

This document holds all the Quartus Handheld Software discussion forum messages from March 17, 2000 to 6:31pm, December 17, 2000.

The links in the document all work -- but please don't try and post new messages to the Forum via the buttons in this document, as the subject threads may eventually be archived from the web site.

Enjoy!

Neal Bridges
Quartus Handheld Software
<http://www.quartus.net>



Discussion Forum

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[Quartus Forth \(PalmOS version\)](#) December 17 - 04:20 pm [2833]

Questions and discussion about the Quartus Forth on-board compiler for Palm/Visor/WorkPad handhelds.

[Quartus Forth \(Royal daVinci version\)](#) April 11 - 09:15 pm [19]

Questions and discussion about the Royal daVinci version of the Quartus Forth on-board compiler.

[Other Quartus Products](#) December 17 - 02:12 pm [25]

All other (non-Forth) Quartus products.

[Everything else!](#) December 5 - 02:37 pm [105]

Anything you'd like to talk about!

[Back to the Quartus Home Page](#)

NOTE: When posting Forth source code, to preserve indentation, format it using the "`\pre{ }`" tag like this:

```
\pre{
: hello
  \ A simple message:
  ." Hello World!"
  10 0 do
    i .
  loop  cr
;
}
```

If you wish to include a } character, enter it as: `\}`

General

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Welcome to General. You may enter any of the discussions below by clicking on the appropriate link. Or, to start a new discussion of your own, click on the "Create New Conversation" button.

Archive of the forum

[Quartus Handheld Software: Discussion Forum: General](#): Archive of the forum



By [Dmitry Yakimov](#) on Sunday, December 17, 2000 - 05:42 pm: [Edit](#)

Is there anybody who has got the subj?
I can't get it from Neal's site because his ftp is seemed to be broken.



By [Neal Bridges \(Nbridges\)](#) on Sunday, December 17, 2000 - 06:31 pm: [Edit](#)

Thanks -- the archives were stored on an external FTP, with which there are apparently technical difficulties. I've moved them for now to the File Area; the "Message Archives" link will take you there.

Sorry for the inconvenience! Let me know if you have any trouble.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Manual in Doc or TealDoc format

[Quartus Handheld Software: Discussion Forum: General](#): Manual in Doc or TealDoc format



By [Mark Norton](#) on Tuesday, December 12, 2000 - 03:04 am: [Edit](#)

Has anyone put the documentation for Quartus Forth in DOC, TealDoc, or TomeRaider format? I've been trying for days to get a chance to sit down and read the manual, however life seems to interfere. It'd be awfully handy to have the manual itself on the PDA as well as the library references and whatnot.



By [Richard Chamberlain \(Rac\)](#) on Tuesday, December 12, 2000 - 07:30 am: [Edit](#)

Mark,

I have it in iSilo format if that is any good?

Richard



By [Mark Norton](#) on Thursday, December 14, 2000 - 04:23 pm: [Edit](#)

Yes, I've found that iSilo has a free format and that would be very helpful.

Add a Message

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E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Starting New Project

[Quartus Handheld Software: Discussion Forum: General](#): Starting New Project



By [Joe McFadden](#) on Sunday, December 10, 2000 - 04:34 am: [Edit](#)

OK here I go ...

I was talked into taking on a PALM IIIC application and since I was familiar with FORTH, I've found my way here. I've loaded QUARTUS into the PALM and it runs from the console...

First Question: Where do I find the ResEdit application ? The tutorial explains it's use but I can't get there

Thanks, joemac@3fire.com



By [Neal Bridges \(Nbridges\)](#) on Sunday, December 10, 2000 - 06:59 am: [Edit](#)

There's a pointer to RsrcEdit and a lot of other resources in the "Online Resources" section of the manual. Also, here's a [link to the RsrcEdit site](#).

Neal

Add a Message

Username:

Password:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

E-mail:

PalmSource 2000

[Quartus Handheld Software: Discussion Forum: General](#): PalmSource 2000



By [Neal Bridges \(Nbridges\)](#) on Saturday, December 9, 2000 - 10:06 pm: [Edit](#)

I'll be at [PalmSource](#) again this year, December 11th to 15th in Santa Clara, California. I'm taking a laptop, so I'll be here as usual.

Neal



By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 12, 2000 - 12:32 am: [Edit](#)

Arrived safely!

Neal



By [Doug Philips \(Dgou\)](#) on Tuesday, December 12, 2000 - 02:52 pm: [Edit](#)

Great! Have fun and have a swift and safe return trip!



By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 12, 2000 - 03:52 pm: [Edit](#)

Thanks, Doug!

Neal



By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 13, 2000 - 12:52 am:

[Edit](#)

Here's something amusing -- a promotional t-shirt from the show. Note "Forth" at the top of the list (crossed out, but that's marketing for you).





Neal



By [Wade Carlson](#) on Wednesday, December 13, 2000 - 10:38 pm: [Edit](#)

Hey Neal, what do you think of AppForge's new Visual Basic for the Palm? I can't believe it will be any real threat to Quartus Forth. Anything with a runtime means Major Slow-Time and a waste of memory.



By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 13, 2000 - 11:15 pm:

[Edit](#)

That's AppForge's t-shirt, actually. I've just been talking to them.

AppForge is a) expensive: \$399 for a 'competitive upgrade', \$695 otherwise (US dollars), and b) requires a run-time module that's already 357K in size, and bound to grow.

Quartus Forth is aimed at a different audience; I don't believe AppForge will draw away any of our customers.

An interesting point about their marketing strategy: they'll accept a Quartus Forth license for their \$300 'competitive discount', so that means a customer could register Quartus Forth at \$69.95, then buy AppForge, and save \$230 overall. This should encourage people to buy Quartus Forth who then don't use it and never ask for support; it's a win for everybody. 😊

(Actually, in all seriousness, I'd rather that people actually use Quartus Forth; that's after all why I created it.)

Neal



By [Neal Bridges \(Nbridges\)](#) on Thursday, December 14, 2000 - 12:38 am:

[Edit](#)

Something else: AppForge apps don't support menus at all at this point. There's a FAQ on this and other things at their site.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Easy Data Input From Paper

[Quartus Handheld Software: Discussion Forum: General](#): Easy Data Input From Paper



By [E. Ross Helton](#) on Thursday, December 7, 2000 - 05:34 pm: [Edit](#)

Hi Gang,

I just purchased the most fantastic piece of equipment! I got it so I could take text from any place and transmit it to my Palm. The unit is a "C Pen 200". It is a tiny handheld scanner. You can scan in any text and then pass it to the Palm through the LED port.

I got it originally so I could get some small books which I had written into the computer, for some editing and re-release.

What makes this unit so unique is that it reads text in some really tight spots. It will allow you to scan places that you can't get a book open wide enough to do it with a regular scanner. It is extremely portable (2 AAA batteries) and it is not much bigger than one of those novelty pens you see in tourist shops.

Where it impacts this users group is its ability to be able to capture text which can be immediately transmitted to the Palm and then used in whatever Quartus program you are working with.

Just thought I would let you know about it.

Make it a good day!

Ross



By [Hans Nordstrom](#) on Friday, December 8, 2000 - 04:33 pm: [Edit](#)

How do you catch the text on the Palm? Like if it was beamed from another Palm? Or it is a special application used for catching the text?



By [E. Ross Helton](#) on Friday, December 8, 2000 - 07:37 pm: [Edit](#)

Hi Hans,

The C Pen can beam the text directly to the Palm or any device such as a laptop which has software to accept a beamed text file.

Make it a good day!

Ross



By [Barry Marks](#) on Sunday, December 10, 2000 - 06:36 pm: [Edit](#)

I saw one of those at CompUsa the other day and I wanted to take a closer look but they were too busy to demo it.

My first thought was that it would be great if the OCR was any good. Is it?



By [Barry Ekstrand \(Ekstrandbb\)](#) on Monday, December 11, 2000 - 04:02 pm: [Edit](#)

Ross,

About how much do these gadgets sell for?

Barry Ekstrand



By [Kris Johnson \(Kdj\)](#) on Tuesday, December 12, 2000 - 08:30 am: [Edit](#)

Ross, thanks for pointing this out. Looks pretty cool. More information on this thingee can be found at <http://www.cpen.com>

Outpost.com sells them for \$150-\$200, depending upon the model.

-- Kris



By [Tel Monks \(Tel\)](#) on Tuesday, December 12, 2000 - 09:05 am: [Edit](#)

I left an erroneous link earlier in talking about the QuickLink Pen - a competitor to the C-Pen. This can be found at www.wizcomtech.com. The pen sells for \$189.



By [E. Ross Helton](#) on Tuesday, December 12, 2000 - 09:44 am: [Edit](#)

Hi Gang,

Sorry for not being available for discussion sooner.

I tried the QuickLink Pen, in fact I got it first for \$150.00 at CompUsa. It was didn't perform up to par. I was discouraged with it. I saw the C Pen at CompUsa and tried it out. It works ten times better in my estimation. Its OCR works great. It doesn't have an upgradeable memory like the QuickLink, but since that one didn't work for me what difference?

I paid \$89.00 with a \$10.00 instant discount and have a \$40.00 mail in rebate.

Can't beat that!!

It miss some letters or symbols depending on the quality darkeness in the original text. It works faster and has error than the QuickLink.

Sorry if this message link has taken so much of your page Neal.

Just hope it will help someone with programming.

Make it a good day!

Ross



By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 12, 2000 - 11:09 am: [Edit](#)

Ross, no problem -- interesting gadget!

Neal



By [E. Ross Helton](#) on Tuesday, December 12, 2000 - 11:33 am: [Edit](#)

Hi Neal,

It really is! I can see a lot of potential uses for it.

Where I see its greatest potential for Quartus is its ability to grab some of the programs from some of these older programming manuals and to get that into text on the Palm and on a computer.

There have been times in the past where I have a program sample and I wanted to run it in Quartus, but I didn't have time at that moment to type type it in on the computer the Palm. With this device I could have scanned it in quickly made the few changes necessary and have a chance to test some code. Many times that code has gotten away from me and was lost to my use.

Hopefully that won't be true from now on.

Problem is now, that I have bunches of projects and Quartus and this pen get sort of a back seat.

Make it a good day!

Ross



By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 12, 2000 - 03:56 pm: [Edit](#)

Time is always the most precious resource. That's one thing about Quartus Forth -- when I'm stuck someplace (airport, waiting room, etc.) I can get real work done instead of just twiddling my thumbs.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

IBM Palm Devices

[Quartus Handheld Software: Discussion Forum: General](#): IBM Palm Devices



By [Trevor Steele](#) on Wednesday, December 6, 2000 - 08:05 am: [Edit](#)

Hi All

Has anyone any experience with the IBM palm type devices such as the Workpad C3 and how they compare with the equivalent Palm devices. What operating system do they use?

Best regards

Trevor



By [Dan Poirier](#) on Wednesday, December 6, 2000 - 12:17 pm: [Edit](#)

They're relabelled Palms. The "C3" could be any of several models; compare the technical specs to Palm models to see which. (The latest C3 is a Vx.)



By [Trevor Steele](#) on Thursday, December 7, 2000 - 03:44 am: [Edit](#)

Many thanks for the info Dan

Best regards

Trevor

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full

Password:

name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

E-mail:

Message Archives temporarily unavailable

[Quartus Handheld Software: Discussion Forum: General](#): Message Archives temporarily unavailable



By [Neal Bridges \(Nbridges\)](#) on Sunday, December 3, 2000 - 10:24 am: [Edit](#)

There's a problem with the site where the Message Archives are stored; they're temporarily unavailable. I'll make them available again as soon as possible.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

File.txt

[Quartus Handheld Software: Discussion Forum: General](#): File.txt



By [Tel Monks \(Tel\)](#) on Saturday, December 2, 2000 - 11:46 am: [Edit](#)

I noted that this was not in the .zipfile for the distribution I got. Was there a problem there? I since found it on your site, but you might want to check...

Tel



By [Hans Nordstrom](#) on Saturday, December 2, 2000 - 05:08 pm: [Edit](#)

As you can see in my published glossary, in library order, it's not part of the distribution and has never been.

The published glossaries are made from the original distribution with nothing added nor reduced.

I haven't checked the distribution that Neal released a couple of days ago. But Neal wrote that the difference compared to the old distribution is the additional support of Mathlib.

It all started because I needed something like it, and nothing was available. So I made one.

These glossaries has helped me and now I hope they are useful for someone else.



By [Neal Bridges \(Nbridges\)](#) on Saturday, December 2, 2000 - 06:14 pm: [Edit](#)

file.txt is still not part of the distribution .zip; I shall have to remedy that.
Thanks!

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Where is the documentation?

[Quartus Handheld Software: Discussion Forum: General](#): Where is the documentation?



By [Tel Monks \(Tel\)](#) on Friday, December 1, 2000 - 07:54 am: [Edit](#)

Quartus Forth looks like just the thing for me - but I cannot find the answer to certain basic questions. Is there a file I have missed that contains all this stuff?

First, what is the difference between "needs" and "include?" Then - if I want to use a word like ?DO or BOUNDS - how do I know where to find it? The case of ?DO is interesting - I now know it is in core-ext, but so is DO and LOOP etc, which are in the "base" vocabulary.

How do I find my way around?

Tel



By [Richard Chamberlain \(Rac\)](#) on Friday, December 1, 2000 - 08:35 am: [Edit](#)

needs inserts the files content if it hasn't been already and include always inserts.

Have a look through the ans documentation (there's a link in the manual). Or use your find button on your palm and it will tell you which memo's have the word.

Richard



By [Neal Bridges \(Nbridges\)](#) on Friday, December 1, 2000 - 09:02 am: [Edit](#)

DO and LOOP are built into the kernel. There are 'wrapper' implementations of them in core-ext, required as part of the definition of ?DO.

Neal



By [Tel Monks \(Tel\)](#) on Friday, December 1, 2000 - 10:14 am: [Edit](#)

Thanks for the quick reponses. However...

Richard Chamberlain: How did you find out the difference between "needs" and "include?" And in order to use the Find button I would have to have downloaded every file to the PDA, no?

Neal Bridges: Thanks for the explanation, but I do not know what 'wrapper' implementations are - how can I educate myself without taking up your

(valuable) tie?



By [Neal Bridges \(Nbridges\)](#) on Friday, December 1, 2000 - 10:19 am: [Edit](#)

My time is at your disposal, Tel.

needs and include are both described on this Quartus Forth manual page:

[Words Specific to Quartus Forth](#)

You should certainly have all the library code installed in your MemoPad; there aren't many files, and they're small.

As to 'wrappers' -- DO and LOOP are built into the Quartus Forth kernel. You'll see redefinitions of them in core-ext because those redefinitions -- 'wrapping' around the original definitions -- are required for the implementation of ?DO.

Neal



By [Tel Monks \(Tel\)](#) on Friday, December 1, 2000 - 10:42 am: [Edit](#)

More thanks.

I think I have 55 files in the libtxt folder. Surely I don't have to download them all?

I guess my point is that it would be good if there were a text file somewhere with all the words and some indication of whether they are kernel or in another file.

Also - there is no implementation for BOUNDS as far as I can find? Is this not standard? Or have I just overlooked it?

On another issue: I have written a small bubble sort for character arrays. I would love to have anyone's opinion on how my (extremely rusty) FORTH is doing.

```
\ BOUNDS ( addr len --- HI-addr LO-addr )
: bounds over + swap ;
```

```
\ SORT ( ADDR len --- )
: sort bounds swap dup rot
  do dup i 1+
    ?do j c@ i c@ 2dup >
      if j c! i c!
      else 2drop
      then
```

```
loop
loop
drop ;
```



By [Neal Bridges \(Nbridges\)](#) on Friday, December 1, 2000 - 10:50 am: [Edit](#)

BOUNDS is defined in toolkit.

Yes, all the library memos should be installed on your Palm. The quick way to do this, if you're working with a Windows desktop, is to use the library.mpa MemoPad Archive file.

There are two manual sections that help with the library organization:

[Library Files](#)

[Documentation for Selected Library Words](#)

You'll find BOUNDS defined on the latter.

Neal



By [Ron Doerfler](#) on Friday, December 1, 2000 - 11:49 am: [Edit](#)

Your code seems fine to me--I can't think of anything I would do differently (though I'm no expert). Tried it, too, and it works (once core-ext is "need"ed for the ?DO).

Incidentally, I tested it, as you might imagine, with the word:

```
: test s" 8348762" 2dup sort type ;
```

but if you want to just type this interpretively on the console command line, you "need" the library file "file", which redefines S" so it can be used in interpretation mode as well as compilation mode. This has been a confusion in the past, so I thought I'd mention it now.

Ron



By [Doug Philips \(Dgou\)](#) on Friday, December 1, 2000 - 12:34 pm: [Edit](#)

I'm glad you mentioned the "Windows" part Neal, as a Mac user I find mpa files are not so easy to use. I guess I'd suggest the option of having a DOC file with all the memos in it, though that could be a pain to maintain, as well as selectively load from. J

-Doug



By [Neal Bridges \(Nbridges\)](#) on Friday, December 1, 2000 - 12:50 pm: [Edit](#)

I'm still searching for the TEXTtoCNOT Mac application that was available a few months ago -- the author vanished, and I had foolishly not saved the app anyplace.

Asking again: Does anybody have it?

Neal



By [Kris Johnson \(Kdj\)](#) on Friday, December 1, 2000 - 03:22 pm: [Edit](#)

Both Windows and Mac users need better ways of doing "batch installs" and "batch downloads" of memos. On Linux, it's pretty easy to write scripts that do it with the pilot-link utilities, but I haven't found anything comparable on Windows or Mac.

Have I missed something? I hate having to reboot into Linux to do memo stuff, as support for my Visor USB cradle isn't available and the serial cradle is glacially slow.

-- Kris



By [Neal Bridges \(Nbridges\)](#) on Friday, December 1, 2000 - 03:32 pm: [Edit](#)

.MPA files, while not an automated facility, are a pretty convenient way to batch transfer memos in/out of the Palm.

On the Mac, TEXT to CNOT did something equally useful. Still searching for it!

Neal



By [Hans Nordstrom](#) on Friday, December 1, 2000 - 06:06 pm: [Edit](#)

There's a way to find out what's available in the memo libraries.
Have a look at:

<http://www.abc.se/%7Em989/>

and follow the Forth link. There you'll find glossaries for the Quartus libraries. Both in library order and alphabetical order. These glossaries are also available to download in MobileDB format if you want to.



By [Neal Bridges \(Nbridges\)](#) on Friday, December 1, 2000 - 08:56 pm: [Edit](#)

Thanks again for that resource, Hans. I must include it in the Online Resources section of the manual.

Neal



By [Tel Monks \(Tel\)](#) on Saturday, December 2, 2000 - 09:07 am: [Edit](#)

Hans:

Thanks - that is exactly what I was talking about.
And Neal - that would be a great idea to include in the documentation. [By the way - I paid for my Quartus now - how could I not with such excellent support?]

Tel

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Newbie questions

[Quartus Handheld Software: Discussion Forum: General](#): Newbie questions



By [Gary Wiese](#) on Wednesday, November 29, 2000 - 05:27 pm: [Edit](#)

Hello all, I am trying to learn the visual side of programming and I have been looking at Steve Donahues Tutorial-v1.02.zip located at the file area. So far I can construct a button on the form, but I can't seem to get it to do anything. I want it to bring up another form with I click it. Can someone help? Below is the code that I have so far. When I run this as is the button is on the form, but it doesn't do anything. I know the forth code is wrong, thats my problem.

needs ids
needs resources
needs Events

(ID) hiwb (ID) rsrc use-resources

```
1001 constant HelloForm
2001 constant AboutMenuItem
3000 constant AboutBox
```

```
: show-panel ( -- )
HelloForm ShowForm ;
```

```
: do-event ( ekey -- )
menuEvent = if
event >abs itemid
AboutMenuItem = if
AboutBox FrmAlert drop
\ AboutMenuItem = if \ This is what I did???
\ Button FrmAlert drop \ I know it s wrong???
then
then ;
```

```
\ Main entry point: \ I understand this is a loop that keeps repeating until there
is an event?
: go show-panel
begin ekey do-event again ;
```



By [Kris Johnson \(Kdj\)](#) on Wednesday, November 29, 2000 - 05:36 pm: [Edit](#)

If you are trying to catch a button event, use "ctlSelectEvent =" instead of "menuEvent =".

-- Kris

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Quartus.ca!

[Quartus Handheld Software: Discussion Forum: General](#): Quartus.ca!



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Saturday, November 25, 2000 - 01:46 pm:

For the curious, <http://quartus.ca> now resolves to Quartus.net.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Starting out from the beginning

[Quartus Handheld Software: Discussion Forum: General](#): Starting out from the beginning



By [Gary Wiese](#) on Monday, November 20, 2000 - 12:08 am: [Edit](#)

Hello Neal,

You may or may not remember me I purchased Quartus from you a while back. I kind of gave up on learning forth because I couldn't find much beginner stuff. You and the others where a big help when I did post questions, but I didn't or couldn't find the time to learn it. I am now taking a class in c++ and have some experience with basic programming. I would like to give it another shot, it may take a while because its going to be part time, but I am going to give a try.

The biggest problem I have with all of this is the visual part. When I taught my self basic there wasn't any visuals and the local college don't teach it. So I am completely lost with forms. I have RsrcEdit and have been going over the apps that are on my palm now. I can figure out what ther're doing and I have changed them a little to, but I don't know how to start. Or how to put the code in to make it ackually do something.

In basic when you need to get information from the user you had the "input" statement and c++ has "cin", how is it done in forth? Could you post or email me a small snippet of an "input" code with forms to get me started? After I get an understanding of it then I will need some help with loops. For example, "for next" "do while".

But first things first.

Thanks
Gary



By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 22, 2000 - 11:23 am:

[Edit](#)

I remember you Gary. I've been trying to track down something I wrote about the nature of forms in one of the Forum Archives, but it hasn't surfaced, so I'll give it another shot.

In a simple, non-GUI enviroment, programs are strictly linear; you ask the user for some sort of input, process the input, return the result, and repeat as required.

In a GUI environment, things are not terribly different, but instead of asking the user to, say, input a string of text, you define a 'form' using special tools like

RsrcEdit. This form can contain any of the various objects that the operating system knows how to display and manipulate: menus, fields to enter text, buttons, etc. You ask the Palm OS to display your form using ShowForm, and then wait for messages to be received by your application. These events, arriving on the stack via EKEY, tell you what the user is doing with your form; he has pressed a specific button, for instance, or he has entered text into a field, or he has selected a menu item. Your application then does whatever is required based on those actions.

A good example of a simple app accepting input is Carl Jacobsen's PhoneDecode program, available from PalmGear. It comes with complete source and should certainly get you started, and help you generate further questions.

I'm always here.

Neal



By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 22, 2000 - 12:55 pm:

[Edit](#)

PhoneDecode is here:

[PhoneDecode](#)

Neal



By [Gary Wiese](#) on Wednesday, November 22, 2000 - 05:27 pm: [Edit](#)

Thanks Neal,

I will load it up and give it some time. By the way have there been any updates for Quartus? Its been a while sense I look here. I also have have IIIc, will everything work ok on it, or do I need to make some changes?

Gary



By [Neal Bridges \(Nbridges\)](#) on Thursday, November 23, 2000 - 08:52 am:

[Edit](#)

There's an interim update of 1.2.6r that I can send you if you wish; let me know. It primarily addresses one issue with events coming from popup lists.

Neal



By [Gary Wiese](#) on Thursday, November 23, 2000 - 11:39 am: [Edit](#)

Yes, send it please. I also sent you mail about a registration code for another of my handhelds.

Thanks
Gary



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Thursday, November 23, 2000 - 03:13 pm:

Haven't seen that yet, Gary; I'll follow up tonight.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Chuck Moore's Fireside Chat 2000

[Quartus Handheld Software: Discussion Forum: General](#): Chuck Moore's Fireside Chat 2000



By [Neal Bridges \(Nbridges\)](#) on Sunday, November 19, 2000 - 03:22 pm: [Edit](#)

Here's a transcript of a chat recently given by Charles Moore, creator of the Forth language.

<http://www.ultratechnology.com/fsc2000.htm>

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Availability downtime

[Quartus Handheld Software: Discussion Forum: General](#): Availability downtime



By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 15, 2000 - 12:16 am:

[Edit](#)

People, I am going to be unavoidably unavailable for much of the next three days through to Friday, November 17th. This will mean delays in responding to email and forum messages. I will review my mail for urgent matters but will not be able to attend to all of them with the usual speed.

I apologise for the inconvenience; I'll be back in the saddle as soon as possible.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Internal error 500

[Quartus Handheld Software: Discussion Forum: General](#): Internal error 500



By [Neal Bridges \(Nbridges\)](#) on Thursday, November 9, 2000 - 01:30 pm: [Edit](#)

Some of you have encountered an 'Internal Error 500' when posting messages here on the Forum. I've investigated and have altered the configuration to prevent this; let me know if it happens again.

Thanks!

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

FIG UK Forth Newsletter -- free!

[Quartus Handheld Software: Discussion Forum: General](#): FIG UK Forth Newsletter -- free!



By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 7, 2000 - 05:11 pm: [Edit](#)

Here's the latest issue of the Forth Interest Group (UK) newsletter, in Adobe Acrobat PDF format:

[August 2000 Issue](#)

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Quartus Banner

[Quartus Handheld Software: Discussion Forum: General](#): Quartus Banner



By [Wade Carlson](#) on Sunday, November 5, 2000 - 08:40 am: [Edit](#)

Just curious, what was up with the Quartus banner on the main page? For a couple of days it had a 'metal' background instead of the usual marble background. I kinda liked the change.



By [Neal Bridges \(Nbridges\)](#) on Sunday, November 5, 2000 - 11:24 am: [Edit](#)

I was experimenting with a new logo; I decided to roll back to the chiseled marble. Here's the newer one, if you missed it:

[New Logo](#)

Neal



[Edit](#)

By [Richard Chamberlain \(Rac\)](#) on Sunday, November 5, 2000 - 12:37 pm:

I like the newer logo Neal. Why don't you have both? add some javascript which chooses the image randomly.

Richard



By [Neal Bridges \(Nbridges\)](#) on Thursday, November 9, 2000 - 01:44 pm: [Edit](#)

I'd like to avoid the javascript, but I'll see about making a separate page for alternate graphics (logos, banners, etc.).

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Quartus Forth for the VTech Helio?

[Quartus Handheld Software: Discussion Forum: General](#): Quartus Forth for the VTech Helio?



By [Darin Basil Arrick](#) on Tuesday, October 24, 2000 - 07:34 pm: [Edit](#)

Have you thought about porting Quartus Forth to the VTech Helio PDA? It looks like a pretty awesome little box, and it's inexpensive.

2MB Flash, 8MB RAM

160x160 16 grays LCD

75MHz MIPS CPU

Runs either VT-OS (VTech's own OS) or one of two versions of Linux

\$179.00 Suggested Retail

I'm a Palm user, but the Helio has started to interest me.



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 24, 2000 - 07:42 pm: [Edit](#)

I've looked at the specs for the device, but I don't own one. They haven't got much market share at this point, so writing software for that platform isn't a high priority for me.

If it runs Linux, gforth might be a good tool.

Neal

Add a Message

Username: not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Formatting in Forum

[Quartus Handheld Software: Discussion Forum: General](#): Formatting in Forum



By [Daryl](#) on Tuesday, October 24, 2000 - 10:52 am: [Edit](#)

I just went through an exercise I'd rather not have to repeat. In the Forth forum there was a section of code I wanted to download to a Memo Pad. In my Internet Explorer browser, I highlighted the code, hit Control-C to copy to the clipboard, went to Outlook, created a new Note, and hit Control-V to paste the clipboard into the Note. Lo, and behold! all the formatting, including the line breaks, was gone. I had to manually reinstall the line breaks and indentation before HotSyncing.

Do you have a tip for a better way to copy code from the forum?



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 24, 2000 - 11:43 am: [Edit](#)

One way -- Netscape copies the text out properly. I haven't found an easy way to make IE work properly.

Neal



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 24, 2000 - 11:47 am: [Edit](#)

One thing that does work is pasting from IE into WordPad (write.exe) -- the formatting is retained, and the code can be then copied and pasted elsewhere successfully. Why IE doesn't have the same cut & paste capabilities as WordPad is not something I'd care to speculate on. 😊

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Strange redirections!

[Quartus Handheld Software: Discussion Forum: General](#): Strange redirections!



By [Neal Bridges \(Nbridges\)](#) on Sunday, October 22, 2000 - 04:05 pm: [Edit](#)

Something odd -- a user has written me to say that when clicking on the "Quartus Forth" link from the main Products page, he was redirected to some other site. I've checked everything, and it hasn't been hacked or otherwise modified, so I'm curious if anybody else has had problems.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Missed Mail

[Quartus Handheld Software: Discussion Forum: General](#): Missed Mail



By [Neal Bridges \(Nbridges\)](#) on Thursday, October 5, 2000 - 10:41 pm: [Edit](#)

I have reason to believe I haven't received some email from the past few days -- if you've written and are waiting for me to respond, please write again.

Thanks,
Neal



By [Richard Chamberlain](#) on Friday, October 6, 2000 - 02:26 am: [Edit](#)

Hi Neal,

I did send you some mail. The content was that I had made an iSilo document of the QF manual and one of the ans forth document (which is much clearer than the doc version - and includes links to different sections). There is a thread which I'm sure you've read already. Do you want these for the file section or would you rather me just put up on a page somewhere for people to get to.

Also I've been trying to write something using a popup trigger/list and failing terribly. From a thread I've read it seems I need a newer version in order to catch the events. I'm currently on 1.2.5R on a IIIfx.

Thanks (for helping with this question, and for QF which entertains me endlessly :-)

Richard



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 17, 2000 - 05:55 pm: [Edit](#)

Just a follow-up. If you're still awaiting a response from me on something, please let me know.

Neal



By [E. Ross Helton](#) on Tuesday, October 17, 2000 - 06:56 pm: [Edit](#)

Hi Neal,

Have asked you about the Beta testing. Have a Personal with 2mb upgrade.

Make it a good day!
Ross



By [Neal Bridges \(Nbridges\)](#) on Thursday, October 19, 2000 - 08:41 pm: [Edit](#)

Ross, just saw your message. Thanks -- if you could tell me if the new version of Benchmark gives a correct reading for your Personal, I'd appreciate it.

Neal



By [E. Ross Helton](#) on Wednesday, October 25, 2000 - 12:35 pm: [Edit](#)

Hi Neal,

Ran BenchMark on my Professional with 2 MB upgrade and it registered 83% as opposed to the 84% in your listing.

Hope this helps.

Make it a good day!

Ross



By [Neal Bridges \(Nbridges\)](#) on Wednesday, October 25, 2000 - 12:39 pm:

[Edit](#)

Thanks, Ross. That's within the margin of error.

Neal



By [E. Ross Helton](#) on Wednesday, October 25, 2000 - 04:50 pm: [Edit](#)

Hi Neal,

Oh you mean +/- something or the other? (Ha!)

Hope this helps

Make it a good day!

Ross



By [Neal Bridges \(Nbridges\)](#) on Wednesday, October 25, 2000 - 05:01 pm:

[Edit](#)

Precisely (or not so precisely, as the case may be 😊).

Benchmark is quite accurate, actually -- some units register one percent higher or lower than the value shown, but tend to do so consistently.

Neal



By [E. Ross Helton](#) on Wednesday, October 25, 2000 - 06:05 pm: [Edit](#)

Hi Neal,

Thanks for the program. Previously I was assuming it was like the ads for some polling data which is given and at the end the announcer say it is accurate within 300,00 +/- or whatever they say.

My Grandma Would've Said, "Tolerance is allowed depending on who does the measuring!"

Thanks for the program. It gave me some concept of where my machine fits.

By the way, you have been doing a great job of answering some of the questions which I have seen lately on this forum.

Sometimes I have a hard time figuring out how to turn on my Pilot let alone being able to program a real program.

Make it a good day!
Ross

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Complete newie question about forth

[Quartus Handheld Software: Discussion Forum: General](#): Complete newie question about forth



By [ray](#) on Wednesday, September 20, 2000 - 11:28 pm: [Edit](#)

I have few newbie questions, could someone answer for me.

1. Is that all development have to do it on palm, I means keyin in palm ?
2. What is the advantage to program directly on palm, cause I'm think is hard to write instruction on the palm.
3. Can Quartus forth create a commerical grade Palm application ?
4. Can Quartus forth create a standard database applications ?
5. The evaulaton saying is build 1999.03.06 ,it is more than a year now. does it means no more improvement since last year ?
6. Does anyone know any shareware was created by using forth, so I can take a look !

Thanks!



By [doerfler](#) on Thursday, September 21, 2000 - 01:19 am: [Edit](#)

Hi Ray,

1. You can code and unit test on the Palm. You should test the final version using the Palm OS Emulator on the PC, though. You can also program on the Emulator on the PC. To program right on the Palm, you need Quartus Forth, of course. Then you need RsrcEdit (<http://www.individeo.net>) to make all of your forms, buttons, etc. right on the Palm. It is probably a good idea to have Forth definitions and Quartus Palm OS (systrap) calls in Doc format on your Palm for handy reference. Also, I like the freeware CharHack (<http://www3.palmgear.com/software/showsoftware.cfm?sid=48187220000225172051&prodID=1496>), which pops up a handy screen to tap on for entering symbols. Finally, thank goodness for the person who recommended the freeware called Crash (<http://www.informatik.hu-berlin.de/~dseifert/en/computer/palm/crash.html>) which automatically resets the Palm from a fatal program error after 10 seconds, so you don't have to poke it in the back every time. It still shows the error message for those 10 seconds. If you aren't very good with Graffiti, you can get one of those portable keyboards. The concise syntax of Forth makes it possible to code on the Palm. And the ability to interactively run individual words for debugging makes it convenient to code on the Palm as well.
2. My family keeps me so active that I wouldn't be able to program very much at home on the PC, while I can (and do) program everywhere on the Palm--at lunch, waiting here and there, etc. It turns boring waits into interesting opportunities.
3. Quartus can create commercial grade programs, but it cannot in this version create multi-segment (>64K) apps. It can create quite large apps, but you should be aware of this limit. It can launch sub-apps, though.
4. Yes, it can create database applications, although I'm not sure that it can handle conduits to the PC desktop (Neal?). You can look at TeamFile for an example of mine, although a new version with more features is going to be released in the next couple of weeks. It's at <http://www3.palmgear.com/software/showsoftware.cfm?sid=48187220000225172051&prodID=7675>.

5. The registered Quartus version 1.2.5 that I have has a 1999.10.25 date. An interim version 1.2.6 was released by Neal to anyone needing to use particular callbacks in OS3.3 or later, but the next version is pending.

6. My three products (ActiveKey, Expedition ES, and TeamFile) can be found at <http://www.eddiesoft.com>. The source is freely available to anyone on this list, but it is true that it can be quite difficult to follow someone else's Forth code. There are a number of other Quartus programs, and there is a list of developer sites on a web page owned by a member of this list, whose URL I don't have handy where I am now. Can someone list it?

Ron



By [doerfler](#) on Thursday, September 21, 2000 - 01:39 am: [Edit](#)

Oh, one more thing regarding your question about improved versions of Quartus. Forth is an extensible compiler (is that the right term?). This means that by adding a library memo of new Forth words you can not only redefine words to update their behavior, but you can also extend the language syntax. For example, you can include the library memo struct.txt and now you have added structures to the language. Same with arrays, debugging tools such as the redirection wordset, etc. Therefore, if the basic kernel of Forth is robust, you don't need upgrades in many cases to adjust the behavior of words or to add features. And I have found Quartus to be very robust. Neal is planning at some point to add some kernel functions, such as handling launch codes and multi-segment apps, but in general Forth is a toolset that is meant to be built upon.

Ron



By [E. Ross Helton](#) on Thursday, September 21, 2000 - 08:50 am: [Edit](#)

Hi Ray,

I agree with Ron, Quartus is a excellent program. You can be anywhere with your Pilot and be programming if you want to. As you begin to use the Pilot writing, you will become good at it. There are lots of programs which make it easier once you learn their methods. For myself I have stayed with the standard way of entry and have done fairly well with it. By doing a lot of cutting and pasting of existing material you can shortened the amount of entry.

My three programs Rtrek, Rface, and Rconvert can be found at:

<http://www.palmgear.com/>

and

<http://www.geocities.com/Heartland/Hills/1705/software.htm>

Just come here and ask questions and you will get a lot of help.

By the way Rons' programs are very good to look at for examples as well as being useful!

Make it a good day!

Ross



By [Jim Hendricks \(Jimh\)](#) on Thursday, September 21, 2000 - 09:40 am: [Edit](#)

Ray,

From my own experience, it is fantastic to be able to whip out my Palm anywhere, and code a few lines, I can't do that with my notebook! For when I am at my desk, or other more conventional programming spot, I have the Palm keyboard to detach me from the extra burden of writing by long hand.

For the databasing, yes, Quartus can database, every "file" on the palm is actually a database. While the builtin databases are not as feature laden as a full relational DBMS, it is most definitely the foundation for more comprehensive database features. The database products out there right now all

seem to be focused on not only giving me the DBMS, but also giving me a form generator to tie with the DBMS. One of my projects is a relational DBMS that just does the databasing so that you can link it into any application you are writing in Quartus. This would then free you from having to write a custom database for each application you need data access, but rather use the framework already provided.

My only program for public consumption at this time is my analog clock code posted in the contributions section of the files area. The version posted there is my first version, I have a newer version here but haven't fully tested it yet so I haven't yet released it.

Jim



By [Hans Nordstrom](#) on Tuesday, September 26, 2000 - 04:32 pm: [Edit](#)

Hi Ray,
if you want to see what others have done, here is a page with URL's to developers on this forum.
[Quartus Forth developers](#)



By [Hans Nordstrom](#) on Wednesday, September 27, 2000 - 12:33 pm: [Edit](#)

Oops,
I made a fool of myself. Here (I hope) is a working link URL:
[Quartus Forth developers](#)



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Wednesday, September 27, 2000 - 12:54 pm:

Hans, thanks for that collection of links -- it's really helpful.

Neal



By [E. Ross Helton](#) on Wednesday, September 27, 2000 - 06:02 pm: [Edit](#)

Hi Hans,

If all you ever do is not get a link linked you're doing very well.

You got the link going and that is what is important!!

I can remember when it was very hard to get links working. Sometimes it would take four or five attends. This board has made the process so much better.

Neal has done a excellent job of giving us a forum which allows a lot of latitude for the things we need to do here.

Make it a good day!
Ross

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Discussion Forum Software Upgraded

[Quartus Handheld Software: Discussion Forum: General](#): Discussion Forum Software Upgraded



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Thursday, September 14, 2000 - 08:47 pm:

I've just upgraded the Forum software. Let me know if anything strange happens.

Thanks,
Neal



By [Erwin Schomburg \(Esc\)](#) on Friday, September 15, 2000 - 12:34 pm: [Edit](#)

Seems to work.

Just re-editing.....
works also (but seemingly not on "old" own posts).

/Erwin



By [Neal Bridges \(Nbridges\)](#) on Friday, September 15, 2000 - 01:52 pm: [Edit](#)

Editing has a time-limit; it's presently set to 30 minutes after posting.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail

address is optional.

Password:

E-mail:

Forth Books for sale

[Quartus Handheld Software: Discussion Forum: General](#): Forth Books for sale



By wmarcy@stny.r.com on Monday, September 4, 2000 - 04:53 pm: [Edit](#)

Hi people, I have come across a set of books that I thought might be of interest to some of you, they are:

"Forth Programmers Handbook", Fourth Edition. Sells new for \$50.00, this copy is in liek new condition (spine not even bent). \$35.00, plus \$3.00 shipping.

"Thinking Forth", By Leo Brodie, great condition, a great companion to the elusive Forth best seller "starting forth". \$20.00 plus \$3.00 shipping. (2 copies 20.00 each)

"Starting Forth", By Leo Brodie, you, this is the hard to find book of Forth. Copies are as rare as hens teeth. great shape, \$25.00 plus \$3.00 shipping.

"Discover Forth", by Thom Hogan, a great into to learning and programming forth. good condition.
\$20.00 plus \$3.00 shipping

Cash/MO or CC through PayPal.

Let me know at email: { wmarcy@stny.rr.com, wmarcy@stny.rr.com }

These will not last.



By wmarcy@stny.rr.com on Wednesday, September 6, 2000 - 08:18 am: [Edit](#)

Hello People, I have one copy of "Thinking Forth" Left.

\$20.00 + \$3.00 shipping.

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Changing EMail address on profiles...

[Quartus Handheld Software: Discussion Forum: General](#): Changing EMail address on profiles...



By [Jamie](#) on Friday, September 1, 2000 - 12:08 am: [Edit](#)

Neal

Since setting up a profile on this board, I've changed ISP's. I would like to change my profile info to reflect this new info. The edit profile option lets me change anything but that. Is it possible ? How ?

Thanks

Jamie



By [Neal Bridges](#) on Friday, September 1, 2000 - 12:43 am: [Edit](#)

Let me know the new details and I'll make the change.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Newbie needs

[Quartus Handheld Software: Discussion Forum: General](#): Newbie needs



By [JoannaK](#) on Wednesday, August 30, 2000 - 03:50 pm: [Edit](#)

Hi

I must say that this Quartus is neat to have on Palm. I hope that some day I can make something usefull with it allthouth it seems it will take quite a while time.

Being a Palm Newbie (and having nearly 10 yrs break on forth (now i have spended most of my free time in last weeks reading Palmos-referencs and old quartus messages)) I have noticed that my problem seems to be on Documentation (as usual)..

Biggest problem is knowing where to look for particular information. For example if a forth newbie wants to do something like reading user input... There is about huge amount different word scattered around Ansi-doc and Quartus docs. I know some forth but it's damn difficult to find best possible word form all available. Perhaps some kind grouped index file would be good.. like:

Input words:

key (-- u) Returns pressed key --> See AnsiDoc (part???)

(ekey) (timeout. -- u) specified timeout, returns event --> Quartus words, see also eventtypes

etc

Allso I'm missing some information on Palm Fonts (like char maps, differences between versions and available fonts).

Second (at least to me) is this resource thingy.. I really can't understand reason on them (and why/how they are used). I must assume that they are quite natural for Mac-coders, but with my Mac-free background...

Third.. Is there Forthified versions of Palm specific C/asm include files available.. I'm not interested downloading (with 33.6k modem) and installing Palm-cross-GCC to my pc just to get header files.

Joanna



By [Neal Bridges](#) on Wednesday, August 30, 2000 - 04:26 pm: [Edit](#)

1. The best approach is to look at the sample projects, both mine and those of others. You can see how they achieve what they achieve. And of course, ask questions here :)

The Palm SDK docs (in PDF format) are a necessary reference when working with the Palm OS; if you haven't downloaded them yet, do.

2. I'm not much of a Mac coder; it's not a required background. Resources are, fundamentally, a description of an interface (buttons, fields, menus, etc.). The Palm OS reads that description, draws the elements on screen, and passes back 'events' to your application depending on which button, menu item, etc. is chosen by the user.

3. The C header files are available as a separate download from Palm -- no need to download and install an entire C compiler.

<http://www.palmos.com/dev/tech/tools/sdk35.cgi>

After agreeing to the license, scroll down and download "Palm OS SDK 3.5 Headers and Libraries".

Neal



By [Joannak](#) on Wednesday, August 30, 2000 - 06:44 pm: [Edit](#)

I have those 2 big PDF:s Palm_osCompanion and Palm_os_reference... After my last message I e-purchased Oriley book (only palm programming book I could found available on my selection of european www-booksellers) I'll hope to get it early next week.

Thanks for that link, I downloaded include files and Palm C-examples. I must read those too.

Thanks.

Joanna



By [JoannaK](#) on Wednesday, August 30, 2000 - 10:25 pm: [Edit](#)

Now I know so much more than couple hours ago...

After reading include files and examining Palm-C eamples I have learned 2 major things..

1) Those .h files contain essential data, they are absolutely must download/read for anyone trying to program Palm (even with Forth).

2) I have decided that I'm not even thinking on programming Palm with C... It looked so impossible.. :-(

Joanna

PS: Time to get some sleep.. Its 5:20 am... :-)



By [Neal Bridges](#) on Thursday, August 31, 2000 - 03:13 pm: [Edit](#)

C is certainly more verbose than Forth.

One key advantage of using Quartus Forth: Quartus Forth takes care of all the event housekeeping for you, keeping things simple. The event-handling routines you see in Palm OS C sources are hairy, to say the least.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Delay in PalmGear registrations: July 15, 2000

[Quartus Handheld Software: Discussion Forum: General](#): Delay in PalmGear registrations: July 15, 2000



By [Neal Bridges](#) on Saturday, July 15, 2000 - 03:43 pm: [Edit](#)

There will be a delay in registration processing for orders for Quartus Forth placed through PalmGear -- they're doing some upgrades, and won't process the orders through to me until Sunday earliest.

If you're anxious to register and get your registration info today, send your registration through RegSoft instead --

[Quartus Forth Registration at RegSoft](#)

Thanks!

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

User Contributions, Forum Search & Personal Profiles

[Quartus Handheld Software: Discussion Forum: General](#): User Contributions, Forum Search & Personal Profiles



By [Brette Blatchley](#) on Thursday, July 13, 2000 - 12:15 pm: [Edit](#)

Hi Neal,

I'm happy to be a new member of the Quartus Forth family, having received my registration today!

Very nice system Sir! (I don't know how You find the time to support it so well.)

Question: How does one make a contribution which other QF users would find helpful?

The reason I've asked is that there does not seem to be any instructions about this, and when I emailed You a new QForth-Lexicon I built recently, I got no indication that it was ever received (It's different and, I think, more useful to Palm users than the other ones offered). (We suffered email server problems near that time, and I did not want to bother You about this until I could afford to register.)

Which brings up my first question about the Discussion Forum System: When I do a search which is NOT limited in time, I get a server error -- thus my comprehensive search for "contrib" failed.

Also, I don't see any way to view another user's profile (I completed mine when I registered for this forum yesterday). Am I blind, or is this feature unsupported?

Take Care Neal & All! :-)

-Brette



By [Neal Bridges](#) on Thursday, July 13, 2000 - 12:26 pm: [Edit](#)

Hi Brette. Thanks for your registration, and your kind words!

As for your lexicon -- you got no indication that it was received because I don't seem to have received it. Please re-send!

The discussion forum software sometimes trips up on heavy searches -- a retry should eventually succeed. (Actually, the software is fine, but the server itself decides the process is a hog and terminates it).

You can view another user's profile by clicking on his name above one of his messages.

Neal



By [Neal Bridges](#) on Thursday, July 13, 2000 - 04:03 pm: [Edit](#)

By the way, if any of you ever need to send me files, one easy way is via anonymous ftp to

<ftp://ftp.quartus.net>

Neal



By [rniere](#) on Monday, July 31, 2000 - 04:42 am: [Edit](#)

I'd love to see this forth-lexicon.

As someone who hasn't touched this language since 1990, I can safely say a lot of things have changed.

Randy Niere



By [Neal Bridges](#) on Monday, July 31, 2000 - 10:17 am: [Edit](#)

It's in the 'Contrib' file area:

<http://www.quartus.net/files/PalmOS/Forth/Contrib/ForthLexicon.zip>

Thanks again, Brette!

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Discussion Forum software upgrade!

[Quartus Handheld Software: Discussion Forum: General](#): Discussion Forum software upgrade!



By [Neal Bridges](#) on Tuesday, June 27, 2000 - 08:04 pm: [Edit](#)

The software that runs this discussion forum has just been upgraded; let me know if anything unusual happens.

Thanks!

Neal



By [Neal Bridges](#) on Tuesday, June 27, 2000 - 08:24 pm: [Edit](#)

By the way, if you'd like to set up a personal profile, you can do so via 'Edit Profile' in the side menu. This allows you to control various personal settings, receive forum messages via email, etc.

Neal



By [Neal Bridges](#) on Tuesday, June 27, 2000 - 11:53 pm: [Edit](#)

The "Instant Registration" feature was broken; just fixed it. If you tried it before and it said you couldn't register, please try again.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail

address is optional.

Password:

E-mail:

Locals

[Quartus Handheld Software: Discussion Forum: General: Locals](#)



By [Bill McCarthy](#) on Friday, June 23, 2000 - 09:46 am: [Edit](#)

I read the following in comp.lang.forth today:

"Neal Bridges" <nbridges@interlog.com> wrote in message
news:8itc5d\$7mt\$1@nnrp1.deja.com...

- > It is easy to implement locals under Quartus Forth, integer or float.
- > The 68K CPU does indeed make it simple.

Great! Could you please add locals, particularly floating point locals to the library?

Thanks,
Bill



By [Neal Bridges](#) on Friday, June 23, 2000 - 10:09 am: [Edit](#)

tinylocals.txt is an existing implementation of locals. You can find it in the File Area. A version that does floats (with an FTO word or similar) should be a straightforward modification. Have a look, see what you think.

Neal



By [E. Ross Helton](#) on Thursday, September 21, 2000 - 08:54 am: [Edit](#)

Hi Neal,

Wasn't sure how to enter this. I was making an entry into the forum and decided to use the spell checking option. It worked right up to the point of re-entry and then crashed my browser. Has anyone else had this problem?

Make it a good day!
Ross



By [Neal Bridges \(Nbridges\)](#) on Thursday, September 21, 2000 - 06:20 pm:
[Edit](#)

Ross, I have never tried that feature of the Forum software; I'll try it now.

...

Works here, but only in Internet Explorer (the button doesn't appear in

Netscape).

Neal



By [E. Ross Helton](#) on Thursday, September 21, 2000 - 06:58 pm: [Edit](#)

Hi Neal,

My browser is Netscape V4.75. that is probably what was wrong. The button did show though for me. Probably if it is for MS Internet and I accessed it in Netscape, it would crash.

Anyway I won't use it again.

Make it a good day!

Ross



By [Neal Bridges \(Nbridges\)](#) on Friday, September 22, 2000 - 10:04 am: [Edit](#)

Thanks for the feedback on the new forum software. The upgrade seems to generally improve things a bit.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

FS problem

[Quartus Handheld Software: Discussion Forum: General](#): FS problem



By [Philippe de Rochambeau](#) on Wednesday, June 21, 2000 - 11:47 am: [Edit](#)

Apart from using fvariables, how do you make a fs containing the following values:

1e 2e 3e 4e 5e

look like this...

1e 2e 3e 4e 5e 3e 4e 3e 4e 5e 3e 4e 5e

since there are no fpick or froll words available?

Philippe de Rochambeau



By [Neal Bridges](#) on Wednesday, June 21, 2000 - 02:48 pm: [Edit](#)

Drop the top three values into fvariables and retrieve them in the right order.

Neal



By [Neal Bridges](#) on Wednesday, June 21, 2000 - 02:53 pm: [Edit](#)

Sorry Philippe. Missed the part 'apart from using fvariables'. It's really the easiest way -- why are you seeking another?

Neal



By [Ron Doerfler](#) on Thursday, June 22, 2000 - 01:33 am: [Edit](#)

I found it convenient when I was manipulating floating point values to define the equivalent of a return stack for them, i.e., another stack that had no purpose other than pushing and popping float values. So I wrote the code below to make >fr and fr> for floats be the equivalent of >r and r> for non-floats. With this and such built-in functions as FDUP, FSWAP and FROT, you can do just about anything. The code can be modified to handle more than the 6-float depth that I needed.

Ron

```
\ f-return 062100 RWD
```

```
: fcells ( u -- u )
```

```
\ Floats take 2 cells
2 cells * ;

\ Create virtual floating return
\ stack for up to 6 floats.
create fr 6 fcells allot
variable frdepth 0 frdepth !

: fraddr ( -- addr )
fr frdepth @ fcells + ;

: >fr ( F: r -- )
fraddr f! 1 frdepth +! ;

: fr> ( F: r -- )
-1 frdepth +! fraddr f@ ;
```



By [Philippe de Rochambeau](#) on Thursday, June 22, 2000 - 03:44 am: [Edit](#)

Neal,

I used to think that you could not call yourself a 'real' Forth programmer if you used fvariables instead of using words such as frot, fswap. Now I know that fvariables are indispensable whenever you have more than 3 values of the fs.

Philippe de Rochambeau



By [Neal Bridges](#) on Thursday, June 22, 2000 - 09:44 am: [Edit](#)

It would be a rare day when you needed so many items on the floating-point stack. In fact, the float stack only has a depth of 8.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Fcos

Quartus Handheld Software: Discussion Forum: [General](#): Fcos



By [Philippe de Rochambeau](#) on Wednesday, June 21, 2000 - 11:43 am: [Edit](#)

Neal,

do you ever plan to implement fcos?

With the current implementation of cos, here is how I compute fcos:

5.729577951e1 fconstant rad

```
<fvar> f@ rad f* fround f>s  
cos s>f 1e4 f/
```

The problem with this code is that a lot of precision is lost.

Philippe de Rochambeau



By [Neal Bridges](#) on Wednesday, June 21, 2000 - 07:41 pm: [Edit](#)

Try this (slightly tested):

```
\ fcos 6/21/00 7:36 pm NAB
```

```
fvariable n  
fvariable x  
3.14159265e fdup 2e f* fconstant 2pi  
fconstant pi  
  
: fsgn ( F: r -- -1|0|1 )  
  fpdissect 2drop drop 0 d>f ;  
  
: fcos ( F: rad -- cos )  
\ Adjust between pi and -pi:  
  fdup 2pi f/ floor 2pi f* f-  
  pi fover f< if  
    fdup fsgn 2pi f* f-  
  then  
\ Series expansion:  
  fdup f* x f! 1e n f!  
  2 1e ( F: y )  
  begin fdup ( F: old y )  
    n f@ x f@ f* dup dup 1- * 0 d>f  
    f/ fnegate fdup n f! f+  
  fover fover f- f0= 0= while  
    2 + fswap fdrop  
  repeat drop  
  fswap fdrop ( F: cos ) ;
```

Neal



By [Neal Bridges](#) on Wednesday, June 21, 2000 - 07:46 pm: [Edit](#)

By the way, here's an implementation of f.s (stack display for the floating-point stack):

<http://www.quartus.net/discus/messages/23/120.html?WednesdayDecember1519990530pm#POST598>Neal



By [Philippe de Rochambeau](#) on Thursday, June 22, 2000 - 05:27 am: [Edit](#)

Neal,

sorry to be a pain, how would you write fsin? (I am not sure how to do a series expansion for fsin).

Philippe de Rochambeau

 By [Neal Bridges](#) on Thursday, June 22, 2000 - 09:43 am: [Edit](#)

The simplest way:

```
: fsin ( F: rad -- sin )
  1.5707963e f- fcos ;
```

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Newest RsrcEdit available V1.010

[Quartus Handheld Software: Discussion Forum: General](#): Newest RsrcEdit available V1.010



By [E. Ross Helton](#) on Tuesday, June 20, 2000 - 11:29 am: [Edit](#)

Hi:

Just wanted make note that RsrcEdit V1.010 is not available for those who would like to get it.

It has several improvements

make it a good day!

Ross



By [Neal Bridges](#) on Tuesday, June 20, 2000 - 01:35 pm: [Edit](#)

Thanks Ross!

Neal



By [Garth T Kidd](#) on Thursday, June 22, 2000 - 12:25 am: [Edit](#)

Where is it not available? :)



By [E. Ross Helton](#) on Thursday, June 22, 2000 - 09:05 am: [Edit](#)

Hi Garth:

Here is the URL for RsrcEdit.

The URL below will take you there.

<http://www.individeo.net/RsrcEdit.html>

Make it a good day!

Ross



By [Dave Bennett](#) on Monday, June 26, 2000 - 07:58 am: [Edit](#)

The latest version, 1.011 is now available. The icon editor stuff didn't work in 1.010

Dave

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

On-Hand Development PQA released.

[Quartus Handheld Software: Discussion Forum: General](#): On-Hand Development PQA released.



By [Serg Koren](#) on Sunday, June 18, 2000 - 01:43 pm: [Edit](#)

Hi gang,

I've thrown together a quick PQA usable on PalmVII and OmniSky connected PalmV(x)s which lets you browse web sites related to development environments that run ON the Palm (including Quartus). The PQA is meant to allow you to view/browse the related message boards. This is a preliminary relase in that I'm trying to find a way around some messageboards use of JavaScript (such as the Quartus one) which isn't supported in PQAs.

You can download it for free from:

<http://www.visualnewt.com/PalmOS/OnHandPQA/OHD.html>

Cheers,

Serg Koren

VisualNewt Software



By [Neal Bridges](#) on Monday, June 19, 2000 - 12:02 pm: [Edit](#)

Interesting, Serg. Thanks for posting that.

Neal



By [Serg Koren](#) on Monday, June 19, 2000 - 01:14 pm: [Edit](#)

The current problem is is that I can't find a link to the messages via the bbs without encountering the Javascript that the bbs uses to wrap the links. That's why it doesn't retrieve the actual text of the messages ;-)

S



By [Neal Bridges](#) on Monday, June 19, 2000 - 01:47 pm: [Edit](#)

Does the 'text-only' view option of this forum help you?

Neal



By [Dave Bennett](#) on Monday, June 19, 2000 - 04:02 pm: [Edit](#)

When I come here with lynx (most of the time) I select Menu, then "last day", then I get a list of topics with messages in the last day. The only option is "text only view", which I choose and can read the messages with no problem.

Dave

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Atan

[Quartus Handheld Software: Discussion Forum: General](#): Atan



By [Philippe de Rochambeau](#) on Thursday, June 15, 2000 - 03:03 am: [Edit](#)

Does anyone have any suggestions as to how to compute 'atan' in QForth?



By [Ron Doerfler](#) on Thursday, June 15, 2000 - 09:59 am: [Edit](#)

Hi Philippe,

Do a keyword search for FATAN and you will see floating point code written by Neal that was posted on May 4, 2000.

Ron

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Congrats Neal!

[Quartus Handheld Software: Discussion Forum: General](#): Congrats Neal!



By [Jim Hendricks](#) on Friday, June 9, 2000 - 08:22 am: [Edit](#)

Neal, I just notice that Palm is now listing Quartus as a development environment for the Palm!

go to <http://www.palmos.com/dev/tech/tools/>

That's a long way from when Palm only supported Code Warrior!



By [Jim N. Deakin](#) on Friday, June 9, 2000 - 11:17 am: [Edit](#)

I've just had a look, and noticed that it doesn't mention the free trial version in the blurb on there. I think that could be a big factor for people who want to dabble with the Palm OS. Those who have to develop for work usually have preferred languages before they look at what's available, knowing there's a free sample might be enough to hook them.



By [Dave Ruske](#) on Friday, June 9, 2000 - 03:43 pm: [Edit](#)

With Microsoft now giving away a full-blown Visual C++ environment for Pocket PC development, it's in Palm's best interest to give developers as many options as possible.



By [Neal Bridges](#) on Friday, June 9, 2000 - 09:18 pm: [Edit](#)

Quartus Forth has been in the Palm SDK listing for more than a year now. It used to be a harder-to-find page at the 3Com site; it's more in the open now.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Forth and Palm

[Quartus Handheld Software: Discussion Forum: General](#): Forth and Palm



By [Francois Vignon](#) on Wednesday, May 17, 2000 - 12:45 pm: [Edit](#)

I think the palm is a very good tool for learning to think forth: is very hard (relatively) to write on the palm, so you must factoring a lot ;-)



By [Neal Bridges](#) on Wednesday, May 17, 2000 - 01:01 pm: [Edit](#)

Graffiti does encourage 'think first' programming :)

Neal



By [Ron Doerfler](#) on Wednesday, May 17, 2000 - 02:30 pm: [Edit](#)

...and short definition names. I've written all my code using Graffiti, and I seriously don't think I can code any faster than I can write it in Graffiti. It does make me think about every word and what's happening with that word.

Ron



By [Neal Bridges](#) on Wednesday, May 17, 2000 - 02:35 pm: [Edit](#)

I agree, Ron. I can't code any faster than I can enter it as Graffiti, either. As a plus, it does encourage short, well-factored definitions.

Neal



By [Francois Vignon](#) on Thursday, May 18, 2000 - 03:07 am: [Edit](#)

so, many opinions says: "the palm is perfect for forth: small screen, slow input entry ...". maybe we should send a Palm to C. Moore (for thanks) ?



By [E. Ross Helton](#) on Thursday, May 18, 2000 - 09:20 am: [Edit](#)

One of the reasons that I began to take of programming again was the way Quartus Forth worked and because I could program anywhere. Trully it has been a struggle for some time now to even find the time I once had, but it still the most viable programming available.

Make it a good day!

Ross

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Content Refresh for Palm?

[Quartus Handheld Software: Discussion Forum: General](#): Content Refresh for Palm?



By [casey stout](#) on Monday, May 1, 2000 - 05:33 pm: [Edit](#)

I'm trying to refresh an HTML page through the Palm VII wireless only it seems that the palm browsers does not permit content refreshes through the meta tag. Any idea on how to do this??

casey stout
casey@wts.net



By [Neal Bridges](#) on Tuesday, May 2, 2000 - 02:38 pm: [Edit](#)

Casey, my VII experience is extremely limited. I suggest you ask on the PQA-Developers list that Palm maintains; you'll likely get a range of decent answers.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

New tools-forum at Palm Development

[Quartus Handheld Software: Discussion Forum: General](#): New tools-forum at Palm Development



By [Jim N. Deakin](#) on Thursday, April 27, 2000 - 09:48 am: [Edit](#)

There's been a notice sent out about a new tools-forum being set up in the Palm Development area. It might be a chance to raise Quartus' profile in an area where people are actively looking for better ways of programming the beastie.

I've attached the notice below. Please note, to access the areas you'll need to register with Palm, if you haven't already.

For information on using the Palm Developer Forums, please see <http://www.palm.com/devzone/maillinglists.html>

Date sent: Tue, 25 Apr 2000 11:31:29 -0700

Subject: New Developer Forums...

From: Ryan Robertson <ryan_robertson@palm.com>

To: Palm Developer Forum <palm-dev-forum@news.palmos.com>

Send reply to: Palm Developer Forum <palm-dev-forum@news.palmos.com>

[Double-click this line for list subscription options]

Hello Everyone,

Today we added two new developer forums to the server! They are: comm-dev-forum and tools-forum.

Both of these were created to lighten the traffic on the palm-dev-forum list

and to stimulate discussion around those two topics. For future postings,

please post communications related questions (eg: TCP/IP, Serial, IrDA, USB)

to the comm-dev-forum list and tools questions (eg: Codewarrior, GCC) to the tools-forum list.

You can subscribe to these forums at

<<http://oasis.palm.com/devzone/forums/>>.

Thanks!

--

Ryan Robertson
Palm Development Support



By [Neal Bridges](#) on Thursday, April 27, 2000 - 08:12 pm: [Edit](#)

Thanks, Jim. I've subscribed and will check it out!

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Palm arms for new processor

[Quartus Handheld Software: Discussion Forum: General](#): Palm arms for new processor



By [Hans Nordstrom](#) on Wednesday, April 26, 2000 - 04:35 pm: [Edit](#)

Read yesterday that some Carl Yankowski at Palm is announcing a new processor for the future Palms. It'll be the ARM, made by Intel.

I'm just wondering if it's hard to move the Quartus project on to new hardware?

Since Quartus isn't an official development environment I guess were supposed to stand in line and just wait for whatever information will come out in public.

Have a look:

[Palm arms handhelds for "wireless revolution"](#)



By [Neal Bridges](#) on Wednesday, April 26, 2000 - 04:54 pm: [Edit](#)

They'll likely be using 68000-emulation on the ARM to run existing PRCs -- so Quartus Forth, and its generated apps, will continue to work. If there's an advantage (speed/size/etc.) I'll consider re-tooling for the ARM.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Easiest way to do Quartus development in Pose?

[Quartus Handheld Software: Discussion Forum: General](#): Easiest way to do Quartus development in Pose?



By [Rick F](#) on Tuesday, April 25, 2000 - 08:46 pm: [Edit](#)

Hi.. I'm getting my feet wet at both Quartus/Forth and while I'm having quite a bit of fun in the process, I'm getting a bit frustrated at how I'm doing it.. I'm currently doing all of my work in the latest version of Pose under NT 4 and have it setup to hotsync via the network.. While this works really well, it has some unintentional problems.. Firstly, both Pose and my real Palm III are using the same "username" and therefore share the same set of hotsync files/databases.. The problem here that I've had a couple of times is that while I frequently hotsync with Pose, when I do a real hotsync with my real Palm, it frequently screws things up and occasionally removes parts of my source files, since the edits appear to have disappeared from hotsync's point of view. I'm afraid that one of these times, I'm going to loose massive amounts of code and get really peeved..

So, what do you all do to solve this problem -- outside of using your real Palm to work on? I suppose that I could create a different profile on the Pose environment and just not build "real" standalone apps on it.. Any comments are appreciated!

-- Rick



By [peter bohac](#) on Tuesday, April 25, 2000 - 11:04 pm: [Edit](#)

If you're just using the Network HotSync to transfer source code (memo files) and the occasional PRC/PDB file to and from POSER you might look into using the Win32 version of pilot-xfer. i have not tried doing a network hotsync with the Win32 version of pilot-xfer, but i believe it has this capability (the *nix version certainly does... i use it often). Set the port to "." (w/o the quotes) to make pilot-xfer sync over the network instead of a serial port. One drawback to this solution is that currently pilot-xfer is the only tool that has been ported to Win32 from the pilot-link suite of tools, so you can only sync whole PRC/PDB files, and not individual memos. There are two other tools called install-memo and memos that allow you to sync individual memos to/from the Palm, but they have not been ported to Win32 (to the best of my knowledge).



By [Steve Bohrer](#) on Wednesday, May 10, 2000 - 01:56 am: [Edit](#)

The latest Windows version of POSE (3.0a6) lets you change the Hot Sync user name via the Settings>Properties... menu dialog, with no change in the POSE's RAM contents.

So, for early development, you can do your network hot sync from the POSE using a separate user name (e.g. "POSE"), which will get all your memo files into the Palm Desktop in a folder for "POSE", without messing with the sync status of your real device. When you want to MakePRC on the POSE, just change its user name to your registered Quartus name.

(Of course, you need to remember to change the POSE's name back again before your next hot sync, or else you will get all the sync problems you mention. The Palm user notes specifically recommend against having two Palm devices with the same user name on the same copy of Palm Desktop software.)

A minor downside of having two user names in the Palm Desktop is that when you double-click a downloaded PRC file to add it to your real Palm, you get a dialog asking if you want to put it to POSE or to your real user name.

Add a Message

Username:	This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave
Password:	the "Password" box empty. Your e-mail address is optional.
E-mail:	

Hack that is a neccessary add-on for Quartus users.

[Quartus Handheld Software: Discussion Forum: General](#): Hack that is a neccessary add-on for Quartus users.



By [Bill Marcy](#) on Tuesday, April 11, 2000 - 09:13 pm: [Edit](#)

This is a hack that when you tap the upper left edge of your form, it returns all the form info. Works in any program running on the palm. Very handy for newbies like myself.

Find it at:

<http://www.geocities.com/thaipalm/download/index.htm>

Enjoy!



By [Neal Bridges](#) on Wednesday, April 12, 2000 - 04:51 pm: [Edit](#)

That's a neat hack, Bill. Thanks for mentioning it.

Neal



By [Zvlv](#) on Monday, May 29, 2000 - 10:30 am: [Edit](#)

Do not use FormInfo together with GadgetHack... The device crashes (VX with 3.5)

Kind regards,



By [Neal Bridges](#) on Monday, May 29, 2000 - 04:03 pm: [Edit](#)

Thanks for the tip!

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Mapping C function to Quartus words

[Quartus Handheld Software: Discussion Forum: General](#): Mapping C function to Quartus words



By [Michel Pelletier](#) on Tuesday, April 11, 2000 - 08:09 pm: [Edit](#)

Howdy,

I'm having a bit of trouble with the following code

```
:go
WikiForm ShowForm
s" FrontPage" WikiForm FrmSetTitle ;
```

This code dies fatally. I'm guesing that I'm doing it wrong, but my question in general is if there is a standard idiom when referencing Palm API functions as they map to QF words?

-Michel



By [Neal Bridges](#) on Tuesday, April 11, 2000 - 09:11 pm: [Edit](#)

\ titles

needs zstrings

create null 0 c,

```
: (title) ( z-addr -- )
>abs FrmGetActiveForm
FrmSetTitle ;
```

```
: set-title ( z-addr u -- )
null (title)
drop (title) ;
```

In use:

needs titles

```
: go
z" My Title" set-title ;
```

Neal

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Form handlers

[Quartus Handheld Software: Discussion Forum: General](#): Form handlers



By [Michel Pelletier](#) on Sunday, April 9, 2000 - 09:47 am: [Edit](#)

Ok, LinkedList code is looking good, minimal but nicer than the examples I've seen because it's dynamic and doesn't keep lists around in global variables, nor does it assume certain overhead fields in the list elements.

Now I'm focusing on my UI a bit, and I have a form with a big textfield on it that behaves normally, but I want to hook into the key events and check each key, if that key is a space I want to read back to the previous space, grok the 'word' that results, and then keep accepting keys. So I guess my 2 questions are:

first, how do you set a form handler?

second, how do you read to and from a form element, as a string I guess? I saw something like String>Form but I didn't know if it was for me, I'm not sure about the repainting issues either.

Clues?

-Michel



By [Neal Bridges](#) on Sunday, April 9, 2000 - 08:24 pm: [Edit](#)

First -- you don't need to set a form handler. Use a simple loop with EKEY.

Second -- check the field.txt memo for field handling words. Repainting is handled by the OS.

Neal



By [Michel Pelletier](#) on Sunday, April 9, 2000 - 11:12 pm: [Edit](#)

I have the simple ekey loop as you can see below in my code, but keyDownEvents do not seem to be returned by ekey. I get two beeps when I tap, and four beeps when I tap the title, but nothing happens when I type.

Thanks for the Field.txt tip. ;)

```
: beepbeep
beep 10. SysTaskDelay beep ;
```

```
: do-event
dup case
keyDownEvent of
beep
drop endof
```

```
penDownEvent of  
beepbeep  
drop endof
```

```
frmTitleSelectEvent of  
 \ backlinks  
beepbeep beepbeep  
drop endof  
endcase  
;
```

```
: go  
WikiForm ShowForm
```

```
begin  
ekey do-event  
again ;
```

-Michel



By [Matthew Blair](#) on Monday, April 10, 2000 - 07:39 am: [Edit](#)

Michel,

I assume that you are referring to my posted linked list code in another thread. If so, then just to be sure - the code does assume that the list elements do have the first four cells (8 bytes) reserved for list maintenance. I'm not sure if you count that as an "overhead field" or not.

If that was not the code you were referring to, then my apologies for jumping in... If it was, then thank you for the kind words...

Matthew



By [Neal Bridges](#) on Monday, April 10, 2000 - 08:18 am: [Edit](#)

Michel, I see now what you're after -- sub-processing field events. Here's a previous thread that will help you:

<http://www.quartus.net/discus/messages/23/261.html?TuesdayFebruary1520000916am>

Neal



By [Trevor Steele](#) on Tuesday, April 11, 2000 - 05:19 am: [Edit](#)

Hi Michel

I can confirm that the code in the previous thread worked a treat for me.

Best regards

Trevor



By [Michel Pelletier](#) on Tuesday, April 11, 2000 - 06:39 pm: [Edit](#)

Thanks trevor, the code works great here too!

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My Forth is rusty

[Quartus Handheld Software: Discussion Forum: General](#): My Forth is rusty



By [Michel Pelletier](#) on Saturday, April 8, 2000 - 10:55 pm: [Edit](#)

And until my programmer's book comes in, I need some help. ;)

I have this code:

```
needs struct
needs Mem
```

```
struct
1 cells field len
2 cells field head
end-struct ListStruct
```

```
: List sizeof ListStruct (allocate) ;
```

The purpose of this code is for the following example:

```
variable myList
variable myOtherList
```

```
myList List !
myOtherList List !
```

but when I try to call List it tells me:

```
? name argument missing
```

I don't get it?

-Michel



By [Neal Bridges](#) on Saturday, April 8, 2000 - 11:11 pm: [Edit](#)

sizeof is a parsing word. Do:

```
sizeof ListStruct constant ListStructSize
```

```
: List ListStructSize (allocate) ;
```

Neal



By [Michel Pelletier](#) on Sunday, April 9, 2000 - 12:39 am: [Edit](#)

Oh man, I must be doin' something stupid, I still don't get it Neal:

\ List

needs struct
needs Mem

struct
2 cells field next
2 cells field prev
end-struct ElementStruct

sizeof ElementStruct constant
ElementStructSize

struct
1 cells field len
2 cells field head
2 cells field tail
end-struct ListStruct

sizeof ListStruct constant
ListStructSize

: Element
ElementStructSize (allocate) ;

: List
ListStructSize (allocate) ;

An exception is still raised (thrown?):

include List
Exception in file: List
? name argument missing

Thanks for you help,

-Michel



By [Neal Bridges](#) on Sunday, April 9, 2000 - 07:41 am: [Edit](#)

Perhaps you have two memos named "List"? The code you show here works fine.

Neal



By [Neal Bridges](#) on Sunday, April 9, 2000 - 07:42 am: [Edit](#)

Oh -- scratch that. I just looked at your listing again. Is there a line-break after 'constant'? It looks like it here. If there is, take it out. The name must immediately follow 'constant'-- there can't be a line-break.

Neal

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Wiki in Forth

[Quartus Handheld Software: Discussion Forum: General](#): Wiki in Forth



By [Michel Pelletier](#) on Friday, April 7, 2000 - 12:49 am: [Edit](#)

Wow, things have changed a lot around here since I last stopped by, looks like Quartus is getting big!

So I've been working with the Wiki lately, and I lamented not being able to use Wiki on my palm. Then I had the revelation that Wiki and Forth were meant for each other. Forth would be an easy platform to implement a Wiki on, and imagine the intensity of Forth code in a Wiki! It could be the next level in forth source editing. Anyway...

I sit down at Quartus for the first time in a long while, pull out my copy of 'Mastering FORTH' by Tracy, Anderson, and AMM Inc, and I visit the chapter on Vocabularies. So I tried::

vocabulary WikiWords

wanting to then do::

WikiWords definitions ...

according to the syntax in the book but Quartus doesn't like those words. My guess is they did not make it into the standard, which this book predates.

Oh yeah, for those of you who are list on the Wiki see <http://joyful.com/zwiki/FrontPage> for my favorite implementation.

Can someone give me a hint? How do you manage multiple dictionaries in an elegant fasion like vocabulary?

-Michel



By [Michel Pelletier](#) on Friday, April 7, 2000 - 05:01 am: [Edit](#)

Answered my own question here:

<http://www.taygeta.com/forth/dpans16.htm#16.6.1>

-Michel

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Oop

[Quartus Handheld Software: Discussion Forum: General: Oop](#)



By [Philippe de Rochambeau](#) on Tuesday, April 4, 2000 - 03:25 pm: [Edit](#)

I am at a loss understanding how to use Neal's port of Randolph Peter's "oop" code. I don't understand "oop.example" either. For instance, what does the line "10 message >>describe" line in the example mean?

Furthermore, could someone please explain how I can use "oop" to create a "square" class that would contain four "point" objects?

Many thanks.



By [Neal Bridges](#) on Wednesday, April 5, 2000 - 06:39 am: [Edit](#)

Philippe, beyond porting that code, I've never done any work with it; perhaps someone else can chime in here and help out.

Neal



By [Jim Hendricks](#) on Wednesday, April 5, 2000 - 09:33 am: [Edit](#)

Just taking a quick gander at the code I can make these comments:

10 message >>describe

basically creates a word ">>describe" which when invoked against an object will execute method "10"

As a start on the idea of a square class, I have first a point class:

```
10 message >>set
10 message >>get
```

```
root new.class point
structure:
  1 cells ivar >>x
  1 cells ivar >>y
;structure
methods:
  3 m: self super >>init ;m
  4 m: self super >>free ;m
  10 m: ( x y -- )
      self >>y !
```

```

    self >>x !
;m
11 m: ( -- x y )
    self >>x @
    self >>y @
;m
;methods
end.class

```

I didn't test this because I don't have the oop libs loaded on my palm so I have no idea if this will work. Line by line though, 10 message >>set and 11 message >>get are setting up 2 messages, execute >>set and execute >>get (methods 10 and 11 respectively). root new.class point creates a new class called point inherited from the root object. structure: begin class data. 1 cells ivar >>x and 1 cells ivar >>y creates 2 named items in this classes data (called >>x and >>y respectively). Each data item contains 1 cell of data space. ;structure end class data. methods: begin method declarations. m: is the begin of each method with the number before it being the methods "name", ;m is the end of method. Methods 3 & 4 are the predefined constructor and destructor methods for the class. In both these methods, self is a reference to the instance of this class once running which is used as an argument for the constructor or destructor defined in the root class, super obtains the ancestor of this class, >>init, or >>free execute methods 3 or 4 in the super class (in this case root) because the super class is what is referenced right before sending the message >>init or >>free. Once again, the self is consumed by the root's method 3 or 4. Method 10 in this case is my defined method which based on the message I created for method 10 (>>set) will set the x & y for this object. With that in mind, self is the object I want to invoke, >>y or >>x is a reference to an attribute of self, then ! like normal. I think with the explanation for method 10, you can follow what's going on in method 11.

Let me know if this makes sense, as well as if it even works, if it does, and you want me to, I could try to continue this thread.

Jim



By [Philippe de Rochambeau](#) on Wednesday, April 5, 2000 - 12:30 pm: [Edit](#)

Many thanks Jim. Things are clearer now.

I still have two questions:

- it seems that root's >>init method merely prints "INIT" to the screen without doing any object initialization. Am I correct?
- is it possible to declare objects as ivars? For instance, I would like to be able to

create a square object contain 4 point ivars:

```
root new.class square
structure:
1 point ivar >>p1
1 point ivar >>p2
1 point ivar >>p3
1 point ivar >>p4
...
```

Can anyone think of a way to do that?

If you need any help with French, let me know :-).

Merci.

Philippe de Rochambeau



By [Jim Hendricks](#) on Wednesday, April 5, 2000 - 04:36 pm: [Edit](#)

- it seems that root's >>init method merely prints "INIT" to the screen without doing any object initialization. Am I correct?

Yes, that is correct.

- is it possible to declare objects as ivars? For instance, I would like to be able to create a square object contain 4 point ivars:

```
root new.class square
structure:
1 point ivar >>p1
1 point ivar >>p2
1 point ivar >>p3
1 point ivar >>p4
...
```

Now there's a winner! Except it would be 1 cells ivar >>p1 ...

When initializing an instance of this class, you would need to instantiate your your point classes then store the references to each point class in each of >>p1 >>p2 etc...

BTW, can't you do a square with 2 points?

Jim



By [Philippe de Rochambeau](#) on Thursday, April 6, 2000 - 03:16 am: [Edit](#)

Yes I could do a square with 2 points, but the purpose of OOP is to avoid repetition. What is the point (no pun intended) of using OOP in Forth if it offers no advantages over using structures? As far as I am concerned, there is not much difference between

structure

```
1 cells field x1
1 cells field y1
1 cells field x2
1 cells field y2
1 cells field x3
1 cells field y3
1 cells field x4
1 cells field y4
end-struct square
```

and

root new.class square

```
1 cells ivar x1
1 cells ivar y1
1 cells ivar x2
1 cells ivar y2
1 cells ivar x3
...
```



By [Neal Bridges](#) on Thursday, April 6, 2000 - 07:53 am: [Edit](#)

For a single type of object, I daresay the object-oriented approach is no better, and in fact may be more cumbersome than the standard approach.

Where I can see the object approach adding value is in situations where you have, say, a variety of different shapes (ellipses, triangles, polygons, etc.) and you want to be able to send a draw message, or an erase message, or a resize message, to any one them.

Neal



By [Jim Hendricks](#) on Thursday, April 6, 2000 - 09:08 am: [Edit](#)

From my own perspective, OOP is just structures that contain their own processing code. Aside from the Polymorphism that Neal refers to, objects also gain the advantage of inheritance which allows building simple generic objects which can then be extended through inheritance to multiple objects with differences but all sharing the same base attributes.

OOP, once again IMHO, has nothing to do with improving my execution speed, or

program size, or program complexity. In fact in my professional programming life I am programming in PowerBuilder and Java, both OOP. I find that my execution speeds are slower, program sizes larger, and sometimes even programs are more complex. I think this same argument can be made between C and C++. The real advantage of OOP is it's enforced structure on programming style. While an OOP program may be more complex, that complexity is wrapped in an enforced structured programming which hides much of the complexity which hopefully leads to faster development times. Since business is always concerned with development time rather than the previously mentioned ideals, OOP is a good business fit. For personal programming, I would rather avoid OOP, especially in Forth where good factoring provides the same structured benefits of OOP. So, I guess you can see, I don't put a whole lot of weight on OOP in Forth. I can see where OOP in Forth can be important if you are having problems with the concepts of factoring, or are so OOP engrained that without the enforced structuring of OOP you can't seem to form a good solution.

From the standpoint of stating you only need 2 points, the idea would be to use the point object which contains code for setting and getting the point (structured data access), from there create a square object which contains 2 cell sized ivars called >>point1 and >>point2, each of these ivars is a holder for a point object. The draw method of your square would use point1 as the squares upperLeft point, and point2 as it's lowerRight point, you don't need the other 2 points. Personally I would rather have a point object and a size variable so that the point object refers to the squares upperLeft point, then the size informs my draw method how big to draw my square. If I instead went with a rectangle object then provide a point object and a dimension object (same as a point object but instead of x & y have width & height) then once again the point object refers to the rectangles upperleft corner and the dimension object determines the size of the rectangle. Hope this makes sense.

Back to OOP, I think once you are outside of the business programming environment, "To OOP or not to OOP, 'tis a personal preference"

Jim



By [Barry Marks](#) on Thursday, April 6, 2000 - 10:41 pm: [Edit](#)

I'm not an oop programmer but I've played around with it in C++ a little. I can see an advantage for a group working on a project together. I can also see where it would be good when you have programmers with varying degrees of experience. And I love the // comments.

But I'm not convinced it would lead to faster development for a single, experienced c programmer who's accustomed to modular programming. I think that programmer will develop better programs faster and with at least as much reusable code in c, and that the c program will be easier to maintain because it'll be less complex.

I think in time, as more and more new programmers use C++ and aren't forced to learn to create their own modularity, there'll be more need for C++ and fewer programmers who can do the job well in c.

Barry



By [Michel Pelletier](#) on Friday, April 7, 2000 - 04:37 am: [Edit](#)

<http://216.132.198.179/linklist.f>

This is cool OO right here, to my eye. This looks like something I can grok much better from my deep Python roots. Does anyone know about this syntax? Can anyone gander at how difficult it would be to implement?

-Michel



By [Jim Hendricks](#) on Friday, April 7, 2000 - 09:07 am: [Edit](#)

I agree Barry, OOP enforces structure, experience in professional programming should also enforce structure without the language forcing it's idea of structure on you. For those programmers who either hate constantly thinking of program structure, or those without the experience to build good structure, OOP is a great solution.

I think also that an experienced programmer can only beat an OOP programmer in development time if he has many years of experience, and a well developed bag of reusable routines. OOP's many times come with a whole handful of reusable routines that may not be the best of breed but spares the programmer from having to "roll his own".

As always though it comes at a cost. I challenge anyone to code something in C++ that is faster or smaller then an equivalent program coded in C. (remember to count all pre-coded libs you may be linking into in you tally!)

Jim



By [Jim Hendricks](#) on Friday, April 7, 2000 - 09:16 am: [Edit](#)

Michel, that implementation is a nice and clean one, question is though, can you free up the source for the OOP implementation? Looks to me that it is a part of SwiftForth. My guess is it's built right into the Kernel which means you don't have any access to it.

Jim



By [Barry Marks](#) on Friday, April 7, 2000 - 02:11 pm: [Edit](#)

Even without access to the source, couldn't an experienced Forth programmer create the same oop structure as in that sample?

That looks so much like the C++ way of doing things that I'm sure it was modelled after it and it does make it really easy to understand if you've been exposed to C++.

Jim, an experienced c programmer should have a pretty good library of functions accumulated and tested over years and constantly improved. That's almost a given. That gives him an edge even if the c++ templates and classes are just as good as his stuff. He knows his library functions inside out and knows how to best utilize them. And he knows how to fine tune them or modify them to take advantage of special circumstances.

Except for me. I left work on disability leave, expecting to return. While I was gone they did away with the mini that my libraries were stored on and didn't know to save a copy for me in some accessible form. So the only parts I have are those that I worked out at home or on my palmtop.

So maybe that C++ programmer could look pretty good racing me. :)

Barry



By [Dave Ruske](#) on Friday, April 7, 2000 - 05:28 pm: [Edit](#)

I've always felt that my experience as a Forth programmer helped me immensely when I started having to do some heavy C++ work. Good factoring is the key to both, and it's trivial to write garbage in either.



By [Michel Pelletier](#) on Saturday, April 8, 2000 - 01:36 am: [Edit](#)

Hmm... it's interesting that you found that code very C++ looking, I found it quite un-C++ looking, except for the PRIVATE and PUBLIC, which I wouldn't use anyway.

It looks more simple to me, C++ is the gordian knot of object orientation, that code reminded of a tinge of Smalltalk on top of some more baseline Python concepts. I quite liked it.

I'm faintly no C++ fan, this is off topic, but C++ is just not my cup of tea, I don't like the idea of lots of powerful ideas and concepts being obfuscated, and intermixed with 'classic' C examples that are really just bad C examples mixed in with confused and unfocused OO code. C is an excellent OO language (if you've ever seen the Python source) and so is FORTH, much better than C++ ever will be.

I know that sounds odd, C a better OO language than C++, but I think it's true!

There is so much more to OO than just adding some new keywords and increasing the complexity of a language by a factor of 2. I think this is what is wrong with the OOp example FORTH code you can find here, it ADDs complexity to accomplish its task instead of clearly communicating an OO philosophy. It focuses more on the mechanics than the pragmatics and compromises that must be weighed when designing anything.

After my stab and palm-wiki, which I am trying to make as OO as possible with structs and unbound 'words' (sorry about the python lingo), maybe I'll try and review some of the major FORTH OO players and come up with some sort of review. I expect I'll find lots of cobwebs. I did find one review of various OO extensions for FORTH that was quite old and I could find little of the products it mentioned.

Something that shocked me about the review was that there were many OO 'extensions' in FORTH but most of them seemed confused, many of them implemented only minor functionality (which I don't object to, OO is more philosophy than code) but it didn't seem any of them provided a framework for including all functionality. It seemed you had to take either the little or the large, but there was no package that implemented all the desired functionality over the course of various abstract layers. Many of the implementation seemed to very concerned with 'dynamic allocation' or 'multiple inheritance' or what have you, and they seemed less focused on the designs and more focused on the implementation and what it can do.

-Michel



By [Barry Marks](#) on Saturday, April 8, 2000 - 10:32 am: [Edit](#)

I can't disagree, never having used or even seen Smalltalk or Python. My only exposure to OOP has been with C++ and even that I haven't used enough to really understand it.

You say that OOP in Forth doesn't give you all it gives in Smalltalk or Python, but I wonder if it really should? Weren't they designed with OOP in mind?

I've done a little HP48 calculator programming in RPL, the built in language that's modelled after both Forth and Lisp. It's very much like Forth. It uses a stack in the same way. You build words like you do in Forth. You add with 1 2 + like in Forth. But each word can be thought of as an object, in a sense.

Most words are capable of handling a variety of parameter types, similar to overloading. Internally that's done by a word in the underlying language that tests the parameter types on the stack and sends control to the proper section, much like a case statement.

Inheritance is possible (single or multiple) in the same way that it is in Forth.

You use words to build new words.

I discussed this once with an OOP (C++) programmer and he objected to calling this oop, describing other features it should have. In one way or another it did have them.

He still objected that it didn't have these features structured in a way that he would call OOP. Not knowing enough to debate that, I just accepted it. But I wondered if maybe it did solve the same problems that OOP solves, but in a new context. Maybe making it look like he expected OOP to look would have made a mess.

Could that be true in Forth, too? Would a Persian cat look odd with a trunk and tusks?

Barry



By [Dave Bennett](#) on Saturday, April 8, 2000 - 03:26 pm: [Edit](#)

I was involved with the rise of OOP as it is known today in the late 80s. Testing various C++ compilers and OOP-like stuff. I agree that OOP is more a mindset than a "language". Many people who were _good_ C programmers asked what the hoopla was about. Using function pointers in C accomplished many of the things that were being touted as "advances" in programming courtesy of C++.

I think C++ is a bad language. Too much C with some "object" stuff thrown in. The only thing that I do like about it that I feel is a shortcoming in java is multiple inheritance. The argument the java folk make about multiple inheritance being too "risky" is something I liken to a "big brother" attitude.

Coming to forth just recently I was quite surprised at how much the mindset for the language seems to be "object oriented" in nature. You create words (objects) that contain their own data (stack) and their own "methods" that manipulate their data. You can hide data within a word; in fact, a word is quite complete in and of itself, much like a "well designed" object in the OOP world.

Of course, forth accomplishes all of this with minimal overhead and without endless lists of APIs. The resulting code produced from forth is (in my experience so far) much smaller in size, faster in execution, and easier to create and maintain.

Dave

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Implementing an x by x matrix class in Forth

[Quartus Handheld Software: Discussion Forum: General](#): Implementing an x by x matrix class in Forth



By [Philippe de Rochambeau](#) on Monday, April 3, 2000 - 03:30 pm: [Edit](#)

How would you implement an x by x matrix class in Forth?

Philippe de Rochambeau



By [E.](#) on Tuesday, April 4, 2000 - 02:14 am: [Edit](#)

Well, this is just vague ideas off the top of my head, since I can neither find the page where I've seen that before nor get to a place where I can test this...

\ This is SO inefficient, somebody please streamline it.

\ Oh yeah. 0-indexed arrays.

```
variable xdim
variable ydim
```

```
\ 5x6 array.
4 xdim !
5 ydim !
```

```
create array [ xdim @ 1+ ydim @ 1+ * ] cells allot
\ Will that even work?
```

```
: x cells ;
: y xdim @ 1+ * cells ;
```

```
: xy>index ( y x -- i )
x >r y r> +
;
```

```
: index>addr ( i -- n )
array +
;
```

```
: xy>addr ( y x -- n )
xy>index index>addr
;
```

Wow. That really sucks. But I'm going to leave it here in hopes that somebody

can take it and turn it in to something USEFUL. Sorry. :/



By [Neal Bridges](#) on Tuesday, April 4, 2000 - 08:03 am: [Edit](#)

```
: 2array ( y x "name" -- )
  create * cells allot
does>
  >r * cells r> + ;
```

Example:

```
4 5 2array myarray
42 2 3 myarray !
2 3 myarray @ . -> 42
```

Neal



By [Bill McCarthy](#) on Wednesday, April 5, 2000 - 03:24 am: [Edit](#)

Neal,

That doesn't work. An index of `2 3` will produce the same address as `3 2`. Here's a simple implementation with a test to show the addresses generated:

```
\ 2array 0.4.5 WJMc 2 Dim Array

: 2array create over , * cells allot
does> dup cell+ >r @ * + cells r> + ;

-1 [IF]
4 5 2array a

: test ( -- ) 1 more cr ."      y x addr"
  5 0 do 4 0 do cr i 4 .r j 4 .r i j a 6 .r
  loop loop more drop ;
test
[THEN]
```



By [Neal Bridges](#) on Wednesday, April 5, 2000 - 06:10 am: [Edit](#)

Quite right, Bill. There has to be a width stored in the array for the Y calculation. I appreciate your fix.

Neal

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"Last Day" not working

[Quartus Handheld Software: Discussion Forum: General](#): "Last Day" not working



By [Dave Bennett](#) on Thursday, March 30, 2000 - 09:05 am: [Edit](#)

Neal,

Clicking on "Last Day" on the left hand frame does not work any longer. It only displays the "text only" pushbutton, no topics. If I push the "text only" pushbutton, things display normally.

This began the day before you left.

Dave



By [Dave Ruske](#) on Thursday, March 30, 2000 - 10:35 am: [Edit](#)

Still works in IE5... just got here from there...



By [Dave Bennett](#) on Friday, March 31, 2000 - 08:29 am: [Edit](#)

I guess I should have mentioned Netscape 4.72

Dave



By [Neal Bridges](#) on Friday, March 31, 2000 - 08:35 am: [Edit](#)

It's working fine here, in Netscape 4.5. I think it must be a local problem, Dave.

Neal



By [Jim Hendricks](#) on Friday, March 31, 2000 - 09:48 am: [Edit](#)

Dave, just checked from here in N4.72 and worked fine!

Jim



By [Dave Bennett](#) on Friday, March 31, 2000 - 04:34 pm: [Edit](#)

It must have something to do with unix. KDM has the same result on my system. My Netscape 4.61 worked fine... Probably a bug. :)

Add a Message

Username:

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I'm off on a trip!

[Quartus Handheld Software: Discussion Forum: General](#): I'm off on a trip!



By [Neal Bridges](#) on Monday, March 27, 2000 - 10:19 am: [Edit](#)

I'm off travelling. I'll be unavailable Thursday through Saturday, but I'll be online here in the Forum each day after that, and back in full swing on April 8th.

Registrations will not be interrupted; they will be handled on a daily basis as they are now.

Neal



By [Neal Bridges](#) on Monday, March 27, 2000 - 10:22 am: [Edit](#)

By the way, Thursday through Friday, if you need to contact support directly (primarily for registration-related concerns), please write quartus@interlog.com.

Neal



By [Bill Marcy](#) on Monday, March 27, 2000 - 01:01 pm: [Edit](#)

Have fun Neal!



By [Neal Bridges](#) on Monday, March 27, 2000 - 11:06 pm: [Edit](#)

Thanks Bill!



By [Neal Bridges](#) on Tuesday, March 28, 2000 - 08:02 pm: [Edit](#)

REPOST:

I'm off travelling. I'll be unavailable Thursday through Saturday, but I'll be online here in the Forum each day after that, and back in full swing on April 8th.

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For Thursday and Friday, if you need to contact support directly (primarily for registration-related concerns), please write quartus@interlog.com.

Neal



By [Neal Bridges](#) on Wednesday, March 29, 2000 - 05:12 pm: [Edit](#)

Just leaving now. See you all soon!

Neal

Add a Message

Username:

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Very simple input routine.

[Quartus Handheld Software: Discussion Forum: General](#): Very simple input routine.



By [Gary Wiese](#) on Saturday, March 18, 2000 - 01:46 pm: [Edit](#)

Hello,

Can anybody show me how to write a simple input routine that does not use any QUI's? Something that will wait for the user to write something and then print it back on the screen. I think ekey is the word to use but I'm not sure.

As you can see I am a newbie and can't find a lot of material on the subject. I would like to enter a prompt to let the user know where to enter the data and it should wait for a reponse. Also I would like to be able to enter numbers to do calculation on them. For example I would like to be able to enter a number without the F. for the float-ext. ,but still give a float point answer.

Thanks
Gary



By [Neal Bridges](#) on Saturday, March 18, 2000 - 02:20 pm: [Edit](#)

Try this for a start:

```
create inputdata 40 chars allot
```

```
: input
  ." Input: "
  inputdata 40 accept
  cr ." You entered: "
  inputdata swap type cr
;
```

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

New Discussion Forum Archive now available!

[Quartus Handheld Software: Discussion Forum: General](#): New Discussion Forum Archive now available!



By [Neal Bridges](#) on Sunday, March 19, 2000 - 02:18 pm: [Edit](#)

Further to that, all the messages from the old site -- archives 1 through 7, spanning June 1998 through to September 1999 -- are available also in a single 5.6 megabyte PDF.

<ftp://quartus.monroe.lib.mi.us/pub/quartus/arch1-7.pdf>

Neal`



By [Kip DeGraaf](#) on Saturday, March 25, 2000 - 12:38 am: [Edit](#)

Pretty neat stuff Neal. Thanks!



By [Neal Bridges](#) on Saturday, March 25, 2000 - 12:43 am: [Edit](#)

Kip, thanks again for the site to put it on. Hope it's not too terribly huge; let me know.

Neal



By [Dave Bennett](#) on Saturday, March 25, 2000 - 09:36 am: [Edit](#)

Any chance of this being available in html?



By [Neal Bridges](#) on Saturday, March 25, 2000 - 01:09 pm: [Edit](#)

You can convert it here:

[PDF to HTML Conversion](#)

However, the conversion will be of limited use -- too hard to search.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Q4th on the SPT-1700 (Symbol Technologies Industrial Palm)

[Quartus Handheld Software: Discussion Forum: General](#): Q4th on the SPT-1700 (Symbol Technologies Industrial Palm)



By [Dave Bennett](#) on Sunday, March 26, 2000 - 04:36 am: [Edit](#)

I'm planning to start working on an app using the Symbol SPT-1500/1700 with Quartus 4th myself in the near future. I'd be willing to participate in any work in this area.



By [Neal Bridges](#) on Sunday, March 26, 2000 - 09:44 am: [Edit](#)

I'm coding an extension right now. I'll put you on the list of testers, Dave.

Neal



By [Dave Bennett](#) on Monday, March 27, 2000 - 07:34 am: [Edit](#)

Thanks. I'm looking forward to this project.



By [Kevin Tory](#) on Saturday, October 28, 2000 - 01:41 am: [Edit](#)

So how did it all turn out? I too am planning to write an application using barcode scanning. I may use the Symbol unit, or the PSC scanner available as a Visor Springboard module (much cheaper). The PSC documentation on their web site indicates they use the same API calls as the Symbol. See <http://www.pscnet.com/momenvsr.htm>

Anybody using this unit or the Symbol please let me know



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 11:17 am: [Edit](#)

I've worked with two Quartus Forth users now, and both have achieved what they wanted with their Symbol units. I'd like to develop some comprehensive library code, but I continue to be hampered by the fact that I don't own a Symbol.

The Visor module sounds promising; I'll look into that.

Neal



By [Kevin Tory](#) on Monday, October 30, 2000 - 10:13 pm: [Edit](#)

If I decide to use the PSC unit, maybe I can send you one (to keep), in exchange for library code.



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 10:28 pm: [Edit](#)

That would certainly aid in the process. There's no substitute for having the hardware on-hand while writing the code.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Speeding up the Palm Vx with StreakHack!

[Quartus Handheld Software: Discussion Forum: General](#): Speeding up the Palm Vx with StreakHack!



By [DavidT](#) on Thursday, April 6, 2000 - 02:04 am: [Edit](#)

Hi Neal,

Sorry I came across this thread 4 months late. With Streakhack and Cruise Control installed, I got the 197% performance boost mentioned by you on my Vx 3.5OS as. But problem is that the benchmark reading keeps on fluctuating wildly between the high of 197% to a low of 110% each time I run the benchmark. Kinda worrying whether I am damaging the Palm's cpu or anything like that. Appreciate your inputs. Thanks



By [Neal Bridges](#) on Thursday, April 6, 2000 - 05:39 am: [Edit](#)

Hi David. I've never seen a Benchmark reading fluctuate more than 1% on any device. What model of device do you have?

Neal



By [Dave Ruske](#) on Thursday, April 6, 2000 - 12:12 pm: [Edit](#)

BTW, the streakhk.txt file still says "StreakHack is designed SPECIFICALLY for the Palm IIIx -- it may do strange things on other Palm devices, and I recommend that you NOT run it on anything other than a IIIx."

You may want to update that if you're comfortable with it running on a V/Vx.



By [Bill McCarthy](#) on Friday, April 7, 2000 - 01:07 pm: [Edit](#)

Neal,

I downloaded and installed the StreakHack and Benchmark PRC's last night. On my IIIx, I get 108% whether or not StreakHack is "installed."

Is this the desired effect?

Bill



By [Hans Nordstrom](#) on Friday, April 7, 2000 - 04:29 pm: [Edit](#)

Bill,
after unistalling StreakHack did you do a soft reset?

It seems that after you do install StreakHack a gear up is accomplished. But a gear down doesn't show up until after a soft reset.



By [Bill McCarthy](#) on Friday, April 7, 2000 - 05:15 pm: [Edit](#)

Hans,

Here's what I just tried: (1) I uninstalled by opening HackMaster and unchecking StreakHack, (2) I exited HackMaster by clicking the house, (3) I reset by simply sticking a needle in the back of my IIIx and (4) I ran Benchmark.

Still at 108%.

Bill



By [Hans Nordstrom](#) on Saturday, April 8, 2000 - 04:21 pm: [Edit](#)

Bill,

and after your soft reset you checked that StreakHack was still uninstalled? If that's so, sorry, I'm not experienced enough to bring any new light in this matter.



By [Neal Bridges](#) on Saturday, April 8, 2000 - 10:19 pm: [Edit](#)

OS3.1 gives you the extra 8% with or without StreakHack. StreakHack is still useful for fixing the streaking problem while maintaining the function of grayscale apps on those devices, however.

Neal

Add a Message

Username:

Password:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

E-mail:

Quartus Forth (PalmOS version)

[Quartus Handheld Software: Discussion Forum](#): Quartus Forth (PalmOS version)

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Welcome to Quartus Forth (PalmOS version), for questions, comments and discussion of the PalmOS version of the [Quartus Forth](#) on-board compiler.

You may enter any of the discussions below by clicking on the appropriate link. Or, to start a new discussion of your own, click on the "Create New Conversation" button.

Creating applications with different types

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Creating applications with different types



By [Jim Meadows](#) on Saturday, December 16, 2000 - 12:56 pm: [Edit](#)

I need to compile modules that don't show up as icons and thus do not have the type set to "appl". I am currently using makeprc to create the executable and then rsrcredit to change the type from appl to something else. (I have my own calling program that runs the module).

Is there anyway to tell makeprc to create the executable with a type other than "appl"? (Or a command that can change it).

- Jim

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Duplicate Messages

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Duplicate Messages



By [James Steven Graham \(SteveG\)](#) on Thursday, December 14, 2000 - 11:28 pm: [Edit](#)

Neal,

I've gotten several duplicates today.

Steve



By [Neal Bridges \(Nbridges\)](#) on Thursday, December 14, 2000 - 11:30 pm: [Edit](#)

Strange! Did it just start today? Let me know if it continues.

Neal



By [James Steven Graham \(SteveG\)](#) on Friday, December 15, 2000 - 12:27 am: [Edit](#)

Neal,

My non-Quartus messages are also being duplicated. So, I doubt if it originated with your site. Sorry.

Steve



By [Neal Bridges \(Nbridges\)](#) on Friday, December 15, 2000 - 12:30 am: [Edit](#)

Steve, thanks for the update. Let me know if you see anything strange and Quartus related.

Neal

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How to get return address?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): How to get return address?



By [Geert Bosch](#) on Thursday, December 14, 2000 - 09:12 am: [Edit](#)

I'm trying to do some debugging and profiling on my forth code. What I'd like to do is to print a call trace where I can see the current nesting of words. I assume that this information is on the return stack, but I don't know how to access this from Forth, the simple

```
2>r
```

doesn't quite give the right result, because if I look at the instruction at that absolute address using

```
2@a
```

it is not the call instruction.

Could anybody help here? Thanks in advance!

PS. How can I quote things inline, so that the at-sign does not get converted to an email address?



By [Kris Johnson \(Kdj\)](#) on Thursday, December 14, 2000 - 09:57 am: [Edit](#)

Does 2@a give the address of the instruction following the JSR? If so, you need to subtract the size of the JSR instruction.

Also, note that not everything on the return stack is going to be a return address. The return stack is used by the DO...LOOP words, and by any other routines that use it for temporary storage.

-- Kris



By [Geert Bosch](#) on Thursday, December 14, 2000 - 01:22 pm: [Edit](#)

Kris, the main issue is that I cannot figure out what code I'm actually looking at. I can use the "see" word to look at the code for a word, but I have no way to go from the addresses listed there to absolute memory addresses, or to "see" the disassembly of a word including the raw bytes in hex.

If you know how I can do this, I might be able to figure out what I'm doing wrong to get the return-address.

-Geert



By [Erwin Schomburg \(Esc\)](#) on Thursday, December 14, 2000 - 04:37 pm: [Edit](#)

Oh boys, what you get on the return stack should be a 16bit (1 cell) relative address value. One hint, if you have an execution token (16 bit relative address for a words execution address), `xt>abs` gives you the absolute (32 bit) address.

/Erwin



By [Geert Bosch](#) on Thursday, December 14, 2000 - 05:08 pm: [Edit](#)

As the code does a JSR, there will be a 32-bit absolute address on the stack. Probably I need to do the reverse thing of `xt>abs`.

-Geert



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 14, 2000 - 07:02 pm:

Actually, the return-stack value is 32-bits; it's a real return address.

Neal



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 14, 2000 - 08:11 pm:

Geert, it's going to be difficult to do what you're looking for. The address on the return stack is not the address of the start of a function, but rather the address of some point within it; it'll be painfully difficult to trace backward and try to find the name of the function.

The best thing for this is to use the Palm Debuffer, along with generate-symbols; then you can do a stack backtrace from any breakpoint using the POSE emulator.

Neal



By [Geert Bosch](#) on Friday, December 15, 2000 - 09:29 am: [Edit](#)

Actually that all is not really an issue. Probably I should explain a bit more. I'm writing some debugging words that will allow one to set breakpoints and record the number of times a function is called.

I use a piece of code as follows:

```
: : :  
  \ Add a prologue to push a 16-bit  
  \ constant 0 on the stack. This value
```

```
\ is used by _mcount to maintain  
\ call statistics and breakpoint info.  
(hex) 393c.0000 cs, cs, \ 0 swap  
postpone _mcount ;
```

I thought it would be quite easy to figure out how to get the address of the call to _mcount and from within _mcount as it should just be a 32-bit value which is pushed on the stack. I'm sure I'm just missing something but I haven't quite figured out what it is yet...

-Geert



By [Kris Johnson \(Kdj\)](#) on Sunday, December 17, 2000 - 03:15 pm: [Edit](#)

I've tried using generate-symbols with POSE and Debuffer, but Debuffer doesn't show me any useful information. Is there anything special I need to do to get this to work?

-- Kris



By [Neal Bridges \(Nbridges\)](#) on Sunday, December 17, 2000 - 04:20 pm: [Edit](#)

In Debuffer, bt will show names of routines, and so will disassembly (using dis). Best of all, the profiling version of the emulator will list your Forth routine names in the profiling output.

Neal

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Palm OS 4.0 -- Good news!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Palm OS 4.0 -- Good news!



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 13, 2000 - 06:54 pm:

Good news!

Palm has provided a pre-release version of Palm OS 4.0, and I'm happy to say Quartus Forth works perfectly with it.

Neal



[Edit](#)

By [Doug Philips \(Dgou\)](#) on Wednesday, December 13, 2000 - 09:59 pm: [Edit](#)

Woooo Hoooo! Yes!

Toutin' that fact should be sweeeeeeeet!

I hope it bodes well for the standalone apps too.

-Doug



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 13, 2000 - 10:37 pm:

It does -- tested about twenty stand-alone apps so far; all fine!

Neal

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CMOVE

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): CMOVE



By [Tel Monks \(Tel\)](#) on Wednesday, December 13, 2000 - 09:24 am: [Edit](#)

Where is this? I can't find it among my palm memos.

Thanks in advance.

Tel



By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 13, 2000 - 11:03 am:

[Edit](#)

In Quartus Forth, MOVE is equivalent.

Neal

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Words for automatic inlining

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Words for automatic inlining



By [Geert Bosch](#) on Tuesday, December 12, 2000 - 11:25 pm: [Edit](#)

After some playing around with the disassembler I found that there are situations where a call is made to a small word, where the call actually takes up the same space as the word being called. This happens for example if one word is just a renaming of another word.

So I tried my first screenful of low-level Forth hacking and implemented some words that will automatically mark any word "inline" if it is less than a predefined number of cells. I set this limit to 2 cells now, which is the size of a call instruction.

With this approach code size should never increase, and renamings do no longer cause extra code to be executed. With a slightly higher setting you could trade off code size for speed.

Anyway here is the code, feel free to comment on it!

-Geert

```
\ inlining 12-12-00 GB
needs core-ext
variable _inlinesize
: ;; postpone ; ; immediate

: ; cshere _inlinesize +! postpone ;
  _inlinesize @ 2 cells u> if exit then
  postpone inline ; immediate

: : : cshere negate _inlinesize ! ;;
```



By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 13, 2000 - 12:27 am:

[Edit](#)

Clever, Geert! Thanks for that.

Neal

Add a Message

Username:

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Gremlin Crashes

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Gremlin Crashes



By [David Slay](#) on Tuesday, December 12, 2000 - 10:41 pm: [Edit](#)

I recently finished my first Palm app, but I have been having some trouble with Gremlin testing. The app is usually able to survive about 50,000-60,000 gremlin commands, then it consistently crashes saying my app has caused a "line 1010 instruction". This causes a reset on the POSE.

I have noticed that with every crash, the Find box is open on the frozen POSE screen. I have tried to recreate the crash outside the gremlin environment with no success. My app has 3 forms, and the crash has occurred in each of the 3 forms. Since the forms share very little code except the event loop, I am having some trouble figuring out where to start the debugging process.

Has anyone had a similar problem? Could the Palm's built in Find command be causing my crashes? If so, is there a way to disable this command while my app is running?

Thanks,

David



By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 12, 2000 - 10:48 pm: [Edit](#)

It's hard to guess why you're getting that error -- off the top, I suspect you're running out of dynamic memory, or that the Find dialog is being displayed when there is no form active on the screen, or -- just possibly -- you're under or over-flowing the stack. It's too hard to tell from here.

The best technique; divide and conquer. Reduce your app to one form, see if the problem occurs; if not, adjust upward to two forms, etc.

Neal



By [David Slay](#) on Tuesday, December 12, 2000 - 11:21 pm: [Edit](#)

I have been keeping a diagram of the stack in the upper right corner of the screen for debugging purposes. So, I know I am not overflowing the stack. Stack underflows have been a recurrent problem of mine, but I am fairly sure that is not the problem.

As for the other suspects, I'm not sure how to check for these problems. Is there a command that tells me how much dynamic memory is free so I can add that to

the display in the upper right corner? and what could cause there to be no active form on the screen?

Thanks for the tip on troubleshooting. I will disable the buttons that allow switching between forms and see what happens.

Thanks again.



By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 13, 2000 - 06:46 pm:

[Edit](#)

mem returns the freespace. As for no active form -- that's just a random thought, I can't say what exactly is happening without seeing the app and the code.

Let us know how it goes!

Neal



By [David Slay](#) on Thursday, December 14, 2000 - 09:31 am: [Edit](#)

I finally found the crash! I have been able to isolate the code and reproduce it in the small app below. The crash seems to be come after the items in a list have been reset many times. The code below causes a crash after about 8000 gremlin events with a "line 1010 instruction"; which causes a reset.

Resources with this are very simple. A list and 2 buttons which change the available options in the list. Please help. I have been working on this app for almost 3 months now, and I just don't see what would cause this to crash. My first thought was that the memhandlelock in the setlist command needed a corresponding memhandleunlock. However, when I added one, I got an error when any item in the list was selected.

```
\-1
\ test
needs ids
needs resources
needs events
needs forms
needs zstrings
needs graphics

(id) sladd (id) rsrc use-resources

2000 constant mainform
3000 constant choice1button
3001 constant choice2button
```



```

4000 constant listid

create listholder 75 allot align

: setlist ( # # add len -- )
  drop >abs
  sysformpointerarraytostrings
  memhandlelock 2dup 2>r
  rot 2r> listid getobjectptr
  lstsetlistchoices
  listid getobjectptr
  lstdrawlist ;

: firstlist ( -- )
  3 dup listholder 0
  z" First Item" 1+ append
  z" Second Item" 1+ append
  z" Third Item" 1+ append
  setlist ;

: secondlist ( -- )
  5 dup listholder 0
  z" First Choice" 1+ append
  z" Second Choice" 1+ append
  z" Third Choice" 1+ append
  z" Fourth Choice" 1+ append
  z" Fifth Choice" 1+ append
  setlist ;

: Whichbutton ( ID -- )
  dup choice1button = if
    firstlist then
  dup choice2button = if
    secondlist then
  drop ;

: doevent ( event -- )
  dup ctlselectevent = if
    event >abs itemid
    whichbutton
  then drop ;

: go
  mainform showform
  begin ekey doevent again ;

```

Any help is greatly appreciated

Sorry about the lack of formatting. I couldn't get it to work. [Fixed -- NAB].

Thanks,

David



By [Wade Carlson](#) on Thursday, December 14, 2000 - 07:55 pm: [Edit](#)

I believe that you cannot just keep on continually Locking down memory because you will eventually get an error as you so have found. The reason you are getting an error when calling MemHandleUnlock is because LstSetLstChoices still has it's list set to that pointer that you gave it. If you try to Unlock that pointer when it is still set to the list, you will get a crash.

Try:

0 0. listid getobjectptr lstsetlistchoices
before calling MemHandleUnlock.

Good luck with the debugging.



By [David Slay](#) on Thursday, December 14, 2000 - 08:51 pm: [Edit](#)

I actually put the MemHandleUnlock as the last command in the setlist statement. That works fine until I click on an item in the list. When an item in the list is selected, I get the error "... has just read directly from an unlocked memory chunk." I guess it must stay locked as long as the list is set to those choices.

I plan to try to unlock the previous handle at the beginning of the setlist command, but I just haven't had time to try it yet. Thanks for the help.



By [David Slay](#) on Thursday, December 14, 2000 - 10:56 pm: [Edit](#)

Just finished testing the idea of unlocking the previous handle before calling setlist. I stored the handle in a double variable during the setlist command, then unlocked it before calling setlist. No Luck 😞 I still had the same crash.

I decided to try getting rid of the event loop, and just changing the list settings over and over again in the loop as below.

```
: go  
secondlist  
begin  
unlockoldhandle firstlist  
unlockoldhandle secondlist  
count  
again ;
```

Count just kept up with how many times it made it through the loop before crashing. This consistently crashed after either 398 or 399 trips through the

loop. This gave me a "NULL Handle" error before crashing? A new error, but the same end result.

It seems that the above code will only allow me to change the items in a list 398-399 times, then crashes, even if I add MemHandleUnlock calls.

Any suggestions on how to change my setlist command to make it more stable?



By [Wade Carlson](#) on Friday, December 15, 2000 - 08:48 am: [Edit](#)

I have it working fine in my application without trouble, so it is possible. Did you try setting the list to null BEFORE unlocking it as I mentioned above? Also, the only other thing I can think of, is that there is a bug with LstSetListChoices (did you know about that?). Here is the workaround to include in your code:

```
: LstSetListChoices ( numItems &itemsText. &list. -- )  
>r >r >r >r >r 0 0 r> r> r> r> r>  
LstSetListChoices ;
```



By [David Slay](#) on Saturday, December 16, 2000 - 01:59 pm: [Edit](#)

Just thought I would give you an update. I was finally able to solve the problem 😊 It seems that SysFormPointerArrayToStrings is somehow limited in the number of times it can be called. After a large number of calls, it eventually starts returning Null Handles. In my tests, it started returning Null Handles after about 400 consecutive calls, but sometimes it would allow more (maybe this was related to the size and number of strings in the array, but I'm not sure).

The way I got around this was to break my setlist command up into 2 commands as below.

```
: locklist ( # add len -- )  
drop >abs  
sysformpointerarraytostrings  
2dup listhandle 2!  
memhandlelock  
listaddress 2! ;
```

```
: setlist ( # add len -- )  
2drop  
0. rot listaddress 2@  
listid getobjectptr  
lstsetlistchoices  
listid getobjectptr  
lstdrawlist ;
```

I call locklist at the very beginning of the program, and set the number to the

maximum number of items that appears in any of my lists. I set the strings to a template with each string being the same length.

Then before calling setlist I construct the string similar to the way I did above, except each item in the string must be the same length as the items in the template used when locklist was called. This was a little tedious to program (and after reading the description I just wrote, also difficult to explain) If anyone is interested in the actual code I used to manipulate the strings, I'll be happy to post it.

I'm sure that my way of working around this problem was not the prettiest nor most efficient, but it seems to be working (I'm very much an amateur programmer).

I have now survived 1,000,000 gremlin events, and I hope to be releasing PhysBill 1.0 soon. It is a program for keeping up with physician inpatient billing. Thanks for all your help. I will certainly put a plug in my program for Quartus Forth.

David Slay, MD



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 16, 2000 - 10:56 pm:

David, I'm glad you found an answer. Congratulations on your upcoming release!

Neal

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Text Wrapping On Command Line

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Text Wrapping On Command Line



By [Barak Shilo \(Barak\)](#) on Sunday, December 10, 2000 - 03:18 pm: [Edit](#)

Hi,

Is there a way to enter multi-line definitions on the Quartus command line? (either have them automatically wrap around to the next line, or have a word that ignores a carriage return and lets you finish the definition on the next line?)

Sometimes I want to test out a word that goes a few words beyond the right side of the screen, and it's a little annoying not being able to see what I'm typing. Thanks.



By [Neal Bridges \(Nbridges\)](#) on Sunday, December 10, 2000 - 05:18 pm: [Edit](#)

There's no such facility in the console at this time. I find that if I'm entering something long at the console, it's usually something I'll want to use again, so I drop it in a memo with PopUp Note.

Neal



By [Barak Shilo \(Barak\)](#) on Sunday, December 10, 2000 - 06:07 pm: [Edit](#)

I just realized that this function is basically built in: you can enter a definition across multiple lines by just hitting enter at the end of each line and Quartus won't interpret it until you type a semicolon followed by a line return. I guess I had always assumed that if I hit enter in the middle of a definition not terminated with a ';' that I would get some error.



By [Neal Bridges \(Nbridges\)](#) on Sunday, December 10, 2000 - 06:09 pm: [Edit](#)

Oh! Yes, I see what you're after now. Right, the system doesn't interpret until you're back in interpretation state. Good, glad it does what you want!

Neal

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Preferences and data types - am I doing this right?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Preferences and data types - am I doing this right?



By [Tammy Cravit \(Tammycravit\)](#) on Sunday, December 10, 2000 - 01:25

pm: [Edit](#)

I'm working on my next Quartus application, which will be a port/rewrite of my BatteryInfo application to Quartus Forth. In so doing, I needed to write a small app in C to do some handling on a system reset (since I can't trap a sysAppLaunchCmdSystemReset in Quartus yet.) I declared my preferences type in C as the following:

```
typedef struct {
    UInt16 WarnMillivolts;
    UInt16 CriticalMillivolts;
    SysBatteryKind batteryKind;
    Boolean applyOnReset;
} BatteryInfoPrefsType;
```

I'm now trying to figure out how to access this information from Quartus. Since neither SysBatteryKind nor (I assume) Boolean types are 16-bit values, I can't just declare them each as a variable. I am guessing I have to let one variable contain the batteryKind in it's high byte, and the applyOnReset flag in its low byte, but I don't know how to access that in Quartus.

Am I on the right track?

Tammy



By [Neal Bridges \(Nbridges\)](#) on Sunday, December 10, 2000 - 01:52 pm: [Edit](#)

I'm not quite clear on what you're after, Tammy, but here's how you'd extract a high and low byte from a 16-bit word:

```
: extract ( x -- low high )
  dup 255 and
  swap 8 rshift ;
```

Neal



By [Steve Bohrer \(Skb\)](#) on Monday, December 11, 2000 - 12:02 am: [Edit](#)

The exact way your C compiler arranged the values in the struct is compiler

dependent. If both variables are single bytes, they are most likely packed into a single word in the struct. But, the compiler is perfectly free to align things however it wishes, perhaps leaving unused pad bytes in the middle of the struct.

Boolean is a byte, since it is just typedefed from unsigned char. SysBatteryKind is an enum, and again, it is compiler dependent what size enums are: Some compilers play tricks like making them a byte if there are < 256 values in the enum; some make them always int sized. ANSI C may have an opinion on this; otherwise only your compiler knows for sure...

You should be able to get your compiler to show you what it has done with a test program that prints various sizeof values, and that prints the raw values of pointers to the fields of your structure. (I think there is also some ANSI macro or function that gives you the offset of a structure element, but I don't know it offhand.)

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Another New App with Source

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Another New App with Source



By [Brette Blatchley](#) on Sunday, December 10, 2000 - 02:58 am: [Edit](#)

Hi Folks :-)

I've just posted my first distributable app (with source) on PalmGear called [Dice 1.0](#).

It's a different approach than Tammy's DiceRoller, and there are several interesting things going on inside that may interest new QF programmers.

I've put it out as freeware with my blessings. Let me know what you think!

Take Care All!



By [Neal Bridges \(Nbridges\)](#) on Sunday, December 10, 2000 - 07:27 am: [Edit](#)

Dice.zip is now also available in the [Contrib File Area](#).

Thanks Brette!

Neal

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Usenet discussion: Re: Programming for Visor

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Usenet discussion: Re: Programming for Visor



By [Neal Bridges \(Nbridges\)](#) on Saturday, December 9, 2000 - 12:26 pm: [Edit](#)

There's a thread on comp.sys.palmtops.pilot right now, titled "Re: Programming for Visor"; one of the posters is asking if anyone has used Quartus Forth, looking for feedback. If any of you feel so inclined as to post your experiences there, that'd be great!

Neal

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Implementation of "recurse" keyword

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Implementation of "recurse" keyword



By [Geert Bosch](#) on Friday, December 8, 2000 - 06:50 pm: [Edit](#)

I have in the past used "recurse" as a convenient way to implement recursive algorithms. It seems however that this may take space on the control stack even if this is not necessary.

In particular code like the following example will run out of stack space with fatal exceptions as result:

```
: sum ( n1 n2--n3)
  \ Return n1 plus the sum of 1 .. n2
  dup 0> if tuck + swap 1- recurse
  else drop then ;
0 1000 sum .
```

This will work fine for a sum of 1 to 100, but not in the above case. I would have expected the code to pop of the "if" construct. After all we're using a stack-based language so there are no parameter passing issues.

As far as I know "leave" does the right thing and gets rid of left over junk on the control stack, is that right? Neil, could you explain a bit how Quartus handles these standard words? thanks :-)

-Geert



By [Neal Bridges \(Nbridges\)](#) on Friday, December 8, 2000 - 06:57 pm: [Edit](#)

LEAVE is only for DO loops, and you have the wrong idea about how IF and THEN are handled -- no pushing or popping occurs at run-time.

What's happening is that your recursive loop is running out of stack space on the return stack. Every nested recursion uses 4 bytes on the return stack, and there's less than 4K of return-stack space available on the Palm. It's a precious resource. A thousand iterations of your loop will use the entire return stack and beyond, and cause an error requiring a soft reset.

Fortunately, your example here is very simply coded as a loop.

Neal



By [Barak Shilo \(Barak\)](#) on Friday, December 8, 2000 - 11:37 pm: [Edit](#)

Out of curiosity, is it possible to extend the stack space available on the return stack, or replace the built-in return stack with a "virtual return stack" (simply to be able to do recursion intensive algorithms)?



By [Neal Bridges \(Nbridges\)](#) on Friday, December 8, 2000 - 11:55 pm: [Edit](#)

As long as you're careful, you can do it. Here's an example:

needs mem

```
: go
  rp@ \ save old return stack pointer
  8192 dup (allocate) throw \ new stack
  rot >r 2dup r> m+ \ point at bottom of it
  rp! \ set return stack pointer
...return-stack intensive operations go here...
  (free) throw \ free the memory block
  rp! \ restore old stack pointer
;
```

In a real-world example, I'd allocate the stack once during initialization, and free it at the end.

Neal



By [Geert Bosch](#) on Saturday, December 9, 2000 - 12:10 pm: [Edit](#)

I know my example is not really interesting, as you don't need recursion or loops in any case, but this example was shortest to type in :-)

What I'm looking for is for a way to jump to the beginning of the word. This is very useful for tail-recursive functions.

This keyword would have the same effect as the sequence "recurse exit", but not use any stack space.



By [Neal Bridges \(Nbridges\)](#) on Saturday, December 9, 2000 - 12:25 pm: [Edit](#)

Simplest:

```
: foo
  begin
  ...
  again ;
```

If you need to jump back to the beginning of the word from multiple points, I can put together some slightly more complex code that allows it. Let me know.

Neal



By [Geert Bosch](#) on Sunday, December 10, 2000 - 03:56 pm: [Edit](#)

Jumping back from multiple locations is indeed the whole issue. Many of the forth words in my arbitrary precision calculator are written in a recursive style, where at the beginning all special cases are checked and after the parameters on the stack are fixed up (ie. normalize floating point values, reduce angle of trig functions) execution should resume at the beginning of the word.

I know I can convert all of these cases to explicit control structures, but this results in a lot of nested constructs which makes the program harder to read and modify.

Wouldn't it be possible to check when compiling the EXIT word whether the last instruction emitted was a bsr instruction and if so, change it to jmp? It seems you already do something similar at the end of a word.

For example, if I have

```
: a ;  
: b a ;
```

this generates

```
1968 jmp 1958(a2) = a
```

Great! The following though

```
: b recurse ;
```

generates

```
1980 bsr.s 1980  
1982 EXIT
```

I hoped it would be possible to generate the same code (a "jmp" instruction) in all cases where bsr.s would be followed by an exit.

-Geert



By [Neal Bridges \(Nbridges\)](#) on Sunday, December 10, 2000 - 05:29 pm: [Edit](#)

Correct -- at present RECURSE does not get optimized into a tail-recursion. I'll see what I can do about that. In the meantime, here's a workaround:

```
variable markpoint
```

```
: mark
  postpone begin
  markpoint ! ; immediate

: gotomark
  markpoint @
  postpone again ; immediate
```

Use:

```
: foo
  mark
  ...
  gotomark
  ...
  gotomark
;
```

Neal



By [Neal Bridges \(Nbridges\)](#) on Sunday, December 10, 2000 - 05:31 pm: [Edit](#)

Correct -- at present RECURSE does not get optimized into a tail-recursion. I'll see what I can do about that. In the meantime, here's a workaround:

```
variable markpoint
```

```
: mark
  postpone begin
  markpoint ! ; immediate

: gotomark
  markpoint @
  postpone again ; immediate
```

Use:

```
: foo
  mark
  ...
  gotomark
```


...
gotomark

;

Neal

 By [Geert Bosch](#) on Monday, December 11, 2000 - 08:11 am: [Edit](#)

Thanks for this workaround, Neil.
Exactly what I needed :-)

 By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 12, 2000 - 12:31 am: [Edit](#)

Glad it helps!

Neal

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IndiVideo OnBoard Debug ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): IndiVideo OnBoard Debug ?



By [Steve Bohrer \(Skb\)](#) on Friday, December 8, 2000 - 09:38 am: [Edit](#)

I was at www.individeo.com to get a newer version of OnBoard RsrcEdit, and I noticed they have a beta OnBoard assembly level debugger.

Does anyone have any experience with this tool? I expect it might be pretty hairy trying to find one's way through a compiled Quartus app.



By [Neal Bridges \(Nbridges\)](#) on Friday, December 8, 2000 - 10:00 am: [Edit](#)

It's hairy to trace through the machine instructions of compiled code from any compiler, and rarely useful.

My practice is to insert breakpoints in high-level code, and debug that way.

Neal



By [Steve Bohrer \(Skb\)](#) on Friday, December 8, 2000 - 10:21 am: [Edit](#)

Oops. Never mind. It doesn't seem to work with Quartus.

Turns out that OnBoard DB can't seem to find "PilotMain" in Quartus apps, so it is unable to debug them (true generate-symbols doesn't help) It may be that it is specifically targeted for however OnBoard C does labels.

Neal is of course correct about debugging regular code. But, sometimes other tools are needed, e.g. debugging callback startup, or exploring details of systrap calls, or generally poking about the insides of things.

Perhaps there are better tools for such things? Debuffer is nice with POSE. What other ways are there to "look under the covers"?



By [John McKeon \(Jmckeon\)](#) on Saturday, December 9, 2000 - 05:01 pm: [Edit](#)

I've been studying disassembled Quartus code using RsrcEdit's disassembler. Along with the Pila assembler package and the M68K programmer's manual I've become pretty adept at reading the startup code at least 😊

Neal, here's a code word:

code

```
prefix  
move .l 40 a5 ) sp -)  
move .w 38 a5 ) tos  
end-code
```

can you tell what I'm up to. If you can't then I probably don't know what I'm doing 😊

Here's what I think I'm doing. I've become obsessed with launch codes and after much study of the startup code of Quartus apps I'm convinced that they are saved at the above addresses -- 38(a5) is the launch code and 40(a5) is the PBP. Unfortunately Quartus apps actually check for a zero launch code and branch to the exit code if it is not. This can be overcome, but I don't want to try it though unless I know those addresses are correct.

What do you say Neal?

John



By [Neal Bridges \(Nbridges\)](#) on Saturday, December 9, 2000 - 06:34 pm: [Edit](#)

Hi John. Certainly I can make it so that Quartus Forth apps can respond to any launch code -- what I'm working on is a simple mechanism so that the developer can select exactly which launch codes to respond to, and which to ignore.

I believe you're correct about the addresses above; I'd need to do some direct testing to be sure.

Neal



By [Steve Bohrer \(Skb\)](#) on Saturday, December 9, 2000 - 10:45 pm: [Edit](#)

A bigger issue (I think, but I've really no direct experience with this stuff) is what is a Quartus app supposed to do in the cases when the OS fires it up without providing global variables? I believe this happens when the OS wants to quickly use parts of a bunch of different apps, e.g. to implement the silk-screened "Find" function. The OS does not want to allocate and initialize a hunk of heap RAM for each installed app; instead, it calls each to do the work with no globals, and then only fully launches whatever app the user selects from the results of the find.

C functions can get away with just using local variables on the OS's A7 stack. Forth code, however, really can't do anything until Neal has set up our data stack at A4. (We also need our code segment, but maybe the OS does that?)

So, even in the case where the OS is trying to start an app with minimal fuss, the Quartus startup code must allocate memory and do a bit of work.

But, is speed the only issue? Hard to think it would really be so slow, even if you had a bunch of Quartus apps. Why does the OS mess with no globals, anyway?



By [Neal Bridges \(Nbridges\)](#) on Saturday, December 9, 2000 - 10:49 pm: [Edit](#)

I suppose the original decision not to have globals available was more due to the extremely limited dynamic RAM on the original Pilot, and less to do with speed.

Neal

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Recommended Books

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Recommended Books



By [James Steven Graham](#) on Thursday, December 7, 2000 - 02:48 pm: [Edit](#)

Greetings, all:

I have been a professional programmer for almost 20 years and several years ago started dabbling in Forth. Earlier this year I bought a Palm IIIx and one of the first packages I put on it was Quartus Forth. I'm now considering doing some serious programming on the Palm platform and am looking for some suggestions on where to start. Of course, I would want to upgrade to the latest version of Quartus Forth. As far as books on the Palm itself and/or on Palm programming, are there any recommendations on the best, the first to purchase, ones to avoid. I'm also interested in using the IR features of the Palm platform. Is it adequately covered in any books on the market.

Also, if anyone has any ideas of a greatly needed app, I would be interested in hearing from you.

Thanks.

Steve Graham



By [Doug Philips \(Dgou\)](#) on Thursday, December 7, 2000 - 04:46 pm: [Edit](#)

From what I've been able to hunt down, re: reviews on Palm Programming books, there isn't any one clear winner. The reviewer comments at amazon.com and such places should give you an idea.

We're all breathlessly (ok, so I exaggerate, but only slightly) awaiting Neal's Launch Code enabled Quartus, which should make the IR stuff even easier (though a helper application seems to be the way to do it at the moment, see the other threads on this message board for more details).

As for a "greatly" needed app, that is hard to say, one could take the philosophical position that as an organizer on steroids, the Palm devices don't need anything else. J Personally I'd love to see a real text editor with outliner, no file size limit except memory on the device. Not a project planning outliner, there are those already, but something that is a true document editor with outline support integrated in from day one. But that's just me. J .

This forum is a great place to find and ask questions about programming the PalmOS with Quartus. (Now if I only had the time to resume my own

programming efforts. Perhaps a New Year's resolution, since it doesn't seem like it'll happen until then anyways).

-Doug



By [Steve Bohrer \(Skb\)](#) on Friday, December 8, 2000 - 09:15 am: [Edit](#)

OnBoard RsrcEdit is (I think) a "greatly needed app" which allows you to create and edit resources on the Palm, rather than with a PC-hosted tool. It is also useful as a general file-mucking-with utility. Find it at www.individeo.net.

For useful books, you could certainly begin at the developer part of Palm's www.palmOS.com site. (Perhaps you are way ahead of me on this, but your request seemed pretty general.)

You should download (if you haven't already) the "PalmOS SDK Reference" and "PalmOS SDK Companion". The Companion gives an overview of the whys and hows to use the OS, whereas the Reference has a specific summary of each OS Call and data structure. You should also download the C header files of the API, as in many cases (e.g. to find offsets to structure members, or to find the values of OS Constants) they are the only documentation.

The PalmOS Documentation section also has a full on-line version of the book "[Palm Programming: The Developer's Guide](#)" which has useful descriptions of many aspects of the OS, such as Tables and Beaming. The book presents a sample C application, so a reading knowledge of C is useful.



By [Steve Bohrer \(Skb\)](#) on Friday, December 8, 2000 - 09:53 am: [Edit](#)

Erwin Schomburg has a useful web-page about setting up a productive environment for Quartus development: [Erwin's how-to page](#)

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Quartus Forth

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Quartus Forth



By [Steve Graham](#) on Thursday, December 7, 2000 - 02:08 pm: [Edit](#)

Neal,

What exactly is included when a person buys Quartus Forth? Does it come with a manual, CD, etc?

Thanks.

Steve Graham



By [Neal Bridges \(Nbridges\)](#) on Thursday, December 7, 2000 - 02:42 pm: [Edit](#)

There's no physical media for the product -- after all, it would fit on half of a floppy. The manual is presently in electronic form only, though I have considered a printed version.

When registering, the registered version + registration code are shipped via e-mail.

Neal

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Question: Automated IR transfers

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Question: Automated IR transfers



By [Ken Samson](#) on Wednesday, December 6, 2000 - 10:55 pm: [Edit](#)

I am somewhat new to Forth; I am awaiting several books to be delivered from Amazon.com.

I would like to create an application in Forth on the palm platform that will communicate with an application on a PC. The idea is as follows:

Every day a new set of information is posted on a network. Using a configuration application, users would flag topics that they are interested in. When a user brings their Palm within range of an IR port connected to a PC, the PC and the palm exchange enough information to know who the person is and what topics the user is interested in.

Based upon that, data is then sent from the PC to the palm, where the user uses an application on the palm to view the data and perhaps make comments. The comments are then sent back to the computer the next time the user "syncs" with the PC via the IR link.

The idea here is kind of an internal company electronic palm based newspaper, where users can communicate back to writers of articles. Opinion poles would be easy to automate, etc.

The trick is making an application on the palm that will do this, and then on the PC as well. Has anyone tried an example of this?

Ken Samson



By [Chris Bucsko](#) on Thursday, December 7, 2000 - 11:59 am: [Edit](#)

I haven't tried too much with Forth or the Palm OS regarding this, but it sounds like a neat idea. I would suggest, however that you limit yourself to PalmOS version 3.5, and any newer versions. The reason is that this is the first version of PalmOS with IRDA, a common IR protocol, which is found on most newer PC notebook computers. I sync my Palm IIIxe at home to my notebook with the IR port all the time. (older Palms don't do this) The first question I would ask is what event is triggered by the IR link? Then I would see if the QForth word ekey (or something like it) could detect the event.



By [Ken Samson](#) on Thursday, December 7, 2000 - 06:09 pm: [Edit](#)

According to the Palm OS documentation, an external IRDA application can

cause a local application to be started, and it passes to that application a different "startup code" to tell it that a user did not start the app from the palm, but from the IR port. This would allow that application to begin accepting data. I do not yet know if Quartus can help me deal with this startup method, but my intuition tells me that it is likely not impossible.

Another, much more simple way, would be to create a database on the PC and use the IR link to sync with the Palm. Using the documented database format, a second database could be used to hold the user's preferences, so that would also reside on the PC as part of the Palm backup process.

What this would do is mean all I have to do is create a way to view the data on the Palm, because everything else happens on the PC. (Putting the data into a standard PALM format and just letting it get moved to the palm as part of the sync update process.)

While this is close to what I want, it is not quite there. For example: I do not want to use a full sync, but rather just a walk-up kiosk type of environment where people come to get their news, a cup of coffee, etc. Ideally you could even use a POP3 client and get their email for them at the same time. Using distributed stations, one could get personalized distributed content and your email at any of a few dozen stations. The idea is that most of the data is transient, and you simply delete it off of the palm when you are done consuming it, making room for more data in the near future.

All I have right now is an old Palm Pro with a 2.0 OS and no IR capability at all. I am very impressed that Quartus runs on it just fine.

I'm looking at either a TRGpro or a Clei, due to the ability to hold much, much more data locally with expansion. Once I get that machine, I will be able to get much more serious about this project. For now I'm learning the basics and playing with Forth.

Anyway, if anyone has any experience with building an interactive IRDA application using Quartus, please speak up!

Add a Message

Username:

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Scroll Up Button

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Scroll Up Button



By [Barak Shilo \(Barak\)](#) on Wednesday, December 6, 2000 - 05:22 pm: [Edit](#)

I've noticed that pressing the scroll up button recalls the last line of words executed on the Quartus command line. Is there a way to extend this function so that it will be able to recall, say, the last 10 entries instead of just the last one?



By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 6, 2000 - 08:48 pm:

[Edit](#)

That's already on my list, Barak -- a good idea!

Neal



By [Barak Shilo \(Barak\)](#) on Friday, December 8, 2000 - 11:25 pm: [Edit](#)

When do you plan on releasing the next version of Quartus? What other features are you planning?

-Barak



By [Neal Bridges \(Nbridges\)](#) on Friday, December 8, 2000 - 11:30 pm: [Edit](#)

Have a look here:

<http://www.quartus.net/discus/messages/23/133.html?SundayApril220000837pm#POST689>

Neal



By [Barak Shilo \(Barak\)](#) on Friday, December 8, 2000 - 11:45 pm: [Edit](#)

Cool, thanks.



By [Geert Bosch](#) on Saturday, December 9, 2000 - 12:13 pm: [Edit](#)

What would be really nice is if the command history could be saved as a preference. This would make the edit/test cycle much faster...

-Geert

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Correcting a bad database type ID

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Correcting a bad database type ID



By [Jim Meadows](#) on Wednesday, December 6, 2000 - 12:28 pm: [Edit](#)

I have an interesting situation. I accidentally created a file with a valid Creator ID, but the pointer to the Type ID string was bad so some non-ascii data was inserted for the type ID. I get a buss error on the emulator anytime I try to access the database and thus cannot correct or even delete it!

This leads to other unsettling problems ... I cannot right click on the emulator and export any data files either (including my FORTH source files) because it 1st scans all the databases in order to list them but gets an error reading this database. So, it appears I have no way to correct this database and no way to get my source files "out" of the emulator. I have a backup from the day before, but I hate to have to re-do what I have done if at all possible. Any suggestions on how to correct or delete a bad database, or get my source files out of the emulator? (Hotsync freezes when I run it on the emulator as well - probably as it tries to read this file).

- Shot in the foot Jim



By [Jim Meadows](#) on Wednesday, December 6, 2000 - 12:29 pm: [Edit](#)

Oh, one other thing ... Rsrcedit will list all the databases but it also gets an error when you click on the bad database. Therefore I can't use it to correct or delete the bad database either.

- Jim



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 6, 2000 - 12:34 pm:

You should be able to use non-ASCII data for a type, without trouble. I'm guessing something else went wrong with the database creation.

If you know the creator ID and type, you could possibly delete it directly from the console; it's worth a try.

Neal



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 6, 2000 - 12:36 pm:

Another point -- if you can save the emulator session, you may be able to

extract the text of your most recent work from the binary RAM dump that it saves.

Neal



By [Jim Meadows](#) on Wednesday, December 6, 2000 - 03:52 pm: [Edit](#)

Unfortunately I don't know what type ID it inserted.

I have tried opening the xxx.psf with winhex, but I cannot see any readable text in the file.

- Jim



By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 6, 2000 - 09:24 pm:

[Edit](#)

Jim, give pilot-xfer a try. There's versions for both Windows and Linux. With it, you can run a list of databases in the Palm, and also download databases individually by name. It might let you salvage what you need.

Neal



By [Neal Bridges \(Nbridges\)](#) on Thursday, December 7, 2000 - 08:21 pm: [Edit](#)

Jim, it occurs to me that to make the emulator work with it, you'd need to configure it to address a serial port, and attach another computer -- or a cable from that port to another serial port.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full

Password:

name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

E-mail:

Tick, tick, find, execute...BOOM!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Tick, tick, find, execute...BOOM!



By [Brette Blatchley](#) on Tuesday, December 5, 2000 - 03:52 pm: [Edit](#)

Hi Folks! :-)

It's been a while since I've been able to get back to my Forth fun. I've got a problem, maybe I'm blind or something. When I try this, I get a fatal exception (MemoryMgr.c, Line:4340, NULL handle).

I'm trying to add on to the programming environment and want to run a word automatically if it's defined -- here's a trivial example:

```
\ tryme

: go ." hi!" ;

cr ' go . ." xt according to tick"

: tiktik ['] go . ." xt according to bracket-tick"

tiktik

: run s" go" (find) 0=
  if
    ." no app!"
  else
    dup . ." xt according to (find)" cr
    ." Enter any character to CRASH" key drop
    execute
  then ;

run \ Ka-BOOM!

\ tryme end
```

XT as returned by tick and bracket-tick is always 6 bytes less than XT returned by (find).

So far as I can tell from the docs, XT is XT. I don't want to hard-code a 6 byte offset without knowing why -- sort of a "penny in the fusebox."

(BTW I'm running version 1.25R)

Say Neal, could I please have the very latest QF?

Could I have a sanity-check please?

Take Care All!

-Brette



By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 5, 2000 - 04:28 pm: [Edit](#)

Hi Brette. (find) returns the offset to the word's header, not the xt itself. I'll have to correct the documentation; I daresay you're the only person who ever used it!

[defined] in toolkit might do what you need.

Neal



By [Brette Blatchley](#) on Tuesday, December 5, 2000 - 06:55 pm: [Edit](#)

Ah! Thanks Neal! :-)

OK, these two examples work (notice the difference between find and (find), however. Also (find) does not seem to leave the word's c-addr & count on stack if it wasn't found either!

```
: go ." hi!" ;
```

```
: run bl word go find 0=  
  if else execute then ;
```

```
\ and...
```

```
: run s" go" (find) 0=  
  if else lfa>xt execute then ;
```

Here's the sort of use I have in mind. To save me some "keystrokes" when compiling source files, I can put this at the end of my application source:

```
: go ." my application here..." ;
```

Done!Run??

Which will ask me if I want to run the app. Here's its definition:

```
: Done!Run?? ( -- )
  ." Done! Run? (y/n)"

  key [char] y = if
    s" go" (find) 0= if
      ." App not compiled."
    else
      lfa>xt execute
    then
  then

  .s beep ;
```

The reason I don't simply tick go and be done with it is that I always want to execute the latest go compiled in the dictionary. Also, this word works even if there is no go defined at either compile or runtime. (In a sense, it is "late-bound.")

I'm interested in defining other words that build on the QForth programming environment to make handheld programming easier and more practical. Eventually I want to build an IDE around QForth.

Take Care All! :-)

-Brette



By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 5, 2000 - 06:59 pm: [Edit](#)

This works:

```
: done!run??
  ." Done! Run? (y/n)"
  key [char] y = if
    s" go" evaluate
  then
  .s beep ;
```

Bear in mind that this only works interpretively, at the console; there's no dictionary headers in compiled apps, so FIND and friends won't work.

Neal



By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 5, 2000 - 07:21 pm: [Edit](#)

By the way, this fixes (find) for your purposes:

```
: new(find) (find) lfa>xt ;
```

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

New Quartus App

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): New Quartus App



[Edit](#)

By [Richard Chamberlain \(Rac\)](#) on Monday, December 4, 2000 - 05:38 pm:

Hi Folks,

I've released my latest Quartus App, Static Chicken, which you can get at palmgear.com or www.sunsetandlabrea.co.uk.

If anyone wants the source let me know.

Richard



By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 5, 2000 - 03:17 pm: [Edit](#)

Congratulations, Richard! An unusual app!

Neal



By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 5, 2000 - 03:24 pm: [Edit](#)

By the way Richard, I can't track this down at PalmGear. Is it there yet?

Neal



[Edit](#)

By [Richard Chamberlain \(Rac\)](#) on Tuesday, December 5, 2000 - 04:39 pm:

Yes, it's there have a look in the last 7 days bit. For some reason if you search under chicken or static it doesn't find it.

Another problem with palmgear search I guess. I may mail them.

Richard

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Password:

E-mail:

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How many items on the stack?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): How many items on the stack?



By [Tel Monks \(Tel\)](#) on Sunday, December 3, 2000 - 06:28 pm: [Edit](#)

Thanks to all for your earlier help. Here's a new one...

Is there a word that tells you how many items are currently on the stack?

thanks

Tel



By [Neal Bridges \(Nbridges\)](#) on Sunday, December 3, 2000 - 06:34 pm: [Edit](#)

Yes -- the Standard word DEPTH does that.

Neal



By [Tel Monks \(Tel\)](#) on Sunday, December 3, 2000 - 06:57 pm: [Edit](#)

What would I do without you? You have to forgive me, but "Starting Forth" does not include this, and even if it did the index is so screwed up...

I have ordered another couple of books that are more recent than 1981, and hope to be able to answer my own questions soon (actually I am able to do a fair amount without hand-holding, but you would never guess it) I just can't wait to put things into my wonderful new Quartus Forth, I suppose.

Thanks again.

Tel



By [Neal Bridges \(Nbridges\)](#) on Sunday, December 3, 2000 - 07:05 pm: [Edit](#)

Enthusiasm does not require forgiveness, Tel. Glad to help! Let us know if you have any other questions as you proceed.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

String constants

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): String constants



By [Tel Monks \(Tel\)](#) on Saturday, December 2, 2000 - 12:26 pm: [Edit](#)

I want to use string constants and am not sure how to do it. [Note that I do not want zero terminated strings.]

Under WinForth I can use

S" abcd" drop constant abcd
and the constant does NOT get overwritten by the next use of S".

Also under WinForth I can say

CREATE abcd 'a' c, 'b' c, 'c' c, 'd'
and that works.

What can I do with Quartus to get what I want?



By [Ron Doerfler](#) on Saturday, December 2, 2000 - 02:28 pm: [Edit](#)

I've used the following code, but bear in mind that I've never used string constants in any other Forth system, so this is my own version.

When you type:

```
s" mystring" sconstant Mine
```

then RAM is allotted so that it contains the string plus a null. Then when you enter "Mine" it returns the (c-addr u) that S" would have returned if you used it there--the count doesn't include the extra null. By having a null at the end the string can be used for null-delimited strings for the PalmOS as well, using s>zabs.

Ron

```
\ string-constants 0222300 RWD
```

```
needs file \ for buffer and new S"  
needs core-ext  
needs toolkit \ for PLACE
```

```
: null>end ( u c-addr -- )
```

```

\ Appends null -- must be allocated.
+ char+ 0 swap c! ;

: sconstant ( buf-addr u <name> -- )
\ Limited to 255 chars. S" input
\ buffer in file memo has limit of 80.
create dup here 2>r \ Size and start
here over 2 chars + allot \ Allot RAM
place \ Buffer --> counted string
2r> null>end \ Add null
does> dup c@ swap char+ swap
( c-addr u ) ;

```

```

: s>zabs ( c-addr u -- &z-addr. )
\ Use only with string obtained
\ from sconstant or svariable, since
\ it has a null at the end.
drop >abs ;

```

```

: s>abs ( c-addr len -- a-addr. len )
>r >abs r> ;

```

```

false [IF]
\ Types test strings to console

```

```

TitledFormID showform
cr cr
s" Test Title" sconstant stringtitle
stringtitle s>zabs \ Tests s>zabs
FrmGetActiveForm FrmSetTitle

```

```

s" C-Text" sconstant string0
s" Constant: " type string0 type cr
[THEN]

```



By [Neal Bridges \(Nbridges\)](#) on Saturday, December 2, 2000 - 03:35 pm: [Edit](#)

The simplest way to produce a string literal:

```

: mystring s" This is my literal string." ;
Neal

```



By [Tel Monks \(Tel\)](#) on Saturday, December 2, 2000 - 07:34 pm: [Edit](#)

Thanks for the help - but...

these solutions are not really it. Neal's suggestion has a runtime behaviour of creating the string and loading the address and the length - every time it is

used. I want to create the string once and ignore the length.

Consider that this is a card game and I have (on other FORTH versions.)

create suits 'C' c, 'D' c, 'H' c, 'S' c,

Then I can define

```
: showsuit ( suit --- ) \ suit = 0, 1 2, 3  
suits + c@ emit ;
```

If there is a better way to do this I would like to know it. Why does 'c' not work on Quartus?

Ron's version (thanks Ron) similarly returns a value I have to drop every time, is limited to 255 characters (and besides is far too complicated for my little brain.)

Tel



By [Kris Johnson \(Kdj\)](#) on Saturday, December 2, 2000 - 09:01 pm: [Edit](#)

"Neal's suggestion" does not create a string every time it is used at runtime, it just returns a pointer and a length.

Maybe what you want is something like this:

```
: (suits) s" CDHS" ;  
(suits) drop constant suits
```

Now SUITS returns the address of "CDHS".

Also, I think someone has provided a redefinition of S" that works in Quartus outside of a colon definition. Does anyone know where that is?

-- Kris



By [Neal Bridges \(Nbridges\)](#) on Saturday, December 2, 2000 - 10:03 pm: [Edit](#)

The Standard method for what you're trying with create is this:

```
create suits  
char C c, char D c, char H c, char S c,
```

Neal



By [Neal Bridges \(Nbridges\)](#) on Saturday, December 2, 2000 - 10:04 pm: [Edit](#)

Kris -- that interpretive S" is in file.txt.

Neal

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Now available: Handspring ROM functions

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Now available: Handspring ROM functions



By [Neal Bridges \(Nbridges\)](#) on Friday, December 1, 2000 - 11:43 pm: [Edit](#)

Now available! hsext.txt in the [Contrib file area](#) allows access to the Handspring-specific ROM functions.

Neal

Add a Message

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Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Rand use

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Rand use



By [Dave Bennett \(Dbennett\)](#) on Friday, December 1, 2000 - 05:55 pm: [Edit](#)

How can I use rand to generate a random selection between X number of items? I have a list of 4 items and I want to randomly select these items. (Let's say the letters in my name D, A, V, E.) Does anyone have a short example of how to do this? Thanks.

Dave



By [Neal Bridges \(Nbridges\)](#) on Friday, December 1, 2000 - 07:48 pm: [Edit](#)

The popular convention is:

needs random

```
: randchar ( c-addr len -- char )  
  rand swap mod chars + c@ ;
```

```
: daverand ( -- char )  
  s" DAVE" randchar ;
```

The use of MOD here very slightly skews the distribution of the resulting values, but not to any degree you're likely to notice.

Neal



By [Kris Johnson \(Kdj\)](#) on Friday, December 1, 2000 - 09:44 pm: [Edit](#)

Does anyone know just how random the Palm OS SysRandom function is? I'm sure it's good enough for most purposes, but I was wondering if there has been any analysis of it.

-- Kris



By [Neal Bridges \(Nbridges\)](#) on Friday, December 1, 2000 - 09:49 pm: [Edit](#)

I've done an analysis. The built-in Palm pseudo-random number generator is not quite acceptable in general terms, but adequate for casual purposes. Most significantly, it fails the DieHard suite.

In PassPhrase, I used a much stronger generator, and I seed it with as much user-generated entropy as I can find -- the exact raw pen-down and pen-up

position, ticks between taps, etc.

Neal



By [Kris Johnson \(Kdj\)](#) on Saturday, December 2, 2000 - 03:24 pm: [Edit](#)

Yeah, I figured it wouldn't be suitable for cryptography. I wouldn't trust it for that even if someone told me it was good enough.

I use it in my JacksOrBetter video poker game to shuffle the deck. I'd like to know how "random" the shuffles truly are, but I'm not interested enough to analyze it in detail. But if I can get my PDA to pay out actual money, then I'd be very interested.

-- Kris

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

A list of Quartus Forth apps at PalmGear

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): A list of Quartus Forth apps at PalmGear



By [Neal Bridges \(Nbridges\)](#) on Friday, December 1, 2000 - 04:08 pm: [Edit](#)

[Click here](#) to browse the list of apps at PalmGear written using Quartus Forth.

Neal



By [Neal Bridges \(Nbridges\)](#) on Friday, December 1, 2000 - 04:12 pm: [Edit](#)

Note: for some reason, the above link sometimes returns "no matches", unfortunately. If that happens, do a reload and it should work. There are presently approximately 35 relevant entries at PalmGear.

Neal



By [Jim Purdy](#) on Friday, December 1, 2000 - 05:07 pm: [Edit](#)

Hey Neal, you forget mine...

PalmStats



By [Neal Bridges \(Nbridges\)](#) on Friday, December 1, 2000 - 05:13 pm: [Edit](#)

Trust me, not forgotten! But it doesn't mention Quartus Forth in its description at PalmGear, so the above link won't turn it up -- it's just a simple search.

I'd like to create a master list of apps built with Quartus Forth. Please chime in if yours isn't in the PalmGear list, and I'll start compiling the master list.

Neal



By [Kris Johnson \(Kdj\)](#) on Friday, December 1, 2000 - 09:49 pm: [Edit](#)

You can add mine: JacksOrBetter

I'll update my PalmGear description to include the magic words.

-- Kris



By [Edin Hodzic](#) on Saturday, December 2, 2000 - 12:22 am: [Edit](#)

Mine doesn't appear on the first page, and I cannot get to the second page. I do mention Quartus Forth.

Here is the home page:

<http://members.home.net/ehodzic>

and on PG:

<http://www.palmgear.com/software/showsoftware.cfm?prodID=6473>



By [Neal Bridges \(Nbridges\)](#) on Saturday, December 2, 2000 - 12:24 am: [Edit](#)

Sorry about that; the link I posted doesn't bring up page two on the PalmGear site, for some unknown reason

Remedy: on the PalmGear page, just do a search for "Quartus Forth" (no quotes). Both pages will be accessible then.

Neal



By [Richard Chamberlain \(Rac\)](#) on Saturday, December 2, 2000 - 02:54 am:

[Edit](#)

I did get both pages when I clicked on the link.

Anyway you can add my efforts:

Guitar Tuner Lt.
Harmonic Square.
Metronome.

and in the next couple of days:

Static Chicken.

Richard

[www.sunsetandlabrea.co.uk]



By [Trevor Steele](#) on Sunday, December 3, 2000 - 07:41 am: [Edit](#)

Hi Neal

I do mention Quartus Forth in my description but the search does not turn up the application for some unknown reason.

The application is called Scorebook and I'd be delighted if you would add it to

your list.

Thanks

Trevor



By [Dave Bennett \(Dbennett\)](#) on Sunday, December 3, 2000 - 09:59 am: [Edit](#)

I've found the search engine at palmgear to be quite fickle. If you do a search on "Answer Farm" at the palmgear site it will find nothing. However, if you include the quotation marks in the search parameters around "Answer Farm", it'll list all of my applications. 😊 The palmgear people have acknowledged this issue several months ago, but apparently have not been able to identify the problem. You might try putting quote marks around "quartus" and see what happens.



By [Neal Bridges \(Nbridges\)](#) on Sunday, December 3, 2000 - 10:21 am: [Edit](#)

Just tried quotes around the search term at PalmGear -- got zero matches. The best result comes from using the advanced search there, and entering "Quartus Forth" (no quotes) in the "Software Description" field.

Neal



By [Barry Ekstrand \(Ekstrandbb\)](#) on Monday, December 4, 2000 - 08:41 am: [Edit](#)

Neal,

My LoanPayment and CanMortgage apps aren't on your list either.

Barry Ekstrand

Add a Message

Username: not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Quartus Forth updated at PalmGear

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Quartus Forth updated at PalmGear



By [Neal Bridges \(Nbridges\)](#) on Friday, December 1, 2000 - 03:48 pm: [Edit](#)

I've updated the Quartus Forth listing on [PalmGear](#) to announce the new MathLib support. The kernel build is still the same; no need to download it if you already have it. Just grab the MathLib code from the Contrib file area here.

Neal



By [Bill McCarthy](#) on Saturday, December 2, 2000 - 10:51 pm: [Edit](#)

Neal, is the current version 1.2.5R built on 10/25/99 at 6:11:12pm?

Bill



By [Neal Bridges \(Nbridges\)](#) on Saturday, December 2, 2000 - 10:56 pm: [Edit](#)

That's the registered build, yes. 1.2.6r is an interim build available upon request to registered users.

The evaluation version is still 1.2.1, for the moment.

Neal



By [Jocelyn Roy](#) on Monday, December 4, 2000 - 10:38 am: [Edit](#)

Hi Neal, I'm a newly registered user of your fine Quartus forth product. What are the new features or fixes that are in your interim version(1.2.6R)? I would like to have a copy of it if possible, since the version that I now own is 1.2.5R. Thanks in advance,

Jocelyn

PS, I really like your product, Quartus Forth is a winner, sorry if I took so much time to evaluate it ;-)



By [Neal Bridges \(Nbridges\)](#) on Monday, December 4, 2000 - 12:43 pm: [Edit](#)

The key reason to have the 1.2.6r interim version is to handle a quirk where LstSelectEvents are not received from popup lists. This bug occurs with Palm OS 3 and version 1.2.5r and earlier.

I'll send you 1.2.6r tonight. Thanks for the kind words, and thanks again for

registering!

Neal



By [Jocelyn Roy](#) on Monday, December 4, 2000 - 08:34 pm: [Edit](#)

Thanks for your fast reply Neal. I've already downloaded version 1.2.6R, now I need to install it on my VISOR. I wonder if I will be able to sleep tonight...LOL, that toy is really addictive...UGH. Thanks again Neal.

Jocelyn



By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 5, 2000 - 03:11 pm: [Edit](#)

Glad to be of service, Jocelyn. Keep us posted on how it goes!

Neal

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New applications

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): New applications



[Edit](#)

By [Dave Bennett \(Dbennett\)](#) on Thursday, November 30, 2000 - 08:36 pm:

I've uploaded three new applications at palmgear.com complete with quartus forth source.

BinaryBuddy allows you to enter two binary numbers and then apply the binary operators to them and see the results. I've been playing around with this for a while and it has helped out on a couple of other projects.

FractInches allows the user to enter a fractional inch and then computes the decimal inch and metric equivalents.

InchCalc is a four function calculator for inch input. It allows the user to enter kerf settings and then the option to either apply them or not on subsequent operations. It stores the kerf setting in preferences so they are persistent. This source is heavily commented and includes some binary stuff that I used BinaryBuddy to help figure out.

If anyone can get me a cool gif screen shot of any of these apps I'd appreciate it.

Thanks.



By [Neal Bridges \(Nbridges\)](#) on Friday, December 1, 2000 - 09:50 am: [Edit](#)

Neat stuff, Dave!

Neal

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Maximum File Size?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Maximum File Size?



By [David Slay](#) on Thursday, November 30, 2000 - 07:54 pm: [Edit](#)

I have been working on an app for a couple of months now, and the app is starting to get quite large (about 12 memos, each with over 100 lines). The app is nearing completion, but today I started getting "address error" from the emulator after I added a small section of code.

I get the error after typing "include main" at the beginning of the Quartus session. I removed all references to the new section of code from the main program, and it still crashed. So, I removed the "needs newcode" line from the app. This stopped the crash.

Since the newcode section runs fine outside the overall app, I am starting to think that maybe my app is just getting too big. Is there a maximum size for an app?



By [David Slay](#) on Thursday, November 30, 2000 - 08:12 pm: [Edit](#)

Disregard the previous post. I am starting to learn that really bonehead mistakes (such as an if without a then) are easier to find:

1. By someone else after you give up
2. After you post a really stupid question on a discussion forum.

Sorry for the disturbance. A friend found the obvious mistake of an if without a then.



By [Neal Bridges \(Nbridges\)](#) on Friday, December 1, 2000 - 12:15 am: [Edit](#)

Glad you found the problem, David. safe.txt helps find such things, too.

Neal



By [Daryl Lee \(Daryl\)](#) on Monday, December 4, 2000 - 10:33 am: [Edit](#)

David: You're right about the effect of posting a question. That's why it saves a lot of time to post the really "stupid" questions earlier on in the process. I've never seen anyone criticized on this forum for asking, and I've given plenty of opportunity. And I concur in using "safe", so much so that I've included it in my standard "test" memo, that I use as a controller for all my development activities.

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MathLib and IEEE floating-point libraries now available!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): MathLib and IEEE floating-point libraries now available!



By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 28, 2000 - 06:49 pm: [Edit](#)

For those needing extended-precision floating-point numbers -- Chapman Flack has contributed library code that gives Quartus Forth applications direct access to all the IEEE math functions in Palm OS 2.0 and greater, as well as all MathLib functions.

<http://quartus.net/files/PalmOS/Forth/Contrib/>

Excellent work. Thanks, Chapman!

Neal



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 29, 2000 - 11:37 am:

I'm working with Chapman's code now; it works fine from the console but there are some quirks for stand-alone apps. I'm just going through to resolve those issues now. Stay tuned!

Neal



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 29, 2000 - 11:47 am:

Bug caught and killed; new MathLib file will be posted in a few hours. The problem: absolute addresses were being calculated at compile time, instead of at run-time.

Thanks for your patience! What they say is true, some bugs are never found until the code is released. 😊

Neal



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 29, 2000 - 11:46 pm:

The MathLib file is updated! Now in the Contrib file area.

Let me know how it goes with this new library code.

Neal



By [Dave Bennett \(Dbennett\)](#) on Friday, December 15, 2000 - 09:01 am: [Edit](#)

Can someone post a sample of how to use this stuff? I'm designing a new app that'll require trig functions: specifically

MG = Mitre Guage

BT = Blade Tilt

N = Number of sides

S = Slope of sides in degrees

$\tan MG = 1 / (\cos S * \tan(360/2N))$

$\tan BT = \cos MG * \tan S$

$\tan BT = \cos MG / \tan S$

Thanks.

Dave



By [Trevor Steele](#) on Friday, December 15, 2000 - 09:36 am: [Edit](#)

Hi Dave

Here is a library from Neal to which I have added fsin, fcos and ftan. It saves the overhead of MathLib but precision is limited, though adequate for most purposes.

```
\ ftrig 4/28/99 1:39 pm NAB

: f+u ( u -- ) ( F: r -- r+u ) 0 d>f f+ ;

: f*u ( u -- ) ( F: r -- r*u ) 0 d>f f* ;

: FATAN ( r -- arctan )
  fdup ( F: r r )
  fdup fdup f* fswap ( F: r r^2 r )
  1 20e f* f>d drop abs 14 +
  ( 1 count )
  0e ( F: r r^2 0 )
  do ( F: r r^2 val ) ( -- )
    \ val=(i*i*r^2)/(i+i+1+val):
    i 2* 1+ f+u ( F: r r^2 tb )
    fover i i * f*u ( F: r r^2 tb ta )
    fswap f/ ( F: r r^2 ta/tb )
  -1 +loop ( F: r r^2 val )
  fswap fdrop ( F: r val )
```

```

\ val=r/(1+val):
1e f+ f/ ( F: arctan ) ;

: FASIN ( r1 -- r2 )
  fdup fdup fnegate f*
  1e f+ fsqrt f/ fatan ;

57.2957795130823e fconstant radsize

: deg>rad ( deg -- rad ) radsize f/ ;

: rad>deg ( rad -- deg ) radsize f* ;

6.283185307e0 fconstant 2pi

: fsin ( f: r -- f: r )
  fdup 2pi f/ f>d d>f 2pi f* f- fdup
  fdup fdup f* fswap
  -1 16 0 do
    fover f* i 2 * 3 + dup 1- * over *
    s>d d>f f/ frot fover f+ frot frot
  loop fdrop fdrop drop ;

: fcos ( f: r -- f: r )
  fsin fdup f* 1e0 fswap f- fsqrt ;

: ftan ( f: r -- f: r )
  fdup fsin fswap fcos fdup f0= if
  fdrop fdrop 9e18 else f/ then ;

```

Best regards

Trevor



By [Neal Bridges \(Nbridges\)](#) on Friday, December 15, 2000 - 06:05 pm: [Edit](#)

Here's a simple Mathlib example that performs tan(.45):

needs MathLib

```

MathLibInit
.45e f>sf sf>df
dftan

```

```
df>sf sf>f fs.  
MathLibDone
```

Note the float, .45e, is converted first to a single-precision IEEE float, and then to a double-precision float, and then DFTAN is called from the MathLib; the result is then brought back down from a double-precision float to a single-precision float, and then to an internal Quartus Forth float for display. You could certainly wrap DFTAN this way and create FTAN:

```
: ftan ( F: r1 -- r2 )  
  f>sf sf>df dftan df>sf sf>f ;
```

Then:

```
.45e ftan fs.
```

Neal



By [Neal Bridges \(Nbridges\)](#) on Friday, December 15, 2000 - 07:21 pm: [Edit](#)

Bear in mind, for the above ftan to work, you'd have to first do MathLibInit, and later MathLibDone.

Neal



By [Dave Bennett \(Dbennett\)](#) on Saturday, December 16, 2000 - 10:06 am:

[Edit](#)

Thanks Trevor & Neal,

I'll play with this throughout the week and see how it goes.

Dave

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Floating Point Precision / Exponents

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Floating Point Precision / Exponents



By [Barry Ekstrand \(Ekstrandbb\)](#) on Tuesday, November 28, 2000 - 09:46

am: [Edit](#)

Neal,

In working on my next program, I have a need to make a series of calculations. I found that my final answer was off slightly from that calculated either by my trusty HP-17B or by an Excel spreadsheet (both of which agree with each other). In trying to find the source of the inaccuracy, I've traced it to my use of floating point exponent calculations from the FEL library. Results show I lose accuracy in the 5th or 6th decimal place, which is a real problem. Here is my test program:

```
\ exptest
```

```
needs fel
```

```
fvariable i1
fvariable i2
fvariable i3
fvariable i4
```

```
: format ( d -- c-addr u )
\ formatting routine to give 8
\ decimal places on output
tuck dabs
<# # # # # # # # [char] . hold #s rot sign #>
;
```

```
: calc
1e-1 1.2e1 f/ 1e0 f+ fdup
1.2e2 fx^y i1 f!
120 fx^n i2 f!
5e-3 1e0 f+ fdup
1.2e2 fx^y i3 f!
120 fx^n i4 f!
;
```

```
: show
i1 f@
\ Multiplies by 100000000 for display formatting and add .5 to round from the 9th
decimal place
1e8 f* 5e-1 f+
f>d format cr type cr
i2 f@
1e8 f* 5e-1 f+
f>d format cr type cr
i3 f@
1e8 f* 5e-1 f+
```



```
f>d format cr type cr
i4 f@
1e8 f* 5e-1 f+
f>d format cr type cr
;

: run
calc
show
;

run
```

As you can see, I tested both the fx^y and fx^n words. Results are as follows:

```
i1 = 2.70703168
i2 = 2.70703968
i3 = 1.81939264
i4 = 1.81939536
```

Based on the equivalent calculations in Excel, the expected results would be:

```
i1 = i2 = 2.70704149
i3 = i4 = 1.81939673
```

Since this calculation is an intermediate step in my overall calculations, the error gets magnified as the result is multiplied by large values.

Shouldn't the precision of the calculation be higher than what I'm seeing, or am I recalling previous discussions about it wrong? In any case, I do need more accuracy in this step than I'm getting, so I'm wondering if you have any ideas I can try?

Barry



By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 28, 2000 - 09:48 am: [Edit](#)

I believe you're up against the precision of the internal floating-point format. I'm about to post something that'll improve that situation quite a bit; stay tuned.

Neal



By [Jim Purdy](#) on Tuesday, November 28, 2000 - 11:34 am: [Edit](#)

I would like a bit of tune-up in the precision, if possible.

Sounds great.

Jim



By [Barry Ekstrand \(Ekstrandbb\)](#) on Tuesday, November 28, 2000 - 01:40 pm: [Edit](#)

Neal,

It's good to hear a solution is coming. I can continue working on the rest of my program, but I won't be able to release it until I have the improved precision calculation in it - not to put more

pressure on you, but as soon as it is available, I'll be happy to put it to use. :-) I'm looking forward to it.

Thanks,

Barry

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New in Forth

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): New in Forth



[Edit](#)

By [Kostas Manetakis \(Kostas\)](#) on Tuesday, November 21, 2000 - 10:15 pm:

Hi guys,

I have downloaded Quartus Forth and I am playing with it for a couple of days now. I like the idea of a native compiler on the Palm, without the need of a complicated IDE on the PC. However, I am new in both Forth and the Palm OS, so I would appreciate some feedback on books/sites that may help me. My programming experience is not that great, but I have done some stuff with both C and Assembly before, so I guess it will be easy to catch up.

Thanks

Kostas



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 22, 2000 - 11:14 am:

You'll want to download the free Palm OS SDK documentation, in PDF format, available from <http://www.palmos.com>. It details all of the Palm ROM functions.

There are introductory Forth materials linked from the 'online references' section of the Quartus Forth manual. The File Area here at Quartus.net contains a number of complete sample apps, ranging from simple to complex. And this Discussion Forum, both the archives and the new material added daily, is a useful resource.

Neal



By [Michael Curtis](#) on Wednesday, November 22, 2000 - 12:17 pm: [Edit](#)

Kostas,

I've only been using Quartus for a couple of months, but here's some of the more helpful resources I've found.

I'm using a book called Starting Forth to learn Forth. I've had it since college (15 years or so), so I don't know if or where you can locate it today, although I think

I've seen some mention of it here on the discussion boards. It's a bit out dated, but it covers the basics well and has a playful style that I enjoy.

Check out the file Tutorial-v1.02.zip in the contrib folder of the files area. It'll get you rolling on simple forms based applications in no time. It uses the OnBoard RsrcEdit program heavily, which I highly recommend.

I also have a copy of 'Palm Programming: The Developer's Guide' from O'Reilly that I find useful, even though all of the examples are in C.

Good luck,
MJC



By [Steve Bohrer \(Skb\)](#) on Wednesday, November 22, 2000 - 07:56 pm: [Edit](#)

['Palm Programming: The Developer's Guide'](#) is available on-line.



[Edit](#)

By [Dave Bennett \(Dbennett\)](#) on Sunday, November 26, 2000 - 09:59 am:

The "Forth Programmer's Handbook" by Conklin & Rather is a recent book that I've found very helpful.



[Edit](#)

By [Kostas Manetakis \(Kostas\)](#) on Sunday, November 26, 2000 - 11:46 pm:

Guys thanks a lot for your feedback and suggestions! 😊

Are you aware of any site with information on the Palm hardware internals (circuit diagrams etc.)

Thanks

Kostas



By [Dmitry Yakimov](#) on Monday, November 27, 2000 - 11:37 am: [Edit](#)

Hello,
I'm professional forther (www.forth.org.ru) and now I'm going to palm os and palm pc. Everybody are invited to palm programmers and user group at http://egroups.com/group/sw_palm (not only forth - the only forther in this group am I)

And I've started my own palm os forth...

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M68K-specific Words

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): M68K-specific Words



By [Kris Johnson \(Kdj\)](#) on Tuesday, November 21, 2000 - 06:49 pm: [Edit](#)

I've started defining some words that make it easy to optimize code for the M68K processor without needing to use CODE definitions.

For example, the following defines words that allow a programmer to use the ADDQ, ADDI, SUBQ, and SUBI processor instructions to do simple arithmetic with constant values:

```
\ m68k-addsub  00-11-21  KDJ

\ M68K opcodes
(hex) 5047 constant addq.w.d7
(hex) 0647 constant addi.w.d7
(hex) 5147 constant subq.w.d7
(hex) 0447 constant subi.w.d7

\ Move 3-bit value to bits 9-11
: >qdata ( n -- 0000xxx0000000000 )
  7 and 9 lshift ;

\ The following words all have
\ these stack effects:
\
\ Compilation: ( n1 -- )
\ Run-time:    ( n2 -- n1+n2 )

: addq
  >qdata addq.w.d7 or cs,
; immediate

: addi
  addi.w.d7 cs, cs,
; immediate

: subq
  >qdata subq.w.d7 or cs,
; immediate

: subi
```

```

    subi.w.d7 cs, cs,
; immediate

: literal+
    dup 0= if
        exit
    else dup 8 < if
        ['] addq execute
    else
        ['] addi execute
    then then
; immediate

: literal-
    dup 0= if
        exit
    else dup 8 < if
        ['] subq execute
    else
        ['] subi execute
    then then
; immediate

```

The **LITERAL+** and **LITERAL-** words automatically use the "quick" instructions for values from 1 to 8, and the "immediate" instructions for other values. (And do nothing if try to add or subtract zero.)

Note that these words consume arguments at compilation time. So, for example, here's how you'd define a word that adds six to the number at the top of the stack:

```

: add6 ( n -- n+6 ) [ 6 ] literal+ ; inline

```

This example compiles the single instruction "addq.w #6,d7". This is better than what you get from compiling "6 +", which would be the three instructions "move.w d7,-(a4); moveq.l #6,d7; add.w (a4)+,d7".

-- Kris



By [Kris Johnson \(Kdj\)](#) on Tuesday, November 21, 2000 - 06:53 pm: [Edit](#)

Oops. In the definitions of **LITERAL+** and **LITERAL-** above, replace "8 <" with "9 <".

-- Kris



By [Kris Johnson \(Kdj\)](#) on Tuesday, November 21, 2000 - 07:05 pm: [Edit](#)

And change "exit" to "drop" in LITERAL+ and LITERAL-.

-- Kris

(Geez, I really oughta check my code BEFORE posting it, rather than after.)



By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 21, 2000 - 09:58 pm: [Edit](#)

Interesting work, Kris.

In my case, I find that with a native-code Forth, that sort of 'programmer does the optimizing' approach usually isn't required. If an app doesn't run fast enough when its done, I'll profile it and find out where it's spending most of its time -- where the bottleneck is -- and then go in and optimize just that one part.

With Quartus Forth, because it compiles to native code, I've never had occasion to do that, but that's the technique I'd recommend. Hand-optimization of generated native code can net you a speedup factor of anywhere from 1.5 to 2.

Neal



By [Kris Johnson \(Kdj\)](#) on Wednesday, November 22, 2000 - 09:20 am: [Edit](#)

I think it was Donald Knuth who said "Premature optimization is the root of all evil." In general, I agree with that. When I'm writing code professionally, with budgets and deadlines, I go with the simple, straightforward approach. Like you say, it's generally unnecessary to hand-optimize things. If you have decent algorithms, then micro-optimizations don't improve things much, and if your algorithm is bad, then micro-optimizations aren't going to save you.

But I've also been reading Chuck Moore's stuff, and he is a proponent of making things as efficient as possible, even when they are already good enough. I don't plan to go to the extremes that he has, but it's fun to play around with the ideas.

I haven't gotten around to it yet, but I want to implement my own STRUCT-like word that uses the m68k-addsub words above. For code that uses lots of structures, I think use of the ADDQ/ADDI words could shrink the code and speed things up quite a bit.

-- Kris



By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 22, 2000 - 09:23 am:

[Edit](#)

That STRUCT idea is clever; then the performance enhancment would be

inherent in the STRUCT itself.

Neal



By [Kris Johnson \(Kdj\)](#) on Wednesday, November 22, 2000 - 06:37 pm: [Edit](#)

Here are some words that provide access to the ROL (Rotate Left) and ROR (Rotate Right) instructions, which rotate bits of a byte or cell:

```
\ m68k-rolr 00-11-22 KDJ
\ Rotate Bits Left and Right

(hex) 3007 constant move.w.d7.d0
(hex) e17f constant rol.w.d0,d7
(hex) e07f constant ror.w.d0,d7
(hex) e13f constant rol.b.d0,d7
(hex) e03f constant ror.b.d0,d7
(hex) e15f constant rol.w.#,d7
(hex) e05f constant ror.w.#,d7
(hex) e11f constant rol.b.#,d7
(hex) e01f constant ror.b.#,d7

\ Move 3-bit value to bits 9-11
: >rodata ( n -- 0000xxx0000000000 )
  7 and 9 lshift ;

\ Rotate left
: rol ( x1 n -- x2 )
  [ move.w.d7.d0 cs, ]
  drop
  [ rol.w.d0,d7 cs, ]
; inline

\ Rotate right
: ror ( x1 n -- x2 )
  [ move.w.d7.d0 cs, ]
  drop
  [ ror.w.d0,d7 cs, ]
; inline

\ Rotate byte left
: crol ( c1 n -- c2 )
  [ move.w.d7.d0 cs, ]
  drop
  [ rol.b.d0,d7 cs, ]
; inline
```

```

\ Rotate byte right
: cror ( c1 n -- c2 )
  [ move.w.d7.d0 cs, ]
  drop
  [ ror.b.d0,d7 cs, ]
; inline

: literal-rol
\ Compile-time: ( n -- )
\ Run-time:      ( x1 -- x2 )
  >rodata rol.w.#,d7 or cs,
; immediate

: literal-ror
\ Compile-time: ( n -- )
\ Run-time:      ( x1 -- x2 )
  >rodata ror.w.#,d7 or cs,
; immediate

: literal-crol
\ Compile-time: ( n -- )
\ Run-time:      ( c1 -- c2 )
  >rodata rol.b.#,d7 or cs,
; immediate

: literal-cror
\ Compile-time: ( n -- )
\ Run-time:      ( c1 -- c2 )
  >rodata ror.b.#,d7 or cs,
; immediate

: lrol [ 1 ] literal-rol ; inline
: lror [ 1 ] literal-ror ; inline
: lcrol [ 1 ] literal-crol ; inline
: lcror [ 1 ] literal-cror ; inline

```

The LITERAL-ROX words only work for rotations of 1-8 places.

-- Kris



By [Kris Johnson \(Kdj\)](#) on Wednesday, November 22, 2000 - 06:44 pm: [Edit](#)

I should note that these words I'm defining only work with the Motorola 68K Family processors and the current implementation of Quartus Forth. If Neal changes the implementation of Quartus Forth such that it no longer uses register D7 to hold the top item of the data stack, then these will all break.

Also, note that my ROL, ROR, CROL, and CROR instructions trash the D0 register. As Quartus Forth's SWAP instruction trashes D0, I assume that's an acceptable thing to do.

-- Kris



By [Kris Johnson \(Kdj\)](#) on Wednesday, November 22, 2000 - 07:40 pm: [Edit](#)

As discussed earlier, here is a redefinition of FIELD that takes advantage of the Add Quick and Add Immediate instructions:

```
\ fastfield 00-11-22 KDJ

needs struct
needs m68k-addsub

: u>string ( u -- cadr u )
  0 <# #s #> ;

: field ( uS uF "fieldname" -- uS+uF )
  pad 0
  s" : " append
  parse-word append
  s" [ " append
  3 pick u>string append
  s" ] literal+ ; inline" append
  evaluate
  + ;
```

For example, this:

```
needs fastfield
struct
  1 cells field >test1
  2 cells field >test2
  2 cells field >test3
  1 cells field >test4
end-struct test
```

will produce the following definitions:

```
: >test1 [ 0 ] literal+ ; inline
: >test2 [ 2 ] literal+ ; inline
: >test3 [ 6 ] literal+ ; inline
: >test4 [ 10 ] literal+ ; inline
```

each of which compiles to a single ADDQ or ADDI instruction. STRUCT, END-STRUCT, and SIZEOF continue to work as before.

-- Kris

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String> field questions

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

String> field questions



By [Chris Bucsko](#) on Tuesday, November 21, 2000 - 04:18 pm: [Edit](#)

I have a couple of questions on string>field. The first is about the err which is returned by the word. I was under the (mistaken) expression that if you ran your uncompiled program in the Forth environment, then the throw would be handled by the QF error handler (i.e. if it's successful then throw is just like drop). But when I enter the following code, I get an 'Exception 1 raised' window, followed by a 'Fatal error - object not in form' reset.

```
:Show-Log  
s" This is a test" myfieldID String>Field throw ;
```

However, if I change the throw to drop, it works fine.

The second question is about the difference between string>field and WinDrawChars. I am trying to get my database records displayed on a form's fields with the following code:

```
:Show-Log  
  RecIndex dbP 2@ DmQueryrecord  
  2dup 2>r MemHandleLock  
  RecLen myFieldID String>Field drop  
  2r> MemHandleUnlock throw ;
```

RecIndex and RecLen are just integers, dbp is a database pointer. If I type this code into QF by hand, and replace the string>field word with x and y coords and WinDrawChars, I get the right stuff. Is there a Font variable I should set for raw database records? The ascii versions of the records look ok in rsrcredit. Any help would be appreciated.



By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 21, 2000 - 05:35 pm: [Edit](#)

Re your first question:

<http://www.quartus.net/discus/messages/23/293.html?FridayMarch1020000127pm#POST1770>

As for the second -- what problem are you seeing?

Neal



By [Chris Bucsko](#) on Wednesday, November 22, 2000 - 10:10 am: [Edit](#)

Thanks for the first link, I've saved it for future reference. (I knew I saw it somewhere, I just couldn't think where.) The second error I'm getting is some garbage characters where blanks should be, and small boxes where the real characters should be. I also seem to be leaving something on the stack, which I don't leave if I don't execute the word.




By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 22, 2000 - 12:26 pm: [Edit](#)

string>field doesn't take a 32-bit string address. It takes a 16-bit address. For your purposes, the simplest thing to do is make a new string>field. Here's one that might work (untested):

```
: farstring>field ( c-addr. u fieldID -- Err )  
  >r rot rot r> GetObjectPtr
```

```
2dup FldGetTextLength 0 2over
FldDelete FldInsert ;
```

Neal

 By [Chris Bucsko](#) on Wednesday, November 22, 2000 - 04:23 pm: [Edit](#)

Ok, thanks again, that gets me on my way. I think I know where to look. I tried inserting a >rel word after MemHandleLock, but no luck. Seems to me that should work. It 'cleans up' the stack, but the address is still wrong. How come??

 By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 22, 2000 - 04:29 pm: [Edit](#)

>REL only works to turn a 32-bit address in dataspace back into a 16-bit address, for instance, one produced using >ABS. It won't work on addresses in storage RAM and elsewhere.

A 16-bit address has a maximum range of +/- 32K, relative to a 32-bit base address.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Animation

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Animation



[Edit](#)

By [Richard Chamberlain \(Rac\)](#) on Sunday, November 19, 2000 - 01:15 pm:

Hi folks,

I want to try my hand at a little simple animation on my Palm.

Ideally I'd like to draw to an offscreen buffer and then copy the whole image to the screen. Firstly is this possible or is the overhead too great for the processor?

Secondly how do I do it? :-)

Thanks

Richard.



By [Neal Bridges \(Nbridges\)](#) on Sunday, November 19, 2000 - 01:51 pm: [Edit](#)

Have a look at jhclock.zip in the Contrib Area:

<http://www.quartus.net/files/PalmOS/Forth/Contrib/>

It does double-buffering animation to draw the clock hands.

Neal

Add a Message

Username: not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

List Events

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): List Events



By [David Slay](#) on Thursday, November 16, 2000 - 11:20 pm: [Edit](#)

I am trying to use a list resource to enter data into an application (list is constantly visible, not being used as a popup). However, I am not getting a `ctlselectevent` when an object in the list is selected. I read some previous posts where others were having similar problems, but I couldn't find a solution. Any suggestions?



By [Neal Bridges \(Nbridges\)](#) on Thursday, November 16, 2000 - 11:29 pm: [Edit](#)

David-- yes, I have an interim version that addresses exactly this problem. I am away from my primary terminal at the moment, but I shall try to get it to you soon.

If anyone reading has 1.2.6r right now on hand, please send it to David.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Forth Application Techniques

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Forth Application Techniques



By [Richard Chamberlain \(Rac\)](#) on Wednesday, November 15, 2000 - 01:51 am: [Edit](#)

Hi,

Just for everyones information I bought a copy of forth application techniques from forth.com. It's kind of a beginner's guide (boy do I need it: -). I've only had it 24 hours but it seems a really good book for those wanting to know the basics.

Richard



By [Kris Johnson \(Kdj\)](#) on Wednesday, November 15, 2000 - 08:39 am: [Edit](#)

I got a copy too. I was hoping for more-advanced stuff, but it is described as a beginner's guide and that's what it is. I would describe it as an updated "Starting FORTH", without the humor or the cartoons.

The chapter on multithreading was a little interesting, as that subject is not covered in other beginner's books. But as there are no standards for multithreading, the description is specific to SwiftOS and SwiftForth (FORTH, Inc. products).

-- Kris



By [Kris Johnson \(Kdj\)](#) on Wednesday, November 15, 2000 - 08:47 am: [Edit](#)

One additional note about FAT: it is intended for use as part of a course, and is not intended as a standalone tutorial. Solutions are not provided for the exercises, and the text contains "rhetorical questions" and "things to think about" that are not really answered within the text.

So this book is not appropriate for absolute beginners who want to teach themselves. But if you know a little about Forth, or have someone available to help you out, then it's fine.

-- Kris



By [Richard Chamberlain \(Rac\)](#) on Wednesday, November 15, 2000 - 09:51 am: [Edit](#)

Actually the answers are provided for the questions at <http://www.forth.com/Content/fat/answers.txt>

Richard

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Help With Databases

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Help With Databases



By [Michael Curtis](#) on Monday, November 13, 2000 - 03:04 pm: [Edit](#)

I've been playing with db-example from the file library trying to learn database access. My biggest challenge has been trying to figure out how to read the string back out of the database created in db-example. Here's what I came up with.

```
: demor ( -- )
  DmModeReadOnly dbname
  OpenDB 2dup dbr 2!

  DmNumRecords
  dup cr s" There are " type .
  s" records " type
  0
  do
    i dbr 2@ DmQueryRecord
    2dup MemHandleSize d>s >r
    2dup MemHandleLock r>
    cr s" Record " type i .
    s" is: " type dtype
    MemHandleUnlock throw
  loop cr

  dbr 2@ CloseDB
;

\ displays a string from a 32 bit address
: dtype ( addr. u -- )
  0
  do
    2dup i m+
    c@a emit
  loop
  2drop
;
```

The word demor reads each record from a database (I modified the word demo in db-example to write several strings to the database), assumes it's a string and prints each string to the console. I created the word dtype because I couldn't figure out another way to read the string from the 32-bit pointer returned by the Palm functions. Did I miss a simple & obvious way of doing this or was it necessary to write a special word?

This all works, but I'd really appreciate any comments on whether this was a good approach or not. This is my first real attempt at programming in Forth and for the Palm OS.

Thanks,
MJC



By [Ron Doerfler](#) on Monday, November 13, 2000 - 04:50 pm: [Edit](#)

Hi,

Looks like the right approach. Just a couple of things:

I guess I would suggest that you verify that the record has not been deleted since the last Hotsync. If DmDeleteRecord or DmArchiveRecord was used by an app to delete a record, the record is marked for deletion (and reduced to record header size if not selected for archiving), but it still exists until the next hotsync. Until that time it is still counted in the total number of records. (DmRemoveRecord removes it immediately, but this cannot be used for apps that have a desktop conduit to track records, such as the MemoPad app.) You can use the deleted-record? word below and loop through all the records to get a count of undeleted records, and then later test each record for non-deletion before listing its contents.

Hmm, I just learned something. I was going to suggest that you verify that the handle returned by DmQueryRecord is not null (0.), which would indicate that the record does not exist, and I found from the docs that it will also return null if the record is deleted.

DmQueryRecord: "Returns record handle, or 0 if record is out of range or deleted."

So you can just check for deletion this way as well as existence. Nice apps like MemoPad move deleted records to the end of the index range and then shift all the other records to fill in the opening in the indices, but you can't expect all apps to do this for their records, so there may be gaps.

I'm still appending the deleted-record word below because if you do a DmGetRecord, it doesn't say in the docs that it would return a null if the record is deleted, so you should check it.

Also, if you are just reading a record, I don't believe you have to lock it--just query it to get a handle and then read it. Maybe others can correct me if I'm wrong on this (I usually lock it anyway unless I'm just finding the size).

As far as typing a string from an absolute address, I don't know of another way without using MemMove to move the string to a text buffer you create with a 16-bit address, and then typing that, which doesn't make much sense here.

Ron

```
(hex) 80 constant deleteMask
```

```
variable attrP
```

```
: get-recordattr
```

```
( index dbref. -- attr )
```

```
2>r >r 0. 0. attrP >abs r> 2r>
```

```
DmRecordInfo drop attrP @ ;
```

```
: deleted-record?
```

```
( index dbref. -- delflg )
```

```
get-recordattr deleteMask and ;
```



By [Michael Curtis](#) on Monday, November 13, 2000 - 11:23 pm: [Edit](#)

Ron,

thanks for your comments. I knew I was neglecting to validate the handle, but I completely overlooked checking for deleted records. Thanks for the code & the hint on DmQueryRecord.

Thanks,
MJC



By [Steve Bohrer \(Skb\)](#) on Tuesday, November 14, 2000 - 12:12 am: [Edit](#)

Always lock a handle before you try to access the chunk it is a handle to. Remember that a handle is a pointer to a pointer to your data, and locking it gets you the pointer to the actual chunk of data. So, until it is locked, you can't fetch your data.

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Shareware applications

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Shareware applications



[Edit](#)

By [Richard Chamberlain \(Rac\)](#) on Friday, November 10, 2000 - 05:05 pm:

Hi,

I'm 85% of my way through the first application that I would like to release as shareware. What is the easiest way I can add somekind of protection. i.e. a code that I can send people based on their hotsync name, or something of that nature.

Any ideas would be appreciated,

Richard



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Friday, November 10, 2000 - 05:09 pm:

The simplest method is to generate a code based on the user's HotSync name (see the UserName function to retrieve this). The generated code is entered into the app and stored on the user's device (perhaps as a preference), and then when the app runs, it checks the code against the HotSync name of the device.

Neal



[Edit](#)

By [Erwin Schomburg \(Esc\)](#) on Saturday, November 11, 2000 - 07:50 am:

Make two versions, one with a countdown timer disabling the app after the trial period, one unlimited version for the registereds. If its worth a cent or two, it will be cracked in no time anyhow, so why bother to spend effort on individual reg-keys and bookkeeping for them? You'll get money only from the honest folks, either way, but OTOH evaluations have shown that no nagging at all also turns in no money at all.

So now you have two points of view and can throw a coin. 8-)

/Erwin



[Edit](#)

By [Richard Chamberlain \(Rac\)](#) on Saturday, November 11, 2000 - 09:05 am:

I'll mull both ideas over. Originally I thought that I would compile a new version for each person's hotsync name.

I'm actually going to create a cut down freeware version anyway but if I wanted a trial version of the full version how would I store the countdown timer? If I store it as preferences if the user deletes and reinstalls would they delete the preferences to?

Richard



By [Erwin Schomburg \(Esc\)](#) on Saturday, November 11, 2000 - 01:36 pm: [Edit](#)

Yes, the preferences go when you delete the app. But deleting and re-installing is a willful act and costs only slightly less power of resistance than to go hunting for the cracked version proper. Elaborate keying and unlock schemes are just simply not worth the effort. But thats just my humble opinion.

/Erwin



By [Edin Hodzic](#) on Saturday, November 11, 2000 - 02:03 pm: [Edit](#)

I have a single binary that encodes user name and compares it with an encoded name stored in the program. If they match it runs, if not, the program allows 50 games and then just posts registration information.

I have a tool on the PC that encodes new user name and modifies the binary with it. This way I don't have to recompile for each registration. The tool is rather simple, and the whole scheme works well for me.

Clearly it is not very hard to crack it, and as mentioned, if you just delete and reload the application you have 50 games again. However, you might need to reload on the road, when you would need the time killer most...

Edin Hodzic



By [Barry Ekstrand \(Ekstrandbb\)](#) on Monday, November 13, 2000 - 09:53 am: [Edit](#)

I've been down this path with my apps as well. I went to the countdown timer and a registration code based on the Hotsync name but found that a small number of users couldn't make codes work, apparently because their Hotsync name was different than as reported (probably included spaces or capitalization differences).

I finally went back to 2 versions, one for evaluation and one for registered users. The evaluation version uses Erwin's countdown timer to give a 14-day period to try the program out. The registered version has the timer disabled.

One other benefit of this approach is I spend a whole lot less time than I did when I had to generate a code for each person. I suppose PalmGear could have done it for me, but I was generating codes and sending to each user that

registered. Now PalmGear distributes the registered version directly when someone registers, and I follow up with a thank you note. Urgency is a bit lower than when a user is waiting for their code after paying.

Barry Ekstrand



By [Barry Ekstrand \(Ekstrandbb\)](#) on Monday, November 13, 2000 - 09:59 am: [Edit](#)

One last thought: you can store the apps preferences under a different creator ID (obviously, it also must be registered with Palm) so they survive the deletion and reinstallation of an app. This keeps the evaluation timer from being reset. As Erwin says, any mechanism for stopping the use of an app can be hacked. This method works for the majority of folks, who just need a gentle reminder to register if they want to continue to use it.

Barry Ekstrand



By [Travis Casey \(Travis\)](#) on Monday, November 13, 2000 - 10:19 am: [Edit](#)

However, storing the preferences under a different creator ID also means that if the user decides *not* to keep your program, that they'll be stuck with some of their Palm memory being taken up by that.

It may not seem like much, but imagine if every application you ever installed, tried for 10 minutes, and decided you didn't want did that.

Personally, I boycott any software which tries to permanently eat some of my storage in such a way. Developers have a right to be paid for their work, but I do not believe that that gives a right to permanently use up part of someone else's computer resources.

--Travis



By [Ron Doerfler](#) on Monday, November 13, 2000 - 11:30 am: [Edit](#)

I have separate evaluation and registered versions, myself. My evaluation versions are limited in some function, as I don't use a timeout mechanism at all. As I understood it from Handango awhile ago, and I don't believe it's changed, they cannot handle two versions unless you specify the application as "commercial," which I don't want to do because it sounds expensive. So I have to designate it as "Author Shareware," and I get email when someone buys it and I have to send the registered version by email. PalmGear handles two versions automatically, though.

My recent shareware applications are relatively cheap, which is my only real defense against thievery. I used to manually go into RsrcEdit and set the copy

protection bit for the registered version of the app so it couldn't be beamed without a third-party app like BeamBox, but I don't even do that anymore. I sell only a modest number of my apps (~ 50 each for my last two, with a couple a week coming in), although I don't release updates every week like some authors--I just posted my first update of any of my three apps I've done.

Ron



By [Edin Hodzic](#) on Monday, November 13, 2000 - 12:33 pm: [Edit](#)

Yes, beaming is one important part of it, I think. When someone beams my registered application to another Palm, it turns into demo on that other Palm...

Edin Hodzic



By [Ron Doerfler](#) on Tuesday, November 14, 2000 - 12:00 pm: [Edit](#)

Hi Edin,

Can you describe generally how you do this? It sounds like a neat idea. I can imagine storing whatever username there is in the app database and then seeing if it suddenly changes...

Thanks!

Ron



By [Barry Ekstrand \(Ekstrandbb\)](#) on Tuesday, November 14, 2000 - 02:11 pm: [Edit](#)

Ron,

Here is some code, originally from Neal if I remember right, to read the Hotsync Username from the device the program is in:

```
\ create a variable to hold the length of the
\ username string
variable namelen
```

```
\ create a buffer to hold the username string, up
\ to 40 characters long
create namebuf 40 chars allot
```

```
\ code to read and store the hotsync username and
\ string length
: username ( --- )
```

```
0. 0. namebuf >abs 0. 0. 0.  
DlkGetSyncInfo drop  
namebuf dup >abs StrLen  
  namelen ! drop  
;  
  
\ read the username, then display it  
username  
namebuf namelen @ type
```

Once you have it stored you can manipulate it to create a registration code if you desire so. My experience was that it took a lot more maintenance than anticipated to help some folks through the process of entering registration codes, but others may have better luck.

On that subject, one thing I would do different if I were to go the registration code route again would be to convert the Username to all upper- or all lower-case, so if folks report their username capitalization wrong it wouldn't matter. This, along with variances in how spaces were used, seemed to be the main source of difficulty that a minority of folks had.

Hope this helps,

Barry Ekstrand



By [Ron Doerfler](#) on Tuesday, November 14, 2000 - 02:58 pm: [Edit](#)

Thanks, Barry!

This also enables me to tell if the username changed from the initial installation if I store it originally when my database is created on a device the first time the program runs. I assume that when an app is beamed, associated databases with the same Creator ID are beamed automatically (this seems to be true), and if so I can tell that the app was beamed and revert to demo mode. Anyway, that's my thought.

Cheers,

Ron



By [David](#) on Tuesday, November 14, 2000 - 03:16 pm: [Edit](#)

I thought I would add my twenty bucks here. Which ever method you choose, do NOT tie the registration code to the machine ID. One such developer did this very thing. If the the machine breaks, and you have it fixed (or buy a new one) and the developer disappears, the customer is out of luck because the ID won't

match. I guess it was great to have the program for 3 months. My loss.

Into the Forth dimension



By [Erwin Schomburg \(Esc\)](#) on Tuesday, November 14, 2000 - 04:30 pm: [Edit](#)

Ron, no, associated preferences and/or databases are not beamed automatically across units in the standard process. However, there is no way to prevent explicit beaming of data(bases) via tools such as Z'Catalog.

/Erwin



By [Doug Philips \(Dgou\)](#) on Tuesday, November 14, 2000 - 05:12 pm: [Edit](#)

Demo/trial request: This has been interesting. As a user, I'd like to toss out a request/idea. I'm not against have a time-based demo, so long as it is the time the app is used, not wall clock time. I had a demo of TinySheet. Sync'ed it over. Fired it up to see if it would work. Ok, dint crash instantly, so I moved it into Flash (Visor 8Mb module), and fired it up there. Nope it dint crash there either... time passes, life gets interesting, hmmm, oh yeah, TinySheet... Fire it up, "its been more than 30 days..." GRRRR. I don't even care what trivial functionality it disabled, I trashed it.

Just my buck-two-fitty,
-D'gou



By [Barry Ekstrand \(Ekstrandbb\)](#) on Tuesday, November 14, 2000 - 05:40 pm: [Edit](#)

D'gou,

You have an interesting perspective, and one I can relate to as well....but looking at it from the perspective of one who wants to gently remind those users who keep my programs to register so donations go to the Juvenile Diabetes Foundation (the recipient of my charitable shareware effort), I feel there is a need to be fair on both sides. In my case, I've settled on a 14 day, fully functional trial period, which seems plenty long enough to shake down my apps and decide. If the level of complexity in future apps is much higher, I would probably extend the time period. The bottom line, though, is this: there unfortunately appears to be a strong correlation with registrations and the need to register to maintain functionality. As you say, just my dos centavos on the subject. 😊

Barry Ekstrand



By [Doug Philips \(Dgou\)](#) on Tuesday, November 14, 2000 - 06:05 pm: [Edit](#)

Barry,
I don't object to the limiting of functionality, or the nagging of shareware. The point I was trying to make was that just starting a timer from the 1st run of the software is frustrating. My scenario is: Download/Sync software. Fire it up. If it crashes immediately, or within 60 seconds of playing with it, I trash it. Otherwise I put it into my Launch'Em 2 "eval" folder/tab and get back to it when I have the time/need to eval it (which is often not when I first do the "does it crash?" test).

I'm just asking that the time be measured actual use, instead of simple "days since user 1st ran me."

Thanks,
-Doug



By [Kris Johnson \(Kdj\)](#) on Tuesday, November 14, 2000 - 09:19 pm: [Edit](#)

I agree that calendar-time-limited demos are annoying. I'm like Doug--I download and install when I see something interesting, and then play with it several days/weeks/months later.

As a user, my preference is for nag screens or limited functionality until registration.

-- Kris



By [Richard Chamberlain \(Rac\)](#) on Wednesday, November 15, 2000 - 01:43 am: [Edit](#)

For everyones information I've decided to compile the user's hotsync name into my application. I do not think I'll have enormous demand but if for some strange reason I do I'll create a 1.1 version where the user can type in a registration code.

As for limiting the demo version I've written a metronome so I'm going to limit by the number of beats it will play before it quits. So you can play with all the features but it will just stop after a while.

On that subject if there are any musician's among the forum contributors and you want a metronome post me your hotsync name and I'll mail you a copy when it's finished (probably a couple or days or so).

Thanks for everyones suggestions,

Richard



By [Edin Hodzic](#) on Wednesday, November 15, 2000 - 01:52 am: [Edit](#)

Hi Ron, and others, here is my code for checking registration. It is taken directly

from my T3D application and hasn't been beautified :-):

A blank form that is used to print the registration message on:

1400 constant PassFormID

The encryption algorithm that is called to encrypt the username (username is the word Neal posted some time ago which retrieves hotsync name from the OS):

```
: encrypt ( a u -- )
  s" Encryption phrase goes here..."
  rot min for
  \ the encryption algorithm goes
  \ here, intentionally taken out
  next
  2drop
;

\ replacement for the buggy compare
: compare ( a u a2 u2 -- b )
  rot min for over c@ over c@ -
  dup if >r 2drop r> unloop exit then
  drop char+ swap char+ swap
  next 2drop 0 ;
```

The registration code. This is the string that gets changed by an external tool. The new string is generated from the registered hotsync name using the same encryption algorithm as the one used in the encrypt word:

```
: pass-code ( -- a c )
  s" T3Demo v1.0"
;
```

The main word used by the application to check for registration. It returns 0 for demo or 1 for registered. It also sets the variable demo to 1 or 0 appropriately.

```
: pass-ok? ( -- 0 | 1 )
\ 0 - demo, 1 - paid
  username 2dup encrypt
  pass-code over min
  compare
  0= if 1 0
  else 0 1 then
  demo ! ;
```


The word called by the application once demo period is over:

```
: pass-demo-expired ( -- )
  PassFormID showform
  boldfont font drop
  0 0 at
  ." T3D demo has expired! For more" cr
  ." information about the game" cr
  ." visit:" cr cr
  ."      members.home.net/ehodzic"
cr cr
  ." The game can be purchased" cr ." for $6.95  from:" cr cr
  ."      www.palmgear.com" cr cr
  ." or by contacting the author at:"
cr cr
  ."      ehodzic@home.com"
  begin key drop again ;
```

The application maintains demo count in the preferences (I initialized it to 50 in T3D). Demo count is decremented each time a game is completed. All the application does is:

```
pass-ok?
0= if
  demo-count @ 0 <= if
    pass-demo-expired
  then then
```

Clearly there are many ways to crack the protection, I hope it is not worth. I felt I didn't get too fancy with it. When I receive a registration, all I do is run my tool, paste the hotsync name into an entry and mail the new binary.

My external tool for updating the registration code in the binary is written in Tcl/Tk. I will be happy to share it if anyone is interested.

Edin Hodzic



By [Ron Doerfler](#) on Wednesday, November 15, 2000 - 02:18 am: [Edit](#)

Thank you very much, Edin. This will come in very handy.

Hmmm, another Tcl/Tk programmer... I would be interested in the code if you

wouldn't mind emailing it to my email address above. _Please_ delete details of your encryption algorithm before you send it. I can make an algorithm up--I'm mostly curious how you stuffed it into the binary.

Ron



By [Mark Browne \(Markbrowne\)](#) on Wednesday, November 15, 2000 - 04:29 am: [Edit](#)

Just a comment on limiting functionality in demos - the reason that I bought DateBk3 (and now 4) is that it was fully functional for 1 1/2 months. Since I used it every day, this was time enough for me to decide that I could not do without it. If it had been crippled, I probably would not have even tried it - it could be one of the missing functions that causes me to say "Wow, this is just what I need."

On the subject of time-limitation, I did exactly what Doug did with TinySheet, and have still not gone back to it, even though I think that it would be really useful, because I can no longer test it at my leisure. A usage count would have been much more useful.



By [Jim Hendricks \(Jimh\)](#) on Wednesday, November 15, 2000 - 08:07 am: [Edit](#)

If you want an example of a fairly reasonable timer, check out Bill Kirby's Soko-Ban. It counts days used. If I open it today, play with it, shut it down, start up later in the day, it is still 1 day count. If I open it today, then open it again in another week, it's a 2 count. This is interesting in that it is not a true usage count, nor a true timer, but a marriage of the two.

Jim



By [Hans Nordstrom](#) on Wednesday, November 15, 2000 - 04:19 pm: [Edit](#)

If you are interested in some other approach to register software, I suggest you look up Regaid and Regcode at Palmgear HQ.

Regaid is a free application that you can enclose with your application. It's purpose is to give the username an unambiguous presentation.

Regcode has the same purpose as above. It also has some outlines how to generate user code.

Both of these utilities might bring some ideas to a solution, about the wish to generate some monetary feedback.

About the argument that a shareware author disappears, for any reason. I don't quite see that as the big problem, towards throttling an application. My impression is that a lot more applications has warped out because of "added" features from a vendor.

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Beaming: Now Working! J

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Beaming: Now Working! J



By [Wade Carlson](#) on Friday, November 10, 2000 - 03:35 am: [Edit](#)

I told you I wouldn't give up on this. Anyways, I tried using Debuffer to see why the Exchange Manager wasn't working. Indeed, it was destroying A4. I tried using Steve Bohrer's callback fix, but I couldn't get it to work (perhaps because ExgPut is not a callback? or perhaps I'm just too slow to figure it out). As a mental exercise, I probably should have pursued it more, but I came up with an even better fix. I've created a small 3K applet with CodeWarrior that can be called from your app transparently to do the beaming for you. The nice thing about this route, is that it also accepts launchcodes on the other end to accept the beaming. I will post my applet and a Quartus wrapper as soon as I get it generic enough to be used for the masses! Thanks for everyone's help!



By [Steve Bohrer \(Skb\)](#) on Friday, November 10, 2000 - 10:08 am: [Edit](#)

Wade,

Sounds like the helper app is a good fix; I look forward to seeing it.

But, can you elaborate on your Exchange Manager debugging? At what stage in the process were you seeing the changed A4 value? Are you seeing a changed value in one of your words which is called by the OS, (a callback function), or is it changed after a call to an OS function that returns?

The Palm OS calling conventions say that every function must restore the values of any registers it changes other than "scratch" registers D0,D1,D2 and A0,A1. Also, A7 is the stack pointer, and A5 is preserved by the OS as a pointer to a block of globals.

So, for normal OS functions, it is no problem what registers they use, as they put everything back when they are done. The only special case should be a callback, because we call an OS function that then calls us.

Thus, the OS function saves and changes A4, then calls our Quartus word, which needs to restore a Forth data stack at A4, or else it will die when it executes. On exit, our word must follow the same rules, and restore any registers it changed before returning to the OS. The OS function would then restore the registers it used, thus restoring the original Quartus A4 data-stack pointer.

So, except for the case of a Quartus word being called by the OS, you should never see an a changed value in A4 while your Quartus code is executing.

Again, I'm probably still confused because in my reading of simple beaming (I haven't actually tried it, though!) it seems that a callback is not needed. So, when is A4 getting mangled?



By [Wade Carlson](#) on Saturday, November 11, 2000 - 11:35 am: [Edit](#)

Steve

Here's my code that should set up for beaming but that changes the A4 value and crashes:

```
\ ExgMgr 10/15/00 6:12 pm WDC
needs ids
needs zstrings
needs DataMgr

create ExgSocketPtr 60 allot
ExgSocketPtr 60 0 fill

: ex:target ExgSocketPtr 6 + ;
: ex:count ExgSocketPtr 10 + ;
: ex:length ExgSocketPtr 14 + ;
: ex:goToCreator ExgSocketPtr 26 + ;
: ex:dbCardNo ExgSocketPtr 30 + ;
: ex:dbID ExgSocketPtr 32 + ;
: ex:recordNum ExgSocketPtr 36 + ;
: ex:uniqueID ExgSocketPtr 38 + ;
: ex:description ExgSocketPtr 48 + ;
: ex:name ExgSocketPtr 56 + ;

: breakpoint [ (hex) 4e48 cs, ] ; inline

: go
[id] memo ex:target 2!
1. ex:count 2!
cardnum @ ex:dbCardNo !
z" MemoDB" drop >abs
cardnum @ DmFindDatabase ex:dbID 2!
1 ex:recordNum !
z" Test Memo data" drop >abs ex:description 2!
z" Test.txt" drop >abs ex:name 2!
breakpoint
ExgSocketPtr >abs ExgPut
breakpoint
\ Followed by calls to ExgSend and ExgDisconnect
\ but it crashes before here
;
```

Using debuffer, you can check the value of A4 before and after the call to ExgPut. Maybe it restores A4 after it is done calling ExgDisconnect, but from within Quartus you can't get that far.

P.S. Erwin, if your out there. I'm getting 'just written to memory location zero (NULL)' when returning from SysAppLaunch when launching my codewarrior applet. I'm using a launch code of 12 as you suggest and saving the active form before and restoring it afterwards. Did you ever figure out the problem with certain applications being launched?



By [Wade Carlson](#) on Saturday, November 11, 2000 - 02:38 pm: [Edit](#)

Erwin, never mind that last message. I found out I was getting the error because I was leaving the Result Pointer for SysAppLaunch set to NULL. After setting it to a variable, no problems.

Anyways, my Beam Manager applet is ready for the masses! It can be downloaded here [BeamMgr.zip](#)

Here's the Quartus wrapper:

```
\ BeamMgr 11/7/00 WDC
needs zstrings
needs core-ext
needs toolkit
needs ids

create BeamBuf 68 allot
2variable Btmp

: do-beam
( z-desc len z-name len Crid. )
BeamBuf 68 0 fill
Btmp 2!
Btmp BeamBuf 4 move
32 min BeamBuf 4 + swap move
32 min BeamBuf 36 + swap move
true 68 BeamBuf >abs 1 0 [id] BMgr
PrefSetAppPreferences
z" BeamMgr" drop >abs
0 DmFindDatabase
2dup or if
2>r Btmp >abs 0. 32768 0 2r> 0
SysAppLaunch drop
else 2drop
\ Recommend adding an Alert msg
\ since BeamMgr.prc not present:
\ NoBMgrAlert FrmAlert drop
then ;

\ : example
\ z" Test description"
\ z" Testfilename"
\ [id] Test
\ do-beam ;
```

Usage should be fairly straightforward. See the text file in the Zip file for more info. All the sources are included in the Zip file. Hopefully Neal will post this in the file area as well.



By [Wade Carlson](#) on Wednesday, November 15, 2000 - 11:00 pm: [Edit](#)

If anybody is interested, I have converted the BeamMgr applet into an Image Resource that can be added to your compiled app. That way, your user only has to install 1 file. On startup of your app, you check if BeamMgr is present, and if it's not you call DmCreateDatabaseFromImage to create it on the fly.

Also, I've found that the above needs to be changed to the following to avoid errors with databases:

2>r Btmp >abs 0. 32768 4 2r> 0
SysAppLaunch drop



By [Steve Bohrer \(Skb\)](#) on Wednesday, November 15, 2000 - 11:28 pm: [Edit](#)

This seems like a very elegant way to deal with helper applets. Can you describe the process for converting the applet into an Image Resource?



By [Erwin Schomburg \(Esc\)](#) on Thursday, November 16, 2000 - 12:25 am: [Edit](#)

Wade, sorry, I haven't followed this thread too closely. Its best to use a LaunchFlags value of 0x0C (12)for SysAppLaunch calls from Quartus apps. If this fails, i.e. needs to be tweaked for the call to succeed, something ist fishy. If the reason lies in the called 3rd party application, there is not too much one can do about it.

/Erwin



By [Wade Carlson](#) on Thursday, November 16, 2000 - 07:19 am: [Edit](#)

Erwin, what I have found out is that the only time you need to use 12 (instead of 4) is if the app being called includes a FrmCloseAllForms in it's application shutdown sequence (that's because it'll also close the Quartus forms that's doing the calling). My Codewarrior applet purposely does NOT include FrmCloseAllForms, that way I can call it only with the new global variables flag (4) and have it 'pop up' from within your Quartus app with it appearing as if you never left. It's quite neat! I agree, though, if you are calling another application that you don't know what it does, you should use a 12.

Steve,

according to the the Palm OS Docs, your Desktop development application is supposed to help you do this. Quite frankly, I couldn't find it anywhere. Probably because it's only supposed to be used for the Palm ROM applications anyways. An image resource is the exact same format as it is on your desktop. I found an application called TCFI for my TRG pro that takes desktop files (even non-palm files) and converts them to a palm file temporarily so that they can be moved to my flash card. Even if you don't have a TRG Pro, you could still use the desktop part of it. It creates a Palm database (non-resource) with the second record being the exact image of the desktop file. You then read the the string in and then save it to a new RESOURCE database. Heres some short code that will convert the string to a resource once TCFI has installed the new file on your palm.

```
\ Imager  
needs DataMgr  
needs zstrings  
needs ids  
include stackshow
```



```
variable index
2variable dbr
2variable dbr2
```

```
: convert
dmModeReadOnly z" Filename.PRC"
OpenDB dbr 2!
1 dup index ! dbr 2@ DmQueryRecord
MemHandleLock 2dup
```

```
true [id] DATA [id] Test
z" TestRes" CreateDB
DmModeReadWrite z" TestRes"
OpenDB dbr2 2!
2dup MemPtrSize 2dup
1000 [id] DBIM dbr2 2@
DmNewResource
2dup 2>r
MemHandleLock 2>r
2swap 0. 2r@ DmWrite throw
2r> MemPtrUnlock throw
2r> DmReleaseResource throw
dbr2 2@ CloseDB
```

```
MemPtrUnlock throw
0 index @ dbr 2@ DmReleaseRecord
throw
dbr 2@ CloseDB ;
```

Hopefully that makes sense. You can then use RsrcEdit to cut and paste the Image Resource to wherever it needs to be. This technique could also be helpful to people who have to have users install several 'modules' for their program. They could all be part of one program that is 'unzipped' per say on startup.



By [Wade Carlson](#) on Thursday, November 16, 2000 - 07:23 am: [Edit](#)

oops, in the above code, leave out the `include stackshow` line. That is just some debugging code that I accidently left in there.



By [Steve Bohrer \(Skb\)](#) on Friday, November 24, 2000 - 09:18 pm: [Edit](#)

Wayne,

Thanks for the tips on getting code into resources.

I tried out your [Quartus beaming code](#), which crashed your system, and it ran fine on both POSE and my IIIe. I was surprised about POSE, as I thought it did not handle beaming.

On both POSE and my real device, I used the debug "loopback" shortcut for testing: enter "shortcut-char . t" to enable loopback, and reset device to end it. (As a test, the loopback lets you beam your business card to yourself!)

With loopback active, this test code successfully beams text into the memo pad on the same device. (Without the loopback, POSE was unable to find anyone to beam to. No surprise, I guess!) On my real Palm, I beamed the text to a friend's

Palm.

To clarify the A4 situation: in the case of a callback, the OS may put an entirely different value into A4, so our Forth stack pointer is not available. In the case you saw above, A4 changed by 2 bytes because there was more stuff on the stack after the ExgPut call: the error result. This value was pushed by the Forth wrapper for the ExgPut systrap. If you looked with Debuffer at the register values just before and after the actual OS trap, you would see that A4 was unchanged by the OS routine.

Notes on my sample:

This code just beams a constant string to memo pad, thus, it is useless as anything beyond a proof-of-concept: Quartus code can indeed call the Exg Manager. (Your helper applet is a better solution, because it can receive beams, which Quartus can't do until Neal gets us start codes.)

I think the "Goto" fields of the ExgSocket struct are only used on the receiver side, although it does no harm to set them on the sender. Your code works both ways, but for the example here I've done only the bare minimum. I use a file name ending with .txt to select Memo Pad as the receiver.

Each of the Exg words returns an error value, but I just stack them up and then print them out at the end. Real code should test the result of ExgPut, and should not call ExgSend if there is an error.

Also, real code should test the bytes-sent value returned by ExgSend, and be prepared to call ExgSend in a loop until all the data is sent. Since I was sending only a short string, I did not do this.

Finally, the delay after sending lets me see the results in loopback mode. After a successful send, Quartus swaps out to Memo Pad as soon as it gets back to its event loop.

```
\ ExgMgr 10/15/00 6:12 pm WDC  
  ( hacked into a simple test. SKB )
```

```
needs ids  
needs zstrings  
needs DataMgr
```

```
create ExgSocketPtr 60 allot  
ExgSocketPtr 60 0 fill
```

```
: ex:description ExgSocketPtr 48 + ;  
: ex:name ExgSocketPtr 56 + ;
```

```

variable sendErr \ result of exgSend

: sendStr ( -- byteCount. )
  sendErr >abs
  s" Walk before you run." 0 rot >abs
  ExgSocketPtr >abs
  ExgSend ;

: doExg
  z" Test Memo data" drop >abs
  ex:description 2!
  z" Test.txt" drop >abs ex:name 2!
  ExgSocketPtr >abs ExgPut
  sendStr
  sendErr @ ExgSocketPtr >abs
  ExgDisconnect ;

: .results ( err cnt. err -- )
  ." ExgDisconnect Err: " . cr
  ." ExgSend Err: " sendErr @ . cr
  ." Byte cnt: " drop . cr
  ." ExgPut Err: " . cr
  ;

: go
  doExg
  .results
  ." delaying 5 seconds..."
  500. sysTaskDelay drop
;

```



By [Wade Carlson](#) on Saturday, November 25, 2000 - 04:29 pm: [Edit](#)

Nice work steve. I've learned a lot. I guess my error was that I was trying to check the value of the stack after calling ExgPut. It seems that you have to call ExgSend and ExgDisconnect IMMEDIATELY after calling ExgPut. As soon as launch codes are working, we will be ready to go! For now, I'll continue using my BeamMgr applet.

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SetLabel Problem

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): SetLabel Problem



[Edit](#)

By [Richard Chamberlain \(Rac\)](#) on Thursday, November 9, 2000 - 05:34 pm:

Hi,

I'm having trouble with a stubborn button. I'm trying to change it's text with the following code:

```
: string2zstring ( addr u -- 32addr ) 2dup + 0 swap c! 1 chars + drop >abs ;  
  
: setButtonLabel string2zstring ctlStart SetLabel ;  
: stopLabel ( -- ) s" Stop" setButtonLabel ;  
: startLabel ( -- ) s" Start" setButtonLabel ;
```

stop works, but start doesn't. :-(

And below User Pattern 1 works but the others do not.

```
case  
mnuUser1 of 1 handleUser s" User Pattern 1" setButtonLabel endof  
mnuUser2 of 2 handleUser s" User Pattern 2" setButtonLabel endof  
mnuUser3 of 3 handleUser s" User Pattern 3" setButtonLabel endof  
mnuUser4 of 4 handleUser s" User Pattern 4" endcase ;
```

I'm confused!

Thanks

Richard



By [Neal Bridges \(Nbridges\)](#) on Thursday, November 9, 2000 - 07:44 pm: [Edit](#)

Use z" instead of s", removing the need to call your string2zstring, which wrongly assumes there is room past the end of each string to store the zero-byte delimiter.

With z", the zero-byte delimiter will be placed there for you.

needs zstrings

Neal



By [Kris Johnson \(Kdj\)](#) on Thursday, November 9, 2000 - 07:58 pm: [Edit](#)

Also, when using SetLabel, remember that the new label cannot be longer than the original string specified in the resource.

-- Kris



By [Richard Chamberlain \(Rac\)](#) on Friday, November 10, 2000 - 01:59 am:

[Edit](#)

Thanks, that works..

Kris the new labels are longer than the resource, what can I do to resolve that?

It seems to work, but is that just luck?

Richard



By [Kris Johnson \(Kdj\)](#) on Friday, November 10, 2000 - 06:47 am: [Edit](#)

My app consistently crashed the PDA until I increased the label size. But this was for "Label" controls--maybe the rules are different for buttons. Or maybe you're just lucky.

To resolve it, make the labels longer. I just put a bunch of spaces in the label. Another approach would be to use "XXXXXX" or something like that, but you need to make sure you change the label before displaying anything.

-- Kris



By [Dave Bennett \(Dbennett\)](#) on Friday, November 10, 2000 - 04:00 pm: [Edit](#)

I'm changing the labels on a button right now in an app. I know that there will never be more than 5 characters, but I put in the 5 physically largest characters and let RsrcEdit autoset the width so I'd have the physical screen size for whatever the label turns out to be. Since you're overwriting it anyways, it doesn't matter what you start with. Put in the longest value (XXXs as suggested above) and then initialize the button label in your initialization routine to the true beginning text.

Dave



By [Richard Chamberlain \(Rac\)](#) on Friday, November 10, 2000 - 05:03 pm:

[Edit](#)

Thanks Chaps,

It all works fine now.

Richard



By [Kris Johnson \(Kdj\)](#) on Friday, November 10, 2000 - 07:12 pm: [Edit](#)

The number of characters is what matters when using SetLabel. The width of the control doesn't matter (except aesthetically).

-- Kris

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Manipulating the Address app's database?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Manipulating the Address app's database?



By [Tammy Cravit \(Tammycravit\)](#) on Thursday, November 9, 2000 - 05:13 pm: [Edit](#)

I'm starting to work on my next Quartus application, and I need to figure out how to manipulate the AddressDB database. (I need to be able to read and change the value of a certain field in each record of the database). I looked at the C source code for the Address app, but I don't know how to do what I need in Quartus.

Can anyone point me in the right direction? Is there any sample code out there on how to do that? (I can figure out the DB access; what I need to know is how to take the data returned by DmGetRecord and identify/change the individual fields.)

Thanks,
Tammy



By [Neal Bridges \(Nbridges\)](#) on Thursday, November 9, 2000 - 05:18 pm: [Edit](#)

The 30,000-foot view: you will need to call DmWrite to modify the data. Knowing that, it's just a matter of determining which bits/bytes to change.

Neal



By [Ron Doerfler](#) on Friday, November 10, 2000 - 04:15 pm: [Edit](#)

My latest version of TeamFile (TeamFile 1.1, which can be found at PalmGear) allows the user to select a name from the Address Book to insert as a member of a "team." After that, if the user taps on the name and hits a phone icon, all the Address Book information for that person is displayed. So I had to be able to search and read all the Address Book data, although I never had to alter it. I had to go through the Address C-code as well to figure it out, and it wasn't much fun. The C-code goes through this process of unpacking and packing the record that I avoided. I gather that the packed record contains only the strings flagged in the header data, while unpacking it changed it into a common format where all fields, even empty ones, were available for reading and editing. I just used it "packed" as it is stored in the record.

Anyway, I've tried to extract out the Address Book lookup and display routines, along with some general purpose tools such as the text buffer routines I use to load some data strings into before writing them out (I use this text buffer memo_all_ the time!) and some open/close words that you seem to already have. The

code probably isn't totally standalone, but it may give you some information on how the Address database is laid out and an example of how to extract and display data into a text field on the display. I know you also want to edit the data.

Note that the phone labels are in English only, as I don't check to see if it is a German Palm or whatever. I avoided the other address differences (such as state, zip, etc.) by not giving labels to them.

Feel free to question or comment on the code.

Ron

```
\ buffer-ext2  073000 RWD
```

```
\ General text buffer routines  
needs toolkit
```

```
121 constant TSize
```

```
variable tptr
```

```
create tbuf TSize 0allot
```

```
: init-t ( -- )
```

```
\ Fill buffer with zeroes and init
```

```
\ text pointer to the beginning.
```

```
tbuf tptr ! tbuf TSize 0 fill ;
```

```
: tptr+ ( u -- )
```

```
\ Increment text buffer pointer.
```

```
tptr +! ;
```

```
: >t ( char -- )
```

```
\ Write character to text buffer
```

```
\ pointer position and increment
```

```
\ pointer.
```

```
tptr @ c! 1 tptr+ ;
```

```
: ,>t ( -- )
```

```
44 >t ;
```

```
: cr>t ( -- )
```

```
10 >t ;
```

```
: bl>t ( -- )
```

```
bl >t ;
```



```
: as>t ( a-addr. u -- )
\ Write string to buffer and increment
\ pointer into buffer.
dup >r s>d 2swap tptr @ >abs
MemMove drop r> tptr+ ;
```

```
: s>t ( c-addr u -- )
\ Write string to buffer and increment
\ pointer into buffer.
>r >abs r> as>t ;
```

```
: t>s ( -- c-addr u )
\ Convert buffer contents to string.
tbuf tptr @ tbuf - ;
```

```
: t>as ( -- a-addr. u )
\ Convert buffer contents to string.
t>s >r >abs r> ;
```

\ Database-Extracts 11/10/00 RWD

(hex) 80 constant deleteMask

```
: get-record ( index dbref. -- recptr. )
DmGetRecord MemHandleLock ;
```

```
: release-record
( dirtyflag index dbref. recptr.-- err)
MemPtrUnlock >r
DmReleaseRecord r> or ;
```

```
: get-recordattr
( index dbref. -- attr )
2>r >r 0. 0. attrP >abs r> 2r>
DmRecordInfo drop attrP @ ;
```

```
: deleted-record?
( index dbref. -- delflg )
get-recordattr deleteMask and ;
```

\ Address-Extracts 11/10/00 RWD

needs core-ext
needs zstrings

```

needs ids
( and probably needs others )

: open-addrDB ( -- )
z" AddressDB" dmModeReadWrite
[ID] addr [ID] DATA openDB
addrdbref 2! ;

: close-addrDB ( -- )
addrdbref 2@ closeDB ;

: ?open-addrrec ( -- successflag )
recindex @ addrdbref 2@
deleted-record? if false else
recindex @ addrdbref 2@
get-record addrrecptr 2! true then ;

: close-addrrec ( -- )
false recindex @ addrdbref 2@
addrrecptr 2@ release-record drop ;

: startaddr ( -- a-addr. )
\ Address record data address after headers.
addrrecptr 2@ 9 m+ ;

: next-string ( -- c-addr. u )
\ Gets parameters for next string
\ in Address record and moves ptr.
\ to start of the string after that.
recptr 2@ 2dup StrLen
dup 1+ 2over rot m+ recptr 2! ;

: load-addrinfo ( -- )
\ Loads data describing the contents
\ of the address record.
addrrecptr 2@ 2dup @a optionshi !
2 m+ 2dup @a optionslo !
2 m+ 2dup @a flagshi !
2 m+ @a flagslo ! ;

: phone-label ( u -- c-addr. u )
\ Stack value has phone label code
\ in lowest nibble.
(hex) 0f and cond
dup 0= if s" Work:  "
else dup 1 = if s" Home:  "
else dup 2 = if s" FAX:  "

```

```

else dup 3 = if s" Other:  "
else dup 4 = if s" Email:  "
else dup 5 = if s" Main:   "
else dup 6 = if s" Pager:  "
else dup 7 = if s" Mobile:  "
else s" "
thens rot drop swap >abs rot ;

```

```

: >afld ( c-addr. u -- )
\ Writes string in the field whose
\ pointer is given by afield.
rot rot afield 2@ FldInsert drop ;

```

```

: >afldline ( c-addr. u -- )
\ Writes string to field followed
\ by carriage return.
>afld init-t cr>t t>as >afld ;

```

```

: phone>line ( u -- )
\ Writes phone information to field.
\ Stack value has phone label code
\ in lowest nibble.
phone-label >afld
next-string >afldline ;

```

```

: data>afld ( -- )
\ Writes all Address Book information
\ to the display field after record
\ is opened.
load-addrinfo startaddr recptr 2!
init-t flagslo @
companyflag @ 0= if \ Name(s)
    dup 1 and if
        \ Last name.  Save to display after
        \ first name.
        bl>t next-string as>t
    then
    dup 2 and if
        \ First name.
        next-string >afld
    then
    \ Output stored last name.
    t>as >afldline
then
dup 4 and if
    \ Company
    next-string >afldline

```

```

then
dup 8 and if
  \ Phone1-Need label first
  optionslo @ phone>line
then
dup (hex) 10 and if
  \ Phone2-Need label first
  optionslo @ 4 rshift phone>line
then
dup (hex) 20 and if
  \ Phone3-Need label first
  optionslo @ 8 rshift phone>line
then
dup (hex) 40 and if
  \ Phone4-Need label first
  optionslo @ 12 rshift phone>line
then
dup (hex) 80 and if
  \ Phone5-Need label first
  optionshi @ phone>line
then
dup (hex) 100 and if
  \ Address
  next-string >aflldline
then
init-t dup (hex) 200 and if
  \ City -- begin single line of text.
  next-string as>t bl>t bl>t
then
dup (hex) 400 and if
  \ State in US
  next-string as>t bl>t bl>t
then
dup (hex) 800 and if
  \ Zip in US
  next-string as>t bl>t bl>t
then drop t>as >aflldline
\ Finish off all address record data
\ without outputting labels.
begin
  recsize @
  recptr 2@ addrrecptr 2@ d- d>s >
while
  next-string >aflldline
repeat ;

: load-address ( -- )

```

```

\ Write all address information
\ in record whose index is given
\ by recindex into a field with
\ a resource ID of 9102.
\ May be called after find-addr
\ locates a name and returns the
\ the proper record, as long as
\ find-addr returns a valid record,
\ which must be stored into recindex
\ first.

```

9102 FieldFocus

```

0 9102 GetObjectPtr 2dup
afield 2! FldSetInsertionPoint
recindex @ addrdbref 2@
size-record recsize !
?open-addrrec drop
data>afield close-addrrec
0 afield 2@ FldSetScrollPosition
false InsPtEnable
false afield 2@ FldSetUsable ;

```

```

: find-addr
( firstz-addr. lastz-addr. -- index | -1 )
\ Uses name strings stored in name
\ buffers whose absolute addresses
\ are given on the stack.
\ Finds record index of address for
\ the given first and last names, or
\ the first name if no last name is
\ given in the record, or the company
\ name, or -1 if not found.
companyflag >false
addrdbref 2@ num-records 0 do
  i recindex ! ?open-addrrec if
    \ Check last name.
    load-addrinfo startaddr recptr 2!
    flagslo @ dup 1 and if
      \ Last name exists.
      drop 2dup next-string drop
      StrCompare 0= if \ Match
        onenameflag @ if
          \ No first name in player field.
          2drop 2drop close-addrrec
          i unloop exit
        else flagslo @ 2 and if
          2over next-string drop
          StrCompare 0= if \ Match

```

```

        2drop 2drop close-addrrec
        i unloop exit
    then
    else
        \ No first name in Address Book
        2drop 2drop close-addrrec
        i unloop exit
    then then then
    else dup 2 and if \ First Name Only
        drop 2dup next-string drop
        StrCompare 0= if \ Match
            2drop 2drop close-addrrec
            i unloop exit
        then
    else 4 and if \ Company Only
        2dup next-string drop
        StrCompare 0= if \ Match
            2drop 2drop close-addrrec
            companyflag >true i unloop exit
        then then then then
    close-addrrec then
loop 2drop 2drop -1 ;

```



By [Ron Doerfler](#) on Friday, November 10, 2000 - 04:23 pm: [Edit](#)

I forgot to mention that no variables have been declared or anything in the above code, so it certainly cannot be compiled as it is--I thought it could be read as a general example of the control flow one would need.

Ron

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Username: name into the "Username" box and leave
the "Password" box empty. Your e-mail
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String termination help needed

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): String termination help needed



[Edit](#)

By [Dave Bennett \(Dbennett\)](#) on Thursday, November 9, 2000 - 12:44 pm:

I've written this function:

```
: setKbtnText ( -- )
  kBuffer 0
  kN @ 0 <# #s #> append
  s" /" append
  kD @ getDValue 0 <# #s #> append
  swap >abs
  kBtn SetLabel
;
```

This "works" except that the text does not end where I expect it to. If kN is 0 and kD is 8 my button text may end up a 0/8... With ... being a random set of characters.

How do I terminate the string after my last append?

Thanks.

Dave



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Thursday, November 9, 2000 - 01:28 pm: [Edit](#)

```
kD @ getDValue 0 <# 0 hold #s #> append
```

Should do the trick.

Neal



[Edit](#)

By [Dave Bennett \(Dbennett\)](#) on Thursday, November 9, 2000 - 02:47 pm:

Thanks, Neal! That did it.



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Thursday, November 9, 2000 - 02:51 pm: [Edit](#)

Glad to hear it. Working on a new app?

Neal



By [Dave Bennett \(Dbennett\)](#) on Friday, November 10, 2000 - 12:25 pm: [Edit](#)

Yeah, actually, this is the fourth one since my last "release". I did one of the Food Pyramid that turned out pretty well, but haven't released it publicly. I did one that converted fractional inch measurements into decimal inch and metric equivalents, mainly for my CNC Router work. This one should be finished over the weekend...

Dave

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Thanks for all the help.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Thanks for all the help.



By [Jim Purdy](#) on Wednesday, November 8, 2000 - 08:30 am: [Edit](#)

In order to thank Quartus Forth users on this board for all the help in developing my application, I am offering FREE registration codes for PalmStats 2.2 (a Quartus Forth Application).

Just E-mail me with your sync name and I will generate a code and get back to you.

You may download the software from my site below.

--- main page ---

<http://members.home.net/seisupport/index.html>

Please go to the Development Release Page and get Version 2.2 (release date 11/7/00)

Comments, complaints and/or encouragement are welcome.

Thanks Again, Jim



By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 8, 2000 - 11:18 am: [Edit](#)

A generous offer, Jim. That's a nice app.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

New Application: DieRoller

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): New Application: DieRoller



By [Tammy Cravit \(Tammycravit\)](#) on Tuesday, November 7, 2000 - 06:57

pm: [Edit](#)

Finally, at long last, I've finished the first release of my DieRoller program. This application, a port of a PocketC app I wrote by the same name, lets you roll multi-sided dice and sum the die rolls. (For gamers, it lets you roll 1-8 of d4/d6/d8/d10/d12/d20, or a single percentile roll).

The application and source code (including a "code at 50,000 feet" overview/tutorial), can be downloaded from:

<http://sourceforge.net/projects/palmdieroller>

Many thanks to everyone (especially Neal) for all the help and encouragement as I wrote this. I definitely plan to use Quartus Forth for future PalmOS development efforts.

Tammy



By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 8, 2000 - 11:17 am:

[Edit](#)

Congratulations, Tammy!

Neal



By [Tammy Cravit \(Tammycravit\)](#) on Wednesday, November 8, 2000 - 11:52

am: [Edit](#)

Neal,

Thanks! I really couldn't have done it without all your help and support (technical and moral *smile*).

If you want to download the code snapshot and add it to the file library, you're more than welcome to do so.

Tammy



By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 8, 2000 - 11:56 am:

[Edit](#)

Done -- thanks!

Neal

Add a Message

Username:

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Hardware Serial Number

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Hardware Serial Number



By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 7, 2000 - 05:22 pm: [Edit](#)

By request, here is a routine to retrieve the unique flash ID from devices that have flash memory. Let me know if it works for you.

```
\ flashid 00.11.7 5:17 pm NAB  
needs ids
```

```
: getflashid ( -- false | addr. len )  
  0 0. sp@ 2dup 4 m+ 2swap  
  [id] snum 0 41792 systrap  
  2drop 2drop 2drop drop  
  d0 drop >r  
  2dup c@a 255 = >r  
  2dup or 0= r> or r> or  
  if drop 2drop false  
  else rot then ;
```

Neal



By [Douglas Atique](#) on Thursday, November 9, 2000 - 09:24 pm: [Edit](#)

Hi, Neal.

It worked for me. I have a Palm V with OS 3.3.

I got 24582 4288 12 on my stack. How should I interpret that?

Regards,

Douglas

P.S.: BTW, do you have a newer Quartus Forth than 1.2.6R Build 2000.07.10 10:42:14pm? Could you send it to me? Thanks in advance...



By [Neal Bridges \(Nbridges\)](#) on Thursday, November 9, 2000 - 09:26 pm: [Edit](#)

As shown -- that's a two-cell (32 bit) string address, and a length (12). You can rearrange the values and use a do..emit..loop, or a WinDrawChars call to display the result.

Your 1.2.6R is up to date. Are you having a problem with it?

Neal



By [Douglas Atique](#) on Thursday, November 9, 2000 - 09:41 pm: [Edit](#)

No, in fact not. Just polling for news... :-). I might have read something about a newer version (or at least a more recent build, which I took for granted was a newer version) in one of the discussion threads. I read so many of them at once that I don't recall which it was.

Regards,
Douglas



By [Arthur](#) on Sunday, November 12, 2000 - 04:00 pm: [Edit](#)

Two questions and a remark:

1. Why not simply

```
needs ids
: getflashid ( -- false | addr. len )
  0. 0 sp@
  2dup 2 m+ [id] snum 0
  41792 systrap
  drop 2drop 2drop 2drop
  d0 drop
  if drop 2drop false
  then ;
```

which works well on a Palm V with OS3.3?

2. Even more simple would be

```
needs ids
: getflashid ( -- false | addr. len )
  0. 0 sp@
  2dup 2 m+ [id] snum 0
  HwrGetROMToken
  if drop 2drop false
  then ;
```

which does **not** work because HwrGetROMToken consumes two cells more than it is assumed to do (Quartus 1.2.6R). Therefore one has to fix it like

```
needs ids
: getflashid ( -- false | addr. len )
  0. 0 sp@
  0. 2swap
  2dup 2 m+ [id] snum 0
  HwrGetROMToken
```

```
if drop 2drop false
then ;
```

Is this a bug of Quartus?

3. Because the flash-id is read by a sysstrap it can easily be hacked. So be warned that what you get does not need to be the unique flash-id! If you want to play with it, here is a Hackmaster-hack using Neal's HackMaker:

```
\ FlashIDHack 12.11.00 0:51 Arthur
\ traps sysTrapHwrGetROMToken
```

```
needs zstrings
needs ids
needs asm68k
decimal
```

```
: name z" FlashIDHack" ;
: version z" 1.0" ;
```

```
(ID) A340 2constant crid
(hex) A340 constant trap#
(hex) a27b constant sysTrapFtrGet
(ID) snum 2constant token
1000 constant trapID
variable offsetStart
```

```
code trap
  prefix
  link -4 a6
  cmpi .l token 10 a6 d)
  0= if
    move .l 18 a6 d) a0
    move .w 12 # a0 )
    move .l 14 a6 d) a0
    cshare 2 + offsetStart !
    lea 0 pcd) a1
    move .l a1 a0 )
    moveq 0 d0
    unlk a6
    rts
  then
  pea -4 a6 d)
  move .w trapID # a7 -)
```



```

move .l crid # a7 -)
trap 15
sysTrapFtrGet cs,
move .l -4 a6 d) a0
unlk a6
jmp a0 )
cshere offsetStart @ -
offsetStart @ cs!
char A csc, char s csc,
char Y csc, char o csc,
char u csc, char L csc,
char i csc, char k csc,
char e csc, char I csc,
char t csc, char ! csc,
end-code

cshere ' trap - 4 - constant traplength

include HackMaker

```

Please make responsible use of it!

Arthur



By [Neal Bridges \(Nbridges\)](#) on Sunday, November 12, 2000 - 04:18 pm: [Edit](#)

Yes, I avoided calling HwrGetROMToken by name, as it consumes too many parameters. It'll be fixed.

You need to check for a starting 0, or 255 character, as some devices without a serial number nevertheless return such an invalid string (the Visor is one).

Neal



By [Arthur](#) on Sunday, November 19, 2000 - 07:00 am: [Edit](#)

A further remark and a question:

1. A more secure version which is not that easily hacked would be:

```

needs flashid
needs core-ext

```

```

(hex) 10C0AE7C. 2constant originalTrapAddress

```

```
\ ROM-address of HwrGetROMToken (Palm V)
(hex) A340 constant trapNo
\ trap number of HwrGetROMToken

: getflashidsecure ( -- false | addr. len )
  trapNo SysGetTrapAddress 2>r
  originalTrapAddress trapNo SysSetTrapAddress drop
  getflashid
  2r> trapNo SysSetTrapAddress drop    ;
```

This brings me to my question:

2. If I would want instead of systrapping to call a ROM routine directly, how would I best do it from Quartus Forth? My reason for asking so is less the "security" issue mentioned above, than performance reasons in time-critical applications. So instead of

```
trapNo systrap
```

I would like to perform

```
"jsr trapAddress #"
```

However, I assume I have to map data stacks and return stacks the right way and my hope is that somebody around here could tell me how to do so.

Thanks,

Arthur



By [Erwin Schomburg \(Esc\)](#) on Sunday, November 19, 2000 - 08:06 am: [Edit](#)

Bad idea, I'd say. The routines you are interested in might be at different addresses, depending on OS version, localization of OS version (languages), whether it is an originally delivered OS3.3 or 3.5 or an update to same, again with the localization differences on top....

/Erwin



By [Kris Johnson \(Kdj\)](#) on Sunday, November 19, 2000 - 09:38 am: [Edit](#)

If the trap address is looked up at run-time (not at compile/build time), then something like this should be safe. This was a performance trick for Mac OS (for 68000 processors, anyway).

-- Kris



By [Arthur](#) on Sunday, November 19, 2000 - 10:43 am: [Edit](#)

Exactly, this performance trick is what I mean! I will explain what I try to do by using C: Lets imagine you have a tight loop running like

```
\\ begin loop
...
result = PalmOSWhateverYouLike(arguments);
...
\\ end loop
```

You can enhance the performance in a **completely portable** way by using

```
tempPtr = SysGetTrapAddress(trapNoOfPalmOSWhateverYouLike);
theRealThing = ((ResultDataTyp(*) (ArgumentDataTypes))tempPtr);
...
\\ begin loop
...
result = theRealThing(arguments);
...
\\ end loop
```

My question was: how do I mimic this using Quartus Forth?

By the way, in the Palm OS manual (Palm OS 3.3) you can read the following comment about SysGetTrapAddress:

"Use this function for performance reasons. You can use the address it returns to call the function without having to go through the trap dispatch table. This function is mostly useful for optimizing the performance of functions called in a tight loop."

I hope this makes my question interesting.

Arthur



By [Steve Bohrer \(Skb\)](#) on Tuesday, November 21, 2000 - 01:10 am: [Edit](#)

The arguments that regular Forth code has pushed on the data stack are on a stack at A4, with the top word in D0.W .

Neal's SYSTRAP code stuffs the top word to the stack, and then swaps A4 and A7 so that all the parameters are where the OS expects them.

So, you could do that.

On the other hand, if you are in such a nastily tight loop, you might do well to just stuff the arguments directly to the A7 stack from a CODE word, rather than using normal Forth and then messing with the stacks.



By [Kris Johnson \(Kdj\)](#) on Tuesday, November 21, 2000 - 07:52 pm: [Edit](#)

Minor correction: the top stack word is in D7.W, not D0.W.

-- Kris



By [Steve Bohrer \(Skb\)](#) on Wednesday, November 22, 2000 - 12:14 pm: [Edit](#)

Right, thanks. Sorry for the error.



By [Arthur](#) on Thursday, November 23, 2000 - 11:12 am: [Edit](#)

Thank you Steve and Kris for the hints. I was able to solve the problem, however, the gain was not really impressive.

I have written a couple of words which might be interesting for those who have followed this discussion:

```
\ jsr 22.11.00 20:49 Arthur
```

```
needs asm68k
```

```
code switch-stacks    ( -- )
  ] dup [
    sp rp exg
end-code inline
```

```
code end-switch      ( -- )
  sp rp exg
  ] drop [
end-code inline
```

```
code a0!    ( addr. -- )
  tos swap
  sp ) tos .w move
  tos a0 .l move
```

```
] 2drop [  
end-code
```

```
code jsr-a0 ( i*j -- k*j )  
  a0 ) jsr  
end-code inline
```

\ Example of usage:
\ The following word replaces 'systrap'
\ if the absolute address instead of the
\ trap number is known. The absolute
\ address can be extracted at run-time
\ by using 'SysGetTrapAddress'.

```
: jsr-OS ( i*j addr. -- k*j )  
  a0! switch-stacks  
    jsr-a0  
  end-switch ;
```



By [Neal Bridges \(Nbridges\)](#) on Thursday, November 23, 2000 - 11:17 am:

[Edit](#)

This was my experience also -- that the speed gains for this sort of optimization were not impressive.

At any rate, very few applications written for the Palm are processor-intensive for any prolonged period; most of the time, the device sleeps while waiting for input from the user.

Neal



By [Neal Bridges \(Nbridges\)](#) on Thursday, November 23, 2000 - 11:19 am:

[Edit](#)

By the way -- nice code!

Neal

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More Tables

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): More Tables



By [Trevor Steele](#) on Tuesday, November 7, 2000 - 11:41 am: [Edit](#)

Neal

I have just finished a short explanation of implementing simple tables in Quartus Forth. It includes the source for tables with callbacks and Palm table resources (using Steve's callback fix which works very well) and for tables without Palm table resources. If you would like to include this in your file area I would be delighted to e-mail it to you. Let me know.

Best regards

Trevor



By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 7, 2000 - 12:14 pm: [Edit](#)

Please do sir!

Neal



By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 7, 2000 - 03:01 pm: [Edit](#)

Thanks Trevor -- it's in the File Area.

<http://quartus.net/files/PalmOS/Forth/Contrib/>

Neal



By [Chris Bucsko](#) on Thursday, November 9, 2000 - 03:22 pm: [Edit](#)

This looks like a great tutorial. I just downloaded it, and can't wait to 'take it apart'. But in your HTML file, you mention Quartus Forth 1.2.6R. I have 1.2.5R, and can't find any reference to 1.2.6R on the QF site. Is there a new official release? I know there were some problems with certain PalmOS systrips in 1.2.5R, but I always seemed to avoid them. What's the latest??



By [Neal Bridges \(Nbridges\)](#) on Thursday, November 9, 2000 - 03:26 pm: [Edit](#)

1.2.6R is the latest build. It's not officially released, but I'm happy to send it out to any registered users who want it.

I'm working like a dog to get 1.3.0 out. If you need 1.2.6R in the interim, drop

me a note, and I'll fire it off.

Neal



By [Chris Bucsko](#) on Thursday, November 9, 2000 - 04:41 pm: [Edit](#)

I certainly understand that. I took a look at the memos in tables.zip, and they look like they'll work in 1.2.5, except for the callbacks memo. If I have any trouble, I'll take you up on your offer, but odds are that you'll probably have 1.3.0 out before I get a chance to do this. Can anyone enlighten me as to what the callbacks function does? I'm looking just to write a simple app that builds tables and stores the data, like a spreadsheet, but without all the formula stuff.



By [Steve Bohrer \(Skb\)](#) on Thursday, November 9, 2000 - 11:29 pm: [Edit](#)

The callbacks memo should work fine with 1.2.5. I upgraded in the middle, so I never quite tested it on 1.2.5, but I don't think there were any significant differences. (Hopefully, by version 1.3.0 Neal will have patched up callbacks, so my memo won't be needed.)

A callback function is a piece of code that an OS routine calls to do part of its task in an application specific way. You call an OS routine to do some generic thing, like draw a table, and, after it figures out which cells actually need to be drawn, it calls your callback function to draw each one.

So, in Trevor's sample, the callback function drawCell is code that draws the row and column number and outlines the cell. The OS calls this code for each visible, active, cell. It passes a pointer to the table, the target screen coordinates, and the row and column number on the stack, in the parameter format needed by a C function. For a Forth callback function to deal with these C-style parameters, it needs to begin with my installCbStack and Neal's callback words, and then end with end-callback removeCbStack.

But, I think a callback function is only required if you make your table cells be of style "customTableStyle". There are also some "built-in" styles that the OS can draw by itself, without needing a callback. See chapter 8 of the on-line book "[Palm Programming: The Developer's Guide](#)" for a sample of the built-in table types. (But, I've never used a table, so I have no first-hand experience with this.)



By [Trevor Steele](#) on Friday, November 10, 2000 - 04:31 am: [Edit](#)

The callbacks memo will indeed work fine with Quartus 1.2.5R. The only problems I experienced was when users of devices with OS 3.5 such as the Palm IIIC complained that my app, which had been compiled under 1.2.5R originally, would not run on their devices. A change to 1.2.6R cured the problem. So specifying version 1.2.6R had nothing to do with any callback problems just to

avoid anyone suffering the difficulties that 1.2.5R can cause over different platforms.

Sorry if I caused you any confusion.

Best regards

Trevor



By [Chris Bucsko](#) on Friday, November 10, 2000 - 09:44 am: [Edit](#)

Thanks one and all!! This is very instructive. Perhaps I'll stick to the built in Table styles for now, since I have a IIIxe with PalmOS 3.5. However, thanks for that explanation of callbacks.



By [Chris Bucsko](#) on Friday, November 10, 2000 - 04:15 pm: [Edit](#)

Trevor, after some further research, I found the following code in:
<http://www.palmos.com/dev/tech/docs/devguide/TableOfContents.htm>

```
numRows = TblGetNumberOfRows (tableP);
for (i = 0; i < numRows; i++) {
    TblSetItemStyle(tableP, i, 0, textWithNoteTableItem);

    TblSetItemStyle(tableP, i, 1, numericTableItem);
    TblSetItemInt(tableP, i, 1, i);

    TblSetItemStyle(tableP, i, 2, checkboxTableItem);
    TblSetItemInt(tableP, i, 2, i % 2);

    TblSetItemStyle(tableP, i, 3, labelTableItem);
    TblSetItemPtr(tableP, i, 3, labels[i]);

    TblSetItemStyle(tableP, i, 4, dateTableItem);
    TblSetItemInt(tableP, i, 4, DateToInt(dates[i]));

    TblSetItemStyle(tableP, i, 5, textTableItem);
    TblSetItemInt(tableP, i, 5, i * 2);

    TblSetItemStyle(tableP, i, 6, popupTriggerTableItem);
    TblSetItemInt(tableP, i, 6, i % 5);
    TblSetItemPtr(tableP, i, 6, list);

    TblSetItemStyle(tableP, i, 7, narrowTextTableItem);
    TblSetItemInt(tableP, i, 7, i * 2);

    TblSetItemStyle(tableP, i, 8, customTableItem);
```

```
TblSetItemInt(tableP, i, 8, i % 4);
```

```
}
```

Does anyone by any chance have an enum structure for these different table items? It almost looks like the customTableItem value should be 8 (I think it should be 1), but I can't seem to find any explicit references in the PalmOS docs for table.h. I'm still a bit confused, I guess.



By [Neal Bridges \(Nbridges\)](#) on Friday, November 10, 2000 - 04:43 pm: [Edit](#)

This should do the trick:

needs toolkit

```
0 enum tableItemStyle
    tableItemStyle checkboxTableItem
    tableItemStyle customTableItem
    tableItemStyle dateTableItem
    tableItemStyle labelTableItem
    tableItemStyle numericTableItem
    tableItemStyle popupTriggerTableItem
    tableItemStyle textTableItem
    tableItemStyle textWithNoteTableItem
    tableItemStyle timeTableItem
    tableItemStyle narrowTextTableItem
```

Neal



By [Steve Bohrer \(Skb\)](#) on Friday, November 10, 2000 - 06:42 pm: [Edit](#)

Chris Bucko notes "but I can't seem to find any explicit references in the PalmOS docs for table.h".

In addition to the docs, you should download the [PalmOS SDK](#), which has all the C header files. In many cases, this source code IS the documentation. (It is helpful to have at least a reading knowledge of C.)



By [Neal Bridges \(Nbridges\)](#) on Friday, November 10, 2000 - 10:18 pm: [Edit](#)

Quite right. Not everything is in the Palm docs; the header files are a required reference.

Neal



By [chris bucsko](#) on Monday, November 13, 2000 - 10:07 am: [Edit](#)

Thanks once again for the jump start. You've both anticipated my next question, which was "where are these header files?" A working knowledge of C and

PalmOS is required here, and I thank everyone for their patience, as I have much to learn. I've gone back to the Palm site and picked up the file from this link - <http://www.palmos.com/dev/tech/tools/sdk35.cgi/sdk35-core.zip> which seems to have most of the source code, and header files. The advantage of this file is that it doesn't require you to install the code warrior plug-ins. Since I don't have code warrior, I was trying to avoid that. However, if the full install is better, I would appreciate knowing. Do most people just install the whole thing anyway??



By [Neal Bridges \(Nbridges\)](#) on Monday, November 13, 2000 - 11:19 am: [Edit](#)

You've got all the header files you need in that .zip -- no need to install anything else.

Neal



By [Kris Johnson \(Kdj\)](#) on Monday, November 13, 2000 - 05:10 pm: [Edit](#)

Is there any easy way to get the exact numeric values for all of the C enums in the SDK header files? I hate having to count line by line to determine the values, or to write out a long Forth enum like Neal's tableItemStyle example above.

(I suppose one easy way would be to write a C program that prints out a specific value. But I'd like an easier way.)

-- Kris



[Edit](#)

By [John McKeon \(Jmckeon\)](#) on Thursday, November 16, 2000 - 01:04 am:

I've been looking into the Pila assembler and noticed that most Palm OS constants are listed in an include file with the form:

```
constantName equ $XX
```

whereXX is the constant value. Perhaps this would be useful. Here is a link to the include file:

<http://palm.dahm.com/Palm3.inc>

Hope this helps

John



By [Kris Johnson \(Kdj\)](#) on Thursday, November 16, 2000 - 11:24 am: [Edit](#)

Yeah, that's perfect. Thanks!

-- Kris

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New Quartus App

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): New Quartus App



[Edit](#)

By [Richard Chamberlain \(Rac\)](#) on Tuesday, November 7, 2000 - 05:30 am:

Hi folks,

I've released my second quartus app - Harmonic Square 1.0.

I've been amazed how many people download both my applications. My guitar tuner has had over 2000 downloads now, and the Harmonic Square has 530 in 12 hours.

If anyone would like the source for either of them (if you're remotely interested then mail me and I'll post it back).

Thanks for everyone's help!

Richard



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 7, 2000 - 09:59 am: [Edit](#)

I'm always looking for sources to post in the File Area, Richard, if you want your sources to have that kind of exposure. Let me know.

Neal



[Edit](#)

By [Richard Chamberlain \(Rac\)](#) on Thursday, November 9, 2000 - 03:37 pm:

Hi Neal,

Did you get my files?

Richard



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Thursday, November 9, 2000 - 03:50 pm: [Edit](#)

Yes -- thought I'd acknowledged them. I will post them tonight.

Neal

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Setting Backup bit

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Setting Backup bit](#)



By [Daryl Lee \(Daryl\)](#) on Monday, November 6, 2000 - 08:48 am: [Edit](#)

I have an app that creates a database, and I want that database backed up. As nearly as I can tell, I have to call DmDatabaseInfo with thirteen parameters, set a bit in one of them, and then call DmSetDatabaseInfo with the same thirteen paramaters. Is there a simpler way? (I know I can set it manually with RscEdit, but I don't expect my users to do that.)

If not, how do I find out the value of dmHdrAttrBackup, which is the documented name of the flag I'm trying to set?



By [Neal Bridges \(Nbridges\)](#) on Monday, November 6, 2000 - 09:57 am: [Edit](#)

This thread may help:

<http://www.quartus.net/discus/messages/23/393.html?TuesdayApril420000809am#POST2602>

Neal



By [Daryl Lee \(Daryl\)](#) on Monday, November 6, 2000 - 10:42 am: [Edit](#)

Thanks. I had not noticed that NULL is an option for the attribute pointers I don't care about.



By [Ron Doerfler](#) on Monday, November 6, 2000 - 07:05 pm: [Edit](#)

Here's an implementation that is more focused on just backing up a database, without the extra general-purpose words.

Ron

```
\ dbname-ext3 051800 RWD
```

```
needs core-ext
```

```
8 constant dmHdrAttrBackup
```

```
2variable dbID
```

```
variable cardnumber
```

```
variable dbattr
```

```
: findopenDB ( dbref. -- )
```

```
\ Find database ID and memory card
```

```
\ number for an OPEN database.
```

```
2>r 0. cardnumber >abs 0. 0.
```

```
dbID >abs 2r>
```

```
DmOpenDatabaseInfo ;
```

```
: DBattr@ ( -- Err )
```

```
\ Gets database attributes and
```

```
\ places result in dbattr if Err=0.
```

```
\ Assumes findopenDB filled dbID
\ and cardnumber.
0. 0. 0. 0. 0. 0. 0. 0. 0. dbattr >abs 0.
dbID 2@ cardnumber @
DmDatabaseInfo ;
```

```
: DBattr! ( -- Err )
\ Sets database attributes.
\ Assumes findopenDB filled dbID
\ and cardnumber.
0. 0. 0. 0. 0. 0. 0. 0. 0. dbattr >abs 0.
dbID 2@ cardnumber @
DmSetDatabaseInfo ;
```

```
: openDBbackup ( dbref. -- Err )
\ Sets backup bit on OPEN database.
findopenDB dup 0= if \ Found
  drop DBattr@ dup 0= if \ Got info
    drop dbattr @ dmHdrAttrBackup
    or dbattr ! DBattr! \ Sets bit
  then
then ;
```



By [Neal Bridges \(Nbridges\)](#) on Monday, November 6, 2000 - 07:21 pm: [Edit](#)

Thanks, Ron!

Neal



By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 7, 2000 - 05:29 pm: [Edit](#)

Note that this same code can be used to set the other database attribute bits, such as the one that prevents beaming/copying.

Neal

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Range Tests

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Range Tests



By [Daryl Lee \(Daryl\)](#) on Thursday, November 2, 2000 - 05:03 pm: [Edit](#)

Some of you may be interested in this suite of range test words. The use of brackets and parentheses is from the world of mathematics. A bracket allows a test to pass if the test value is equal to the boundary value, and a parenthesis does not allow the test to pass if the test value is equal to the boundary value. Thus, for example, "2 2 4 [in]" leaves TRUE on the stack, but "2 2 4 (in]" leaves FALSE.

I think I may have seen these in Scientific Forth, but I'm not certain.

```
\ rangetests 10/29/00 DOL

: <= > invert ; inline

: rngprep ( n ll ul -- ll n n ul )
rot dup rot ;

\ all tests: ( n ll ul -- f )

: [in)
rngprep < >r <= r> and ;

: [in]
rngprep <= >r <= r> and ;

: (in)
rngprep < >r < r> and ;

: (in]
rngprep <= >r < r> and ;
```



By [Kristopher Johnson \(Kdj\)](#) on Friday, November 3, 2000 - 01:24 pm: [Edit](#)

I like these words. Thanks.

Question for everyone: for the definition of <=, would it be better Forth style to use 0= instead of INVERT? I know the result is the same, but it seems that 0= would be better for a Boolean flag.

Then again, the code generated using INVERT is shorter than that generated for 0=, so INVERT is better if we ignore the style issue.

-- Kris



By [Neal Bridges \(Nbridges\)](#) on Friday, November 3, 2000 - 02:06 pm: [Edit](#)

INVERT works fine to flip the value of a properly-formed boolean value, where true is all-bits-set, and false is 0 (no bits set). If your true value is anything other than all-bits-set, use 0= to flip it.

Neal

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Launching Applications ...revisited

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Launching Applications ...revisited



By [Jim Purdy](#) on Thursday, November 2, 2000 - 12:24 pm: [Edit](#)

I am using the following code segment to call a Quartus-written "module". Everything works fine...UNTIL...I try to call another function (local) which changes the form. A crash follows.

```
: Launch ( -- )
set-stored
dbID > abs
cardNo > abs
true creator 2@ type 2@
stateInfo > abs true DmGetNextDatabaseByTypeCreator
if
alertFrm FrmAlert drop
else
FrmGetActiveForm _frm !
result > abs
0. 0 12 dbID 2@ cardNo @
SysAppLaunch page
_frm @ dup FrmSetActiveForm
then get-stored drop ;
```

I seem to remember someone having to close all forms or something after a launch??

How about a hand on this one. By the way, this is OS 3.5H.



By [Jim](#) on Thursday, November 2, 2000 - 12:58 pm: [Edit](#)

I should mention, the crash occurs after retuning (successfully) from the call.



By [Neal Bridges \(Nbridges\)](#) on Thursday, November 2, 2000 - 02:36 pm: [Edit](#)

Is this discussion relevant to your problem?

<http://www.quartus.net/discus/messages/23/693.html?MondaySeptember420000643am#POST4383>

Neal



By [John McKeon \(Jmckeon\)](#) on Thursday, November 2, 2000 - 08:31 pm: [Edit](#)

I think your leaving alot of stuff on the stack. FrmGetActiveForm returns a 32 bit ptr so _frm should be a 2variable. sysAppLaunch returns a value so you need to drop it or throw it. Then put _frm 2@ frmSetActiveForm _before_ page and after drop/throw. The first thing you do after calling sysAppLaunch is restore the active form. Thank Erwin Schomburg for that.

HTH

John



By [Jim Purdy](#) on Thursday, November 2, 2000 - 09:25 pm: [Edit](#)

No luck yet, it seems the program only crashes when it tries to display another form the return. It is a Fatal Error with not much other Info.



By [Jim Purdy](#) on Friday, November 3, 2000 - 05:02 am: [Edit](#)

Is there ANY way to get around this "calling a module" thing.

After trying ALL the code snippets on the site etc.

I have come to the conclusion that...

no one really knows how to do this. AND it is VERY thinly documented everywhere.

I would like to use Quartus Forth for large applications, but I can't seem to call the modules correctly. At this point I don't know What to do...



By [Erwin Schomburg \(Esc\)](#) on Friday, November 3, 2000 - 05:25 am: [Edit](#)

I am considering to take personal offense in reaction to "I have come to the conclusion that... no one really knows how to do this. " 8-(

If calling your own, well behaving Quartus generated modules, there should not be a problem at all and not even the need to save and restore your active form. Else these your modules need a brushover. However, with some very few (3rd party) applications there is the issue of returning with locked and/or unfreed memory chunks, as well as with a window table destroyed in the roots (mostly secure password storage apps and other encryption stuff), paranoically overdoing wiping of its own traces. Most, but not all of this situations can be overcome by storing one's own active form pointer just before, and restoring it just after the launch call. The remaining rest will still cause a fatal on return. For my own purposes I managed to convince most authors of offending applications to successfully revise and update their stuff.

/Erwin



By [Neal Bridges \(Nbridges\)](#) on Friday, November 3, 2000 - 06:12 am: [Edit](#)

Jim, Erwin is definitely the one to follow here. While developing his FPLaunch software, he had to overcome this very issue.

Neal



By [Jim Purdy](#) on Friday, November 3, 2000 - 07:06 am: [Edit](#)

Sory if I sounded a little harsh.

I am VERY frustrated about this problem, it really has never been fixed. When I upgraded to the new

Handspring Platinum (OS3.5H), nothing seems to work!

Here is the code for the exact calling sequence..

```
variable result
2variable _frm
```

```
: clearstack depth 0 ?do drop loop ;
```

```

: Launch (  --  )
set-stored
dbID >abs
cardNo >abs
true creator 2@ type 2@
stateInfo >abs true DmGetNextDatabaseByTypeCreator
  if
alertFrm FrmAlert drop
  else
  FrmGetActiveForm _frm 2!
  result >abs
0. 0. 0 12 dbID 2@ cardNo @
SysAppLaunch clearstack
page _frm 2@ FrmSetActiveForm
then get-stored drop ;

+++++++ called module
  begin [' ] do-event catch
    byeThrow =
  until
  set-stored ;

```

Upon returning, you can not change forms without a crash.

I am considering re-writting the code using SysUIAppSwitch.



By [Erwin Schomburg \(Esc\)](#) on Friday, November 3, 2000 - 07:28 am: [Edit](#)

- 1) Your stack balance, i.e. parameter count before the call looks doubtful.
- 2) PAGE needs an active form to work its magic, you have already been told some messages up to restore the active form **before** calling PAGE.
- 3) You use TYPE as a 2variable (do you?), but TYPE is also a kernel word in Quartus.
- 4) You still haven't let us into the secret, which particular application you try to launch, maybe I or someone else could evaluate it separately to check how "clean" it returns. If I assume that the last part above is representing the "catch" word for the called module, it needs to re-throw the caught exception after dealing with it, not eat it.

/Erwin



By [Jim](#) on Friday, November 3, 2000 - 10:41 am: [Edit](#)

Thanks I'll take a closer look!

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Stupid Quartus Forth Tricks

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Stupid Quartus Forth Tricks



By [Kristopher Johnson \(Kdj\)](#) on Monday, October 30, 2000 - 11:00 pm: [Edit](#)

I thought it might be interesting for people to share some of the experimental and generally useless Quartus Forth code they've written. These should be programs or word definitions that may be entertaining, interesting or educational, but not useful enough to be added to the File Area. I enjoy reading little mini-programs, and would like to see what other people have done.

As an example, here's my implementation of the popular "Mirror" program. This simply fills the screen with black, turning your PDA into a small mirror or (with the backlight on) a nite-lite.

```
\ mirror 2000/10/17 KDJ
\
\ Copyright 2000 Kristopher Johnson
\
\ Permission is granted to use,
\ redistribute, or modify this code
\ for any purpose.
```

```
8 constant #Pat \ size of pattern
```

```
create BlackPattern
  #Pat chars allot
BlackPattern #Pat (hex) FF fill
```

```
\ Quartus Forth 1.2.5R's built-in
\ WinSetPattern definition is
\ incorrect, so we'll fix it here
: WinSetPattern ( &pattern. -- )
  (hex) A224 systrap 2drop ;

: set-pattern ( &pattern -- )
  >abs WinSetPattern ;

: fill-rect ( &rect -- )
  0 swap >abs WinFillRectangle ;

: form ( -- )
  BlankFormID ShowForm ;
```



```

: mirror ( -- )
  form
  BlackPattern set-pattern
  window-bounds fill-rect ;

: run ( -- )
  begin ekey drop again ;

: go ( -- )
  mirror run ;

\ mirror-make 2000/10/17 KDJ
\ Script for building KDJMirror app

needs mirror
needs ids

' go (id) KDJm MakePRC KDJMirror

\ Remove unneeded resources
MainFormID (id) tFRM delrsrc drop
TitledFormID (id) tFRM delrsrc drop
1000 (id) tAIB delrsrc drop
1001 (id) tAIB delrsrc drop

```

-- Kris



By [Kristopher Johnson \(Kdj\)](#) on Monday, October 30, 2000 - 11:09 pm: [Edit](#)

Here's a program that simply draws a bunch of flickering horizontal lines, a little like "static" on a television screen. Install this on a friend's PDA, start it, and then watch their reaction when they turn on the screen.

BTW, this program is probably not very good for your batteries.

```

\ flicker 00-10-19 KDJ
\
\ Draws flickering horizontal lines

\ Init random number generator
: seed ( -- )
  TimGetSeconds
  SysRandom drop ;

\ Return random number in range 0-159
: choose ( -- n )

```

```

0. SysRandom 160 mod ;

\ Convert given Y value to a
\ horizontal line
: >hline ( n -- n 159 n 0 )
  159 over 0 ;

\ Draw horizontal line at
\ given Y value
: hdraw ( n -- )
  >hline WinDrawLine ;

\ Erase horizontal line at
\ given Y value
: herase ( n -- )
  >hline WinEraseLine ;

\ Draw/erase a few lines
: lines ( -- )
  choose herase
  choose hdraw
  choose herase
  choose hdraw ;

\ Consume input event
: check-ekey ( -- )
  ekey? if ekey drop then ;

\ Main loop
: flicker ( -- )
  begin
    lines
    20 ms
    check-ekey
  again ;

: form ( -- )
  BlankFormID ShowForm ;

\ Entry point
: go ( -- )
  seed form flicker ;

\ flicker-make 00-10-19 KDJ
\ Script for building application
needs flicker

```

needs ids

```
' go (id) kdjF MakePRC Flicker
```

```
\ Remove unneeded resources
```

```
MainFormID (id) tFRM delrsrc drop
```

```
TitledFormID (id) tFRM delrsrc drop
```

```
1000 (id) tAIB delrsrc drop
```

```
1001 (id) tAIB delrsrc drop
```

-- Kris



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 11:34 pm: [Edit](#)

I like this one (enter the line exactly as shown):

```
\ counts 1..10 without compiling any code:
```

```
0 1+ dup . dup 10 = 35 and 2 + >in ! cr drop
```

Neal



By [Mark Beckman](#) on Tuesday, October 31, 2000 - 12:35 am: [Edit](#)

OK, here is one I've always liked.

Avoid using SHOW with a value over 7 on the stack

```
\ hilbert
needs turtle
: leap ( a b c -- a b c a)
  2 pick ;
: hilbert ( size level direction ---)
  over 0= if 2drop drop exit then
  dup -90 * turn
  leap leap 1- leap negate recurse
  leap fwd Dup 90 * Turn
  leap leap 1- leap recurse
  leap fwd
  leap leap 1- leap recurse
  Dup 90 * Turn leap fwd
  leap leap 1- leap negate recurse
  -90 * turn 2drop ;

: show ( depth - )
  1001 showform ( blank form)
  turtle
  64 -64 goto
```

```
dup 128 swap rshift swap -1 hilbert key drop ;
: slideshow 7 1 do i show loop ;
slideshow
```

Mark



By [David Kriest](#) on Tuesday, October 31, 2000 - 07:49 am: [Edit](#)

First time I have ever posted anything. So here goes.

This is something I did when I first started programming in Quartus Forth. I did most of this while waiting for busses or planes (or elevators) It builds off db-example in the file area, so run it first. You can do some database things, so be ready for a soft reset. You can use OPEN for writing or RES to resize the record or FILL to fill it with zeros. I have read and have been helped by many messages on this board. I think its time to return the favor.

```
\ db2
```

```
needs DataMgr
needs zstrings
needs ids
needs core-ext
```

```
2variable dbr
2variable phlock
2variable hand
```

```
: dbname z" MyDatabase" ;
```

```
\ create a buffer to write to
create buffer 40 allot
: open
\ set write flag
dmModeReadWrite
```

```
\ opens data base using name and
\ store returned referance
dbname OpenDB dbr 2!
```

```
\ get record using referance, index
\ and store returned handle
0 dbr 2@
DmGetRecord 2dup hand 2!
```

```
\ lock the handle and store the
\ returned pointer to chunk
```

```
MemHandleLock phlock 2!  
;  
  
\ unlock the handle and close DB  
: rem hand 2@ MemHandleUnlock 0.  
dbr 2@ 2dup 2>r DmReleaseRecord 2r> CloseDB ;  
  
\ make a test string  
: data s" This is a test" ;  
  
\ write the string to the record  
: wrt data s>d rot >abs 0. phlock 2@ DmWrite throw ;  
  
\ copy out of database to buffer and  
\ display it. Do NOT hold onto handle  
\ this long. It could change.  
: copy hand 2@ MemHandleSize 2dup phlock 2@ buffer dup >r >abs  
MemMove 2drop r> swap type ;  
  
\ resize  
: res hand 2@ MemHandleUnlock 25 0 0 dbr 2@ DmResizeRecord  
MemHandleLock phlock 2! ;  
  
\ fill record with zeros  
: fill [char] 0 >byte 25. 0. phlock 2@ DmSet ;
```



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 31, 2000 - 12:00 pm: [Edit](#)

Kristopher -- thanks for starting this thread. Mark -- neat graphics. David, thanks for posting and for the useful code, and welcome to the board!

Neal



By [E. Ross Helton](#) on Wednesday, November 1, 2000 - 08:32 am: [Edit](#)

Hi David,

About your program. You use "Open" and what to make it run?

Make it a good day!

Ross



By [David Kriest](#) on Wednesday, November 1, 2000 - 01:26 pm: [Edit](#)

Hey Ross,

The program really doesn't do anything. Nothing needs to be on the stack. OPEN just opens the database and locks the record. Then you can resize it with RES or

write to it with WRT or fill it with zeros with FILL or COPY something out that you wrote to it. I did this while figuring out how databases work at the PALM OS function level. I saw so many questions about this and thought it would help someone. Just remeber to run REM, which will unlock the record and close the DB, or the reset will happen the next time you run it.



By [Kristopher Johnson \(Kdj\)](#) on Tuesday, November 7, 2000 - 12:50 am: [Edit](#)

This program repeatedly plays a few simple songs. Warning: it can get really annoying--keep away from violent people or risk having your PDA smashed into lots of pieces.

Exercise for the reader: add holiday songs.

```
\ musicbox 00-11-7 KDJ
```

```
\ No warranty. Use, modify, copy, or  
\ redistribute as you wish.
```

```
needs sound
```

```
32 constant volume
```

```
\ Milliseconds per beat  
250 constant beat
```

```
: beats ( n -- ms )  
  beat * ;
```

```
\ Abbreviation for LITERAL  
: lit  
  s" literal" evaluate ; immediate
```

```
variable duration
```

```
\ Words for setting note/rest duration  
: whole [ 4 beats ] lit duration ! ;  
: 1/2   [ 2 beats ] lit duration ! ;  
: 1/4   beat duration ! ;  
: 1/8   [ beat 2/ ] lit duration ! ;  
: 3/4   [ 3 beats ] lit duration ! ;  
: 5/4   [ 5 beats ] lit duration ! ;
```

```
1/4
```

```
: drop-events ( -- )  
  begin ekey? while ekey drop repeat ;
```

```
: note ( freq -- )
  volume duration @ 10 - rot sound
  10 ms
  drop-events ;
```

```
: rest ( -- )
  duration @ ms
  drop-events ;
```

```
: C 523 note ;
: D 587 note ;
: E 659 note ;
: F 698 note ;
: G 784 note ;
: A 880 note ;
: B 988 note ;
: C2 1046 note ;
```

```
: /scale 1/4 C D E F G A B C2 ;
```

```
: \scale 1/4 C2 B A G F E D C ;
```

```
: scale /scale \scale ;
```

```
\ Mary Had a Little Lamb
```

```
: mary
  1/4 E D C D E E 1/2 E
  1/4 D D 1/2 D
  1/4 E G 1/2 G
  1/4 E D C D E E E E
  D D E D 1/2 C ;
```

```
: (twinkle1)
  1/4 C C G G A A 1/2 G
  1/4 F F E E D D 1/2 C ;
```

```
: (twinkle2)
  1/4 G G F F E E 1/2 D ;
```

```
\ Twinkle, Twinkle Little Star
```

```
: twinkle
  (twinkle1) (twinkle1)
  (twinkle2) (twinkle2)
  (twinkle1) ;
```

```
: (saints1)
```

1/4 C E F 5/4 G ;

\ When the Saints Go Marching In

: saints

(saints1) (saints1)

1/4 C E F 1/2 G E C E 5/4 D

1/4 E D 3/4 C 1/4 C 1/2 E

1/4 G G G whole F

1/4 F E F 1/2 G E C D 5/4 C ;

: pause whole rest ;

: go

begin

mary pause

twinkle pause

saints pause

again ;



By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 7, 2000 - 05:27 pm: [Edit](#)

I like that, Kris. I have something very much like it, written long ago for PilotFORTH.

One of my earliest development projects was a music player for the ZX81. On that machine, you had to switch the video on and off very rapidly in order to make the television's speaker buzz in a square wave. At least the Palm sound circuitry spares us that! 😊

Neal



By [Andrew Kearns](#) on Tuesday, November 7, 2000 - 07:31 pm: [Edit](#)

Wow, that takes me back. My very first computer was a ZX81. Also where I started programming simple text adventures in 1K of memory.

Andrew



By [Richard Chamberlain \(Rac\)](#) on Wednesday, November 8, 2000 - 06:28 pm: [Edit](#)

I had a zx80 and an 81. I think I was blessed. I was six at the time. :-)

I remember getting magazines with listings in that you had to type in - My zx80 actually taught me to read.

Richard

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Handbase Anyone? (and sysAppLaunch commands)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Handbase Anyone? (and sysAppLaunch commands)



By [John McKeon \(Jmckeon\)](#) on Monday, October 30, 2000 - 09:26 pm: [Edit](#)

Hello all,

I've written the Handbase API in Quartus and other than a few bugs in the API itself it works well. It relies heavily on minioof by Bernd Paysan. If anyone is interested I'll post the code (two memos).

I now need to call the functions from a conduit but I read in another thread that Quartus Apps can't respond to sysAppLaunch commands. Is this true? Must I resort to CodeCadet? to get this done. I really do not want to code in C but the code required would be quite short so I guess I could struggle through it.

Are there any possible workarounds, Neal?

Thanks

John mcKeon



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 10:03 pm: [Edit](#)

Not yet, John. I'm working on the launchcode support, but it's not prime-time yet; other matters have taken the front burner position. Soon!

Neal



By [Erwin Schomburg \(Esc\)](#) on Tuesday, October 31, 2000 - 03:54 am: [Edit](#)

The question looks a bit ambiguous. Sure its possible to call up a Quartus application by using SysAppLaunch, but it then won't be able to branch on LaunchCodes, other than zero, passed with the call.

/Erwin



By [chris bucsko](#) on Wednesday, November 1, 2000 - 01:56 pm: [Edit](#)

Is this the HandBase as in www.handbase.com?? If so, I would very much like to see this code. Sounds very interesting....



By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 1, 2000 - 02:02 pm:

[Edit](#)

By the way John -- yes, please post the code!

Neal



By [John McKeon \(Jmckeon\)](#) on Thursday, November 2, 2000 - 12:51 am: [Edit](#)

Warning: Loooong post!

Just a few words of explanation. The API consists of about six different C structs and corresponding sysAppLaunch commands. So the basic idea behind code below is simply to fill the required struct with the necessary info and call sysAppLaunch, simple but as you will see it's not very Forth-ish.

If you're unfamiliar with minioof, there is always an implied "object" on the top of the stack when calling an object's method, but it is omitted from the stack diagrams. Also, the "data" for an object starts one cell offset from the objects address (the first cell holds the address of the "v-table") hence the r@ cell+ to pass the data structure on the stack.

Since all field values are returned as zero terminated strings, I added the following utilities to zstrings:

```
: zmove ( zaddr1 zaddr2 -- )
begin over c@ dup >r over c!
r> while 1+ swap 1+ swap repeat 2drop ;
```

```
: zcount ( zaddr -- zaddr n )
dup 0 begin over c@ while
1+ swap 1+ swap repeat
swap drop ;
```

```
: ztype ( zaddr -- )
zcount type ;
```

```
\ hapi JMCK
needs toolkit
needs struct
needs zstrings
needs minioof
needs memory
```

```
32768 enum HAction
HAction HGetDBNames
HAction HGetDBInfo
HAction HGetFieldValue
HAction HGetLinkInfo
HAction HGetNextLinkedRec
```

HAction HSetFieldValue

HAction HSetRecord

HAction HAddRecord

30 constant HMaxFlds

60 constant HMaxDBs

199 constant HMinVersion

0 enum HapiFieldType

HapiFieldType HFldNotUsed

HapiFieldType HStringFld

HapiFieldType HDecimalFld

HapiFieldType HFloatFld

HapiFieldType HPopupFld

HapiFieldType HCheckBoxFld

HapiFieldType HUniqueFld

HapiFieldType HImageFld

HapiFieldType HDateFld

HapiFieldType HTimeFld

HapiFieldType HLinkFld

HapiFieldType HLinkedFld

HapiFieldType HNoteFld

HapiFieldType HHeadingFld

HapiFieldType HLinkListFld

HapiFieldType HCalculatedFld

2variable hdbID

2variable result

0. result 2!

: FindHDB

z" HandBase" drop >abs 0 DmFindDatabase hdbID 2! ;

FindHDB

: Hapi (ptr cmd --)

>r >r FrmGetActiveForm

result >abs r> >abs

r> 0 hdbID 2@ 0

SysAppLaunch throw

FrmSetActiveForm ;

\ Thanks to Erwin Schomburg for the tip on

\ restoring the active form to make sysAppLaunch

\ work

struct

cell field fieldtype

cell field exp/vis

```
cell field maxsize
20 field fieldname
end-struct HFldDef
```

```
sizeof HFldDef constant fldsize
```

```
object class
20 var dbname
method >dbname
method init
method AllocOutVal
method FreeOutVal
end-class hdbase
```

```
:noname ( zaddr -- )
dbname zmove ;
hdbase defines >dbname
```

```
hdbase class
cell var recnum
end-class hdbrec
```

```
object class
HMaxDBs 20 * var dbnames
cell var numdbs
method dblist>
end-class HDBList
```

```
:noname ( -- )
dbnames HGetDBNames Hapi ;
HDBList defines dblist>
```

```
hdbase class
HMaxFlds fldsize * var flds
cell var numrecs
method fld>
method dbinfo>
method fldtype>
method fldname>
method export>
method visible>
method >check
end-class HDBDef
```

```
:noname ( n -- fldaddr)
flds swap fldsize * + ;
HDBDef defines fld>
```

```
:noname ( zaddr -- )
>r r@ >dbname r> cell+ HGetDBInfo Hapi ;
HDBDef defines dbinfo>
```

```
:noname ( n -- n' )
fld> fieldtype @ ;
HDBDef defines fldtype>
```

```
:noname ( n -- zaddr )
fld> fieldname ;
HDBDef defines fldname>
```

```
:noname ( zaddr fld# -- flag )
fld> maxsize @ swap zcount 1+
swap drop > ;
HDBDef defines >check
```

```
hdbrec class
cell var maxvalsize
cell var fldnum
2 cells var outval
method FldVal>
method >FldVal
end-class HFldVal
```

```
:noname
0. rot outval 2! ;
HFldVal defines init
```

```
:noname ( n -- )
>r ALLOCATE throw >abs
r> outval 2! ;
HFldVal defines AllocOutVal
```

```
:noname
outval 2@ 2dup or if
>rel FREE throw
else 2drop then ;
HFldVal defines FreeOutVal
```

```
:noname
( db fld# rec# --zaddr )
>r r@ recnum !
dup r@ fldnum !
over fld> maxsize @
dup r@ maxvalsize !
```

```
r@ AllocOutVal
dbname r@ >dbname
r@ cell+ HGetFieldValue Hapi
r> outval 2@ >rel ;
HFldVal defines FldVal>
```

```
:noname
( zaddr dbo fld# rec# )
>r >r >r 2dup r> dup >r swap
>check throw r> r>
r@ recnum !
dup r@ fldnum !
over fld> maxsize @
dup r@ maxvalsize !
r@ AllocOutVal ( z db )
dbname r@ >dbname
r@ outval 2@ >rel zmove
r@ cell+
HSetFieldValue Hapi
r> FreeOutVal ;
HFldVal defines >FldVal
```

```
hdbrec class
60 cells var fldvalarray
method >fld
method AddRecord
method SetRecord
end-class HRecord
```

```
:noname ( addr. n -- )
fldvalarray swap 2 cells * + 2! ;
HRecord defines >fld
```

```
:noname ( -- )
30 0 do i swap >r 0. rot
r@ >fld r> loop drop ;
HRecord defines init
```

```
:noname ( db -- )
>r dbname r@ >dbname
r> cell+ HAddRecord Hapi ;
HRecord defines AddRecord
```

```
:noname ( db -- )
>r dbname r@ >dbname
r> cell+ HSetRecord Hapi ;
HRecord defines AddRecord
```

needs hapi2

\ hapi2 JMCK

```
hdbrec class
  cell var linkfld
  20 var linkdb
  cell var linktofld
  24 var linkval
method linkinfo>
end-class HLinkInfo
```

```
:noname ( dbo fld# rec#)
>r r@ recnum !
r@ linkfld !
dbname r@ >dbname
r> dbname
HGetLinkInfo Hapi ;
HLinkInfo defines linkinfo>
```

```
hdbase class
cell var linkedfld
cell var linkmaxsize
cell var newsearch
24 var linkedval
cell var linkedrec
2 cells var linkoutval
method LinkVal>
end-class HLinkedRec
```

```
:noname ( -- )
>r true r@ newsearch !
0 r> linkedrec ! ;
HLinkedRec defines init
```

```
:noname ( n -- )
>r ALLOCATE throw >abs
r> linkoutval 2! ;
HLinkedRec defines AllocOutVal
```

```
:noname
linkoutval 2@ 2dup or if
>rel FREE throw else 2drop then ;
HLinkedRec defines FreeOutVal
```

```
:noname
```



```
( db linkinf flag-- rslt )
>r r@ newsearch !
dup linkdb r@ >dbname
dup linkval r@ linkedval 24 cmove
linktofld @ dup
r@ linkedfld !
swap fld> maxsize @ dup
r@ linkmaxsize !
r@ AllocOutVal \ ??why?
r@ dbname
HGetNextLinkedRec
['] Hapi catch \Problem!
r> FreeOutVal ;
HLinkedRec defines LinkVal>
```

```
\ hapi ends
```

```
\ Begin test code
```

```
\ hdb
needs hapi
```

```
HDBList new constant dbs
HDBDef new constant hdb
HDBDef new constant hdbl
HFldVal new constant fld
HLinkInfo new constant lnk
HLinkedRec new constant lnkr
HRecord new constant rec
```

```
fld init
lnkr init
```

```
: ListDBs dbs dblist>
dbs numdbs @ 0 do
dbs dbnames i 20 * + ztype cr
loop ;
```

```
: dblist ( zaddr -- )
hdb dbinfo>
hdb numrecs @ 0 do
HMaxFlds 0 do
i hdb fldtype> 0= 0= if
i hdb fldname> ztype space
hdb i j fld FldVal> ztype cr
fld FreeOutVal
then
```

```

        loop key drop
loop ;

: listinfo  z" Your db name here" drop
dblist ;

\ -----
\ This word is broken
\ -----
: listlinks ( db rec# linkfld# -- )
  lnk linkinfo>
  lnk linkdb hdbl dbinfo>
\ Loop thru linked db for
\ linked records
  hdbl lnk true lnkr
  LinkVal> 0= if begin
    HMaxFlds 0 do
      i hdbl fldtype> 0= 0= if
hdbl i lnkr linkedrec @
fld FldVal> ztype
  space
fld FreeOutVal
then loop cr
      hdbl lnk true lnkr
  LinkVal> 0= 0= until
      then ;

```

Hope you find this useful.

John

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Return value of systrap

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Return value of systrap



By [Jih-tung Pai](#) on Monday, October 30, 2000 - 08:07 pm: [Edit](#)

I have been investigating the systrap functions in low level and compare it with Palm OS documentation. I notice the described returned value of any systrap function after the call will be place in either A0 or D0 register. So far, I haven't figured out when it will be in A0 or when it will be in D0. Does anyone know the rule to determine where to expect the return value.

Thanks,



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 08:46 pm: [Edit](#)

The Palm OS functions built into the Quartus Forth kernel automatically know whether a routine returns its value in A0, or in D0, and take care of it for you. If you're rolling your own systraps for some reason, using systrap, the rule-of-thumb is that addresses are returned in A0, other values in D0.

Neal

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Fatal exception with FP math.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Fatal exception with FP math.



By [Marc Lehman \(Marclehm\)](#) on Monday, October 30, 2000 - 02:47 pm: [Edit](#)

I repeatedly get a fatal exception when executing this word in a program.

```
: cbmi weight f@ f>d drop 703 * height f@ f>d drop dup * / bmi ! ;
```

These variables were all created with the syntax variable height and such, set with 68.0e height f!

Is there some obvious error in my code (I am just getting started with Forth), or could it be a compiler bug? I am using version 1.2.5R.

Thanks for any insight.



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 03:26 pm: [Edit](#)

If height is zero, you'll get a fatal exception when you try to divide by zero.

Here's a simpler solution that uses floating-point operators:

```
: cbmi
  weight f@ 703e f* height f@ fdup f* f/ f>d drop bmi !
;
```

Neal



By [jim purdy](#) on Monday, October 30, 2000 - 04:09 pm: [Edit](#)

Marc,

You could catch the math error. This may make the program behave better.

```
: (cbmi)
weight f@ 703e f* height f@
fdup f* f/ f>d drop bmi !
;
```

```
: cbmi
['] (cbmi) catch if
\ matherror
else
```

\ go on with it....
then
;

Try this.. Jim



By [Marc Lehman \(Marclehm\)](#) on Tuesday, October 31, 2000 - 12:33 am: [Edit](#)

Yep, that did it. Looks like I need some checking for valid input ranges. Thanks!

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Grab text from screen

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Grab text from screen



By [Jih-tung Pai](#) on Monday, October 30, 2000 - 02:35 pm: [Edit](#)

Hi there,

Is there a way to grap text from the output screen and use it as an input for other function? I am interested in knowing how it can be done in Quartus Forth as well as grabbing the information from other program and make is available for Quartus Forth. An example will be grab a string from the output of other program and use it as the query for my own program.

Thanks in advance,



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 03:24 pm: [Edit](#)

There is a system-wide clipboard facility for applications that choose to make use of it. Text has to be in a field object in order for it to be copied to the clipboard; letters and symbols that are simply drawn as bitmaps on the screen cannot be copied as text to the clipboard.

Quartus Forth apps can access the clipboard without difficulty, for example via the FldCut and FldPaste calls.

Neal



By [Joanna Kurki \(Joannak\)](#) on Monday, October 30, 2000 - 04:55 pm: [Edit](#)

There was a utility for old Amiga that allowed to copy text from graphics screen and paste it as a text. It was quite usefull and worked fine on 7Mhz Amiga 500 (named "Snap" or something similar) so it should be doable on Palm too.

It was used by selecting a part of Gfx screen (with alt or similar key pressed simultaneously) and then releasing mouse button. Program then analysed captured bitmap (comparing patterns to Romfonts) and made clibboard entry from text.

It's definitely needs to be done on palm-hack.. But without multitasking there is no much choise.



By [Jih-tung Pai](#) on Monday, October 30, 2000 - 07:59 pm: [Edit](#)

The program like this is what I have in mind if there is no easier way to grab text from screen. I wonder if anybody have started this kind of project or know if this

kind of program is available. I will like to use this kind of program or improve on the existing program instead of doing it from scratch.

Thanks,



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 31, 2000 - 11:49 am: [Edit](#)

I haven't heard of any such program. As Joanna said, it'd need to be implemented as a HackMaster module.

Neal

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FldRecalculateField problem?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): FldRecalculateField problem?



By [Reid Bishop](#) on Monday, October 30, 2000 - 03:14 am: [Edit](#)

I have a non-editable Field, where I have allocated 4K of memory and called "FldSetText" after seeding the handle with some text.

I then begin to append text to this field programmatically. I lock the Field's handle, append my text, unlock it, and then call "FldRecalculateField". The text appears ok, but word-wrap is not doing it's job at all. All the text is 'appearing' on the first line.

I'm looking for a way to do this without having to keep calling FldSetTextHandle every time I add new text, as it causes me to have to keep rescrolling the field to the bottom- this is a terrible performance hit.

Am I going about this the wrong way?



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 11:25 am: [Edit](#)

To update a field, use this sequence:

```
FrmHideObject  
FldRecalculateField  
FrmShowObject
```

Give that a try.

Neal



By [Reid Bishop](#) on Monday, October 30, 2000 - 07:19 pm: [Edit](#)

Neal, your suggestion did not work (or at least it did not change the behavior.) The text I am adding to the memory pointer is definitely in the field, but the wordwrap info is very messed up. If I click in the field and start typing, the field gets very, very confused.

I'm wondering if FldRecalculateField has some problems? This is a real drag, as I see no 'fast' way to add text to a 4K field. There is FldInsert, but I'm more concerned about the fact I need to remove text from the top of the field as I approach the max chars limit in order to make room for more text coming in. This is essentially a FIFO field...



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 07:21 pm: [Edit](#)

Can you show your code that contains FldRecalculateField?

Neal



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 07:57 pm: [Edit](#)

Can you show your code that contains FldRecalculateField?

Neal



By [Reid Bishop](#) on Monday, October 30, 2000 - 08:30 pm: [Edit](#)

Sure... here is the source Neal.

I allocate a 4K MemHandle in my main, and then call fld-settext. Later, I call fld-append.

I haven't yet put in the code that traps if my max number of characters has been exceeded in the field or if my handle is not big enough. This code is just to see if the premise works. (I know, ugly code... just haven't factored it yet.)

```
: fld-settext ( str u hdl. fldid -- )
  >r 2dup 2>r MemHandleLock 2dup
  2>r rot dup >r m+ 0 -rot c!a r>
  s>d rot >abs 2r> MemMove drop
  2R@ MemHandleUnlock drop
  2r@ MemHandleSize d>s
  0 2R> r> GetObjectPtr 2DUP 2>R
  FldSetText 2R> FldDrawField
;

: fldRedraw ( fldptr. fldid )
  GetObjectIndex dup
  FrmGetActiveForm 2dup 2>R
  FrmHideObject
  -rot 1 -rot FldRecalculateField
  2r> FrmShowObject ;

: fld-append ( str u fldid -- )
  dup >r GetObjectPtr 2dup 2>r
  FldGetTextHandle 2dup 2>r
  MemHandleLock
  2dup 2>R StrLen 2dup +
```

```
2r@ rot m+ 0 -rot c!a
2r> rot m+ 2>r
s>d rot >abs 2r> MemMove drop
2r> MemHandleUnlock drop
2r> r> fldRedraw ;
```



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 08:44 pm: [Edit](#)

Try TRUE instead of 1 as the flag passed to FldRecalculateField.

Neal



By [Reid Bishop](#) on Tuesday, October 31, 2000 - 03:06 am: [Edit](#)

TRUE didn't change it's behavior.

I'm frustrated... it seems the only way to make the wordwrap information update is to call FldSetTextHandle... and then I have to call FldSetScrollPosition to get the field to scroll back to the bottom. <sigh> The performance hit seems to be centered around setting the scroll position.



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 31, 2000 - 01:41 pm: [Edit](#)

Reid, I haven't dug into this very deeply, but I suspect it's been talked about before on the Palm developers' lists and groups. A search of the pilot.* groups at news.massena.com may return some useful info.

Let me know if you can't turn anything up; I can help.

Neal

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Strings

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Strings



By [Richard Chamberlain](#) on Sunday, October 29, 2000 - 05:01 pm: [Edit](#)

Hi,

I have got a word which selects a quote via a case statement.

I am using the form:

```
0 of s" the quote" endof
```

I am having fatal exceptions if I insert a particular quote, I presume because it contains punctuation which is screwing the compiler up. Here it is below, can anyone shed any light for me?

```
0 of S" The most likely way for the world to be destroyed, most experts agree, is
by accident. That's where we come in; we're computer professionals. We cause
accidents. --- Nathaniel S. Borenstein" endof
```

Thanks

Richard



By [Richard Chamberlain \(Rac\)](#) on Sunday, October 29, 2000 - 05:15 pm: [Edit](#)

I take that back. after playing around a bit longer it seems to be string length which is the issue.

What are the limits? is there anyway I can get round this?

Thanks again

richard



By [Neal Bridges \(Nbridges\)](#) on Sunday, October 29, 2000 - 05:24 pm: [Edit](#)

This technique works:

```
needs file
```

```
create mybuffer 100 allot
mybuffer 0
```

```
s" This is the first part of the string" append  
s" , and this is the second part." append  
2constant mystring
```

Neal



By [Richard Chamberlain \(Rac\)](#) on Monday, October 30, 2000 - 02:09 am: [Edit](#)

Thanks Neal,

I was right up with you until needs file :-)

where do I get that from? I've looked in the files section

Thanks

Richard



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 11:13 am: [Edit](#)

file.txt is part of the collection of library code that ships with Quartus Forth.

<http://www.quartus.net/files/PalmOS/Forth/Library/file.txt>

Neal



By [Richard Chamberlain \(Rac\)](#) on Tuesday, October 31, 2000 - 11:49 am:

[Edit](#)

Thanks Neal, I looked, but obviously not that hard!

Richard

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Program Idea!!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Program Idea!!



By [Barak Shilo \(Barak\)](#) on Saturday, October 28, 2000 - 11:17 pm: [Edit](#)

If anyone wants to program something useful in Forth that at least one other person will use, I have an idea for them. Hack AvantGo!

I asked AvantGo a few months ago if they were planning to implement a working "copy" menu option, so that people can save articles they like in a memo file. They replied that they are going to add the feature "in the future." Well, I don't know if they are going to add it anytime soon. However, I'm sure many people would appreciate it (other people have complained about this missing feature) if someone would write a hack that would allow you to copy the text of an article to the clipboard. If I had more time and experience I would do it myself, but I don't have enough of either as I'm a senior in high school. So, is anyone up to it?



By [Wade Carlson](#) on Sunday, October 29, 2000 - 07:16 pm: [Edit](#)

Thinking back to my high school years, that's when I started writing some of my best software. For an old guy like me (I'm 30), the brain is just not as sharp anymore. I could pick up new stuff just like that when I was your age. Sounds like you'd be the best person for the job to me! J



By [Kristopher Johnson \(Kdj\)](#) on Sunday, October 29, 2000 - 08:03 pm: [Edit](#)

As an even older guy (I'm 34), I'd agree. If you ever want to be a programmer, now is the time to start. And having a specific program to write that is important to you is a good motivator.

-- Kris



By [Barak Shilo \(Barak\)](#) on Sunday, October 29, 2000 - 08:49 pm: [Edit](#)

I bet there's some guy in his fifties who's laughing at you for making it sound like you're ancient. In any case, I already have a program I'm working on that's a priority and my main motivation for learning Forth; my HP 82240 printing program. And, seeing how long I've stretched this project along for, and it being more important to me, and barely having enough time to continue it (I'm really busy now, after January I should have more time for this stuff), I was hoping someone else might be interested in working on a new project while the need for it is still there.



By [Doug Philips \(Dgou\)](#) on Sunday, October 29, 2000 - 11:59 pm: [Edit](#)

Ah! The HP 82240A (I got it for a reasonable price off of eBay). The "standard" printing solutions (PrintBoy, TealPrint, the Steven's software solution whose name I've forgotten) don't work, but heck, I figured, its IR. How hard could it be? I won't have time to hack on it until at least December, but if you make progress you've got at least one customer! Cool beans!

-Doug

P.S. I'm not in my 50's, but I'm chuckling. You're only as old as.... you want to be. Too many studies show that mental agility/alertness do not decline with age so long as the old noggin' is exercised, that I don't buy that its an inevitable age thing. Personally I think its a matter of where one is focussing one's energies, and for a lot of 30/40+ types its on work and family with little left over for personal use.



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 11:29 am: [Edit](#)

I agree with Doug -- it's a question of state of mind. The Quartus Forth customer base spans quite a considerable range of ages, with good developers right across that range.

Neal



By [E. Ross Helton](#) on Monday, October 30, 2000 - 12:08 pm: [Edit](#)

Hi Gang,

Young or old is what you make it! Everytime I reach one of those age milestones, someone moves the marker just a little higher. I have worked at and learned three new programming languages in the last three years. It has been fun and it has keep me thinking.

The next zero is my age which I am half way to doesn't start with a 5. The one which started with 4 was a pretty good year.

The ladies still like me, or feel sorry for me.

Age is what you make of it. Stay active in mind and body.

Make it a good day!

Ross



By [Barry Ekstrand \(Ekstrandbb\)](#) on Monday, October 30, 2000 - 04:18 pm:

[Edit](#)

Barak,

I thought it worth adding that I also have an HP 82240B printer that I'd like to

use with my Palm Vx. I hope you take this project to completion, it would be handy to those of us with the this printer, and give a reason for others to seek one out.

Barry



By [Barak Shilo \(Barak\)](#) on Monday, October 30, 2000 - 04:22 pm: [Edit](#)

Wow, I'm almost sorry I mentioned I was in high school... well, I truly agree with Neal and Doug that age shouldn't matter.

In response to Doug's question, "How hard could it be?" At least for me, pretty hard. The DragonBall processors are designed to control the IR diode following IrDA protocol and there isn't a way to get around that (I know the protocol that the 82240 uses, and it's not IrDA). I'm still hoping I can get around it in a few ways, and once I get a chance to test them out I'll know for sure. For now I'm stuck with a real cool looking GUI that doesn't do anything 😊.



By [Barry Marks](#) on Monday, October 30, 2000 - 06:52 pm: [Edit](#)

I have an 82240B printer also but I can't see much use for it on the Palm. I think the line length is only 28 characters, if I remember right.

It'll go wider in graphics mode with smaller font's but not a whole lot wider.

By the way, I'll be 60 in a few days, but I'm not laughing at you kids. 😊

Barry



By [Barak Shilo \(Barak\)](#) on Monday, October 30, 2000 - 10:17 pm: [Edit](#)

Wow, lots of HP fans here, must be the whole RPN thing. Well, you can print 24 characters per line, but I figure it's adequate for printing out short memos, lists, etc. (besides the whole coolness factor)



By [Doug Philips \(Dgou\)](#) on Tuesday, October 31, 2000 - 12:25 pm: [Edit](#)

Barak,

If you know the HP protocol, you're already a step ahead of me. I've done some poking around on the HP website, but no luck (I've only spent about an hour looking, though why it should take more than 10 minutes is beyond me. Grrrrr). As far as IrDA goes, is that what is used in TV/VCR/etc. remote controls? I didn't think so, but then I'm just guessing. I know that there are programs to do that kind of stuff, so I had just assumed that non-IrDA protocols would be possible.

Barry,

For doing label like things, etc. its great. I picked up a used Canon BJC-80 for doing full page stuff, but as part of my mobile wants, I want something akin to cash register tape. A full size page is way overkill.

-Doug



By [Barak Shilo \(Barak\)](#) on Tuesday, October 31, 2000 - 05:48 pm: [Edit](#)

I've tried sending a few characters from an HP calculator to OmniRemote and then sending that to the printer, but it didn't work. I don't know how OmniRemote does it exactly, but somehow it's able to resend most non-IrDA remote signals, yet it doesn't seem to be able to reproduce this HP protocol. By the way, HP never made the protocol public, but there are a few documents that some people who hacked the protocol wrote.



By [Robert Tate](#) on Wednesday, November 1, 2000 - 12:25 pm: [Edit](#)

Barak is a friend of mine, and i stil remember teaching him to program on a TI. I am very proud of him. (sniff sniff) He isn't all that much of a genius, so don't count on any creative solutions.



By [Doug Philips \(Dgou\)](#) on Wednesday, November 1, 2000 - 03:42 pm: [Edit](#)

Well, if the protocol isn't public... So much the more fun figuring it out! J . Grrrr, stupid HP, stupid anyone with a closed communications protocol. Grrrrrr. Well, I did get a good price on the printer, so if it doesn't work out, I can probably sell it for what I paid for it. Sigh.

-Doug

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PopUpForm Button Fatal Exception

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): PopUpForm Button Fatal Exception



By [Richard Chamberlain](#) on Wednesday, October 25, 2000 - 06:21 am: [Edit](#)

Hi,

I've created a preferences form which I popup, which works fine.

On the form is a list and three buttons. If I click on any of buttons I get a fatal exception, if I click on the list no problem.

I've even commented out any handling but it still does it.

Anyone any ideas?

Thanks

Richard



By [Richard Chamberlain](#) on Wednesday, October 25, 2000 - 12:02 pm: [Edit](#)

Ok,

It would appear to be me (nothing new there then).

I'm having immense difficulty debugging this bit of code:

```
: handle-prefEvent ( eventType -- ) case
lstSelectEvent of do-list false endof
ctlSelectEvent of do-pref true endof
false
endcase ;
```

```
: goPref ( -- ) preForm PopUpForm begin
ekey handle-prefEvent if leave then again myForm FrmReturnToForm;
```

So basically what I hoped would happen is that it would repeat until the user tapped a button and then it would return to my form.

But it doesn't.

Save me,

Richard.



By [Neal Bridges \(Nbridges\)](#) on Wednesday, October 25, 2000 - 12:10 pm:

[Edit](#)

LEAVE does not allow exiting a BEGIN/AGAIN loop. It's strictly for use with DO loops.

Try this structure:

```
: goPref
  preForm PopUpForm
  begin ekey handle-prefEvent until
  myForm FrmReturnToForm ;
```

Neal



By [Ronny Svensson](#) on Tuesday, October 31, 2000 - 03:20 am: [Edit](#)

If you want to leave a flag on the stack between endof and endcase you must follow it with swap as the test-value to case is present between endof and endcase. Endcase removes your true flag in handle-prefEvent and leaves the event-type. Also if you have a stack-comment it should be correct: (eventType -- flag)

Ronny



By [Richard Chamberlain \(Rac\)](#) on Tuesday, October 31, 2000 - 11:33 am:

[Edit](#)

I figured that out in the end. Took me a while though! and yes I changed the stack comment as well.

Thanks

Richard

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Development Environment

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Development Environment



By [Konrad Hinsen](#) on Monday, October 23, 2000 - 01:06 pm: [Edit](#)

First of all, let me say that I am positively impressed by Quartus Forth, which I downloaded last week. This looks like the only system that really allows on-board development. And Forth looks like the perfect language for a machine with so many limitations. I haven't used Forth for about 15 years, but it still feels familiar.

There's only one aspect of Quartus Forth that I dislike a bit: its user interface (i.e. the console) is, well, a bit primitive, especially considering that typing and viewing are a bit restrained on a Palm. What I'd love to have is a three-window GUI: one for command entry (with an optional log to a memo pad), one for output, and one for a display of the current stack. Plus some menu or pop-up that lets me load memos from some definable category with a tip of the pen.

This doesn't look terribly complicated to do, and I wonder whether it could be done in QuartusForth itself, such that it could be loaded in the quartus.setup memo if desired (I suppose you would not want it for GUI development). At first glance, the main problem seems to be console output, I haven't found any way to redirect it somewhere else. Did I overlook something? And would anyone else be interested in such an add-on?

Konrad



By [Neal Bridges \(Nbridges\)](#) on Monday, October 23, 2000 - 01:41 pm: [Edit](#)

Hi Konrad. Glad you like Quartus Forth!

What you suggest -- breaking the screen into sections -- is feasible. The ability to break the screen into separate windows is already present in the Quartus Forth kernel. (Screen real-estate is obviously limited on the Palm, of course, which may limit the usefulness of such a scheme.)

I suggest you try a simple three-window system, see if you like it and want to keep using it, and then expand from there as required.

Neal



By [Konrad Hinsen](#) on Monday, October 23, 2000 - 02:05 pm: [Edit](#)

Hi Neal,

thanks for the quick reply. Where can I find information on dividing the console screen? I didn't spot anything obvious in the manual.

Konrad.



By [Neal Bridges \(Nbridges\)](#) on Monday, October 23, 2000 - 02:39 pm: [Edit](#)

window-bounds is a four-cell data structure that holds the dimensions of the currently active window. If you can hang on till later today, I'll upload a little three-window demo that does most of what you're asking.

Neal



By [Jim Purdy](#) on Monday, October 23, 2000 - 06:12 pm: [Edit](#)

Hey,
I might be interested too.

That would really be cool if you could integrate a tracing debugger into the mix!



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 24, 2000 - 07:17 pm: [Edit](#)

Sorry! Forgot to post this. It's quick and dirty; have a look, tell me if it's in line with your thoughts. Enter win to fire it up.

```
\ win 10/23/00 7:13 pm NAB
```

```
needs graphics
needs core-ext
```

```
variable currwin
: window ( h w y x "name" -- )
  create
  2over 2over , , , ,
  , , 2drop
  does>
  dup dup currwin !
  window-bounds 4 cells move
  4 cells + 2@ at
  window-bounds >abs WinSetClip ;

: exit-window ( -- )
  currwin @
  cursor-position rot 4 cells + 2! ;
```

```
20 160 0 0 window stack-window
```

```
68 160 22 0 window output-window
68 160 92 0 window input-window
```

```
create input-buffer 80 chars allot
: interpreter
  begin
    stack-window .s exit-window
    input-window
      state @ 0= if ."    ok" then cr
      [char] > emit space
      input-buffer dup 80 accept
    exit-window
    output-window
      evaluate exit-window
    again ;

: win
  page
  21 160 21 0 line
  91 160 91 0 line
  stack-window page exit-window
  output-window page exit-window
  input-window page exit-window
  begin
    ['] interpreter catch dup -257 = if (bye) then
      dup -1 = if
        input-window
        0 more drop
        depth 1- 0 ?do drop loop
      else exit-window dup throw
      then drop
    again ;
```

Neal



By [Konrad Hinsén](#) on Wednesday, October 25, 2000 - 01:01 pm: [Edit](#)

Wow, thanks! This looks very close to what I had in mind, except that I had expected 10 times the amount of code. I'll play with this and see what I can reasonably add.

There's just one problem: after an error message (empty stack etc.), the cursor remains in the output window. There's my first chance at debugging ;-)

Konrad.



By [Neal Bridges \(Nbridges\)](#) on Wednesday, October 25, 2000 - 01:19 pm:

[Edit](#)

At that point, enter win to restart the 3-window console.

I can make it a closed system, but I'll need to add a vector to the kernel ABORT routine.

Neal



By [Tammy Cravit \(Tammycravit\)](#) on Wednesday, October 25, 2000 - 04:43 pm: [Edit](#)

I was playing around with this (VERY cool, BTW -- I find it to be really helping me in debugging the last bug or two in my Die Roller app), but in testing something out, I found a result I am curious about.

I started to type a definition into the input window (to dump out some variables), and I typed

```
:noname 8 0 do rolls i elem@ loop ;
```

and hit Enter. At that point, I saw the following stack display:

```
<4> -98 0 0 -46
```

I am curious what those values represent; namely, what's being put on the stack here? I guess I don't understand enough about the inner workings of a Forth interpreter to know what I'm seeing here, but that's why I am asking. :-)

Tammy



By [Neal Bridges \(Nbridges\)](#) on Wednesday, October 25, 2000 - 04:58 pm: [Edit](#)

Is that really exactly what you entered, all on one line? During compilation, items will be placed on the stack (by :noname, and then by DO), but they should all resolve down into one number (an XT) after the semi-colon.

Neal



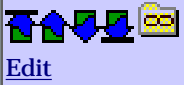
By [Tammy Cravit \(Tammycravit\)](#) on Wednesday, October 25, 2000 - 05:22 pm: [Edit](#)

I thought that was what I'd entered, but when I tried it again just now, I got a single stack item, which I assume is the XT you mentioned. So, I withdraw my previous question. :-)

Side question: is my understanding that an XT is like a "pointer" to a chunk of code

someplace correct? Also, I'd like to learn more about how Forth interpreters work internally -- is there a good explanation anywhere of how the whole thing works?

Tammy



By [Neal Bridges \(Nbridges\)](#) on Wednesday, October 25, 2000 - 05:33 pm:

[Edit](#)

There are many different ways to implement Forth. Quartus Forth uses a native-code approach; there are also various direct and indirect threading methods in use.

Search for Chris Jakeman's Minimal ANS Forth. It's a Forth written in Forth, and is quite instructive.

Neal



By [Reid Bishop](#) on Wednesday, October 25, 2000 - 07:41 pm: [Edit](#)

Neal,

Interestingly enough... this sample code does not appear to work properly on the Emulator with an OS2.0 ROM. It does, however, work properly on a real Palm with 2.0.

I haven't tried it with other ROM's yet. Any ideas?



By [Neal Bridges \(Nbridges\)](#) on Wednesday, October 25, 2000 - 09:51 pm:

[Edit](#)

Interesting! Where does it fail?

Neal



By [Reid Bishop](#) on Thursday, October 26, 2000 - 02:26 am: [Edit](#)

It draws the three sub-windows, has a VERY small blinking cursor in the top window, and appears to accept input. But it draws NOTHING else on any of the windows, including my input. I can tell that it appears to be "processing" key, etc, but zero output of anykind.



By [Neal Bridges \(Nbridges\)](#) on Thursday, October 26, 2000 - 10:09 pm: [Edit](#)

I'll have to investigate. Thanks for letting me know about it!

Neal



By [Daryl Lee \(Daryl\)](#) on Monday, October 30, 2000 - 05:47 pm: [Edit](#)

Hoping not to be accused of trying to gild the lily, I have modified my local copy of Neal's windows environment, making it incrementally more efficient. The change was to embed a call to "exit-window" in the DOES> portion of "window", which means the other calls to exit-window can be deleted.

I submit this mainly to see if there is some subtle reason that this might not be such a hot idea.

I apologize for the lack of proper indentation. It looks okay in the edit field, but the \fixed{ } tag doesn't seem to recognize the indenting spaces.

```
\ win2

needs graphics
needs core-ext
variable currwin

: exit-window ( -- )
currwin @
cursor-position rot 4 cells + 2! ;

: window ( h w y x "name" -- )
create 2over 2over , , , , , 2drop
does> exit-window
dup dup currwin !
window-bounds 4 cells move
4 cells + 2@ at
window-bounds >abs WinSetClip ;

20 160 00 0 window stack-window
68 160 22 0 window output-window
68 160 92 0 window input-window
create input-buffer 80 chars allot

: interpreter
begin
stack-window .s
input-window
state @ 0= if ." ok" then cr
[char] > emit space
input-buffer dup 80 accept
output-window
evaluate
again ;

: win
```

```
page
21 160 21 0 line
91 160 91 0 line
stack-window page
output-window page
input-window page
begin
['] interpreter catch dup -257 = if
(bye) then
dup -1 = if
input-window
0 more drop
depth 1- 0 ?do drop loop
else exit-window dup throw
then drop
again ;
```



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 05:54 pm: [Edit](#)

One subtle problem: the first time exit-window is called, the variable it uses (currwin) is uninitialized, and so it'll write to somewhere in memory you likely don't want it to.

Neal



By [Konrad Hinsén](#) on Monday, November 6, 2000 - 11:49 am: [Edit](#)

Neal, could you tell us a bit more about "adding a vector to the kernel ABORT routine"? Is that something that can be done in Forth?

I have played a bit with your code, and it looks like a good basis for the development system I had in mind. But it won't be very convenient if it has to be restarted manually after every error message.

Here's what I have in mind: keep the output and stack windows as they are, and replace the input area by a multi-line input form with two buttons, "execute" and "save". The first button would feed the contents of the input form to the interpreter. The second button would add them to a memo record which acts as a protocol file.

Such an environment would support the Forth-style incremental development: you keep one word and its test code in the input form until it works, then remove (or comment out) the test code and add it to the protocol file.



By [Neal Bridges \(Nbridges\)](#) on Monday, November 6, 2000 - 12:28 pm: [Edit](#)

The ABORT vector will need to be added within the kernel. That'll avoid the need

to restart after an error.

Are you really finding the three-window display useful on such a small screen? I played with it a bit, but found that the novelty quickly wore off.

Neal



By [Konrad Hinsen](#) on Monday, November 6, 2000 - 01:29 pm: [Edit](#)

The separation of input and output is not so useful as it is, but I do like the separate stack display, and it only steals a small amount of screen space.

My main reason for wanting to separate input and output is for providing an editable input form with a protocol option. I haven't tried that yet in Forth, but I really do like the editable input form in LispMe. In fact, I like the LispMe environment a lot, but Lisp is not such a great language for Palm development.

Konrad.

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General-purpose sorts

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): General-purpose sorts



By [Daryl Lee \(Daryl\)](#) on Monday, October 23, 2000 - 09:42 am: [Edit](#)

I spent the President's Cup Saturday writing a general-purpose sort word, and was not particularly impressed with it. Does anyone know where I can go to find a good set of sorting words? I think the stack will need values for a comparison function execution token, a starting address for the array to sort, size of each element, and number of elements. The one I wrote is called with:



By [Neal Bridges \(Nbridges\)](#) on Monday, October 23, 2000 - 10:39 am: [Edit](#)

That's very concise code, even for Forth! 😊

Neal



By [Daryl](#) on Monday, October 23, 2000 - 11:39 am: [Edit](#)

Good work, self! I meant to erase that last fragment, but since I've gone this far...

Word definition:

```
: Sort ( xt addr size count -- )
```

Typical calling sequence:

```
['] CompWord ArrayAddr ElemSize ElemCount Sort
```

And just to expose WHY I'm not impressed with it, here's what I ended up with (Bubble sort?):

```
: Sort
  dup 1- 0 do dup
    i 1+ do
      1 pick j * 3 pick + ( f a s c a l )
      2 pick i * 4 pick + ( f a s c a l a 2 )
      2dup 7 pick execute if
        3 pick MemSwap
      else 2drop then
    loop
  loop
  2drop 2drop
;
```

MemSwap is another general-purpose word that swaps two non-overlapping areas of memory in the Forth data space.

It's the liberal use of "pick" that bothers me. I'm pretty sure that long ago and far away I wrote a sort that didn't use pick.



By [Neal Bridges \(Nbridges\)](#) on Monday, October 23, 2000 - 12:20 pm: [Edit](#)

All those PICKs give me the horrors too. I suggest something like this:

```
needs core-ext
```

```
0 value item-size
```

```
0 value compare-xt
```

```
: compare-items ( addr1 addr2 size -- flag )  
  compare-xt execute ;
```

```
: exchange-items ( addr1 addr2 size -- ) ... ;
```

```
: bubble-sort ( addr count size xt -- )  
  to compare-xt  
  to item-size  
  ... item-size compare-items if ...  
  item-size exchange-items  
  ...  
;
```

Neal



By [Daryl Lee \(Daryl\)](#) on Monday, October 23, 2000 - 12:44 pm: [Edit](#)

So you recommend trading off PICKs with global variables. I thought of that, but I hate embedding variables in "included" files, due to the possibility of name conflicts. But I'll take your suggestion seriously.



By [Neal Bridges \(Nbridges\)](#) on Monday, October 23, 2000 - 01:30 pm: [Edit](#)

If you're worried about naming conflicts, you can set up a new wordlist and put your private words in there.

Neal



By [Doug Philips \(Dgou\)](#) on Monday, October 23, 2000 - 03:52 pm: [Edit](#)

Or, you could allot the space for an anonymous variable, store its address on the stack (which can be accessed at compile time for the words you want to have

use it), and at the end of your code/memo, drop the address off the stack.

But Neal is right, a wordlist is a much cleaner solution. Though it isn't perfect either because it prevents name conflicts of one type by making them name conflicts of another type, i.e. foo is not a conflict, its just not the foo you thought you were getting. J

-Doug



By [Kristopher Johnson \(Kdj\)](#) on Monday, October 23, 2000 - 07:27 pm: [Edit](#)

Neil Bawd's home page has a couple of implementations of Quicksort:
<http://home.earthlink.net/~neilbawd/>

Previous postings in this thread bring up a bigger question: I see lots of uses of global variables in Forth programs. Is this considered to be "good Forth style", or are there better alternatives? In addition to the naming conflict problem, it seems that globals would be bad for multi-threaded/multi-tasked/interrupt-handling environments.

It seems like the best alternative is use of local variables, but it seems that most Forth gurus discourage use of locals.

-- Kris



By [Neal Bridges \(Nbridges\)](#) on Monday, October 23, 2000 - 09:19 pm: [Edit](#)

Good Forth programming avoids globals where possible, preferring instead to pass arguments on the stack. Globals, however, don't affect multitasking Forths much, as they can exist in task-specific space where required.

Locals, like globals, are eschewed. Implicit parameter passing, using the stack as temporary working space, builds shorter, stronger, better factored Forth.

Neal



By [Steve Bohrer \(Skb\)](#) on Monday, October 23, 2000 - 10:53 pm: [Edit](#)

What about SysQSort for arrays, and DmQuickSort for databases? Seems any user code would have to be pretty tiny to beat using the ROM. I've not tried the array versions, but the [setup for a database sort](#) is pretty small. Most of my example is the compare function, and you'd need that in any case.

Steve



By [Neal Bridges \(Nbridges\)](#) on Monday, October 23, 2000 - 10:57 pm: [Edit](#)

The compare function that the ROM expects can be done in Quartus Forth as a callback. I haven't done much work on those calls myself, but it's a workable idea.

Neal



By [Steve Bohrer \(Skb\)](#) on Monday, October 23, 2000 - 11:54 pm: [Edit](#)

Workable indeed. The link above points to a working sample for database sorts.

It needs my A4 callback fix to work; I suspect the A4 callback problem was the issue behind other troubles with the ROM sorts. Debuffer shows that the OS sort code (in OS ver 3.1, anyway) uses A4, so without a fix, the Quartus stack is gone at the start of the callback.



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 24, 2000 - 12:00 am: [Edit](#)

I agree, Steve -- your database sort code looks great. My speculation was about SysQSort. I agree with your assessment; your callback fix will make that work nicely.

Neal



By [Daryl](#) on Tuesday, October 24, 2000 - 09:56 am: [Edit](#)

It seems that SysQSort is just what I was looking for. I made a quick stab at it, and found that I have to bone up on callbacks and addressing to eliminate that mildly annoying Fatal Exception message I'm getting.



By [Steve Bohrer \(Skb\)](#) on Tuesday, October 24, 2000 - 02:01 pm: [Edit](#)

Sample SysQSort

Here's a quick sample of sorting an array of random numbers. Requires my [callback words to setup A4](#). (Note that the latest version, used in this example, takes a stack size as an argument to allocCbStack.)

```
\ sortAry 00.10.24 skb
\ Sort random numbers in an array
```

```
needs core-ext
needs random
needs callbacks \ for A4 setup
```

```
: comparF ( CALLBACK )
\ Args: other. &n2. &n1.
\ compute n1 - n2 to give:
```

```

\ <0 if n2 greater, 0 if =, >0 if less
\
  installCbStack callback
  @a rot rot @a -
  >R 0. 0. R> \ restore stack depth
  0 d0! \ return result for C
  end-callback removeCbStack ;

: sortAry ( n adr -- )
\ Sort array of n numbers at adr
\ NOTE: Must call allocCbStack before
\ using this routine!
  2>R 0. \ other (unused)
  ['] comparF xt>abs
  2 \ width
  2R> >abs \ count and addr.
  SysQSort ; \ or sysInsertionSort

\ =====
\ scaffolding to test the above
\ =====

```

```

25 constant numEls
create baseP numEls cells allot

```

```

: showAry ( -- )
  baseP numEls for
    dup @ . cell+
  next drop ;

: randAry ( -- )
  baseP numEls for
    dup rand swap ! cell+
  next drop ;

: go ( -- )
  randAry
  ." Initial Array" cr showAry
  2048 allocCbStack
  numEls baseP sortAry
  freeCbStack
  cr ." Sorted Array" cr showAry ;

```

(Using only 25 elements for the test makes the output fit on one screen, but may not actually use a Quick Sort, as SysQSort falls back to SysInsertionSort for small numbers of elements.)



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 24, 2000 - 02:06 pm: [Edit](#)

You do good work, Steve. Thanks for the example!

Neal



By [Daryl Lee \(Daryl\)](#) on Tuesday, October 24, 2000 - 03:29 pm: [Edit](#)

I love it when a plan comes together! Thanks to both of you gentlemen. It also helps to discover that `xt>abs` exists, because I suspect it works a lot better than just `>abs` for extending the `xt`, which is what I was doing.

On a related note, I couldn't help but notice the simple usage of pushing a zero to convert a single to a double for loading `D0`. My habit for writing portable code made me use `s>d` there. Is there any other reason to prefer one to the other?



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 24, 2000 - 03:48 pm: [Edit](#)

Placing a 0 on the stack converts an unsigned or a positive single-cell value into an unsigned or positive double-cell value. `S>D` should be used when the single cell is considered signed or is negative.

Neal



By [Steve Bohrer \(Skb\)](#) on Wednesday, October 25, 2000 - 08:47 am: [Edit](#)

Since the result from the compare function is, in fact, a signed value, `S>D` is more correct.

On the other hand, in this case, we know the OS is only looking for a 16-bit value, so it will ignore the upper word of register `D0`. We just need to put something there, because `D0!` takes a double to load the full register with a long value.

Note that all the "magic words" like `D0!` and `xt>abs` are documented in the ["Words Specific to Quartus Forth"](#) section of the manual. I have found it handy to review this section from time to time, because I find words for things I didn't know I needed when I first read it.

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SetLabel

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): SetLabel](#)



By [Richard Chamberlain](#) on Sunday, October 22, 2000 - 06:02 am: [Edit](#)

Hi,

I've borrowed some code from this forum to set a label but when I use it I just get an exception. any ideas?

needs Forms

```
: num>ctl ( u controlid -- ) >r 0 <# 0 hold #s #> drop >abs r> SetLabel ;
```

thanks

Richard



By [Travis Casey \(Travis\)](#) on Sunday, October 22, 2000 - 10:56 am: [Edit](#)

Are you trying to set the text on a control, or on an actual label? SetLabel uses `ctlSetLabel`, which works for controls, but not for labels.

For labels, you need to use the `FrmCopyLabel` system call. Unfortunately, it has a few problems (at least, in 3.0 and previous versions of PalmOS. Don't know if these have been fixed). First, it draws the new label, but doesn't erase the old one -- thus, if the old label is longer (which is almost has to be -- see below), you'll end up with some of it still on the screen. You can work around that by using `FrmHideObject` and `FrmShowObject` to hide the label before changing the text and show it afterwards.

The second problem is more serious, though; if the length of the new label is longer than the length of the original label, PalmOS will not allocate new space for the label, but will simply write over space beyond the label, almost certainly causing an error. There is no simple workaround for this problem.

Because of these problems, it's generally recommended that labels only be used for static text. If you need text to change at runtime, it's generally easier to use a field that has the `editable` and `underline` attributes turned off. You can then use the `string2anyfield` module (in the `contrib` files section) to change its text.

--Travis



By [Richard Chamberlain](#) on Sunday, October 22, 2000 - 03:09 pm: [Edit](#)

Thanks for that Travis,

I swapped the label for a field and tested with the code that Neal posted, it still had a fatal exception. I'm going to look at the module you suggested but I'm still curious

why that code failed.



By [Travis Casey \(Travis\)](#) on Sunday, October 22, 2000 - 08:58 pm: [Edit](#)

Note to self: in addition to giving general advice, look at the code too.

My guess would be that it's bombing because SetLabel expects the string to be a zero-terminated string, which the string the <# #> sequence creates is not. Try this:

needs Forms

```
: string2zstring ( addr u -- addr u+1 )  
  + 2dup + 0 swap c! 1 chars + ;
```

```
: num>ctl ( u controlid -- )  
  >r 0 <# 0 hold #s #>  
  string2zstring drop >abs r> SetLabel ;
```

and see if it does any better.

--Travis



By [Richard Chamberlain](#) on Monday, October 23, 2000 - 02:53 am: [Edit](#)

Still no joy!

I added your code and still got the error.

The exception is object not on the form. So I thought about it for a while and guessed that the form hadn't been drawn when the code ran. so basically I triggered the change from a button instead - still nothing.

If I keep your zstring word the buttons kind of shift right across the screen, and if I take it after a while it just freezes (no error message).

Help!

Thanks for your help so far,

Richard



By [Ronny Svensson](#) on Monday, October 23, 2000 - 03:51 am: [Edit](#)

The 0 hold in num>ctl makes the string zero-terminated ok.

Why don you try a plain SetLabel first to check that your code-logic is ok?

```
create num-test char 1 c, 0 c,  
: num>ctl ( u controlid -- ) >r drop num-test >abs r> SetLabel ;
```

I don't think SetLabel works for Fields. Try a popup-trigger instead. I normally write directly on the form with type, emit, at etc.

Ronny



By [Ronny Svensson](#) on Monday, October 23, 2000 - 03:58 am: [Edit](#)

I think that the first plus in string2zstring should be removed making the code:

```
: string2zstring ( addr u -- addr u+1 )      2dup + 0 swap c! 1 chars + ;
```

But as i wrote before it isn't needed in num>ctrl and besides I don't think it's ok to write beyond the address returned by #>.

Ronny



By [Richard Chamberlain](#) on Monday, October 23, 2000 - 04:38 pm: [Edit](#)

That would explain the word name num>ctl - I perhaps should read things a little more carefully :-)

Yep, I changed that to a control (actually a button) and it works fine. I guess that string2anyfield actually works with fields? (having said that I presumed that setLabel would actually set a label!)

Thanks for everyones help,

Richard

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ExgPut Bug? L

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): ExgPut Bug? L



By [Wade Carlson](#) on Friday, October 20, 2000 - 10:38 pm: [Edit](#)

I am still trying to beam a record from the Memo Pad to the Memo Pad on another device (from within Quartus). From looking at the sources for Memo Pad, it looks like I need to be using ExgPut, which depends on a structure called ExgSocketType to feed all the correct info before doing the beaming. From the ExgMgr.h file, I have broke down the offsets for the ExgSocketType structure into the following:

```
0 UInt16 libraryRef;
2 UInt32 socketRef;
6 UInt32 target;
10 UInt32 count;
14 UInt32 length;
18 UInt32 time;
22 UInt32 appData;
26 UInt32 goToCreator;

\ Begin goToParams Structure
30 UInt16 dbCardNo;
32 LocalID dbID;
36 UInt16 recordNum;
38 UInt32 uniqueID;
42 UInt32 matchCustom;
\ End goToParams Structure

46 UInt16 localMode: 1;
48 UInt16 packetMode: 1;
50 UInt16 noGoTo: 1;
52 UInt16 noStatus: 1;
54 UInt16 reserved: 12;
78 Char *description;
82 Char *type;
86 Char *name;
```

So, my code goes like this:

```
\ ExgMgr 10/15/00 6:12 pm WDC
needs ids
needs zstrings
needs DataMgr
```

```
create ExgSocketPtr 90 allot
ExgSocketPtr 90 0 fill
```

```
: target ExgSocketPtr 6 + ;
: goToCreator ExgSocketPtr 26 + ;
: dbCardNo ExgSocketPtr 30 + ;
: dbID ExgSocketPtr 32 + ;
: recordNum ExgSocketPtr 36 + ;
```

```
: uniqueID ExgSocketPtr 38 + ;  
: description ExgSocketPtr 78 + ;  
: ExgName ExgSocketPtr 86 + ;  
  
: go  
[id] memo target 2!  
cardnum @ dbCardNo !  
z" MemoDB" drop >abs  
cardnum @ DmFindDatabase dbID 2!  
1 recordNum !  
z" Test Memo data" drop >abs description 2!  
ExgSocketPtr >abs ExgPut ;
```

It'll say preparing when you type 'go', but then will crash. Interestingly, if you change the offset for description from 78 to 48, it will at least give you 'Preparing: Test Memo data' before it crashes, which makes me think that ExgPut is somehow corrupt or that I completely don't understand Palm OS structures.



By [Neal Bridges \(Nbridges\)](#) on Friday, October 20, 2000 - 10:57 pm: [Edit](#)

Wade, I've never done any beaming code; hopefully someone will chime in here. I'll look at your code -- the only thing that comes to mind immediately is that as I recall, beaming requires callbacks.

Neal



By [Neal Bridges \(Admin\)](#) on Saturday, October 21, 2000 - 01:10 am: [Edit](#)

From Steve Bohrer:

If beaming does use a callback, it is likely that the OS is using register A4 between when you call ExgPut and when it calls your callback routine, and this may make your code scribble all over arbitrary RAM. You can use POSE and debuffer to check: Put a break in your Quartus code, and write down the A4 value, and then put a break at the start of your callback routine. If the A4 value is different, your callback can't work.

To work around this, I have words to install a pre-allocated [temporary callback stack](#) at A4.



By [Wade Carlson](#) on Saturday, October 21, 2000 - 01:26 am: [Edit](#)

Although I can't say that I fully understand callbacks, I believe only the IR Manager uses callbacks. Exchange Manager is a little more higher level and automated than IR Manager. How would one tell from the Palm OS Reference that one needed to use callbacks?



By [Steve Bohrer \(Skb\)](#) on Saturday, October 21, 2000 - 01:57 am: [Edit](#)

Right you are, I think. I've not done any beaming code, I just jump at the chance to chime in about callbacks, because I'm pleased with the code I worked out to make them work. Sorry.

If you've not already seen it, the on-line book "[Palm Programming : The Developer's Guide](#)" has a very readable outline of beaming, plus sample C code, in Chapter 8, Extras. It also covers some beaming debug and testing techniques, using the loopback modes.

And, it does not mention callbacks as part of using ExgPut.



By [Wade Carlson](#) on Sunday, October 22, 2000 - 02:09 pm: [Edit](#)

That reference was helpful, and I realize that I need to make calls to ExgSend and ExgDisconnect after ExgPut, but the problem is is that it crashes before it even completes ExgPut as in my above example. The fact that the offset for 'description' is off by 30 bytes (which I found by brute trial and error) makes me think that there is something wrong at a level lower than what I am doing from within Quartus. I am wondering if ExgPut is reading the ExgSocketPtr incorrectly?



By [Steve Bohrer \(Skb\)](#) on Monday, October 23, 2000 - 11:46 pm: [Edit](#)

Some of the ExgSocketType fields are "bit fields", which are a C hack to let the language represent bit-sized items in structures.

The C syntax ": n" after an integer variable in a structure means that the variable is a field of n bits within a single chunk of the size required for the specified integer type.

So, within the ExgSocketType structure, the fields from "localMode" to "reserved" are stored in a single 16-bit integer. The first four are a single bit each, and the reserved field sops up the leftover bits:

```
typedef struct ExgSocketType {  
    [...]  
    ExgGoToType goToParams;  
    UInt16 localMode:1;  
    UInt16 packetMode:1;  
    UInt16 noGoTo:1;  
    UInt16 noStatus:1;  
    UInt16 reserved:12;  
    Char *description;  
    [...]
```

Thus, the field "description" is, in fact, at offset 48, and so on. If you want to set or test any of the flag fields, use bit logic on the single cell at 46.

Still, it is not clear why this would make it crash. Perhaps a "name" is actually required?



By [Wade Carlson](#) on Tuesday, October 24, 2000 - 07:05 am: [Edit](#)

Ahh, that makes perfect sense. I have actually tried setting a 'name' and still the same crash. At least I am making some progress (albeit slow). I am determined on this one. I will share my code when (and if) I get this one figured out.



By [Mike Will](#) on Monday, October 30, 2000 - 09:43 am: [Edit](#)

I haven't worked on Exchange Manager since June, but back then I really wanted to have a Quartus library that could beam databases (and parts thereof) under program control. Alas, I failed miserably and abandoned the project. For what it's worth, here is some of the code I was using.

First, a list of ExgMgr errors:

```
<PRE>
```

```
\ EMErr ExgMgr Errors 6.11.00 MRW
```

```
0x1501 enum EMErr
EMErr exgMemError
EMErr exgErrStackInit
EMErr exgErrUserCancel
EMErr exgErrNoReceiver
EMErr exgErrNoKnownTarget
EMErr exgErrTargetMissing
EMErr exgErrNotAllowed
EMErr exgErrBadData
EMErr exgErrAppError
EMErr exgErrUnknown
EMErr exgErrDeviceFull
EMErr exgErrDisconnected
EMErr exgErrNotFound
EMErr exgErrBadParam
EMErr exgErrNotSupported
EMErr exgErrDeviceBusy
EMErr exgErrBadLibrary
</PRE>
```

Next, an A5 manipulator written by Neal to help me test the effect of protecting A5 across a callback:

```
<pre>  
\ A5 manipulation 6.5.00 NAB
```

needs asm68k

```
code save-a5  
prefix  
move .l a5 a7 -)  
end-code inline
```

```
code restore-a5  
prefix  
move .l a7 )+ a5  
end-code inline
```

```
</pre>
```

Next, the structs needed to implement ExgMgr calls a la code samples in Palm's SDK:

```
<pre>  
\ ExgMgr 5/25/00 MRW
```

needs struct

```
0 enum ExgAskResult  
ExgAskResult exgAskDialog  
ExgAskResult exgAskOk  
ExgAskResult exgAskCancel
```

```
struct ( ExgGotoType: 8 cells)  
1 cells: eg:dbCardNo  
2 cells: eg:dbID  
1 cells: eg:recordNum  
2 cells: eg:uniqueID  
2 cells: eg:matchCustom  
end-struct ExgGotoType:
```

```
\ must be erased before use  
struct ( ExgSocketType: 30 cells)  
1 cells: es:libraryRef  
2 cells: es:socketRef  
2 cells: es:target  
2 cells: es:count  
2 cells: es:length  
2 cells: es:time  
2 cells: es:appData
```



```

2 cells: es:goToCreator
sizeof ExgGotoType:
field es:goToParams
1 cells: es:statusWord: 16
2 cells: es:&description
2 cells: es:&type
2 cells: es:&name
end-struct ExgSocketType:
</pre>

```

Finally, I modified Neal's struct code to add more field'ing support. I read with some amusement Wade's recent post that one's brain fades at 30. I have found truth in that, and I continually fall back on C because it's the language I learned back when my neurons were still firing correctly.

```

<pre>
\ struct 6/5/00 MRW
\ based on Neal's work

```

needs toolkit

0 constant struct

```

: field ( n "fieldname" -- )
over create , ( store offset)
dup , ( store size)
+ ( adjust offset)
does> ( o -- o+n) @ + ;

: end-struct ( s "structname" --)
create , ( store size)
does> ( "name" --) @ create 0allot ;

: sizeof ( "structname" -- s)
' >body @ ; immediate

: fieldsize ( "field" -- s )
' >body 1 cells + @ ; immediate

: cells: ( n "fieldname" -- )
cells field ;
</pre>

```

Hope there's something useful in there. I didn't post my callback routine. I had such little success with it I thought it might be counterproductive. What do you think, Neal?

PS Neal, could I have/buy/steal a copy of the latest Quartus if there is one after 1.25R which is what I have.

Cheers
Mike



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 11:16 am: [Edit](#)

I'll send you 1.2.6 tonight, Mike. I think Steve Bohrer's callback fixes would fit this problem well. I haven't done a lot of exploring in this area myself, but it's interesting, and something I'd like to see working.

Neal



By [Wade Carlson](#) on Monday, October 30, 2000 - 06:11 pm: [Edit](#)

I'm confused now, I thought that we decided that the Exchange Manager didn't need callbacks? (only the IR manager does).



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 06:16 pm: [Edit](#)

I was making reference to Mike's comments about his callback routine. From what I've read about the Exchange Manager, it requires launch code support to receive data, but sending should be straightforward. How are you proceeding with figuring it out?

Neal



By [Wade Carlson](#) on Tuesday, October 31, 2000 - 06:47 am: [Edit](#)

I'm in the process of teaching myself some basic C++ in order to decipher it since my C++ is not as good as my Forth. I'll let you know if I get stuck again. Thanks.



By [Wade Carlson](#) on Friday, November 3, 2000 - 11:34 pm: [Edit](#)

Even though the Exchange Manager doesn't seem to require callbacks, I have reason to believe it does trash A5 or something of the sorts. I am trying to use Debuffer, but how do I insert 'a break' into my Quartus code?



By [Neal Bridges \(Nbridges\)](#) on Saturday, November 4, 2000 - 01:54 pm: [Edit](#)

TRAP 8 is the instruction that will drop you into Debuffer from the emulator. Here's a shortcut that doesn't require the assembler:

```
: breakpoint  
[ (hex) 4e48 cs, ] ; inline
```

Neal



By [Steve Bohrer \(Skb\)](#) on Saturday, November 4, 2000 - 11:26 pm: [Edit](#)

That's a handy trick, Neal, as well as another example of how to use what's really happening rather than just following the usual path. I can almost follow your lead, but couldn't yet write something similar.

The [puts us to interpret mode rather than compile mode, so the 0x4e48 value gets put on the stack right now, rather than being compiled into code that would put it on the stack when breakpoint runs. Then, cs, stores it into codespace.

But, I don't follow how this interacts with : and ; to make a callable code word, and how inline makes this word stuff this opcode code in place rather than being jsr'ed to.

I think I'm missing a bigger picture or deeper understanding of how colon words work in general, and how the compiler works. This all seems to me to be part the next tier of Forth understanding, and I've bumped against it various places, but not made it through.



By [Neal Bridges \(Nbridges\)](#) on Sunday, November 5, 2000 - 12:19 am: [Edit](#)

Quartus Forth is a native-code compiler, so all compilation is done directly to machine instructions. The technique shown above just allows us to compile a specific byte sequence directly into codespace, in this instance as a quick-and-dirty way to write a machine instruction without loading the assembler module.

inline flags a word so that when it is compiled into other words, it is copied inline instead of being called as a subroutine. There are a number of such flagged words in the Quartus Forth kernel.

Neal



By [Kristopher Johnson \(Kdj\)](#) on Sunday, November 5, 2000 - 10:07 am: [Edit](#)

My own newbie question: can the same effect be achieved with an IMMEDIATE word instead of INLINE? For example:

```
: breakpoint  
  [hex] 4x48 cs, ; immediate
```

-- Kris



By [Neal Bridges \(Nbridges\)](#) on Sunday, November 5, 2000 - 11:26 am: [Edit](#)

Yes, that will work (though it's 4e48, not 4x48), but only at compilation-time, within the definition of another word. My version will work if entered as a command at the console, or within another word.

Neal



By [Kristopher Johnson \(Kdj\)](#) on Sunday, November 5, 2000 - 03:23 pm: [Edit](#)

OK, that makes sense. To make sure I understand: if I use my IMMEDIATE version, and enter BREAKPOINT in interpret mode, it would put a couple of bytes into codespace, but it wouldn't actually trigger the trap, right?

Also, if I use your version, but leave out the INLINE, then it would still work. But the debugger would stop inside the BREAKPOINT routine rather than in the word that called it, so you'd have to step up one stack frame to actually see where the breakpoint is. Correct?

-- Kris



By [Neal Bridges \(Nbridges\)](#) on Sunday, November 5, 2000 - 06:05 pm: [Edit](#)

Right on both counts.

Neal

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Ms bug?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Ms bug?



By [Kristopher Johnson \(Kdj\)](#) on Friday, October 20, 2000 - 12:40 am: [Edit](#)

I've found a problem with the MS word, which waits for a given number of milliseconds. It seems to only work with values that are multiples of 10. Other values cause my Visor to freeze.

For example, the following work fine:

10 ms

20 ms

However, if I try the following, then the Visor stops responding and I have to reset. (Have a paper clip ready when you try this.)

25 ms

Maybe this is already documented somewhere, but I couldn't find it.



By [Neal Bridges \(Nbridges\)](#) on Friday, October 20, 2000 - 10:49 am: [Edit](#)

This was found previously and is in the archives. I have fixed it as at 1.2.6; send me an email and I'll update you.

Neal



By [Steve Bohrer \(Skb\)](#) on Saturday, October 21, 2000 - 12:17 am: [Edit](#)

I was trying to track down the other references to this bug to put a note in the "known bugs" topic, but I'm having trouble with the keyword search. Is there a magic code to make it match only the exact text I enter, rather than that text in any word?

For example, a keyword search for ms bug matches the "ms" in "programs" and the "bug" in "debug", so it generates lots of extra hits.



By [Neal Bridges \(Nbridges\)](#) on Saturday, October 21, 2000 - 12:25 am: [Edit](#)

The keyword search in this new version of the discussion forum is faster, but seems to behave as you say. I'll check on that.

Thanks again for that callback code!

Neal



By [Kristopher Johnson \(Kdj\)](#) on Saturday, October 21, 2000 - 11:50 am: [Edit](#)

Yes, I tried a search for " ms " (with surrounding spaces), but got the thousandss of "prograMS" and similar hits.



By [Kris Johnson \(Kdj\)](#) on Thursday, November 9, 2000 - 07:54 pm: [Edit](#)

I'm using 1.2.6R now, and the "MS freeze" bug still exists.

-- Kris



By [Neal Bridges \(Nbridges\)](#) on Thursday, November 9, 2000 - 08:23 pm: [Edit](#)

Thanks Kris -- I'll kill that bug for good this time. 😊

Neal

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Forth question

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Forth question



By [Richard Chamberlain](#) on Thursday, October 19, 2000 - 06:56 am: [Edit](#)

Hi gang,

I want to help creating a word which I'm having difficulty with.

I'm going to call the word during a loop which counts down from 5 - 0 stopping when I get to -1. I call ekey during the loop and then pass it to a handler. So I want:

```
( n eventType -- n )
```

I want to return either -1 if the user clicks a particular button or just n if he doesn't.

so in english:

```
tos is 5
user did nothing
loop is 4
user did nothing
loop is 3
user clicked button 1010 so set tos to -1
end loop
```

this is probably really easy, so apologies for that.

Richard



By [Erwin Schomburg \(Esc\)](#) on Thursday, October 19, 2000 - 09:05 am: [Edit](#)

```
: eventType
\ your stuff
ButtonPressed if drop -1 then
;
```

```
: yourloop
5 0 DO
I eventType
-1 = if LEAVE then
LOOP ;
```


/Erwin



By [Ron Doerfler](#) on Thursday, October 19, 2000 - 12:43 pm: [Edit](#)

One additional note on this. LEAVE will exit the loop and continue with whatever is after the loop in the word, which in this case is nothing so the word exits. You could also use the word EXIT, which exits the word completely regardless of what's after the loop, but my warning here is that if you would need to use UNLOOP EXIT so that the loop parameters are discarded from the return stack before exiting the word. In this case LEAVE or UNLOOP EXIT work the same, but having been through this I thought I'd mention it.

Ron



By [Richard Chamberlain](#) on Friday, October 20, 2000 - 02:35 am: [Edit](#)

Thanks for this guys - really helpful.

I ended up with this - any comments?:

```
: check ( eventType -- n )  
ctlSelectEvent = if -1 else 0 then ;  
  
: play-auto ( -- )  
6 0 do ekey check -1 = if leave then I 5 swap - play-string loop ;
```

I actually needed to count from 5 - 0 hence the I 5 swap -

Anything better spring to mind.

Also the first ekey returns immediately - obviously something due to a penup event or something and then subsequent ones have a short delay. I actually do want the delay, is there anything I can do apart from ekey drop at the beginning of the word?

Thanks again

Richard



By [Erwin Schomburg \(Esc\)](#) on Friday, October 20, 2000 - 03:57 am: [Edit](#)

```
50000. 2constant timeout.  
: flush-equeue begin 0. (ekey) 0= until ;  
: play-auto
```

flush-equeue

6 0 do timeout. (ekey) check if leave then 5 I - play-string loop ;

/Erwin



By [Erwin Schomburg \(Esc\)](#) on Friday, October 20, 2000 - 04:12 am: [Edit](#)

: play-auto

flush-equeue

0 5 do timeout. (ekey) check if leave then I play-string -1 +loop ;

/Erwin



By [Doug Philips \(Dgou\)](#) on Friday, October 20, 2000 - 08:47 am: [Edit](#)

: check (eventType -- n)

ctlSelectEvent = if -1 else 0 then ;

Isn't that the same as:

: check (eventType -- n)

ctlSelectEvent = ;

-D'gou



By [Erwin Schomburg \(Esc\)](#) on Friday, October 20, 2000 - 09:04 am: [Edit](#)

Yes.

Help to get up and running *and* a training course in obfuscation, all in one thread.

8-)

/Erwin



By [Richard Chamberlain](#) on Friday, October 20, 2000 - 09:04 am: [Edit](#)

doh!



By [Doug Philips \(Dgou\)](#) on Friday, October 20, 2000 - 12:32 pm: [Edit](#)

Ouch! Guilty as charged!

Actually, one of Forth's great strengths is its terseness. Indeed, one might be tempted to eliminate the check word and replace its use with the test instead. I would counsel against that. check nicely encapsulates and gives meaningful name to the operation (well, OK, not a very specific name), and gives you an

isolated point at which to change the logic should you need to (or if you port the code to a different system where '=' returns something different).

Actually, the stack diagram should read:

```
: check ( eventType -- 0|-1 )
```

```
...
```

```
;
```

if you are depending on exactly those values, or the type of value it returns, if you want boolean, positive integer, etc.

-Doug



By [Neal Bridges \(Nbridges\)](#) on Friday, October 20, 2000 - 11:30 pm: [Edit](#)

The IF - 1 ELSE 0 THEN code shows up from time to time, particularly with programmers from other environments where true is 1. In Standard Forth, TRUE is always 'all bits set', which is equivalent to -1 on the vast majority of processors. This value of TRUE is very handy for bit-masking, and for writing code with fewer IF/THEN pairs.

Neal



By [Richard Chamberlain](#) on Saturday, October 21, 2000 - 03:26 am: [Edit](#)

Thats right. Its due to my c,c++ and java background - and nothing to do with my stupidity at all! :-)



By [Doug Philips \(Dgou\)](#) on Saturday, October 21, 2000 - 09:11 am: [Edit](#)

You're right, its not to do with your stupidity, just your place on the learning curve. If ignorance is lack of knowledge, that will diminish as you learn (and in the case of some of us, ah, re-learn J) the Forth philosophy. Stupidity is a term I reserve for willfull ignorance/refusal-to-learn, though I might be in a minority in that interpretation.

Lest you think I take that too seriously (After all, life is too important to take seriously!) even Charles Moore, the inventor of Forth, admits that he goes over his code many times, looking for ways to simplify it.

-D'gou

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R_Mines - New Quartus App

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): R_Mines - New Quartus App



By [Mark Beckman](#) on Thursday, October 19, 2000 - 01:29 am: [Edit](#)

R_Mines is a Palm version of Minesweeper. It's actually been done and fully tested for some time now but I've been slow to put the final touches on it and get a web page up.

The web page is still a day or two away but I'm making the files available to all of you now. Maybe someone will spot something that my beta testers and I missed and keep me from making a complete fool of myself.

A zip archive with R_Mines, sources, and resources is at

http://www.jps.net/mbeckman/palm/r_mines_src.zip

A zip archive with no sources is at

http://www.jps.net/mbeckman/palm/r_mines.zip

Have Fun !

Mark Beckman



By [Neal Bridges \(Nbridges\)](#) on Thursday, October 19, 2000 - 08:19 pm: [Edit](#)

Just had a look. Very nicely done!

Neal

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Whoops...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Whoops...



By [Travis Casey \(Travis\)](#) on Tuesday, October 17, 2000 - 11:46 am: [Edit](#)

I accidentally included an "extra" file in ezUI.zip -- prefs.txt. It contains untested code for accessing preferences via the PalmOS 2.0 and above functions.

I'm making a new zip right now -- if you've been fast enough to download a version of the ezUI.zip that has prefs.txt in it, please be aware that that code isn't needed by anything else in the package, and that it is *completely* untested right now.

Sorry...

--Travis

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

EzUI current version posted

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): EzUI current version posted



By [Travis Casey \(Travis\)](#) on Tuesday, October 17, 2000 - 11:41 am: [Edit](#)

The current version of ezUI is now available from [my Quartus web page](#). (Or, if you just want it straight, [here's the zip file](#).)

I've included the pushbuttons and string2anyfield memos in the zip file, since they're not part of the library that ships with Quartus. I'm assuming that will be OK with their authors; if it's not, let me know and I'll fix it.

I haven't gotten a chance to do anything more than think about how to do an automated event loop... I think any implementation is going to wind up being a tradeoff, and am trying to decide what will be the best tradeoff. Anyone else's thoughts on the matter are welcome. I'll have to put down mine later -- I'm feeling a bit fried at the moment.

At any rate, if you try out ezUI, please let me know what you like, dislike, and/or think should be added... it's no fun to send out code and never hear back. :-)

--

Travis



By [Doug Philips \(Dgou\)](#) on Tuesday, October 17, 2000 - 09:44 pm: [Edit](#)

Thanks Travis!

I downloaded it (after the clean up, say around 6pm Eastern time). Took a look at it in RSRC Edit. Was amused to find that what looked like "pop up triggers" where just characters in a funky font.

As for the automated event loop, I think my previous comments in the other thread still stand, I haven't had any change of heart or additional ideas. Whether I get around to implementing something a'fore you do, I dunno. In any event ;-)

the ezUI should be orthongonal.

Will let you know how it goes with the ezUI part (I'm still prototyping my interface in RsrcEdit, it changes about everyday, so I'm not yet ready to put anything behind it yet).

-Doug



By [Travis Casey \(Travis\)](#) on Tuesday, October 17, 2000 - 10:02 pm: [Edit](#)

Oh, you mean the up and down "roller arrows" on the time dialog? Yeah, I was

surprised to find that too... I literally just used RsrcEdit to copy the time dialog from out of a PalmPilot Pro's "General" preferences app, then renumbered the the form and the items in it.

I like that about resources... if you see that another program does something with a form that you'd like to do, it's very easy just to look and see how they did it, or just copy it.

--Travis



By [Doug Philips \(Dgou\)](#) on Tuesday, October 17, 2000 - 10:30 pm: [Edit](#)

Ah, I knew that was familiar (though I don't change the time on my PalmOS devices very often. J). Actually, is there some reason that you can't just use that resource directly (hypothetically, assuming that it won't change with a new version of the O/S)?

Copy rather than re-write.

Reuse rather than copy.

....

-Doug



By [Travis Casey \(Travis\)](#) on Tuesday, October 17, 2000 - 11:04 pm: [Edit](#)

It's not in PalmOS 3.1 or higher -- they've created a built-in function to get a time from the user, like the one for date. I suppose it would be possible to detect the OS version and either use the one from General or use the built-in function appropriately, but I think I'll save trying to do something like that for a later revision.

Also, there's the remote possibility that someone out there is running on a PalmOS 3.0 machine and has used TRG's Flash utilities to remove the General preferences app -- in which case the resource wouldn't be there. :-/

--Travis



By [Doug Philips \(Dgou\)](#) on Wednesday, October 18, 2000 - 12:41 am: [Edit](#)

Ah, yes, well, in the "general case" one would always check for the availability of resources before attempting to use them (just good practice).

I've spent a few minutes playing with your new stuff. Doser seems to be fine. ezTimetest however, isn't working. I had to add 'needs ezDate' and 'needs pushbuttons' to ezTime to get it to load, except them it hits a undefined word in ezTimetest itself (mydtime) and without comments I dint really feel like guessing as to which control/field/etc id that was supposed to be.

Also, I'm not sure why simple-handler is being used since the doserc database doesn't have any resources defined in the range used by simple-handler. Is this just a decoy? J

-Doug



By [Travis Casey \(Travis\)](#) on Wednesday, October 18, 2000 - 12:09 pm: [Edit](#)

Arg. Note to self: before posting up a group of files, make sure they're the most recent working versions. ezTime and ezTimetest were both bad versions; working versions are now up -- just tested them on the Palm, sync'ed, and made a new archive with those versions.

simple-handler was included just because it's part of the template that I normally use for making a Palm app -- it's not really needed in any of the three. I took it out of all three of them.

I've also added datestamps and my initials to datetest and doser, and added a "version" as the first line of the README.txt, to make it easy for people to compare the version they have to the one online.

[Here's a link to the ezUI.zip](#) so anyone reading this doesn't have to scroll all the way back to the top to download the new version.

Gee, I guess I'm going to have to start organizing things like a real programmer now... not used to having other people using my code in addition to me. :-)

--Travis



By [Doug Philips \(Dgou\)](#) on Thursday, October 19, 2000 - 01:03 am: [Edit](#)

Thanks! I pulled it down before leaving from work. Got as far as verifying that I could turn the crank, it seems to be fine. Will play more tomorrow.

-Doug

P.S. Oh, it is tomorrow. Will play more later today. J

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SysTaskCreate

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): SysTaskCreate](#)



By [Zvly](#) on Tuesday, October 17, 2000 - 06:40 am: [Edit](#)

Greetings,

Concerning 'SysTaskCreate'

I know it's non-documented but what is the 'taskIDP' ? Is it a pointer to the current task ?

Thank you... I'm bit lost...



By [Tammy Cravit \(Tammycravit\)](#) on Tuesday, October 17, 2000 - 11:38 am:

[Edit](#)

Have a look at the following forum post:

<http://www.quartus.net/discus/messages/23/501.html?TuesdayMay2320000444pm>

The consensus seems to be that the OS is (by means of a license agreement with the kernel vendor) compiled with exactly the number of tasks that it needs, and that there aren't any spare slots for user-created tasks.

Tammy



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 17, 2000 - 11:39 am: [Edit](#)

You might find a bit of guidance in the Palm OS sources that you can download from Palm, following a bit of paperwork.

It may be a bit of a wild-goose chase. As I understand it, the Palm kernel has been compiled with a maximum number of tasks equal to the number the Palm OS itself uses, leaving no extras for developers.

Neal



By [Zvly](#) on Thursday, October 19, 2000 - 07:24 am: [Edit](#)

Thank you very much =)

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Data Base Files?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Data Base Files?



By [Jim Purdy](#) on Tuesday, October 17, 2000 - 05:45 am: [Edit](#)

I am writing a PC desktop, conduit-like program to manipulate some Palm DB files after hotsync (in Forth of course).

If I create my own DB it will probably be similar to the MemoPad DB. Otherwise, I will try to extract the desired info from the MemoPad file.

Question:

Does anyone know the format/structure of a Data Base file on the PC?



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 17, 2000 - 11:41 am: [Edit](#)

Here's a link:

<http://195.206.35.44/pub/palm/docs/pdb-format.html>

Neal



By [Wade Carlson](#) on Tuesday, October 17, 2000 - 10:49 pm: [Edit](#)

Also take a look at PalmDB automation server (on PalmGear). It is a plug in for MS visual basic to automatically access Palm databases on the computers hard drive. It seems to work well for me.



By [Jim Purdy](#) on Wednesday, October 18, 2000 - 08:04 am: [Edit](#)

Thanks for the Info...

I will look at PalmDB server, but I don't think I can integrate it. I am coding on the PC side with MPE ProForth.

I think it will be an interesting time due to the fact the the data (from the Motorola-generated file) is byte-reversed with respect to the PC's way of looking at it. This will make for some new custom store and fetch words.

Jim

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Newbie question ??

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Newbie question ??



By [PAUL T.](#) on Monday, October 16, 2000 - 08:06 pm: [Edit](#)

Hi, I just found out I can use Forth to create apps on board. I still can't decided either learn forth or c++ . I don't know both languages, I do know VB , Lotus script and other languages.

I need some recommendation on how easy to learn forth compare to c++ on palm , most of apps I would like to create is database related. but I assumed both language can handle mutilpe DB files.

Any suggestion are welcome.

Thanks!



By [Travis Casey \(Travis\)](#) on Tuesday, October 17, 2000 - 12:27 am: [Edit](#)

Well, here's my experience as someone with a lot of time in using "traditional" programming languages:

Getting started with Forth took me a while. It's a considerable adjustment to get used to thinking about what's on the stack and how to rearrange it rather than using variables.

Once I started to grow comfortable with this method of working, though, I've found Forth to be a very easy language to use and very powerful -- I can do things with a short snippet of Forth that would take a lot more writing in another language.

I've found that my level of code reuse is a lot higher with Forth than with other languages that I've used -- Forth's way of thinking encourages breaking down the problem into a lot of small functions, which makes it more likely that some of them will be useful in other programs.

Further, Forth seems much more flexible than other languages I've worked with -- if I want to do objects, I can, but I don't have to. If I want to use exceptions, I can -- but if I'd rather, I can use a try/recover style of error handling. If I really wanted to, I could implement an "on error" style like that used by some versions of BASIC.

I've written probably a hundred times as much C and C++ code as I have Forth at this point... but I already feel more comfortable taking on a project like

creating a UI library in Forth than I would in C++.

So... I'd say that Forth will be harder to learn, but learning it is well worth the effort. In the long run, I think you'll find Forth easier than C++. To use a metaphor, learning C++ is like going up a long incline -- it's not hard to do, but it takes a long time to get to the top. Learning Forth is like going up the steep side of a low hill -- it looks harder, but you'll get to the top a lot faster.

Now, on the practical end, as far as I know, there's no C++ compiler that runs on the Palm. OnBoard C is a C compiler, which is not the same thing as C++. My experience is that, over the long haul, C is harder to use than C++.

Quartus also has an advantage over OnBoard C in that it can be used as an interpreter as well as a compiler -- which means you can test out ideas on how to do something without having to worry about having an entire application framework. Being able to use the interpreter is also a big help for debugging.

Overall, I'd definitely recommend Quartus over OnBoard C for development on the Palm.

--Travis



By [Barry Ekstrand \(Ekstrandbb\)](#) on Tuesday, October 17, 2000 - 08:56 am:

[Edit](#)

I'll throw my 2 centavos in. I come from the perspective of one who had dabbled in a bit of Fortran and BASIC programming 15-20 years ago and not a lot since. I was just beginning to learn C to develop char-ware programs for the Palm OS when I found Quartus Forth. Although I had no knowledge of Forth, the stack-based language appealed to my engineering background (HP calculators are loved by all engineers, near as I can tell). I especially like the fact that Quartus offers both an interpreter and compiler - I find the interpretive mode very helpful for working out subroutines before dropping into a larger program.

I've run into many roadblocks on my learning curve, but overall I find the language to be pretty logical overall for a novice to dig into. The outstanding participation on this forum has quickly gotten me past those things that I couldn't figure out on my own. A great program and a great forum user group, both are highly recommended.

Regards,

Barry Ekstrand



By [Doug Philips \(Dgou\)](#) on Tuesday, October 17, 2000 - 10:07 am: [Edit](#)

I'll add my two cents in here too. If you don't already know C or C++ ... It will

probably be easier to learn Forth than otherwise. As Travis has indicated, the learning curve for Forth can be steeper (and shorter) than for other languages. Quartus isn't particularly easier or harder than other Forth systems to learn, but you'll probably be trying to learn the PalmOS calls at the same time, which can compound the apparent effort of learning Forth/Quartus.

Forth is much more of a programmer amplifier than other languages, and so its much easier to write bad Forth than bad C/C++/..., and its also much easier to write great Forth then great C/C++/... as Forth is both a high-level language and a low-level (bit banging) language. Probably the weirdest thing about it coming from an algol-like language or basic language background is the stack. Its very powerful, but very simple. If you find you're trying to juggle a lot of stack data, you need to rethink you're program structure/design. As Barry mentioned, if you're already familiar with HP calculators, or RPN syntax, Forth won't seem so strange.

-Doug



By [PAUL T.](#) on Tuesday, October 17, 2000 - 08:27 pm: [Edit](#)

Thanks for all your suggestions, I finished reading and created the "Hello world" apps, I printed out the ANSI Forth ref. I browse through the leo wong website. what I should start next ??



By [Travis Casey \(Travis\)](#) on Tuesday, October 17, 2000 - 09:11 pm: [Edit](#)

Well, I've always found that the best way to learn a language past the basics is to pick a project I want to do and start working on it. What would you like to have on your Palm that you don't already?

--Travis



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 17, 2000 - 09:22 pm: [Edit](#)

I agree with Travis. Learn by doing. The hurdles you need to jump will become immediately obvious, and the questions (and answers) will follow.

Neal



By [PAUL T.](#) on Wednesday, October 18, 2000 - 12:45 am: [Edit](#)

Ok,I would like to create an really standard database apps. wish will first show a table to list all the records, when tap on it , it will go into the details record edit form, you can go next, prev, delete the records from there.

Any code there In file area , I can start take a look. or it is too complicate for beginner ?

Thanks!



By [Doug Philips \(Dgou\)](#) on Wednesday, October 18, 2000 - 12:58 am: [Edit](#)

Doesn't seem like its too complicated for a beginner. I would suggest, though, that you flesh out the interface first, and by then you'll be more comfortable with Quartus and PalmOS stuff and ready to tackle manipulating the PalmOS's databases. Though if you just want to dive in to all of it, that'd be an interesting learning experience too.

Is the database format fixed, or will the user be able to define the database structure (number of fields in each record, field type, etc.)?

-Doug



By [PAUL T.](#) on Wednesday, October 18, 2000 - 01:13 am: [Edit](#)

Doug,

I will start with fixed database format with name, address, tel. something simple. idea is sort by name.

I'm trying to create the form resouces using RsrcEdit. I guess my first form is a form with table (list all records)

Thanks!



By [Trevor Steele](#) on Wednesday, October 18, 2000 - 05:11 am: [Edit](#)

Paul

Do you want a table or just a list? Making a list to display records is much easier than a table. However if a table is what you need I may be able to give some assistance. I have a feeling that a list may fit your needs here.

Best regards

Trevor Steele



By [PAUL T.](#) on Wednesday, October 18, 2000 - 08:10 am: [Edit](#)

Trevor,

I think is table, because I want to display more than one columns, say display name and tel fields on the table.

Thanks!

Regards,
Paul

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New Quartus App

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): New Quartus App



By [Richard Chamberlain](#) on Saturday, October 14, 2000 - 02:12 am: [Edit](#)

Hi Folks,

I've finished my first little Quartus app. It's pretty small on features, so don't expect much!

You can get it at:

http://homepage.ntlworld.com/richard_chamberlain/g_tuner.zip

or if you want the source as well:

http://homepage.ntlworld.com/richard_chamberlain/g_tunerS.zip

What I would appreciate is constructive criticism over the Forth code. It's pretty dire as far as I'm concerned, so please rip it to pieces - but go easy on me if you send me a mail :-)

Thanks for all your assistance,

Richard



By [Neal Bridges \(Nbridges\)](#) on Saturday, October 14, 2000 - 06:11 pm: [Edit](#)

Congratulations, Richard!

Neal

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Forth Books

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Forth Books



By [Richard Chamberlain](#) on Friday, October 13, 2000 - 04:26 am: [Edit](#)

Hi all,

I've all most finished my first application, but I get the feeling I'm a very poor Forth programmer :- (

Can anyone recommend any books that I can get hold of - to add further complication - in the UK?

Thanks

Richard



By [Neal Bridges \(Nbridges\)](#) on Friday, October 13, 2000 - 11:07 am: [Edit](#)

If you join the Forth Interest Group in the UK, you can borrow items from their extensive library of Forth books:

<http://forth.org.uk/4thres/librindx.htm>

Neal

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"Object not in form" error

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): "Object not in form" error



By [Ludvig Svenonius](#) on Thursday, October 12, 2000 - 10:15 am: [Edit](#)

I get an "Object Not In Form" fatal error when I try to acquire a pointer to an object in a form (in this case a field). Can someone tell me what I'm doing wrong from the code below?

```
1000 [id] tFRM DmGet1Resource
( FrmHand. )
2dup MemHandleLock
( FrmHand. &FrmP. )
2dup 2001 rot rot
( FrmHand. &FrmP. 2001 &FrmP. )
\ 2001 is the ID of the field object I'm
\ trying to acquire a pointer to.
\ The above code works as intended, I've verified.
FrmGetObjectIndex \ This causes the fatal error
( FrmHand. &FrmP. fieldidx )
rot rot FrmGetObjectPtr \ Discard form pointer
( FrmHand. &FldP. )
\ ...
```

Obviously I'm doing something wrong when calling FrmGetObjectIndex, but I don't understand what. The documentation says it takes an object ID and a form pointer as arguments, and in that stack order.

Thankful for any help!

--

Ludvig Svenonius



By [Neal Bridges \(Nbridges\)](#) on Thursday, October 12, 2000 - 10:22 am: [Edit](#)

Ludvig, though I haven't tested this idea, I believe FrmGetObjectIndex only gets the index for items on an active form, i.e. a form that is presently on-screen.

Perhaps that's the difficulty.

Neal



By [Ludvig Svenonius](#) on Thursday, October 12, 2000 - 10:41 am: [Edit](#)

It doesn't seem like it. I get the same error even when the form in question is displayed at the time the code is executed. I wonder if it's okay to pass in a resource pointer to FrmGetObjectIndex as the form pointer... I don't see how else the form pointer could be aquired.

--

Ludvig



By [Neal Bridges \(Nbridges\)](#) on Thursday, October 12, 2000 - 10:48 am: [Edit](#)

Ah, I see. Yes, that's the problem. The resource pointer is not in fact a pointer to a form

A form structure is created in dynamic RAM when a form is initialized; you can retrieve the form pointer using FrmGetActiveForm.

Neal



By [Ludvig Svenonius](#) on Thursday, October 12, 2000 - 11:09 am: [Edit](#)

That did it. Thanks a lot. =)

--

Ludvig

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New char-ware Quartus app released

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): New char-ware Quartus app released



By [Barry Ekstrand \(Ekstrandbb\)](#) on Wednesday, October 11, 2000 - 05:57 pm: [Edit](#)

I just wanted to let the Quartus community know that I have released CanMortgage v1.00, a Canadian mortgage calculator program. I did this program in response to requests from Canadian users of my LoanPayment app. No surprises here, it has all of the same functions of LoanPayment but uses the Canadian method of calculating mortgages for all calculations. It is available on PalmGear, and like my LoanPayment app, all registration fees are donated to the Juvenile Diabetes Foundation.

Barry Ekstrand



By [Neal Bridges \(Nbridges\)](#) on Thursday, October 12, 2000 - 11:51 am: [Edit](#)

Thanks for letting us know, Barry!

Neal

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Colour bitmaps

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Colour bitmaps



By [Richard Chamberlain](#) on Wednesday, October 11, 2000 - 04:16 am: [Edit](#)

Hi Gang,

Can some one talk me briefly over the steps of creating a colour bitmap. I'm using rsrcedit on my palm at the moment but would really like some colour (else what's the point of a IIIc?). Is it possible I can create a bitmap in pilrc and then copy it into my rsrcedit created file? If so how.

Thanks as always,

Richard



By [Erwin Schomburg \(Esc\)](#) on Wednesday, October 11, 2000 - 04:53 am: [Edit](#)

As from OS3.0 you can have bitmap and icon resources as bitmap families. That is, under the same resource id you have up to four images, from bit depth 1 (b/w), depth 2 (4step grayscale), depth 4 (16step grayscale) to depth 8 (256 color scale). In RsrcEdit, when inside a bitmap or icon you see a form with the title caption "<resource type><resource id>, Depth 1". Tap on the title or on the menu button and you are given the choice of color depth to create the (other) members of the bitmap or icon family.

Tip 1: if you have the 1 bit (or 2 bit) image, just copy it from the 1 bit (or 2 bit) view to the 8 bit view and fill in the colors. That way you don't need to recreate the contours.

Tip 2: if you are interested in backwards compatibility (down to PalmIII), just create 2 family members, the 1 bit plane or the 2 bit plane and the 8 bit plane. That will save you a lot of work and also a lot of space in the resulting application database.

/Erwin

BTW: Of course you can edit resource databases "imported" from an external build in RsrcEdit.



By [Richard Chamberlain](#) on Wednesday, October 11, 2000 - 06:50 am: [Edit](#)

Thanks Erwin,

You see the things you miss if you don't read the manual.

Out of curiosity when I played with pilrc (ok I admit it again I didn't thoroughly read the manual) I could only create a bin file - am I supposed to compile that?

Richard



By [Erwin Schomburg \(Esc\)](#) on Wednesday, October 11, 2000 - 09:52 am: [Edit](#)

Its a long time since I'm out of GCC and ASDK, but AFAIR you need to at least link it so you get an installable skeleton (a .pdb or .prc file).

/Erwin

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Exchange Manager

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Exchange Manager



By [Wade Carlson](#) on Tuesday, October 10, 2000 - 05:48 pm: [Edit](#)

Has anybody messed around with the Exchange Manager at all? I am trying to beam a record from my app to the memo pad on another users palm. It looks like I will be digging through a lot of dirt to figure this out, so if anybody has already tread these waters it would be most helpful. Thanks.

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Newbie question: reading 'data' resources

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Newbie question: reading 'data' resources



By [Ludvig Svenonius](#) on Monday, October 9, 2000 - 04:49 am: [Edit](#)

I have been trying to figure out how to aquire a pointer to a 'data' resource and use the pointer to read bytes using QForth. The code below illustrates what I'm trying to do (in this case print the byte at offset +1 from the beginning of the data). This only raises fatal exceptions, however. I figure I might be doing something wrong when manipulating the 32-bit address to get a new pointer pointing to the byte at the desired offset (2dup + 1 c@a). I simply add the offset to the last number on the stack (is that the most significant or least significant word of the address?). I've also tried swapping the last two words on the stack before adding the offset, and swapping them back before fetching the byte value, but this doesn't work either (2dup swap + 1 swap c@a).

```
2000 [id] data DmGet1Resource
2swap 2over ( h1 h2 y x h1 h2 )
MemHandleLock ( h1 h2 y x p1 p2 )
2dup + 1 c@a .
```

Can someone please tell me what I'm doing wrong and what I should do to be able to access bytes from the data resource without causing any fatal exceptions?

--

Ludvig Svenonius



By [Jim N. Deakin \(Jndeakin\)](#) on Monday, October 9, 2000 - 05:13 am: [Edit](#)

You should use M+ to add a single-cell number to a double.

```
M+ ( d1 n1 -- d2 )
```



By [Doug Philips](#) on Monday, October 9, 2000 - 10:23 am: [Edit](#)

And shouldn't the '1' come before the M+ ?
otherwise you're adding the address to itself and previous stack garbage? (Or I'm just mis-reading this altogether!)

-Doug



By [Jim N. Deakin \(Jndeakin\)](#) on Monday, October 9, 2000 - 10:40 am: [Edit](#)

eech! I didn't even check that! That'll teach me not to email first thing on a Monday morning :- (

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Pop Up Problem

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Pop Up Problem



By [Richard Chamberlain](#) on Sunday, October 8, 2000 - 03:32 am: [Edit](#)

Hi folks,

I'm using 1.2.5R which I received when I registered. I have a problem with the Pop Up control event not being received. After reading a thread on this forum it would seem I need a later version. Can anyone tell me where I can get this from. I've been stuck on this for over a week now, I've tried mailing Neal but I haven't had a response.

Thanks,

Richard



By [Neal Bridges \(Nbridges\)](#) on Sunday, October 8, 2000 - 12:39 pm: [Edit](#)

You did have a response, Richard -- not received, apparently. I'll re-send 1.2.6.

Neal



By [Richard Chamberlain](#) on Sunday, October 8, 2000 - 12:53 pm: [Edit](#)

Hi Neal,

Marvellous - I've got your file and it works perfectly now thanks very much.

Richard

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DmWrite Errors

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): DmWrite Errors



By [David Slay](#) on Sunday, October 8, 2000 - 12:00 am: [Edit](#)

I have been working on a small database application, constructing each section of the program out separately, testing for errors, then adding it to the large program. All was going well until I made a routine that edits records.

I open the DB by first getting the ID with DMFindDatabase, then using DMOpenDatabase. I then use DMQueryRecord and MemHandleLock to get the address of the record I want to replace. I then use DMWrite to write the new record on top of the old one. This works fine as a small stand alone program, but when I add it to the large application it crashes.

I have isolated the crash to the DMWrite call (No crash in I remark it out). I have looked at the stack immediately before the crash, and it looks fine. The source address is a little different than when the program runs as a small stand alone, but the string I am writing to the DB is in a different place in the big application. (This seemed OK to me) The rest of the stack is exactly the same.

The errors that I get are a series of "...has just read directly from memory manager data structures..." alternating with "...has just written directly to memory manager data structures..." These two errors alternate with each other until I finally get tired of pressing the continue button and do a reset on the POSE.

Has anyone seen a similar situation before. I couldn't find anything in the archive. Please help.

By the way, Thanks Neal for giving me an alternative to C. I will be registering as soon as I prove to myself that I can make this application work.



By [Neal Bridges \(Nbridges\)](#) on Sunday, October 8, 2000 - 12:13 am: [Edit](#)

DmWrite is an unpleasant system call. See if you can replicate the conditions of your DmWrite call in a single hard-coded definition, and we can have a look at it and see what's what.

Neal



By [David Slay](#) on Sunday, October 8, 2000 - 12:18 am: [Edit](#)

I have tried to replicate the error outside the large application. The code gives no errors then. Could this just be a POSE thing?

I am obviously new to palm programming. Is there an alternative to DmWrite that I can use in this situation?

David



By [Neal Bridges \(Nbridges\)](#) on Sunday, October 8, 2000 - 12:25 am: [Edit](#)

When you need DmWrite, there's no alternative.

If you cannot replicate outside the app, it may not be your DmWrite call that's failing, but some supporting/surrounding code.

Neal



By [Steve Bohrer \(Skb\)](#) on Sunday, October 8, 2000 - 10:49 pm: [Edit](#)

DmQueryRecord opens a record without setting the "busy" flag, so you should not try to write to it.

If you wish to write to a record, open it with DmGetRecord, and then call DmReleaseRecord after you are done with it, to clear the busy flag.

If you just want to read it, use DmQueryRecord to open, and don't call DmReleaseRecord.

That said, I don't know if the crash you report would result from calling DmWrite on a record that does not have its busy bit set.



By [David Slay](#) on Wednesday, October 11, 2000 - 10:47 pm: [Edit](#)

You were right, Neal. The error was coming from surrounding code. I had a 2drop when there was only one item left on the stack. The program then went into my event loop and started generating errors (thus the neverending alternating errors).

My code seems to be working now, but do I need to change my DMQueryRecord calls to DMGetRecord? Are there any problems caused by writing to a record that doesn't have the busy flag set?



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Wednesday, October 11, 2000 - 11:04 pm:

DmWrite doesn't check the busy flag, at least not in its current incarnation. However, it might be wise to behave properly to protect yourself against future OS changes.

Neal

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New Quartus Application

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): New Quartus Application



By [Trevor Steele](#) on Friday, October 6, 2000 - 04:50 pm: [Edit](#)

Hi everyone

I've just posted my new Scorebook application at Palmgear. Its an electronic scorebook for target rifle shooting (So good that the NRA of Great Britain banned the use of Palm type PDA's in competitions which it runs). Still never mind it was great fun writing this and maybe I can persuade the NRA to change their mind :-)

I would like to thank the many people who helped me while I was developing this application, in particular Neal without whose help I most certainly would not have managed this.

Best regards

Trevor



By [Geert Bosch](#) on Tuesday, October 10, 2000 - 02:25 pm: [Edit](#)

I really think it's a shame to use a Palm for target shooting, but it may explain why so many people have problems with their Palm IIIs having cracked screens :-)

-Geert



By [Doug Philips](#) on Tuesday, October 10, 2000 - 07:23 pm: [Edit](#)

What amazed me was how quickly it was banned, perhaps even before it was released. Now that is muzzle velocity of a different sort. J

-Doug



By [Trevor Steele](#) on Wednesday, October 11, 2000 - 02:19 pm: [Edit](#)

The humour is appreciated, well all you can do under the circumstances is laugh! Maybe I should suggest to 3Com that they bring out a new Palm with a bullet proof screen specially for target shooting :-)

Trevor



By [Doug Philips \(Dgou\)](#) on Wednesday, October 11, 2000 - 02:28 pm: [Edit](#)

Interesting idea. I've seen (but don't recall any salient info), clear clipboards for sale that claim bullet proof up to 44/45 caliber "attacks"... With all the "I just use overhead transparencies for screen protectors" discussions, perhaps cutting up these clipboards would provide the ultimate in screen protection. J

-Doug

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Library question - Toolkit

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Library question - Toolkit



By [CHoban](#) on Thursday, October 5, 2000 - 09:07 am: [Edit](#)

Can someone give me an example of how to use the append word in the toolkit library,

Thanks in advance



By [Travis Casey \(Travis\)](#) on Thursday, October 5, 2000 - 12:52 pm: [Edit](#)

Well, the simplest example would be something like:

```
needs toolkit
needs file
```

```
s" Here's a string"
s" to append"
append type
```

(If you do that inside a definition, you don't need the needs file.)

Try that and see what happens. I'll wait.

Didn't get what you expected, huh? Well, that's because the s" " in file uses just one buffer. When you defined the second string, it overwrote the first part of the first one. If you do a .S instead of the type, you'll be able to see that the address part of both strings is the same.

So... let's try this another way. This one won't work either, but it's another "naive" way that someone might try if they haven't thought about what's happening:

```
needs toolkit
```

```
: a s" here's a string" ;
: b s" and another" ;
: c s" to append" ;
```

```
\ make sure they're not the same address
a b c .S
```

```
\ they're not, so let's try it...
a c append type
```

\ looks good... but let's try this:

b type

What happened? Well, b's memory space was right after a's... so when c was appended to a, b was overwritten.

What you need to do to append to a string safely is make sure you have a buffer to use that can hold the combined string, then append the strings together there. For example:

needs toolkit

create stringbuf 80 chars allot

: a s" This is a string" ;

: b s" and another";

: c s" to append";

\ save the length of a

a tuck

\ then copy it to the buffer

stringbuf swap move

\ we've got the size of that string left,

\ since we tucked it. So, make a "string"

\ reference by putting the location of

\ stringbuf before it

stringbuf swap

c append type

a type

b type

c type

There! That's done what we wanted! We got the two appended together and usable, without disturbing the copies we already had. Of course, if you don't mind disturbing a copy you already have, you could just create one of those strings with a big enough "empty space" behind it, which you should be able to do like this:

\ let's say you want to create a 40 character space

\ with "Test string" already in it. You could

\ do it like this:

: a s" Test string" ;

dup 40 swap - chars allot

So... play with it a bit, and if you still have more questions, let us know. :-)

--Travis



By [CHoban](#) on Thursday, October 5, 2000 - 02:11 pm: [Edit](#)

Thanks for the help, bear with me while I ask another question.

OK so I want to append multiple short strings, a,b,c,d,e,f etc into one large string that I can write to a database. For example,

a+b+c+d+e = result

How do I relate this to your example?



By [Travis Casey \(Travis\)](#) on Thursday, October 5, 2000 - 02:55 pm: [Edit](#)

To do that while using a separate buffer, the order gets a bit tricky. To do, say:

a b c d e append append append append

You'd have to put d in a buffer big enough to hold d+e, then put c in a buffer big enough to hold c+d+e, and so on.

However, if you rearrange things a bit, you can use just one buffer, like so:

First, move a into the buffer, preserving its length. Let's call this new copy of a something else... say, a'. Now, you can do:

a' b append c append d append e append

and get what you want. Of course, you'll need to make sure that the buffer you're using for all of this can hold the combined string.

--Travis



By [CHoban](#) on Thursday, October 5, 2000 - 03:17 pm: [Edit](#)

Would this be appropriate?

needs toolkit

create stringbuf 80 chars allot

: a s" string1" ;

: b s" string2";

: c s" string3";

a tuck

stringbuf swap move
stringbuf swap

b append
c append

type



By [Travis Casey \(Travis\)](#) on Thursday, October 5, 2000 - 04:17 pm: [Edit](#)

Yep, that should work perfectly. Checking on my Palm... yep, seems to test out just fine.

--Travis



By [CHoban](#) on Thursday, October 5, 2000 - 04:32 pm: [Edit](#)

OK remember easyfields?

When I try to append a field captured from a form defined as a stringfield, the resulting record written out is over 700 bytes of garbage instead of the contents of the field.

Have I missed something?

I feel as if I am losing a memory pointer or something. When I bracket the variable string with static strings the static strings are written perfectly ie,

record1 static string (result normal),
record2 variable string (garbage),
record3 static string (result normal).

Any suggestions would be welcome



By [Travis Casey \(Travis\)](#) on Thursday, October 5, 2000 - 04:47 pm: [Edit](#)

Could you post a sample of your code, or, if it's too long, email it to me at efindel@earthlink.net?

I'm still developing the easyfields stuff, and would be very interested in seeing what's happening... either to fix the code or to write up how to do things well enough to prevent other people from having the same problem.

Thanks!

--Travis



By [Steve Bohrer \(Skb\)](#) on Thursday, October 5, 2000 - 05:16 pm: [Edit](#)

Use append to copy the first string as well.

This is very minor, but it eliminates some special case code if you use stringBuffer with a length of zero, and then append the first string, e.g.:

```
stringbuf 0  
a append  
b append  
c append
```

rather than

```
a tuck
```

```
stringbuf swap move  
stringbuf swap
```

```
b append  
c append
```



By [Travis Casey \(Travis\)](#) on Thursday, October 5, 2000 - 07:51 pm: [Edit](#)

Erg... I should have thought of that myself. I think I was just trying too hard. :-)

Haven't received any info from Colm yet, but I thought some about what might be happening while I was driving to pick up my daughter, and had these thoughts:

- If a PalmOS call is being used to store the string, it probably expects it to be zero-terminated, which the string returned from stringfield is not.
- The stringBuffer defined in easyfields is only 80 characters long; if you're trying to get a longer string, you'll need to redefine the buffer or write special code for that one field to have a longer buffer.
- One buffer is shared by all the fields to use for scratch string space; if you do a get from a stringfield and then use another field call before doing anything with the string pointer and length returned, the string you were interested in will likely have been overwritten. Note especially that if you got a string, converted it to a zstring, then did another field operation before using the string, the terminating zero might be overwritten.

These are all just shots in the dark right now, but they seem like likely possible

problems.

--Travis

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Required Copyright Statements

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Required Copyright Statements



By [Kristopher Johnson \(Kdj\)](#) on Thursday, October 5, 2000 - 12:23 am: [Edit](#)

The Quartus license includes the following:

"The Software contains certain sample source code in the form of library code, example applications and code fragments (both in the source code files and documentation provided hereunder), and may include tutorial applications (collectively, "Sample Source Code"). The Licensee may use the Sample Source Code internally to develop products for Palm Computing® platform products. The Licensee may distribute any such products built with the Sample Source Code, provided that the following copyright notice is included within the source code and in the location of any such product's copyright notice: "Portions copyright © 1998 Neal Bridges. All rights reserved."

Does this mean that if we use any of the library code, we have to include the Neal Bridges copyright statement?



By [Neal Bridges \(Nbridges\)](#) on Thursday, October 5, 2000 - 01:04 am: [Edit](#)

It'd be nice, but I haven't enforced it in any way. A plug for Quartus Forth is always appreciated. 😊

Neal



[Edit](#)

By [Barry Ekstrand \(Ekstrandbb\)](#) on Thursday, October 5, 2000 - 08:37 am:

FWIW,

In my LoanPayment app, and in my next, soon to be released app, I credit / plug Quartus, RsrcEdit, and peditPro as my development package in the information text that comes up with the "About ..." menu choice.

Barry



By [Erwin Schomburg \(Esc\)](#) on Thursday, October 5, 2000 - 11:29 am: [Edit](#)

For my sense of rightness, library modules provided by Neal and others submitted for inclusion in the library area *never* fall under that obligation. A different issue are code snippets posted here and in other areas of this site. The hopefully agreed upon way I try to give credits is to mark all of my apps as Quartus generated apps in the about popup and give credit to sources where I

have "stolen with pride" in the text of the package.

/Erwin



By [E. Ross Helton](#) on Thursday, October 5, 2000 - 12:00 pm: [Edit](#)

Hi Gang,

As Barry stated in my programs I list Quartus Forth and RsrcEdit as being a part of my programs. I also list Quartus as the base for my programs in the places where I have posted them.

Erwin is correct and has a good way of giving credit that all of us should practice. If each of us gives credit where credit is due, we all benefit!

Thanks Kristopher for bringing it up and thanks to Barry and Erwin for giving ideas about how to handle it.

Make it a good day!

Ross



By [Kristopher Johnson \(Kdj\)](#) on Thursday, October 5, 2000 - 08:35 pm: [Edit](#)

My problem is that my About box is already pretty crowded. I might have to remove MY copyright to fit Neal's (and Erwin's and...).

I'll figure something out. My web site and the README files both mention Quartus.

-- Kris



By [Travis Casey \(Travis\)](#) on Thursday, October 5, 2000 - 09:11 pm: [Edit](#)

You could give your About box a "Credits" button, possibly...



By [Ron Doerfler](#) on Thursday, October 5, 2000 - 09:41 pm: [Edit](#)

Just assign a Help ID to your About form (which I assume to be an Alert form). Then the "i" information icon appears in the upper right corner of the form. Create a String resource with that Help ID number and you can type in all the text you want.

As a warning, if you Preview a form with a Help ID assigned to it, but without the String resource created, RsrcEdit creates an exception and the Palm has to be reset. I'm not sure if this is the case with the latest version, but it certainly has been true in the past.

Personally, my About box says, for example:

TeamFile 1.0
@2000 Ron Doerfler
Portions @1998,1999
Neal Bridges.
All rights reserved.

****Registered****

and then if the "i" icon is pressed, they read that the app was written in Quartus Forth, that resources were created on-board using RsrcEdit, the web page for more information (including registration information), and the date built.

Ron

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Palm Pilot Robot

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Palm Pilot Robot



By [Neal Bridges \(Nbridges\)](#) on Wednesday, October 4, 2000 - 02:53 pm: [Edit](#)

This is neat -- but it would definitely benefit from Quartus Forth!

<http://www.cs.cmu.edu/~reshko/PILOT/>

Neal



By [Doug Philips](#) on Sunday, October 8, 2000 - 12:19 am: [Edit](#)

Yes, it is neat. And a cool/cheap way to get A/D data into a PalmOS device (I love the Visor's Springboard concept, but I'm sorry, the Springboard Data collection modules I've seen so far are way out of line on price).

And speaking of using Quartus Forth (I feel like I'm stuttering when I say the full name)...

and also following up on my reference in another thread on Charles Moore's recent writings... Wouldn't it be cool if Q.F. could take over the entire device. Eliminate all these pesky levels of GUI interface, etc. In other words turn the PalmOS device into a mobile embedded system! But it would be a stretch to have the same Forth system do both.

Sure there would be things to work out, downloading and uploading forth images, backups, thwarting the built in ROMs for us poor Visor users stuck without a flash solution, etc. Nothing insurmountable, though.

And yeeeeeeessssss, I still want to write traditional PalmOS apps so that I can integrate with that user experience too. J



By [Mike Keesling \(Blueeyedpop\)](#) on Wednesday, October 18, 2000 - 07:29 pm: [Edit](#)

I'm working(slowly), on a way to interface the visor to modules from new micros inc. <http://www.newmicros.com> . I hope to build diagnostic tools, and cute little robots as well.

can't find the time to build a bi-direction data level shifter circuit to use 5v logic with the visor's 3v logic.

when I get it up and running, i'll either sell or publish (depending on how much outside help I get for free) my results.



By [Neal Bridges \(Nbridges\)](#) on Thursday, October 19, 2000 - 01:17 pm: [Edit](#)

Sounds very neat, Mike. I look forward to seeing what you do.

Neal



By [Mike Keesling \(Blueeyedpop\)](#) on Saturday, October 21, 2000 - 10:20 pm: [Edit](#)

I do too.

The level shifter hardware thing is the only chink in my armor.

It's really just a matter of sitting down and designing it, and in fact I need this sort of thing for my work as well. The address lines are pretty straight forward, but I need to decode the data bus arbitration signals from 6811 style to 68328 style.

I just purchased an old "big trak" toy off of e-bay, and I plan on mounting my visor in place of the keypad, and adding a bucket load of sensors.

If anyone reading this has any suggestions for the design of the level shifter, I'm considering all options.



By [Neal Bridges \(Nbridges\)](#) on Saturday, October 21, 2000 - 10:46 pm: [Edit](#)

This is the only interesting page I could find. It's a bi-directional level shifter.

http://www-us.semiconductors.com/news/backgrounders/bg_esc9727.html

Neal



By [Mike Keesling \(Blueeyedpop\)](#) on Sunday, October 22, 2000 - 09:10 pm: [Edit](#)

I've got my hands on some level shifters from T.I. The only real issue here is time. I use a LOT of quadrature decoders in my line of work, and I am thinking of having a board designed that will interface New Micros' (<http://www.newmicros.com>) boards to the Visor.

It's frustrating, because this would really open up the Visor Market. Think of it, an embedded Micro with 8 meg, serial i/o, memory mapped i/o, graphical display and GUI for \$249.00. I paid that for a bare bones 68332. (sigh)! Just another thing on my ever filling plate.

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HotSync Info

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): HotSync Info



By [Trevor Steele](#) on Monday, October 2, 2000 - 05:18 am: [Edit](#)

Does anyone know of a way of finding out the Hotsync user name which is displayed when in the HotSync main screen. I've searched through the SDK reference but can't seem to find anything.

Thanks

Trevor



By [Trevor Steele](#) on Monday, October 2, 2000 - 05:21 am: [Edit](#)

Cancel that!! I just found a posting answering my question.

Trevor

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Literate Programming for Quartus Forth

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Literate Programming for Quartus Forth



By [Kristopher Johnson \(Kdj\)](#) on Sunday, October 1, 2000 - 05:26 pm: [Edit](#)

I noticed in a newsgroup discussion that Neal Bridges uses a literate programming (LP) system in the development of Quartus Forth. This rekindled an idea I've had for a while.

I've already started an LP version of my JacksOrBetter program, for use as a tutorial. I was planning to just run this on my desktop to create the output, but it would be nice to edit the code and generate the program on my Visor.

I'd like to create an LP "tangle" program for Palm OS. The idea is to have it read a Doc file and generate memos or Doc files as output.

I don't think a PDA-resident "weave" program is very necessary. I plan to support Noweb's syntax, so people could use noweb on the desktop to generate the pretty output.

Does anyone out there know of any existing LP tools for Palm OS. Does anyone have any related ideas or suggestions?

(BTW, if you don't know what "literate programming" is, <http://www.eecs.harvard.edu/~nr/noweb/> is a good starting point.)



By [Neal Bridges \(Nbridges\)](#) on Sunday, October 1, 2000 - 10:22 pm: [Edit](#)

For quick-and-dirty literate programming on the Palm itself, I'd create a series of sections, like this:

```
\ section1
0 [IF]
Here's a block of descriptive text about the source that follows.
[THEN]
: foo ... ;
```

and a master file that places all the various pieces in order:

```
\ myapp
needs tools-ext
include section2
include section1
include section3
```

... MakePRC MyApp!

Neal



By [Chris Bucsko](#) on Thursday, October 5, 2000 - 05:25 pm: [Edit](#)

Can someone please explain the [if]....[then] construct? How does it differ from the regular if...then ? I've seen this before, and I know it has something to do with compilation, but I'm not sure how it works. thanks..



By [Neal Bridges \(Nbridges\)](#) on Thursday, October 5, 2000 - 06:50 pm: [Edit](#)

[IF], [ELSE] and [THEN] are what are known as 'conditional compilation' words. You wrap bits of source code in them, so the compiler skips what you ask it to skip, and compiles what you ask it to compile. They are equivalent to the C pre-processor directives, #IF and #ELIF and #ENDIF.

Neal



By [chris bucsko](#) on Friday, October 6, 2000 - 03:03 pm: [Edit](#)

I thought that was the case. So, the phrase '0 [if]' always compiles? is the 0 true or false? I always get this mixed up in forth. How would use this on a conditional statement like a #if ??



By [Neal Bridges \(Nbridges\)](#) on Friday, October 6, 2000 - 03:14 pm: [Edit](#)

```
0 [IF]
this won't compile
[ELSE]
this will
[THEN]
```

```
1 ( or any non-zero value ) [IF]
this will compile
[else]
this won't
[then]
```

Neal



By [Neal Bridges \(Nbridges\)](#) on Friday, October 6, 2000 - 03:25 pm: [Edit](#)

In Forth, as with most languages, there is one value for false (zero) and many true values (non-zero). The canonical TRUE value in Forth is a cell with all bits set -- very handy for doing logical calculations. For instance, the conventional way to add 2 to a value on the stack only if it is greater than 10 would look like this:


```
: +2? ( n1 -- n2 )  
  dup 10 > if 2 + then ;
```

But using the value of TRUE returned by conditional comparisons, it looks like this:

```
: +2? ( n1 -- n2 )  
  dup 10 > 2 and + ;
```

This avoids the use of a branching conditional, and is cleaner and neater.

Neal



By [chris bucsko](#) on Friday, October 6, 2000 - 05:55 pm: [Edit](#)

Thanks, this is very helpful, especially when peering at code. My confusion was from an earlier version of Forth, I think, where canonical true was with the LSB only of the cell set (??) It looks here like + gets executed all the time; when n1 < 10 then 0 gets added to n2, because the and clears the stack value. Otherwise the and returns a 2 for adding. Right??



By [Neal Bridges \(Nbridges\)](#) on Friday, October 6, 2000 - 06:07 pm: [Edit](#)

You got it! The advantage is that executing + is appreciably faster than branching, on most modern CPU architectures.

It also adheres to the advice given by Leo Brodie in 'Thinking Forth' --

Quote:

Don't decide -- calculate!

Neal



By [Doug Philips](#) on Saturday, October 7, 2000 - 11:54 am: [Edit](#)

Indeed a good book.

I'd also recommend Chuck Moore's texts on <http://www.ultratechnology.com/>
Factor Factor Factor, Simplify Simplify Simplify!

-Doug



By [chris bucsko](#) on Saturday, October 7, 2000 - 12:39 pm: [Edit](#)

I've promised myself that I would start reading Thinking Forth soon. However, I still find that I'm reading 'Starting Forth' a lot. This is also an excellent intro. Too bad it seems to be out of print.



By [Tom Atwell](#) on Sunday, October 8, 2000 - 09:44 pm: [Edit](#)

Is there a way to use a variable before the [IF] so that one variable can be set at the beginning of the code to control a bunch of [IF]s?



By [Neal Bridges \(Nbridges\)](#) on Sunday, October 8, 2000 - 09:48 pm: [Edit](#)

Certainly, though a constant is more common. Here's an example with a variable:

```
variable do-it
```

```
true do-it ! \ make this FALSE to turn it off
```

```
do-it @ [if] ...do something...  
[then]
```

Neal



By [Tom Atwell](#) on Sunday, October 8, 2000 - 10:09 pm: [Edit](#)

Yes I see that a constant would be more applicable. I thought that I had tested it correctly with a variable. However, I still make the mistake from time to time of not putting the @ after the variable to fetch the value. So it was always coming out true.



By [Tom Atwell](#) on Sunday, October 8, 2000 - 11:06 pm: [Edit](#)

I thought had this [IF] understood. In one place it is working fine but when I put it in the code bellow I get a:
;? control structure mismatch

```
...  
needs tools-ext  
false constant demo  
...  
: pref-type  
  demo [IF]  
pref-demo  
  [ELSE]  
pref-event  
  [THEN] ;  
  
: pref-dialog ( -- )  
  FrmGetActiveFormID  
  6000 PopupForm  
  init-buttons
```

```
BEGIN ekey
pref-type
  UNTIL
  FrmReturnToForm ;
...
```

If I do:

```
: pref-type
\ demo [IF]
  pref-demo
\ [ELSE]
\ pref-event
\ [THEN]
;
```

or I do:

```
: pref-type
\ demo [IF]
\ pref-demo
\ [ELSE]
  pref-event
\ [THEN]
;
```

then it works fine. So I assume that my pref-demo and pref-event are fine. I am guessing that I missed something obvious. I realize that this snippet of code may not be enough info to figure this out. But any help would be appreciated.



By [Neal Bridges \(Nbridges\)](#) on Sunday, October 8, 2000 - 11:12 pm: [Edit](#)

If you make demo an immediate constant, it should do the trick.

false constant demo immediate

Alternatively:

```
: pref-type
  [ demo ] [IF]
  pref-demo
  [ELSE]
  pref-event
  [THEN] ;
```

Neal



By [Tom Atwell](#) on Sunday, October 8, 2000 - 11:23 pm: [Edit](#)

Thanks much. That solved my problem.



By [Tom Atwell](#) on Sunday, October 8, 2000 - 11:37 pm: [Edit](#)

Oops, I spoke too soon. My program entry point, which is the last few lines of code, is:

```
: go ( -- )  
  [ ' ] g5000 CATCH  
    DUP byeThrow = IF setPrefs THEN  
  THROW ;
```

But now I get a:

go? undefined word

For some reason that I do not understand the go word is no longer defined even though its code has not changed. Actually it looks like everything after pref-type is not defined.



By [Neal Bridges \(Nbridges\)](#) on Sunday, October 8, 2000 - 11:39 pm: [Edit](#)

Is the ; of pref-type inside, or outside, the conditional [IF] [THEN] structure?

Neal



By [Tom Atwell](#) on Sunday, October 8, 2000 - 11:46 pm: [Edit](#)

It is outside. This is the actual code:

```
: pref-type  
  demo [IF]  
pref-demo  
[ELSE]  
pref-event  
[THEN]  
;
```

But it appears that nothing after this is being loaded in.



By [Neal Bridges \(Nbridges\)](#) on Monday, October 9, 2000 - 12:04 pm: [Edit](#)

It's a bug, and a testimonial to the fact that some bugs never appear during testing, or for that matter, during many months of daily use. Here's a fix -- a modification to ([if]) in tools-ext:

```
: ([if]) ( flag --)
  ...
  bl skip bl word  dup c@ while
  ...
;
```

Note the addition of bl skip at the start of that line.

Let me know how that goes, and thanks for finding this one!

Neal



By [Tom Atwell](#) on Monday, October 9, 2000 - 07:07 pm: [Edit](#)

Yes, that fixed it. I was just looking for an easy way to make one change in my code for compiling a registered version or a demo version. And now I can do that. Thanks for your help.

BTW, I have been able to figure out how to make my programs do what I want them to do. However, I realize that I still have a lot to learn before I can take full advantage of what Forth has to offer. So, I am sure that I am not alone when I say thanks Neal for providing these learning experiences in your forum. Keep it up.



By [Neal Bridges \(Nbridges\)](#) on Monday, October 9, 2000 - 10:42 pm: [Edit](#)

Thanks, Tom!

Neal

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Editing a Data Record

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Editing a Data Record



By [Andrew Kearns](#) on Saturday, September 30, 2000 - 10:39 pm: [Edit](#)

I've been working through some of the code posted to the forum to get a custom database working. I need the ability to create records, read records, delete records and modify existing records.

So far with the examples posted and some fooling around I've gotten everything to work except editing a record. I suspect that I'm missing something to do with the PalmOS calls. Forth is wonderful, but the Palm API is not.

If I try anything like DmWrite to a record that exists, is open and locked down, then I get a Write Check error, which makes sense as the docs say that the area is write protected. Which leaves me wondering how to modify short of reading the record to memory, editing it, deleting the record and writing a new record with the old index value.

I'm hoping that someone can run through the necessary steps to modify an existing record. I'd sure appreciate it. Trying to sort this out with a hefty dose of the flu is starting to get to me. 😊



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Saturday, September 30, 2000 - 10:59 pm:

I daresay you're on the right track. DmWrite only returns that "Write Check" error if the region you're asking to write is outside of the bounds of the record.

It's also possible to edit text records 'in place', without having to use DmWrite explicitly. Have a look at this thread about FldSetText:

<http://www.quartus.net/discus/messages/23/249.html?TuesdayFebruary820001227pm#POST1367>

Neal



By [Andrew Kearns](#) on Sunday, October 1, 2000 - 10:34 am: [Edit](#)

Hmm, well too much cold medicine. You were right Neal, I had it, I had just mixed up offset and index. Once I put the offset to 0. in order to replace the whole record everything worked exactly like it should.

I swear I already did that, so I'm blaming it on the flu. 😊

Thanks for the point in the right direction.

Andrew

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WinSetPattern Weirdness

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): WinSetPattern Weirdness



By [Kris Johnson](#) on Saturday, September 30, 2000 - 04:13 pm: [Edit](#)

I'm trying to use WinSetPattern, as follows:

```
create GrayCustomPattern
```

```
(binary) 1010101010 c,
```

```
(binary) 0101010101 c,
```

```
(binary) 1010101010 c,
```

```
(binary) 0101010101 c,
```

```
(binary) 1010101010 c,
```

```
(binary) 0101010101 c,
```

```
(binary) 1010101010 c,
```

```
(binary) 0101010101 c,
```

```
: gray-pattern ( -- )
```

```
GrayCustomPattern >abs WinSetPattern ;
```

WinSetPattern's stack effects are documented as (&CustomPatternType. --), but invocation of WinSetPattern leaves a single-cell value on the stack. If I look at the stack after calling each word, here's what I see:

```
GrayCustomPattern ( 1228 )
```

```
>abs ( 14472 0 )
```

```
WinSetPattern ( 14472 )
```

It looks like it's leaving the low word of the passed address on the stack. I don't think it's an error code or any other "useful" value.

Otherwise, the WinSetPattern trap seems to be working--the fill pattern looks the way I want it to when I call one of the fill functions.

Am I doing something wrong, or is this some sort of problem with Quartus or with the Palm OS?

Thanks,

-- Kris



By [Kristopher Johnson \(Kdj\)](#) on Sunday, October 1, 2000 - 01:00 am: [Edit](#)

Pending an official response by someone who knows more than me, I'm doing this for now:

```
: WinSetPattern ( &CustomPatternType -- )  
(hex) A224 systrap 2drop ;
```

Is this a reasonable fix? It seems to work correctly.

-- Kris



By [Neal Bridges \(Nbridges\)](#) on Sunday, October 1, 2000 - 04:11 pm: [Edit](#)

You have found a bug in the systrap arguments, Kris. This also fixes it:

```
: WinSetPattern WinSetPattern drop ;
```

Thanks!

Neal



By [Kristopher Johnson \(Kdj\)](#) on Sunday, October 1, 2000 - 04:29 pm: [Edit](#)

But if I use your suggested fix, things will go awry when I try my code with a fixed version of Quartus Forth.

So I think I prefer my fix (unless future Quartus Forths will break that one as well).

-- Kris



By [Neal Bridges \(Nbridges\)](#) on Sunday, October 1, 2000 - 08:15 pm: [Edit](#)

You're correct -- you'd need to remove my fix when I incorporate it in the kernel.

Neal

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Quartus Forth (PalmOS version) license for sale

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Quartus Forth (PalmOS version) license for sale



By [Matthew Blair \(Blair\)](#) on Saturday, September 30, 2000 - 02:57 pm: [Edit](#)

Hi,

I'm getting out of the Palm arena for an indefinite while, and would like to sell my license for one copy of Quartus Forth. If interested, please make an offer via e-mail to matthew.blair@intellon.com.

Thanks,

Matthew



[Edit](#)

By [Erwin Schomburg \(Esc\)](#) on Saturday, September 30, 2000 - 04:05 pm:

How good are chances for you to find another Matthew Blair, or at least someone willing to put up that name as his on the Palm? 8-)

/Erwin



By [Wade Carlson](#) on Saturday, September 30, 2000 - 04:44 pm: [Edit](#)

I'm not sure you can do that. What's to prevent you from keeping on using it after you have 'sold' it to someone else?



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Saturday, September 30, 2000 - 06:15 pm:

The license agreement generally prohibits resale/transfer, but Matthew asked me if it'd be all right -- I don't mind making an exception and facilitating a license transfer in this case.

Neal



By [Matthew Blair \(Blair\)](#) on Saturday, September 30, 2000 - 06:50 pm: [Edit](#)

Of course, you know that Neal didn't mind facilitating a license transfer, if only to keep me from pestering him with questions 😊

Matthew

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Words for moving data from memory to stack (and back)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Words for moving data from memory to stack (and back)



By [Travis Casey \(Travis\)](#) on Saturday, September 30, 2000 - 12:27 am: [Edit](#)

Here's a couple of words I've created for moving data to and from the stack:

```
: n! ( n1 n2 ... nx adr x -- )
  tuck cells + swap
  0 do 1 cells - tuck ! loop drop ;

: n@ ( adr x -- n1 n2 ... nx )
  0 do dup @ swap cell+ loop drop ;
```

These are useful for moving data between the stack and array or structures. For example, if you need to use a date several times in your program, you could do:

```
struct
  1 cells field year
  1 cells field month
  1 cells field day
end-struct date

...

( store from the stack into the date structure )
2000 9 30 date 3 n!

( retrieve from the date structure )
date 3 n@ ( -- year month day )
```

(Indeed, this is exactly what I wrote them for... my date field word is doing a lot of moving year, month, day back and forth from stack to memory, and this is a lot more compact than constantly moving the data one cell at a time.)

Note that you can also use this with an array, which could be useful for something like sorting items on the stack (move them into an array, sort it, move them back). However, if you're using it with the arrays defined by the toolkit, you need to remember that 0 name is the address of the start of the array name.

(You could also get around this by using a different array definition, like the one used in Noble's Scientific Forth.)

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Drawing pixels and shapes in colour

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Drawing pixels and shapes in colour



By [Richard Chamberlain](#) on Friday, September 29, 2000 - 04:41 pm: [Edit](#)

Hi Folks,

To save me scrabbling around has anyone got any simple source code that draws to the screen. Preferably in colour, I would be interest in single pixels and also geometric shapes such as circles, rectangles and the like.

If not can someone point me to the words I should be using.

Thanks

Richard



By [Neal Bridges \(Nbridges\)](#) on Friday, September 29, 2000 - 05:02 pm: [Edit](#)

There are rectangles and circles in graphics. Color is in the color library file. For irregular shapes, bitmaps are fastest, though you could draw them with line and then fill them with the floodfill library.

For drawing single pixels, line works -- with the same start/end coordinates.

Neal



By [Erwin Schomburg \(Esc\)](#) on Friday, September 29, 2000 - 05:09 pm: [Edit](#)

You can use the normal routines from the graphics library module and set the respective drawing colors via the words you get out of the (new) color module. Hints: there is a somewhat tedious circle routine in the graphics library, but drawing a rounded rectangle with a carefully calculated corner radius will be hard to distinguish from a circle. A dark rounded rectangle and a somewhat smaller rounded rectangle drawn concentric over the first in background color leaves a nice rounded box...

/Erwin

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Porting to a Handspring

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Porting to a Handspring



By [Jim Meadows](#) on Thursday, September 28, 2000 - 04:01 pm: [Edit](#)

I am about to "port" my application from a standard palm to the handspring. I use the term "port" loosely since I am hoping there are no changes required. Are there any changes to Quartus necessary to support the handspring? I do use the serial port in my application.

- Jim



By [Tammy Cravit \(Tammycravit\)](#) on Thursday, September 28, 2000 - 04:04 pm: [Edit](#)

Jim,

I do my Quartus development on a Visor Deluxe, and I've found nothing different as long as you don't need to use any of the Visor-specific features (like the Springboard slot, or USB port). For the normal stuff, the Visor behaves pretty much like any other PalmOS 3.1 handheld device.

Tammy



By [Jim purdy](#) on Thursday, September 28, 2000 - 04:38 pm: [Edit](#)

I use the Visor for development and own a Palm IIIex for beta testing.

I know from experience that any code that will run on one will run on the other, provided you get the 1.26 release of Quartus Forth. There are several OS related fixes in this version (related to Palm OS 3+).

The only difference is that the Visor is faster.



By [Erwin Schomburg \(Esc\)](#) on Friday, September 29, 2000 - 01:19 am: [Edit](#)

> The only difference is that the Visor is faster.

Not if you "Patch" your Palm with CruiseControl from BackupBuddy.com

/Erwin



By [Michael Rowe](#) on Friday, November 3, 2000 - 05:23 am: [Edit](#)

Has anyone tried Quartus on the new Handspring Prism?

-mrr



By [Neal Bridges \(Nbridges\)](#) on Friday, November 3, 2000 - 06:13 am: [Edit](#)

I don't have a Prism in the lab, yet, but I've had positive reports, Michael.

Neal



By [jimmeadows](#) on Friday, November 17, 2000 - 01:23 am: [Edit](#)

What would be required to access devices plugged into the slot? (e.g. using a device like a GPS that might plug into the slot rather than attaching to the serial port)

Jim



By [Neal Bridges \(Nbridges\)](#) on Friday, November 17, 2000 - 11:49 am: [Edit](#)

Here's a relevant message:

<http://www.quartus.net/discus/messages/23/584.html?TuesdayJune2720000812pm#POST3662?TuesdayJune2720000812pm>

I have an unreleased library file of Visor-specific function calls; I can't send it to you from here, but drop me an email and I'll send it to you when I can.

Neal

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Getting Global Preferences

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Getting Global Preferences



By [Travis Casey \(Travis\)](#) on Wednesday, September 27, 2000 - 04:06 pm:

[Edit](#)

Could someone post an example of getting one of the global preferences set from the Preferences application? In particular, I want to get the user's short date and time format preferences.

(I'm working on adding a "Datefield" type to my "easyfields" stuff (which I've now retitled "ezUI", since it covers more than just fields), and want it to display date selections in the user's preferred format. Planning on doing a time setter too.)

Thanks!



By [Neal Bridges \(Nbridges\)](#) on Wednesday, September 27, 2000 - 04:19 pm:

[Edit](#)

There's an example in the Swatch sources. For backward compatibility, you use the V10 version of the function, and read the preference you want out of the returned data.

Neal



By [Travis Casey \(Travis\)](#) on Wednesday, September 27, 2000 - 04:30 pm:

[Edit](#)

If I'm reading this and understanding the header files right, then:

```
here >abs PrefGetPreferences
here 3 + c@ dateformat !
```

should store the date format into a "dateformat" variable for me, right?

(Sorry to trouble you again, but my C skills are a bit rusty, so I wanted to double-check...)



By [Wade Carlson](#) on Wednesday, September 27, 2000 - 07:38 pm: [Edit](#)

You got it exactly right! (at least that's what's been working for me).



By [Kris Johnson](#) on Wednesday, September 27, 2000 - 11:20 pm: [Edit](#)

I'm still new to Forth, and have a question: is the above code valid for all Forths?

That is, is it always valid to use HERE as the base of a "temporary buffer", or does this just work with Quartus Forth (and similar implementations)?

And is it valid in a standalone application? I've heard the warnings against using ALLOT at runtime, and this seems similar.

Thanks,
Kris



By [Erwin Schomburg \(Esc\)](#) on Thursday, September 28, 2000 - 01:18 am:

[Edit](#)

This should work in all Forth implementations, HERE is the start address of the free data area.

And yes, you are right, in a standalone application this could be critical, as there "officially" is a lid on the data space, no addressing above HERE, no increments of HERE any more after the build. Unofficially though there seem to be some bytes of leeway buffer above the value HERE has when making the standalone.

/Erwin



By [Ronny Svensson](#) on Thursday, September 28, 2000 - 06:13 am: [Edit](#)

How many bytes after HERE is included in MAKE-PRC? Is PAD ok to use? I myself have redefined PAD:

```
Create Pad 128 Allot
```

Ronny



By [Erwin Schomburg \(Esc\)](#) on Thursday, September 28, 2000 - 06:38 am:

[Edit](#)

That is a two sided story, the PAD definition as supplied in the libraries is outside the "safety margin" for stand alone apps, whereas your self-defined PAD is safe to use, it statically allocates its memory before making the stand alone, the resulting stand alone will "carry" that space.

One more time for general understanding purposes: It is not a bad idea to use ALLOT for stand alone apps per se. With your variable and constant definitions and create-allot constructs you statically build up the framework for the compiler (makeprc) to know how large the data segment is going to be in the stand alone. But from there then it is not allowed to use, i.e. call, code that dynamically ALLOTS memory when the generated stand alone is run. For this purpose you need to use dynamic memory allocation, featureing ALLOCATE or (ALLOCATE).

/Erwin



By [Ronny Svensson](#) on Friday, September 29, 2000 - 03:29 am: [Edit](#)

But how big is the "safety margin"?

Ronny



By [Erwin Schomburg \(Esc\)](#) on Friday, September 29, 2000 - 06:27 am: [Edit](#)

Apart from the fact that you really shouldn't test your luck here, this is implementation inside information best to be answered by Neal.

/Erwin



By [Neal Bridges \(Nbridges\)](#) on Friday, September 29, 2000 - 09:40 am: [Edit](#)

256 bytes beyond HERE are available in a stand-alone app.

Neal

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Gadgets...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Gadgets...



By [Doug Philips](#) on Tuesday, September 26, 2000 - 06:20 pm: [Edit](#)

Perhaps this is premature, but as a first step towards my "What's New"-thread project, I've been doing some interface playing around, and I'd like to have some Form controls that don't seem to be already provided for.

Hence, I'm thinking that a custom gadget control will be handy. The first control I'm looking for is a time "picker". Kind of like the one that is the general "tab" of the built in preferences app, for setting the time, but I want something smaller though. I've browsed through all the files in the Quartus Forth part of the files section (I think), and didn't see anything like this. Did I miss anything?

((Request: Neal, how about a way to search the file archives?)).

I've downloaded the jclock stuff, figure that'd be a nice intro to the GUI. J

-Doug

P.S. If I do manage to write a custom gadget, I'll post the source for critique and potential library inclusion.



By [Neal Bridges \(Nbridges\)](#) on Tuesday, September 26, 2000 - 06:52 pm:

[Edit](#)

The main site search engine ("Search" from the pulldown on every page) searches the File Area. Let me know if it doesn't find something you know is there, and I'll see why.

Neal



By [Jim Hendricks \(Jimh\)](#) on Wednesday, September 27, 2000 - 09:41 am:

[Edit](#)

I'm flattered that someone would consider my Analog clock as a nice intro to the GUI!

Doug, just so you know, I do have a newer version floating around here somewhere that corrected a few minor things and also added a few features, If you want it I can e-mail it to you.

Also, don't hesitate to ask me questions about the code, either here on the forum where others can benefit, or through e-mail.

Jim



By [Jim Hendricks \(Jimh\)](#) on Wednesday, September 27, 2000 - 09:45 am:

[Edit](#)

Oh, a secnod thought on my analog clock, it's not a standard GUI. From my recollection, the only standard GUI controls I use are those related to menuing and dialogs. The rest of the GUI (clock face, digital display, & date display) are all custom painted graphics. This does give a good start though to double buffered graphics and custom graphics in general...

Jim



By [Doug Philips](#) on Wednesday, September 27, 2000 - 11:20 am: [Edit](#)

Neal,
Thanks for the search pointer. For some reason I had just assumed that the lack of a search 'button'/'link' on the file area meant that I couldn't search it. Glad I was wrong. So far it seems to be finding things fine.

Jim,
I probably should have qualified that as an intro to doing custom graphics. J
Though I admit I found some of the code rather opaque at first blush. If it resists a direct study then I'll post questions, thanks for offering.

-Doug

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Good evening all.....new on the block.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Good evening all.....new on the block.



By [andrew chung](#) on Monday, September 25, 2000 - 10:24 pm: [Edit](#)

Hello all:

Really new to the Forth language. Are there any advantages at all to using C over Forth? Can Forth be used to generate Windows friendly programs as well? How powerful is this language? and finally, why isn't everyone using Forth? It looks so friendly!



By [JIm Purdy](#) on Tuesday, September 26, 2000 - 06:00 am: [Edit](#)

Quartus Forth runs VERY fast and compiles very small. This is also typical of other Forths too. Using Qforth, you can interactively debug your code. For example, running each new word from the console and examine the stack etc. afterward.

ANY program you can write in C can be written in forth.

One reason many people are not using Forth is probably due to the lack of "press" it receives.



By [Erwin Schomburg \(Esc\)](#) on Tuesday, September 26, 2000 - 08:18 am: [Edit](#)

Forth is predestined for small systems and typical one developer projects. If you are about to shoot yourself in the foot in Forth, you usually hear the bullet whistling, idiosyncrasies related to the compiler are extremely rare, in opposition to the "official" CodeWarrior environment, where I heard more than one hour long rambling about improper automatic type casts and other funny stuff. Forth OTOH is not the environment of (my) choice for larg(er) multi-developer projects, encapsulation and hiding of source is not as easy an undertaking in Forth as it is in C or C++.

Ah, and yes, there are Forth versions for Windows, look into the online resources chapters in the manual to get a search started.

/Erwin

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OS versions and App launch?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): OS versions and App launch?



By [Jim Purdy](#) on Sunday, September 24, 2000 - 11:39 am: [Edit](#)

I have had similar problems to some of the ones mentioned by previous posts. It seems users with OS 3.0 are having trouble when my App launches another "module".

SysAppLaunch

I assume the majority of users are operating correctly.

I am compiling with QF 1.26

Is there a difference in the way in which thw OS's launch app as subroutines? Also could my problem be related to getting/storing preference?

I use the version 1 calls for getting and setting the preferences.

PrefGetAppPreferencesV10

PrefSetAppPreferencesV10

Thanks



By [Jim Purdy](#) on Monday, September 25, 2000 - 05:41 am: [Edit](#)

After investigation with an imabe of the users rom, I find the error to be a BUSS error.

any thoughts?



By [Erwin Schomburg \(Esc\)](#) on Monday, September 25, 2000 - 05:54 am: [Edit](#)

After much tearing of hair I found out two things (not exactly related to OS versions). First, despite the SDK docs stating not to use LaunchFlags, use (hex) 0C as flag parameter, especially when calling non-Quartus "modules". Second, you need to save the pointer to the active form prior to calling another module and make that form the active form again first thing after return.

/Erwin



By [Jim Purdy](#) on Monday, September 25, 2000 - 12:19 pm: [Edit](#)

Ok so it should go like this

2variable ThisFrm

2variable dbIDP

2variable cardNoP

2variable creator

2variable type

2variable totalBytesP

create stateInfoP 16 chars allot

2variable numRecordsP

create szName 32 chars allot

: Launch (--)

set-stored

dbIDP >abs

cardNoP >abs

true creator 2@ type 2@

stateInfoP >abs true

DmGetNextDatabaseByTypeCreator

if

alertFrm FrmAlert drop

else

FrmGetActiveForm ThisFrm 2!

0. 0. 0 (hex) 0c dbIDP 2@ 0

SysAppLaunch drop

ThisFrm 2@ FrmSetActiveForm

then get-stored drop ;

How is this calling scheme?



By [Erwin Schomburg \(Esc\)](#) on Monday, September 25, 2000 - 01:07 pm: [Edit](#)

Apart from the fact that I also tend to lazily assume that applications are always located in card 0, despite the fact that I just got an OS confirmed card location, and leaving aside that cardNo goes into a 16bit (single) cell variable and the stateInfo block is technically 16 cells (8 DWords) big (not chars, which might be another source of crashes...), also leaving aside your namings, where you name the actual data holding areas as if they were pointers to such, this looks perfectly OK to me.

/Erwin



By [JIm Purdy](#) on Monday, September 25, 2000 - 07:14 pm: [Edit](#)

Ok, every think seems to work (almost)

I get an Invalid Chunk pointer message intermittently when I return from the Modules.

I have included the code:

2variable ThisFrm

2variable dbID

variable cardNo

2variable creator

2variable type

2variable totalBytes

create stateInfo 16 cells allot

2variable numRecords

create szName 32 chars allot

2variable results

2variable LaunchCom

: Launch (--)

set-stored

dbID >abs

cardNo >abs

true creator 2@ type 2@

stateInfo >abs true

DmGetNextDatabaseByTypeCreator

if

alertFrm FrmAlert drop

else

FrmGetActiveForm

ThisFrm 2!

results >abs LaunchCom >abs 0 (hex) 0c

dbID 2@ cardNo @ SysAppLaunch drop

ThisFrm 2@ FrmSetActiveForm

then get-stored drop ;

Thanks for the help I think I am about there



By [JIm Purdy](#) on Tuesday, September 26, 2000 - 05:51 am: [Edit](#)

OK, from some reading of the OS doc, I think

the invalid chunk may be due to my inability to

allocate the parameter(s) correctly prior to using the application call.

Could someone give me an example of a complete Application Call?

When I use the call code with all (most) parameters set to zero, the POSE throws errors and will not run correctly.

I hate to be a pest, but this will probably be important to others as well.

Thanks for the continued support.

Jim



By [Erwin Schomburg \(Esc\)](#) on Tuesday, September 26, 2000 - 07:27 am: [Edit](#)

0. 0. 0 (hex) 0C dbID 2@ cardNO @ SysAppLaunch drop

You don't know about any parameter blocks and you are not interested in any results, so why take pains to set up the pointers? If that call model above does not work, I'd check into something else, e.g. general stack balance or the *called* modules.

Also, in cooperation with another POSE victim, I found that you should run your tests on a "fresh" POSE, using the latest 3.0a7 and starting it while your keyboard is in caps lock.

/Erwin



By [Jim Purdy](#) on Tuesday, September 26, 2000 - 09:32 am: [Edit](#)

The whole reason for this is that I am trying to fix a users problem. When you run the code above on POSE, (0. 0. 0 (hex) 0C dbID 2@ cardNO @ SysAppLaunch drop)

with a 3.0 ROM it creates a bus error and won't call the Subroutine.

The reason for the pointers is that if the parameters are set to zero, you get a "writing to null address" error.

Setting things up more completely causes less errors. (on the users ROM.)

The original code runs perfectly on my Visor, IIIex, and several other machines I have tried.

Thanks



By [Wade Carlson](#) on Tuesday, September 26, 2000 - 11:19 am: [Edit](#)

What ROM does your user have (that's having problems with your app)? If it's a TRG Pro I would be happy to help you out and do some debugging.



By [Jim Purdy](#) on Tuesday, September 26, 2000 - 01:27 pm: [Edit](#)

A Palm III with a Spanish language OS 3.0 something. Circa 1998. (I am at work and don't remember now)

I have another South American user with the same symptoms and I will bet it's the same @\$%@ ROM.

There seems to be no trouble at all with newer 3.1+, 3.5's and Visor OS.

Maybe I will raise the OS requirments of the APP and take care of this the easy way.

Really, I would like to get a hold on the calling routine in its entirety.

Jim



By [Erwin Schomburg \(Esc\)](#) on Tuesday, September 26, 2000 - 07:11 pm: [Edit](#)

Spanish ROM images are crap when generated via Till Harbaum's FlashTools and burned over an originally English version PalmIII. Careful enquiry from your problem users is advised.

If the NULL pointered example is planted into your second posting's code snippet you have a complete calling sequence, almost exactly like I use in my next to be released piece of software, in other words, you got all I know about this from me already.

/Erwin

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VideoPoker for Palm OS

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): VideoPoker for Palm OS



By [Kris Johnson](#) on Sunday, September 24, 2000 - 11:27 am: [Edit](#)

I've written a simple video poker simulator, using Quartus Forth and OnBoard RsrcEdit. Source code is included (under GPL). I plan to write a simple tutorial describing how it works.

See <http://videopoker.sourceforge.net> for more details and for downloads.

This is my first "real" Forth program, and my first Palm OS program. I'd appreciate any constructive criticism people want to give.



By [Neal Bridges \(Nbridges\)](#) on Sunday, September 24, 2000 - 08:12 pm: [Edit](#)

I've just downloaded and played it -- fun!

It looks good. The only constructive criticism I can offer so far, not having yet looked at the sources, is that it seems to repaint the screen a bit more often than required.

Neal



By [Kristopher Johnson](#) on Monday, September 25, 2000 - 12:44 am: [Edit](#)

It does repaint the entire form after every user action. I don't notice anything bad on my Visor, but the Visor is faster than the Palm models. If the redraw is noticeable on other models, then I'll guess I'll have to change the form-update code to update things in a nicer way.

Thanks for the comments.



By [Neal Bridges \(Nbridges\)](#) on Monday, September 25, 2000 - 01:49 am: [Edit](#)

I was trying it on a IIIC -- the screen updates are a bit slower on that model.

Neal



By [Kris Johnson](#) on Tuesday, September 26, 2000 - 09:46 am: [Edit](#)

Oops.

It turns out that there is already another game called "VideoPoker", published by Rose Software (<http://www.rosesw.com>).

So I'm withdrawing my program for now. I will re-release it under a different name.

If anyone has downloaded a copy of my game, I request that you not re-distribute it until I can change the name.



By [Barry Ekstrand \(Ekstrandbb\)](#) on Tuesday, September 26, 2000 - 05:29 pm: [Edit](#)

Well, you're not alone. When I did the first version of my LoanPayment program, it was called LoanCalc, and I actually uploaded it to PalmGear HQ under that name. It suddenly occurred to me right afterward to double check the name, and sure enough, there was another LoanCalc out there. On the spur of the moment I renamed it LoanPayment and recompiled it under that name, then re-uploaded it. I wish I'd come up with a 'catchier' name off the cuff, but it was late and creativity was on the wane.

Barry Ekstrand



By [Ron Doerfler](#) on Tuesday, September 26, 2000 - 05:43 pm: [Edit](#)

My ActiveKey app was originally AlphaPad, and I was just going to upload it when I thought I'd do a web search. I found that there was actually a site called www.alphapad.com that sold this named software as a convenient touch keypad replacement for handheld computers, which was exactly the functionality of mine (although implemented differently). They were even announcing work on a version for the Palm. So I switched as well at the last minute. I've since found that you should also choose a relatively uncommon word for the name, so you can do a web search on the title and find out what sites have or reference your software without getting a slew of hits to sort through. And although I didn't do this on purpose, I found that a name beginning with a letter near the beginning of the alphabet appears on the user's application screen near the beginning, so they don't have to page down to get to it, and it gets an early slot on the sites that list apps alphabetically in categories.

Ron



By [Erwin Schomburg \(Esc\)](#) on Tuesday, September 26, 2000 - 07:19 pm: [Edit](#)

Oh well, Pentominoes is the common name for the pieces of the game I wrote a Quartus implementation for, but when re-reading my "reference" (Imperial Earth) I found in the acknowledgements that someone was trying to register "Pentominoes" as a trademark for the set of Pentomino pieces they were going to sell. Emergency creativity mode came up with Quintominoes.

/Erwin



By [Kris Johnson](#) on Tuesday, September 26, 2000 - 11:20 pm: [Edit](#)

I uploaded mine to PalmGear with the name VideoPoker. I found the other one when I did a search on PalmGear to find mine ("Hmmm, 2 software products found. I wonder what that means?").

The people at Rose Software didn't raise a stink. I let them know, and they were cool about it.

I did do a web search on "videopoker" a few weeks ago, and was so overwhelmed with hits that I didn't notice this program. But I should have checked PalmGear first.

The new name will be JacksOrBetter. I'll re-release it some time next weekend.



By [Kristopher Johnson \(Kdj\)](#) on Sunday, October 1, 2000 - 02:56 pm: [Edit](#)

JacksOrBetter 1.1 is now available for download from <http://videopoker.sourceforge.net>.

If you're interested in the source code, be sure to download the "full" package instead of the "binary only" package.

New features:

- Name changed to "JacksOrBetter"
- Simple animations (cards flash, etc.)
- No longer repaints form on every mouse tap.



By [Kris Johnson \(Kdj\)](#) on Sunday, November 12, 2000 - 12:09 am: [Edit](#)

New version, 1.2. of JacksOrBetter is now available.

Full version (including Quartus Forth source code): <http://download.sourceforge.net/videopoker/JacksOrBetter-1.2-full.zip>


New features:

- Fixed "Full House does not flash" bug
- Added Statistics window

I have not been able to update the <http://videopoker.sourceforge.net> web site yet. SourceForge doesn't seem to accept my SSH authentication anymore.


The program is still free, under GPL.

-- Kris

 By [Neal Bridges \(Nbridges\)](#) on Sunday, November 12, 2000 - 08:16 am: [Edit](#)

Thanks, Kris!

Neal

 By [Kris Johnson \(Kdj\)](#) on Sunday, December 10, 2000 - 10:49 pm: [Edit](#)

Handango has included JacksOrBetter in its "Handango Card Games Suite"
<http://www.handango.com/PlatformProductDetail.jsp?siteId=1&homePath=HANDANGO&platformId=1&productType=2&productId=12437§ionId=0&catalog=1>

Interestingly, they never asked or informed me of this. It doesn't bother me, but I'm surprised they didn't make any attempt to contact me. I do wonder if they are strictly adhering to the terms of the GPL, but Handango's policy probably is that they can do whatever they want to with anything a developer puts on their site. (I don't care enough to actually re-read the agreement.)

Besides, they call my app a "best of class application", so I won't disagree with anything they say.

-- Kris

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Tool compilation.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Tool compilation.



By [Mike Keesling \(Blueeyedpop\)](#) on Sunday, September 24, 2000 - 11:04 am: [Edit](#)

I have seen a lot of people posting the different tools that they use here, but this wealth of information is always scattered through different postings. How about a compilation?

PLEASE POST THE FULL URL, INCLUDING THE HTTP://
FOR THE CONVENIENCE OF OTHERS!, without adjoining characters.

To get the ball rolling:
I find PopUp Note by Bozidor Benc useful.
<http://www.benc.hr>

OnBoard RsrcEdit written by someone at
<http://www.individeo.com>
Distribution through <http://www.pilotgear.com>

presently, I am using a Visor for custom hardware development, and find the products from
<http://www.pacificmicroinstruments.com>
necessary.

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Could someone explain structures please?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Could someone explain structures please?



By [Mike Keesling \(Blueeyedpop\)](#) on Sunday, September 24, 2000 - 10:49 am: [Edit](#)

Could someone explain structures, and provide a code snippet please? This is one of my major stumbling blocks, and it's causing me premature baldness.

THANKS



By [Kris Johnson](#) on Sunday, September 24, 2000 - 11:42 am: [Edit](#)

A structure is a set of related data elements. Each of these elements has a size and a name.

Simple example:

```
needs struct
struct
1 cells field >firstfield
2 cells field >secondfield
1 cells field >thirdfield
end-struct myfield
```

"needs struct" defines the words STRUCT, END-STRUCT, and FIELD.

After execution of the above, there will be four new words defined:
>FIRSTFIELD, >SECONDFIELD, >THIRDFIELD, and MYFIELD:

MYFIELD (<ccc> --): creates a new word and allocates 4 cells of space

>FIRSTFIELD (adr -- adr): adds zero to the address on the stack (a no-op, essentially)

>SECONDFIELD (adr1 -- adr2): adds two (one cell) to the address on the stack

>THIRDFIELD (adr1 -- adr2): adds six (three cells) to the address on the stack

You can then use the new words like this:

```
\ create TESTSTRUCT
myfield teststruct
```


\ store values to fields of TESTSTRUCT

100 teststruct >firstfield !

101. teststruct >secondfield 2!

102 teststruct >thirdfield !

\ print values from TESTSTRUCT

teststruct >firstfield @ .

teststruct >secondfield 2@ d.

teststruct >thirdfield @ .

To sum up, each of the words defined with FIELD adds the appropriate offset to the beginning of the structure.



By [Travis Casey \(Travis\)](#) on Sunday, September 24, 2000 - 03:29 pm: [Edit](#)

For some caveats about using structures, see the "Storing Into a Structure" thread. You might also want to look at the "Arrays of Structures" and "Structs" threads.

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ROM Versions

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): ROM Versions



By [Wade Carlson](#) on Saturday, September 23, 2000 - 11:36 am: [Edit](#)

Neil, is there a possibility that any thing else could 'break' in a compiled app run on a different ROM other than COMPARE? I get occasional emails from users who have purchased my application that it randomly gives them a fatal exception upon startup. I've only got this from users running a Visor or a Palm V series. It runs through Gremlins on the emulator without a hitch (including a Visor ROM that I got my hands on, although I can't test the Palm V ROM on the emulator cause it doesn't run at all). I'm compiling it on a TRG Pro. I've gone over my startup code a thousand times and can't track it down. Anybody else experiencing similar problems?



By [Neal Bridges \(Nbridges\)](#) on Saturday, September 23, 2000 - 03:57 pm:

[Edit](#)

COMPARE was the only function that had an issue, Wade (now fixed).

ROM differences would cause consistent failures, not random -- can you send me your app? I'd be happy to test it on a variety of ROMs and see what happens.

Neal



By [Wade Carlson](#) on Saturday, September 30, 2000 - 01:44 am: [Edit](#)

Ahh, Neil, I had not heard back from you, so alas I decided to spend the money and purchase a Visor for myself to do some debugging. And since, I have found that my bug is not related to the ROM that it is compiled on. It seems to be randomly related to coming across a '5 roll' command. Me thinks that you may have mentioned a bug with ROLL in the past? Is this why you have always discouraged against using ROLL?



By [Neal Bridges \(Nbridges\)](#) on Saturday, September 30, 2000 - 08:19 am:

[Edit](#)

Sorry for the delay, Wade. Buying a whole new gadget in the name of debugging is certainly a measure of dedication!

There is an intermittent bug in ROLL, yes. That's not the reason I advise against it -- rather, it's usually bad form.

The fix to ROLL is in the message archives; I'll send you an updated kernel today.

Neal



By [Wade Carlson](#) on Saturday, September 30, 2000 - 09:30 am: [Edit](#)

I've just factored all ROLL's out of my code and now it works fine. I didn't see the fix to ROLL in the archives when doing a search for it, though. Don't worry about rushing to get the update to me today, I know your terribly busy, and now that I've worked around it, it works beautifully!

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Database sample needed ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Database sample needed ?



By [Kevin Lee](#) on Saturday, September 23, 2000 - 07:58 am: [Edit](#)

Hi, Can anyone show me where I can get some sample code about create an apps with simple file I/O function.

Like display a table with the records, in detail screen have add/delete/next/prev that kinds of standard buttons. Have a alpabet search/ find features.

All using forth of course.

For experience forth programmer, how long is the develpment time to create such one database file apps.

Thanks!



By [Wade Carlson](#) on Saturday, September 23, 2000 - 10:29 pm: [Edit](#)

I don't know if anybody has a full working example of all of what you have mentioned above, but it certainly would be possible. A good place to start for looking at handling databases is newmemo.txt in the library section of the file area.

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E-mail:

I'm ready to start now !!! what is next ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): I'm ready to start now !!! what is next ?



By [Ray](#) on Friday, September 22, 2000 - 06:14 pm: [Edit](#)

Hi, I just finished the "Quartus Forth Manual - quick start" and Steven Donahue's tutorial for beginners

I understand how the ResEdit Work and the put codes in the forth program in memopad.

I also look at the Leo wong's simple forth website,

could someone tell me where I can grab the ANI forth language ref to start my coding. OR I need to know something else first ? or should start with something first.

Thanks!



By [Erwin Schomburg \(Esc\)](#) on Saturday, September 23, 2000 - 07:02 am:
[Edit](#)

The standard in Palm doc format is in the Quartus distribution .zip (dpans94.pdb). The link to the web version you find in the "Online Resources" part of the manual.

/Erwin

Add a Message

Username: not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Categories revisited.. (again)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Categories revisited.. (again)



By [Rick Flower \(Nrflower\)](#) on Friday, September 22, 2000 - 04:38 pm: [Edit](#)

Hi all!

I'm having some problems with the support of Categories in PalmOS. I've got the general infrastructure in place (initial creation when the database is created, using CategoryInitialize et-al), but now I find that when I go to select a category, I get this wierd popup "thingie" on the screen (no text or anything), and when I tap on it, then I get the real popup with the text selections it in.. I just don't see what I'm doing wrong in this case..

Also, I find that the second time that I select a category, I get a BUS error -- another problem I haven't tracked down...

Any comments are appreciated.. Also, I did look through the Quartus archives, but didn't really find much on Categories..

I've snipped some code out of my application that is relevant and included that below.. The resources is a basic form with a popup trigger (1004)/list as taken from the memopad. I've also copied a "tAIS" resource from Memopad and changed the default categories -- this is used during the database creation. The tAIS resource is 1000.

Since this code doesn't remotely fit into a single memopad document, I've split it up into pieces, separated by "=== "..

Let me know if you see anything strange!

-- Rick

=====

\ MySecret-main 2000-22-SEPT 12:57 REF

needs safe
needs core-ext
needs ids
needs zstrings
needs zstrings-ext
needs hex-dump
needs Mem
needs DataMgr
needs double
needs resources
needs Events
needs condthens
needs easyfields
needs facility
needs tools-ext


```
\ Registered Creator ID
(ID) myst 2constant crid
(ID) data 2constant dbtype
(ID) tSTL 2constant catStrings
```

```
crid (ID) rsrc use-resources
```

```
here constant prefs
    variable CurrentCategory 0 CurrentCategory !
here prefs - constant prefsSize
```

```
: debugme
    0 0 at-xy .s about ;
```

```
needs MySecret-db
needs MySecret-gui
```

=====

```
\ MySecret-rsrc 2000-22-SEPT 11:58 REF
```

```
10001. 2constant DfltEditCatStr      \ only on PalmOS 3.5+
10005. 2constant categoryEditStrID   \ good for older models
```

```
\ //////////////////////////////////
\ \ Main Form Resource ID's
\ //////////////////////////////////
```

```
1000 constant Main.Form
1004 constant Main.Form.Category.Trigger
1005 constant Main.Form.Category.List
1006 constant Main.Form.Table
1007 constant Main.Form.Button.New
1050 constant Main.Form.CategoryStrings
```

```
1100 constant ChPwd.Form
1101 constant ChPwd.Form.Help
1102 stringfield ChPwd.Form.Field
1103 constant ChPwd.Form.Button.OK
1104 constant ChPwd.Form.Button.Cancel
```

```
1200 constant ChPrefs.Form
1201 constant ChPrefs.Form.Help
1203 constant ChPrefs.Form.Button.OK
1204 constant ChPrefs.Form.Button.Cancel
```

```
1300 constant      Record.Form
1302 constant      Record.Form.Button.OK
1303 constant      Record.Form.Button.Cancel
1305 stringfield Record.Form.String.Name
1307 stringfield Record.Form.String.Account
1309 stringfield Record.Form.String.Passwd
1311 stringfield Record.Form.String.Notes
```

```
1500 constant Main.Form.Menu
1501 constant Main.Form.Menu.Secrets.Change
1502 constant Main.Form.Menu.Options.Prefs
```

```
1503 constant Main.Form.Menu.Options.About
3000 constant Main>AboutBox
3001 constant Main.HelpString
```

=====

```
\ MySecret-db 2000-21-SEPT 14:51 REF
```

```
2variable _SecretDBR          \ Database reference
2variable AppInfoID           \ work variable for creating AppInfo
280. 2constant CategoryMaxSize \ Max Size of the Category buffer
1000 constant LocalizedAppInfoStrID
```

```
: KeysDBname z" MySecret-Data" ;
```

```
\ Return the dbref pointer
```

```
: SecretDBR ( -- dbref. )
_SecretDBR 2@ ;
```

```
\ Returns true (-1) if db exists
```

```
: SecretDB? ( -- localid. flag )
KeysDBname drop >abs          ( strPtr. )
cardnum @ DmFindDatabase      ( localID. )
2dup or 0= 0= ;               ( localid. flag )
```

```
\ Close the already opened database
```

```
: CloseSecretDB ( -- )
SecretDBR DmCloseDatabase throw ; ( )
```

```
\ Create the database and attach the AppInfoID category
```

```
\ support into the database -- then initialize the categories
```

```
: CreateSecretDB ( -- )
false dbtype crid              ( false dbtype. crid. )
KeysDBname drop >abs           ( false dbtype. crid. StrPtr. )
cardnum @ DmCreateDatabase throw ( )
dmModeReadWrite crid dbtype    ( mode creator. type. )
DmOpenDatabaseByTypeCreator     ( dmOpenRef. )
_SecretDBR 2!                   ( )
SecretDB? drop 2>r 0. 0. 0. appInfoID ( 0. 0. 0. VA )
>abs 0. 0. 0. 0. 0. 0. 0. 2r>    ( 0. 0. 0. VA. 0. 0. 0. 0. 0. 0. localid.
)
cardnum @ DmDatabaseInfo throw   ( )
appInfoID 2@ or 0= if            ( )
\ If the AppInfoID doesn't exist.. Create it!
CategoryMaxSize SecretDBR       ( val. dbref. )
DmNewHandle                      ( voidHand. )
MemHandleToLocalID appInfoID 2! ( )
0. 0. 0. appInfoID >abs 0. 0. 0. ( 0. 0. 0. VA. 0. 0. 0. )
0. 0. 0. 0. SecretDB? drop cardnum @ ( 0. 0. 0. VA. 0. 0. 0. 0. 0. 0.
localid. card )
DmSetDatabaseInfo throw         ( )
then
\ Now that we've either created or retrieved the
\ AppInfoID value, let's go ahead and initialize it
cardnum @ appInfoID 2@          ( cardnum appInfoID. )
MemLocalIDToLockedPtr 2dup 2dup ( voidPtr. voidPtr. voidPtr. )
2>r 2>r 2>r 0 CategoryMaxSize 0. 2r> ( 0 val. 0. voidPtr. )
```

```

DmSet throw ( )
LocalizedAppInfoStrID 2r> CategoryInitialize ( )
2r> MemPtrUnlock throw ( )
CloseSecretDB ; ( )

\ See if the database exists, if not, then create it
: OpenSecretDB ( -- )
  SecretDB? false = if ( localid. )
    CreateSecretDB ( localid. )
  then
  2drop dmModeReadWrite crid dbtype ( mode creator. type. )
  DmOpenDatabaseByTypeCreator ( dmOpenRef. )
  _SecretDBR 2! ; ( )

\ Get a record handle for the specified Keyring record
: KeyRecord_Query ( recidx -- recHandle. )
  SecretDBR DmQueryRecord ; ( recHandle. )

\ Copy a z-string from the record to the specified buffer
: record>strBuffer ( recHandle. c-addr. -- )
  2swap 2dup 2>r MemHandleLock ( c-addr. voidPtr. )
  2swap StrCopy 2drop ( )
  2r> MemHandleUnlock drop ; ( )

\ Copy numBytes from the record to the specified buffer
: record>binBuffer ( numBytes. &dstP. recHandle. -- )
  2dup 2>r MemHandleLock ( numBytes. &dstP. voidPtr. )
  2swap MemMove drop ( )
  2r> MemHandleUnlock drop ; ( )

\ Copy the specified record into the local storage buffer
: CopyRecordtoBuffer ( recidx -- bufSize. )
  KeyRecord_Query 2dup ( recHandle. recHandle. )
  MemHandleSize 2dup 2>r 2swap ( recSize. recHandle. )
  BigBuff >abs 2swap ( recSize. BigBuff. recHandle. )
  record>binBuffer 2r> ; ( recSize. )

```

=====

\ MySecret-gui 2000-22-SEPT 12:57 REF

needs MySecret-rsrc

-257 constant byeThrow

variable lastForm

variable categorycount

create CurrCat align 16 chars allot

```

: build-category-list ( -- )
  CurrCat >abs CurrentCategory @ ( CatStr. idx )
  SecretDBR CategoryGetName ( )
  CurrCat >abs Main.Form.Category.Trigger ( CurrCatStr. TrigID )
  GetObjectPtr ( CurrCatStr. ObjPtr. )
  CategorySetTriggerLabel ; ( )

```

```

: get-preferences ( -- )
  prefsize prefs >abs 1 crid          ( x prefAddr. 1 crid )
  PrefGetAppPreferencesV10 drop      ( )
  openSecretDB ;                     ( )

: set-preferences ( -- )
  prefsize prefs >abs 1 crid          ( x prefAddr. 1 crid )
  PrefSetAppPreferencesV10 drop ;    ( )

: init-display ( -- )
  Main.Form ShowForm build-category-list ;

: change-password ( -- )
  true = if
    0 get ChPwd.Form.Field rot rot >abs cryptoKey >abs MemMove drop
  then Main.Form FrmReturnToForm ;

: add-new-record ( flag -- )
  true = if
    \ save filled in information
    get Record.Form.String.Notes
    get Record.Form.String.Passwd
    get Record.Form.String.Account
    get Record.Form.String.Name
  else
    \ discard changes
  then
  Main.Form FrmReturnToForm ;

: do-menu ( -- )
  event >abs itemid cond
    dup Main.Form.Menu.Options.About = if
      Main.AboutBox FrmAlert drop
    else dup Main.HelpString = if
      Main.HelpString FrmHelp
    else dup Main.Form.Menu.Secrets.Change = if
      ChPwd.Form FrmPopupForm
    else dup Main.Form.Menu.Options.Prefs = if
      change-preferences
    then drop ;

: do-control ( -- )
  event >abs itemid cond
    dup ChPwd.Form.Button.OK = if
      true change-password
    else dup ChPwd.Form.Button.Cancel = if
      false change-password
    else dup Main.Form.Button.New = if
      Record.Form FrmPopupForm
    else dup Record.Form.Button.OK = if
      true add-new-record
    else dup Record.Form.Button.Cancel = if
      false add-new-record
    else dup Main.Form.Category.Trigger = if
      categoryEditStrID 1          ( id. 1 )
      CurrCat >abs CurrentCategory >abs true ( id. 1 CurCatStr. CurIdx. true )
      Main.Form.Category.List      ( id. 1 CurCatStr. CurIdx. true lstID )
    then
  then drop ;

```

```

        Main.Form.Category.Trigger                ( id. 1 CurCatStr. CurIdx. true lstID
trigID )
        FrmGetActiveForm SecretDBR                ( id. 1 CurCatStr. CurIdx. true lstID
ctlID &frm. db. )
        CategorySelect                            ( Boolean )
        drop                                      ( )
        Main.Form.Category.List GetObjectPtr       ( ObjPtr. )
        LstGetSelection CurrentCategory !         ( )
    then drop ;

: handle-event ( ekey -- )
    dup menuEvent = if do-menu then
    ctlSelectEvent = if do-control then debugme ;

\ Main entry point
: (go) ( -- )
    get-preferences init-display
    begin
        ekey handle-event
    again ;

: go
    [''] (go) catch
    byeThrow = if                                ( exception )
        set-preferences                          ( )
        closeSecretDB                            ( )
        (bye)                                    ( )
    then ;

```



By [Rick Flower \(Nrflower\)](#) on Tuesday, September 26, 2000 - 07:36 pm: [Edit](#)

Ok.. This is really strange.. In goofing around with my category junk, I'm now finding that I'm getting the following sequence of events when selecting a category (dynamic, not static) :

```

.
.
.
7 (ctlEnterEvent)
9 (ctlSelectEvent)
5 (winEnterEvent)
1 (penDownEvent)
0 (nilEvent)
2 (penUpEvent)
.
.
.

```

The funny thing is that when I initially do the "pen" on the screen the first time, I get the "7" event, at which point everything just stops (and I get a funny looking shape above the "pen") -- until I hit the screen again, THEN I get the list of available categories!! It's like I need to hit the screen twice when it should only take once.. Has anyone seen this? I'm running Quartus 1.26R currently.. Is this a new issue or am I doing something wrong?

Actually, I can recreate the funny shape part using RsrcEdit and bringing up the MemoPad resource database and "previewing" Form 1000 and then trying to select a Category.. I believe it does that because the underlying "list" is empty.

At this point, I'm really tempted to ditch the current event handling code (using ekey) and switch

over to using EvtGetEvent(), SysHandleEvent, MenuHandleEvent, where FrmDispatchEvent is called for unhandled events.. I suspect that I would be at a minimum recreating what ekey is doing behind the scenes, but at least I can see what's going on in totality.

Also, I search around and didn't find anyone that had tried FrmSetEventHandler in Quartus? Is this correct?

Any comments are appreciated!

-- Rick



By [Neal Bridges \(Nbridges\)](#) on Tuesday, September 26, 2000 - 08:51 pm:

[Edit](#)

I doubt the internal EKEY is the problem, Rick. However, if you wish to break it down yourself, you'll find its implementation in the message archives; you can insert your own handling at any point in the process. Search on HandleEvent.

Neal



By [Rick Flower \(Nrflower\)](#) on Wednesday, September 27, 2000 - 03:14 pm:

[Edit](#)

Ok.. Neal was right.. It was a silly mistake on my end.. It turns out that when you're using the dynamically created categories (as opposed to statically built categories such as those in Neal's Swatch program - that can't be edited), you shouldn't bother using a "Popup" resource (ala. RsrcEdit).. I was following the example resources that were in MemoPad, etc which were using the Popup resource to map the Popup-button to the Popup-list.. This for some reason was causing two button pushes to be needed to get the same effect.. Once I removed the popup resource and left the popup button / list to do the work, the problem went away AND my Bus errors that I was getting when using the popup for the second time went away also! Sheesh! I think I'll post my code so that nobody else bothers stumbling into the tar-pit that I did.. Is that OK Neal?



By [Rick Flower \(Nrflower\)](#) on Wednesday, September 27, 2000 - 03:18 pm:

[Edit](#)

Ok.. Now for another question.. Do we know that the Quartus implementation for CategorySelect is correct? One of the values that gets passed to that PalmOS function indicates how many Categories are uneditable, so that it can keep them out of the "Edit Categories" popup -- you certainly don't want to delete the "Unfiled" category!

Anyway, everything I can find (examples) pass a value of "1" (it's a UINT8), which I'm doing, but it still allows me to remove ALL of my categories and whatnot..

I've got standalone code that shows this if anyone is interested..

-- Rick



By [Neal Bridges \(Nbridges\)](#) on Wednesday, September 27, 2000 - 07:49 pm:

[Edit](#)

Here's the whole stack diagram:

```
CategorySelect ( editingStrID. numUneditableCategories[>byte] &categoryName.  
&categoryP. title? lstID ctlID &frm. db. -- Boolean )
```

Because the numUneditableCategories parameter is passed as (in C) a UINT8, you must massage the value you pass with > BYTE, as per the stack diagram.

Neal



By [Rick Flower \(Nrflower\)](#) on Wednesday, September 27, 2000 - 08:33 pm:

[Edit](#)

Is that still true if I'm just shoving a "1" on the stack (not from a variable)?

Thanks!

-- Rick



By [Rick Flower \(Nrflower\)](#) on Wednesday, September 27, 2000 - 08:40 pm:

[Edit](#)

Never mind! I just answered my own question.. I found that a 1 >byte is converted to 256..
Thanks Neal! Can I put this sample code in the file area when I'm done with it, as an example of how to do dynamic (editable) categories from within Quartus?

Thanks!



By [Neal Bridges \(Nbridges\)](#) on Wednesday, September 27, 2000 - 08:57 pm:

[Edit](#)

You bet, Rick. Send it along when it's ready.

Neal



By [Rick Flower \(Nrflower\)](#) on Wednesday, September 27, 2000 - 09:00 pm:

[Edit](#)

What's the best way to send it over? I think I read somewhere about FTP'ing it? I'm going to put it into a zip file, since it is in several memo-pads and the resource file also.. Let me know!

-- Rick



By [Neal Bridges \(Nbridges\)](#) on Wednesday, September 27, 2000 - 09:23 pm:

[Edit](#)

You can FTP it to the incoming directory at ftp.quartus.net, if you wish, or just e-mail it over.

Neal



By [Rick Flower \(Nrflower\)](#) on Wednesday, September 27, 2000 - 09:32 pm:

[Edit](#)

Ok.. I just put it into the incoming area as "Test-Categories.zip"..

Thanks!

-- Rick



By [Neal Bridges \(Nbridges\)](#) on Wednesday, September 27, 2000 - 11:16 pm:

[Edit](#)

It's now in the File Area -- thanks!

Neal

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PalmOS 3.5 SDK Reference in iSilo Format

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): PalmOS 3.5 SDK Reference in iSilo Format



By [Tammy Cravit \(Tammycravit\)](#) on Friday, September 22, 2000 - 02:29 pm: [Edit](#)

I have created a hyperlinked iSilo document from the HTML version of the PalmOS 3.5 SDK reference. The file is pretty big (the .pdb is 939KB), but I've put it on the web for anyone who wants it. You can download it from [my web server](#).

Neal, if you want to snag a copy and add it to the file area, please feel free.

Tammy



By [Neal Bridges \(Nbridges\)](#) on Friday, September 22, 2000 - 02:44 pm: [Edit](#)

Thanks Tammy! Done.

http://www.quartus.net/files/PalmOS/Forth/Docs/PalmOS35SDK_iSilo.zip

Neal



By [Erwin Schomburg \(Esc\)](#) on Saturday, September 23, 2000 - 06:51 am: [Edit](#)

Although I have spread hints here on how to create and use this invaluable carry-with-you reference over the last year, I've been advised informally against putting the resultant file up on a download site. Beware of the bloodhounds. 8-)

/Erwin



By [Neal Bridges \(Nbridges\)](#) on Saturday, September 23, 2000 - 08:22 am: [Edit](#)

Thanks, Erwin. I didn't consider that when I placed it in the File Area last night -- I'll try and find out if there are any issues.

Neal



By [John McKeon \(Jmckeon\)](#) on Sunday, September 24, 2000 - 12:13 am: [Edit](#)

Caveat Emptor

I have just downloaded iSilo and the PalmSDK to give it a run and see if it would be useful for me. I decided I didn't want to shell out the doe for the software so I deleted it . . . Now I didn't read the manual (and still haven't) but when I went back to QED to look up a SysTrap there were NO doc files available. Apparently

when I deleted iSilo it took all of my existing docs with it = [

Is his standard behavior for doc readers?

Anyone deciding to try out iSilo be forwarned.



By [Doug Philips](#) on Sunday, September 24, 2000 - 01:44 am: [Edit](#)

Yeah, well that happened to me when I decided to switch from AportisDoc to iSilo. I don't know what would have happened if I had loaded iSilo first, luckily I'd done a hotsync with all the back up bits on not long before that, so I was able to reload the docs. Annoying as all get out. The bloody question in the default launcher says only the app and all its databases. NO, I want to sometimes delete the app and _leave_ the databases. But I rant to the wrong group. Just to say that it happened to me with different apps, so iSilo isn't be particularly worse than anything else.
-Doug



By [Barry Ekstrand \(Ekstrandbb\)](#) on Sunday, September 24, 2000 - 02:23 am: [Edit](#)

I've learned to appreciate RsrcEdit's capabilities in a couple of ways outside of it's form building value: a great tool to backup files during development, and a great tool for deleting files that you choose without touching others, like doc readers but not the docs in the database.

Barry Ekstrand



By [chris bucsko](#) on Tuesday, September 26, 2000 - 04:18 pm: [Edit](#)

I've had good luck with a piece of freeware available frome aportis (<http://www.aportis.com/tryme/download/AportisDoc/aportisdopdfconverter.html>) which converts pdf files into Palm doc files. The download also includes a copy of aportis doc reader. I now have both the PalmOS Reference and PalmOS Companion on my IIx as doc files. Total size: 910KB. They can be read from any doc reader, but you'll have to add your own bookmarks. The aportis doc reader is OK. It's the only free reader I've found which lets you add bookmarks. It's big, though, over 1 meg by itself.



By [Doug Philips](#) on Friday, September 29, 2000 - 10:23 am: [Edit](#)

Thanks for the pointer to the PDF convertor. Unfortunately they don't have a version for the Mac, so I'm stuck L (for now).

Having the Quartus and Palm docs "on palm" (I was going to say "online" but that would have been wrong J), its very nice. (I've sucked down the converted HTML and use iSilo to convert my own HTML).

-Doug



By [chris bucsko](#) on Wednesday, October 4, 2000 - 10:51 am: [Edit](#)

I would be willing to send anyone who wants, my docs of the SDK and companion. If you would like a copy, just email me. Further, if there's room on this web site, just let me know and I'll send them along. I've read these on Aportis, iSilo and CSpotRun (a freeware doc reader). I recommend any reader with bookmarks capability, since they're so large...



By [Kristopher Johnson \(Kdj\)](#) on Thursday, October 5, 2000 - 12:33 am: [Edit](#)

Has anyone generated an iSilo or Doc version of the Quartus Forth online manual? I have the QF-specific words and systraps, but the rest of the manual is useful too.



By [Richard Chamberlain](#) on Thursday, October 5, 2000 - 01:53 am: [Edit](#)

Yes I have, it's in isilo format. I've also got the ans forth document in isilo which is nicer because it has links and different font styles and sizes.

Let me know if you want them.



By [Kristopher Johnson \(Kdj\)](#) on Thursday, October 5, 2000 - 07:48 am: [Edit](#)

Maybe Neal should post it to the QF file area?



By [Mark Browne \(Markbrowne\)](#) on Thursday, October 5, 2000 - 08:15 am:

[Edit](#)

I would like them. Either set them up for download, or please Email them.

Thanks

Mark Browne



By [Richard Chamberlain](#) on Sunday, October 8, 2000 - 03:20 am: [Edit](#)

Hi Folks,

Sorry it took me so long - I was kinda waiting for a response from Neal.

Anyway for now they are at the following location:

http://homepage.ntlworld.com/richard_chamberlain/QFMan.zip

http://homepage.ntlworld.com/richard_chamberlain/Dpans94.zip

You are better off with the full version of iSilo so that the hyperlinks work.

Richard

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Known Bugs

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Known Bugs



By [Steve Bohrer](#) on Thursday, September 21, 2000 - 10:55 pm: [Edit](#)

Various threads on this forum point out minor bugs in the compiler, but it is difficult to find these threads until you know the bug so you can pick the proper keywords. Thus, I've stumbled into some pitfalls that I could have been forewarned about.

There is also a maintenance issue: bugs are found, and Neal posts a patch, but there is no easy way to track what is fixed and what remains.

So, when you find bugs (after they are confirmed by Neal) please post a short summary to this topic. This may save time for others who can avoid known bugs, rather than wasting the time "discovering" them again.

Thanks.



By [Steve Bohrer](#) on Thursday, September 21, 2000 - 11:03 pm: [Edit](#)

COMPARE breaks when moving to different ROM

This built-in word fails when a compiled app is run on a different ROM than the compiling machine. [More details.](#)

WORK-AROUND: Use the OS Trap StrNCompare rather than COMPARE.

FIXED in Quartus ver 1.2.6



By [Steve Bohrer](#) on Thursday, September 21, 2000 - 11:11 pm: [Edit](#)

LstSetListChoices drops two extra cells

The built-in setup code for this trap removes two extra cells from the stack, typically leading to a stack underflow error.

WORKAROUND: Redefine the trap as follows:

```
: LstSetListChoices
  ( numItems &ItemsText. &list. -- )
>r >r >r >r >r 0 0 r> r> r> r> r>
LstSetListChoices ;
```



By [Neal Bridges \(Nbridges\)](#) on Friday, September 22, 2000 - 10:05 am: [Edit](#)

Good idea, Steve. Thanks.

Neal



By [Wade Carlson](#) on Saturday, September 23, 2000 - 11:28 am: [Edit](#)

Quartus Forth is not catching popSelectEvent's in OS 3.3 and 3.5

WORKAROUND: Fixed in ver 1.2.6R



By [Wade Carlson](#) on Saturday, September 30, 2000 - 01:17 pm: [Edit](#)

Using ROLL leads to random Fatal Exception's in a compiled app on certain Palm units (Visor, Palm V's, and some 8 MB Palm III's)

WORKAROUND: avoid using ROLL by factoring out code using 2SWAP, 2>R, etc.



By [Kristopher Johnson \(Kdj\)](#) on Sunday, October 1, 2000 - 04:27 pm: [Edit](#)

WinSetPattern leaves a cell on the stack that it is not supposed to.

So I'm using the following redefinition:

```
: WinSetPattern ( &CustomPatternType. -- )  
  (hex) A224 systrap 2drop ;
```



By [Steve Bohrer \(Skb\)](#) on Saturday, October 21, 2000 - 02:10 am: [Edit](#)

MS only works for multiples of 10.

[\(Reported by Kristopher Johnson\)](#)

FIXED in ver 1.2.6R



By [Kristopher Johnson \(Kdj\)](#) on Wednesday, October 25, 2000 - 12:08 pm:

[Edit](#)

ALLOCATE is not safe to use with newer Palm OS versions.

It uses the Palm OS heap allocation routines, and then attempts to convert 32-bit absolute addresses to 16-bit relative addresses. This was safe with older Palm OS versions, but is not safe with newer versions.

Workaround: Use (ALLOCATE), which returns a 32-bit absolute address, and use

the Quartus Forth words for absolute addresses (@a, !a, etc.).



By [Neal Bridges \(Nbridges\)](#) on Wednesday, October 25, 2000 - 12:13 pm:

[Edit](#)

An editorial note: ALLOCATE is safe, but it may not always succeed, which may be unexpected. It returns a flag indicating success/failure.

(ALLOCATE) and friends will allow you to more reliably manage memory on the newer Palm OS versions.

Neal



By [Ron Doerfler](#) on Wednesday, October 25, 2000 - 12:58 pm: [Edit](#)

Neal said: An editorial note: ALLOCATE is safe, but it may not always succeed, which may be unexpected. It returns a flag indicating success/failure.

And what Neal means here is that you can try ALLOCATE and check the return flag--if it has failed, try again until it succeeds. Therefore, you have the ALLOCATE in a BEGIN..UNTIL loop. Sounds really inelegant (and it is), but I've done it this way and it does work.

Ron

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Registration of Quartus Forth ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Registration of Quartus Forth ?



By [Jeff Brown](#) on Thursday, September 21, 2000 - 04:25 pm: [Edit](#)

Will I got some kind of Programming ref or language ref guide for Quartus Forth after I registered the products ?

Because I preferred have printed copy on my hand that show me all the language synax, keywords etc..., like something in PDF format.

Also does Quartus Forth let me create an full color apps on IIIC ??

Thanks!



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Thursday, September 21, 2000 - 06:22 pm:

Hi, Jeff. Yes, you can create full color apps with Quartus Forth -- check out "Oracle!" on this site as an example.

Also, the ANSI Forth Standard is available for download in multiple electronic formats, which you can print as required, or keep on your Palm for reference.

Neal

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Question about Resource Edit?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Question about Resource Edit?



By [ray](#) on Thursday, September 21, 2000 - 12:41 pm: [Edit](#)

Does anyone know the different between the downloaded version and register version of Resource edit ? I can find anything on their site.

It is \$15.00 for register.



By [Jim Hendricks \(Jimh\)](#) on Thursday, September 21, 2000 - 12:48 pm: [Edit](#)

Based on when I registered, there is no difference. I registered in support of the authors development, rather than to get extra bells and whistles, or to eliminate a nag screen.

Jim



By [Barry Ekstrand \(Ekstrandbb\)](#) on Thursday, September 21, 2000 - 01:31 pm: [Edit](#)

Registration of RsrcEdit is the right thing to do because it properly compensates the developer (Roger Lawrence) for his efforts, but you don't get any notice of updates or other attention for having done so. You do, however, get to sleep better at night.... 😊

Barry Ekstrand



By [ray](#) on Thursday, September 21, 2000 - 09:33 pm: [Edit](#)

Sure, I will go to register this program.

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How quartus forth compare with GCC and CodeWarriors

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): How quartus forth compare with GCC and CodeWarriors



By [Colin Doug](#) on Thursday, September 21, 2000 - 11:46 am: [Edit](#)

Hi, Can quartus forth compare with GCC or CodeWarriors regarding the features , functionlities and speed.

I don't know C at all, does it matter for learn forth ?? I assumed the forth can create a apps that C did.



By [Jim Purdy](#) on Thursday, September 21, 2000 - 12:36 pm: [Edit](#)

Yes, you can develop ANYthing in Forth that you could in C. The code runs VERY fast as well.

I recently wrote a large numerically-intensive application (PalmStats v2.1) and found the performance of Quartus Forth to be superb.

Check out the application to see what Forth can do.

Jim



By [Barry Ekstrand \(Ekstrandbb\)](#) on Thursday, September 21, 2000 - 01:21 pm: [Edit](#)

I ran across Quartus Forth just as I was getting ready to try to learn C, and decided to switch to Quartus because development is completely onboard the Palm device (REAL code on the road!). I think it was a wise decision, and one I've never regretted - a great development platform with great support.

Barry Ekstrand



By [Colin Doug](#) on Thursday, September 21, 2000 - 01:46 pm: [Edit](#)

Wow, thanks for your reply, after reading what you guys saying, I would jump into it right a way. Thinking about programming on the road and that is COOL. I think I will register now!

Does the registered version comes with something like programming ref guide ? to list all the syntax, keywords, example etc..



By [Mike Keesling \(Blueeyedpop\)](#) on Thursday, September 21, 2000 - 06:41 pm: [Edit](#)

The main differences that I have found between Quartus and Codewarrior are:

Quartus tech support answers my questions.

Quartus doesn't cause me to pull my hair out.

I make quartus crash, code warrior makes me crash.

I have come up with angry little names for code warrior like "bloat warrior".



By [Erwin Schomburg \(Esc\)](#) on Friday, September 22, 2000 - 01:32 am: [Edit](#)

To give a kind of answer to the question, the docs you find here will help you. Run the manual through iSiloWeb and you have a handy starters reference on board. If you don't have the Forth standard hardwired into your brain like Neal apparently has, use the doc file supplied with the Quartus download or iSilo the web version as an advanced add on. Finally, if you dig to the core of it all, make an iSilo version of the complete OS SDK doc from Palm. All in all thats about one and a half meg of Palm memory and the most complete portable reference you can get.

/Erwin



By [Tammy Cravit \(Tammycravit\)](#) on Tuesday, October 10, 2000 - 03:49 pm:

[Edit](#)

I have one more difference between CodeWarrior and the current version of Quartus Forth:

- Apps written in Quartus Forth 1.2.x (or earlier) cannot respond to application launch codes.

I am eagerly awaiting QForth 2.x, which hopefully will fix this. I have a program (BatteryInfo, on PalmGear) which I want to rewrite in Quartus for the next version, but the existing version responds to sysAppLaunchCmdSystemReset (as well as sysAppLaunchCmdNormalLaunch), and I don't want to port it until I have a way to replicate the existing functionality.

Tammy



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 10, 2000 - 04:40 pm: [Edit](#)

Quite right, Tammy. That's a key item I'm working on for version 2.

Neal

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Input Questions ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Input Questions ?



By [Janet](#) on Thursday, September 21, 2000 - 11:26 am: [Edit](#)

Hi, just wonder is that all your forth developer have the portable folder keyboard attached to your palm, I'm just thinking is that hard to coding the apps without the keyboard ?



By [Erwin Schomburg \(Esc\)](#) on Thursday, September 21, 2000 - 11:41 am: [Edit](#)

I coded for Quartus long before the PPK or the GoType became available. Although I have a PPK now I hardly ever use it for coding purposes. You become a Grafitti wizard and you learn to appreciate Rick Bram's Pop! Hack for input of the most commonly used keywords. A strip of removable tape (Scotch removable, the one from the famous blue box) over the Grafitti area also helps. 8-)

/Erwin



By [Jim Hendricks \(Jimh\)](#) on Thursday, September 21, 2000 - 12:46 pm: [Edit](#)

I too have been coding strictly using Grafitti until the Palm Portable Keyboard came out.

Now if I am only doing small things, or on the road where the keyboard is not handy, I still use Grafitti, but otherwise I am trying to rely on the keyboard when possible. For me, I can type much faster than I can Grafitti, I also tend to press too hard when I write and my Grafitti area is less reliable as it wears so any use of the keyboard reduces the wear and tear on the grafitti input area for me!

Jim



By [Barry Ekstrand \(Ekstrandbb\)](#) on Thursday, September 21, 2000 - 01:23 pm: [Edit](#)

Nearly all of my coding has been done with Grafitti. Recently my editor of choice has become peditPro - lots of options and the ability to export to Doc format. Occasionally I hook up my old Newton keyboard to my Palm Vx, but Grafitti is generally just as fast for me.

Barry Ekstrand



By [Dave Bennett \(Dbennett\)](#) on Friday, September 22, 2000 - 08:38 am: [Edit](#)

I write everything in grafitti as well. I did recently purchase the folding keyboard, but find it too cumbersome for programming use. I did find it quite useful however for inputting lots of data into ThinkDB databases. The big drawback of the keyboard is that they didn't think to put a numeric keypad somewhere on the letter keys as others has done.



By [Neal Bridges \(Nbridges\)](#) on Friday, September 22, 2000 - 10:07 am: [Edit](#)

Thanks for everyone's feedback re Graffiti. I use Graffiti more than the portable keyboard, myself. Forth is a very concise language; there isn't nearly as much source to type as there is with C, for instance.

Neal



By [Tom Atwell](#) on Saturday, September 23, 2000 - 12:19 am: [Edit](#)

I do most of my Forth coding on my PC using POSE. Beings that I am relatively new to Forth I find it handy to have a window open to this forum and a few other reference windows open. And even though I can not drag and drop directly into POSE, I can drag and drop into the Palm desktop and hotsync to POSE. And for those times when I am away from the PC it is easy enough to copy my code to the Palm and use Graffiti.

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Where to start

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Where to start



By [Johnny P](#) on Thursday, September 21, 2000 - 07:37 am: [Edit](#)

I don't know much about C programming and find this forth product on the web, so I downloaded the evaluation and install it to my palm. when lanuch it, just have a cursor , seems waiting for my to input something.

Where I should start now ?? where to put my code in ?

How about that on-board form design tool resource Edit ?



By [Joanna Kurki \(Joannak\)](#) on Thursday, September 21, 2000 - 08:30 am: [Edit](#)

Cursor means it's ready to take your commands If you have no previous experience on Forth programming language you need to find some entry level tutorial material .. As a First try looking following page: Quartus Forth Manual - quick start

<http://www.quartus.net/products/forth/manual/quick.htm>

By default Source code is stored on regular Palm Memoes. See quickstart example above.

Resource Edit is independently developed program, there is link on <http://www.quartus.net/products/forth/manual/online.htm>

page... Direct address to download page is:

<http://www.individeo.net/RsrcEdit.html>

In geneal: I would like to recommended you to read older messages and message archives... Those files contain a lot of useful information for all of us Quartus beginners.

Joanna



By [Travis Casey \(Travis\)](#) on Thursday, September 21, 2000 - 11:55 am: [Edit](#)

Three resources I recommend:

[Steven Donahue's tutorial for beginners](#)

This will get you started with how to use RsrcEdit and Quartus.

[Leo Wong's Simple Forth](#)

This will get you started with Forth, with a lot of examples.

[Julian Noble's A Beginner's Guide to Forth](#)

This will rehash some of what you learned in the previous one, from a different perspective. The most useful thing here is the section on CREATE and DOES> -- which is one of the best things in Forth, but Leo Wong's tutorial doesn't cover.

If you can find a copy of Leo Brodie's book Starting Forth, it's very, very good. Interlibrary loan is probably your best bet.

From there, use the resources listed in the "Online Resources" part of the Quartus manual, and this forum. Good luck!

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Launch codes?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Launch codes?



By [Mike Wilson](#) on Wednesday, September 20, 2000 - 02:33 pm: [Edit](#)

I saw this in the doc...

"When Quartus Forth starts, the following actions occur: 1)If launch code is non-zero, exit immediately..."

Is this still true? Is there no way to build a quartus app which handles, for example, being started up for a Find?

(Sorry if this is answered elsewhere, I didn't see it after a quick search of the discussion area.)

Mike Wilson



By [Neal Bridges \(Nbridges\)](#) on Wednesday, September 20, 2000 - 06:35 pm:

[Edit](#)

Mike -- correct, launch codes are presently not handled. It's one of the enhancements I've got in development.

Neal

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Ubiquitous Development...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Ubiquitous Development...



By [Doug Philips](#) on Wednesday, September 20, 2000 - 11:57 am: [Edit](#)

I've been poking through the message archives, trying different search criteria, looking for past info on how folks are doing Quartus Forth development. I found a pointer to Erwin Schomburg's site <http://home.t-online.de/home/Erwin.Schomburg/howtoe.htm> but little else comprehensive. There doesn't seem to be a clear consensus on which Doc tool to use.

What I would like is to be able to work on a "base" of source code either on my Palm, on a hot-synched computer (Mac), or in POSE... I'm beginning to get the idea that just isn't going to happen (i.e. I'd be the one to make it work, and I'm not going to bother J).

I saw the discussion last spring about clean (cold) starting on every entry. I found it somewhat disturbing. Perhaps my previous Forth experience is just too old, but the idea of a bottom up, write and test the words as you go development-environment that is live, seems to me to be one of the fundamental foundations of Forth.

None the less, it is quite clear that the cold start on entry is going to stay. So perhaps there is another approach? I'd like to be able to write and test code in Quartus without having to bop back and forth between that and some other application (Memo or one of the Doc creators). So, perhaps a new version of : could be written that would log the source being compiled to a memo (perhaps called dynamic-defns<n> or dynamic-<wordBeingDefined> or some such) but not what I compile from include/needs. For me that would be a big win.

In the mean time, I'm looking for a way to write Forth code anywhere, anytime and have it all be consistent (the promise of Hotsync!).

-Doug "think ubiquitous"



By [Mike Keesling \(Blueeyedpop\)](#) on Wednesday, September 20, 2000 - 12:15 pm: [Edit](#)

popup note, a hackmaster extension, allows you to edit memos from within other programs, such as quartus.

go to <http://www.benc.hr>

or email bbenc@benc.hr



By [Mark Browne](#) on Wednesday, September 20, 2000 - 12:33 pm: [Edit](#)

The only problem with this is that Quartus does not seem to have "forget", so if you continuously reload the same memo you will run out of space.

Neil, is there a reason for "forget" to be missing (or is it there under another name)?

Mark Browne



By [Doug Philips](#) on Wednesday, September 20, 2000 - 01:35 pm: [Edit](#)

Right, the popup note thing is interesting, but backwards (that is, it lets me enter the text into a memo, then "play it" into Quartus, instead of the other way around).

I realized while at lunch that it isn't : that I wish to have "log to a memo" but the interpreter itself (when taking keystrokes, er, user input). So that if I would do some "outside of definition" initialization, etc. then that would be logged for replay as well.

I guess now that I've thought more about it, what I'm asking for is logging. Sure, I know that if I pop up a form and do stuff with it, that won't be logged. I still think there is a lot of value of being able to work "on the fly" and have it captured so that I could set up some startup code that would read my "current state" memo(s) and get me back to the state I was in when I switched out to another application. No, its not perfect, but it would be very useful.

AND this gets me "back" to the old style of Forth fun and experimentation.

The other half of my quest (and perhaps the harder/larger half) is still the multi-homed development stuff. J

-Doug



By [Neal Bridges \(Nbridges\)](#) on Wednesday, September 20, 2000 - 06:36 pm: [Edit](#)

Mark -- MARKER is the Standard replacement for FORGET. Have a look, let me know if you have any questions.

Neal



By [Geert Bosch](#) on Saturday, September 23, 2000 - 12:39 pm: [Edit](#)

On this topic, it would be great if Quartus had a small history list, which would be preserved across invocations. This would solve most of my issues with quickly

repeating small experiments between editing.

-Geert



By [Neal Bridges \(Nbridges\)](#) on Saturday, September 23, 2000 - 03:57 pm:

[Edit](#)

I agree, Geert. I'm working on it.

Neal

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Array question

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Array question



By [Tom Atwell](#) on Tuesday, September 19, 2000 - 12:36 am: [Edit](#)

I am a little baffled about the "array" word in toolkit. First off I would like to verify what I think I know. If I do:

5 array myarray

I will have a 5 element array of elements 0-4. Therefore, I can safely do:

22 0 myarray !

34 4 myarray !

And a subsequent:

0 myarray @

4 myarray @

Will put integers 22 and 34 on the stack. I have been able to use array believing that it works this way. However, I was searching through past discussions and see that there may be a bug in the array definition. I look in my toolkit and see that I have \ toolkit 99.2.12 7:24 pm NAB.

On Aug 4, 1999 Neal posted a possible change to array to fix a bug. I made this change but now array seems to be overwriting an adjacent variable. I am relatively new at forth and do not fully understand the array definition.

To Neal: Should I be using my old array definition? If I do use it what kind of problems should I try to avoid? Is there a new array word that I should drop into my toolkit?

To Anyone: I would appreciate a breakdown of what is going on in Neal's array. I don't have enough forth experience to fully understand what is going on here.



By [Neal Bridges \(Nbridges\)](#) on Tuesday, September 19, 2000 - 12:57 am:

[Edit](#)

Hi Tom. The bug in ARRAY, as I recall, was that it did a FILL before an ALLOT, which is bad. I fixed it to do the ALLOT first, then the FILL. That won't affect how the array actually works -- can you demonstrate the problem you're having?

Neal



By [Tom Atwell](#) on Tuesday, September 19, 2000 - 08:55 pm: [Edit](#)

Well I am sorry but I can not duplicate my problem. I have modified the code and now I can not get it back to where it misbehaves. I have been using POSE to write and test my code. At one point when it was acting up I shut down POSE and when I stated it back up I also went back to the old array. I no longer had the problem and I assumed that the fix was to go back to the old array. But now that I think about it I have had some problems recently with POSE where it becomes unstable and restarting helps.

However, my original array in toolkit reads:

: array (cells --)

create cells here over 0 fill allot

```
does> swap cells + ;
```

If I understand correctly the fill before the allot can be a problem if the array is large because there is not enough space set aside yet for the fill.

So, I have seen this as a fix to that problem:

```
: array ( cells -- )
create cells here over allot swap
0 fill does> swap cells + ;
```

But I have also seen this as a fix:

```
: array ( cells -- )
create cells allot
does> swap cells + ;
```

Right now it looks like all 3 of these will work in my program. Can you recommend one of these or can you tell me where I might find your latest? I have looked at the files in your Library download area along with the library files in the q4th121e.zip file. It looks like all of them have the first array with the fill before the allot.

Tom



By [Neal Bridges \(Nbridges\)](#) on Tuesday, September 19, 2000 - 09:34 pm:

[Edit](#)

The second one is the only one that works properly and fills the array with zeroes. The last one doesn't, and the first one is broken for large arrays.

```
: array ( cells -- )
  create cells here over allot swap 0 fill
  does> swap cells + ;
```

Neal



By [Travis Casey \(Travis\)](#) on Tuesday, September 19, 2000 - 09:38 pm: [Edit](#)

Here's a breakdown of what those three do:

```
: array ( cells -- )
  create ( tells compiler "run this to make the array" )
  cells ( convert from cells to bytes )
  here over 0 fill ( fill those bytes with 0's )
  allot ( mark those bytes as in-use, moving the here pointer and allocating memory
if needed )
  does> ( tells compiler "run this when someone uses the name given" )
( the address of the array start is put on the stack automatically )
  swap ( which stackstart -- stackstart which )
  cells ( convert the "which" to bytes )
  + ( stackstart + converted which -> address to use )
;
```

Whew! The second one is the same, except that it does the allot **before** the fill. With the previous, if you were to, say, try to declare a 25 cell array when only 23 cells of memory were left free for Quartus to use, you'd get an error, since you'd try to write to memory that Quartus didn't own. Putting allot before fill solves that problem.

The third allots the memory, but doesn't fill it... which just means that instead of having the memory all set to 0's before you use it, it still has whatever old data was there. Not a problem, given that your app doesn't assume that it's 0-filled.

The first version can cause problems -- if you're not allocating a lot of memory in your app, it might not, but it can. The second and third versions should both be perfectly safe.

Since you can't replicate the problem, no way to tell what was happening. :-/



By [Doug Philips](#) on Tuesday, September 19, 2000 - 10:03 pm: [Edit](#)

I like the third method, because if you wanted to "zero out" the array, it'd be easy to do that, but if you're just going to fill it up right away, the fill is a waste of time/code-space. I might be tempted to have a second word that calls array then does the fill. Dunno what I'd call it though, maybe 0array or cleanArray or somesuch.



By [Neal Bridges \(Nbridges\)](#) on Tuesday, September 19, 2000 - 10:20 pm:

[Edit](#)

Good points.

It only takes a very tiny amount of time at compile-time to zero the array, and about 6 bytes of code-space (and none in the generated stand-alone executable). However, the compile-time initialization can usually be omitted.

One of my variants in the archives was in fact named 0ARRAY.

Neal



By [Doug Philips](#) on Wednesday, September 20, 2000 - 08:41 am: [Edit](#)

Right, my objections were mostly philosophical, not practical. Factoring in the small. J

I am curious though to know why it takes no code space in the stand alone executeable... doesn't it still have to call fill? Or at least in-line it?

-Doug



By [Neal Bridges \(Nbridges\)](#) on Wednesday, September 20, 2000 - 06:39 pm:

[Edit](#)

ARRAY is called during compile-time, not during run-time, so it never becomes part of a stand-alone app. I suppose you could call it at run-time, but that'd be very strange, as it's intended for static array creation.

Neal



By [Erwin Schomburg \(Esc\)](#) on Thursday, September 21, 2000 - 08:45 am:

[Edit](#)

At this point a reference to

<http://www.quartus.net/discus/messages/23/506.html?FridayMay2620000402pm>,

<http://www.quartus.net/discus/messages/23/559.html?TuesdayJune2020000450pm> and several related threads seems to be in order.

Summary: ALLOTting and usage of constructs derived from ALLOT during runtime of a compiled stand alone Quartus application is a BAD idea. Not to be confused with space allotted at compile time that is used at runtime, which is common and proven practice.

/Erwin



By [Doug Philips](#) on Thursday, September 21, 2000 - 01:19 pm: [Edit](#)

Thanks guys. I had forgotten that the generated app was not a full blown forth system, so doing those things at run time is problematical.

Thanks also for the pointers. I've found the discussion archives to be informative, though I've had trouble finding stuff in them.

-Doug

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LoanPayment (Quartus App) Update Released

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): LoanPayment (Quartus App) Update Released



By [Barry Ekstrand \(Ekstrandbb\)](#) on Monday, September 18, 2000 - 06:15 pm: [Edit](#)

Just a note to let you know that my LoanPayment app has been updated and v4.00 released. I added preferences support, a registration code routine, optimized the save to memo routine, as well as Erwin's registration timer. Many thanks once again to Erwin and Neal for their guidance and willingness to put up with my pestering along the way. As I hope all will remember, all of the registration fees from LoanPayment are donated to the Juvenile Diabetes Foundation.

Barry Ekstrand



By [Neal Bridges \(Nbridges\)](#) on Monday, September 18, 2000 - 11:45 pm: [Edit](#)

Good to hear, Barry!

Neal

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Multitasking...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Multitasking...



By [Doug Philips](#) on Monday, September 18, 2000 - 03:53 pm: [Edit](#)

As part of the preliminary design for the program I described "over" in the "What's New" conversation, I'm starting to think about the overall program structure. I would really like to be able to use multitasking. So far, the only thing I could find about this was a discussion from about a year ago. I poked through the various "file" areas for Quartus and didn't seem to find anything. I'd hate to roll my own if its been done already... J

Thanks,

-Doug

P.S. I also looked at the online Forth 94 dpANS and didn't seem to find anything there either. But the Forth-aware part of my brain is still very rusty. L



By [Neal Bridges \(Nbridges\)](#) on Monday, September 18, 2000 - 04:01 pm: [Edit](#)

The ANSI Forth Standard doesn't yet cover multitasking. I have a design ready to be implemented; practically speaking, it needs to be done from within the kernel, though I think something workable could be implemented from outside.

Quick answer: not yet done, but coming. I'd be interested in your thoughts about it.

Neal



By [Doug Philips](#) on Monday, September 18, 2000 - 04:40 pm: [Edit](#)

Thoughts about mulitasking:

Ideally, each thread/word's data and return stacks would be preserved. The scheduler would be preemptive with a few levels of priorities for tasks
Semaphores could be used to control scheduling (block-until-semaphore kind of things).

Practically, what I'm thinking I'd do if I had to do it myself would be a simple non-pre-emptive round robin thing. Imagine a vector of xt's, executed in turn. Words for manipulating the list, by name preferably, as in: AddTask FooWord but also support ' foo AddTaskXT or removeTask Bar or skipTask BlueBar ...

the task list manipulation can get arbitrarily rich, but I'd do a simple list/queue (probably borrow an existing similar data structure from the library if it is exists)

Perhaps with or without some data stack preservation. Maybe have the

words/tasks return a "keep me on the list" "remove me from the list" "keep my on but skip me" kind of thing... (or maybe not J)

I'd just as soon not get too bogged down in building the tools I want to use, but I think I'd rather build them than try to use a different model of programming. This simple strategy I'm thinking of would work so long as I can get access to wait-less info (such as palm events, serial port data, etc). If any of those accessors might block, this simple scheduler scheme is hosed.

-Doug



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Tuesday, September 19, 2000 - 01:10 pm:

I'm working on a round-robin scheme, rather than preemptive -- too many issues with OS non-reentrancy.

Palm events and serial port data are both handled in the background on the Palm, so those won't block.

Thanks for your thoughts, I'll keep you posted!

Neal



[Edit](#)

By [Doug Philips](#) on Tuesday, September 19, 2000 - 03:11 pm:

If the PalmOS isn't re-entrant, then pre-emptive would be a lot less useful.

Now to find that PalmOS programming book I bought 6 months (or was it a year?) ago....

Maybe by the time I'm ready to start prototyping, it'll be ready! J .

Pre-emptive or not, though, having a lock/semaphore mechanism that works with the scheduler would be very handy.

-Doug



[Edit](#)

By [Dave Bennett \(Dbennett\)](#) on Monday, September 25, 2000 - 08:28 am:

I think the problem with the round-robin scheme is very much apparent in Windows implementations. A single application can grab the OS or the hardware and lock it so no one else can get to it. Pre-emptive puts the OS (or watchdog) in charge of the doling of resources rather than trusting the app (or developer) to "play nice".



By [Neal Bridges \(Nbridges\)](#) on Monday, September 25, 2000 - 09:36 am: [Edit](#)

In the context of an entire OS, you're right. In this case, it's multitasking internal to your own app, so it's only yourself you're trusting 😊

Neal



By [Doug Philips](#) on Monday, September 25, 2000 - 11:41 am: [Edit](#)

Quite right Neal. As I understand it (I'm still reading about the Palm OS), all the events on the device are filtered through your app, so the OS is actually giving your app control over the entire device. Most apps are supposed to be written such that you give control back to the OS, but it is voluntary.

Perhaps OS is too strong a term to use though... J

-Doug

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FlushQueue?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): FlushQueue?



By [Ron Doerfler](#) on Friday, September 15, 2000 - 01:55 pm: [Edit](#)

Hi Neal,

I apparently need to use the "FlushQueue" Quartus command because I'm overflowing the event queue when I'm saving and refreshing fields. Where is this defined? I know this has come up before, but I'm having trouble on this computer searching the archive files.

Thanks,

Ron



By [Neal Bridges \(Nbridges\)](#) on Friday, September 15, 2000 - 01:59 pm: [Edit](#)

Here it is:

```
: FlushQueue ( -- ) begin 0. (ekey) 0= until ;
```

Neal



By [Ron Doerfler](#) on Friday, September 15, 2000 - 03:02 pm: [Edit](#)

Thanks, Neal!

Ron

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LstSetListChoices still broken?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): LstSetListChoices still broken?



By [nrflower](#) on Thursday, September 14, 2000 - 07:09 pm: [Edit](#)

Neal,

Did you not fix the above PalmOS call? I ran into the same problem that was mentioned back in February with the version of Quartus you just sent me a few weeks ago (1.2.6r) At the time, the fix was to include the following line in our source file (which did fix my problem, by the way):

```
: LstSetListChoices ( numItems &ItemsText. &list. -- )  
  >r >r >r >r >r 0 0 r> r> r> r> r>  
  LstSetListChoices ;
```

I just thought I'd let you know in case it slipped by.. Thanks again for a great forum!



By [Neal Bridges](#) on Thursday, September 14, 2000 - 07:30 pm: [Edit](#)

I'll check, Rick. Thanks for letting me know!

Neal

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Password: the "Password" box empty. Your e-mail address is optional.

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Zstring concatenation - Newbie question

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Zstring concatenation - Newbie question



By [Colm Hoban](#) on Thursday, September 14, 2000 - 01:08 pm: [Edit](#)

Excuse me if I missed something obvious, but is there a word to concatenate zstrings, for example,
" abc" + " def" = " abcdef"

Thanks in advance....



By [Neal Bridges](#) on Thursday, September 14, 2000 - 01:31 pm: [Edit](#)

There's a PalmOS call for this: StrCat.

```
StrCat ( &src. &dst. -- &CharPtr. )
```

Neal



By [Colm Hoban](#) on Thursday, September 14, 2000 - 04:55 pm: [Edit](#)

Oops! Thanks Again

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Categories revisited..

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Categories revisited..



By [nrflower](#) on Wednesday, September 13, 2000 - 06:10 pm: [Edit](#)

Ok.. I've been fooling around with categories (in the UI of course) and have a few questions.. I've been able to get categories to work OK generally, but when I try to build multiple categories automagically, I run into trouble. Perhaps someone can enlighten me? Parts of my code are below -- keep in mind they are in-work and are NOT optimized by any means. I'm mainly using POSE as my development platform, but I frequently get such nasty aborts that POSE actually dies! I'm pretty sure it has to do with the build-category-list word below..

```
needs safe
needs core-ext
needs ids
needs zstrings
needs zstrings-ext
needs resources
needs Events
needs condthens
needs easyfields
needs facility
needs ...
```

```
\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
\ \ Main Form Resource ID's
\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
1000 constant Main.Form
1004 constant Main.Form.Category.Trigger
1005 constant Main.Form.Category.List
1006 constant Main.Form.Table
1007 constant Main.Form.Button.New
```

```
create ScratchBuff 200 chars allot
variable categorycount
```

```
: znullsepstring ( c-addr1 u c-addr2 strcount -- strcount )
  \ append the null-terminated c-addr1 to the
  \ end of the null-terminated c-addr2 with a
  \ null separating the newly added string.
  \ Keep track of total string count
  >r dup zlength
  0= if
    zplace
  else
    + 1 + zplace
  then
    r> 1+      \ increment string count
  ;
```

```

: build-category-list ( -- )
  ScratchBuff 200 chars 0 fill
  0 categorycount !
  z" 1st Item" ScratchBuff categorycount @ znullsepstring categorycount !
  z" 2nd Item" ScratchBuff categorycount @ znullsepstring categorycount !
categorycount @ ScratchBuff >abs
SysFormPointerArrayToStrings ( stringCount &c. -- VoidHand. )
MemHandleLock 2dup
2 rot rot Main.Form.Category.List GetObjectPtr
\ .s about
LstSetListChoices
2 Main.Form.Category.List GetObjectPtr
LstSetHeight
\ .s about
Main.Form.Category.List GetObjectPtr LstDrawList ;

: get-preferences ( -- )
  prefsize prefs >abs 1 crid
  PrefGetAppPreferencesV10 drop
  openDB ;

: init-display ( -- )
  Main.Form ShowForm build-category-list ;

\ Main entry point
: (go) ( -- )
  get-preferences init-display
  begin
    ekey handle-event
  again ;

```



By [nrflower](#) on Wednesday, September 13, 2000 - 06:35 pm: [Edit](#)

Also, I forgot to mention that I was planning on just storing the categories that the user creates in the preferences database along with anything else. Is this the best way to store and retrieve editable categories?

Thanks!



By [Neal Bridges](#) on Wednesday, September 13, 2000 - 10:13 pm: [Edit](#)

It's tough to tell where your code is going astray without having the matching resources to look at. If you'd mail them to me, I'd be glad to run a test.

If you're sure it's the build-category-list function that fails, try isolating what step in that function is causing the problem.

Neal



By [nrflower](#) on Thursday, September 14, 2000 - 01:38 pm: [Edit](#)

Well.. I was poking around on the web looking for resources for more information on using the SysFormPointerArrayToStrings function and found a nice resource that is part of the PilRC program. It turns out that PilRC has a StringTable resource that RsrcEdit doesn't have (tSTL

resource type). I've manually created a resource of the same type (using RsrcEdit's "String" resource and then hex-editing the contents a little) with the first two bytes of the string changed to indicate the number of "strings" in the table. Then I use the following code snippet to extract and format the stuff.. It looks a lot cleaner too! I've not converted it to Forth yet, but if anyone is interested in the results, let me know!

Here's the snippet that I got from PilRC's manual for what I'm going to do.. The only thing I don't quite follow is why they are using StrLen the way they are -- perhaps their string table is a little different that I'm thinking.. Anyway, that's where I'm at..

Also, I believe that some of my initial problems in the last few days were due to a slightly messed up POSE environment -- After starting over with a new RAM file, it seems to run quite a bit better!

```
[source.rcp]
STRINGTABLE stringTableMetric
    " " "Litres" "Meters" "Celsius"      "Newtons"      "Kilograms"

[source.c]
MemHandle memHandle, memStringList;
MemPtr     ptrTable;
UInt16     count;

memHandle = DmGetResource('tSTL', stringTableMetric);
ptrTable  = (MemPtr)MemHandleLock(memHandle);

// get the string count <-- "messy"
count      =
    (*((UInt8 *) (ptrTable + StrLen((Char *) ptrTable) + 1)) << 8) |
    (*((UInt8 *) (ptrTable + StrLen((Char *) ptrTable) + 2)));

// get the handle to an array of strings
memStringList =
    SysFormPointerArrayToStrings(ptrTable + StrLen((Char *) ptrTable) + 3, count);

// NOTE: the "prefix" is ignored here
...

MemHandleUnlock(memHandle);
DmReleaseResource(memHandle);
```



By [Neal Bridges](#) on Thursday, September 14, 2000 - 01:53 pm: [Edit](#)

I'd like to place the results in the Contrib file area, Rick -- let me know.

Neal



By [nrflower](#) on Thursday, September 14, 2000 - 08:44 pm: [Edit](#)

Ok.. I've re-written the above code in Forth, but it doesn't appear to set the category fields properly.. It works from the standpoint that it doesn't crash, the stack looks good all the way through (I spent a fair amount of time verifying the stack as it goes through the module

below). The item count is OK (three items), but when you go to select a category, it's either blank or gibberish.. Any ideas on something obvious?!

```
: LstSetListChoices ( numItems &ItemsText. &list. -- )
  >r >r >r >r >r 0 0 r> r> r> r>
  LstSetListChoices ;

: build-category-list ( -- )
  Main.Form.CategoryStrings      ( id )
  catStrings DmGetResource        ( rsrcHand. )
  2dup 2>r MemHandleLock          ( voidPtr. )
  2dup @a                         ( memPtr. Strcount )
  >r 2dup cell+ r> dup >r         ( memPtr. strPtr. Strcount )
  rot rot                         ( memPtr. Strcount strPtr. )
  SysFormPointerArrayToStrings   ( memPtr. voidHand. )
  2dup sysFormStringHand 2!       ( memPtr. voidHand. )
  MemHandleLock                  ( memPtr. voidPtr. )
  r> rot rot                      ( memPtr. Strcount voidPtr. )
  Main.Form.Category.List        ( memPtr. Strcount voidPtr. ID )
  GetObjectPtr                   ( memPtr. Strcount voidPtr. ObjPtr. )
  2dup 2>r                        ( memPtr. Strcount voidPtr. ObjPtr. )
  LstSetListChoices              ( memPtr. )
  @a 2r> 2dup 2>r LstSetHeight   ( )
  2r> LstDrawList                ( )
  2r> 2dup MemHandleUnlock drop  ( rsrcHand. )
  DmReleaseResource drop         ( )
  ;
```

My resource looks like the following hexdump :
(created initially as a tSTR in RsrcEdit, and then edited by hand)

type : tSTL, id:myst, size : 58 bytes

```
00 03 57 65 62 20 53 69 74 65 73 00 42 61 6e 6b
20 41 63 63 6f 75 6e 74 7e 00 43 6f 6d 70 75 74
65 72 20 41 63 63 74 73 00 45 64 69 74 20 43 61
74 65 67 6f 72 69 65 73 00 00
```



By [Neal Bridges \(Nbridges\)](#) on Thursday, September 14, 2000 - 11:33 pm:

[Edit](#)

Hi Rick. I'm not clear on what the cell+ is doing -- are you trying to increment the double-cell pointer by 2? If so, 2 M+ is required.

The C you're translating calls StrLen before SysFormPointerArrayToStrings -- are you working around that somehow?

Neal



By [nrflower](#) on Friday, September 15, 2000 - 12:09 pm: [Edit](#)

Ok.. I was using cell+ to increment my double-cell pointer by 2 bytes (1 16 bit word) -- it seemed to work OK (I found it while poking my nose through the dpans document yesterday) -- Does the 2 M+ do the same thing or will it increment by an entire 32 bit size? According to the dpans, it looks like it might do the same type of thing.

As for the StrLen thingie, I'm still not sure why that was there in the first place -- unless the binary equivalent of my tSTL is different than that which is generated by PilRC. I'll have to poke through some of my resources on my Pilot to see if there are any of these types of resources that I can do hex-dumps of to see how they are put together.

Thanks!

-- Rick



By [Neal Bridges \(Nbridges\)](#) on Friday, September 15, 2000 - 12:11 pm: [Edit](#)

CELL+ would increment the high-cell of the double-cell pair, which is definitely different from incrementing the double-cell value by 2. Instead of adding 2, you'd be adding 131072. M+ is what you want.

Neal



By [nrflower](#) on Friday, September 15, 2000 - 12:16 pm: [Edit](#)

You're right.. I just tried switching out the cell+ over to 2 M+ and it works great now! My categories are all intact! Cool.. Let me work out the other minor details -- like doing the MemHandleUnlock and MemHandleFree when the app. exits, which I found out about on the net, to make sure I don't have any leaks.. Once I'm fairly satisfied, I'll post the code so it can go in the contrib area.. Ok?

-- Rick



By [nrflower](#) on Friday, September 15, 2000 - 12:43 pm: [Edit](#)

Neal (or anyone else!),

Is there an easy way to compare a double-cell value against a constant (such as zero)? I was erroneously using something like the following :

```
2variable var
...
var 2@ 0. <> if
...
then
```

Just curious..

Thanks!



By [Neal Bridges \(Nbridges\)](#) on Friday, September 15, 2000 - 01:51 pm: [Edit](#)

var 2@ or if does the trick.

Neal



By [nrflower](#) on Friday, September 15, 2000 - 01:55 pm: [Edit](#)

Cool Thanks! I'll assume that is only valid for checking a double-cell if it's zero.. correct?

-- Rick



By [Neal Bridges \(Nbridges\)](#) on Friday, September 15, 2000 - 01:57 pm: [Edit](#)

It actually tests for non-zero:

```
var 2@ or if ( non-zero )
else ( zero )
then
```

Neal



By [Ron Doerfler](#) on Friday, September 15, 2000 - 03:55 pm: [Edit](#)

Or you can use D= (include the library file "double") to compare two doubles of any value. If one of the values is a single, use S>D to convert it to a double before using D=.

```
3 constant TestValue
2variable var
...
var 2@ TestValue s>d d= if
...
then
```

or

```
3. 2constant TestValue
2variable var
...
var 2@ TestValue d= if
...
then
```

Ron



By [Rick Flower \(Nrflower\)](#) on Friday, September 15, 2000 - 04:52 pm: [Edit](#)

Well.. I was stumbling around with more of my category junk and noticed that PalmOS provides a nice API that does most of the work for you.. I was not looking forward to providing the code in my app to edit and otherwise manage the category names.. Had I known that an API existed (I should have looked -- DUH!), I wouldn't have written the code below.. So, without further ado.. Here's the code that I mentioned earlier -- for anyone that might find it useful. It works to put up a category list on the screen, but doesn't deal with any details beyond that!

```
2variable sysFormStringHand
```

\ The word below is temporary until Neal gets his Kernel

```

\ fix into Quartus.. Once done, we remove this entry!
: LstSetListChoices ( numItems &ItemsText. &list. -- )
  >r >r >r >r >r 0 0 r> r> r> r> r>
  LstSetListChoices ;

: FreeCategoryStrings ( -- )
  sysFormStringHand 2@ or if      ( )
    sysFormStringHand 2@ 2dup      ( voidHand. voidHand. )
    MemHandleUnlock drop           ( voidHand. )
    MemHandleFree drop             ( )
  then
  ;

: build-category-list ( -- )
  FreeCategoryStrings              ( )
  Main.Form.CategoryStrings        ( id )
  catStrings DmGetResource          ( rsrcHand. )
  2dup 2>r MemHandleLock            ( voidPtr. )
  2dup @a                          ( memPtr. Strcount )
  >r 2dup 2 M+ r> dup >r            ( memPtr. strPtr. Strcount )
  rot rot                          ( memPtr. Strcount strPtr. )
  SysFormPointerArrayToStrings     ( memPtr. voidHand. )
  2dup sysFormStringHand 2!        ( memPtr. voidHand. )
  MemHandleLock                    ( memPtr. voidPtr. )
  r> rot rot                       ( memPtr. Strcount voidPtr. )
  Main.Form.Category.List          ( memPtr. Strcount voidPtr. ID )
  GetObjectPtr                     ( memPtr. Strcount voidPtr. ObjPtr. )
  2dup 2>r                         ( memPtr. Strcount voidPtr. ObjPtr. )
  LstSetListChoices                ( memPtr. )
  @a 2r> 2dup 2>r LstSetHeight     ( )
  2r> LstDrawList                  ( )
  2r> 2dup MemHandleUnlock drop    ( rsrcHand. )
  DmReleaseResource drop           ( )
  ;

```

Just make sure that during your App's initialization, that you set SysFormStringHand to zero using the line below :

```
0. sysFormStringHand 2!
```

You will need a form that has a popup trigger and an associated list. I found a note on a Palm programming forum indicating that you should NOT unlock/free the handle returned from SysFormPointerArrayToStrings after you setup things -- otherwise crashes are likely. Also, just before you're palm App exits using (bye), invoke the FreeCategoryStrings Forth word to cleanup the handle associated with the category string.. Below is most of my main-loop code :

```

1000 constant Main.Form
1004 constant Main.Form.Category.Trigger

```

```
1005 constant Main.Form.Category.List
```

```
.  
.   
.
```

```
: do-control ( -- )  
  event >abs itemid cond  
  .  
  .  
  .  
  else dup Main.Form.Category.Trigger = if  
    handle-category-switch  
  then drop ;
```

```
: handle-event ( ekey -- )  
  dup menuEvent = if do-menu then  
  ctlSelectEvent = if do-control then ;
```

```
\ Main entry point
```

```
: (go) ( -- )  
  0. sysFormStringHand 2!  
  get-preferences init-display  
  begin  
    ekey handle-event  
  again ;
```

```
: go  
  ['] (go) catch  
  byeThrow = if ( exception )  
    set-preferences ( )  
    closeDB ( )  
    FreeCategoryStrings ( )  
    (bye) ( )  
  then ;
```

In your App's resource database, create using RsrcEdit a String resource with a long string like the following (between the quotes):

```
"\b\bCategory-1\nCategory-2\nCategory-3\n"
```

The "\b" are spaces -- they MUST be there -- they are placeholders that are used to indicate how many category "strings" are specified -- three in the above case. The "\n" are carriage returns. Once you have that resource in your database, save it and in RsrcEdit, change the type of that resource from tSTR to tSTL, which will force RsrcEdit to edit in hex-dump mode. Hit the "Open" button and then put "00 03" where the two "\b\b" are and change the "\n" to "00" -- null terminators. Save it, and you're done.. Just DON'T try to convert it back to the tSTR resource type and then edit as usual -- it really confuses RsrcEdit...

I think that's about it!

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New Versions of QF

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): New Versions of QF



By [JIm Purdy](#) on Wednesday, September 13, 2000 - 12:48 pm: [Edit](#)

Neal,

Is there any plan to increase the code space in the new release? I believe this was done on a previous version.

As for me, the extra space would be great!

Thanks, Jim



By [Neal Bridges](#) on Wednesday, September 13, 2000 - 01:24 pm: [Edit](#)

That's one of the things I'm working on, Jim. How's the development going?

Neal



By [jim Purdy](#) on Thursday, September 14, 2000 - 05:49 am: [Edit](#)

Great!

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Forth newbie who is useless :- (

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Forth newbie who is useless :- (



By [Richard Chamberlain](#) on Wednesday, September 13, 2000 - 06:36 am: [Edit](#)

Hi Folks,

I've made my first attempt at converting something I wrote in PocketC. Any suggestions on how I can make this a little less verbose?

Basically I've got a resource with a load of buttons on it (25 in total) ids: 44,54,64,74,84,45,55,65,75,85,etc. up to 88.

and I've got a do-event word like so:

```
: do-event (ekey -- )
  ctlSelectEvent = if
  event >abs itemid
  dup 44 = if
  64 200 440 4 4 m*/ sound drop
  then
  dup 54 = if
  64 200 440 5 4 m*/ sound drop
  then
  <...>
  dup 88 = if
  64 200 440 8 8 m*/ sound drop
  then
  then ;
```

Any suggestions?

Also I've no idea on forth float and double operations. I copied the calculation above from a post of neal's but I don't really understand it! Any pointers to good documentation on it.

(Note to Neal - as soon as I've completed this - probably today / tomorrow, and if it runs fast enough I'll register :-) great work btw)

Thanks for the help.

Richard



By [Richard Chamberlain](#) on Wednesday, September 13, 2000 - 08:09 am: [Edit](#)

Hi,

I tried my verbose version and ran into difficulties, obviously `m*/` doesn't do what I think it does.

What I want to achieve is:

`440 * (4/4)` or `(== 440)`
`440 * (5/4)` or `(== 550)`
`440 * (6/4)` or
`440 * (4/5)` etc.

How do I do that?

Thanks again!

Richard



By [Travis Casey](#) on Wednesday, September 13, 2000 - 10:01 am: [Edit](#)

`M*/` is for mixing double-length and regular integers. Since none of your values are double-length, you want to use `*/` instead.

You could simplify things a bit by using the case module to put the different cases in a case statement instead of a series of if statements.

--Travis



By [Neal Bridges](#) on Wednesday, September 13, 2000 - 01:30 pm: [Edit](#)

Hi Richard. Thanks for your kind words!

Travis is right -- `*/` is the operator to use when working with single-cell values.

I recommend a `cond/thens` structure to process your buttons. I'd also use named constants:

needs `condthens`

```
44 constant firstbutton
54 constant secondbutton
```

```
: go ...
  cond
    dup firstbutton = if ...
    else dup secondbutton = if ...
    else ...
```

```
thens drop
...
;
```

Neal



By [Richard Chamberlain](#) on Thursday, September 14, 2000 - 03:43 am: [Edit](#)

Thanks Chaps,

I've still no idea about floating point maths, or the storage of those.

A couple of guesses would be that each item on the stack is 16bit and you cast it into the format you want. Or is there a float (or double) stack?

I'm finding it very difficult to find specifics on the internet about forth. I had a look over a tutorial, but then there seemed to be major differences. (for instances no see, >r just caused a fatal exception).

Any help would be appreciated!

Richard Chamberlain



By [Ronny Svensson](#) on Thursday, September 14, 2000 - 04:04 am: [Edit](#)

You could use tables:

```
: Note ( n1 n2 -- n3 )
  440 Rot Rot */ ;
```

Create ButtonTable

```
  44 , 4 4 Note ,
  54 , 5 4 Note ,
<...>
  88 , 8 8 Note ,
  0 , ( end marker )
```

```
: Button>Note ( id -- note ; 0 )
  ButtonTable
  Begin 2Dup @ =
    If Cell+ @ Nip Exit Then
    Cell+ Cell+ Dup @ 0= Until
  2Drop 0 ;
```

```
: Do-Event ( event -- )
  ctlSelectEvent =
  If Event 8 + @ Button>Note ?Dup
    If 64 200 Rot Sound Then Then ;
```

You could also consider numbering the buttons consecutively say from 1 to 25:

```
Create ButtonTable
  ( 1 ) 4 4 Note ,
  ( 2 ) 5 4 Note ,
<...>
  ( 25 ) 8 8 Note ,
```

Here BottonTable - Constant /ButtonTable

```
: Button>Note ( id -- note ; 0 )
  1- Cells Dup /ButtonTable U<
  If ButtonTable + @ Else Drop 0 Then ;
```

Understand that this is only concept code - it isn't tested

About floating point look at the Ansi standard (links in the Quartus manual). I think Quartus uses a floating point stack (I havent used floating point). Doubles use the normal stack. To look at the number of entries on the stack use .S The use of >R and R> must be balanced in a definition as they use the return stack that the system uses for nesting (jsr/rts) and Do/Loop.

Ronny



By [Neal Bridges](#) on Thursday, September 14, 2000 - 10:29 am: [Edit](#)

>R entered at the console will cause a crash on most Forths. It's meant to be used inside a definition.

Floats are 32-bits wide, and are stored on a floating-point stack. There are various examples in the file area, and also in the forum archives.

```
22e 7e f/ fs. -> 0.31428570E1
```

```
fvariable a
5e a f!
fvariable b
7e b f!
```

```
b f@ a f@ f* fs. -> 0.35000000E2
```

Neal



By [Richard Chamberlain](#) on Thursday, September 14, 2000 - 11:58 am: [Edit](#)

Thanks everyone for their help. The mists are clearing :-)

Richard

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Picture output to string

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Picture output to string



By [Dave Bennett](#) on Tuesday, September 12, 2000 - 06:05 pm: [Edit](#)

I have changed my app to use fixed instead of floating point math. I can get to the point where my output is formatted by doing this.

```
: '.' [CHAR] . HOLD ;
```

```
: ... <# # # # # # # '.' #s #> ... ;
```

I have a text buffer set up diBuf and allocated for 15 bytes. (more than I need) How do I get my formatted output into that text buffer? Thanks.



By [Travis Casey](#) on Tuesday, September 12, 2000 - 11:27 pm: [Edit](#)

CMOVE is what you want:

```
addr1 addr2 u CMOVE
```

copies u characters from a buffer starting at addr1 to a buffer starting at addr2.

Thus, if diBuf is a constant with the address of your buffer, you could insert:

```
diBuf swap cmove
```

after the #> to copy the string produced to your own buffer.

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Speed

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Speed



By [Richard Chamberlain](#) on Tuesday, September 12, 2000 - 06:08 am: [Edit](#)

Hi,

I'm evaluating Quartus Forth at the moment and have a question or two. At the moment I cannot decide on which development environment to use. I've played around with PocketC which is fun but seems way too slow, and I don't like the fact it needs a runtime.

Before I sit and learn forth has anyone any benchmarks of QF compared to codewarrior or gcc. A couple of applications I'd like to program are probably a bit intensive and so I don't want to discover huge speed issues half way through.

Also I've looked at a few of the links to tutorials. Can anyone give me a hint of which one is best to read for a forth beginner, but a 'fairly' competent programmer.

Thanks for any help,

Richard



By [Richard Chamberlain](#) on Tuesday, September 12, 2000 - 06:10 am: [Edit](#)

Sorry I forgot to ask about upgrades.

Are then any upgrades planned shortly - I notice that the evaluation I'm using is over a year old. Is this an issue? For instance can qf support colour?

Thanks again,

Richard



By [Neal Bridges](#) on Tuesday, September 12, 2000 - 11:15 am: [Edit](#)

Hi Richard.

Quartus Forth apps are native-code, and so run very fast -- directly comparable to CodeWarrior or GCC.

For a fairly experienced programmer, I'd suggest looking at the various sample apps to start with. That'll get the ball rolling. If any questions are generated during that process, please do ask.

I'm overdue to release an update -- it's available informally, but hasn't yet gone out to all registered users. Coming soon!

The current version, both evaluation and registered, supports colour. Have a look at [color.txt](#).

Neal

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What's new?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): What's new?



By [Neal Bridges](#) on Monday, September 11, 2000 - 11:50 am: [Edit](#)

Here's a soapbox -- let us know what Quartus Forth projects you're working on these days.

Neal



By [Mike Keesling](#) on Monday, September 11, 2000 - 12:17 pm: [Edit](#)

I'm interfacing to the springboard expansion slot on the handspring visor for two different projects. One is for amature roboticists can use a visor as a processor, and the other is a data acq. system for my work.

I've been programming in forth since GraFORTH on the apple IIe in '82. Neal has done a great job on this one!



By [Dave Bennett](#) on Monday, September 11, 2000 - 02:30 pm: [Edit](#)

I've made a mid-life career change from CIO -> a woodworking factory. I'm learning about CNC routers & writing programs for them. I'm also writing a series of programs for woodworkers; extending my existing Drill Press Speed Chart and Extension Cord apps to include Fractional Inches & MM conversions, complex angle setting for table/radial arm saws. And things like that.



By [Travis Casey](#) on Monday, September 11, 2000 - 02:41 pm: [Edit](#)

I'm still working on-and-off on expanding the "easyfields" module that I posted on a while back. I've added a dblfield "type", rewrote the string2int and int2string calls to just call the double versions and do s>d or d>s as appropriate, and made int2string and dbl2string work with negative numbers.

I may write a module to sit on top of easyfields to bind fields to variables, like you'd been doing in your UI module, Neal. Seems like a natural extension.

I'm still open to requests/suggestions for easyfields... anyone with such, either email me or post in the "'Easy" field words' thread.

At some point I'll probably add a floatfield type, if you don't post code for it first, Neal. It'll be a while, though -- this'll be the first time I've messed with floats in

Forth, so I keep putting it off. :-)

I've also written my own Quartus version of the KidDoser app that's on PalmGear -- nice idea, but I don't want to carry around an 80+K runtime to use it. Actually, that's the app that prompted me to do the easyfields stuff in the first place.

I've been working on a dice roller on and off for a while (mostly off). Now I'm planning on moving some of the easyfields code back into that, and also on writing a little module for saving and retrieving stuff from preferences -- basically taking the code for that from PhoneDecode and modularizing it.



By [Andrew Kearns](#) on Monday, September 11, 2000 - 03:58 pm: [Edit](#)

I'm working on a turn based strategy combat game featuring giant robots which will have nothing to do with BattleTech (so don't try to sue us!) :)

Our project group just recently finished Pocket Dimension in PocketC and while the coding was very easy the natural extension from that would be to the more powerful CodeWarrior. Except I have played around with CodeWarrior and don't find it comfortable at all.

Luckily I stumbled across Forth. This language seems well suited to the Palm. With a little luck, and lots of help from the people here we'll have another game next summer. We're at the very early design stage right now.



By [nrflower](#) on Monday, September 11, 2000 - 08:45 pm: [Edit](#)

I'm working on a replacement for the GNU Keyring application, which I was using until recently when it developed a bug and I wasn't getting any response out of the author.. I've successfully been able to read out the records, and was originally going to have database compatibility, but decided against it, since it would limit the direction it may head.. So far, I'm working on the UI with the background hooks into the database and encryption stuff.. This is really the first time I've been serious with Quartus since I registered it last year.. Thanks Neal!

-- Rick



By [Tammy Cravit](#) on Monday, September 11, 2000 - 09:50 pm: [Edit](#)

I'm sill working on my first Quartus application, a port of my PocketC die rolling program (the PocketC version is at [PalmGear](#). I'll be making the code available as soon as I run down a couple more bugs.

After that, I'll be porting (in my spare time, what there is of it right now) a couple of other PocketC applications, and then deciding what project I want to take on next. :-)

Thanks to Neal and everyone for all the help in my protracted learning effort!

-- Tammy



By [Barry Ekstrand](#) on Monday, September 11, 2000 - 11:23 pm: [Edit](#)

I'm working on the next release of my LoanPayment char-ware program, where all registration fees go to the Juvenile Diabetes Foundation. I am adding a registration code routine along with preferences support. Hopefully it will be released 'real soon now'.

Barry



By [Mark Beckman](#) on Tuesday, September 12, 2000 - 02:22 am: [Edit](#)

I've been working an embarrassingly long time on a version of Minesweeper. Except for high score tracking it is complete. Actually the main thing holding it up is I need to create a web page to release/support it from.

Mark



By [Ron Doerfler](#) on Tuesday, September 12, 2000 - 10:04 am: [Edit](#)

I'm finishing up a major upgrade to my TeamFile app, including: a much-improved interface to the Address Book to import names in various formats and to also display complete data for lookups; the ability to attach notes to individual members in individual lists; individual up/down counters for members in each list; list propagation to other teams; and a Win32Forth-generated PC program to extract exported TeamFile data memos from the memopad.dat file on the PC and copy them into .csv files directly for spreadsheet use (rather than copying and pasting them manually from the Palm Desktop).

Ron



By [Erwin Schomburg](#) on Tuesday, September 12, 2000 - 04:02 pm: [Edit](#)

I'm working with the FlashPlug API to get an app launcher for it going, when that runs I hope to get into a doc-reader to read doc files directly from the FlashPlug. Anyone in here owns a FlashPlug? I'm looking for BetaTesters and suppliers of enhancement ideas.

/Erwin

BTW: The manufactureres have re-done the interface of the API library, so my previously posted Quartus wrapper for it and most of the work done for the launcher is broken code now. Due to lack of feedback when I posted this first version on Neal's triggering, I ask if anybody at all is interested in the new

version of the wrapper I'm going to make this weekend?



By [Neal Bridges](#) on Tuesday, September 12, 2000 - 05:07 pm: [Edit](#)

I don't know how many people own FlashPlugs, but it certainly can't hurt to make the code available. How are you finding the gadget?

Neal



By [Erwin Schomburg](#) on Wednesday, September 13, 2000 - 12:27 am: [Edit](#)

Oh, I dig a while in the front pocket of my briefcase, usually its there when not attached.

8-)

Seriously, I think it soon becomes indispensable as an on the road backup device and mass (manual) storage.

And its fun to program for in Forth, having working developers's support both sides.....

/Erwin



By [Dave Bennett](#) on Wednesday, September 13, 2000 - 06:46 am: [Edit](#)

The flashplug is my next purchase. (It got edged this last time by the folding keyboard thingie.) I want to use it for mobile backup mainly.



By [Neal Bridges](#) on Wednesday, September 13, 2000 - 02:17 pm: [Edit](#)

Just ordered one myself, so I'd certainly like to see that interface code by and by, Erwin :)

Neal



By [Travis Casey](#) on Wednesday, September 13, 2000 - 02:51 pm: [Edit](#)

I think I'm going to make a FlashPlug my next Palm purchase... I've got a Palm VII, and had been thinking about shipping it over to those guys in Singapore who upgrade them to 8 MB for \$150, but this would be cheaper -- and I wouldn't have to give up my Palm for 2 weeks or worry about it getting destroyed.

(I don't really need 8MB on a day-to-day basis, but being able to carry around the extra in my pocket would be great!)

So, I'd be happy to see the code too. :-)

--Travis



By [Jim Hendricks](#) on Wednesday, September 13, 2000 - 03:46 pm: [Edit](#)

I am currently stalled in my Palm development (life got too busy for the fun stuff!)

Prior to my stall, I was finishing a bug fix release to my analog clock code, developing a palm version of the game sokoban, and also developing a relational dbms for the palm (actually a modified version foxpro for the palm). Some day I still have hopes of returning to all this! (I also have partially written code for the game lights out, and snake)

From the FlashPlug side, I would love to buy one (Erwin showed his to me when I had the chance to visit!). I am pushed away from purchasing by the fact that I need to also buy an adapter since the FlashPlug uses the PIII plug, not the PV plug. Erwin, do you know if this is still true and if there are any real plans to remedy this?



By [E. Ross Helton](#) on Wednesday, September 13, 2000 - 04:08 pm: [Edit](#)

Hi,

I am working on some updates to two of my programs, and want to do one that uses database info, but haven't gotten one to work successfully

The FlashPlug which is being mentioned is something which I'm not currently familiar with. Can someone elaborate on it?

Make it a good day!
Ross



By [Doug Philips](#) on Wednesday, September 13, 2000 - 04:32 pm: [Edit](#)

About to start on a TSD road rally computer program. TSD -Time/Speed/Distance. TSD rallies are done on real roads, with real cars, and at or under real speed limits. TSD rallyists are penalized for being off their correct time, 1 point per 1/100th of a minute (either slow _or_ fast). Rather than buy a special rally computer, I'm going to take a crack at using a Pilot (Professional) and a Garmin eTrex (for location/speed/time info). If the eTrex is too unreliable, I will have to rig up an interface to a wheel mounted sensor for calibrating mileage and am not sure about whether to trust pilot's clock or add interface to external WWV based clock. But that input source info will be isolated from the rest of the code for doing rally-leg management and "car" management (turning the virtual odo in reverse, or stopping it at a rest point, etc.)



By [Trevor Steele](#) on Wednesday, September 13, 2000 - 04:45 pm: [Edit](#)

I'm hopefully now getting back to finishing my Fullbore Target Rifle Scorebook application after a long break from Forth coding.

Trevor



By [Erwin Schomburg](#) on Wednesday, September 13, 2000 - 04:56 pm: [Edit](#)

Ross, read about it at <http://flashplug.de>, its an (8MB) external Flash memory for Palm devices and the makers are begging 3rd party developers to do some creative stuff for it.

Jim, there are concrete plans at JKS to offer a PalmV version Very Soon Now, I'll keep you posted when I get to know any news.

Neal, there was less changes than anticipated, so the revised Quartus wrapper code comes up by tomorrow after I have run a quick verification if my code still compiles and runs when I just modify the wrapper and nothing else. Thanks to Forth factoring possibilities I think I can suck the additional (but never changing) parameter inside the function call words without touching the working application code. I already heard the C gang swearing at the API lib developer.... 8-)

/Erwin



By [E. Ross Helton](#) on Wednesday, September 13, 2000 - 07:33 pm: [Edit](#)

Hi Erwin,

Thanks have been out of the Palm loop a little bit this last few weeks.

Make it a good day!

Ross



By [Edin Hodzic](#) on Thursday, September 14, 2000 - 12:50 am: [Edit](#)

I haven't done any development since March, when I published my T3D game (3D 4x4x4 Tic Tac Toe). However, I am thinking about adding IR-player in a new version of the game.

Another thing I am thinking about is a Scheme compiler. I have tried LispMe several times, and don't think it works well. One needs compiler and the capability of generating binary. Scheme is a beautiful language, minimalistic just like Forth and slightly higher level (e.g. it has automatic garbage collection).

And another idea was to look into adapting Oberon2 language and whole environment and philosophy of Oberon modules to PalmOS. That would be a bit more demanding task, but highly exciting...

Just short on time as many others.

Take care.

Edin Hodzic



By [Jim Hendricks](#) on Thursday, September 14, 2000 - 09:03 am: [Edit](#)

Thanks Erwin, I will be most interested in the FlashPlug when it has the V interface.

Jim



By [John McKeon](#) on Saturday, September 16, 2000 - 01:22 am: [Edit](#)

Hello,

After reading this thread I figure it's a good time to quit lurking and post! I've been working with the evaluation version for about a month or two and as soon as RegSoft finds my check I'll be a full fledged registered user. My hats off to you Neal Bridges for a great product. I spent my vacation last week sitting poolside programming in the shade of the palm trees. As close to heaven on earth as a hacker can get I'd say - and no Windoze! Thanks.

I have to say - Forth is _sublime_.

I'm working on a Palm Piano/Music Composition program. Wherein I combine my two favorite pastimes. I want to get into all the Midi stuff and draw the music on screen etc. but I'm having trouble getting past the UI. (It's tough to fit eighty-eight keys in 160 pixels 😊)

Seriously I can't get the things (buttons) to scroll. If anyone knows any pitfalls to watch out for when working with the OS scrolling functions/events I'd appreciate any help.

Thanks
John McKeon



By [Neal Bridges \(Nbridges\)](#) on Saturday, September 16, 2000 - 10:58 pm:

[Edit](#)

Hi, John. Good to have you on-board. Thanks for the kind words!

There's no easy way to make a 'virtual screen' larger than the display screen; mostly you'd need to handle it yourself, even down to repositioning the various GUI objects. The OS will provide scrollbars, though.

Neal



By [Tom Hayosh](#) on Sunday, September 17, 2000 - 10:47 pm: [Edit](#)

I wrote a program that displays my email messages and allows me to copy a selected message to the memo pad. It was mainly a learning exercise, but I have actually used the program twice for copying a couple book reviews I wanted to save outside of the mail program. I might try a baseball scorecard program for my next project. It would be cool to go to a ballgame, score the whole thing on the Palm, then come home and print out the sheet.



By [Harry Chou](#) on Monday, September 25, 2000 - 08:02 am: [Edit](#)

The Palm Software we made for access control system were written in Quartus Forth. Great developing environment!

IrKey 1.0 - System activation
IrKeyConf 1.0 - System configuration

details at
<http://www.tapspring.com>



By [Kris Johnson](#) on Monday, September 25, 2000 - 10:19 pm: [Edit](#)

I just finished my first Quartus Forth program, VideoPoker (<http://videopoker.sourceforge.net>). It was a great experience--I've been promoted to management at work, so I don't get to write code (i.e., have fun) for pay anymore.

I've had few ideas for my next Quartus Forth project. I'm not sure which I want to do. I'll let you all vote:

- Lunar Lander-type game
- Missile Command-type game (actually, I started this several months ago, but what I've done needs to be rewritten)
- CRobots-like programming battle game (ForthRobots?)
- Text-based resource compiler/decompiler that runs inside Quartus Forth
- An encrypted memopad-like thingee (basically, an open-source equivalent to Secret!)



By [Joanna Kurki \(Joannak\)](#) on Tuesday, September 26, 2000 - 07:51 am:

[Edit](#)

Kris:

I would like to vote for ForthRobots as its something there is not currently available and it would be neat tool to get more people to interested using Forth on Palm. Besides it sounds quite a fun game ; -)

Textmode recource compiler/decompiler might be useful too.. Not sure about difficulty?

OpenSource Secret type program is going to be darn difficult to do, mainly because you haveto make a lot of work on keeping crypted user data 100% secure. Selecting proper algorithms and implementing/testing them (on forth) is going to take lots of hard work.

Those two other games.. Personally I don't miss either of them (I played Coin-Op Missle command back then) so much that I would use limited memory on my 2MB palm on them.

Joanna

Ps: Just for an Idea.. Anyone played Board game 'RoboRally?' something like it might be nice...



By [Doug Philips](#) on Tuesday, September 26, 2000 - 01:34 pm: [Edit](#)

I agree with Joanna, though rsrcEdit is somewhat limited in the resources it currently supports, so having a full fledged resource compiler (from either memos or docs) would probably eek it up just ahead of the ForthRobots game. J

-Doug



By [Erwin Schomburg \(Esc\)](#) on Sunday, October 8, 2000 - 07:56 am: [Edit](#)

The launcher for FlashPlug I talked about earlier in this thread is now up at PalmGear. And Neal, yes, I forgot to put in a plug for Quartus in the description (again), but its prominently mentioned in the docs and the about screen. 8-)

/Erwin



By [Neal Bridges \(Nbridges\)](#) on Sunday, October 8, 2000 - 11:13 pm: [Edit](#)

Good work, Erwin -- it works well.

Neal

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Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Set-places question

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Set-places question



By [Dave Bennett](#) on Friday, September 8, 2000 - 04:43 pm: [Edit](#)

set-places worked as I expected it to. Now I want the chopped off values rounded up to the last displayed place. :) Any way to do this easily?



By [Neal Bridges](#) on Friday, September 8, 2000 - 06:35 pm: [Edit](#)

One way:

To round to two decimal places, add 0.005.

Neal



By [Dave Bennett](#) on Saturday, September 9, 2000 - 07:08 am: [Edit](#)

Actually I was working 10,000ths of inches while converting from fractional inches to decimal inches and millimeters. I've decided to just go with 6 decimal places, which covers everything quite well through 64ths of an inch. The metric stuff isn't too clean, but close. (I hate computer math.) For instance, using 25.4 as my metric multiplier, I still get 24.999999 as the result for 16/16ths of an inch. (!)



By [Neal Bridges](#) on Saturday, September 9, 2000 - 12:22 pm: [Edit](#)

Here's an interesting paper on why such things occur:

["What Every Computer Scientist Should Know About Floating-Point Arithmetic"](#)

Neal



By [Dave Bennett](#) on Monday, September 11, 2000 - 06:48 am: [Edit](#)

Good article. It appears that 25.4 cannot be represented correctly in floating point! The values like 23/64 and 63/64 are accurate to 5 places, small variances in the 6th place the closer I get to 1 inch. I looked at doing this with integer number, but don't see a way to divide

two doubles. Lots of mixed calculation stuff. Can you give me an example of integer math with 63/64? I just do 63 64 / for the decimal inch, then the same and multiply by 25.4 for the mm value. I want to go to 5 or 6 places. Thanks.



By [Neal Bridges](#) on Monday, September 11, 2000 - 07:23 am: [Edit](#)

The scaling operator, M* /, will do what you want with integers. For instance, to multiply 12.345678 by 63/64 and then by 25.4 (correct result, to seven places: 308.6805302):

needs double

```
12345678.  63 64 m*/  254 10 m*/  d. -> 308680510
```

(You'd want to format the output with a decimal point in it, of course.) That's accurate to four decimal places. With a simple trick, we get 6 places of accuracy:

```
12345678.  6300 64 m*/  254 1000 m*/  d. -> 308680530
```

Neal



By [Travis Casey](#) on Monday, September 11, 2000 - 08:10 pm: [Edit](#)

Or, alternatively, you could use the DOUBLEASM module in the contrib part of the file area, if you want to multiply or divide doubles by doubles. It requires the assembly modules, though.

--Travis

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Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail

address is optional.

Password:

E-mail:

ZIP format algorithms or code

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): ZIP format algorithms or code



By [Kit Latham](#) on Tuesday, September 5, 2000 - 05:15 am: [Edit](#)

Hi All

Does anyone know of any code in C or 4th that will decode and generate .ZIP files? Alternatively any simple algorithms. I am trying to write an app for the Visor that needs to include this functionality.

Thanks in advance

Kit



By [Travis Casey](#) on Tuesday, September 5, 2000 - 10:31 am: [Edit](#)

Do you need Zip compression specifically, or are you really just looking for a compressor?

There's a [free compression library for PalmOS](#). I haven't tried it myself, but if you just want compression, that might be easier than re-coding a ZIP compressor.

Or, you can try the source from [Info-ZIP](#). They have a free zipper and unzipper, written in C.

If by some chance you're looking for info on the Infocom ZIP adventure game format instead of the PKware ZIP compression format, try [the Inform web site](#).



By [Mark Beckman](#) on Tuesday, September 5, 2000 - 11:06 am: [Edit](#)

For a Forth implimentation of LZ77 there is a link for a version written by Wil Baden at

<http://www.taygeta.com/forth.html>



By [Kit Latham](#) on Friday, September 8, 2000 - 02:16 am: [Edit](#)

Thanks Guys, I need compression and at first look the eTree stuff looks good.

Cheers

Kit

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

How to catch assert " " and display message

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): How to catch assert " " and display message



By [Geert Bosch](#) on Monday, September 4, 2000 - 10:53 am: [Edit](#)

I only found out that the error code is -2, but it would be nice if I could display the message that was passed.

-Geert



By [Neal Bridges](#) on Monday, September 4, 2000 - 12:48 pm: [Edit](#)

Assertions (as implemented in assert.txt) are immediate, and none of them throw a -2. I'm guessing you mean ABORT", as it does throw a -2.

One easy solution:

```
\ myabort"
```

```
2variable abortmsg
```

```
: myabort "  
  postpone if  
  [char] " parse  
  s" sliteral 2dup abortmsg 2! type"  
  evaluate  
  s" -2 throw" evaluate  
  postpone then ; immediate
```

```
: .abortmsg  
  abortmsg 2@ type ;
```

Neal



By [Geert Bosch](#) on Tuesday, September 5, 2000 - 05:41 am: [Edit](#)

You're right, I meant abort". Thanks for your example on how to implement such a routine.

I was wondering though, since the built-in abort" already stores a message somewhere, isn't there a way to access that one?

If not, would everything be OK if I'd redefine abort" as in the example you gave. The reason

I want to keep the original name is that I share code with other projects, and it would be a pain to have to maintain duplicate versions.

-Geert



By [Neal Bridges](#) on Tuesday, September 5, 2000 - 11:58 am: [Edit](#)

The internal string used by ABORT" is not currently exposed in the dictionary.

The code above can certainly be named ABORT" instead of myabort", without causing any problems.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

What Palm OS Versions will Quartus generated PRCs work on?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): What Palm OS Versions will Quartus generated PRCs work on?



By [Tom Atwell](#) on Sunday, September 3, 2000 - 04:34 pm: [Edit](#)

I am new user of Quartus Forth. I recently wrote a simple game using an interpreted Palm Basic. It took me about 3 evenings to write the game. I thought that it would be fun to make it a stand-alone program. I searched the web looking for software to do this. I initially decided on the GNU C for Palm. I downloaded the software and started learning it. Not being a C programmer I quickly realized I had a steep learning curve to climb.

Going back to the web I found Quartus Forth. I downloaded the unregistered version and started learning it by going through the Simple Forth tutorial at: <http://www.albany.net/~hello/simple.htm>. For anyone who is just learning forth this is a good place to start. It was fun learning the basics of forth and trying them out on Quartus as I went. I then went to the Quartus documentation to learn how to interface with the Palm. Once I thought that I knew enough to start writing code is when the real fun began. I was surprised at how easy it was to build and debug as I went. Of course everything was not smooth sailing. There were those frustrating times when I had trouble figuring out how to do what I wanted do. However, in every case I was either able to learn from past posts to this forum or through examining the code in the files area.

It has been about 3 weeks now and I finally have this small game doing everything and more that I wanted it to. So I bought the registered version of Quartus and compiled my game. Being new to this, I was not aware that I had to save the game state so that I could go back and forth between the game and other apps. A minor stumbling block that was easy to hurdle.

Anyway, now it is all done and I am ready to put it on the web. I go to palmgear and notice that they want to know the minimum requirements. I noticed in the forum that someone suggested testing using different OS versions in POSE. I had just been using the 3.5 from my palm in POSE. I did just now register at Palm to be able to get the older OS versions. But my question is:

1. Is there a known version of Palm OS that is required to run Quartus generated PRCs?
2. Are there OS calls that one can avoid so that your app will work with older versions?

(Sorry about being so wordy. I just thought others might gain from hearing

about my experience with Quartus Forth.)

BTW: Great program Neal!



By [Joanna Kurki](#) on Sunday, September 3, 2000 - 06:04 pm: [Edit](#)

My first answer.. I hope I get major details right ;-)

Quote:

Anyway, now it is all done and I am ready to put it on the web. I go to palmgear and notice that they want to know the minimum requirements. I noticed in the forum that someone suggested testing using different OS versions in POSE. I had just been using the 3.5 from my palm in POSE. I did just now register at Palm to be able to get the older OS versions. But my question is:

Testing is definitely needed before releasing software. Sometimes emulator seems to be having problems of it's own (especially with debug roms) so you need to have some real Palms as well.

Personally I have been looking for older Pilot just for testing my code. (Palmpilot personal/pro)

Quote:

1. Is there a known version of Palm OS that is required to run Quartus generated PRCs?

To best of my knowledge Quartus itself (or it's prc-compiler) does not limit usable OS version.

Biggest limitations (that I know) are:

1) Memory usage. Older palms had limited amount of work space available for program. I don't have numbers here, but this needs to be tested on emulator/real Pilot1000/5000.

2) System calls used. There are many calls that have various versions, usually

older ones work on newer OS:s, although some parts of PalmOs seem not to be 100% compatible.

Quote:

2. Are there OS calls that one can avoid so that your app will work with older versions?

See C header file CoreTraps.h

There is list of PalmOS calls and there are (short) comments on what traps belong to what OS.

There is also info on Palm_os_reference.pdf but IMHO it's quite confusing on this detail.

If this information is somewhere available with better organization and documentation, I'll would like to know too...

Quote:

BTW: Great program Neal!

Agree on that..

Joanna



By [Steve Bohrer](#) on Sunday, September 3, 2000 - 08:52 pm: [Edit](#)

I would disagree with Joanna's comment that the "Palm OS SDK Reference" is not useful for sorting out the OS changes version by version.

Appendix B of the Reference is the "Compatibility Guide", and it explicitly lists the changes made in each version of the OS. Here is the table of contents from Appendix B:

2.0 New Feature Set

Launch Codes

Functions

Existing Functions that Changed

Other Changes

3.0 New Feature Set

Launch Codes

Font

Functions

Existing Functions that Changed

Other Changes

3.1 New Feature Set

Functions

Changes to the Character Encoding

Other Changes in 3.1

3.2 New Feature Set

Functions

Existing Functions that Changed

Other Changes in 3.2

International Feature Set

Functions

Japanese Feature Set

Wireless Internet Feature Set

Launch Codes

Events

Functions

New Serial Manager Feature Set

Functions

3.5 New Feature Set

Launch Codes

Events

Functions

Existing Functions that Changed

New Data Types

Changes to Events

Other Changes

Notification Feature Set

Any traps not listed in some part of this appendix are unchanged from OS version 1.0 . There are also some old traps that are still present, but have been renamed in newer OS versions, e.g. PrefGetAppPreferencesV10. The appendix gives details on these changes as well.

The Palm OS SDK Reference is available on-line at www.palmOS.com, and is available for download in PDF or HTML formats.



By [Joanna Kurki](#) on Monday, September 4, 2000 - 03:13 am: [Edit](#)

One addition to original answer.. Remember to check OS version (and exit cleanly) if your program needs newer features than available on some machines. (quoted from manual)

Quote:

SndDoCmd in versions of Palm OS before 3.0 will generate a fatal error on anything other than sndCmdFreqDurationAmp.

And back...

Quote:

Any traps not listed in some part of this appendix are unchanged from OS version 1.0
. There are also some old traps that are still present, but have been renamed in newer OS versions, e.g. PrefGetAppPreferencesV10. The appendix gives details on these changes as well.

Appendix B is indeed good reference for seeing what new has been added. But the original problem was finding most compatible set (1.0 or 2.0?) of Os sysstraps. At least I have not yet found any list of "V1.0 sysstraps" from that manual.

But as allways, manuals are matter of opinion. I have seen better and worse. It might help to had copy of original 1.0 (or 2.0) SDK documentation around.

Joanna



By [Tom Atwell](#) on Wednesday, September 6, 2000 - 08:50 pm: [Edit](#)

Well I got the ROMs from Palm and tested my program and I was pleasantly surprised. It ran fine on every version all the way back to the Pilot using 1.0 Palm OS. I suppose the definitive test would be to use a real Palm other than my V with 3.5 OS. And I do understand that other software, such as hacks, can cause problems. But I am happy to say that it appears that you can write code with Quartus that will work on the older Palm OSs.



By [Neal Bridges](#) on Wednesday, September 6, 2000 - 09:04 pm: [Edit](#)

I meant to step in earlier. Yes, assuming you stick to the functions that exist in any given version of the OS, Quartus Forth generated PRCs will work all the way back to version 1 of the Palm OS.

Bear in mind the earliest models had very limited dynamic RAM (about 12K).

Neal

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Palm SDK in Doc Format

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Palm SDK in Doc Format



By [Chris Bucsko](#) on Saturday, September 2, 2000 - 07:49 pm: [Edit](#)

In searching through the forum, I found a reference to someone using the Palm SDK in doc format, under a category initialize thread. Does anyone know where I can get that? I've been using the pdf file on my PC for awhile, but I find it's cumbersome. It would be much easier to read it on my Palm. If I can't find it, I've downloaded the new Aportis PDF to doc converter and will try that. I just hate to re-invent the wheel.



By [Erwin Schomburg](#) on Sunday, September 3, 2000 - 01:07 am: [Edit](#)

I don't know the doc location, but would advise against anyway. I prefer the iSilo version with hyperlinks. That one you can generate yourself from the links on PalmOS.com and with iSiloWeb.

/Erwin



By [Brian Wong](#) on Monday, September 4, 2000 - 08:52 pm: [Edit](#)

I have iSilo freeware version and have downloaded some beginner Forth lessons in HTML. Nice product, but unfortunately iSilo messes up the crucial program code sections of the document by omitting line feeds.

Besides manually editing the HTML documents to fix this, is there another option? Would having the registered version of iSilo fix this problem?

BW



By [Erwin Schomburg](#) on Tuesday, September 5, 2000 - 03:36 am: [Edit](#)

When using iSiloWeb to convert you might get success out of playing with the line break options in channel properties.

/Erwin

Add a Message

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E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Newbie - Database Tutorial

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Newbie - Database Tutorial



By [Colm Hoban](#) on Thursday, August 31, 2000 - 05:23 pm: [Edit](#)

Can anyone point me to a tutorial on the use of databases or did I miss one in a previous posting?

Thanks in advance,



By [Chris Bucsko](#) on Friday, September 1, 2000 - 03:14 pm: [Edit](#)

Yes, check the file area for Steve Donahue's tutorial which is good for the Resource database type of stuff, and look for 'db-example.txt', in the library area, I believe. This memo shows how to create and open a database. I took this code apart pretty thoroughly (with pen and paper!) and found it to be useful for figuring out Palm sys calls in Forth, etc. Also, try a keyword search of this forum, it usually turns up some good stuff.

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"Easy" field words

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): "Easy" field words



By [Travis Casey](#) on Thursday, August 31, 2000 - 03:37 pm: [Edit](#)

Well, I've gotten back to playing with Quartus and reading the boards, and thought I'd share a little something I whipped up for form-based applications:

```
\ easyfields
```

```
needs Fields
```

```
needs string2anyField
```

```
create stringbuf 80 chars allot
```

```
: string2int ( str u -- n )
  >r >r 0 0 r> r> ( str u -- 0 0 str u )
  >number
  drop drop drop
;
```

```
: int2string ( n -- str u )
  dup abs 0 <# #s rot sign #>
;
```

```
0 constant set
```

```
1 constant get
```

```
: stringfield ( GET -- str u ) ( str u SET -- )
create ,
does>
  @ swap ( flag fieldid -- fieldid flag )
  if ( get )
    stringbuf dup      ( fieldid sb sb )
    rot                ( sb sb fieldid )
    Field>string       ( sb count )
  else ( set )
    string>anyField
  then
;
```

```
: intfield ( GET -- n ) ( n SET -- )
create ,
does>
```

```

@ swap ( flag fieldid -- fieldid flag )
if ( get )
    stringbuf dup      ( fieldid sb sb )
    rot                ( sb sb fieldid )
    Field>string       ( sb count )
    string2int         ( n )
else ( set )
    >r ( save fieldid)
    dup abs 0 <# #s rot sign #>
    r> string>anyField
then
;

: listfield ( GET -- n ) ( n SET -- )
create ,
does>
    @ swap ( flag fieldid -- fieldid flag )
    if ( get )
        GetObjectPtr LstGetSelection
    else ( set )
        GetObjectPtr LstSetSelection
    then
;

```

This has had next to no testing, so I'd appreciate any comments or bug reports.

To use this, you use the stringfield, intfield, and listfield keywords like so for setup:

```

1001 intfield fromweight
1002 listfield fromunits
1003 listfield tounits
1004 intfield toweight

```

then you'd use them like so in code:

```

get fromweight
get fromunits
get tounits
... feed to some function that does conversion ...
set toweight

```

I know I'm not explaining this too well at the moment. If people are interested, I'll do a longer explanation and an example program. If people really like this, I might actually add more field types.

Thanks!

BTW, anyone who remembers me from before, I have a new email address now, so don't try to send me email at the old address.



By [Jamie](#) on Friday, September 1, 2000 - 12:03 am: [Edit](#)

Travis - If that code does what I think it does (and part of my overall problem is that I'm not too sure how even the stuff I have working really does), then it could really simplify things for me - I'm still muddling through Forth and the Palm GUI. I'm working on an application in which the screen navigation is completely done (not having learnt any forth really - just "pirated" from examples), but I'm having all kinds of trouble getting screen input into variables and vice versa - and then there's the db's - I would appreciate seeing more. If I can find (create, use, borrow, whatever) some words that handle the stack manipulations (so I can work like I'm used to) then I'm sure I could make some real progress. Spend too much time on mainframes, and the parts of your brain that can learn to do anything else start to atrophy. I read through the Forth docs (and one of Mr. Brody's books) and C docs and things still just seem strange. (Remember you're dealing with a Cobol and RPG programmer here...go easy) It's just the whole stack idea that's so foreign...

Still plugging away...

(Neal - still planning on registering if I can get up to speed with this...I'll have to, I want to write this program as a set of optional modules...)



By [Travis Casey](#) on Friday, September 1, 2000 - 11:27 am: [Edit](#)

Getting screen input into your program is just what it's for. I was doing a little app with a lot of fields, and saw that I'd have to cut-and-paste the code to get a number out of a field a lot of times, or I'd have to automate it. Once I had that idea, I thought it'd be neat to make little object-like things to do the work -- thus the setup I made with "get" and "set" as parameters (or, to use an object model, messages).

Realizing how helpful this could be, I decided to post it up before finishing the application that was using it -- which is why I didn't have a good example to put up. :-)

Ok... here's a do-it-yourself example that does nothing useful, but shows how it works:

First, the form, which should have ID 1001:

number 1: _____

number 2: _____

```
(multiply)
result: _____
```

Make the number 1 field have the ID 1010, the number 2 field 1020, the multiply button be 1030, and the result field 1040. Save it all in a resource with type rsrc and id tscE.

(I'm assuming that you know how to create forms and get them onto the Palm by some method. I can do it, but I'm not really the best person to give a tutorial on that.)

Now for the code:

```
\multiplier

\ Simple example program, based largely on the
\ example for simple-handler.

needs case
needs resources
needs Events
needs simple-handler
needs easyfields

(ID) tscE (ID) rsrc use-resources

\ set up the info for the resources we need.
\ Note that the fields are declared with the
\ "intfield" type.

1001 constant MyForm
1010 intfield number1
1020 intfield number2
1030 constant calcbutton
1040 intfield result

: show-panel
  \ Show our form and bind simple-handler to it
  \ to handle things like menu clicks, clicks
  \ on fields, etc.
  MyForm ShowForm
  ['] simple-handler eventhandler !
;

: do-event
  case
```

```

        ctlSelectEvent of
            event >abs itemid ( get the itemid of the control selected )
                calcbutton = if ( was it our button? )
                    get number1
                    get number2
                    *
                    set result
                then
            endof
        endcase
;

: go
    show-panel
    begin ekey do-event again
;

```

Then go into Quartus and do:

```

include multiplier
go

```

That will bring up your form and let you play. First, try hitting the Multiply button without putting anything in the fields, to see what happens.

If you wanted to put input into a variable, it'd be a simple matter of doing:

```

get fieldname varname !

```

--Travis



By [Neal Bridges](#) on Friday, September 1, 2000 - 12:49 pm: [Edit](#)

Travis, your code is curiously like something I've been working on here:

```

\ UI 7/21/00 4:55 pm NAB
needs string>float
needs fields

: 2args ( arg1 arg2 "name" -- )
    create , , ;

needs string2anyfield
needs float-ext

```

```
create floatbuf 20 chars allot
```

```
: floatfield: ( fvariable id "name" -- )
  2args
  does> 2@
  over f@
  dup >r floatbuf dup r>
  field>string dup 0= if
    2drop fdup 1e f+
  else string>float then
  dup GetObjectPtr
  2dup FldReleaseFocus
  FldDirty if
    false swap
    GetObjectPtr FldSetDirty
    f! fdrop
  else
    fover f- f0= 0= if
      nip (f.)
      2dup 1- + c@ [char] . = 1 and -
      rot string>anyfield
    else 2drop fdrop then
  then ;
```

While your code provides 'get' and 'put' methods for field objects, mine ties the field to a floating-point variable.

Example (assumes an input field, id 1000, and an output field, id 1001):

needs UI

```
fvariable input-data
fvariable output-data
input-data 1000 floatfield: update-input
output-data 1001 floatfield: update-output
```

Then...

```
: go ...
  \ Initialization:
  0e input-data f! update-input
  begin
    ...
    update-input
    input-data f@ ( some calculation here )
    output-data f!
    update-output
    ...
```

again ;

floatfields are two-way. If you change the fvariable, and then call the field word, the field will update; if you edit the field, and then call the field word, the fvariable will update.

set-places is used to control the number of decimal-places. Trailing '.'s are removed from the output, so zero displays as '0' and not as '0.'.

Neal



By [travis](#) on Friday, September 1, 2000 - 01:09 pm: [Edit](#)

Interesting way of doing it. I hadn't tackled floats yet, since I didn't need them for what I was doing right now. I was trying to keep with the "no variables unless we need them" philosophy of Forth in not tying to variables.

I like how you used the dirty bit of the fields to decide whether to read or write. Nice.

--Travis



By [Travis Casey](#) on Friday, September 1, 2000 - 02:40 pm: [Edit](#)

Here's a new addition to easyfields... it can be tacked on at the end of the code given in the original post:

```
: checkbox ( GET -- n ) ( n SET -- )
create ,
does>
  @ swap ( flag adr -- fieldid flag )
  if ( get )
    GetObjectPtr CtlGetValue
  else ( set )
    GetObjectPtr CtlSetValue
  then
;
;
```

So, with this, you can do:

```
1050 checkbox yesno
```

...

```
get yesno ( returns 1 if box is checked, 0 otherwise )
1 set yesno ( to set the box as checked )
```

Of course, 1050 would have to be the ID of a checkbox in a form you were using.



By [Neal Bridges](#) on Friday, September 1, 2000 - 02:50 pm: [Edit](#)

I like your design, Travis. I'd like to adapt my field effort to use your get/set syntax.

Neal



By [Travis Casey](#) on Friday, September 1, 2000 - 02:59 pm: [Edit](#)

Feel free... I posted it so people could use it, after all. :-) Also, feel free to put it in the file library and add anything else you wish to it. I'd just like a credit in there.

I'm going to be out of town this weekend, so I won't have any new updates for it until next week at least, myself. In fact, I'm literally about to leave! :-/

--Travis



By [Jamie](#) on Saturday, September 2, 2000 - 12:59 am: [Edit](#)

Thanks to both of you - this looks like it will really simplify things...

Jamie



By [Colm Hoban](#) on Tuesday, September 12, 2000 - 11:42 am: [Edit](#)

Thanks for some really useful code, this makes things easier to understand for the newbies among us.

Now for the next step how do I tie the easyfields to zstrings so that I can write the input into a DB.



By [Travis Casey](#) on Tuesday, September 12, 2000 - 02:50 pm: [Edit](#)

Here's a simple method, which relies on the presence of the stringbuf defined in easyfields:

```
: string2zstring ( addr u -- addr2 u2 )
  tuck
  stringbuf swap cmove
  stringbuf swap 1 chars +
  2dup
  + 0 swap c!
;
```

This copies the string to the stringbuf area, adds a 0 (actual zero, not the character 0) to the end of it, and returns the location and length of the string including the zero.

Or, you could do it in place:

```
: string2zstring
  1 chars + 2dup + 0 swap c!
;
```

This version will be faster, especially for long strings, since there's no copying done.

In either case, you'll need to make sure the string will fit -- within the 80 characters of the stringbuf area for the first version (though you could make that longer) or within whatever area you've set up for the 2nd version.

As a third alternative (I like listing alternatives :-), you could make a new zstringfield word. Just modify the stringfield word to automatically tack the null onto the end of strings when you do a get. (And to take it off when you do a set, if necessary -- I'm not sure if the PalmOS GUI will ignore nulls like that off-hand.)

Please note that all of this is off-the-cuff and untested code. It should work, but I may have made a mistake.

--Travis



By [Colm Hoban](#) on Tuesday, September 12, 2000 - 03:59 pm: [Edit](#)

Cool !

Thanks again for the help, this is great



By [Travis Casey \(Travis\)](#) on Friday, October 6, 2000 - 11:14 am: [Edit](#)

Whoops... I figured out yesterday that I've got a bug in my two versions of string2zstring. I did the old mistake of forgetting to count from zero when figuring out where something is supposed to go, so the two versions both stick the 0 character one space past where it should be. Here are the corrected versions:

With a buffer:

```
: string2zstring ( addr u -- addr2 u2 )
```

```
tuck
stringbuf swap cmove
stringbuf swap
2dup
+ 0 swap c! 1 chars +;
```

and in-place:

```
: string2zstring ( addr u -- addr u+1 )
  + 2dup + 0 swap c! 1 chars +
;
```

My apologies to anyone who was messed up by this. :-(

--Travis

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Using files in library and contrib area

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Using files in library and contrib area



By [peter bohac](#) on Thursday, August 31, 2000 - 03:28 pm: [Edit](#)

What's the general policy for using the source and (in the case of LCD and others) resources that are available in the File Area of this site? Most do not have any apparent licensing restrictions on them, but i don't want to step on anyone's toes or use anything that the author wouldn't want me to use.

Is it okay to use these files in opensource/freeware/charware applications so long as proper credit is given to the author(s) of the files used?

TIA,
-peter (=



By [Neal Bridges](#) on Thursday, August 31, 2000 - 03:40 pm: [Edit](#)

There aren't any usage restrictions on those materials; feel free to make use of them as you require while developing your Quartus Forth apps.

Neal



By [Erwin Schomburg](#) on Friday, September 1, 2000 - 04:02 am: [Edit](#)

I can only speak for myself in this matter, but what I submitted to Neal for inclusion in the contrib area, put up on my own page or posted directly into the forum, you are free to use. However, where original ideas are involved (if you can perceive any in my stuff), proper credits, and if using greater portions, dropping of a note to me would be appreciated. I explicitly disallow the generation of Quintominoes-type puzzles derived from my code for commercial purposes.

/Erwin

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Defer & deferred keywords

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Defer & deferred keywords



By [Berwyn Hoyt](#) on Tuesday, August 29, 2000 - 06:25 pm: [Edit](#)

Quartus does not seem to have a defer word.

I know it's easy enough to make (see appendix), but there are two problems with making one:

1. Quartus really needs some of its keywords to be deferred: emit, type, key, (bye), etc.
2. Defer really needs to be implemented by Neal so that he can fix up the xt's on MakePRC - since all the xt's will be changed. It seems that he could do this since he has control of MakePRC, but we cannot.

Does Quartus already do this in a way I've not discovered?

One use would be to have a deferred (bye). For example, when I exit Quartus, I want it to make sure the com port is closed. I know I can do this by catching a -257 throw, but how can I catch this when I'm issuing com port commands from the interpreter, and not catching an app? Maybe there is another mechanism for this last.

Have others had this problem?

- Berwyn

\ Defer

```
: defer ( <name> -- )
create 0 ,
does> @ ?dup if execute then ;
: is ( xt <name> -- ) postpone to ; immediate
: whatis ( <name> -- xt ) ' >body @ ;
```



By [Neal Bridges](#) on Tuesday, August 29, 2000 - 10:45 pm: [Edit](#)

Your 'defer' is mostly OK -- except it assumes that a 'create' word can be operated on by 'to'. This is not a valid assumption for a Standard Forth, though it works in Quartus Forth.

I don't need to make kernel changes -- your code will work fine if used like this:

```
defer foo

: action ." Hello! " ;

: go
...
['] action is foo
...
;
```

Neal



By [Berwyn Hoyt](#) on Wednesday, August 30, 2000 - 01:47 am: [Edit](#)

I know that using TO for a variable is non-standard, but it was quick and simple.

You missed my point #1 about kernel changes. See, if I want to adjust the behaviour of emit and type so it goes to (say) a com port, I can't do it without you making those words defers in the kernel. I can provide deferred wrappers, but that will only effect subsequent words that use type/emit.

Secondly, you are right that if I init all my defers in the PRC using ['] then things will be OK. I was thinking of having them pre-initialized and letting MakePRC fix them up. Perhaps you don't want this complexity in MakePRC.

Cheers,
Berwyn



By [Neal Bridges](#) on Wednesday, August 30, 2000 - 01:42 pm: [Edit](#)

It's not possible at present to arbitrarily re-vector kernel words. It has been requested once or twice before, and it's on my list of enhancements.

You're right about 'defer' words -- initializing them at run-time works perfectly, and keeps unneeded complexity out of MakePRC.

Neal

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Initialized variables & :OnLoad

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Initialized variables & :OnLoad



By [Berwyn Hoyt](#) on Tuesday, August 29, 2000 - 06:07 pm: [Edit](#)

I wish to discuss a syntax whereby I can arrange to initialize things in a prc. The init source code must be able to be located in its logical source file. I propose an :OnLoad definer word similar to C's onexit().

Background question: I am unsure about whether Quartus saves out CREATED data space when I MakePRC. Anyway, it doesn't seem to since one of my variables changes from -1 to 255. Is this so?

For example if I want to have a variable that remembers whether I currently have the com port open:

```
variable ComPort -1 ComPort ! ( -1=closed )
: test ComPort @ . key drop ;
' test MyID MakePRC test
```

This program prints 255!

So I need to initialize all data at the beginning of test. However, I want to place the init code in my Serial-ext source module. I suggest an :OnLoad word similar to SwiftForth's :OnSysLoad implemented as follows:

\ OnLoad

```
: OnLoad ; \ start the chain
```

```
: :OnLoad ( <code ;> -- )
s" : OnLoad OnLoad" evaluate ;
```

```
: MakePRC ( xt id. <name> -- )
rot >r :noname
s" OnLoad" evaluate
r> compile,
postpone ;
rot rot MakePRC ;
```

... then later ...

```
:OnLoad -1 ComPort ! ;
```

This works for me, but I wonder whether Neal wants to include something like this in Quartus so that we can pass around source modules that arrange for their own initializing.

- Berwyn



By [Neal Bridges](#) on Tuesday, August 29, 2000 - 08:06 pm: [Edit](#)

Berwyn, is that really the whole program? Here, it prints '-1'.

```
variable ComPort -1 ComPort ! ( -1=closed )  
: test ComPort @ . key drop ;  
' test MyID MakePRC test
```

Neal



By [Berwyn Hoyt](#) on Tuesday, August 29, 2000 - 10:40 pm: [Edit](#)

No, I'm sorry Neal, it wasn't really the whole program. The whole program is rather bigger and I thought I could simplify it but I couldn't.

Here is a "whole program" that shows up the bug. I have placed this into my Startup.Quartus, and I recommend that you do the same because the order seems rather critical to reproduce the bug.

\ Startup.Quartus

Registered <My-Reg-Code>

```
needs ids  
id MyID  
: mt ( <word> -- )  
' MyID s" MakePRC Test" evaluate ;  
variable ComPort  
needs serial  
-1 ComPort !  
: test ComPort @ . key drop ;  
mt test  
[end]
```

some more code which gets ignored because of the [end] above

I re-package MakePRC as MT purely for my debugging convenience, but it may be related to the problem.

With thanks,
Berwyn



By [Neal Bridges](#) on Tuesday, August 29, 2000 - 10:59 pm: [Edit](#)

Hi Berwyn. Thanks for the details; I can reproduce it here. If you call MakePRC directly, instead of via EVALUATE, the problem doesn't exist. I'll track it down.

Neal

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Find Last Error

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Find Last Error



By [Berwyn Hoyt](#) on Tuesday, August 29, 2000 - 05:39 pm: [Edit](#)

Where in my memo did the last error occur?

PC Forths usually specify the line number where a syntax error occurred. It wouldn't help much for Quartus to do this because memopad doesn't show line numbers.

Quartus tries to get around this with the "Go Last Error" menu option. This doesn't work for me since I use popnote and don't like to have to exit Quartus and re-include everything again.

I would suggest (as a minimum) that Quartus display the last definition - this would get us to an approximate location. LAST @ does not seem to work on Quartus.

Alternatively, is there a way to hook into the "Go Last Error" feature so I could then ask the author of PopNote how to start it up at a certain place.

Perhaps these are bad ideas, and some of you have better ones.

- Berwyn



By [Neal Bridges](#) on Tuesday, August 29, 2000 - 11:01 pm: [Edit](#)

I can't think of any possible way to hook into 'Go Last Error', but your idea of displaying the latest definition is a good one, and one I implemented in the daVinci version of Quartus Forth. It's on my list.

Neal

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Beaming Data

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Beaming Data



By [Wade Carlson](#) on Tuesday, August 29, 2000 - 01:37 pm: [Edit](#)

Neal, is it a fair assumption to say that in order to have your application beam it's data to the same application on another palm that your application has to be able to accept launch codes?



By [Neal Bridges](#) on Tuesday, August 29, 2000 - 01:58 pm: [Edit](#)

It is, yes. If you're beaming an entire database, an app like BeamBox or RsrcEdit will do the trick, but to beam the way, say, MemoPad does, you need launch codes.

Neal

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SysAppLaunch crashes on return

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): SysAppLaunch crashes on return



By [Erwin Schomburg](#) on Monday, August 28, 2000 - 11:06 am: [Edit](#)

In my experimenting with calling other applications via SysAppLaunch, I find that some 3rd party applications get launched and return seemingly OK, but cause a crash when my (the calling) application terminates subsequently. In most of the failing cases I get a MemMgr Null (or invalid) pointer error. Seems like I get presented with dangling pointers from some of the called apps. What preparatory or cleanup actions am I missing? Any clues anybody?

/Erwin



By [Neal Bridges](#) on Monday, August 28, 2000 - 11:53 am: [Edit](#)

Does this happen consistently with certain apps, or only sometimes?

Neal



By [Erwin Schomburg](#) on Monday, August 28, 2000 - 12:11 pm: [Edit](#)

It is consistent. Some apps (most in fact) come "clean" all the time, some produce the final fatal all the time, different messages and final states (tapping the reset on-screen button works or the device is so hung that it requires the pin) but consistent per individual application.

/Erwin

Ah, before you need to ask, stack is "clean" before and afterwards, LaunchFlags used are 8 and 4 (UI App and New Globals)



By [Neal Bridges](#) on Monday, August 28, 2000 - 12:26 pm: [Edit](#)

If you can tell me which called app exhibits this behaviour, and show me your launch snippet, I can test here to see what's going awry.

Neal



By [Erwin Schomburg](#) on Monday, August 28, 2000 - 12:57 pm: [Edit](#)

```
Pname > abs
0 DmFindDatabase 2dup dbp 2!
2dup
or if
```

```
>r >r 0. 0. 0 12 R> r> 0
sysapplaunch drop
\ dbp 2@
\ 0 dmdeletedatabase throw
then
```

is the snippet, Pname the address holding zero-byte terminated application name, the setup residing in the event handling routine and run through on occurrence and localization of coordinates of a PenDown event.

In the culprit list are currently, besides Linke's "Secret!" v2.5 (MemoryMgr.c, Line:4340 NULL handle), your "Benchmark" v1.5 (unspecified fatal) and my own "Eisbaer" v0.9 (unspecified fatal), whereas other Quartus apps, like my "Quintominoes color" and "Alarms?" come out clear, as well as big whoppers such as HandBase, GSMTTool, JShopper, AlarmMaster....

/Erwin



By [Erwin Schomburg](#) on Monday, August 28, 2000 - 01:34 pm: [Edit](#)

Ah, own further bughunting found that the point of crash is a call to SysCurAppDatabase following return from the called app. Something somehow grabbed ownership of *my* application? Crash occurring because in real life (see commented lines) the stealer-owning application has already been deleted?

/Erwin



By [Neal Bridges](#) on Monday, August 28, 2000 - 01:52 pm: [Edit](#)

Erwin, try

needs registers

```
...
saveRegs
... SysAppLaunch ...
restoreRegs
```

and see if the problem still exists.

Neal



By [Erwin Schomburg](#) on Monday, August 28, 2000 - 02:55 pm: [Edit](#)

Where is this module stored?

/Erwin



By [Neal Bridges](#) on Monday, August 28, 2000 - 03:13 pm: [Edit](#)

Sorry Erwin; thought it was in the File Area.

\ registers

needs asm68k

```
code saveRegs
(hex) ffff rp -) .L movem>
end-code inline
```

```
code restoreRegs
(hex) ffff rp )+ .L movem<
end-code inline
```

Neal



By [Erwin Schomburg](#) on Monday, August 28, 2000 - 03:31 pm: [Edit](#)

Thanks, and sorry, no go. To add from my own efforts to pinpoint this, the crash happens on about any call to the OS after the return from SysAppLaunch.

/Erwin



By [Neal Bridges](#) on Monday, August 28, 2000 - 03:42 pm: [Edit](#)

I'll have to set up to reproduce the error, and see what the POSE emulator has to say about the errors.

Neal



By [Erwin Schomburg](#) on Tuesday, August 29, 2000 - 08:14 am: [Edit](#)

When stripped to bare bones and run through POSE it gives me the same message and suggests to notify the author of "MyApp", when the launched "Secret!" returns *and* another OS call is placed or my application terminates. Well, I feel mightily notified, but none the wiser. When trying same setup with "Benchmark" Pose reports "writing to an unallocated chunk of memory". Any deeper insights yet from your side of the pond?

/Erwin



By [Neal Bridges](#) on Tuesday, August 29, 2000 - 02:33 pm: [Edit](#)

Nothing deeper yet, Erwin. I'll let you know what I find.

Neal



By [Erwin Schomburg](#) on Wednesday, August 30, 2000 - 04:59 pm: [Edit](#)

I think it loses the data segment pointer register. That would explain why saveregs also failed. Since I don't know enough 68k Assembler, could you give me a quick hint how to save and restore this value in a safe place, e.g. the returnstack, since this seems to reappear untampered with. TIA.

/Erwin



By [Neal Bridges](#) on Thursday, August 31, 2000 - 01:52 pm: [Edit](#)

saveRegs/restoreRegs does save the data segment pointer register, along with the others, so I suspect the problem lies elsewhere.

Have you tried this on OS3.5 only, or on earlier versions?

Neal



By [Erwin Schomburg](#) on Thursday, August 31, 2000 - 03:19 pm: [Edit](#)

Same picture under OS3.0/3.1. As soon as I try to access data. And only when returning from specific Apps. Hmmmm.

/Erwin



By [Erwin Schomburg](#) on Monday, September 4, 2000 - 12:56 am: [Edit](#)

Uhhuououohuoihihhh! A Quartus generated app does not like to work at all when there is no valid active form, even if there is nothing to display. Some apps come back with this context destroyed. The workaround is to save the pointer to the active form and do a FrmSetActiveForm after the call to the other app. A simple nnnn ShowForm does not work here, as it includes actions that require a valid form to be active before it can activate another one. However, this solves the problems with all apps that troubled me, except Secret!, which seems to be leaving me a dangling pointer I'm not the owner of (instead of just coming back with no valid context like the others), so with this my program still crashes on exit.

/Erwin



By [Neal Bridges](#) on Monday, September 4, 2000 - 02:05 am: [Edit](#)

Ah! Excellent sleuthing, Erwin.

Neal



By [Erwin Schomburg](#) on Monday, September 4, 2000 - 06:43 am: [Edit](#)

To finalize, the last offending app comes back from the call leaving my, the

calling, app with a pointer to active form of NULL. Re-setting the active form holds until my application terminates, then the implicit cleanup (involving FrmCloseAllForms I suppose) stumbles over this NULL pointer and pops the fatal. As the author might not cooperate, any clues on how to avoid this? Perhaps a way to clean up the window list FiFo buffer? Thanks for your patience.

/Erwin

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537 throw - What do exceptions mean

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): 537 throw - What do exceptions mean



By [Berwyn Hoyt](#) on Sunday, August 27, 2000 - 11:15 pm: [Edit](#)

The big question is where do I look up what any given exception number means?

The small question is what do exception numbers 537 and 102 mean? I am trying to do this:

' Go (id) VEko MakePRC This-is-my-program

Thanks,
Berwyn



By [Neal Bridges](#) on Monday, August 28, 2000 - 12:21 am: [Edit](#)

Here's a Doc reference from the File Area:

<http://www.quartus.net/files/PalmOS/Forth/Docs/errlist.zip>

Neal



By [Berwyn Hoyt](#) on Monday, August 28, 2000 - 12:34 am: [Edit](#)

Yep, that's great, Neal - I should have known about that file since it is provided in the quartus download, and I'd noticed it several times.

However, there is still the problem that exception (decimal) 102 is not listed in errlist.txt. Any idea why?

- Berwyn



By [Neal Bridges](#) on Monday, August 28, 2000 - 12:52 am: [Edit](#)

102 is the error that the MakePRC code throws when it cannot create the target database. Is the creator ID and filename you're using unique on your Palm?

Neal

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Now available: Upload.zip (Jim Purdy)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Now available: Upload.zip (Jim Purdy)



By [Neal Bridges](#) on Saturday, August 26, 2000 - 12:18 pm: [Edit](#)

Now available in the Contrib file area: a program to upload/dump selected memo files to the serial port, contributed by Jim Purdy. Thanks, Jim!

Neal

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Fe. command anyone?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Fe. command anyone?



By [Jim Purdy](#) on Friday, August 25, 2000 - 01:12 pm: [Edit](#)

Does anyone have a fe. command they have written.

for those who don't know

fe. (F: --) (-- addr u)
\ convert in engineering format.



By [jim purdy](#) on Friday, August 25, 2000 - 01:16 pm: [Edit](#)

Correction

(fe.) (F:f --) (-- addr u)



By [Neal Bridges](#) on Friday, August 25, 2000 - 02:01 pm: [Edit](#)

Such a beast would be built around fpdissect.

Neal

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Help with bug in multi-module APP

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Help with bug in multi-module APP



By [Jim Purdy](#) on Thursday, August 24, 2000 - 11:24 am: [Edit](#)

I need help with the following "BUG"
my App uses multipul modules to allow for
expandability and to avoid code space limitations.
All modules function correctly when called AND
return correctly.

The problem IS. Using the code below, the user
must tap the DONE button TWICE to get the program to return. This seems
strange to me. After the first tap, the program seems to be in a kind of
"limbo" too. The code seems straightforward enough.

PLEASE HELP! Jim

---- MAIN CALLING ROUTINE ----

2variable dbIDP

2variable cardNoP

2variable creator

2variable type

2variable totalBytesP

create stateInfoP 16 chars allot

2variable numRecordsP

create szName 32 chars allot

: Launch (--)

set-stored

dbIDP >abs

cardNoP >abs

true creator 2@ type 2@

stateInfoP >abs true

DmGetNextDatabaseByTypeCreator

if

alertFrm FrmAlert drop

else

0. 0. 0. dbIDP 2@ 0

SysAppLaunch drop

then get-stored drop ;

: do-REMOTE-Routine

CreatorID creator 2!

CreatorType type 2!
set-stored Launch ;

-----START of REMOTE MODULE-----
----- COMPILED INTO SEPARATE PRC FILE
variable flag

```
: do-Ctrl
event >abs itemid
case
RDone of TRUE flag ! endof
endcase ;
```

```
: do-event ( -- )
ekey
case
ctlSelectEvent of do-Ctrl endof
ctlRepeatEvent of do-Ctrl endof
MenuEvent of edit-menu endof
popSelectEvent of do-Pop endof
endcase ;
```

```
: go
get-stored drop
do-intialize code here....
```

```
FALSE flag !
begin ['] do-event catch
byeThrow = if
TRUE flag !
then
flag @
until ;
```



By [Erwin Schomburg](#) on Thursday, August 24, 2000 - 12:13 pm: [Edit](#)

I think that you need to re-throw the bye exception after having handled it. So your go-word should look like this:

```
: go
....
```

```
FALSE flag !
begin ['] do-event catch
dup
byeThrow = if
```

```
TRUE flag !
then
flag @
throw
until ;
```

Besides that, although it works with Quartus generated apps and should have nothing to do with your problem, as I said in another posting this week, one should set the LaunchFlags for the SysAppLaunch call:

```
0. 0. 0 12 dbIDP 2@ 0
SysAppLaunch drop
```

/Erwin



By [Neal Bridges](#) on Thursday, August 24, 2000 - 12:19 pm: [Edit](#)

Note that the original loop can be simplified:

```
: go ...
  begin [''] do-event catch byeThrow = until
  bye ;
```

Neal



By [Erwin Schomburg](#) on Thursday, August 24, 2000 - 12:38 pm: [Edit](#)

What about exceptions not being AppStop? Or am I constructing a scenario that can't happen?

/Erwin



By [jim purdy](#) on Thursday, August 24, 2000 - 12:40 pm: [Edit](#)

Sorry,

Both solutions crash!

I changed my done button to throw a BYE.

After removing the bye command,
Neal's loop fix required a double-tap on the done key.



By [Erwin Schomburg](#) on Thursday, August 24, 2000 - 12:59 pm: [Edit](#)

Har har, no we come closer to the whole story. Never throw a byeThrow

exception yourself. Issue a direct BYE:

(some pseudocode)

: evt-handling

ekey

case

.....

CntlSelectEvent of

event >abs ItemID

case

.....

DoneButton of

BYE

endof

endcase

endof

endcase

.....

;

Now the BYE as result of the DONE button press will throw a byeThrow that you can catch to wrap up your parcels in your GO word as shown above.

/Erwin



By [Neal Bridges](#) on Thursday, August 24, 2000 - 01:21 pm: [Edit](#)

Jim, does this happen when the sub-app is launched by itself, as a stand-alone app, or only when it is called from your main app?

Neal



By [Jim Purdy](#) on Thursday, August 24, 2000 - 02:54 pm: [Edit](#)

PROBLEM FIXED!!

All the modules "pulled" from the same resource DB.

I was using the SAME resource number for all of the DONE buttons. They were individually defined on each form, but they just hade the same number to keep me straight.

THIS MUST HAVE CONFUSED THINGS.

When I renumbered each button and recompiled, the original code work just fine.

Thanks for the Help.



By [Neal Bridges](#) on Thursday, August 24, 2000 - 03:01 pm: [Edit](#)

Ah, glad to hear it, Jim. Sorry our help wasn't closer to the mark -- it is sometimes difficult, without having the actual code and resources, to guess at what the problem might be.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

See, OSP, do these exist in quartus?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): See, OSP, do these exist in quartus?



By [Verxion](#) on Thursday, August 24, 2000 - 10:13 am: [Edit](#)

I have been trying to do some tutorials I found on the net, but couldn't use these commands. Are there equivalents to them? Is there a word definition someone could give me for them?

Thanks

-Verxion



By [Neal Bridges](#) on Thursday, August 24, 2000 - 10:38 am: [Edit](#)

SEE is available in the library file `disasm.txt`. OSP is a non-standard word that clears the data stack. As a quick substitute, ABORT will also clear the data stack.

If you really need OSP, here it is:

```
: OSP ( i*x -- )
  depth ?dup if
    0 do drop loop
  then ;
```

Neal

Add a Message

Username:

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Password: the "Password" box empty. Your e-mail address is optional.

E-mail:

DateToDays systrap signature?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): DateToDays systrap signature?



By [Dan Poirier](#) on Wednesday, August 23, 2000 - 07:24 am: [Edit](#)

The Quartus manual gives this signature for the PalmOS systrap DateToDays:

DateToDays (date[>byte] -- ud.)

The PalmOS doc gives the input parameter as a DateType, which is a 16-bit structure, not a byte. Is this an error in the Quartus doc, or am I mis-reading something?



By [Dave Bennett](#) on Wednesday, August 23, 2000 - 07:47 am: [Edit](#)

The >byte is really an 8 LSHIFT equivalent; in effect stuffing a "byte" in the LSB side of the value. It isn't a "to byte" kind of thing as it may appear in its own notation.



By [Dan Poirier](#) on Wednesday, August 23, 2000 - 09:27 am: [Edit](#)

Right, but if we start with a 16-bit cell containing a full 16-bit structure, and then left shift it 8 bits, it seems as if we've just lost 8 bits.



By [Neal Bridges](#) on Wednesday, August 23, 2000 - 10:25 am: [Edit](#)

DateType isn't a 16-bit structure, it's an enum. Enums are is passed in the PalmOS as a byte, but in the high part of a 16-bit word, so >BYTE is required to massage the parameter.

Neal



By [Erwin Schomburg](#) on Wednesday, August 23, 2000 - 11:08 am: [Edit](#)

In the OS3.5 SDK I carry around, DateType is described as, what I understand IIRC from the time I gave C lectures, to be a bitfield structure crammed into a 16bit value.

/Erwin



By [Neal Bridges](#) on Wednesday, August 23, 2000 - 12:04 pm: [Edit](#)

Eep! Mea culpa. IDateType is a 16-bit bitfield. The [>BYTE] notation is an error. I'll correct it.

The Quartus Forth stack diagrams are created automatically from the SDK header files -- unfortunately, Palm is somewhat erratic in the way they name their various data types. Most enums are named xxxxType; DateType is not an enum, however, but a structure.

Sorry for the confusion!

Neal

Add a Message

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Trying to learn. :)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Trying to learn. :)



By [Verxion](#) on Tuesday, August 22, 2000 - 11:14 pm: [Edit](#)

Hello there. I just picked this thing up yesterday. I tried lispme the day before, but it doesn't seem able to make standalone apps that don't need runtime material. From what I have read and seen, this is the place for me.

I don't know Forth at ALL, but in reading some example code, it doesn't seem too rough. I would like to know if there are any good WEB resources for learning Forth. I know RPN (from an HP48sx I used for YEARS, programming like a madman), and I know tcl/tk, C, etc. so programming isn't completely new to me, just Forth. I am also new to palm programming, so I am looking for some good resources (again on the web) for palm specific aspects of programming.

I guess the main thing I was hoping for was a series of growing programming examples that start somewhere and get progressively better. There is a tutorial linked to on the quartus site, but it only has two examples, and while the first one seemed excellent, I have yet to get the second example to work. Even so, I fear that the tutorials, while very very very helpful for a newbie, explain the HOW, but not any of the WHY.

I am more than willing to write examples up if I can learn enough to actually do some programming. I guess the main things I am looking for are:

How to do glue logic behind the app resources, for instance, when a button is pressed, update a label. When a checkmark is checked, change the state of a variable. Some sample apps with progressively increasing complexity would just rock for this, but in the digging through the site, I couldn't find such a thing.

Another thing is, I have been getting several crashes with this app I am trying to put in from the tutorial (the second example). I keep getting the error: "MemoryMgr.c, Line:4340, NULL handle", after which the palm locks up. I did download the INCREDIBLY awesome "crash 0.2" program by Daniel Seifert that traps the crash and resets the palm on its own. That makes this a great deal more tolerable.

The thing is, I don't know what the process is for debugging this sort of thing. I think it is running amuck with memory pointers, I know I am trying to point to the resources in my code, and I suspect the id's I am pointing to are not the right ones. I just don't know how to narrow this down. Can someone throw me a bone?

Thanks in advance,

-Verxion



By [Dave Bennett](#) on Wednesday, August 23, 2000 - 07:43 am: [Edit](#)

Verxion,

If you go to www.palmgear.com and do a search on Answer Farm you will find several free apps that I have written using Quartus Forth that include the source code with a running commentary on what is going on. They start with a very simple app and progressively add other features. I wrote these as I learn about new things.



By [Verxion](#) on Wednesday, August 23, 2000 - 08:40 am: [Edit](#)

Thank you VERY VERY VERY much, I will do that first thing this morning! :)

-Verxion



By [Neal Bridges](#) on Wednesday, August 23, 2000 - 04:22 pm: [Edit](#)

Be sure and use this forum as a resource when you run into roadblocks, Verxion. Happy to help.

Neal



By [Lennie De Villiers](#) on Saturday, September 2, 2000 - 12:25 pm: [Edit](#)

Go take a look at Palm RoadCoders website at <http://developer.earthweb.com/roadcoders/>

Lennie De Villiers
ICQ# 57008830

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Attention: Berwyn Hoyt

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Attention: Berwyn Hoyt



By [Neal Bridges](#) on Tuesday, August 22, 2000 - 09:07 pm: [Edit](#)

Berwyn, I've been trying to respond to your email re Quartus Forth, but the mail bounces.

Quote:

Reason: Relaying mail to marconi-online.com is not allowed.

Send me a note qhen your mail is working and I'll re-send the reply.

Neal



By [Berwyn Hoyt](#) on Monday, August 28, 2000 - 06:38 pm: [Edit](#)

Neal,

I'm not sure whether you got this message through normal email, so I'll post it here. I am getting my message board messages just fine.

Thank you for posting on the message board regarding the failure of our mail system. You can use my alternative email addresses:

Berwyn@mailandnews.com

and BerwynHoyt@mailandnews.com

Please send your original reply to me on both those addresses. Please also send a copy of the bounced message so that I can give it to our email administrator.

With thanks,
Berwyn Hoyt

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Passing a value to an alert message

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Passing a value to an alert message



By [Barry Ekstrand](#) on Tuesday, August 22, 2000 - 02:13 pm: [Edit](#)

In Paul Nevai's pedit program, while the program is unregistered and during the evaluation period, an alert box pops up to remind the user to register. In the message, the user is told he (or she!) is on day X of the evaluation period. In looking at pedit's resource file, I see the alert box message text has ^ 1 as a placeholder for the actual day value. Does anyone know how to insert an actual value for a placeholder like this?

Barry



By [Neal Bridges](#) on Tuesday, August 22, 2000 - 02:32 pm: [Edit](#)

The system call for that is FrmCustomAlert. These alerts can have three placeholders, ^ 1, ^ 2, and ^ 3.

Assuming your alert has id 1000, and only one placeholder (^ 1):

needs zstrings

```
: mystring z" Hello" ;
```

```
0. 0. mystring drop >abs 1000 FrmCustomAlert drop
```

Neal

Add a Message

Username: not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

AppStopEvent vs. exception -257

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): AppStopEvent vs. exception -257



By [Tom Hayosh](#) on Monday, August 21, 2000 - 10:13 pm: [Edit](#)

When compiling and running an app within Quartus, my understanding is that the app never receives an appStopEvent. Rather, Quartus receives the event and throws the -257 exception which the app may or may not catch. If the app is later converted to stand-alone code, it would then receive the appStopEvent but not the exception. So any required shutdown activity must be transferred from code catching the exception to code handling the event. Is this correct? Thanks, Tom.



By [Neal Bridges](#) on Monday, August 21, 2000 - 10:21 pm: [Edit](#)

No, the stand-alone app will still get the exception. The exception throw/catch mechanism is present in all stand-alone apps.

Neal



By [Tom Hayosh](#) on Tuesday, August 22, 2000 - 09:11 pm: [Edit](#)

Thanks Neil. Your responsiveness is truly amazing.

Add a Message

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Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Hot Sync Serial Port?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Hot Sync Serial Port?



By [Alex Alava](#) on Monday, August 21, 2000 - 11:09 am: [Edit](#)

Where can I get information on using the Hot Sync Serial Port? What are the voltage levels? Is it really RS232 compliant? What are the pin functions and what Quartus Forth Words are available to use this port?

Neal,

I have 1.2.6R build 1999.12.16. Is this still the current version?

Thanks

Alex Alava



By [Neal Bridges](#) on Monday, August 21, 2000 - 11:33 am: [Edit](#)

That's an earlier build of interim update, Alex; it's quite current.

The library module serial.txt holds the serial-port words. The port is indeed RS232. The pinouts, etc. are available from www.palmos.com, in the developer's area.

Neal



By [Alex Alava](#) on Tuesday, August 22, 2000 - 04:45 pm: [Edit](#)

Thanks for the info. Is there more documentation for serial.txt?

Alex Alava



By [Neal Bridges](#) on Tuesday, August 22, 2000 - 04:55 pm: [Edit](#)

The message archives have a number of examples of its use; that's a good place to start.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Trouble adding Preferences to app

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Trouble adding Preferences to app



By [Barry Ekstrand](#) on Monday, August 21, 2000 - 10:36 am: [Edit](#)

I am trying to add support for preferences to an app and am trying to follow what I see in Erwin's Quintominoes and Carl's PhoneDecode sources. I thought I had it clearly understood, but the resultant change won't compile and I can't figure out why. Here is what I've done:

1) Started with a working-and-bug-free app, whose event loop occurs in a word named Main.

2) I've bracketed my variable declarations with 2 words to give me (I think) where my preferences will reside (starting address) in memory and the size of the preferences, i.e.:

```
here constant prefs
...<fvariable and variable declarations>...
here prefs - constant prefsiz
```

3) I've added the following line:

```
-257 CONSTANT byeThrow
```

4) I've added the following words for reading preferences, writing preferences, and catching the exit event:

```
: get-stored ( --- bool )
prefsize prefs >abs 1 CrID
PrefGetAppPreferencesV10 ;
```

```
: set-stored ( --- )
prefsize prefs >abs 1 CrID
PrefSetAppPreferencesV10 ;
```

```
: exit-hand ( --- )
['] main catch
```

```
dup byeThrow
= if
set-stored then
throw ;
```

5) I've modified my make file to make the exit handler (exit-hand) the main executing word, which should (I think) catch from the event loop (main)

6) I added a new word to initialize the preferences database:

```
: inits ( -- )
get-stored 0= if
..<lots of initial variable values>...
then
;
```

7) I've inserted a call to the inits word at the beginning of my main event loop

Upon compilation, I get the following error:

Exception in file: make
main? undefined word

I don't understand the error, as the main word is defined as it always has been with the addition of the inits call. Any ideas?

Regards,

Barry Ekstrand



By [Neal Bridges](#) on Monday, August 21, 2000 - 11:07 am: [Edit](#)

That's an odd one, Barry. Perhaps you have an unbalanced control structure in an earlier word. Try

needs safe
include ...

and see if it reports an error.

Neal



By [Barry Ekstrand](#) on Monday, August 21, 2000 - 11:33 am: [Edit](#)

Neal,

I should have mentioned it, but I already have the needs safe declaration in the code, and the error is reported as above.

Barry



By [Neal Bridges](#) on Monday, August 21, 2000 - 01:26 pm: [Edit](#)

You'll need to divide and conquer, Barry. Comment out the new code, and add it in selectively until you discover the fault. I'm happy to look at it, if you wish to send it over.

Neal



By [Barry Ekstrand](#) on Monday, August 21, 2000 - 03:03 pm: [Edit](#)

Darn, I was hoping I was overlooking something obvious :). I will do as you suggest, although my additions were largely copied and pasted from the referenced sources. I'll let you know what I find, and if I remain stumped for very long, I'll take you up on your offer to look at it.

Barry



By [Neal Bridges](#) on Monday, August 21, 2000 - 03:56 pm: [Edit](#)

The only thing I can guess at -- are you defining 'exit-hand' before 'main'? 'main' would have to be defined first, or 'exit-hand' wouldn't find it.

Neal



By [Barry Ekstrand](#) on Monday, August 21, 2000 - 04:05 pm: [Edit](#)

Neal,

It didn't take too long to find the source of the problem, but I'm not seeing a solution. If I comment out the exit-hand word (which catches the exit event and writes calls the set-stored word) and have the make file target the main word, all is well. If I leave all of the exit-hand code commented out but add a call to main, i.e.:

```
: exit-hand
main
;
```

and have the make file target exit-hand, I get the same error as before. It is acting like exit-hand can't reference main for some unknown reason - the way

exit-hand is written above, with the make file targeting it, isn't it the same as the make file targeting main directly?

Near as I can tell, the other sources I am using as a guide are built exactly like what isn't working for me - the make file targeting the exit handler, and the exit handler calling the main event loop.

Any ideas??

Barry



By [Neal Bridges](#) on Monday, August 21, 2000 - 04:08 pm: [Edit](#)

Did you catch my idea just above -- is exit-hand defined before, or after, main?

Neal



By [Barry Ekstrand](#) on Monday, August 21, 2000 - 04:47 pm: [Edit](#)

Well, as I said, it was bound to be something obvious. I hadn't caught your note about defining main first when I wrote the last post. I've moved exit-hand to after the main word definition and now all works as it should. I'm sure somewhere along the way I learned that the order of defining words is important, but it was completely forgotten. Thanks for your insight, as usual you got me on track.

Thanks,

Barry



By [Neal Bridges](#) on Monday, August 21, 2000 - 08:22 pm: [Edit](#)

Glad I could help, Barry!

Neal



By [Dave Bennett](#) on Tuesday, August 22, 2000 - 07:08 am: [Edit](#)

I think it would be nice if Quartus would perform an initial pass to build the word list before executing. This would support forward referencing such as this and not make it necessary to have the words in any order.



By [Erwin Schomburg](#) on Tuesday, August 22, 2000 - 08:03 am: [Edit](#)

Arrrrgh. The dangerous closeness to the very core of the system when programming in Forth can only be kept in check with discipline and an

unforgiving compiler. Allowing unconditional forward references would mean its no longer Forth as we know it, its no longer simple and straightforward (to implement) and it would have different and potentially more dangerous pitfalls than the known ones. For example, there would be no more hiding of previously defined words of same spelling from subsequent usage, a form of polymorphism any seasoned Forth user uses with care but without need to think twice about side effects. I don't know what makes others tick, but, like Ohms Law, the "the latest defined incarnation is the one that is called if I use the word, if its not defined yet at all I can't use it" ruleset is hardwired in my brains by now.

/Erwin



By [Barry Ekstrand](#) on Tuesday, August 22, 2000 - 08:44 am: [Edit](#)

...and as the latest guilty party, perhaps I'm entitled to a final (?) opinion...

There is nothing like suffering through a problem to make you remember the rules in the future. I likely will remember the order is important from here forward, and I feel fortunate that there is an active discussion forum with strong support from experienced programmers to help me along the way. I'm satisfied with learning the hard way, and many thanks to those who have given assistance on this path - particularly to Neal and Erwin, who have received the brunt of my novice questions.

Barry



By [Dave Bennett](#) on Tuesday, August 22, 2000 - 06:16 pm: [Edit](#)

Maybe forward referencing isn't really what's needed. I've been hit with this before and sorted it out. Maybe a clearer warning? or "undeclared word" statement? Maybe this is a likely addition to safe.



By [Neal Bridges](#) on Tuesday, August 22, 2000 - 07:06 pm: [Edit](#)

It does display an 'undefined word' message, now.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Trapping processor exceptions

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Trapping processor exceptions



By [Neal Bridges](#) on Sunday, August 20, 2000 - 12:22 am: [Edit](#)

Here's a way of catching address alignment errors and divide-by-zero errors -- with zero run-time overhead:

```
: div0err  -10 throw ;
: alignerr -23 throw ;
: remap-traps
  ['] div0err xt>abs (hex) 14. 2!a
  ['] alignerr xt>abs (hex) 0c. 2!a ;
remap-traps
```

If you use this in production code (though I can't imagine why you'd do it -- a tested app should certainly never divide by zero, or attempt a misaligned memory write), you'll want to save the original trap vectors and restore them when your app exits. I leave the exercise to the proverbial student. :)

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

More questions about memory access

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): More questions about memory access



By [R. Flower](#) on Friday, August 18, 2000 - 11:47 am: [Edit](#)

Ok.. I'm back to pester people again.. I've been playing around with an existing database that has a 21 byte record in it. When I read a record, I get back a record pointer (that's what I call it), returned by MemHandleLock. Is there a way that I can do a hex-dump of the buffer without doing anything special.. I do have a hexdump routine that I got from the Quartus archives and it seems to work for other areas.. However, if I do a >rel on the return from MemHandleLock, and then dump out that region, it's all zeros.. (which it shouldn't be). In reading the archives, I'm confused by the [c@a](#), >abs, >rel, and the other insundry memory operators (16/32) bit. Also, after I get a recordpointer back from MemHandleLock, do I need to move it into another Quartus "local" buffer before I use it?

-- signed,
confused..

Thanks!



By [Neal Bridges](#) on Friday, August 18, 2000 - 01:53 pm: [Edit](#)

>rel and >abs only work for addresses originating in dynamic RAM. Your best bet -- copy the 21 bytes out of the record into a buffer using MemMove, and then use the dump routine to display them on screen.

[c@a](#) retrieves an 8-bit value from a 32-bit (double-cell) address.

Neal



By [R. Flower](#) on Friday, August 18, 2000 - 09:43 pm: [Edit](#)

Thanks Neal.. That explains quite a bit! (no pun intended!)

Now I can continue on my Forth Adventure...

-- Rick



By [R. Flower](#) on Monday, August 21, 2000 - 02:01 pm: [Edit](#)

Neal,

Just another quick question.. In playing around with MemPtrNew, I notice down

in the implementation for \ Mem, that (allocate) uses MemPtrNew and (free) uses MemChunkFree.. Is there any particular reason that MemChunkFree is used instead of MemPtrFree? I noticed that in the API spec's that MemChunkFree was listed for internal use only and isn't really documented much.. Any comments ?

Thanks!



By [Neal Bridges](#) on Monday, August 21, 2000 - 02:32 pm: [Edit](#)

MemPtrFree is an alias for MemChunkFree --just a #define in the C headers. MemChunkFree is the actual system call.

Neal



By [rflower](#) on Thursday, August 24, 2000 - 04:46 pm: [Edit](#)

Ok I've got another stupid memory question.. I've got the folowing code that produces the following output from Quartus :

Exception in file : KeyRing
new? invalid memory address

=====

I'm playing around with the mini-oop stuff that Bernd Paysan wrote and was on his web page.. I have tracked it down to the "open" method, but can't determine why it's complaining.. Any comments are appreciated!

Thanks!

```
\ KeyRing 2000-23-AUG 15:16 REF
```

```
needs safe
```

```
needs core-ext
```

```
needs mini-oof
```

```
needs dbase-ext2
```

```
needs ids
```

```
needs zstrings
```

```
\ Declare all types & variables..
```

```
ID Gkyr          \ database type      ID
```

```
ID Gtkr          \ database Creator ID
```

```
4 cells constant HANDLE
```

```
4 cells constant LENGTH
```

```
4 cells constant DATE          \ Sizeof a date item
```

```
4 cells constant DBREF         \ Sizeof a database ref.
```

```

\ //////////////////////////////////////
\ Declare the object class for the entire keyring
\ //////////////////////////////////////
object class
    DBREF var dbRef
    HANDLE var recHandle
    HANDLE var recPtr
    method init
    method view
    method open
end-class KeyRing

\ //////////////////////////////////////
\ KeyRing : Method : Init
\ //////////////////////////////////////
:noname ( o -- ) >r
    0 0 r@ dbRef      2!
    0 0 r@ recHandle 2!
    0 0 r@ recPtr     2! r> ;
KeyRing defines init

:noname ( o -- ) >r
    r@ dbRef 2@ . . r> ;
KeyRing defines view

\ //////////////////////////////////////
\ KeyRing : Method : Open
\ //////////////////////////////////////
:noname ( o -- ) >r
    z" Keys-Gtkr" dmModeReadOnly Gtkr Gkyr
    OpenDB r@ dbRef 2! r> ;
KeyRing defines open

KeyRing new constant krt
\ krt init

```

Here's the mini-oof code :

```

\ Mini-OOF      12apr98py
needs string

1 cells constant cell
: method ( m v -- m' v ) Create over , swap cell+ swap
DOES> ( ... o -- ... ) @ over @ + @ execute ;

```

```

: var ( m v size -- m v' ) Create over , +
DOES> ( o -- addr ) @ + ;

: class ( class -- class methods vars ) dup 2@ ;

: end-class ( class methods vars -- )
Create here >r , dup , 2 cells ?DO ['] noop , 1 cells +LOOP
cell+ dup cell+ r> rot @ 2 cells /string move ;

: defines ( xt class -- ) ' >body @ + ! ;

: new ( class -- o ) here over @ allot swap over ! ;

: :: ( class "name" -- ) ' >body @ + @ compile, ;

Create object 1 cells , 2 cells ,

```

Here's the dbase-ext2 code that someone posted here before :

```

\ dbase-ext2 RWD 122399

needs core-ext
needs DataMgr

\ Tools needed:
: 4dup 2over 2over ;
: 3dup 4dup 2>r >r drop r> 2r> ;

(hex) 80 constant deleteMask

\ Temporary variables
variable attrP
variable dbmode
variable recindex
variable dbzname
2variable dbcreator
2variable dbtype
2variable dbref

: new-record
( len. index-a-addr. dbref. -- recptr. )
DmNewRecord MemHandleLock ;

```

```

: get-recordattr
( index dbref. -- attr )
2>r >r 0. 0. attrP >abs r> 2r>
DmRecordInfo drop attrP @ ;

: set-recordattr
( attr index dbref. -- err )
2>r >r attrP ! 0. attrP >abs r> 2r>
DmSetRecordInfo ;

: query-record
( index dbref. -- handle. )
DmQueryRecord ;

: get-record ( index dbref. -- recptr. )
DmGetRecord MemHandleLock ;

: release-record
( dirtyflag index dbref. recptr.-- err)
MemPtrUnlock >r
DmReleaseRecord r> or ;

: num-records ( dbref. -- n )
DmNumRecords ;

: size-record
( index dbref. -- size )
query-record MemHandleSize d>s ;

: deleted-record?
( index dbref. -- delflg )
get-recordattr deleteMask and ;

: grow-record
( addedsize index dbref. -- newsize recptr. )
\ Release record if needed before calling.
3dup 2>r >r size-record + dup s>d
r> 2r> DmResizeRecord
MemHandleLock ;

: ?openDB ( -- dbref.|null. Err )
dbmode @ dbcreator 2@ dbtype 2@
DmOpenDatabaseByTypeCreator
2dup or 0= ;

: openDB

```

```

( namez-addr u mode creator. type. -- dbref.|null. )
\ null. means an error
dbtype 2! dbcreator 2! dbmode !
\ Don't need size u of z-string
drop dbzname !
?openDB if
  \ Database doesn't exist. Create it.
  2drop false \ Not a resource DB
  dbtype 2@ dbcreator 2@
  dbzname @ >abs 0 \ Card #0
  DmCreateDatabase
  if \ Error creating it
    0.
  else \ Now open it.
    ?openDB drop
  then
then ;

: closeDB ( dbref. -- )
DmCloseDatabase drop ;

: write-newrecord
( z-addr len index-addr dbref. -- )
\ Save index-addr and dbref.
3dup 2>r >r
\ Add 1 to zlength and dup it.
2>r >r 1+ s>d 2dup r> >abs 2r>
( z-addr len+1. len+1. index-addr. dbref. )
new-record 2>r rot >abs 0.
2r@ DmWrite drop
2r> true r> @ 2swap 2r> 2swap
release-record drop ;

```



By [Neal Bridges](#) on Thursday, August 24, 2000 - 04:58 pm: [Edit](#)

When does it produce this error -- when you call the method, or while you're including the file?

Neal



By [Ron Doerfler](#) on Thursday, August 24, 2000 - 05:11 pm: [Edit](#)

Hi,

I'm not very familiar with the OOP code you are working with, or even with using :noname, so this is just a suggestion: since OpenDB returns dbRef, I don't see why you're doing an r@ before you save it in the portion of code below.

Ron

```
:noname ( o -- ) >r
  z" Keys-Gtkr" dmModeReadOnly Gtkr Gkyr
  OpenDB r@ dbRef 2! r> ;
  KeyRing defines open
```



By [rflower](#) on Thursday, August 24, 2000 - 06:11 pm: [Edit](#)

The problem occurs during the compilation stage -- I don't even get to use it..
The line that causes the error message to be sent out is the one at the bottom :

KeyRing new constant krt

As for the "r@" question.. I'm following the example code that was provided with the package (see below) :

```
OBJECT CLASS
  CELL VAR TEXT
  CELL VAR LEN
  CELL VAR X
  CELL VAR Y
  METHOD INIT
  METHOD DRAW
END-CLASS BUTTON
```

```
:NONAME ( o -- ) >R
  R@ X @ R@ Y @ AT-XY  R@ TEXT @ R> LEN @ TYPE ;
  BUTTON DEFINES DRAW
:NONAME ( addr u o -- ) >R
  0 R@ X ! 0 R@ Y ! R@ LEN ! R> TEXT ! ;
  BUTTON DEFINES INIT
```



By [Neal Bridges](#) on Thursday, August 24, 2000 - 07:03 pm: [Edit](#)

Maybe safe isn't playing nice with the Paysn's oop package. Try it without safe.

Neal



By [Neal Bridges](#) on Thursday, August 24, 2000 - 07:04 pm: [Edit](#)

I should also mention what I believe I mentioned when I first posted that OOP code -- it won't work with Quartus Forth to produce stand-alone apps, not as it stands. Within the development environment, though, it'll work fine.

Neal



By [nrflower](#) on Thursday, August 24, 2000 - 07:54 pm: [Edit](#)

Damn! It's nice and easy, straight forward.. I looked at the OOP package on the Quartus site and found it a bit on the "ugly" side to look at, and not very straight forward to follow..

Is there any particular reason why it would work in a stand-alone app environment? Just curious.. Thanks for the info, by the way! I guess I won't bother playing with it anymore if I can't use it in a stand-alone configuration..



By [Neal Bridges](#) on Thursday, August 24, 2000 - 08:02 pm: [Edit](#)

That OOF is pretty minimal as it stands (only 14 lines or so), so it's not surprising that its functionality is limited.

I haven't played with it a lot, but trying to make stand-alone apps with it will result in calls to functions that aren't in the stand-alone app, and hence a crash. MakePRC can't know that calling a given function will cause it to look up another function in a table and then call that function. You'd need to somehow export all the :noname functions in each method, and also update the method tables with the new addresses.

Neal



By [rflower](#) on Thursday, August 24, 2000 - 09:39 pm: [Edit](#)

Oh well.. An interesting experiment anyway.. I was really looking for a better way to juggle (from my C/C++ backgrounded point of view) all of the "local" variables that my small app needs for some of the words I'm defining -- stuff that is needed only within the scope of the defining word.. If you've got any suggestions, please do tell.. I just find it difficult to tell what is on the stack and when and how to get to the nth item down to use for some PalmOS function.. It seems a bit tedious.. Thanks in advance for any helpful suggestions!

-- Rick



By [Neal Bridges](#) on Thursday, August 24, 2000 - 10:37 pm: [Edit](#)

Keep the number of items on the stack to four or less, whenever possible. If you find you have more items than that on the stack, step back and factor.

Learning to factor is the hurdle. To write well in forth is to write short, well-named definitions. This isn't common in C and C++, and so it's a bit of a transition when coming from those environments.

If you have a troublesome definition, post it and we'll have a go at factoring it. That might be helpful.

Neal



By [nrflower](#) on Friday, August 25, 2000 - 06:50 pm: [Edit](#)

Ok.. now for the next phase. I've trashed the OOP stuff and have gone back to traditional Forth.. So, I've got something a little bit similar to some of my earlier models and when I invoke the word "KeyRecord_CopyRecToLocalBuf", I get a bus error message from Pose. I've stepped through line-by-line by hand doing the same steps (except for the 2r> stuff) and it mostly works.. I'm using the return stack to temporarily store a copy of the return value from MemHandleLock to use later in the word.. Any ideas on what I'm doing wrong? Also, my stack diagrams might be a little off..

```
\ KeyRing 2000-23-AUG 15:16 REF
```

```
needs safe
```

```
needs core-ext
```

```
needs dbase-ext2
```

```
needs ids
```

```
needs zstrings
```

```
needs hex-dump
```

```
needs Mem
```

```
\ Declare all types & variables..
```

```
ID Gkyr          \ database type      ID
```

```
ID Gtkr          \ database Creator ID
```

```
2variable dbr      \ Database reference
```

```
create MD5digest align 16 chars allot
```

```
create BigBuff    align 32 chars allot
```

```
: KeysDBname z" Keys-Gtkr" ;
```

```
\ Open the existing GNU Keyring Database
```

```
\ Do not create it if it doesn't exist.
```

```
: openKeyringDB ( -- )
```

```
  z" Keys-Gtkr" dmModeReadOnly Gtkr Gkyr
```

```
  OpenDB dbr 2! ;
```

```
\ Close the GNU Keyring Database
```

```
: closeKeyringDB ( -- )
```

```
  dbr 2@ closeDB ;
```

```
\ Allocate a String Handle of the specified length
```

```

: AllocateStrHandle ( u -- HANDLE )
  (allocate) drop ;

\ Create an MD5 Hash of the passed in string
\ and return the hash on the stack, along
\ with the resulting length
: MD5 ( c-addr u -- c-addr2 16 )
  MD5digest >abs 2swap swap >abs
  EncDigestMD5 2drop ( * fix * )
  MD5digest 16 ;

\ Get a record handle for the specified Keyring record
: KeyRecord_QueryRec ( recidx -- recHandle )
  dbr 2@ query-record ;

\ Copy a database record into a local storage buffer
: KeyRecord_CopyRecToLocalBuf ( c-addr recHandle -- )
  MemHandleLock 2dup 2>r 2swap
  StrCopy 2drop 2r> MemHandleUnlock ;

\ Copy a database record into

\ Dump out the Keyring Header for the specified record
: testkey ( recidx -- )
  KeyRecord_QueryRec 2dup
  BigBuff >abs 2swap ;
  \ KeyRecord_CopyRecToLocalBuf ;

```



By [Neal Bridges](#) on Friday, August 25, 2000 - 07:07 pm: [Edit](#)

You need to unlock the handle, not the pointer it returns. Try this:

```

: record>buffer ( c-addr. recHandle. -- )
  2dup 2>r MemHandleLock
  2swap StrCopy 2drop
  2r> MemHandleUnlock drop ;

```

Note that I've added a drop after MemHandleUnlock, and added '.' to the end of the stack descriptions to indicate that each parameter is two cells on the stack. I've also renamed the function to something more general, so that it can be easily re-used in other apps.

Neal



By [Neal Bridges](#) on Friday, August 25, 2000 - 07:16 pm: [Edit](#)

An afterthought -- I'd re-order the parameters as

```
record>buffer ( recHandle. c-addr. -- )
```

to keep it in line with the common 'what, where' structure of Forth words that move data.

Neal



By [nrflower](#) on Friday, August 25, 2000 - 07:55 pm: [Edit](#)

Wow! What a quick reply! Thanks for the great info.. I'll see about plopping in the change tomorrow morning! Thanks for the other "good" forth programming tips also!

-- Rick



By [nrflower](#) on Saturday, August 26, 2000 - 02:17 pm: [Edit](#)

Neal,

With your second comment above, does that mean that the routine would now be written as follows -- I think I got it right.

```
: record>buffer ( recHandle. c-addr. -- )
  2swap 2dup 2>r MemHandleLock
  2swap StrCopy 2drop
  2r> MemHandleUnlock drop ;
```

-- Rick



By [Neal Bridges](#) on Saturday, August 26, 2000 - 06:18 pm: [Edit](#)

Looks right at a glance, Rick.

Neal



By [nrflower](#) on Saturday, August 26, 2000 - 08:33 pm: [Edit](#)

Neal,

Just another quick question.. I'd like to clone the above code into one that works for general memory (instead of specifically for strings). I've got my template (pretty much the same code), but don't really know how to go about re-arranging the stack to fit the inputs to MemMove instead of StrCopy. Since MemMove takes an extra argument, I wanted to have the stack diagram shown (neatest). However, I can't seem to find an easy way to rearrange the stack such

that the "numBytes." gets from the top of the stack to the bottom.. Any ideas, outside of using a "2variable" style of swapping?

Thanks!

```
\ Copy a record into the specified local buffer
: record>binBuffer ( recHandle. &dstP. numBytes. -- )
  2swap 2dup 2>r MemHandleLock
  2swap MemCopy 2drop
  2r> MemHandleUnlock drop ;
```



By [Neal Bridges](#) on Saturday, August 26, 2000 - 09:29 pm: [Edit](#)

Because of the constraints of the underlying system calls, the most logical choice for the stack-ordering of this word is:

```
: get-data ( numBytes. &dstP. recHandle. -- )
  2dup 2>r MemHandleLock
  2swap MemMove drop
  2r> MemHandleUnlock drop ;
```

If you want to rearrange the stack from (n. d. r. --) to (r. d. n. --), this works:

```
: 2spin ( a. b. c. -- c. b. a. )
  2swap 2>r 2swap 2r> 2swap ;
```

Neal



By [nrflower](#) on Sunday, August 27, 2000 - 12:46 am: [Edit](#)

Thanks again Neal! You make this "work" with Forth a lot more fun and interesting.. I think the greatest benefit is that you have quick turn-around for answers -- almost like having a Forth tutor (for those of us that need them) just a phone call away.. Thanks again!



By [Neal Bridges](#) on Sunday, August 27, 2000 - 01:02 am: [Edit](#)

You're welcome, Rick. I hope the forum helps to make up for the shortage of Forth learning materials out there.

Neal

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DTMF tones

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): DTMF tones



By [Mike Keesling](#) on Thursday, August 17, 2000 - 07:27 pm: [Edit](#)

Has any one out there been able to synthesize DTMF tones?



By [Dave Bennett](#) on Friday, August 18, 2000 - 02:19 am: [Edit](#)

Palm has said all along that this is not possible for a variety of reasons. I know there was quite a bit of discussion of this in the Palm Community in mid-1998. You might check one of the palm newsgroups or dejaneux for discussions on this.



By [Erwin Schomburg](#) on Friday, August 18, 2000 - 04:48 am: [Edit](#)

It is possible on TRGPro's and there are a handful of supporting applications out (search PalmGear).

/Erwin



By [Marc](#) on Wednesday, September 6, 2000 - 03:27 pm: [Edit](#)

If I recall correctly, bottom line is that DTMF needs two frequency generator. Palm hardware has only one. The TRGpro has a different sound module that can generate two frequency at the same time and hence can generate DTMF.

Marc.



By [Travis Casey](#) on Wednesday, September 6, 2000 - 04:16 pm: [Edit](#)

The Palm hardware is capable of synthesizing DTMF tones, but the speaker can't generate them clearly enough and/or loud enough. See [Peter Strobel's DTMF page](#) for more details than you ever wanted to know.

--Travis

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Has anyone used EncDigestMD5 and friends?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Has anyone used EncDigestMD5 and friends?



By [R. Flower](#) on Tuesday, August 15, 2000 - 01:51 pm: [Edit](#)

I'm trying to create an alternative to GNU Keyring for PalmOS (which is written in C), since I've got a populated database and that program crashes with some strange memory error (a long story for another day).. So, I've written some C code under Solaris to parse out the strings and decrypt them (since I know my password) successfully.. I was thinking it might be much easier to just go ahead and write a Quartus App that does the same.. Unfortunately, I've not been able to find anyone that has used the EncDigestMD5 and/or EncDES API routine.. I created some quick code yesterday and it crashed the Palm pretty hard.. Perhaps someone can enlighten me.. Just keep in mind that I'm still a Forth newbie..

\ KeyRing
needs toolkit
needs safe
needs zstrings

decimal 16 constant buff_size
create MD5Hash buff_size allot

: testmd5
z"password" MD5Hash EncDigestMD5 ;

I suspect that I'm messing up and doing the wrong kind of buffer allocation. Any comments are appreciated!

-- Rick



By [Neal Bridges](#) on Tuesday, August 15, 2000 - 01:54 pm: [Edit](#)

Have a look at the arcfour code in the library -- it uses EncDigestMD5. It should put you on the right road.

<http://quartus.net/files/PalmOS/Forth/Library/arcfour.txt>

Neal

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Text Storage

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Text Storage



By [Dave Bennett](#) on Tuesday, August 15, 2000 - 08:55 am: [Edit](#)

I have some static text that I would like to store in some fashion that I will be displaying in a table. What is the best way to store this? Each piece of text is a single word long. There are approximately 200 words that will be used in various tables in my application.

What is the best way to store this? I wish it to be separate from my program source so I can update or translate it as needed.

Dave



By [Neal Bridges](#) on Tuesday, August 15, 2000 - 09:03 am: [Edit](#)

I'd store it in a database associated with your app -- either a normal database, or a resource database, your choice.

Neal

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Any HAM Operators as programmers?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Any HAM Operators as programmers?



By [Yeshiah](#) on Monday, August 14, 2000 - 09:13 pm: [Edit](#)

Anyone here also a Ham Operator?
I use to run AX.25 Packet on an
HP200lx.

Wondered if anyone would be interested
in a similar Terminal for the Palm?



By [Dave Bennett](#) on Tuesday, August 15, 2000 - 07:09 am: [Edit](#)

I wrote Text2Morse recently. You can get it for
free at www.palmgear.com It needs Palm OS 3.0 or
better. I haven't seen much else that would be
HAM related for the Palm.



By [Jim Hendricks](#) on Tuesday, August 15, 2000 - 09:33 am: [Edit](#)

I was a US Navy Submarine radioman back a few more years than I want to
admit. With the communications background (yes including 22WPM Morse code
) I was always interested in Ham but never made the move to look into it.

Based on my communications background though, I could see many useful apps
for Ham, like Callsign tracking/logging, even a small lookup for all those codes (
forget what they're called) ie. QRK, QRU. Maybe even a calculator for calculating
antenna parameters based on freq etc.

Jim



By [Yeshiah](#) on Tuesday, August 15, 2000 - 10:21 am: [Edit](#)

AX.25 is a type of BBS via Ham frequencies.
It uses a basic RF modem with your Radio. The trick is a good protocol emulator.

there is even a Network protocol which was the for-runner to the internet and
was/is used especially in disaster situations.

If someone is interested in working on a such an emulator email me for
background and info.



By [Ed Beroset](#) on Saturday, September 2, 2000 - 01:40 pm: [Edit](#)

I'm AF4YN. I've been experimenting with APRS on the Palm. Anybody else have anything?

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PalmStats v1.26 Another Quartus Forth Application!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): PalmStats v1.26 Another Quartus Forth Application!



By [jim Purdy](#) on Monday, August 14, 2000 - 07:20 pm: [Edit](#)

You may download this original Quartus Application at the location below.

Comments please!

<http://members.home.net/seisupport/index.html>



By [jim purdy](#) on Monday, August 14, 2000 - 07:53 pm: [Edit](#)

or downloaded here.

<http://members.home.net/seisupport/PalmStats.zip>



By [Joe Watkins](#) on Tuesday, August 15, 2000 - 02:20 pm: [Edit](#)

Jim,

Is there a way to register this thing? It is a very compelling application for the palm, one of the best scientific applications I have seen, but it is quite annoying because I am not able to register it. Is there a solution to this problem?

Thanks for your input.

JW



By [Neal Bridges](#) on Tuesday, August 15, 2000 - 02:58 pm: [Edit](#)

Jim -- nice work. I'm impressed!

Neal



By [Neal Bridges](#) on Tuesday, August 15, 2000 - 03:08 pm: [Edit](#)

A side note: your web site comes up fine in Internet Explorer, but gives me a page-not-found error with Netscape. Very strange!

Neal



By [jim purdy](#) on Tuesday, August 15, 2000 - 09:47 pm: [Edit](#)

The registration is through Palmgear.com
\$13.95 I think they should have it for sale there by now.

The latest version there (1.26a) does not nag as much.

The web site/page has been fixed and updated with the latest APP and LINK.

Thanks for all the kind words and
THANKS FOR ALL THE HELP!!

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Why use "include"?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Why use "include"?



By [Tom Hayosh](#) on Saturday, August 12, 2000 - 11:05 pm: [Edit](#)

Is there any reason to use "include" rather than "needs" in the interpreter?



By [Neal Bridges](#) on Sunday, August 13, 2000 - 12:55 am: [Edit](#)

If you wish to force a file to be included at a certain point, whether or not it has already been included, you'd want to use include.

Neal



By [Tom Hayosh](#) on Sunday, August 13, 2000 - 12:41 pm: [Edit](#)

When would I want to force an include? To re-re-define a word back to its original definition maybe?



By [Neal Bridges](#) on Sunday, August 13, 2000 - 01:39 pm: [Edit](#)

I can't think of too many circumstances. You might want to be sure a file (code or data structures or both) is included at a certain point during compilation, perhaps for testing purposes, even if it has been included previously.

Neal

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M+ mysteries

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): M+ mysteries



By [Tom Hayosh](#) on Saturday, August 12, 2000 - 11:02 pm: [Edit](#)

I've been playing with the M+ word a bit since Steve Bohrer pointed it out to me. I noticed that the word is defined in double.txt, but it is also already defined when Quartus is launched. Should I delete the definition from double.txt?

Also, if I just enter M+ (or D+) in the interpreter on an empty stack, I sometimes get a fatal exception when I switch to another application, and I have to stick the pin in the back. For any given application, the first couple times I try to switch to it, the switch succeeds. After that, the exception always results from an attempt to switch to that application. + never results in an exception.



By [Neal Bridges](#) on Sunday, August 13, 2000 - 12:56 am: [Edit](#)

You're underflowing the stack by three items, modifying the lower two. This causes problems. If you wish, add M+ to safe.txt and load that in your startup; it'll then guard against trying to use it without sufficient parameters.

Neal



By [Tom Hayosh](#) on Sunday, August 13, 2000 - 12:37 pm: [Edit](#)

Thanks. I don't expect to run into this problem again. I've only gotten it when I've done it on purpose--first when I was verifying that M+ was already defined without including double.txt, and after that when I was checking what other words and applications produced the same results. I suspected this might turn out to be like, "Doctor, it hurts when twist my arm." ... "So, don't twist your arm." And I will refrain from purposely underflowing the stack.

Why is there another definition of M+ in double.txt?



By [Neal Bridges](#) on Sunday, August 13, 2000 - 01:40 pm: [Edit](#)

Oversight. It has been removed from the update release; remove it from your own in the meantime if you wish.

Neal

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Creating resource files on the mac

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Creating resource files on the mac



By [Henry Olders](#) on Friday, August 11, 2000 - 10:11 am: [Edit](#)

Newbie question: is it possible to use CodeWarrior Constructor on a Mac to create a palmOS resource file which can then be loaded into the palm? While RsrcEdit is very nice, it looks like a lot of work if there are many resources to create, and Constructor has a nice drag-and-drop visual interface. I am not a C programmer, however, and I don't have experience with CodeWarrior, other than to try out the Constructor on the CW Lite version available as a web download.

Any help would be greatly appreciated!



By [Neal Bridges](#) on Saturday, August 12, 2000 - 08:41 am: [Edit](#)

Henry -- short answer, yes I believe you can do this. I'm not a heavy CodeWarrior user, but perhaps someone else can shed some light.

Neal



By [Douglas Atique](#) on Wednesday, August 16, 2000 - 07:20 pm: [Edit](#)

I have tried the CW Lite on Windows and I found it much more complicated than RsrcEdit. Anyway, it seems to work like traditional desktop environments, where you design the resources, write the code, compile and link the code, then compile the resources to an intermediate form and link them together. That way it is not possible to create a database with the resources only. I would try to write a very simple project that does nothing and try to bundle any resources into this project. Then one must only upload the resulting prc to the handheld and open it on RsrcEdit to get the resources (or get them with Quartus resource manipulation words).

Good luck.

Regards,

Douglas

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Retain User Entry in Form

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Retain User Entry in Form



By [dino](#) on Thursday, August 10, 2000 - 01:15 pm: [Edit](#)

What is the simplest way to retain a user entry such as an odometer reading in a form after it is closed. The goal would be to enter an odometer reading at the begining of the day and again at the end of the day.

Thanks, Dean



By [Erwin Schomburg](#) on Thursday, August 10, 2000 - 01:26 pm: [Edit](#)

Assuming that you know or are able to find out how to store such a reading as a value or a piece of text into a numerical variable or a text buffer, the way to keep the value or text is to write it out into a preference record when the application exits and to read it back into the application when it is started anew.

The how tos are all in this forum's past threads, come back when you can't find what suits you or can't make ends meet.

/Erwin



By [Ron Doerfler](#) on Thursday, August 10, 2000 - 03:18 pm: [Edit](#)

Here's an example where 4 variables are intended to be saved and retrieved from the built-in Saved Preferences database of the Palm. If you change the PrefsVersion value, the old preferences will not be retained--I usually change this value when I add or delete variables to be saved. My creator ID here is TFil, so you need to put your own creator ID in its place so it saves the variables under an area for your app.

You normally would save your preferences before your app exits, and get them when your app starts up. Catching the appStopEvent to save your preferences before exiting your app can be done in a couple of ways, of which I recommend Erwin's way to others, in which EKEY is split into two functions--I believe Erwin's web page has an example of this in his Quintominos code--is that right, Erwin? (I use an outdated method of a separate event handler routine).

```
1 constant PrefsVersion
```

```
\ Preference variables
```

```
here constant prefs
```

```
variable statenum
```

```
variable teamnum
variable listnum
variable pagenum
here prefs - constant prefs-size
```

```
: save-prefs ( -- )
prefs-size prefs >abs
PrefsVersion [ID] TFile
PrefSetAppPreferencesV10 ;
```

```
: get-prefs ( -- flag )
prefs-size prefs >abs
PrefsVersion [ID] TFile
PrefGetAppPreferencesV10 ;
```

Ron



By [Erwin Schomburg](#) on Thursday, August 10, 2000 - 04:27 pm: [Edit](#)

Ah Ron, as long as you do not need to use the hardware keys (application buttons) there is absolutely no need to split up ekey into halves. The way to catch the AppStop event below was taken from a snippet Neal posted a long time ago:

```
: app-init ( --- )
get-prefs 0 = if
( your init sequence goes here )
save-prefs
then

;

: go ( --- )
decimal
app-init
begin
begin
ekey
?dup until
( your call to main event handling goes here )
again ;
\ Main event loop

-257 constant byeThrow

: exithand ( --- )
['] go catch
```



```
\ If the application is exiting,  
\ store settings:  
dup byeThrow  
= if  
save-prefs  
then  
throw ;
```

```
/Erwin
```

Add a Message

Username:

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Multi-line comments?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Multi-line comments?



By [Eugene Zalyubovsky](#) on Thursday, August 10, 2000 - 06:40 am: [Edit](#)

I've seen (in one of Forth versions for PC) special words: ":",COMMENT" and "COMMENT;".
These words ignore all text between them. Is something in Quartus? Or how can I write words like them?



By [Neal Bridges](#) on Thursday, August 10, 2000 - 10:35 am: [Edit](#)

The easiest way:

needs tools-ext

```
0 [IF]
This is comment text.
All of this will be ignored.
[THEN]
```

Neal



By [Dave Bennett](#) on Friday, September 8, 2000 - 09:28 am: [Edit](#)

This doesn't work. I have

```
0 [IF]
This program....
[THEN]
```

When I start Quartus it generates an error message.

This "unknown word"

Dave



By [Neal Bridges](#) on Friday, September 8, 2000 - 10:48 am: [Edit](#)

[IF] and [THEN] are in tools-ext -- add

needs tools-ext

to the start of your code.

Neal



By [Dave Bennett](#) on Friday, September 8, 2000 - 12:37 pm: [Edit](#)

I did add tools-ext to the start.

This works:

```
\ testy
needs tools-ext
0 [IF]
This
[THEN]
```

This doesn't:

```
\ progname
\ comments
needs condthens
needs events
needs fields
needs forms
needs graphics
needs ids
needs opg
needs pushbuttons
needs resources
needs safe
needs string>float
needs string2anyField
needs toolkit
needs tools-ext
```

```
0 [IF]
This
[THEN]
```

Something about the other include files is kicking tools-ext definitions.

Dave



By [Neal Bridges](#) on Friday, September 8, 2000 - 01:46 pm: [Edit](#)

I don't have pushbuttons, so I don't know what effect that might have, but the rest work fine here. Perhaps it's safe -- try removing it, or moving it to the end of the list.

Neal



By [E. Ross Helton](#) on Friday, September 8, 2000 - 01:48 pm: [Edit](#)

Hi Dave,

Have you tried moving the Tools-Ext line up a few lines or even to the beginning of the list?

Make it a good day!

Ross

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Pop Trigger Problem

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Pop Trigger Problem



By [jim Purdy](#) on Wednesday, August 9, 2000 - 02:48 pm: [Edit](#)

I came across this post (listed below) and it sounds EXACTLY like the problem I am having. The poptriggers in my APP are not being read when run on SOME palms.

By Eugene Zalyubovsky on Monday, June 12, 2000 - 01:11 pm

If there is another build of Quartus forth that fixes it, I would gladly pay to upgrade.

(I am a reg user and developer)

thanks Jim



By [Neal Bridges](#) on Wednesday, August 9, 2000 - 03:23 pm: [Edit](#)

No payment required, Jim. I'll send it out the interim upgrade to you tonight.

Neal



By [jim Purdy](#) on Wednesday, August 9, 2000 - 04:54 pm: [Edit](#)

Thanks .. I'll recompile and run the App
though its paces when I get the new version.

Add a Message

Username: not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

KeyDownEvent offsets

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
KeyDownEvent offsets



By [Dave Bennett](#) on Wednesday, August 9, 2000 - 10:21 am: [Edit](#)

How do I calculate the offsets for this structure?

```
struct _KeyDownEventType {  
WChar chr;  
UInt16 keyCode;  
UInt16 modifiers;  
};
```

Are all data structures starting from the same location? And I just add up the bytes that make up the individual items in this structure to get my offset?

Is WChar +8 ? as is the first item in sclExit? Or do these vary?

Thanks.

Dave



By [Neal Bridges](#) on Wednesday, August 9, 2000 - 11:32 am: [Edit](#)

Dave, have a look at this:

<http://www.quartus.net/discus/messages/23/177.html?MondayJanuary1720000141pm#POST942>

It's an implementation of the event structure, with a couple of eventtypes filled in. Add the sclExit structure, and you'll be set.

Neal



By [Dave Bennett](#) on Wednesday, August 9, 2000 - 11:59 am: [Edit](#)

I was going to bypass the sclExit stuff just like Palm does on their apps. I believe that touching the scrollbar generates a virtual PageUP and virtual PageDown. That is the only way to explain how their code works.

I'll try this out though as it looks like it'll get me to what I need.

Dave



By [Dave Bennett](#) on Wednesday, August 9, 2000 - 12:01 pm: [Edit](#)

Actually, looking higher in your reference reveals what I need to know to test my virtual Page movement thoughts.

Dave



By [Dave Bennett](#) on Wednesday, August 9, 2000 - 03:01 pm: [Edit](#)

OK, after trying a bunch of things I like the idea of the structure; but how does it get populated?

What sort of event loop does it need?

When I tried a cond then's to process ekey, it didn't work out well. If I put my keyDownEvent first, it messes up everything else. The way the Palm folk do it is to test for keyDownEvent first, then the other stuff, but I'm getting clobbered. My edit,paste fails if keyDownEvent is ahead of menuEvent in my cond statement.

Should I just use a case? or the monster if clause like those used in the Palm samples?

Dave



By [Erwin Schomburg](#) on Thursday, August 10, 2000 - 04:21 am: [Edit](#)

In conjunction with event handling a struct gets populated by the event, a Quartus (Forth) struct construct just helps you with offset calculation and interpretation of the otherwise raw assortment of bytes generated by the event.

A case is just a nested if..else..then construct of arbitrary depth in a readable and better to handle form, i.e. there is absolutely *no* difference in what the application sees, no matter if you try to keep track of nesting levels yourself or let the case do this work.

/Erwin

Add a Message

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Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Multiple Cards : Is Card 0 always available?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Multiple Cards : Is Card 0 always available?



By [Steve Bohrer](#) on Monday, August 7, 2000 - 01:51 pm: [Edit](#)

My app uses datafiles which come from Excel documents via InstallBuddy. My "file select" form uses DmGetNextDatabaseByTypeCreator to find the installed datafiles, so I think I will get them even if they wind up on another card.

But, I save the file names I find to a temporary database which I then sort and display in a list control. Is it safe to always create this "file list" database on card 0?

If not, is there a simple way to decide what card I should create it on?

For now, I've tested my code only with POSE and with a III and IIIe, not with any Visors.

Thanks,
Steve



By [Neal Bridges](#) on Monday, August 7, 2000 - 05:41 pm: [Edit](#)

Card 0 exists on all the current Palm OS devices. I think it's safe to assume it.

Neal

Add a Message

Username: name into the "Username" box and leave
the "Password" box empty. Your e-mail
address is optional.

Password:

E-mail:

Operating system question.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Operating system question.



By [jim Purdy](#) on Monday, August 7, 2000 - 09:27 am: [Edit](#)

I just finished an APP I plan to release.
The program is written on a Visor with the
current version of the OS and Quartus, 1.25R.

When testing it on a friend's Palm IIIe it runs
eratically. For example it does not store preferences, and the menu's don't work
all the time.

Are there any things I can look for?



By [Steve Bohrer](#) on Monday, August 7, 2000 - 11:14 am: [Edit](#)

Have you tried POSE? Free from www.palmOS.com, and it lets you simulate any
type of Palm, with any version of ROM. (You have to sign up as a registered
developer (also free) to download the ROM files.) I have a IIIe, and I found
POSE useful for tracking problems between OS versions (e.g. the COMPARE
bug), and for debugging callbacks.



By [Neal Bridges](#) on Monday, August 7, 2000 - 12:20 pm: [Edit](#)

Jim, I'd be happy to look at it if you wish -- I've never seen any Visor <-> IIIe
problems, so I'm curious to know what's happening.

Neal



By [Jim Purdy](#) on Monday, August 7, 2000 - 02:58 pm: [Edit](#)

I'll try the POSE from Palm tonight.
I do need to sign up as a developer at their
site (I am just signed-up at HS).

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Macros

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Macros



By [Michael Chen](#) on Sunday, August 6, 2000 - 12:39 am: [Edit](#)

Does anyone know if it's possible to write a hack that will wake up the palm, say, every hour, "push" a button on the screen (queue a pen event), and then sleep again? I'm a little dubious that it's possible because of the single-threaded nature of PalmOS, but does anyone have any clues as to how it might be done, if possible?



By [Neal Bridges](#) on Sunday, August 6, 2000 - 01:40 am: [Edit](#)

It's probably possible by setting an alarm and having the system wake up and call your code at the appropriate interval. I've never tried it, mind you.

What are you trying to achieve?

Neal



By [Erwin Schomburg](#) on Sunday, August 6, 2000 - 07:10 am: [Edit](#)

The nature of the OS alarm queue is such that you can have exactly one alarm per application in the queue. So you can have an alarm to wake up an application at a specified time, then have this same application re-schedule the alarm for further occurrences, then have your application launch or do by itself whatever you desire.

However, there are special launchcodes used by OS to wake up on alarm occurrence, to clean up the alarm queue by asking each application in turn to verify and reschedule on hotsyncs and on resets. So since Quartus generated applications do (as yet) only react on one "standard" launchcode, your clever ideas will probably fall over their feet with Quartus 1.x.y, latest when resetting or hotsyncing.

/Erwin



By [Dave Bennett](#) on Sunday, August 6, 2000 - 09:16 am: [Edit](#)

I've noticed that the OS also has an issue with handling more than one alarm set for the same time from different applications. Sometimes I get the alarms stacked, one on top of the other display-wise. And sometimes the first alarm disappears and the second takes its place.

Dave



By [Erwin Schomburg](#) on Sunday, August 6, 2000 - 04:32 pm: [Edit](#)

To see whats really stacked in the queue and what the application "ate" you can check using a handful of simple OS calls, e.g. see my Alarms? application, its at PalmGear.

/Erwin



By [Michael Chen](#) on Monday, August 7, 2000 - 07:19 pm: [Edit](#)

Hmm I am beginning to see that it won't be easy. But what I'm trying to achieve is a clicking of a button in another program, not mine. Say, for automatic mail polling or something...so I was thinking of writing a hack that would "tap" a specified area of the screen every hour or so...is this possible?

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FldScrollable

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): FldScrollable



By [Dave Bennett](#) on Friday, August 4, 2000 - 11:51 am: [Edit](#)

Has anyone used FldScrollable successfully? I have a field that is definitely scrollable in the down direction, (12 lines, 4 displayed) however

```
1 >byte  
fldText GetObjectPtr  
FldScrollable
```

always returns false.

Dave



By [Neal Bridges](#) on Friday, August 4, 2000 - 12:37 pm: [Edit](#)

Does FldScrollField scroll the field properly?

Neal



By [Dave Bennett](#) on Friday, August 4, 2000 - 01:40 pm: [Edit](#)

No. I had assumed that would work, and tried it first in my conditional statement. When it didn't work, I removed the conditional statement and just went for a scroll in a known situation. When that didn't work, I thought I'd use FldScrollable to check out what condition was happening that made FldScrollField not work.



By [Neal Bridges](#) on Friday, August 4, 2000 - 01:53 pm: [Edit](#)

Is the 'scrollbar' bit set on your field object?

Neal



By [dbennett](#) on Friday, August 4, 2000 - 02:37 pm: [Edit](#)

Yup. Or at least I set it on in ResourceEdit. And the scrollbar dynamically appears when enough text is pasted into the field to cause it to need more space than the screen display area allows.

Dave

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Reading from a database

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Reading from a database



By [Chris Bucsko](#) on Tuesday, August 1, 2000 - 05:45 pm: [Edit](#)

I'm trying to display records from a database, and I can't seem to see anything. Here's the code:

```
: show-log ( -- )
\ setup y, x as 10 * I and 5 ;
  index @ 1 Do I dup
10 * 5 Rot dbp 2@
  DmQueryRecord
\ returns hand. ;
2dup 2>r
StrLen
\ have y,x,len on stack ;
2r> WinDrawChars
beep
loop ;
```

When I try to run it, I don't get anything in the form. I've checked the variables. Index is initialized with DmNumRecords before I write a record to the database. dbp is the database pointer. I can see the records in rsrcedit, so I know they're there, but I'm stumped. I've also noticed that trying to run >r or 2>r in terminal mode causes a fatal error reset!! I'm also not sure if WinDrawChars is the proper way to display database records. If anyone has any ideas, please let me know. Thanks...



By [Neal Bridges](#) on Tuesday, August 1, 2000 - 06:31 pm: [Edit](#)

Yes, >R and friends must be used inside a definition. If you load safe it'll warn you about that.

At a glance, I see you're getting a handle back from DmQueryRecord, but not locking that handle into a pointer before you use it. You need to use MemHandleLock.

Neal



By [chris bucsko](#) on Wednesday, August 2, 2000 - 05:39 pm: [Edit](#)

Neal;

I tried the following code:

```

: show-log ( -- )
  index @ 1 Do
\ setup y, x as 10 * I and 5 ;
  I dup 10 * 5 Rot dbp 2@
\ returns hand., lock it ;
  DmQueryRecord
  MemHandleLock
  2dup 2dup 2>r 2>r
  StrLen
\ have y,x,len on stack ;
  2r> WinDrawChars
  2r> MemHandleUnlock
  beep
  loop ;

```

which should both lock and unlock the pointer. I'm presuming that I should use the locked pointer for StrLen and WinDrawChars. But now I'm getting a fatal reset error. Any suggestions? Also, any debugging tips would be helpful. I'll try running safe tonite as I single step thru the code. Many Thanx



By [Neal Bridges](#) on Wednesday, August 2, 2000 - 05:43 pm: [Edit](#)

You are using MemHandleUnlock on a pointer, and that's causing your problem. MemHandleUnlock needs to be passed the original handle.

There's also MemPtrUnlock if you wish to unlock the handle using the pointer.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Dynamic array creation

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Dynamic array creation



By [Dave Bennett](#) on Tuesday, August 1, 2000 - 04:55 pm: [Edit](#)

I'm trying to understand how to create an array within a program word.

```
: makeMyArray ( numCells name -- )  
  array ;
```

Will this work properly to allow me to build an array of a given size once I've calculated the needed size?

Is there an easier, smarter, or just better way to do this?

Thanks.

Dave



By [Neal Bridges](#) on Tuesday, August 1, 2000 - 05:09 pm: [Edit](#)

array is for use during compilation, not run-time. Look to allocate or (allocate).

Neal



By [Mike Keesling](#) on Wednesday, August 2, 2000 - 10:03 am: [Edit](#)

What would one use a compile time array for?



By [Neal Bridges](#) on Wednesday, August 2, 2000 - 10:14 am: [Edit](#)

Most commonly, arrays are defined during compilation, and used in the application when it runs.

There are circumstances under which an array is defined and used only during compilation, but it's not as common.

Neal



By [Jim Hendricks](#) on Wednesday, August 2, 2000 - 10:21 am: [Edit](#)

Just to clarify the situation.

An array which is defined during compilation is reserving memory space in the compiled code which at runtime will be used as an array. This has the effect of increasing the size of the compiled application. For dynamic arrays, one must use `allocate` or `(allocate)` which allows during runtime to reserve a chunk of memory which I can use however I want (as an array even if I define the appropriate access words). This second method reduces the size of my compiled code, but introduces the runtime memory requirement of my application, which also means I have to be prepared for the application to be unable to allocate memory.

Hope this is stated correctly, and helps in shining a light on the situation.

Jim



By [Dave Bennett](#) on Wednesday, August 2, 2000 - 03:13 pm: [Edit](#)

Thanks, guys. I understand the issues and decided to ignore them for now! I've decided on another tactic for my problem.

Dave

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Some more IR

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Some more IR



By [barak](#) on Tuesday, August 1, 2000 - 01:04 pm: [Edit](#)

It seems that the Motorola 68EZ328 UART was designed to let you do either IrDA or NRZ, and not have any direct control over the IR port. Obviously there must be a way to do this by the fact that OmniRemote exists (I don't believe most remote controls follow IrDA protocol). In any case, OmniRemote must have found some way to create different types of IR signals by either using the IrDA registers in a creative way, or using some undocumented register that gives direct control over the IR port. So, does anyone have some suggestions about how I can create non-IrDA pulses? Specifically, the method of transmission I need to use is MFM (modified frequency modulation), but if I can get direct control over the IR port I can encode the pulses myself.

I've searched through all the palm newsgroups, many websites, and have read the UART section of Motorola's 68EZ328 documentation, yet I can't find anything except a few people who asked about the same problem and answers like, "I know it can be done, but I don't know how."

Thanks.



By [Neal Bridges](#) on Tuesday, August 1, 2000 - 10:29 pm: [Edit](#)

Here's one link:

<http://www.escribe.com/computing/pcpqa/m13242.html>

And another:

<http://oasis.palm.com/dev/kb/faq/1066.cfm>

And another:

<http://www.escribe.com/computing/pcpqa/m9953.html>

Best I could find quickly; perhaps they're helpful.

Neal



By [Harry Chou](#) on Tuesday, August 1, 2000 - 11:27 pm: [Edit](#)

Hi,

I believed that it is playing tricks by using different baud rates and special byte patterns combinations of serial port to make approximate main loop frequency of IR remote.

On the other side. The IR remote receiver can filter in the desired signal.

Harry



By [Barak Shilo](#) on Wednesday, August 2, 2000 - 12:04 am: [Edit](#)

I think I may have solved my own problem, but first some replies:

Thanks for the links. Palm's explanation seemed a little sketchy. However, the one about making a fake carrier signal using the letter U (which is 1010101 in binary) at a fast baud rate sounded like a real cool idea, but not completely believable, since IrDA transmits 3/16ths bit time pulses for zeros, not complete bit times, so instead of evenly alternating, the carrier would have very spaced out "blips." In any case, I can't really say anything for sure as I don't know how that remote functions, I can only say it probably won't work for my application.

But.... as I said, I think, and hope that I may have solved the problem, you can tell me if you think I'm right. I was browsing through Motorola's MC68EZ328 User's Manual this evening, and I came across the following:

Quote:

TXD/PE5 - UART Transmit Data and Port E Bit 5. This pin is the transmitter serial output. During normal operation, NRZ data is output, but in infra-red mode, a 3/16 bit-period pulse is output for each "zero" bit transmitted. For RS-232 applications, this pin must be connected to an RS-232 transmitter. For infra-red applications, this pin can directly drive an infra-red LED. This pin defaults to a general-purpose PE5 input signal.

What caught my attention was the "general-purpose PE5" part. This is what I think I was looking for all along. I then found a convenient section in the manual that explains how to control the different registers of the Ports and another section that has the addresses for all the port registers. Prior to finding this, I couldn't find any info on accessing pins, and I thought that it might just not be allowed. If I can just flip this bit 5 of Port E, I should have complete control over the IR port. Any comments?



By [Steve Bohrer](#) on Wednesday, August 2, 2000 - 12:17 am: [Edit](#)

Caveat: I know nothing specific about the internals of the Dragonball.

But, it is probably significant that your Motorola quote refers to a "general-purpose PE5 input signal."

My sense is that if they meant that PE5 can be general purpose I/O, they would have said I/O rather than input.

It may be the case that the hardware can de-activeate the UART, and leave the pin weakly pulled up as an input, but the hardware can not stuff a signal directly into the pin driver stage that is normally controlled by the UART.



By [Harry Chou](#) on Wednesday, August 2, 2000 - 01:24 am: [Edit](#)

Hi,

I think the problem of making use of IR port in Palm to be a frequency modulated remote controller is not just the coding issue, but also the weak IR power.

The OmniRemote try to make things work. But it is not likely to be really useful. Because you must put the Palm very close to the object that you want to control. You still need additional power IR module for a realistic remote control distance.

We are now try to make a chip to solve this problems just like the one we made for IrDA access control system.

<http://www.tapspring.com> (It is still under construction, but there are some preliminary data posted)

This tiny chip(14pins) accept SIR IrDA command and play real (powered) IR remote signal(500k/38K ASK). It is mounted inside a case, and on top of Palm V. This chip also accept the PS/2 keyboard signal and send the PC keyboard data to Palm through IrDA port. May be this chip can solve your problem.

Harry



By [Barak Shilo](#) on Wednesday, August 2, 2000 - 10:15 am: [Edit](#)

Thanks Harry, but range isn't important to me as long as I can get it to work.



By [Ron Doerfler](#) on Wednesday, August 2, 2000 - 02:45 pm: [Edit](#)

Of course, the PalmIII Upgrade for the older PalmPilots provides a much more powerful IR output than the PalmIII does. Speaking of the upgrade (which I have), I understand that there is a difference in how the UART works, since the IR port is an add-on. However, I don't know the details--just a warning that whatever you do at a low level may not work with the PalmIII upgrade card.

Ron



By [Barak Shilo](#) on Thursday, August 3, 2000 - 10:55 am: [Edit](#)

Steve, I really hope you're wrong about not being able to output to that pin. I don't have any experience trying to manipulate hardware at this level, so it's likely I'm doing something wrong, but I haven't been able to get the ir to function.

I've written some code, but it doesn't seem to do anything (I can't see the ir light), although it is writing the values to the registers. Also, the 'p' word should print the register values in binary, but it prints them in decimal, I'm wondering why since it prints the values in binary every time I include the file, as it should.

If someone could look at the [Motorola documentation \(2.5 MB\)](#), the info is in section 7, parallel ports under the sub-section on Port E. Maybe someone with more experience can help me get this working, if it's possible to get it working. Thanks.

\ test

```
(hex) ffff420. 2constant pdir
(hex) ffff421. 2constant pdat
(hex) ffff422. 2constant pup
(hex) ffff423. 2constant psel
```

```
pdat c@a (binary) .
pdir c@a (binary) .
pup c@a (binary) .
psel c@a (binary) .
```

```
: on (binary) 10100011 pdir c!a
(binary) 00111010 pdat c!a
(binary) 10100010 pup c!a
(binary) 11100000 psel c!a ;
```

```
: p pdir c@a (binary) .
pdat c@a (binary) .
pup c@a (binary) .
psel c@a (binary) . ;
```



By [Neal Bridges](#) on Thursday, August 3, 2000 - 11:33 am: [Edit](#)

(binary) is a compile-time word. If you want to switch to base 2, here's how:

```
: binary 2 base ! ;
```

Then in, say, p:

```
: p
  binary
  pdir c@a .
  pdat c@a .
  pup c@a .
  psel c@a .
  decimal ;
```

Neal



By [Tim Hayward](#) on Friday, August 4, 2000 - 01:02 am: [Edit](#)

From looking at the documentation I think your best option is to set the highest possible baud rate and key the ir using the break register bit. Setting it triggers the transmitter. I dont know how the hardware between the port and the ir led works so i dont know if ir gets sent in rs232 nrz mode or not. If it does that would be where you would get most control. Otherwise you are stuck with the low duty cycle and high frequency overtone of the irda mode. Still you might have enough control to make it do what you want. I hope that makes sense.



By [Barak Shilo](#) on Saturday, August 5, 2000 - 08:57 pm: [Edit](#)

I think that all data that is sent from the UART to the ir is in IrDA mode (a 3/16ths of a bit time pulse for each zero) and that wouldn't give me a good carrier frequency if I even tried sending breaks (all zero's). I just went out and bought an HP 39G (which I'll probably return) and tried (unsuccessfully) to train OmniRemote to send a letter 'A' to the printer. I tried at a carrier frequency of 32768 Hz, which is the closest setting on OmniRemote to the setting I need (33333 Hz). I'm not sure whether the reason it didn't work is because the carrier was off or whether OmniRemote couldn't reproduce the pulses, although I hope it was because of the carrier.

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Graphics routines in Forth?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Graphics routines in Forth?



By [Darin Basil Arrick](#) on Tuesday, August 1, 2000 - 02:01 am: [Edit](#)

Is there a library, with source, of 2d and 3d graphics routines in ANS Forth (or any dialect, for that matter)? Where could I get such a thing (free, preferably).

Thanks!



By [Erwin Schomburg](#) on Tuesday, August 1, 2000 - 03:38 am: [Edit](#)

Graphics and Turtle for example. Take care that they don't bite you when you look at the modules supplied with Quartus.

8-)

/Erwin



By [Neal Bridges](#) on Tuesday, August 1, 2000 - 10:09 am: [Edit](#)

Or are you looking perhaps for the actual 'line' and 'rectangle' drawing algorithms?

Neal



By [Dave Bennett](#) on Tuesday, August 1, 2000 - 01:42 pm: [Edit](#)

When are we going to see "mobius-ring" and "sphere" in there? :)



By [Darin](#) on Tuesday, August 1, 2000 - 01:47 pm: [Edit](#)

How would they bite me? I've gone through the graphics library supplied with Quartus Forth, and I saw the line, point, etc. words. Where is WinDrawLine, WinDrawRectangle, etc.? I'm assuming those are Palm OS calls? If so, why the intermediate "line" word?

Thanks!



By [Erwin Schomburg](#) on Tuesday, August 1, 2000 - 02:18 pm: [Edit](#)

Yep, thats the beauty of Quartus, if you want to use the OS functions directly, you can use them, Quartus provides wrappers for almost all of them as Kernel words, retaining the name "officially" used by Palm. To identify and distinguish these sys traps and the stack diagrams equivalent to the parameter sequence specification, from other words in the Quartus Kernel, see the manual or Palm OS documentation.

The "intermediate" words are there to simplify parameter order, to avoid unnecessary scribbling or to hide values that are required by the OS call, but are defaults in the context, from the Quartus call. If you take e.g. "line", would you prefer to scribble "A B C D line E F A B line" or "A B C D WinDrawLine E F A B WinDrawLine"? Or see "rounded-rectangle" vs. "rectangle", WinDrawRectangle always requires the corner radius, so you can factor it out of the call if need sharp corners as regular as rounded rectangles.

/Erwin



By [Axel Pellegrin](#) on Thursday, November 16, 2000 - 09:06 am: [Edit](#)

I would like to use Forth to plot the course of a hurricane on an area of the world map. How do I get this graphic into Palm and how do I get the trajectory drawn on the map (probably using a repeat loop)? How do I input the coordinates and the time?

Thanks



By [Neal Bridges \(Nbridges\)](#) on Thursday, November 16, 2000 - 01:09 pm:

[Edit](#)

That's a moderate-sized task. A map of the world can fit on the Palm screen -- see the CityTime for an example.

My advice is to start writing the app, and then as specific issues arise, come back and raise those one at a time. That way we'll be able to give you more directed advice as you go.

Neal



By [Axel Pellegrin](#) on Thursday, November 16, 2000 - 11:34 pm: [Edit](#)

Thanks for the reply Neal but I was misunderstood. To start with it's only a small portion of the world I want to show, not the whole globe. The first question is how do I transfer this graphic from my PowerBook to the Palm? (ie which format). The other question is of course about writing the correct script to have the drawing take place. Can you help?

Thanks

Axel



[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Thursday, November 16, 2000 - 11:51 pm:

In order to import a graphic from the desktop to the Palm, you need to convert it into a Palm bitmap resource in a Palm resource database, and then HotSync that resource database into your device. I'm not very familiar with the tools available on the Mac for this; hopefully someone can jump in.

When you have the resource database HotSync'd, the code to display it is just a call to WinDrawBitmap, of which there are several examples in the discussion forum and file area. Let me know if you can't find a reference quickly, and I'll post a new example.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

MailDB

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): MailDB



By [Tom Hayosh](#) on Monday, July 31, 2000 - 10:30 pm: [Edit](#)

Hello all. I've been lurking here for a few months getting familiar with Forth, and I've come to the conclusion that this is the thing for me. My first little project is a collection of words for accessing the MailDB. I am considering a few ways setting up the words:

1. messageSubject (-- c-addr.)

This relies on an index variable being set as in newmemo.txt. The data could be retrieved by messageSubject or all data items could be retrieved when getting the current message and stored in variables.

2. messageSubject (i -- c-addr.)

This gets the index from the stack instead of from a variable.

3. messageSubject (ptr. -- c-addr.)

This gets a locked record handle from the stack.

I currently prefer 3 because I don't have to open and lock the message for each piece of data, and I don't have to use any variables. Is that the right way to approach this in Forth?

(Also, is c-addr. the correct way to express an absolute character-aligned address pointing to a zero-terminated string?)



By [Neal Bridges](#) on Tuesday, August 1, 2000 - 10:08 am: [Edit](#)

I'd use z-addr. to indicate a 32-bit address of a zero-byte delimited string.

Option 3 looks best to me, as you can build 1 and 2 from it if needed.

Neal



By [Tom Hayosh](#) on Monday, August 7, 2000 - 10:54 pm: [Edit](#)

OK, here's my first crack at this--and my first public display of Forth code I've written. This code is intended for criticism. Please DON'T go easy on me. I would like to hear any suggestions for improvement, no matter how trivial they may seem.

\ maildb

\ Inspired by Allen Chen's newmemo

needs DataMgr

needs ids

15 constant categoryMask

ID DATA ID mail

2variable _MailDBR

: MailDBR _MailDBR 2@ ;

variable attrP

: releaseMessage

(dirty index -- err)

MailDBR DmReleaseRecord ;

: recordAttr (index -- attr)

>r 0. 0. attrP >abs r> MailDBR

DmRecordInfo drop attrP @ ;

: recordCategory (index -- cat)

recordAttr categoryMask and ;

: queryMessage (index -- handle.)

MailDBR DmQueryRecord ;

: query&lockMessage (index -- ptr.)

queryMessage MemHandleLock ;

: numMessages (-- n)

MailDBR DmNumRecords ;

: openMailDB (--)

dmModeReadOnly mail DATA

DmOpenDatabaseByTypeCreator

2dup or 0= drop _MailDBR 2! ;

: closeMailDB (--)

MailDBR DmCloseDatabase drop ;

: nthZstring (z-addr. n -- z-addr.')

dup 0 > if 0 do

2dup StrLen 1+ chars s>d d+

loop then ;

: messageSize (ptr. -- ud.)

MemPtrSize ;

```

: messageDate ( ptr. -- DateType )
  @a ;

: messageTime ( ptr. -- TimeType )
  1 cells s>d d+ @a ;

: messageSubject ( ptr. -- z-addr. )
  3 cells s>d d+ ; \ addr of 1st zstr

: messageFrom ( ptr. -- z-addr. )
  messageSubject \ addr of 1st zstr
  1 nthZstring ;

: messageTo ( ptr. -- z-addr. )
  messageSubject \ addr of 1st zstr
  2 nthZstring ;

: messageCc ( ptr. -- z-addr. )
  messageSubject \ addr of 1st zstr
  3 nthZstring ;

: messageBcc ( ptr. -- z-addr. )
  messageSubject \ addr of 1st zstr
  4 nthZstring ;

: messageReplyTo ( ptr. -- z-addr. )
  messageSubject \ addr of 1st zstr
  5 nthZstring ;

: messageSentTo ( ptr. -- z-addr. )
  messageSubject \ addr of 1st zstr
  6 nthZstring ;

: messageBody ( ptr. -- z-addr. )
  messageSubject \ addr of 1st zstr
  7 nthZstring ;

```

Now a couple of my own comments and questions on this code:

1. Is it better to maintain the dbr as a 2variable or to put it on the stack when calling queryMessage, releaseMessage, recordAttr, etc.? I appreciate the convenience of not having to put the dbr on the stack, but I also don't like preconditions on words that are not expressed in the stack diagrams. One solution would be to call openMailDB within the above code, but not all of the words here require an open dbr.

2. The words `queryMessage`, `releaseMessage`, `recordAttr`, etc. are not specific to the MailDB except for the presence of the MailDBR word. Should such words be gathered into a collection of database-independent words for database records?

3. Should `nthZstring` be implemented by advancing character by character rather than using `StrLen`? How can I measure the performance of these two approaches? `nthZstring` is clearly not specific to the MailDB. Should it be pulled into a different memo?

Finally, thanks for the response to my previous post Neal. If I may generalize your comment, the principle is to keep your options open when defining words.



By [Steve Bohrer](#) on Tuesday, August 8, 2000 - 12:02 am: [Edit](#)

Two Trivial suggestions:

For adding cell sized offsets to pointers, use `M+` (M for Mixed double/single math) rather than the phrase `S>D D+`.

In `openMailDB`, why bother to test for a null handle if you just drop the result of the test? Either throw an error, or leave out the test. I've used the word `throwNull` to validate database results:

```
: throwNull ( ptr. -- ptr. )  
\ throw DmLastErr if null  
  2dup or 0=  
  if DmGetLastErr throw then ;
```



By [Tom Hayosh](#) on Tuesday, August 8, 2000 - 10:44 pm: [Edit](#)

Thanks Steve. I didn't know about `M+`. The lack of a `throw` was partly because I just forgot to put it in and partly because I wanted to get more familiar with how `throw` and `catch` work in Forth before using them. I like the `throwNull` word.

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Text Manager Functions

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Text Manager Functions



By [Dave Bennett](#) on Monday, July 31, 2000 - 05:40 pm: [Edit](#)

Am I missing something? I don't see the text manager functions listed in the quartus sysstraps. TxtCharWidth as an example.

Dave



By [Neal Bridges](#) on Monday, July 31, 2000 - 05:51 pm: [Edit](#)

Are you perhaps thinking of FntCharWidth and FntCharsWidth?

Neal



By [Dave Bennett](#) on Monday, July 31, 2000 - 06:05 pm: [Edit](#)

Not really. I can manage with those, but I was looking at the TextManager as those functions deal with similar situations regardless of the charEncoding... used.

Dave



By [Neal Bridges](#) on Monday, July 31, 2000 - 06:17 pm: [Edit](#)

The Txt* calls are part of the International Manager, which I haven't yet implemented. You're the first person to show any interest.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

TSTR ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): TSTR ?



By [Dave Bennett](#) on Monday, July 31, 2000 - 01:12 pm: [Edit](#)

Deos anyone know how tSTR is stored? Is it just a terminated string?

What I want to do is to access a tSTR and then manipulate it before displaying the contents in my application.

Thanks.

Dave



By [Neal Bridges](#) on Monday, July 31, 2000 - 02:04 pm: [Edit](#)

Yes -- tSTR resources are zero-byte terminated strings, nothing else.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Bluetooth from Quartus

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Bluetooth from Quartus



By [Michael Rowe](#) on Monday, July 31, 2000 - 10:13 am: [Edit](#)

I think that it would be interesting to write bluetooth applications on the palm platform in forth. The upcoming springboard from widcomm looks like a good possibility. Is anybody else interested in this?



By [Mike Keesling](#) on Monday, July 31, 2000 - 10:20 am: [Edit](#)

Yup,
Neal is in the process of writing the appropriate hooks to allow springboard communications.

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

LstSetListChoices & Callback

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): LstSetListChoices & Callback](#)



By [Tim Hayward](#) on Sunday, July 30, 2000 - 06:25 pm: [Edit](#)

I just finished searching the archives for LstSetListChoices and I am not at all sure where things stand.

Do you have a current stack diagram for LstSetListChoices? The one in the QForth Doc seems incorrect.

Does this work under OS3.3 when I don't explicitly use callback anywhere?



By [Neal Bridges](#) on Sunday, July 30, 2000 - 08:05 pm: [Edit](#)

Here's the link:

<http://www.quartus.net/discus/messages/23/264.html?WednesdayFebruary1620001155am#POST1577?WednesdayFebruary1620001155am>

This call doesn't need or use a callback routine of any sort; you'll have no problems with it in OS3.3.

Neal



By [Tim Hayward](#) on Wednesday, August 2, 2000 - 10:52 am: [Edit](#)

For some reason I am still having problems. Here is the code I am using:

```
4 ( number of items in list )
buffer >abs buffptr 2!
bufferptr >abs ( abs pointer to the buffer )
1001 GetObjectPtr ( pointer to list object )
LstSetListChoices ( this is the fixed one n &s. &l. -- )
1001 GetObjectPtr LstDrawList
```

The form displays but when I click on the popup trigger only the first item in the list displays then the emulator hangs and requires a reset.

When I dump buffer it is a list of items each terminated with a zero. They are character aligned z-strings and although I am only using the first 4 there are 11 present.

I have looked at it for a day and a half and I just can't see the problem. Your help is appreciated.



By [Tim Hayward](#) on Wednesday, August 2, 2000 - 11:24 am: [Edit](#)

Oops now I see I left out SysFormPtrArrayToStrings. Sorry for the disturbance in the forth.



By [Tom Hayosh](#) on Tuesday, August 22, 2000 - 09:17 pm: [Edit](#)

I've been playing around with building an array of pointers to strings from scratch because the strings I'm using (email message subjects) are not sequenced in the format required by SysFormPtrArrayToStrings. Is there any advantage to using SysFormPtrArrayToStrings, or is it

just a convenience for when the strings are appropriately sequenced? Thanks, Tom



By [Steve Bohrer](#) on Wednesday, August 23, 2000 - 04:49 pm: [Edit](#)

If your "email message subjects" are already in a database, and you are trying to draw them in a list, it is simpler and more memory efficient to use a callback to draw the list on the fly, rather than copying all the strings from the database into the heap, and then making an array of all the pointers.

To make list draw callbacks work with OSes > 3.1, use my [setupCbStack...removeCbStack](#) words to setup a data stack at A4 for your callback word. (This is not required for list draws under OS3.1, because the OS code that calls this callback happens to preserve A4. Other callbacks do require this setup even on OS 3.1)

The list draw callback routine is passed an item number and a ptr to a rectangle of the position to draw to. So, just open the specified record, and draw the text. This also saves list setup time, because your callback is called just once for each visible list item. There is no need to process every record before drawing the first list full.

I can post sample list draw callback code if that would help.



By [Tom Hayosh](#) on Wednesday, August 23, 2000 - 10:21 pm: [Edit](#)

The sample code would be a big help. Please do post it. Thanks a lot.

I was actually debating between copying the strings and locking all the DB records, and I didn't like either option. Yours sounds like a much better solution.

Will the setupCbStack and removeCbStack words work for list draws under OS3.1? If so, shouldn't I just use them in all circumstances so the code I write won't be tied to a particular OS?



By [Steve Bohrer](#) on Thursday, August 24, 2000 - 05:07 pm: [Edit](#)

setupCbStack works fine for OS3.1, it just does not happen to be necessary, because the OS does not use A4 before calling a list draw callback. So, use it for all callbacks.

The only issue is that the extra data stack for the callback uses some heap, the amount of which is set by a constant in my callbacks module (should probably be an argument to setupCbStack but I did not think of that before posting it). I use 1K or 2K, but this space is wasted when I'm not doing callbacks. However, I couldn't guess a way to find out where to set A4 into the regular datastack, so using a dedicated chunk is probably the best solution.

Anyway, here is sample code to draw records from a database into a list. The actual list setup is pretty small, but I needed a bunch of scaffolding to make a stand-alone example. In my app, I have various words to read my database format, but here I just show the main text from the ToDo database.

There are three memos: "ToDoSample" is words to open and draw a record from ToDoDB: openToDoDB, closeToDoDB, numRecs, and drawItem.

"ListDraw" is the draw callback, and a word to install it: InitList.

Finally, "ListSample" is the main go word. Of these, only "ListDraw" is generally useful; the other words are just to present a working demo.

The demo code needs a resource file of creator 'p4ap' and type 'Test', which must have a form 1100 with a list 1500 .

The draw code needs [DrawTruncChars](#) to keep the text from spilling out of the list if you have a long ToDo item.

The callback code needs [callbacks](#)

Here is the drawing code:

```
\ ToDoSample 00.8.24 SKB
\ Demo ToDo database words, for
\ ListDraw sample.
\ (Assumes OS 3.1ToDo format)
\ little error handling!
```

```
needs dataMgr
needs zstrings
```

```
needs drawTruncChars
```

```
2variable srcDBR 0. srcDbr 2!
2variable rech
```

```
: todoName z" ToDoDB" ;
```

```
: null? ( ptr. -- ptr. flg )
  2dup or 0= ;
```

```
: throwNull ( ptr. -- ptr. )
  null? if DmGetLastErr throw then ;
```

```
: openToDoDB ( -- )
  dmModeReadOnly todoName
  openDb throwNull srcDbr 2! ;
```

```
: closeToDoDB ( -- )
  srcDbr 2@ closeDB ;
```

```
: numRecs ( -- numRecords )
  srcDbr 2@ DmNumRecords ;
```

```
: queryRec ( id -- ptr. )
  srcDbr 2@
  DmQueryRecord throwNull
  2dup rech 2! MemHandleLock ;
```

```
: closeQuery
```

```

\ unlock rec handle
  rech 2@ MemHandleUnlock throw ;

\ each todoRec starts with
\ 2 bytes date, 1 byte priority,
\ then zstring
\
: skip2txt ( ptr. -- ptr+hdrSize )
  3 M+ ;

\ os rectangle components
\ rect struct is 0:x 2:y 4:wide 6:hi

: ->wide ( &rect. -- width )
  4 m+ @a ;

: ->yx ( &rect. -- y x )
  2@a ;

\ NOTE: This version uses
\ drawTruncChars so long items cant
\ spill out of the list.
\
: drawItem ( &rect. itemNum -- )
  >R 2dup ->wide rot rot ->yx
  R> queryRec skip2txt
  2dup StrLen rot rot
  drawTruncChars closeQuery ;

\ If all your items are guaranteed
\ to be narrower than the list, it
\ is simpler to just use winDrawChars
\
: drawItemNoTrunc ( &rect. item -- )
  >R ->yx R> queryRec skip2txt
  2dup StrLen rot rot
  WinDrawChars closeQuery ;

```

Okay, now here is the actual list draw callback. Once you have the drawing code, this part is pretty simple:

```

\ ListDraw 00.8.24 SKB
\ sample list draw callback routine,
\ to draw strings from a database
\ needs database interface words:
\ numRecs ( -- n )
\ drawItem ( &rect. itemNum -- )

```

needs forms
needs callbacks

1500 constant ListID

```
: ListDrawCB ( &text. &rect. item )  
\ CALLBACK for LstSetDrawFunction  
\  
  installCbStack callback  
  \ insert code to draw an item here:  
  drawItem ( &rect. item -- )  
  0. 0 \ restore stack depth  
  end-callback removeCbStack ;  
  
\ Quartus 1.2.5 bug workaround :  
\ this systrap drops 2 extra cells  
\  
: LstSetListChoices  
  2>R 2>R >R 0. R> 2R> 2R>  
  LstSetListChoices ;  
  
: (initList) ( 'listDraw num ListID -- )  
  0. rot getObjectPtr 2dup 2>R  
  LstSetListChoices  
  xt>abs 2R@ LstSetDrawFunction  
  2R> LstDrawList ;  
  
: initList ( -- )  
  ['] ListDrawCB numRecs ListID  
  (initList) ;
```

Right. If anyone is still with me, here is a word to demo the above:

```
\ ListSample 00.8.24 SKB  
\ Demo of list draw callback  
\ Shows ToDo list text  
\ Resources needed :  
\   resource file  p4ap Test,  
\     with Form 1100,  
\     containing List 1500.
```

needs resources
needs forms

needs callbacks

```

needs ToDoSample
needs ListDraw

(id) p4ap (id) Test use-resources

1100 constant FormID


: mainLoop ( -- )
  begin
    Ekey drop
  again ;

-257 constant byeThrow


: go ( -- )
  \ clean up on close
  allocCbStack \ before any callbacks!
  openToDoDB
  FormID dup showForm until-drawn
  InitList
  ['] MainLoop catch
  dup byeThrow = if
    drop closeToDoDB freeCbStack
    (bye)
  then
  throw ;

```

So, provide a suitable resource file, then include listSample, type Go, and you should see a list of your toDo items. Good luck.

 By [Tom Hayosh](#) on Thursday, August 24, 2000 - 09:59 pm: [Edit](#)

Thanks a lot, Steve. I'll try it out and let you know how it goes.

 By [Steve Bohrer](#) on Sunday, August 27, 2000 - 12:33 am: [Edit](#)

Callback stack overflow with <# #S #> ?

In experimenting with the above [List Draw Callback](#) code, I tried a simple drawItem word that just prints the item number for each thing in the list:

```

20 constant numRecs

: u>str ( u1 -- c-addr u2 )
  0 <# #S #> ;

```

```
: drawStr ( y x c-addr u -- )  
  swap >abs WinDrawChars ;  
  
: drawItem ( &rect. item -- )  
  >R 2@a R> u>str drawStr ;
```

These words would be called by listDrawCB. They work happily for items 0 thru 9, but once you scroll the list far enough so that item 10 must be drawn, the program fails in a funny way: it draws the expected items in order in the list, and then repeats item 2, and continues to draw items off the bottom of the list, until finally it hits a bus error.

My guess is that this is some sort of data stack overflow, with the effect that the OS code that calls my callback gets confused, and calls it a bunch of extra times.


Unfortunately, since callback...end-callback swap the stacks, it is difficult for me to tell how much stack space is being used. The "data stack" during the callback is the original OS-provided A7 stack, and the "return stack" during the callback is my temporary A4 stack, which was installed by my installCbStack word.

Questions (for Neal, probably):

- 1) Is there a way to tell the bounds of the OS supplied stack? Can I tell how far below the current A7 value the return stack goes?
- 2) Any thoughts on a way to verify that a stack overflow is the problem?
- 3) Is it reasonable from the code of the number formatting words (specifically #S) that converting a 10 uses lots more stack space than converting a 9? Or, maybe it is just really close to overflowing in any case.

Or, maybe this is not a stack space problem after all? (Again, drawing constant text, or text from a database, works fine. But, the number converts make the callback die.)


Thanks for any thoughts.

 By [Neal Bridges](#) on Sunday, August 27, 2000 - 12:39 am: [Edit](#)

One way to tell whether it's a stack problem would be to not use <# #S #>, but rather draw a fixed string, while placing/removing an increasing number of items on the stack.

#S uses exactly the same stack space to convert any number, mind you, so I'm not sure that stack overflow is the problem.

Neal

 By [Steve Bohrer](#) on Sunday, August 27, 2000 - 07:37 pm: [Edit](#)

Your test of putting more and more things on the stack is a good idea.

On a different tack, I made a test version of u>str using um/mod, and this makes the callback above work properly.

So, the problem seems definately related to using the <# #S #> words in a callback.

However, the one digit / two digit symptom is apparantly just coincidence: I tried displaying itemNumber 2* rather than just itemNumber, and it showed funny results on item 3, rather than item 5. So, failing on 10 not 9 is not reproducible.

Can you give a rough estimte of how much stack space you think <# #S #> should require?

Does these words do anything that strikes you as likely to be problematic in a callback?

(This is not a critical issue to me at the moment, I'm just trying to have a better sense of what is likely to work.)



By [Steve Bohrer](#) on Monday, August 28, 2000 - 02:07 am: [Edit](#)

Callback crash with <# #S #> not stack-space related.

As Neal guessed, the crash when I call <# #S #> in a callback is not due to stack space. To test, I swapped the return and datastacks again in the callback setup, so that my temporary stack was being used as the data stack during the callback. This let me instrument my stack to determine how much stack was used. By dropping various parts of the callback, I could determine which words used what amount. A callback with just the number conversion words uses just 28 bytes of stack space. When I call WinDrawChars, the stack usage jumps to about 400 bytes.

However, even the simple callback that just converts a number to a string, and then drops the results rather than drawing anything, fails when I call <# #S #> to do the conversion. The same routine succeeds when I use my number conversion word in place of <# #S #>.

Again, I don't really need <# #S #> in callbacks, because I can use a special case replacement instead, but I would like to know why this word causes such strange failures.



By [Tom Hayosh](#) on Monday, August 28, 2000 - 10:56 pm: [Edit](#)

On a positive note, I got the sample code working with my application pretty easily. Thanks, Steve. I'm now in the process of going through the sample to get a good understanding of how this callback mechanism works in Forth. I notice that "callback" is a Quartus-specific word. I gather that it was introduced primarily for systraps like LstSetDrawFunction that take a function pointer argument. What are the differences if any between a function pointer in C and a Quartus callback?



By [Neal Bridges](#) on Tuesday, August 29, 2000 - 12:00 am: [Edit](#)

I'm not sure why #S would fail in that context, Steve -- I'll trace through the code and see what's what.

Neal



By [Steve Bohrer](#) on Tuesday, August 29, 2000 - 10:11 am: [Edit](#)

Tom,

C uses a single stack for both function arguements and return addresses. The called function is free to change the values of any arguement, and it can return at most one value. Typically, in the called function, the return address is on top of the one stack, and all the other arguements are below it, at known offsets. After the call, the calling function removes from the stack any arguements it passed.

Forth uses two stacks, one for arguments, and one for return addresses. Items are always used from the top of the stack, and are "consumed" when they are used.

So, when the OS calls a C callback, it stuffs the arguments on the system stack (at A7) and calls the subroutine. At this point, the Forth return stack would have the return address, with all the arguments buried under it. The callback...end-callback words setup the Forth data stack (at R4) and data segment (at R2), move the return address out of the way, and then swap the stacks, so all the arguments are now at the top of the data stack.

The problem that my installCbStack...removeCbStack words fix is that the OS sometimes uses register A4 within the code that calls a callback function. If the OS changes register A4, then at the time of the callback, the Forth data stack does not exist. So, installCbStack sets A4 to point to a pre-allocated chunk of RAM, and this RAM serves as the data stack in the callback. Then, the builtin Callback word swaps A4 and A7, so this RAM serves as the return stack.

From this, it should be apparant why these words exist in pairs: All of the manipulations described above must be reversed before ending the callback. The original return address must be back at the top of the original A7 return stack, and this stack must have the original depth, because the OS calling function will remove the number of arguments it pushed.

Hope this helps.



By [Neal Bridges](#) on Tuesday, August 29, 2000 - 08:52 pm: [Edit](#)

Steve, unless for some reason the A5 pointer is pointing someplace else during the callback, <# #S #> look fine to me. Can you ascertain whether it's <# #> or #S that cause the problem, or only all three in combination?

Neal



By [Tom Hayosh](#) on Wednesday, August 30, 2000 - 10:56 pm: [Edit](#)

Perfect Steve. That's just what I was looking for. Thank you.

Now when doing a callback, what is really necessary is to save the data stack someplace, to use the return stack as the data stack temporarily, to establish a substitute return stack for any words the callback might call, and to restore the data and return stacks when the callback returns. Swapping the data and return stacks is a convenient way of doing this, but is not required for a single callback. But what about nested callbacks? They would work with stack-swapping, and no other solution would be anywhere near as simple.



By [Steve Bohrer](#) on Wednesday, August 30, 2000 - 11:48 pm: [Edit](#)

Tom,

I think you miss the flow a bit (or, I misunderstand you) when you say "what is necessary is to save the data stack someplace". The problem is that the OS code which has called our callback may have used register A4 for some purpose of its own, so at the time the callback routine is called, A4 is possibly not pointing to the forth data stack at all. In this case, if you use any forth word which puts a value on the stack, you will be writing to arbitry memory. The only fix I could think of was to reset A4 to point to some safe chunk of RAM. (Note that the OS routine must save our A4 value on entry, and restore it on exit. It is only during the time that the OS routine is executing that A4 may have a changed value. Unfortunately, when it calls our callback, its temporary values are in there. Only A5 (and the stack at A7) are always valid. Similarly, we must preserve and restore the registers that we change, or else we may break the code that called us.)

I think the main reason for stack swapping is that it gets the arguments which the OS has put on the return stack (the ONLY stack, as far


as C and the OS are concerned) over to the data stack where we want them for Forth. Thus, this is required for a single callback as well. Neal does the same trick in reverse for all systrap calls: we push a bunch of arguments onto the Forth data stack, and he swaps A4 and A7 to get those arguments into the spot where the OS routines will look for them.

Although the stack swaps could survive a "nested callback", my installCbStack word would die badly, because I point each callback to the same stack area, so the values from the first call would be trashed. However, I think (hope!) the OS does not in fact nest callbacks. A callback is only called in response to an OS call that your app makes; they are not called asynchronously, so there should not be any way for them to nest. Once the system calls one callback routine, it does not regain control until that callback returns. (As far as I know, no callbacks are called in response to an interrupt.)

For example, debuffer shows that my ListDrawCB callback word is called in response to "FrmDispatchEvent", as follows:

```
FrmDispatchEvent
FrmHandleEvent
LstHandleEvent
LstHandleScrollingIndicators
ListDrawCB
```

This makes sense: I click on a list scroll arrow, and the OS responds only by posting an event. Later, Neal's HandleEvent word (via Ekey) calls FrmDispatchEvent to deal with the click. Your app explicitly passes control to the OS, and then the OS can call your callback.

 By [Steve Bohrer](#) on Thursday, August 31, 2000 - 12:17 am: [Edit](#)

or #S cause callback problems.

Neal asked:

Quote:

Can you ascertain whether it's <# #> or #S that cause the problem, or only all three in combination?

I tested with a callback word that does not draw anything on the screen; it just sets up the callback, calls the number converters, and cleans up. I found that <# #>, or either one alone, would run happily: I could select any item, use the little list scroll arrows to scroll up and down for the proper number of items, and exit my app normally. However, when I tried <# # or <# #S, the app would hang on the first screen of the list, and I would need to reset POSE. (# by itself sometimes just hung, or sometimes caused POSE to complain about writing to an un-allocated chunk.)


The symptoms are the same with either # or #S. I assume #S calls #, so that seems to be the problem area.

Also, Neal wondered:

Quote:

unless for some reason the A5 pointer is pointing someplace else during the callback

If A5 was trashed, I'd expect to die much more quickly. I'd not find my stack buffer for the data stack, nor could the built-in callback code find the proper A2 value to point to the code segment. So, if A5 was gone, I do not think the callback would work ever, instead of working fine EXCEPT when I call #.

 By [Tom Hayosh](#) on Thursday, August 31, 2000 - 11:34 pm: [Edit](#)

Sorry for the confusion Steve. I was thinking out loud about what was required for the original callback arrangement before the A4 problem arose.

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Cant read a memo.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Cant read a memo.



By [Tim Hayward](#) on Thursday, July 27, 2000 - 03:11 pm: [Edit](#)

What am I missing here? I am trying to dump the first 150 bytes of memo 5

```
needs memo ( this is new-memo)
create buffer 200 allot
```

```
: go
openmemodb
150. ( 150. --- )
5 QueryMemo ( 150. &Handle. --- )
buffer >abs (150. &Handle. &buffer. --- )
MemMove . ( --- )
150 buffer type
;
```



By [Neal Bridges](#) on Thursday, July 27, 2000 - 03:13 pm: [Edit](#)

TYPE takes (c-addr len --). So you'd need

```
buffer 150 type
```

Neal



By [Tim Hayward](#) on Thursday, July 27, 2000 - 03:20 pm: [Edit](#)

I feel stupid, but I change that and I still dont get the data that I expect. Am I missing something else?



By [Neal Bridges](#) on Thursday, July 27, 2000 - 03:38 pm: [Edit](#)

Now that I look at it, yes --

You need to lock the handle coming from QueryMemo to resolve the handle into a pointer. Do this with MemHandleLock (see GetCurrentMemo in newmemo.txt as a reference). When done, release the lock with MemPtrUnlock.

Neal



By [Tim Hayward](#) on Thursday, July 27, 2000 - 03:56 pm: [Edit](#)

amazing! Thanks.

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Launch MemoPad to a Specific Memo

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Launch MemoPad to a Specific Memo



By [Dean Davenport](#) on Thursday, July 27, 2000 - 02:39 pm: [Edit](#)

I copied this code from a previous posting. What I would like to do is open a memo that has just been appended by Quartus.

```
\ launchmemo
\ This is a simple script that just launches
\ the MemoPad.
needs ids
create DmSearchStateType 16 allot
variable cardnum
2variable localid
\ Find the MemoPad application:
localid >abs cardnum >abs true
(ID) memo (ID) appl
DmSearchStateType >abs true
DmGetNextDatabaseByTypeCreator throw
\ Allocate a system-owned dynamic region:
18 constant cmdPBsize
cmdPBsize s>d MemPtrNew 2constant gpt
0 gpt MemPtrSetOwner throw
\ Launch the app:
: launchmem
gpt 0 localid 2@ cardnum @
SysUIAppSwitch throw ;
```



By [Neal Bridges](#) on Thursday, July 27, 2000 - 11:28 pm: [Edit](#)

Let me check my notes on that, Dean. You need to pass the memo number in the cmdPB, as I recall.

Neal

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Displaying bodies of text...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Displaying bodies of text...



By [Barak Shilo](#) on Thursday, July 27, 2000 - 12:28 pm: [Edit](#)

Hi,
I read the thread "Displaying bodies of text" that was about changing the title in a modal that displays a text string using FrmHelp (it defaults to "Tips"). I'm wondering if anyone knows an easy way to change it, such as the "specific tFRM resource" that Neal said there is.

If not, I'm wondering if FrmSetTitle could be used to do this, and if so, how.
Thanks.



By [jim Purdy](#) on Thursday, July 27, 2000 - 12:47 pm: [Edit](#)

Here is a code snippet i have used successfully.
It located on this site somewhere

\ titles

needs zstrings

create null 0 c,

```
: (title) ( z-addr -- )  
>abs FrmGetActiveForm  
FrmSetTitle ;
```

```
: set-title ( z-addr u -- )  
null (title)  
drop (title) ;
```



By [Neal Bridges](#) on Thursday, July 27, 2000 - 01:00 pm: [Edit](#)

That title-changing code works, but not for 'Tips' displays, as they're handled entirely by the FrmHelp routine.

I found the resource number -- it's 10400. If you create your own tFRM 10400, it will override the 'Tips' form within your app.

Neal



By [Barak Shilo](#) on Thursday, July 27, 2000 - 03:39 pm: [Edit](#)

I created a tFRM with id 10400 and the title I wanted and compiled my app, but the 'tips' title still shows up when I call something like "tSTR3002 FrmHelp". Also, even if I get this to work, is there a way to have different titles for two different strings called by FrmHelp? Thanks for the help :)



By [Barak](#) on Thursday, July 27, 2000 - 03:48 pm: [Edit](#)

Please ignore the first part of my message for a minute, I think I know why.



By [Barak](#) on Thursday, July 27, 2000 - 03:56 pm: [Edit](#)

Yeah, I forgot to put a "10400 (ID) tFRM copyrsrc" line in the make file. Now I get a reassuring "Fatal Error Form.c, Line:1272, Object not in form"

Neal?



By [Neal Bridges](#) on Thursday, July 27, 2000 - 04:17 pm: [Edit](#)

Your tFRM 10400 needs to exactly reproduce the elements in the system tFRM 10400, in the System resource database. The latest version of RsrcEdit doesn't let you browse such a large resource database, but the older versions do. Copy and paste the original resource from there, and modify it.

Neal



By [Barak](#) on Thursday, July 27, 2000 - 04:43 pm: [Edit](#)

ok, where can I find the older versions of RsrcEdit? Also, do you know if I'll be able to have two different titles? (I have a program info screen AND a help screen) Thanks.



By [Barak](#) on Thursday, July 27, 2000 - 04:51 pm: [Edit](#)

sorry, I spoke too soon, I have version 1.009 and it lets me browse through system resources...



By [Barak](#) on Thursday, July 27, 2000 - 04:54 pm: [Edit](#)

Very cool... it works... so, how do I get two different titles?



By [Neal Bridges](#) on Thursday, July 27, 2000 - 05:03 pm: [Edit](#)

The only way I can think is to have a separate resource database, and open it when you need an alternate title. Kludgy, but the PalmOS doesn't provide any clever way to do this.

Neal



By [Barak](#) on Thursday, July 27, 2000 - 09:13 pm: [Edit](#)

Wouldn't it be nicer to draw in the title? You could draw a black rectangle over the old title and then print the white, bold text title. I'm trying to figure out how to do this. I need help using WinDrawRectangle though.



By [Neal Bridges](#) on Thursday, July 27, 2000 - 09:18 pm: [Edit](#)

With FrmHelp, you can't modify the form after it's drawn, as control as already been handed over to FrmHelp.

Neal



By [Barak](#) on Thursday, July 27, 2000 - 10:00 pm: [Edit](#)

Oh well. So how would I go about using a second resource database?



By [Neal Bridges](#) on Thursday, July 27, 2000 - 10:39 pm: [Edit](#)

Just open the alternate resource database when you need it, with DmOpenDatabaseByTypeCreator -- see resources.txt as a reference.

Neal



By [Tom Hayosh](#) on Monday, July 31, 2000 - 02:51 pm: [Edit](#)

I just downloaded RsrcEdit version 1.012 last week, and it allows me to browse the system resources and copy tFRM 10400. Which version prevents browsing large DBs?



By [Neal Bridges](#) on Monday, July 31, 2000 - 03:03 pm: [Edit](#)

I'm having trouble browsing the system resource database with RsrcEdit 1.012 06/25/00 under OS3.5 on a Palm IIIc.

Neal



By [Ron Doerfler](#) on Monday, July 31, 2000 - 03:29 pm: [Edit](#)

FYI: I can browse it with RsrcEdit 1.012 under OS3.3 on a Palm III(upgrade).

Ron



By [Tom Hayosh](#) on Monday, July 31, 2000 - 03:39 pm: [Edit](#)

I have a IIIx with the original 3.1 OS.



By [E. Ross Helton](#) on Tuesday, August 1, 2000 - 09:48 am: [Edit](#)

Hi gang,

I notice you refer to RsrcEdit V1.012, however when I checked the site a few minutes ago the latest version was 1.011.

Is it a misprint in this forum or is that a newer version of RsrcEdit?

Make it a good day!
Ross



By [Ron Doerfler](#) on Tuesday, August 1, 2000 - 10:09 am: [Edit](#)

I look at the "About Onboard RsrcEdit" menu function within RsrcEdit and I see v1.012 with a date of 6/25/00. However, you're right that the last version listed on www.individeo.net is 1.011 with a date of 6/24/00. I notice that if you download the latest version, though, the .prc file has a date of 6/25/00, so you might want to download the latest and see if it really is 1.012.

Ron



By [Erwin Schomburg](#) on Tuesday, August 1, 2000 - 01:17 pm: [Edit](#)

What you get currently *is* 1.012.

/Erwin



By [E. Ross Helton](#) on Tuesday, August 1, 2000 - 01:40 pm: [Edit](#)

Thanks Gang,

I had downloaded the latest version of RsrcEdit about a week back. According to the site I have V1.011. However in looking on my Pilot and checking About RsrcEdit, I find that it is V1.012.

Thanks for bringing that up. I had downloaded the version with the manual, so both must be the same.

Make it a good day!
Ross



By [E. Ross Helton](#) on Tuesday, August 29, 2000 - 08:42 am: [Edit](#)

Hi gang,

If you haven't been out there RsrcEdit has been updated to Verion 1.013

Make it a good day!

Ross



By [Neal Bridges](#) on Tuesday, August 29, 2000 - 02:35 pm: [Edit](#)

Thanks for the info, Ross!

Neal



By [E. Ross Helton](#) on Tuesday, September 12, 2000 - 09:45 am: [Edit](#)

Hi Gang,

RsrcEdit has been upgraded to V1.014

Make it a good day!

Ross



By [Barak Shilo \(Barak\)](#) on Sunday, October 22, 2000 - 07:07 pm: [Edit](#)

Hi,

I took a vacation from Forth, but would like to bring up this topic again now. Is there a way to edit the title property of a form record (in this case tFRM 10400) from within a Quartus program? If not, is there a nice way of dynamically making a new resource on the first run of an application, so that the user won't have to transfer the extra database when installing the program. (this would also be a problem if the user tried to beam the program to another device since the database would not be beamed...) Thanks.



By [Barak Shilo \(Barak\)](#) on Sunday, October 22, 2000 - 08:43 pm: [Edit](#)

I changed my mind. It probably isn't really worth the trouble anyhow. The title on a help screen isn't something people really care about, and I've found a better use for that space without using an extra resource (or other, as Neal said, kludgy technique). I decided to go in and edit the tFRM 10400 (that I had previously copied into my resource). I deleted the title property, and then went into Field10402, and changed the settings to: top 3, height 140, Font Standard. This way I get a full extra line of text (12 lines instead of 11) on each screen and it's displayed in standard font instead of bold. I think it's a lot easier to read the text screens after I formatted them this way; they don't look so crowded.



By [Neal Bridges \(Nbridges\)](#) on Sunday, October 22, 2000 - 11:51 pm: [Edit](#)

Sounds good, Barak.

Neal

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"catching" floating point errors?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): "catching" floating point errors?



By [Jim Purdy](#) on Wednesday, July 26, 2000 - 03:19 pm: [Edit](#)

I am writting an AP which does a great deal of floating point calculations based on user input.

From time to time, this results in a "floating point error", which halt the program.

This is due to a printed message to the screen resulting in a object not in form error.

My question, how do I catch these before they print and crash?



By [Neal Bridges](#) on Wednesday, July 26, 2000 - 03:39 pm: [Edit](#)

Here's an example of catching a 'floating-point divide by zero':

```
: divide-by-zero  42e 0e f/ ;

: go
  ['] divide-by-zero catch
  ?dup if
    ( handle error here )
  drop
then
;
```

Neal

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Forms/Database example application

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Forms/Database example application



By [Alfred Salton](#) on Wednesday, July 26, 2000 - 12:46 pm: [Edit](#)

Can anyone provide example code for a forms-based database application, even a simple one? I find the combination of learning Forth & the Palm OS API a struggle without an example to follow.



By [Chris Bucsko](#) on Thursday, July 27, 2000 - 09:45 am: [Edit](#)

Although I am a 'newbie' like you, I recommend Steve Donahue's excellent tutorial available at:

<http://www.quartus.net/files/PalmOS/Forth/Contrib/>

It's called Tutorial-v1.02.zip, and is very informative. It starts very simply, and points you to some tools you can pick up off the web to get started. also check out the topic called 'My First Step' in this forum...

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Text files larger than 4K

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Text files larger than 4K



By [Ronny Svensson](#) on Tuesday, July 25, 2000 - 02:52 am: [Edit](#)

I have configuration info in a text-file that is edited on a Pc and sent down to the Palm as a Memo. The problem is that the file is growing above the 4K limit of Memo. What are my other options on sending down text-files to the Palm. Is there some way to convert the text-file to a .prc on the Pc? The content is plain text.

Ronny



By [Dave Bennett](#) on Tuesday, July 25, 2000 - 07:53 am: [Edit](#)

There are tools available to convert to doc format; which supports larger file sizes. On linux I have one called txt2pdbdoc that works well. I don't know about Windows.

Dave



By [Chris Bucsko](#) on Tuesday, July 25, 2000 - 05:41 pm: [Edit](#)

Also check <http://www.handango.com/> and search for 'Word Doc Converter'. You'll find some free and shareware programs for converting files to/from the .pdb file format, which can be viewed on the Palm using a free reader such as CSpotRun, Isilo, etc.



By [Ronny Svensson](#) on Wednesday, July 26, 2000 - 03:02 am: [Edit](#)

The files are configuration files for my application. There is no need to read them on the Palm - only my program reads the configuration files.

Ronny

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Problem with creating catagory w/ newmemo.txt

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Problem with creating catagory w/ newmemo.txt



By [dino](#) on Monday, July 24, 2000 - 05:53 pm: [Edit](#)

Today I upgraded to OS 3.5.2. I also started working with newmemo.txt. When I run test, test1, and test2 everything appears to work fine. The memo is created, found, and appended. The problem is that the memo does not show up in the Unfiled catagory. It shows up in All and has Unfiled selected in the catagory picker. But when I open it the tab that displays the catagory is blank. I've hotsynced the Palm and tried a reset, the result is the same.

Thanks,



By [Neal Bridges](#) on Monday, July 24, 2000 - 05:57 pm: [Edit](#)

Those tests in newmemo arbitrarily write the memo to category #6, whatever that happens to be. Do you have six categories or more?

Neal



By [dino](#) on Monday, July 24, 2000 - 06:06 pm: [Edit](#)

After using category five and four the memo showed up properly. I have six categories (maybe it starts with 0.) The numbering of the categories does not seem to follow the order in which they are listed. I'll have to play around with it a little.

Thanks again,

Dean

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Username: not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

O [if] . . . [then]

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): O [if] . . . [then]



By [dino](#) on Monday, July 24, 2000 - 11:44 am: [Edit](#)

I'm working w/ newmemo.txt and can't get the words in the if/then to load.
Could someone explain how the O [if] . . . [then] works.

Thanks

O [if]

: string1 z" hello world!" ;

: string2 z" abcdefg" ;

: test \ tests write in category

openMemoDB 6 string1 WriteNewMemoInCategory

closeMemoDB ;

: test1 \ tests find in category openMemoDB

6 string1 FindMemoInCategory closeMemoDB ;

: test2 \ tests appending memo

openMemoDB string2 appendcurrentmemo closeMemoDB ;

[then]



By [Neal Bridges](#) on Monday, July 24, 2000 - 01:05 pm: [Edit](#)

Change the 'O' to a '1', and that section of code will be processed instead of skipped.

Neal

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address is optional.

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Now available: ISO/ANS Forth Standard in PDF format

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Now available: ISO/ANS Forth Standard in PDF format



By [Neal Bridges](#) on Sunday, July 23, 2000 - 01:08 pm: [Edit](#)

I've added a PDF version of the ISO/ANS Forth Standard to the File Area:

<http://quartus.net/files/PalmOS/Forth/Docs/dpans94.pdf>

Neal

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Loop counter ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Loop counter ?



By [Dave Bennett](#) on Saturday, July 22, 2000 - 02:48 pm: [Edit](#)

Is there a way, in this construct,

```
0 6 DO
i ...
1 +LOOP
```

to capture the exit value of i to use for further calculations? I've done this using a variable like this...

```
0 6 DO
i ...
i myVar !
1 +LOOP
```

but was wondering if there was a "forth" way.

Dave



By [Neal Bridges](#) on Saturday, July 22, 2000 - 06:21 pm: [Edit](#)

If you needed to do a lot of that, I'd suggest redefining I:

```
variable lasti
: I I dup lasti ! ; inline
```

Neal



By [Dave Bennett](#) on Sunday, July 23, 2000 - 10:32 am: [Edit](#)

Not a lot. I just found it handy in one situation. I'd rather leave things as they are for that one exception than change it for a rarely needed purpose.



By [John Newell](#) on Monday, July 24, 2000 - 07:20 am: [Edit](#)

The only time you could exit the loop before reaching the upper loop limit would be if the loop contained a LEAVE.

How about:

```
-1 ( -- -1 )
6 0 do
i ...
```

if drop i (-- i) leave then

...

loop

(-- -1 | i)

John

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Use of tables

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Use of tables



By [Tim Hayward](#) on Friday, July 21, 2000 - 11:57 am: [Edit](#)

I am confused on how to put objects inside a table on a form. Are there any examples to look at that may help?



By [Neal Bridges](#) on Saturday, July 22, 2000 - 12:07 pm: [Edit](#)

Trevor Steele has done some work with tables; a search of the Forum should turn up some of his code.

Neal



By [Trevor Steele](#) on Wednesday, July 26, 2000 - 01:12 pm: [Edit](#)

Hi Tim

If you have any questions regarding my code feel free to ask.

Best regards

Trevor



By [Tim Hayward](#) on Thursday, July 27, 2000 - 11:12 am: [Edit](#)

Wow! now I see how they work, and I dont understand why anyone would use them rather than just create your own inside a bitmap. It doesnt look like it does anything to make life easier.



By [Trevor Steele](#) on Thursday, July 27, 2000 - 01:19 pm: [Edit](#)

Depends on what you're trying to achieve I suppose. I have found tables useful for a spreadsheet type of interface in one of my applications, where it was necessary to scroll the display as the table was larger than the palm screen. I can see how they may be too much trouble in other cases :-)

Best regards

Trevor

Add a Message

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Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Multiple fonts allowed?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Multiple fonts allowed?



By [Mike Will](#) on Thursday, July 20, 2000 - 10:45 pm: [Edit](#)

I notice that some Palm apps (eg address book) allow multiple fonts on the same screen. Others (eg mail) do not. In mail, you're only given the choice of three fonts, only one of which can be active at once.

Is this 'hard wired' behaviour? Could I somehow embed font information in an e-mail? Failing that, could I somehow hack mail with Quartus to allow such functionality?

Thanks

Mike



By [Neal Bridges](#) on Thursday, July 20, 2000 - 10:52 pm: [Edit](#)

It's a hard-wired limitation of the PalmOS. A PalmOS field can only display one font at a time. You can change which font is currently active, but you can't mix them.

Neal



By [Mike Will](#) on Friday, July 21, 2000 - 07:58 pm: [Edit](#)

Thanks Neal.

I guess Mail has a single field for its text window, which explains the uniform font. Have you ever played with iSilo? It definitely does allow multiple, simultaneous fonts (including size, italics, underlining, etc). Are they doing this with proprietary, bit-mapped coding would you say? Has anyone ever played with such wizardry with Quartus?

Cheers



By [Neal Bridges](#) on Friday, July 21, 2000 - 09:04 pm: [Edit](#)

I'd say you're right about iSilo's method.

Quartus Forth doesn't force you to use one field on the whole screen. You can write your own display routines, changing fonts/styles as you wish.

Neal

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< # #s #> How to Use it?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): < # #s #> How to Use it?



By [dino](#) on Thursday, July 20, 2000 - 11:27 am: [Edit](#)

After entering the following:

```
12345 s>d < # #s #> type
```

The display reads:

```
12345 ok
```

This is what I would expect.

But, after entering:

```
12345 s>d < # # # # [char] . #s #>
```

I expected to get 123.45 .

The display reads:

```
12345 ok
```

Could someone explain how the pictured numeric output string can be used.

Thanks,

Dean



By [Neal Bridges](#) on Thursday, July 20, 2000 - 11:54 am: [Edit](#)

You're missing a HOLD:

```
: test
```

```
12345. <# # # # [char] . hold #s #> ;
```

```
test type -> 123.45
```

Neal



By [Travis Casey](#) on Thursday, July 20, 2000 - 01:07 pm: [Edit](#)

For more information, check out the "Number to String" thread from May 24.

--Travis



By [dino](#) on Thursday, July 20, 2000 - 01:10 pm: [Edit](#)

With the HOLD added I get

```
786440[]345
```

the [] being a solid block

Dean



By [Neal Bridges](#) on Thursday, July 20, 2000 - 01:14 pm: [Edit](#)

Are you using [CHAR] outside of a definition?

12345. <# # # # char . hold #s #> type

is what you want if you're just working at the console. [CHAR] is for use inside definitions.

Neal



By [dino](#) on Thursday, July 20, 2000 - 01:19 pm: [Edit](#)

Yes! (Are you using [CHAR] outside of a definition?)
That is my problem! It now works fine. I get 12.345 .
Thanks for the quick response.

Dean



By [dino](#) on Thursday, July 20, 2000 - 01:23 pm: [Edit](#)

While we are on the subject, how would I added a string to <# #>? Such as
12345 resulting in 123.45 celcius

Dean



By [Neal Bridges](#) on Thursday, July 20, 2000 - 01:30 pm: [Edit](#)

I'd do this:

needs toolkit

create mystring 40 allot

```
: temperature>string ( u -- c-addr u )
s>d <# # # [char] . hold #s #>
mystring 0 2swap
append
s" celsius" append ;
```

12345 temperature>string type -> 123.45 celsius

Neal



By [dino](#) on Thursday, July 20, 2000 - 01:54 pm: [Edit](#)

Thanks again!

Dean



By [Erwin Schomburg](#) on Friday, July 21, 2000 - 05:39 am: [Edit](#)

Neal's last example is bound to fail. You'd need to use bracketed char ([char]) here. Only a typing error, but a probable cause for sleepless debugging sessions for those still on the steep slope of the learning curve who take the words from the master of ceremonies as source of wisdom without doubt.

8-)

/Erwin



By [E. Ross Helton](#) on Friday, July 21, 2000 - 08:39 am: [Edit](#)

Hey Erwin,

That's liable to get your Quartus merit badge points cut off. The MAN is liable to get a head of steam up (HA! HA!) :)

Make it a good day!

Ross



By [Neal Bridges](#) on Friday, July 21, 2000 - 09:42 am: [Edit](#)

Sad thing is, I tested the code, and then typed it into the Forum wrong. Ah well, live and learn. I'll edit the message now.

Neal



By [E. Ross Helton](#) on Friday, July 21, 2000 - 10:52 am: [Edit](#)

Hi Neal,

Just goes to show that computers and computer related activities will keep us on our toes.

But this is why this forum is so great! People like Erwin can feel free to point up something without fearing they will be put down. I know my little note was sort of a stab, but just to be funny.

The real truth is that all who contribute here can be assured that what they contribute will be looked up on with respect and with a watchful eye to make sure it really works.

Secondly, we have the very deep assurance that You are willing to take the credit for both good which is mostly what happens, but you will also acknowledge any less than stellar activity on your part.

That is something which not all boards and their owners can say.

So I say KUDOs to you all the way!!!

Make it a good day!

Ross



By [Neal Bridges](#) on Friday, July 21, 2000 - 11:22 am: [Edit](#)

Thanks Ross!

Neal

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How do you use asm68k?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): How do you use asm68k?



By [Darin Basil Arrick](#) on Wednesday, July 19, 2000 - 11:36 pm: [Edit](#)

I've recently become enamoured with the Palm, and spent money to buy a used IIle even though I'm currently out of work. :- (Anyway, I want to develop software on the Palm, and I'd like to have 2 ways to do it: first, a C environment on my Windows PC, and second, something native on the Palm (for killing time waiting on job interviews :-)). asm68k under the free version of Quartus Forth (which itself looks pretty neat!) would be perfect. I've got C, 68K assembly, Pascal, lots of other CPU assemblies (6502, 6510, Z80, 8051, 8088, 1802!, etc.), BASIC, a little Prolog and Lisp, etc. So I've got programming knowledge. But, I'm new to Forth.

So, finally, my question: Could someone (Neal?) write a short tutorial on loading up and using asm68k? (I'm assuming I can make standalone PRCs with the free version of Forth running asm68k; is that correct?) Something a page long would probably suffice.

Thanks a bunch! I'm having a blast with the Palm!

Darin "Basil" Arrick
basil_arrick@yahoo.com
Dallas, TX



By [Neal Bridges](#) on Thursday, July 20, 2000 - 12:21 am: [Edit](#)

I suggest first you have a look at the TickHack sources in the File Area; this'll give you some initial information, and you can come back with any questions that arise.

Neal



By [Darin Basil Arrick](#) on Thursday, July 20, 2000 - 12:50 pm: [Edit](#)

Well, that was just it: I got the TickHack

source (I've programmed 68K assembly before, so that's not the issue), but my questions are more basic.

1) I've run Quartus Forth (BTW: I'm learning some Forth now, as your product is really nice, and so is Forth!). I've "include"d asm68k. Now, how do I take a source file I've downloaded or written, like the TickHack source for example, load it in, and run the assembler?

2) When the assembler is done, is there a resultant PRC executable? I know that I would need to buy the registered version of Quartus Forth to compile Forth programs, but does asm68k generate them anyway?

I did get Steven Donahue's Quartus Forth tutorial and printed it in very small format (4 pages per 8.5x11.5 sheet). It's bigger than my Palm! :-S It looks good and I'll be going through it within the next couple of days or so.

Thanks Neal. Your product is quite nice, and it has caused me to look at a very different language than what I'm used to (mostly C). I can't afford your product right now (I'm out of work :- (), but maybe once I get on my feet you'll see a check from me.

Thanks,
Darin Basil Arrick
basil_arrick@yahoo.com



By [Neal Bridges](#) on Thursday, July 20, 2000 - 12:58 pm: [Edit](#)

To compile the TickHack Hackmaster module:

include TickHack <enter>

The evaluation version of Quartus Forth will not create a stand-alone app from your assembler code. It'll create HackMaster hacks, certainly, but that's about it. If you want to create assembler apps and turn them into stand-alone PRCs with Quartus Forth, you'll need to register. Then it's just a matter of

needs asm68k

code mycode

...

end-code

' mycode (id) MyId MakePRC My App!

Neal



By [Neal Bridges](#) on Thursday, July 20, 2000 - 12:59 pm: [Edit](#)

By the way, thanks for your kind words about Quarus Forth!

Neal



By [Darin Basil Arrick](#) on Saturday, July 22, 2000 - 05:58 pm: [Edit](#)

So, Neal, what you're saying is that it'll compile a raw file of executable object code, such as used as a Hackmaster hack, but it won't integrate in all the resources and such and make a PRC file as the commercial version will. Right? (I'm still new to the PalmOS paradigm, but I think I'm catching on.)

Thanks a bunch.

Darin "Basil" Arrick

basil_arrick@yahoo.com



By [Neal Bridges](#) on Saturday, July 22, 2000 - 06:25 pm: [Edit](#)

Right. If you're hell-bent on using the evaluation version of Quartus Forth to write stand-alone assembler apps, you'd have to write all the appropriate start-up resources, the data resource, etc.

If you register, MakePRC does all that for you. :)

Hackmaster modules are made up of only raw sections of assembler, with no supporting code; that support is provided by Hackmaster itself.

Neal



By [Darin Basil Arrick](#) on Sunday, July 23, 2000 - 01:51 am: [Edit](#)

Well, again, it's a money issue at the moment. I don't mind paying for software (especially something nice and inexpensive like Quartus Forth; you checked on prices for M\$ Visual C++

lately?!?!?!?!), when I have the money, that is.
:-)

Maybe doing everything by hand will teach me
more about PalmOS? Well, anyway... :-)

Thanks!



By [Neal Bridges](#) on Sunday, July 23, 2000 - 02:14 am: [Edit](#)

A free assembler alternative is Pila -- runs on the desktop, but it's a workable
assembler if assembler is all you want.

Neal

Add a Message

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not have an account, enter your full
name into the "Username" box and leave
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Bug? ROLL on Handspring - fatal exception

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Bug? ROLL on Handspring - fatal exception



By [David Craig](#) on Wednesday, July 19, 2000 - 08:06 pm: [Edit](#)

Hello All-

I have a copy of the evaluation version of QF on a Handspring Visor Deluxe. I had the following problem.

1. I had not loaded core-ext (should I have? see below)
2. I had the following code in a memo file (part of a low precision log10 approximation)

```
: lgr ( n -- n <log apprx 4 dec digits> )  
1000 +  
swap  
1000 -  
2dup  
2dup  
3642 roll */ / roll problem here?  
roll */  
>r  
8630 roll */  
r> + ;
```

executing this word, i. e. 2000 lgr
gives a fatal exception.

So i did a soft reset. I restarted QF and
entered 'needs core-ext' and tried each step from the console, getting a fatal
exception at the 1st 'roll' step.

so then i just tried this:

```
1 2 3 roll .s  
and I got something like  
1 2 28016 (not sure i remember exactly)
```

I tried a couple more values and got a blank screen with a line at the top. hit the
reset button in the rear of the handspring and got a blinking Palm Splash screen,
which i only got past by a HARD reset, erasing the handspring.

Any Ideas? I am about to resync.

-David



By [David Craig](#) on Wednesday, July 19, 2000 - 08:39 pm: [Edit](#)

My apologies - I got ROLL and ROT confused. I must have been plunging somewhere into memory!

The Bug was definitely of my making!

Oh well, maybe it will give Neal some info on memory protection issues . . .

Sorry, still relearning FORTH.



By [Neal Bridges](#) on Wednesday, July 19, 2000 - 08:46 pm: [Edit](#)

I could add a wrapper for ROLL in safe.txt, I suppose. I have a strong personal dislike of ROLL. :)

Neal



By [David Craig](#) on Wednesday, July 19, 2000 - 09:14 pm: [Edit](#)

I think maybe roll on an hp calculator is forth's rot. That may be the source of my confusion.

You may not need a wrapppper. I think I just sent roll into a long loop (i presume some loop construct is inside it).

If i had more patience, i might not have reset my handspring, but then Palm OS users are supposed to be impatient, no? ;-)

-David



By [Neal Bridges](#) on Wednesday, July 19, 2000 - 09:16 pm: [Edit](#)

The wrapper would be to check that there were enough arguments to allow ROLL to proceed.

Patience, they say, is a virtue :)

Neal

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Text To CNOT -- anybody got a copy?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Text To CNOT -- anybody got a copy?



By [Neal Bridges](#) on Tuesday, July 18, 2000 - 07:36 pm: [Edit](#)

I'm in search of Brian Beeler's Macintosh utility, "Text to CNOT". His page has gone 404, and I was foolish enough not to keep a copy of it.

Did any one of the Mac users out there grab a copy of this while it was up? Let me know, please.

Regards,
Neal

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Displaying bodies of text

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Displaying bodies of text



By [Dave Bennett](#) on Tuesday, July 18, 2000 - 05:19 pm: [Edit](#)

I have several bodies of text that will more than fill a screen that I would like to be able to display in an informational application. How should I go about this in Quartus Forth?

I thought perhaps a tStr, but how do I get it onto a form? so that it is scrollable?

I also considered a field with built in scrolling, but again, how do I get my text into it?

Thanks for any clues.

Dave



By [Neal Bridges](#) on Tuesday, July 18, 2000 - 05:24 pm: [Edit](#)

You could create tSTR resources for them, and display them with FrmHelp. This would display each one in a paginated form.

Neal



By [Dave Bennett](#) on Tuesday, July 18, 2000 - 05:27 pm: [Edit](#)

So the user would touch a button on my main screen that would open up a subsidiary form. How do I force the FrmHelp to happen automatically so it displays the tSTR?

Dave



By [Neal Bridges](#) on Tuesday, July 18, 2000 - 06:04 pm: [Edit](#)

Add your sections of text as tSTR resources in your resource file. Then, in your code

1000 FrmHelp

will display the resource tSTR1000,

1001 FrmHelp

will display the resource tSTR1001, etc.

Neal



By [Dave Bennett](#) on Wednesday, July 19, 2000 - 07:07 am: [Edit](#)

I realized after I disconnected what dumb question that was. :) I was thinking about it as an icon on the corner of a displayed window. I got it to work and it's doing exactly what I needed.



By [Neal Bridges](#) on Wednesday, July 19, 2000 - 11:28 am: [Edit](#)

I can understand the confusion -- usually "Tips" windows are activated by the (i) in the top left corner of a window.

FrmHelp is handy. The only downside is that each window says "Tips" at the top. You can work around that in various tricky ways, if required.

Neal



By [Dave Bennett](#) on Wednesday, July 19, 2000 - 01:26 pm: [Edit](#)

I tried to "work around that" and crashed my Palm a few times this morning. It isn't crucial for what I'm working on, but if there is an easy way to do so, please share it.

Dave



By [Neal Bridges](#) on Wednesday, July 19, 2000 - 01:33 pm: [Edit](#)

You need to define a specific tFRM resource in your own app -- I'd tell you the number of the resource, but the latest version of RsrcEdit won't let me browse the internal AMX resource database. I'll have to backtrack to an earlier RsrcEdit.

Neal

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Problem with Quartus compiled apps in Emulator

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Problem with Quartus compiled apps in Emulator



By [Mark Beckman](#) on Tuesday, July 18, 2000 - 02:10 am: [Edit](#)

While trying to track down a problem in an app I am writting I noticed the following behavior of event the simplist app (: go begin ekey drop again ;). When I exit the app the emulator (v3.0a6) I get the following message:

"UIAppShell (unknown version) reports "SystemMgr.c, Line 4192, Possible memory leak. Use the 'hd 0' command to find chunks owned by your app. These chunks have an ownerId of 2". If this is the latest version of "UIAppShell", please report this to the application author.

When I try other apps that I were compiled with Quartus from your files area I get similar results (Oracle and Duco).

Is this a problem I should be worried about, or just noise from the emulator ?

Mark



By [Mark Beckman](#) on Tuesday, July 18, 2000 - 02:12 am: [Edit](#)

Oops, I forgot to mention the ROM version I'm using:

PalmOS33-en-iii-dbg.rom



By [Neal Bridges](#) on Tuesday, July 18, 2000 - 10:15 am: [Edit](#)

That's noise from the emulator, and nothing to worry about. The memory is actually freed by the OS.

It's on my list of things to do, but not high up.

Neal

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Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Dates, times, etc.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Dates, times, etc.



By [Chris Bucsko](#) on Monday, July 17, 2000 - 05:54 pm: [Edit](#)

Here's a little memo which I've found useful in my work. I'm pretty much a newbie in Forth and Palm, and I thought this code might help others. It's based on code gathered from the discussion forum and the book 'Starting Forth'. Basically, there's three date,time type functions here: reformatting a double into hh:mm:ss format, popping up a calendar and storing a date, and formatting a date into mm/dd/yy format.

```
\ PIM-kit 7-1-00 cmb
```

```
needs facility-ext
needs zstrings
needs double
```

```
variable year
variable month
variable day
```

```
: sextal ( -- ) 6 base ! ;
```

```
: :00 # sextal # decimal 58 hold ;
```

```
: d>hms ( ud -- c-addr u )
\ converts ud to hh:mm:ss or mm:ss
2dup 3600. D< if
    <# :00 #s #>
else
    <# :00 :00 #s #>
then ;
```

```
: cal-init ( -- )
\ initialize to today :
time&date year ! month ! day ! drop 2drop ;
```

```
: title z" Select a Day" ;
```

```
: cal-popup ( -- )
\ pops up a calendar, returns date :
```



```

cal-init
title drop >abs
year >abs
day >abs
month >abs
SelectDayV10 drop ;

: date>mdy ( -- c-addr u )
\ formats date to mm/dd/yy :
<# year @ 0 # # 2drop 47 hold
    day @ 0 #s drop 47 hold
    month @ 0 #s drop #> ;

```

P.S. Neil, thanks for your reply to my DateToAscii posting. I hope I didn't make you work too hard, but I like my date>mdy...



By [Neal Bridges](#) on Monday, July 17, 2000 - 06:01 pm: [Edit](#)

Looks good. The advantage of DateToAscii is that you can pull the user's date format preference out of the preferences database, and then give him the date in the format he prefers.

Neal



By [Chris Bucsko](#) on Tuesday, July 18, 2000 - 09:31 am: [Edit](#)

Actually, now that you mention it, I've been meaning to ask you about that. Could you please provide an example of using DateToAscii using your 'dateformats' memo? I'm interested in how the enum function is used in this case. Thanks...

Chris



By [Neal Bridges](#) on Tuesday, July 18, 2000 - 01:15 pm: [Edit](#)

Here's a quick sketch:

needs dateformat

```

create DateStr 40 chars allot
variable year
variable month
variable day

```

```

: date>zstring ( d m y -- z-addr )
year ! month ! day !
DateStr dup >abs

```

```
\ a date format, hard-coded here:
  dfMDYLongWithComma >byte
  year @
  day @ >byte
  month @ >byte
  DateToASCII ;

: ztype ( z-addr -- )
  dup >abs StrLen type ;

: go
  3 7 1994 date>zstring  ztype ;
```

Neal



By [Chris Bucsko](#) on Tuesday, July 18, 2000 - 02:36 pm: [Edit](#)

Thanks!! This makes a lot of sense... One quick question, because I see this so much. Why does an address (such as DateStr in date>zstring) need to be duped before >abs? I thought the address was complete on the stack simply by invoking its name. Doesn't >abs consume the whole address when run?



By [Neal Bridges](#) on Tuesday, July 18, 2000 - 03:04 pm: [Edit](#)

>ABS does consume the address, and that's why I DUP it:

```
: ztype ( z-addr -- )
  dup      ( z-addr z-addr )
  >abs     ( z-addr z-addr. )
  StrLen   ( z-addr length )
  type     ( ) ;
```

Neal

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Floats kicking my b#\$%

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Floats kicking my b#\$%



By [Dave Bennett](#) on Monday, July 17, 2000 - 04:13 pm: [Edit](#)

I have a number on top of my stack. It is calculated based on other things, but in this case it comes down to 70. I need to multiply it by 1.732 and get back the 121 integer part of the answer so I can use it as part of a Y X screen location.

I've banged my head on this and am not interpreting what I'm seeing on the stack I guess. All I'm getting back is 70. Like it is just multiplying by the integer part of the 1.732.

I've tried storing them both in float variables and multiplying those and doing a f>d d>s but I still get back 70.

Thanks.

Dave



By [Neal Bridges](#) on Monday, July 17, 2000 - 04:19 pm: [Edit](#)

Fixed-point math is perfect for that, no floats required:

```
70 1732 1000 */ . -> 121
```

Neal



By [Dave Bennett](#) on Monday, July 17, 2000 - 04:23 pm: [Edit](#)

Well, I learned a lot about following the stack today. :)

Thanks!



By [Neal Bridges](#) on Monday, July 17, 2000 - 04:24 pm: [Edit](#)

Anytime, Dave!

Neal

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OS version < - > Quartus Forth?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): OS version < - > Quartus Forth?



By [Stefan J. Eriksson](#) on Monday, July 17, 2000 - 06:25 am: [Edit](#)

Hi,

I can't get Quartus Forth to work on my Palm IIIc with Palm Os 3.5, when I try to do something in Forth my Palm freezes...

Eg.

3 5 + . <return>

Quartus version: 1.2.1U Build 1999,03.06

All help is welcome!

Regards /Stefan



By [Neal Bridges](#) on Monday, July 17, 2000 - 08:08 am: [Edit](#)

Stefan, 1.2.1U works fine on the IIIc. What Hackmaster extensions are you running?

Neal



By [Stefan J. Eriksson](#) on Monday, July 17, 2000 - 11:18 am: [Edit](#)

It doesn't matter if I run any Hackmaster ext. or not, the symptom is the same...

(I'm sorry for poor English but since I'm Swedish this is a foreign language for me.)

/Stefan



By [Stefan J. Eriksson](#) on Monday, July 17, 2000 - 11:18 am: [Edit](#)

It doesn't matter if I run any Hackmaster ext. or not, the symptom is the same...

/Stefan - Sweden



By [Neal Bridges](#) on Monday, July 17, 2000 - 11:33 am: [Edit](#)

I'd like to be able to reproduce the problem here, Stefan. Have you tried deleting and re-installing the q4th121.prc executable?

Neal



By [Stefan J. Eriksson](#) on Monday, July 17, 2000 - 11:54 am: [Edit](#)

Yes, I've done that two times and one of them after a lowlevel reset (had to after the freeze).

But I will try one more time if you want me to.



By [Neal Bridges](#) on Monday, July 17, 2000 - 11:56 am: [Edit](#)

Are you by any chance running on a Mac? Macs have been known to horribly corrupt PRCs when unzipping them. Let me know -- I can mail you the PRC directly.

Neal



By [Stefan J. Eriksson](#) on Monday, July 17, 2000 - 11:58 am: [Edit](#)

Oh, sorry, I should have told you that to!

No, I'm on Intel - Microsoft env. Win98/NT/Win2000

/Stefan



By [Neal Bridges](#) on Monday, July 17, 2000 - 12:18 pm: [Edit](#)

What, if anything, is in your startup.quartus memo?

Neal



By [Neal Bridges](#) on Monday, July 17, 2000 - 12:19 pm: [Edit](#)

Another question: did Quartus Forth work previously and then suddenly stop working?

Neal



By [Stefan J. Eriksson](#) on Monday, July 17, 2000 - 12:23 pm: [Edit](#)

- Nothing in startup
- Newer worked...

/Stefan



By [Neal Bridges](#) on Monday, July 17, 2000 - 12:34 pm: [Edit](#)

I can't make it fail on my IIIc units here. What exactly happens -- "Fatal Exception"? Or does it just hang?

I've mailed you the PRC directly; please delete the old, install the new, and let me know. It's possible your copy is somehow corrupted.

Neal



By [Stefan J. Eriksson](#) on Monday, July 17, 2000 - 01:09 pm: [Edit](#)

It just hang and I have to make an HW reset...
Once the HW reset didn't work so I had to make
an low level reset.

Will do.

/Stefan



By [Stefan J. Eriksson](#) on Monday, July 17, 2000 - 01:15 pm: [Edit](#)

Same problem with the "new" file...

/Stefan



By [Neal Bridges](#) on Monday, July 17, 2000 - 01:27 pm: [Edit](#)

How much free RAM is available on your IIIc?

Neal



By [Stefan J. Eriksson](#) on Monday, July 17, 2000 - 01:59 pm: [Edit](#)

Right now: 4870K



By [Stefan J. Eriksson](#) on Monday, July 17, 2000 - 02:31 pm: [Edit](#)

It's working now!

I deleted some apps from my Palm and after that
QForth started to work.

The bad thing is that I did delete more then one
app before testing QForth so I'm not sure which
app that caused the trouble...
It could have been PocketC or TextPlus but I'll

install my apps again one at a time and try QForth after each app. I hope I'll be able to pinpoint the failing app so that I could inform you...

Now when I got the demo version of QForth working I will try it out for my needs and if it is OK I'm going to reg. it.

Best Regards and thank you for all the help!
/Stefan



By [Neal Bridges](#) on Monday, July 17, 2000 - 02:32 pm: [Edit](#)

1. So Quartus Forth starts up correctly, logo is displayed, and then the prompt, and you can enter commands, but when you enter a Graffiti Return it hangs?
2. Does any sequence of commands cause this to happen? Does WORDS do it?
3. What about no commands, but simply Return?
4. If you have a simple

.(Hello)

in a "\ startup.quartus" memo, does it display "Hello" when you start Quartus Forth?

5. Do you have any memos at all in your MemoPad?

Neal



By [Stefan J. Eriksson](#) on Monday, July 17, 2000 - 02:54 pm: [Edit](#)

1. - Yes
2. - Don't know
3. - Yes
4. - Don't know
5. - Yes, quit a lot including the QForth lib.

(But it's working now)

/Stefan



By [Neal Bridges](#) on Monday, July 17, 2000 - 03:39 pm: [Edit](#)

It's working now?

Neal



By [Neal Bridges](#) on Monday, July 17, 2000 - 04:25 pm: [Edit](#)

Hehe. Nevermind, looks like you were posting 'it's working' while I was posting additional questions.

I'd like to know which app caused the problem. My guess: TextPlus. I'll have to check it out.

Neal



By [Stefan J. Eriksson](#) on Tuesday, July 18, 2000 - 05:38 pm: [Edit](#)

It was the TextPlus app, Qforth hangs if I have the function "TextPlus anywhere" active.

/Stefan



By [Neal Bridges](#) on Tuesday, July 18, 2000 - 05:42 pm: [Edit](#)

Thanks Stefan. I'll see what can be done.

Neal

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Callbacks in OS >= 3.3 vs 3.1

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Callbacks in OS >= 3.3 vs 3.1



By [Steve Bohrer](#) on Monday, July 17, 2000 - 01:03 am: [Edit](#)

A forum keyword search for "callback" gives a few examples of trouble under OS 3.3. Is this a generic problem with callbacks? Or, are my problems with a simple listDraw probably due to my code rather than the callback mechanism?

Specifically, I'm drawing the items of an empty list with records from a database. I call LstSetListChoices with the number of records and a nil "itemsText" ptr. I use LstSetDrawFunction to pass my callback, which draws the text from the record at idx "itemNum" into the specified rectangle.

This seems to work well for OS 3.1, and gets arbitrary errors ("Invalid Font", "Application has directly read processor registers", etc.) quickly under OS 3.3. (The code works for as many hundreds of thousand gremlins as I let it with POSE OS 3.1, but dies after a few manual clicks on the list scroll arrows under OS 3.3.)

I would like some clarification about what I can and can't do to the stack in a callback:

If the stack is exactly the same when I call end-callback as it was when I called callback, is that enough? Or, must I never disturb the passed arguments? (e.g. can I do a >R to get the top arg out of the way while I use a middle one, as long as I dup what I use, and then put the top one back at the end? Or, must I PICK the middle ones out so SP never gets below the starting depth?

Next, a normal C function is allowed to scribble all over the contents of its arguments, although it can't change the number of them. Does this mean that as long as I've got the right number items on the stack at exit, I can change the values as I wish? Or, does the Metrowerks compiler do special magic for callback functions to prevent them from altering the contents of their arguments?

Steve



By [Neal Bridges](#) on Monday, July 17, 2000 - 08:21 am: [Edit](#)

You have it right; the depth of the return stack must stay the same, but the values on it can change.

I'm working out why 3.3 broke the callback mechanism. I have a few clues, and I'll keep you posted.

Neal



By [Steve Bohrer](#) on Monday, July 17, 2000 - 10:02 pm: [Edit](#)

Sorry to seem nit-picky, but I'm not understanding your response:

Quote:

I'm working out why 3.3 broke the callback mechanism.

Are you saying that callbacks in general do not work on OS 3.3, or that you are working on my specific problem?

Quote:

You have it right; the depth of the return stack must stay the same, but the values on it can change.

The depth must stay the same when I return, or it can't ever get lower than it is when I'm called?

Also, you say "the return stack". Do you mean, "the return stack that callback swapped to the data stack, or are you talking specifically about use of >R and R>? I was talking about the regular data stack.

Steve



By [Neal Bridges](#) on Tuesday, July 18, 2000 - 01:04 pm: [Edit](#)

Your specific problem is related to Quartus Forth callbacks under 3.3 -- there are some issues with 3.3 and callback/end-callback that I'm investigating.

When I say 'return stack' -- I mean the place where the callback arguments live. callback temporarily swaps the return and data stacks until end-callback, so what I'm referring to as the 'return stack' is actually the data stack, inside a callback.

Neal



By [Steve Bohrer](#) on Thursday, July 27, 2000 - 04:56 pm: [Edit](#)

Neal,

I'm sure you are way ahead of me on this, but apparently the trouble is that the OS routine that calls my listDraw callback has trashed A4 before calling my callback. Thus, our Forth data stack is not available. (I'm sure the OS call properly restores A4 when it exits, but that doesn't help my callback.)

This is an issue mentioned in the PalmOS topIssues for OS3.5 page:

Quote:

Problem Symptom:

Callbacks written in assembly, or by a version of gcc which relies upon register A4 being set automatically, now crash.

Problem Cause:

Some applications were written in such a way that they assumed that the A4 register, or some other register, was preserved or set to a particular value by the system when invoking a callback routine. In short, they were getting lucky since nothing was guaranteeing this behavior, and in newer versions of the OS the register may have been used for some other purpose by the routine calling the callback.

Solution:

A5 is the register reserved for global variable access. The other registers are not guaranteed to be preserved. Change the code to get the information via reliable methods. (Sometimes the Feature Manager may be appropriate.)

So, I'm thinking as a workaround, I can allot a chunk of ram for a temp stack (I don't need much stack space in my callback) and, in my callback, preserve the OS's A4 value, then set A4 to point to my temp stack, and then call the normal callback ... endcallback stuff, and finally restore the OS's A4 value.

But, I'm not sure the best way to find my temp stack from inside my listDraw callback routine. Using the normal variable call would trash the data at A4.

Is there away to get the variable's A5 offset without a stack push?

Can I create the variable at a known place, so that I can just use a constant offset?

I'm not sure about Palm's suggestion of using a feature, as I fear that this might be a bit much overhead for each list draw, but I suppose I should try it first and see if it is too sluggish.

Thanks for any hints.



By [Steve Bohrer](#) on Thursday, July 27, 2000 - 05:42 pm: [Edit](#)

Uh, I forgot about the A7 return stack. I think I can have a small code word that pushes A4 to the a7 stack, and then copies a7 to a4 so that I can use regular Forth variables to locate my temp stack buffer. Then I can set a4 to point to my buffer, and run my working OS3.1 callback routine.

I'll see if I can make this work. Seems conceptually clear, but I've not used the Forth assembler yet...



By [Neal Bridges](#) on Friday, July 28, 2000 - 02:35 pm: [Edit](#)

Steve, you're on the right track. I'm working on solutions here too.

Neal



By [Steve Bohrer](#) on Friday, July 28, 2000 - 11:51 pm: [Edit](#)

I was worried about how much space the system might want on the A7 stack, so I decided to replace callback and end-callback with my own, and not swap stacks. This means I have to rewrite my callback to pull its arguments with >R, but it seems not too bad.

I have a simple test working (i.e. a callback that does nothing, but manages to install and remove my stack without breaking anything), but then it dies in my real app, and at the moment it seems like the app needs much more space on the data stack than seems reasonable, so I am looking deeper to see what is really going on.

I would have been totally stuck on this without DeBuffer, which I found after reading the forum sections on [debugging](#). What a slick tool!



By [Neal Bridges](#) on Saturday, July 29, 2000 - 12:05 am: [Edit](#)

DeBuffer is nice, and it's Forth, too :)

Glad to have you working this problem.

Neal



By [Steve Bohrer](#) on Saturday, July 29, 2000 - 07:27 pm: [Edit](#)

I notice (again, something I read on the forum once!) that you swap stacks for all OS calls (makes sense, how else could you avoid moving all the args back and forth.)

So, that means any "temporary" stack needs to be sufficiently big for any

interrupts or whatever during the time it is swapped with the system stack.

Any suggested size?

(My problem last night with the stack needing to be bigger than I thought is due to the string conversion word #S, which needs about 400 bytes. Not that I could do it in less, but I was thinking my callback's stack only needed to be big enough for what ever few args I was passing on it, and was astounded that it kept getting trashed.)

So, I've swapped from allotting the temp stack to getting a ptr for it. My code seems to work for my specific case: I use a ListDraw callback to draw strings from database records. I'll post what I have if it passes a few more tests, but it is much ulgier than the original callback...end-callback.

For now, I don't swap stacks when I init my temp stack, but since they get swapped for traps anyways, this is pointless, and I should redo it to put the callback's args to the data stack.



By [Steve Bohrer](#) on Saturday, July 29, 2000 - 08:12 pm: [Edit](#)

Callback setup that works with OS 3.3 (in POSE, anyways)

Background:

I have an app that uses listDraw callbacks, and it is happy for many Gremlins under OS3.1, and dies painfully in the callbacks under OS3.3. This is perhaps related to the problems others have had with callbacks under OS3.3.

OS 3.3 apparantly uses the A4 register more than 3.1 does, so often during a callback, a4 does not have the Quartus data stack pointer, so the existing callback...end-callback sequence trashes arbitrary memory when it tries to use A4 as a stack.

Workaround:

Install a chunk of RAM to be the temporary data stack for the callback.

The code here is a first cut at this. It is sufficient to make my app work under OS 3.3 (yay!), but it is pretty ugly otherwise. For example, I don't know where Neal keeps track of the proper Quartus A2 value (the code pointer) so I have to grab it and stuff it in a variable so I can load it for the call back. But, I can't access any variables until I have a datastack, so I need to share the return stack for a bit to find my datastack pointer.

Also, I don't swap the data and return stacks, so I have to use the args from the return stack. I grab them with a R>, and then put a zero back as a placeholder to get the depth right.

Also, the required stack size is a guess. Testing of my app (only!) with POSE and DeBuffer shows I need about 450 bytes of stack for my callback, so 1 K could leave some room for the OS. But, enough?

But, this works well enough to be a proof of concept. Actually, I think a better approach is if I setup my datastack only, and then use Neal's callback stuff to handle the rest. I'll try that next.

To use this, call prepareCallbacks before you try to install any callbacks. Then, in each called-back word, use setupCallback...cleanupCallback in place of the normal callback...end-callback words.

```
\ callbacks 00.7.28 skb
\ setup a temporary stack for
\ callback routines to use

\ NOTE: This code depends on the
\ way Quartus ver 1.26 reads vars &
\ will probably break under new vers

needs asm68k

2variable savedCS \ copy of CS reg
2variable cbStackBase \ stack chunk
0. cbStackBase 2!
2variable cbSp \ callback stack ptr
0. cbSp 2!

\ data stack size for the callback func
\ (plus 16 bytes for register saves)
1024. 2constant cbStackSize

-256 constant noMem

: allotCbStack ( -- )
  cbStackSize memPtrNew
  2dup cbStackBase 2!
  2dup OR 0= if noMem throw then
  cbStackSize D+ cbSP 2!
  \ point to END of the stack!
  ;

: freeCbStack
  cbStackBase 2@ 2dup OR if
  memChunkFree
  0. cbStackBase 2! 0. cbSP 2!
  throw
```

```

    else 2drop then ;

code saveCS
\ save A2 to a 2 var
  prefix
  ] savedCS [      \ tos gets offset of var
  andi .l (hex) 0ffff. tos
  move .l cs 0 tos ds di)
  move .w sp )+ tos
end-code

: prepareCallbacks ( -- )
\ store CS value and ptr to stack buf
  saveCS
  allotCbStack
  ;

code setupCallback
\ save regs, setup temp stack
\ Set CS to saved value
\ Set SP to cbBuf (from 2var cbSp)
\ Move callback's ret addr to stack
\ Call back args are on RETURN STACK
  prefix
  move .l cs rp -)      \ preserve regs
  move .l tos rp -)
  move .l sp rp -)
  move .l rp sp          \ both stacks @ rp
  moveq .l 0 tos
  ] savedCS [           \ offset of saved cs
\ addq 2 sp
  move .l 0 tos ds di) cs \ setup cs
  ] cbSp [              \ offset of temp sp
\ addq 2 sp
  move .l 0 tos ds di) sp \ & cbBufEnd
  move .l rp )+ sp -)    \ orig sp
  move .l rp )+ sp -)    \ orig tos
  move .l rp )+ sp -)    \ orig cs
  move .l rp )+ sp -)    \ orig return adr
end-code inline

code cleanupCallback
\ data stack must be same and
\ rp must be same depth as after
\ setupCallback
\ Restore OS regs from cbStack
  prefix

```

```
move .l sp )+ rp -) \ orig return
move .l sp )+ cs
move .l sp )+ tos
move .l sp )+ sp
end-code inline
```



By [Neal Bridges](#) on Sunday, July 30, 2000 - 12:40 pm: [Edit](#)

Steve, thanks very much for that, it's helpful. Well done!

Neal



By [Steve Bohrer](#) on Sunday, July 30, 2000 - 11:25 pm: [Edit](#)

Simpler fix for OS3.3 callbacks

This is a revised version of my post above, which uses Neal's callback...end-callback. Thus, my code only has to deal with installing and removing the temporary stack, not with the CS pointer.

So, in the main program, before installing any callbacks, call `allocCbStack` . Then, in the callback, bracket Neal's functions with `installCbStack` and `removeCbStack`, e.g.

```
: someCalledBackWord ( -- )
  installCbStack callback
  \ body of callback function,
  \ be sure to leave datastack depth same
  \ as it was
  end-callback removeCbStack ;
```

Finally, if you want to be extra tidy, call `freeCbStack` before your app quits. The OS will reclaim the memory in any case, so this is not really required.

Again, this code makes my app with ListDraw callbacks work under OS3.3. I'd be curious to hear if it helps anyone else who is stuck with callbacks in 3.3.

Note that my choice of stack size is arbitrary: I looked with `deBuffer` to see what I used, and then added a few hundred bytes; more may be required. (For instance, what if the Palm starts receiving a beamed file while my callback is running? Does that use a lot of stack space?)

And, `installCbStack` could be smaller if it used a kernel global for the callback SP, rather than needing to use the stack to fetch a regular forth var.

```

\ callbacks 00.7.30 skb
\ setup a temporary stack for
\ callback routines to use

\ NOTE: This code depends on the
\ way Quartus ver 1.26 reads vars &
\ will probably break under new vers

```

```

\ USAGE:
\ In main program, before any
\ callbacks:
\   allocCbStack
\ In each callback function:
\   installCbStack callback
\   [... body of function]
\   end-callback removeCbStack
\ At main program exit:
\   freeCbStack

```

needs asm68k

```

2variable cbStackBase \ stack chunk
0. cbStackBase 2!
2variable cbSp        \ callback stack ptr
1. cbSp 2! \ bus err if not initd

```

```

\ data stack size for the callback func
\ (plus 16 bytes for register saves)
1024. 2constant cbStackSize

```

-256 constant noMem

```

: allocCbStack ( -- )
  cbStackSize memPtrNew
  2dup cbStackBase 2!
  2dup OR 0= if noMem throw then
  cbStackSize D+ cbSP 2! ;

```

```

: freeCbStack
  cbStackBase 2@ 2dup OR if
    memChunkFree
    0. cbStackBase 2! 1. cbSP 2!
    throw
  else 2drop then ;

```

code installCbStack

```

\ save SP & TOS, setup temp stack
\ call this FIRST in callback func
\ after this, call "callback"
prefix
move .l tos rp -) \ preserve regs
move .l sp rp -)
move .l rp sp      \ both stacks @ rp
moveq .l 0 tos
] cbSp [           \ offset of temp sp
move .l 0 tos ds di) sp \ install sp
move .l rp )+ sp -) \ orig sp
move .l rp )+ sp -) \ orig tos
end-code inline

```

```

code removeCbStack
\ Call this after "end-callback"
\ Restores OS regs from cbStack
prefix
move .l sp )+ tos
move .l sp )+ sp
end-code inline

```



By [Steve Bohrer](#) on Sunday, July 30, 2000 - 11:38 pm: [Edit](#)

Easier argument use for callbacks

In messing with callbacks, I found that in my case it was much simpler (and cleaner and easier to follow) to just use the callback's args the way I would in any normal function, and then restore the original depth at the end by pushing zeros or double zeros.

For example, in a list draw callback, the OS passes a rect ptr and an item number. In my first versions, I did extra dups and >Rs to keep the original item number around, and the same for the rect ptr.

But, there is no need for this: C functions can trash the values of their arguments. However, they can't change the stack depth, because the calling code will remove the args it passed.

So, now I just use the item number, and then use the rect ptr, and then do a 0 0. to adjust the stack depth before I exit.

Stuffing the zeros is certainly less code than the stack manipulations required to preserve the original args.



By [Neal Bridges](#) on Monday, July 31, 2000 - 11:16 am: [Edit](#)

You beat me to wrapping your code around callback/end-callback; thanks.

Right -- for most callbacks, the stack just has to remain balanced. I'm working on a way to do that automatically.

Neal



By [Steve Bohrer \(Skb\)](#) on Saturday, October 21, 2000 - 12:58 am: [Edit](#)

AllocCbStack with "Callback stack" size as an argument

Since posting the above, I've changed my version to take the stacksize from the stack, rather than as a fixed constant. (Of course, if you've actually been using this code, you can't make this change without changing your existing calls to allocCbStack, or making a wrapper)

```
\ USAGE:
\ In main program, before any
\ callbacks:
\     stackSize allocCbStack

: allocCbStack ( u -- )
  0 2dup memPtrNew
  2dup cbStackBase 2!
  2dup OR 0= if noMem throw then
  D+ cbSP 2!
  ;
```



By [Daryl Lee \(Daryl\)](#) on Tuesday, October 24, 2000 - 12:11 pm: [Edit](#)

Now that I'm trying to use a callback function in my quest for sorting, I've read this thread, and I want to be clear on one thing. The SysQSort documentation includes a pointer to a compare function, with a definition:

```
typedef Int16 DmComparF (void *, void *, Int16 other,
SortRecordInfoPtr, SortRecordInfoPtr, MemHandle appInfoH);
```

The only two arguments I care about on the incoming stack are the two pointers, but on the return side, I also have to think about the returned Int16 (which in this case is a boolean). How do I account for this value? My inclination is to put it on top of the original stack, which I have been careful to maintain. But I tried that and had to dig out my local paperclip to reset my device.



By [Steve Bohrer \(Skb\)](#) on Tuesday, October 24, 2000 - 02:03 pm: [Edit](#)

Daryl,

The word D0 takes a long from the stack and puts it to register D0, where the OS will expect to find it. I posted a [sample of SysQSort](#) in your sorting thread which shows this in the compare function.



By [Steve Bohrer \(Skb\)](#) on Wednesday, October 25, 2000 - 10:51 am: [Edit](#)

Correction: D0! moves a long from the stack to register D0.

The word D0 moves register D0 to the top of the stack.

Oops.



By [Neal Bridges \(Nbridges\)](#) on Wednesday, October 25, 2000 - 12:11 pm: [Edit](#)

Right! I missed that too.

Neal



By [Steve Bohrer \(Skb\)](#) on Thursday, November 9, 2000 - 11:54 pm: [Edit](#)

Callback fix size vs. speed trade off: The main downside of my callback "fix" above is that it needs an extra 2k or so of RAM to be the stack for the callback function.

This is a waste, because the "real" stack is still there, it is just that some OS function (the one that called our callback function) has changed the value of A4, so we don't know where we can safely start the callback's stack pointer.

My "fix" works around this by pointing to another chunk of RAM instead. But, if we saved the value of A4 to a kernel variable before calling an OS trap, then our callback code could easily use the regular datastack.

Is this a better way to go? For code that does use callbacks, it could save a couple of K of RAM. But, the price is adding an extra instruction to every SYSTRAP call, e.g. MOVEA.L A4, xxx(A5) , where xxx is the offset of the kernel variable.

Almost all of the time, this move would be wasted, as most traps don't call a callback. But, when a callback function is invoked, it could simply setup A4 with the saved value.

Neal may well have already fixed callbacks for version 1.3.0, possibly in a way with less overhead than what I've come up with.

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GOTO for Quartus Forth

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): GOTO for Quartus Forth



By [Neal Bridges](#) on Sunday, July 16, 2000 - 07:14 pm: [Edit](#)

Wil Baden has contributed an implementation of named labels and GOTO for Quartus Forth, available at:

<http://quartus.net/files/PalmOS/Forth/Contrib/goto.zip>

Here's his description, from gotomemo.txt:

Quote:

LABEL <name>

GOTO <name>

IFGOTO <name>

Implementation of text labels is proof that Forth control flow is complete

-- anything that labeled instructions do, Forth control-flow words can do using CS-ROLL .

In this implementation, labels are case sensitive and must be recognized by the first 2 CELLS characters.

Only one GOTO or IFGOTO can go to a previous label. This is because control-flow elements cannot be duplicated in the control-flow stack. Previous labels may be defined more than once to handle more than one backward goto. Many `GOTO`s and `IFGOTO`s can be made to each one of future labels.

Because control-flow elements are removed when they are resolved, labels may be redefined. Thus all loops may begin and end with the same labels, such as START and END .

In the rare occasions when unstructured control flow is desirable, labels are clearer than explicitly shuffling the control-flow stack with CS-ROLL. Multiple termination of functions is a good use for labels.

Programming note. Many Forth systems use the data stack for control flow. Therefore the data stack must be cleared before compiling control-flow words.

LABEL <name> Is a destination. If <name> has no gotos to it, LABEL <name> becomes a BEGIN , otherwise enough `THEN`s are used to resolve the gotos. As labels are resolved they are removed from Label-Table.

GOTO <name> Is the origin of an unconditional branch. If <name> has no LABEL , GOTO <name> becomes `FALSE IF` (or `AHEAD`), otherwise the last LABEL <name> is resolved with AGAIN .

IFGOTO <name> Is the origin of a conditional branch. If <name> has no LABEL , IFGOTO <name> becomes `0= IF` , otherwise the last LABEL <name> is resolved with `0= UNTIL` .

IF WHILE ELSE THEN BEGIN AGAIN UNTIL REPEAT

The Standard control-flow words must be redefined so they can be mingled with the label words.

IF and BEGIN are extended to put an empty label on top of Label-Table. Other control-flow words search Label-Table for the empty label of the last control-flow word. CS-ROLL brings the control-flow word to the top of the control-flow stack, and the normal control-flow word is compiled. Label-Table is updated equivalently.

`:` is extended to initialize Label-Table.

As defined in Standard Forth, DO-loops can not be mingled with control-flow

words. Use `LEAVE` to break out of a DO-loop.

Neal

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

ThumbMusic: New app at palmgear

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): ThumbMusic: New app at palmgear



By [Dave Bennett](#) on Sunday, July 16, 2000 - 05:08 pm: [Edit](#)

I've created a digital kalimba (African finger piano) to learn how to turn penDownEvent's into program actions. It's called ThumbMusic.

Dave

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App compiled on IIIe crashes on III, and vice-versa

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): App compiled on IIIe crashes on III, and vice-versa



By [Steve Bohrer](#) on Saturday, July 15, 2000 - 02:03 am: [Edit](#)

My first Quartus app runs happily on my IIIe, both on the real device, and with the POSE debug ROM. But, I gave it to a friend with a III, and it crashed and died with a bus error.

I fired up POSE and made a new III, and I could replacate the error. (I thought it was a OS version problem first, as my IIIe is 3.1, and the III was 3.0, although I don't use anything 3.1 only. But, it also crashed on the POSE III with OS3.3 .)

SO, I copied Quartus, the libs, all my source files to the POSE III, and ran my app to debug it.

It did not crash, nor cause the debug ROMs to fuss. I compiled it, and the compiled version ran fine as well.

SO, I exported the compiled PRC from the POSE III, and installed it in the POSE IIIe.

It crashed in the same spot, same error. It crashes on my real IIIe, also.

Once again, if I compile it on the IIIe, it is happy on the IIIe, but not the III. If compiled on the (virtual POSE) III, it runs there, but not on the IIIe.

Any generic hints?

I am working to isolate the code where it dies, but this is a bit slow going because it all runs on either device. I have to make a PRC and transport it to the other device to see a crash, and then of course I'm not in the Quartus enviornment, but just running the app.

I will try showing a series of alerts to track where it gets to before it dies.

In general, the code on the form that dies is writing a db with the names of all files of a specific type/creator (using DmGetNextDatabaseByTypeCreator) and then showing the db of files with a list control and callback. On the III, the IIIe seems to die when trying to write this file list DB, because the DB is created but empty. But, on the IIIe, the code from the III seems to manage to get all the filenames into this DB.

I fear these mystery crashes are the result of a deeper problem in my code, but

it is puzzling that it works fine on the platform it is compiled on.



By [Steve Bohrer](#) on Saturday, July 15, 2000 - 12:38 pm: [Edit](#)

How much difference should I see in the PRC files of the the same code compiled on two different Palms, a 3e running OS 3.1, vs a 3 running OS 3.3? On my PC, both files are exactly the same size, but comparing them with DOS's FC shows about 180 bytes of differences.

The four bytes at 0x20 and 0x29 - 0x2B I'm assuming are the creation dates or some other variable header stuff, but do all the differences later in the code mean that I've gotten absolute addresses compiled in? (Again, the compiled PRC runs on the type of machine it was compiled on, but not on the other.)

Under normal circumstances, should I expect the PRC files to be byte-for-byte identical no matter what it is compiled on? (I am testing with POSE, one version set up as a IIIE, and one as a III. I exported MemoDB and my resource file from one, and imported both into the other, so the source is as identical as I can figure to make it. I made my PRC on each version, exported the results, and ran FC with the binary flag.)

Steve



By [Neal Bridges](#) on Saturday, July 15, 2000 - 12:41 pm: [Edit](#)

The differences are likely uninitialized data in the dataspace section. I have sent you the 1.2.6r interim update; try that please, let me know if it works. If it does, it's likely the COMPARE bug that bit you.

Neal



By [Steve Bohrer](#) on Sunday, July 16, 2000 - 09:00 pm: [Edit](#)

It is indeed compare. I narrowed it down to that, and solved it by replacing compare with the os StrCompare.

Is there an easy way to query the forum for known compiler bugs? A search for "Known Bugs" gets lots of extra hits. (Of course, your note was right on target.)

Thanks for the update, as well.

Steve

Steve



By [Neal Bridges](#) on Monday, July 17, 2000 - 08:26 am: [Edit](#)

That's a good idea, Steve. I'll set up an area for listing discovered problems/fixes

as they arise.

Neal

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Text2Morse application available

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Text2Morse application available



By [Dave Bennett](#) on Friday, July 14, 2000 - 09:12 am: [Edit](#)

I have uploaded my Text2Morse application at palmgear. It is a Morse code generator for the Palm.

I need some feedback on this one. It works fine on my Palm V and Vx with Palm OS 3.3, however it doesn't work on Palm IIIs with Palm OS 3.0 or Palm OS 3.0.2. The only thing I can figure out is that Palm changed something in the "sound" interface between those OSs.

I'd also like to hear about it on a Visor if someone has one.

Thanks.



By [Mike Keesling](#) on Friday, July 14, 2000 - 11:01 am: [Edit](#)

I'll download it at work and test it. I have never had a compatability issue to date, however.



By [Dave Bennett](#) on Friday, July 14, 2000 - 01:11 pm: [Edit](#)

I have someone saying that it works on their Visor Deluxe with OS 3.1h. Is this like a Palm III? (I've never seen a Visor.)

Thanks.

Dave



By [Mike Keesling](#) on Friday, July 14, 2000 - 09:55 pm: [Edit](#)

Didn't have a chance to do it today, but it is on my list.



By [Mike Keesling](#) on Monday, July 17, 2000 - 10:31 am: [Edit](#)

Yup,
It works on my visor delux.

Add a Message

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Limits of Product Support

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Limits of Product Support



By [Brette Blatchley](#) on Thursday, July 13, 2000 - 03:42 pm: [Edit](#)

Hi Neal,

Quick question concerning QF technical support:

I understand that registration entitles me to 60 days of email support. Does that mean that after 60 days You will no longer address any of my posts to the Quartus Discussion Forum?

Could You please explain what You had in mind in more detail?

Many Thanks & Take Care,

-Brette



By [Neal Bridges](#) on Thursday, July 13, 2000 - 03:53 pm: [Edit](#)

:) No, that's not what it means. That clause is just there to give me a way to twilight old versions as required. As you can see from the forum, and the several megabytes of archives of past messages, I provide continuous support to registered and non-registered users alike.

Neal

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This is a public posting area. If you do not have an account, enter your full

Username: name into the "Username" box and leave
the "Password" box empty. Your e-mail
address is optional.

Password:

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What's in ALLWORDS?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): What's in ALLWORDS?



By [Brette Blatchley](#) on Thursday, July 13, 2000 - 03:37 pm: [Edit](#)

Hi Neal,

Say, I've researched this for some time and can't find an answer:

I'd like to be able to traverse the word list and process the names of all the currently defined words (In Forth'79 there I would have used the CFA, if I remember right). Anyway, I'd like to write a "better" version of ALLWORDS, and I'd also like to dump a such a list to a memo to help me improve my QF lexicon. I can envision other things I might want to do with this basic capability that would let me extend/improve? the QF programming environment.

Also, is FORGET implemented? This is something else I haven't been able to determine. (I haven't researched as hard as for the above question!)

Finally, downloading Your message forum archives has been a major help -- they are very useful, and I recommend it to others, especially beginners.

Thanks Again Neal & Take Care,

-Brett



By [Neal Bridges](#) on Thursday, July 13, 2000 - 03:55 pm: [Edit](#)

There's no exposed method of traversing the dictionary; anything I gave you might well break in a future revision. Fortunately, all the internal words are documented in the manual, so there's no need to export the list from within Quartus Forth itself.

FORGET is not provided, but MARKER is. MARKER is the ANSI replacement for FORGET, and is more powerful.

Neal

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

PalmPrint sample?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): PalmPrint sample?



By [Dave Bennett](#) on Thursday, July 13, 2000 - 11:26 am: [Edit](#)

Does anyone have a sample of how to call PalmPrint from within Quartus Forth?

Thanks.



By [Neal Bridges](#) on Thursday, July 13, 2000 - 11:33 am: [Edit](#)

Never tried it. Do they provide a shared library? In that case, access would be similar to the method used serial.txt; you'd open the library and call specific routines in it.

Neal



By [Dave Bennett](#) on Thursday, July 13, 2000 - 02:21 pm: [Edit](#)

Here is what they say about the "Simplest Possible Printing".

Using PalmPrint can be simplicity itself - you simply provide a pointer to a character string containing the material to be printed and PalmPrint does the rest. A snippet of code is shown below. The 32768 is the "launch code" PalmPrint is using to identify a request for print service; the rest is straightforward.

```
DWord result;  
LocalID dbID;  
Char theChars[32];
```

```
dbID=DmFindDatabase(0,"PalmPrint");  
if (dbID) {  
  StrCopy(theChars,"This is the string to print");  
  err=SysAppLaunch(0,dbID,0,32768,theChars,&result);  
}
```

The fifth argument to SysAppLaunch should be a CharPtr. CharPtr's can be generated in a variety of ways, as you should realize; the method above is one of the crudest but suffices for this example. Form feeds (new pages) and word wrapping are handled automatically within PalmPrint based on a maximum number of lines per page and maximum number of characters per line. However if you want to control these factors, the character string can contain newline characters - use linefeed (0x0A hex, 10 decimal) for this purpose, or formfeed characters (0x0C hex, 12 decimal).

There are other methods as well, but this should get me started.

Dave



By [Neal Bridges](#) on Thursday, July 13, 2000 - 02:30 pm: [Edit](#)

Here's a snippet (untested):

```
needs zstrings
needs core-ext
```

```
: printstring ( z-addr len -- )
  z" PalmPrint" drop >abs
  0 DmFindDatabase
  2dup or if
    2>r 0. 2swap
    drop >abs 32768 0 2r> 0
    SysAppLaunch drop
  else
    2drop
  then ;
```

\ Example:

```
\ : test z" Hello" printstring ;
```

Neal

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

E-mail:

Original Paper on Forth from 1970

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Original Paper on Forth from 1970



By [Neal Bridges](#) on Wednesday, July 12, 2000 - 11:43 pm: [Edit](#)

Here's an interesting read. It's the first paper ever published on Forth, from 1970. Forth has changed somewhat over the years, but this gives interesting perspective from the point of view of the inventor, Charles Moore.

http://www.quartus.net/cgi-bin/pdfs/4th_1970.pdf

Neal



By [Erwin Schomburg](#) on Thursday, July 13, 2000 - 08:18 am: [Edit](#)

Neal, if it was you converting this to .pdf, could you please redo for Acrobat Reader v3.x backward compatibility?

/Erwin



By [Neal Bridges](#) on Thursday, July 13, 2000 - 09:27 am: [Edit](#)

It wasn't me, but I'll see what I can do.

Neal



By [Neal Bridges](#) on Thursday, July 13, 2000 - 11:34 am: [Edit](#)

Erwin, I can read that PDF under Adobe Acrobat Reader 3.0. It grumbles once or twice but then settles down, and the entire document is accessible.

Neal



By [Erwin Schomburg](#) on Thursday, July 13, 2000 - 12:28 pm: [Edit](#)

I get blackouts in place of the drawings, but never mind, I'll have access to a machine where I can install AR 4 later today.

/Erwin



By [Neal Bridges](#) on Thursday, July 13, 2000 - 01:45 pm: [Edit](#)

Hmm, two of the pages of that PDF appear to have a huge curved beak on them. You can still make out the information, though. I suspect the original is corrupt; I'll send a message.

Neal



By [Steve Bohrer](#) on Thursday, July 13, 2000 - 03:12 pm: [Edit](#)

This paper is online at Jeff Fox's UltraTechnology site:

The html version is:

http://www.ultratechnology.com/4th_1970.html

Also .PDF

http://www.ultratechnology.com/4th_1970.pdf

There is much else interesting at this site as, if you are curious about what Chuck Moore has been working on for the last couple of decades. By continuing to simplify (radically!) both Forth and the hardware it runs on, he has developed some mind-blowing stuff. (Of course, actually bringing the hardware to commercial reality is a different question.)



By [Neal Bridges](#) on Thursday, July 13, 2000 - 04:16 pm: [Edit](#)

The document has been repaired by Jeff Fox at UltraTechnology. Use the links Steve provided above, or the link I first provided, and you'll see the corrected doc -- and it should be OK with Adobe 3.x now, also.

Neal



By [Erwin Schomburg](#) on Friday, July 14, 2000 - 03:43 am: [Edit](#)

Thanks, looks OK now and this time the printout came out readable.

/Erwin



By [Ken Butterfield](#) on Monday, July 17, 2000 - 05:09 pm: [Edit](#)

Intersesting read!! Here are a few of the things I noticed when I read the paper.

The syntax has changes a bit since this paper was written! (a word ends at any special character?) Now we use the . separator as adding an extension or modifying a data field, but think of it as part of the name.

They used the old block access for disc storage(called sheets or more recently, screens).

There was a distinction between a verb and a definition. The definitions were interpreted and slower than the code. Subroutine threading was a long way into the future!

The linked list of words in the dictionary was already in place.

The sample code looks very much like it would compile except for the 'verb' structure.

The stack is already in place except I think there was not a separate return stack. It took a little time to find the correct number of stacks. Even today it is not settled. Some FORTHS use a separate floating point stack and even a control structure stack. Others add a string stack.

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PRCs and ticked words

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): PRCs and ticked words



By [Douglas Atique](#) on Wednesday, July 12, 2000 - 04:09 pm: [Edit](#)

Hello, Neal.

I read in Quartus manual that if I tick a word with ' and store that xt it will work fine while inside Quartus, but a PRC generated from it won't work. I was thinking of defining a word with :NONAME and wondering how I can use this word in a PRC.

Regards,
Douglas



By [Neal Bridges](#) on Wednesday, July 12, 2000 - 11:02 pm: [Edit](#)

I cannot figure out how you'd want to use that, Douglas. Can you give me a small example?

Neal



By [Mark Beckman](#) on Thursday, July 13, 2000 - 04:33 pm: [Edit](#)

OK, I think this is along the lines of what Douglas is trying to do. This one bit me today.

EXEC: is "stolen" from comp.lang.forth and in "real life" it was getting a better use than the following example.

This example works fine while in quartus but dies horribly as a compiled program (you have been warned, emulator recommended).

```
\ exec-test
needs core-ext
: exec:
  ( n "name" "word0" ... "wordn-1" -- )
  ( r: n -- )
  CREATE DUP , \ lay down bound
  0 DO ' , LOOP \ lay down items
DOES> >R DUP R@ @ 0 \ i i top 0
  \ first, some trival error checking
  WITHIN ABORT" exec: out of range"
  1+ CELLS \ account for bound
  R> + @ EXECUTE ; \ get item i, execute it
```

```
\ example:
: foo ." foo" cr ;
: bar ." bar" cr ;
2 exec: foobar foo bar
: go ( --)
cr ." exec test start, hit up key "
key drop cr
0 foobar \ -> foo
1 foobar \ -> bar
2 foobar \ -> abort
\ following will NOT execute
cr ." exec test done, hit up key "
key drop cr ;
```

needs Ids
(ID) r_et 2constant crid

' go crid MakePRC ETest



By [Neal Bridges](#) on Thursday, July 13, 2000 - 05:05 pm: [Edit](#)

What you want is select/xt/end-select, found on <http://www.quartus.net/products/forth/manual/specific.htm>. It's designed specifically to handle this situation.

Neal



By [Mark Beckman](#) on Thursday, July 13, 2000 - 06:42 pm: [Edit](#)

Now I remember reading that and thinking "thats neat" but since I didn't actually try it ...

Thanks !



By [Douglas Atique](#) on Thursday, July 13, 2000 - 06:51 pm: [Edit](#)

I am trying to do something like select/xt/end-select to build a "word table" for implementing late binding in my port of the FICL object model. However, what I would like to do is to define my words with :NONAME so that they are private to each object and thus don't come out in a dictionary search. In few words, I intend to do something like the Forth dictionary but that can be taken to the PRC. Also, I intend to make some kind of name lookup at runtime but it need not be based on word names.

BTW, the example given by Mark is a little obscure for me. I know it gets xts from words but I didn't get what it does with them (I am still a newbie).



By [Neal Bridges](#) on Thursday, July 13, 2000 - 07:17 pm: [Edit](#)

literalxt is provided as a means for storing relocatable xts in a definition.

Example:

```
:noname ." Hi there" ; constant myword
```

```
: go [ myword ] literalxt execute ;
```

Neal



By [Douglas Atique](#) on Thursday, July 13, 2000 - 07:22 pm: [Edit](#)

Complementing, I have an idea how to do this word table when running inside Quartus, but I am afraid of what can happen when I generate a PRC (I have only one Palm and it is crowded with my databases, so a crash is not a reasonable chance to take :-). I am asking this mostly because of your warning about using ['] instead of ' when generating a PRC (I guess I saw this in Quartus manual) where your go word initializes all variables with the xts in the beginning of the program.

Could you explain this ['] issue again?

Regards,

Douglas



By [Douglas Atique](#) on Thursday, July 13, 2000 - 07:25 pm: [Edit](#)

Thanks, Neal.



By [Neal Bridges](#) on Thursday, July 13, 2000 - 08:40 pm: [Edit](#)

I warn against ' because it won't work in a stand-alone app, not because there's some danger of it melting your Palm. The worst possibility in a crash is a loss of on-board data. Common sense says always keep a backup (HotSync and Backup Buddy or Penguin Backup, etc.) when developing.

Using ' instead of ['] in a compiled app will likely result in a simple 'fatal exception', requiring a reset, and no loss of data. Nothing to worry about there.

To put the issue in a nutshell, use ['] to retrieve the xts of functions in a stand-alone app. If you must store an xt derived by ', use literalxt to store it inside a definition.

Neal



By [Douglas Atique](#) on Friday, July 14, 2000 - 02:00 pm: [Edit](#)

Neal,

I cannot find a definition of literalxt. It doesn't appear in DPANS and I couldn't find on Quartus manual, either. Could you tell me about its stack diagram? BTW, thanks for the hint. I didn't know about PenguinBackup and it seems very

nice (and cheap):-)

Regards,

Douglas



By [Neal Bridges](#) on Friday, July 14, 2000 - 02:35 pm: [Edit](#)

literalxt is in the update, Douglas, as I just realized. :) I'll send you an interim copy tonight.

Neal



By [Douglas Atique](#) on Friday, July 14, 2000 - 02:48 pm: [Edit](#)

OK. You can send it to this address, too (at home).

You know, with so many improvements you are making us more and more anxious for the next version...

Regards,

Douglas



By [Douglas Atique](#) on Friday, July 14, 2000 - 02:50 pm: [Edit](#)

BTW, Neal, it would be nice to have an updated doc with the Quartus (at least the non-ANS ones) words, the wordsets in which they are defined and their stack diagrams.

If you want help with updating documentation, count on me.

Regards,

Douglas

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Debug and view

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Debug and view



By [Jih-tung Pai](#) on Wednesday, July 12, 2000 - 01:26 am: [Edit](#)

I have been using QForth for the past few days. I felt something useful missing in QForth. I'm quite familiar with FPC and Win32Forth and get used to some very useful words that I could not find in QForth. I wonder if I just missed it or these are just not there. Here is the list--

1. Use "words" with substring ability. It can save a lot of time when you want to find out if the word you want is available, or to find a group of words, e.g. to find the words with char "f" for possible float point words.
2. Use "view" to see the source code. It is very useful for seeing the stack comment, and to figure out exactly what that word is doing if it is new to you. By the way, do you get to see source code if you register QForth? Is there any documentation about how QForth is implemented? "see" can not totally replace "view", especially it will be much better if you can stop the result of "see" scrolled away.
3. I found "debug" in Win32Forth very useful for debugging. It will be very convenient to have this word or something similar available. If there is such, I will be very pleased to know.

I have tried to do a search on the archive. Forgive me if these have been discussed, and please point me the sources.

Thanks in advance!



By [Erwin Schomburg](#) on Wednesday, July 12, 2000 - 05:26 am: [Edit](#)

1. is definitely missing AFAIK, OTOH I have the complete Quartus user manual and the standard onPalm in hyperlinked iSilo format as a handy reference to words I want to know about.
2. to control scrolls, toggle "more", 1 more for on, 0 more for off, note that more is (newstat --- oldstat), so you might want to add a drop if you don't intend to reuse the value for restoration.
3. unnecessary overhead and an invitation to take up a "code before thinking" sloppy programming style, IMHO YMMV.

/Erwin



By [Neal Bridges](#) on Wednesday, July 12, 2000 - 09:51 am: [Edit](#)

Hello!

WORDS substring I can add; I'll put it on the list of future enhancements.

The source code to Quartus Forth is not available. SEE can be made to paginate as Erwin has said, by the use of MORE.

I once spent a short time porting a debugging module to Quartus Forth, but didn't complete the work at that time. It would allow single-stepping through functions. It's on my list of projects, but not at the top.

However, the same functionality can be achieved through the use of simple breakpoints and stack displays. I maintain that if a single-stepping facility is necessary, your definitions are too long.

Neal



By [Jih-tung Pai](#) on Wednesday, July 12, 2000 - 02:26 pm: [Edit](#)

Hi,

Thanks for the answers. I am now sure what's there and what's not, so I don't have to keep looking. And if I really need a function, I can always implement it myself. :-)

Since the QForth source code is not available, I wonder if some sort of information discussing the internal design of it is available. In order to make sense out of some internal words, a guide will be very helpful in saving a lot of time figure it out. For example, I am interested in knowing why it is not a good design choice to save a new QForth system with added word other than License issue. This ability is available for some other Forth systems, and it is not so hard to implement. If it is just license issue, people may be happy to register QForth just for this function. I, for one, is bothered by the 8 to 10 seconds it takes to load my application each time I need to do something else and come back to QForth, and will greatly appreciate this function.



By [Neal Bridges](#) on Wednesday, July 12, 2000 - 02:55 pm: [Edit](#)

The ability to modify the kernel and save a modified Quartus Forth is not present for the same reason that the source is unavailable; both would make it possible to create derivative versions of Quartus Forth, which violates the licensing.

If you have any questions about implementation specifics, let me know and I'll do my best to answer.

As to the 8-10 seconds: are you referring to an application under development, or a complete application? If it's completed, compiling to a stand-alone app

would give you instant response.

Neal



By [Jih-tung Pai](#) on Wednesday, July 12, 2000 - 04:48 pm: [Edit](#)

I'm talking about an application under development. For most of the basic parts, they are done. When working to add more features to the application, and test it, it takes long time to go back and forth memo and QForth. I also hesitate to leave QForth to check my schedule, phone book, etc. Do you have good solution for this situation?

Cheers,



By [Jih-tung Pai](#) on Wednesday, July 12, 2000 - 05:31 pm: [Edit](#)

Can someone tell me what does the first number of each line mean when you use "see"? Why does ">abs" return 2 numbers? What do they mean? How are name space and code space arranged?

Thanks!



By [Neal Bridges](#) on Wednesday, July 12, 2000 - 11:16 pm: [Edit](#)

The decision to start each Quartus Forth session 'clean' was a deliberate one. The state of a Quartus Forth dictionary is generally intertwined with the state of the GUI; as there's no practical way to save and restore the GUI state, the dictionary is also brought up clean.

The numbers at the left of each SEE line are addresses in codespace.

> ABS converts a single-cell (16-bit) address on the stack to a 32-bit address, which needs 2 cells.

Namespace and codespace are both 16-bit spaces, completely separate from one other.

Neal

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Help! I'm running out of Code-space.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Help! I'm running out of Code-space.



By [Jim Purdy](#) on Tuesday, July 11, 2000 - 09:32 am: [Edit](#)

I got the dreaded "dictionary overflow" message when compiling my app. After a bit of optimization, csunused returned 2716 (bytes?) I still have some very important code to include, but there appears to be NO space. (compiled the APP is about 47K)

My question, involves breaking some code into "modules", compiling them separatly, and calling them from the main APP.

HOW DO YOU DO THIS.....

Thanks in advance to all who may know. Jim



By [jim purdy](#) on Tuesday, July 11, 2000 - 10:25 am: [Edit](#)

One thought...

I have several large float arrays which have been created with ALLOT. Could/would it help to ALLOCATE them instead?

If so, please healp me with the Syntax of ALLOCATE?

again, thanks.



By [Neal Bridges](#) on Tuesday, July 11, 2000 - 10:30 am: [Edit](#)

ALLOT changes the size of your dataspace region, not your codespace.

What version of the compiler are you using?

You're in luck, at any rate; one of the forumites has in fact been doing just what you're looking for, calling sub-programs. It's not difficult. I'll look back in the forum and find the messages.

Neal



By [jim purdy](#) on Tuesday, July 11, 2000 - 10:43 am: [Edit](#)

1.25R, the latest one.



By [Neal Bridges](#) on Tuesday, July 11, 2000 - 11:00 am: [Edit](#)

Jim, two steps are required to launch a 'sub' application. First, find the sub-application's dbID using DmGetNextDatabaseByTypeCreator. Next, launch the sub-app with SysAppLaunch. When it terminates, control will be returned to the calling application.

You can give your sub-apps a different type than 'appl'; they'll still work fine, and this will stop them from showing as independent applications in the launcher, and they'll all be grouped under one listing in the Info panel.

Neal



By [jim purdy](#) on Tuesday, July 11, 2000 - 11:30 am: [Edit](#)

So each "module" will may have the same, but different types?

This looks kind of easy! I could add more functions to my APP as modules, right?

The main app could be a sort of module management/calling routine.

OK, How about passing data back and forth?



By [Neal Bridges](#) on Tuesday, July 11, 2000 - 11:37 am: [Edit](#)

Each module will have the same creator ID, but a type of, say, 'sub!'.

What has worked for others is to pass data as application preferences, using PrefGetAppPreferences and PrefSetAppPreferences.

Neal



By [Neal Bridges](#) on Tuesday, July 11, 2000 - 11:54 am: [Edit](#)

Er, sorry, typing before finishing my coffee. Yes, each module would have a different type, but the same creator ID.

Neal



By [Erwin Schomburg](#) on Tuesday, July 11, 2000 - 05:33 pm: [Edit](#)

One might find life to be easier when looking up the dbID by looking by filename using 0 DmFindDatabase (namezp. cardnum --- dbID.). In that case they can all have the same type (e.g. Subs). In any case one needs to tweak the type via a resorce editor or database tool, as makeprc generally makes appl's.

/Erwin



By [Jim Meadows](#) on Wednesday, July 12, 2000 - 04:30 pm: [Edit](#)

I have been calling other modules from my master module with good results - I pass my variables in my own small database. I had not thought about PrefGetAppPreferences and PrefSetAppPreferences ... possibly because I am using different creator ID's so I can beam the modules to another unit for testing. Standard beaming only appears to work for appl so I kept each module as an appl for now (but will probably switch them to a single creator ID later).

In an effort to keep my use of codespace down, I have a related question ... does anyone have any code that will search the dictionary and list words that are NOT used? I need to do some "house cleaning" on my program and this would track down which words I might have inadvertantly left in that are no longer used.



By [Erwin Schomburg](#) on Wednesday, July 12, 2000 - 04:46 pm: [Edit](#)

When you compile your app it will only include what your main word drags in and what these words use.... and so on, so there is no need to worry about dead and forgotten stuff if codespace use is your concern. Another issue is overall .prc size consideration, as Quartus drags in *all* dataspace used up to the moment you compile, here it is sometimes advisable to check and strip down unnecessary use of variables and buffer allotments prior to compilation.

/Erwin



By [Jim Meadows](#) on Wednesday, July 12, 2000 - 10:13 pm: [Edit](#)

I am not as concerned about codespace in the .prc since I realize Quartus doesn't include unused words during makeprc ... but unused words have caused me to run out of codespace in the past WHILE I am compiling and thus cannot get to execute makeprc to generate the .prc. So a utility to list unused words would allow me to clean them out so I can complete the compile and then generate the .prc. Thats my thinking ... if its valid.



By [Erwin Schomburg](#) on Thursday, July 13, 2000 - 07:33 am: [Edit](#)

If Neal would open up the search algorithm for makeprc to allow a dry run producing a list of *used* words instead of compiling them into a .prc

/Erwin



By [Neal Bridges](#) on Thursday, July 13, 2000 - 11:22 am: [Edit](#)

That would only tell you the words you have used, not the ones you haven't used. Let me think about it a bit.

Neal



By [Erwin Schomburg](#) on Thursday, July 13, 2000 - 12:14 pm: [Edit](#)

Consideration: You'd need to exclude the Kernel from the list of non-used words, else a list of unuseds would contain too much (useless) information.

/Erwin



By [Jim Meadows](#) on Thursday, July 20, 2000 - 02:34 pm: [Edit](#)

While on the topic of conserving codespace, is there any equivalent to equ's or def's that don't use up code space like constants do? I have been diligent to define all my forms and buttons in a single doc for good programming practice, but the constants eat up code space when you only use them once. Example:

Changing

: showit 2000 showform ;

to

2000 constant myform

: showit myform showform ;

uses 18 extra bytes. While this is not much, it can add up in a larger program with multiple forms, buttons, etc. Good programming practice says don't use absolutes in your code, but when your pressed for space, constants that are only used once are inefficient. Is there any version of equ's for Quartus Forth I have missed?



By [Neal Bridges](#) on Thursday, July 20, 2000 - 02:38 pm: [Edit](#)

If I use a number only once, I tend to just place the value in the code and comment it there, rather than defining a named constant.

Neal



By [Jim Meadows](#) on Thursday, July 20, 2000 - 10:52 pm: [Edit](#)

That's probably what I will go back and do ... but I could put a comment in the "common" doc with the other constants that documents the use-only-once values. That way all form ID's & button ID's could still be found in one place.

- Jim

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Problem with CtlNewControl

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Problem with CtlNewControl



By [Matthew Blair](#) on Monday, July 10, 2000 - 12:49 pm: [Edit](#)

Hi,

I'm trying to dynamically create a control on the form. Here is the code I'm using:

```
2variable formPP
: CreateNewUIObject ( -- )
  false ( leftAnchor )
  0 ( group )
  0 ( fontID )
  h_w 2@ ( height width )
  y_x 2@ ( y x )
  0. ( textP )
  0 ( style )
  1050 ( ID )
  FrmGetActiveForm ( formPP )
  formPP 2! formPP >abs
  CtlNewControl ;
```

Now, when I try to change the style from a normal button to say, a checkbox, the program still draws a normal button. Anybody seen this before?

FYI: The h_w and y_x are 2variables that contain the location and dimensions of the control I wish to create.

Thanks,

Matthew



By [Neal Bridges](#) on Monday, July 10, 2000 - 01:09 pm: [Edit](#)

As per the documentation:

```
CtlNewControl ( leftAnchor? group[>byte] font[>byte] height width y x &textP.
style[>byte] ID &formPP. -- &ControlPtr. )
```

You need to use >byte to massage the group, font, and style parameters.

Neal



By [Matthew Blair](#) on Monday, July 10, 2000 - 03:19 pm: [Edit](#)

Ahhh Bleah!

I hate it when I forget to RTFM!!!! Oh well, it's always the stupid little things...

Thanks Neal!

Matt



By [Neal Bridges](#) on Monday, July 10, 2000 - 11:06 pm: [Edit](#)

Not to worry, Matt -- glad to help.

Neal

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Drill Press Speed Chart application available

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Drill Press Speed Chart application available



By [dbennett](#) on Monday, July 10, 2000 - 09:38 am: [Edit](#)

I've uploaded my Drill Press Speed Chart application along with the quartus forth source at palmgear.

Dave

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WinDrawTruncChars bug and workaround

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): WinDrawTruncChars bug and workaround



By [Steve Bohrer](#) on Sunday, July 9, 2000 - 12:52 am: [Edit](#)

After bothering Neal for a systrap to call WinDrawTruncChars, I find the function seems broken, at least on OS 3.1 on my IIIe: Instead of the elipsis, it draws the "missing character" symbol.

I expect this is due to the change of the character value of elipsis, which is also part of the "3.1 New Feature Set.

(However, it seems pretty lame for this trap to be broken because of a change that was realeased in the same OS upgrade as the trap. I could not find any mention of this bug on the PalmOS site, but it is mentioned on the eScribe archive. Maybe the "TextGlue" routines skip the buggy trap?)

In any case, here is a Forth implementation of WinDrawTruncChars. It uses three periods rather than the elipsis char, so it avoids the issue of the moved character. It should work for earlier versions of the OS, but I've only tested it on v3.1.

I'd like instructive feedback about improvements to the following.

```
\ drawTruncChars  00.7.8 SKB
\ WinDrawTruncChars, but with
\ periods for ellipsis to avoid font
\ change problem
\ usage:
\ drawTruncChars ( wid y x len str. )
\ Draw str. of upto len chars, at x y,
\ clipped to wid pixels.  If str. clipped,
\ draw ... at end.  str. is ptr to chars
```

needs core-ext

```
variable tcWid      \ FntCharsInWidth
variable tcLen      \ requires ptrs to
variable tcFlg      \ these variables
```

```
: 3dup ( a b c -- a b c a b c. )
  dup 2over rot ;
```

```

: Elipsis s" ..." swap >abs ;    \ 3 periods

: ElipsWidth ( -- width )
\ compute width of "..." in cur font
Elipsis FntCharsWidth ;

: (appendElipsis) ( initialY initialX -- )
\ tcWid has wid of drawn text
\ Put elipsis at end of clipped string
tcWid @ +
Elipsis WinDrawChars ;

: (drawStr) ( y x len &str. adjWid )
\ draw as much of str. as fits in
\ adjWid . adjWid leaves room for ...
tcWid ! 2>R tcLen !
0 tcFlg ! tcFlg >abs
tcLen >abs tcWid >abs
2R@ FntCharsInWidth
2dup tcLen @ 2R> winDrawChars ;

: (truncChars) ( maxWid y x len &s. )
\ string too big for maxWid, so clip it
5 pick          \ get maxWid
ElipsWidth -    \ make room for the ...
dup 0< 0= if    \ elipsis fits, trunc rest
  (drawStr)
  (appendElipsis)
  drop
else \ no room for elipsis: punt!
  drop 2drop 2drop 2drop
then ;

: drawTruncChars
( maxWid y x len &str. -- )
3dup FntCharsWidth \ calc full width
6 pick \ get max width
> if      \ the str is too wide
  (truncChars)
else      \ it all fits, draw entire string
  winDrawChars
  drop \ maxWid
then ;

```

needs tools-ext \ for [if] [then]

0 [if] \ words for testing...

```
: theStr
  s" A longish string to truncate"
  swap >abs ;

: test
  page 121 0 do
    [char] > emit cr
    i dup 6 theStr drawTruncChars
  11 +loop ;
[then]
```



By [Neal Bridges](#) on Sunday, July 9, 2000 - 03:01 pm: [Edit](#)

Thanks for that, Steve. Good work.

In terms of improvements, my first instinct is to remove pick wherever I find it. I'd: a) place the string address and length in global variables, and b) calculate and store FntCharsInWidth early (instead of using FntCharsWidth), so as to avoid calling both routines.

Neal



By [Steve Bohrer](#) on Monday, July 10, 2000 - 12:20 am: [Edit](#)

Thanks for the feedback.

The double call was a way to deal with the case when the string just fits. I call FntCharsInWidth with the width reduced to leave room for the elipsis.

Better would be to do that first, and then test the clipped chars to see if they all fit into the elipsis width.

Or, perhaps it would be smaller and cleaner (though probably slightly slower) to process the entire string a char at a time with TxtCharWidth. I might try both ways.

Why are stray globals preferable to pick ? I have been more-or-less trying to avoid globals unless they really are global. I guess globals would be faster, and probably smaller, if pick is not built in.

Pick certainly seems easier to follow than my first version, which used the return stack for all the upper arguments.



By [Neal Bridges](#) on Monday, July 10, 2000 - 12:30 am: [Edit](#)

You already have a couple of stray globals, so adding more doesn't muddy the

waters further. It is a good idea to avoid globals, but as an evil I rank globals below PICK and ROLL.

PICK accesses the stack as though it were an array -- it's not as bad as ROLL, but still to be avoided where possible.

I find when I re-write code to eliminate PICK, the resulting code is much more pleasing. With this code, I lean toward re-ordering the items on the stack, but then they'd have to be straightened back out for the Palm OS function calls, so it's hard to win.

Neal



By [Steve Bohrer](#) on Monday, July 10, 2000 - 01:30 am: [Edit](#)

Yah, certainly giving up on matching the WinDrawTruncChars argument order could give a handier implementation. Likewise, using a character by character approach would avoid the messy call to FntCharsInWidth which needs the stray variables for its pointer parameters. (Or, is there a better way to get temporary space for an OS call? Can I have it use here?)

Again, thanks for the tips.



By [Neal Bridges](#) on Monday, July 10, 2000 - 03:24 pm: [Edit](#)

One approach for a temporary value:

0 sp@

This leaves a 32-bit pointer to the third item on the stack.

Neal



By [Steve Bohrer](#) on Tuesday, July 11, 2000 - 01:39 pm: [Edit](#)

Neal,

Thanks as always for your fast responses, and useful and instructive suggestions. I will experiment with sp@ a bit to figure out which way the offsets go to reach deeper into the stack, etc. But, it seems it could get pretty hairy pretty quickly. I guess that's what variables are for.

I must admit, however, that since I have a version that works, even though it's > twice as slow as need be, I probably won't mess with a new implementation until I finish everything else.

One question this brings up, however: what percentage of your Quartus

development time on a typical day do you devote to instructing not-always-clueful people like me on the forum, vs doing deep coding on the next release? Is it significant?

I love this forum, and read it almost daily, but I'm concerned about taking all your time and energy for things that are instructive but not vital (like this whole thread as a case in point, I fear!)

Thanks again for your wonderful support.

Steve



By [Neal Bridges](#) on Tuesday, July 11, 2000 - 01:50 pm: [Edit](#)

Never worry about the time the questions take, Steve. Work done on support is as important to me as new product development.

Neal

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Double math in assembly: d* d/ dmod d/mod

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Double math in assembly: d* d/ dmod d/mod



By [Ken Corey](#) on Saturday, July 8, 2000 - 06:42 pm: [Edit](#)

Here's a few double routines recoded in assembly. Maybe not the fastest implementation, but I needed to speed these up some, so maybe they can help others.

\ d

```
include asm68k
```

```
\ add these to test carry flag
```

```
6400 constant CS
```

```
6500 constant CC
```

```
code d*
```

```
  prefix
```

```
  clr .l d0
```

```
  clr .l d3
```

```
  clr .l d5
```

```
\ multi-purpose 1, use to avoid
```

```
\ double literal bug.
```

```
move .w 1 # d5
```

```
\ the initial args into d1 and d2.
```

```
move .w tos d2
```

```
move .w 16 # d4
```

```
asl .l d4 d2
```

```
move .w sp ) d2
```

```
move .l 2 sp d) d1
```

```
\ set the counter to length
```

```
move .w 32 # d3
```

```
BEGIN
```

```
  add .l d0 d0 \ Shift product
```

```
  add .l d2 d2 \ Shift multiplicand
```

```
  CS if
```

```
    add .l d1 d0 \ add multiplier
```

```
  then
```

```
  sub .w d5 d3
```

```

0= UNTIL

\ return values on stack
] 2drop [
move .w d0 sp )
asr .l d4 d0
move .w d0 tos
end-code

code d/mod
prefix
clr .l d0
clr .l d6
clr .l d5

\ multi-purpose 1
move .w 1 # d5
\ the initial args into d1 and d2.
move .w tos d2
move .w 16 # d4
asl .l d4 d2
move .w sp ) d2
move .l 2 sp d) d1

\ set the counter to length
move .w 32 # d3

\ remember neg flag
tst .l d1
0< if
    neg .l d1
    eor .l d5 d6
then
tst .l d2
0< if
    neg .l d2
    eor .l d5 d6
then

BEGIN
    asl .l d5 d1 \ shift LSLW
    roxl .l d5 d0 \ shift, get bit
    cmp .l d2 d0 \ can subtract?
    CC if
        sub .l d2 d0 \ then subtract
        add .l d5 d1 \ incr quotient
    then

```

```
    sub .w d5 d3    \ loop
0= UNTIL

\ restore signs
tst .l d6
0<> if
    neg .l d0
    neg .l d1
then

move .w d1 sp )
asr .l d4 d1
move .w d1 tos
move .l d0 2 sp d)
end-code

: d/ d/mod 2swap 2drop ;
: dmod d/mod 2drop ;
```



By [Neal Bridges](#) on Saturday, July 8, 2000 - 07:17 pm: [Edit](#)

Very nice, Ken. Thanks.

Neal

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DateToASCII and DateToDOWDMF usage

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): DateToASCII and DateToDOWDMF usage



By [Chris Bucsko](#) on Friday, July 7, 2000 - 10:48 pm: [Edit](#)

I'm trying to convert a date to either of the above formats, to see what they look like. I think I'm calling the code right:

needs facility-ext

create DateStr 10 cells allot

variable year

variable day

variable month

variable DateFormat

:cal-init (--)

time&date year ! month ! day ! drop 2drop
0 DateFormat ! ;

:date>ascii (--)

DateStr >abs

DateFormat @ >byte

year @

day @ >byte

month @ >byte

DateToASCII ;

I can't seem to find out anything about DateFormat. The Palm SDK says it's either short or long, but doesn't say how to declare it. I'm guessing it's a number in Forth, since the PalmOS sysstraps doc says use the >byte operator on it. But I have no idea how to set it. I'm also guessing about the length of the string. I tried 10 to 50 cells, but I keep getting blanks.

When I run this code from the console, it doesn't create an error, but if I then type:

DateStr >abs type

I think this should work from the console mode, but I get OK, and then blanks. When I try to display DateStr in a form, I just get an error beep. I'm kind of lost at the moment, so if anyone can offer any help with this, I'd appreciate it. Thanks



From datetime.h in the PalmOS 3.5 SDK:

```
typedef enum {
    dfMDYWithSlashes,    // 12/31/95
    dfDMYWithSlashes,    // 31/12/95
    dfDMYWithDots,       // 31.12.95
    dfDMYWithDashes,     // 31-12-95
    dfYMDWithSlashes,    // 95/12/31
    dfYMDWithDots,       // 95.12.31
    dfYMDWithDashes,     // 95-12-31
    dfMDYLongWithComma,  // Dec 31, 1995
    dfDMYLong,           // 31 Dec 1995
    dfDMYLongWithDot,    // 31. Dec 1995
    dfDMYLongNoDay,      // Dec 1995
    dfDMYLongWithComma, // 31 Dec, 1995
    dfYMDLongWithDot,    // 1995.12.31
    dfYMDLongWithSpace, // 1995 Dec 31
    dfMYMed,             // Dec '95
    dfMYMedNoPost        // Dec 95 (added for French 2.0 ROM)
} DateFormatType;
```

This translates to:

```
\ dateformats 00.7.7 11:27 pm NAB
```

needs toolkit

```
0 enum DateFormat
\ 12/31/95:
    DateFormat dfMDYWithSlashes
\ 31/12/95:
    DateFormat dfDMYWithSlashes
\ 31.12.95:
    DateFormat dfDMYWithDots
\ 31-12-95:
    DateFormat dfDMYWithDashes
\ 95/12/31:
    DateFormat dfYMDWithSlashes
\ 95.12.31:
    DateFormat dfYMDWithDots
\ 95-12-31:
    DateFormat dfYMDWithDashes
\ Dec 31 1995:
    DateFormat dfMDYLongWithComma
\ 31 Dec 1995:
```

```
DateFormat dfDMYLong
\ 31. Dec 1995:
DateFormat dfDMYLongWithDot
\ Dec 1995:
DateFormat dfDMYLongNoDay
\ 31 Dec 1995:
DateFormat dfDMYLongWithComma
\ 1995.12.31:
DateFormat dfYMDLongWithDot
\ 1995 Dec 31:
DateFormat dfYMDLongWithSpace
\ Dec '95:
DateFormat dfMYMed
\ Dec 95 (added for French 2.0 ROM):
DateFormat dfMYMedNoPost
```

Neal



By [Neal Bridges](#) on Friday, July 7, 2000 - 11:31 pm: [Edit](#)

'DateStr >abs type' won't work. TYPE requires two cells on the stack: an address, and a length. Use:

DateStr dup >abs StrLen type

Neal



By [A.Schönfeld](#) on Thursday, November 9, 2000 - 05:58 pm: [Edit](#)

Using DateToASCII (on IIc french rom) like this :

```
buf >abs
1 >byte
2000 >byte
09 >byte
11 >byte
DateToASCII
buf dup >abs StrLen type
```

prints 9/11/48
Other dateFormats give some 09. nov 53248
Any idea why ?



By [Neal Bridges \(Nbridges\)](#) on Thursday, November 9, 2000 - 07:39 pm: [Edit](#)

The years value is not a byte parameter -- don't put >byte after 2000.

Neal



By [A.Schönfeld](#) on Friday, November 10, 2000 - 09:20 am: [Edit](#)

Considering the size of the year value I should have found out myself.

Thanks Neal !

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"Snippets" file area now available.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): "Snippets" file area now available.



By [Neal Bridges](#) on Friday, July 7, 2000 - 12:34 pm: [Edit](#)

I've collected a few of the skeletons, templates and examples from the Discussion Forum and placed them in a "Snippets" file area. If you have any such code -- unfinished, perhaps, but instructional -- let me know.

<http://quartus.net/files/PalmOS/Forth/Snippets>

Neal

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

TapeMeasure application available

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): TapeMeasure application available



By [Dave Bennett](#) on Friday, July 7, 2000 - 08:35 am: [Edit](#)

OK, so I'm cleaning up my system.

This is a 2" tape measure that displays along one side of the Palm screen. Source, etc. available at www.micoks.net/~dbennett.

Dave

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Circle application available

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Circle application available



By [Dave Bennett](#) on Friday, July 7, 2000 - 04:42 am: [Edit](#)

First "extension cord" and now "circle". The titles just leave one breathless.

Circle is just a simple app that I wrote to learn how to use some of the graphics stuff, create bitmaps, and change to and from secondary forms upon user input. The source, executable, and a brief tutorial are available at www.micoks.net/~dbennett.

I promise the next app will be "meaningful". Really!

Dave

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Parsing characters

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Parsing characters



By [Dave Bennett](#) on Thursday, July 6, 2000 - 02:33 pm: [Edit](#)

I'd like to be able to parse the individual characters of a string and act upon them individually. Does anyone have a routine that will allow me to parse a string, character by character? Thanks.

Dave



By [Neal Bridges](#) on Thursday, July 6, 2000 - 02:42 pm: [Edit](#)

Here's a skeleton:

```
needs toolkit
needs case
```

```
: process ( c-addr u -- )
  bounds do i c@
    case
      [char] A of ." A detected" endof
      [char] B of ." B detected" endof
    endcase
  loop ;
```

Neal



By [Dave Bennett](#) on Thursday, July 6, 2000 - 05:20 pm: [Edit](#)

Thanks... you'll regret this later. :)

Dave

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

What is the equivalent of DPL?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): What is the equivalent of DPL?



By [David Craig](#) on Wednesday, July 5, 2000 - 08:04 pm: [Edit](#)

Hi All

To learn a little I am working on some fixed point routines. What is the Quartus or ANS equivalent of DPL, the variable that helps locate decimal points in an entered number?

Thanks,
-David Craig



By [Neal Bridges](#) on Wednesday, July 5, 2000 - 08:08 pm: [Edit](#)

The equivalent is DPL; it's not implemented yet, but it's in the update code. I can send you an interim version if you wish. Let me know.

Neal

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Backup bit

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Backup bit



By [Jim Meadows](#) on Wednesday, July 5, 2000 - 06:13 pm: [Edit](#)

Is there any sample code I can check out that shows how to set the backup bit on a database from a Forth program?



By [Ron Doerfler](#) on Wednesday, July 5, 2000 - 07:21 pm: [Edit](#)

From the source for TeamFile (available to anyone here--just email me for it at my email link above):

```
\ dbname-ext3 051800 RWD
```

```
needs core-ext
```

```
8 constant dmHdrAttrBackup
```

```
2variable dbID
```

```
variable cardnumber
```

```
variable dbattr
```

```
: findopenDB ( dbref. -- )
```

```
\ Find database ID and memory card
```

```
\ number for an OPEN database.
```

```
2>r 0. cardnumber >abs 0. 0.
```

```
dbID >abs 2r>
```

```
DmOpenDatabaseInfo ;
```

```
: DBattr@ ( -- Err )
```

```
\ Gets database attributes and
```

```
\ places result in dbattr if Err=0.
```

```
\ Assumes findopenDB filled dbID
```

```
\ and cardnumber.
```

```
0. 0. 0. 0. 0. 0. 0. 0. 0. dbattr >abs 0.
```

```
dbID 2@ cardnumber @
```

```
DmDatabaseInfo ;
```

```
: DBattr! ( -- Err )
```

```
\ Sets database attributes.
```

```
\ Assumes findopenDB filled dbID
```

```
\ and cardnumber.
```

```
0. 0. 0. 0. 0. 0. 0. 0. 0. dbattr >abs 0.
```

```
dbID 2@ cardnumber @
```

```
DmSetDatabaseInfo ;
```

```
: openDBbackup ( dbref. -- Err )
```

```
\ Sets backup bit on OPEN database.
```

```

findopenDB dup 0= if \ Found
    drop DBattr@ dup 0= if \ Got info
        drop dbattr @ dmHdrAttrBackup
        or dbattr ! DBattr! \ Sets bit
    then
then ;

```

In practice, you would have stored the database reference when the database was opened. Then you would have something like:

```

datadbref 2@ openDBbackup drop

```

I use the following code to open the database, or create it if it does not exist yet (this code was pasted from a larger memo--hope I didn't miss anything):

```

variable dbmode
variable dbzname
2variable dbcreator
2variable dbtype
2variable dbref

: ?openDB ( -- dbref.|null. Err )
dbmode @ dbcreator 2@ dbtype 2@
DmOpenDatabaseByTypeCreator
2dup or 0= ;

: openDB
( namez-addr u mode creator. type. -- dbref.|null. ) \ null. means an error
dbtype 2! dbcreator 2! dbmode !
\ Don't need size u of z-string
drop dbzname !
?openDB if
    \ Database doesn't exist. Create it.
    2drop false \ Not a resource DB
    dbtype 2@ dbcreator 2@
    dbzname @ >abs 0 \ Card #0
    DmCreateDatabase
    if \ Error creating it
        0.
    else \ Now open it.
        ?openDB drop
    then
then ;

```

Ron



By [Jim Meadows](#) on Thursday, July 6, 2000 - 02:29 am: [Edit](#)

Wow! Thanks for the help Ron.



By [Neal Bridges](#) on Thursday, July 6, 2000 - 11:19 am: [Edit](#)

It looks to me like that code would work nicely to set the copy-prevention bit, as well:

(hex) 0040 constant dmHdrAttrCopyPrevention

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Asm68k strangeness for an assy programmer

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Asm68k strangeness for an assy programmer



By [Ken Corey](#) on Wednesday, July 5, 2000 - 05:15 pm: [Edit](#)

Hi All.

I need to recode a function using assembly, so I started looking at the documentation on the web site.

At the bottom of the documentation, it mentions taking out the 'LABEL' directive. There are also lots of flow control commands like if, begin, etc.

However, I just need to do a BCC to a label. How do I do this kind of thing in the current implementation?

Any ideas?

-Ken



By [Neal Bridges](#) on Wednesday, July 5, 2000 - 07:46 pm: [Edit](#)

I'm trying to add the label functionality back in. For the moment, calculate the branch offset and enter it directly (ugly, I know).

Neal



By [Ken Corey](#) on Thursday, July 6, 2000 - 02:42 am: [Edit](#)

Okay, I'm trying to manually calculate the offsets. The code that I currently have is listed below. I have this code in a memo \ d. When I try to include this, the message I get is:

```
"include d Loading ask68k v1.21...done. <2> -5416 1026
```

```
Exception in file: d
```

```
end-code? control structure mismatch
```

It sounds as if I'm stepping on 'code's functionality somehow. Ideas?

```
include asm68k
```

```
code d*
```

```
    postfix
```

```
    clr .l d0
```

```
move .l sp ) d2
move .l 4 sp d) d1
move .l 31. # d3

add .l d0 d0
add .l d2 d2
bcc .s 2
add .l d1 d0

dbra d3 -10

] 2drop [
move .l d0 sp )
end-code
```



By [Neal Bridges](#) on Thursday, July 6, 2000 - 11:00 am: [Edit](#)

I believe you mean 'prefix' there, not 'postfix'.

Neal



By [Ken Corey](#) on Friday, July 7, 2000 - 10:00 am: [Edit](#)

Ah, Thanks Neal, that was the problem with that error.

Got another, if you've got a minute...

The 'dbra d3 -10' was being translated into 'sl d3' according to disasm(!?!) Who's wrong?

So, I changed it to be:

```
sub .w 1 # d3
bne .s -10
```

According to disasm, it's turned into:

```
sub.w #1, d3
bne.l 65526 (!?!)
```

How do I force a 10 step backwards rather than a ~64K jump ahead?

-Ken



By [Neal Bridges](#) on Friday, July 7, 2000 - 10:07 am: [Edit](#)

You have the 'dbra' backward, should be:

```
dbra -10 d3
```

The disassembly of the 'bne .s -10' is correct, after a fashion -- 65526 is 65536-10. I'll make a note to fix that.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

How to check dynamic memory

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): How to check dynamic memory



By [Wes Matchett](#) on Wednesday, July 5, 2000 - 04:53 pm: [Edit](#)

I'm trying to verify that I am freeing memory used by allocate correctly by calling mem. The total-available value returned is not what I expected. I am allocating space until a log is full, then freeing the oldest entry and allocating a new entry. I would expect the avail. mem. to decrease to a watermark and then remain constant - given that each log entry is identical. But the avail. mem. value seems to jump up and down until the watermark is reached, and then becomes a little more stable. Here are the values observed:

(read left to right)

-31454 -31466 -31382 -31394 -31406 -31514 -31430 -31544 -31562 -31574

-31490 -31604 -31618 -31534

<should start freeing entries now >

-31534 -31630 -31630 -31630 -31534 -31630 -31534 -31624 -31528 -31534

Can these numbers be explained? Do they show that the old entries are freed correctly?

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

WinScrollRectangle params

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): WinScrollRectangle params



By [Wes Matchett](#) on Wednesday, July 5, 2000 - 01:26 pm: [Edit](#)

I'd like to use WinScrollRectangle but I am unsure of the parameter data types. It is listed in the Quartus docs as:

```
WinScrollRectangle( &vacated. distance direction[>byte] &r. -- )
```

and in the SDK as

```
WinScrollRectangle ( RectanglePtr r, DirectionType direction, SWord distance, RectanglePtr vacated )
```

I have found how to handle a rectangle from graphics.txt. distance and direction are the problems.

distance is described in the SDK as SWord. What is the forth equivalent to an SWord? My guess is a signed number.

direction is another problem.

According to Window.h DirectionType is :

```
enum directions { up = 0, down, left, right }
```

but it is noted with >byte in the quartus docs, so I assume that something must be done with the value before calling the Win function, I just don't know what it is. Again, my guess is some sort of shift process to properly align it?



By [Neal Bridges](#) on Wednesday, July 5, 2000 - 01:43 pm: [Edit](#)

An SWord is just a signed single-cell value on the stack. As for the direction:

```
0 >byte constant up  
1 >byte constant down  
2 >byte constant left  
3 >byte constant right
```

The >byte shift is required because of the exact nature of the parameter passing that the Palm OS expects.

Neal



By [Wes Matchett](#) on Wednesday, July 5, 2000 - 02:21 pm: [Edit](#)

Ah - then my guesses were close - thanks

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Problem with ACCEPT

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Problem with ACCEPT



By [John Newell](#) on Wednesday, July 5, 2000 - 09:50 am: [Edit](#)

Hi,

In Quartus:

I have INCLUDED some new words.

I call one of the words from Quartus - it calls another etc. which does ACCEPT. When I do a return (because I don't want to enter any input) the buffer is filled with the calling sequence. If I clear this and enter return it comes back - I can't enter zero data.

e.g. If I enter

5 foo

to start foo, foo calls another word etc. which does an ACCEPT. Doing return I get:

5 foo

displayed and I can't get rid of it.

Is there any way of clearing this before I do the ACCEPT?

Thanks

John



By [Neal Bridges](#) on Wednesday, July 5, 2000 - 10:31 am: [Edit](#)

I'm not sure I understand, John. ACCEPT returns a zero-length buffer if you simply hit <Enter>.

Neal



By [John Newell](#) on Wednesday, July 5, 2000 - 11:21 am: [Edit](#)

Neal,

What AM I talking about? : ^ Sorry about the confusion. All my fault.

What I meant to say was that if I used the scroll back hardware button (not return) it filled the ACCEPT buffer with what had previously been typed. I then have to clear it (which I don't want to have to do).

I want scroll back button just to do a return.

Regards

John



By [Neal Bridges](#) on Wednesday, July 5, 2000 - 11:39 am: [Edit](#)

If the last line of your source is a blank line, this should clear the scrollbar buffer.

Neal



By [John Newell](#) on Wednesday, July 5, 2000 - 12:19 pm: [Edit](#)

The text that appears at the ACCEPT is the line I used to initiate the whole sequence of words that ends up at the ACCEPT. That is, I enter:

5 foo
to kick off foo and it calls other words then, when it gets to the ACCEPT and I use the scrollbar button, I get :

5 foo
inserted into the buffer. I don't want that.

Can I clear the scrollbar buffer myself?

John



By [Neal Bridges](#) on Wednesday, July 5, 2000 - 01:15 pm: [Edit](#)

I haven't exposed any facility to manipulate the scrollbar buffer. ACCEPT isn't really a facility meant to be used in finished apps; for that you'd want to create a real form, and handle the field(s) appropriately.

While developing, a workaround to erase the scrollbar buffer might be to include a short source file with only a couple of blank lines in it.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full

Password:

name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

E-mail:

Shift Key

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Shift Key



By [Jim Hendricks](#) on Monday, July 3, 2000 - 10:03 am: [Edit](#)

Anybody know how to trap for the Shift stroke? I'm attempting to add "arrow" keys to an app using shift, space, i, and backspace.

Thanks, Jim



By [Neal Bridges](#) on Monday, July 3, 2000 - 11:25 am: [Edit](#)

Try GrfGetState.

Neal



By [Erwin Schomburg](#) on Monday, July 3, 2000 - 11:54 am: [Edit](#)

You can't, you won't even see an event until you made a complete character *including* the shift stroke. Using EKEY you won't even see pen movement on Grafitti area if it does not resolve into a recognizable stroke. Workaround: Split up EKEY into an EvtGetEvent and a HandleEvent part, catch the movements between PenDown and PenUp by looking up the respective coordinates, see which direction the stroke was made and if it was made in the Grafitti area. Don't forget to flag the events you want to keep for yourself to suppress handing down to HandleEvent. You may get tired to hear this, but you can find it all in the Quintominoes sources.

May the Forth be with you.

/Erwin



By [Erwin Schomburg](#) on Monday, July 3, 2000 - 12:02 pm: [Edit](#)

Neal beat my posting. Revised statement: You can but its tedious and you need to poll and reset the damn thing, whereas the other movements can be caught by events, if I see this correctly.

/Erwin



By [Jim Hendricks](#) on Monday, July 3, 2000 - 03:48 pm: [Edit](#)

OK, so:

1. Neal's way - GrfGetState - without looking it up, I assume returns the Shift

state flag, when it is shifted, I must have had a shift character. Erwin you refer to resetting, I assume this is to set the state back to no shift so I can trap for the next shift case. But as Erwin points out, this is polled, not trapped which means it is not integrated with my event loop.

2. Erwin's way - Already divided my Event loop, since I am trapping for the hardkeys and the divided Event loop works best for this (Yes, thanks to the Quintominoes sources, I just reformatted to my own taste (slightly salty)). The pen-down pen-up requires logging the position on a pen-down if in the grafitti area, then on the pen-up check if the row is less than the previous and still in the grafitti area, and that the col is the same as the pen-down (plus or minus a tolerance). This allows for trapping for the stroke rather than polling for it. But... what of other strokes that can meet this test since I am not testing for the pattern, only for the begin and end points. Is this a real concern, or just programmer paranoia? What also would be considered a reasonable tolerance for the col deviation +/-5?

Basically (sorry Neal) I like Erwin's solution, just want to make sure I'm not stepping into the proverbial pile of stink...



By [esc](#) on Monday, July 3, 2000 - 04:52 pm: [Edit](#)

I got a taste of your perfectionism and you got some impression of my attitude to leave good enough alone (bordering on sloppiness, I'm afraid). For good enough I'd say, check if PenDown is in Grafitti area, then see where PenUp ends up (doesn't really matter if still in G area), if its more up than sideways relative to starting point its "up", more to the left than vertical its "left" and analogous for the remaining two directions.

All this assuming that you are interested in the four directions (only), that you want to allow for some user leeway in dragging accuracy and that none of you users is too crosseyed to missalign the four main directions by more than 45 degrees.

/Erwin



By [Jim Hendricks](#) on Tuesday, July 4, 2000 - 12:15 pm: [Edit](#)

I don't know if it's perfectionism, or paranoia that easy answers bite when not thought through. (Although, I am a perfectionist in programming, I might as well be in some area!)

I had not though of your solution from the perspective of a whole solution, only from the perspective of my up key (shift stroke). My short sightedness was due to the fact that the other directions are already coded through their respective grafitti strokes.

Using your whold solution approach though, are I not disableing all grafitti since I am intercepting all penDown penUp sequences that start in the grafitti area? This would not be a problem if all I am concerned with is turning the grafitti area into a joystick. But what if I also need to trap for menu shortcuts etc.

I am wondering also with how much abuse the grafitti area gets, if I shouldn't instead use your approach outside the grafitti area, or instead provide a graphical joystick (arrow buttons). I mention the abuse of the grafitti area since my palm is suffering from digital trash from how much grafitti I enter. Makes me want to look into that keyboard!

Jim

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Categories Re-Re-visited 255 cats !

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Categories Re-Re-visited 255 cats !



By [jim purdy](#) on Sunday, July 2, 2000 - 12:53 pm: [Edit](#)

I am using the code below to give catagory support to an App I am writing. The catagory number returned is 255. (always)

I am using a Visor with the new OS.

thanks in advance.

```
: disp-cats ( -- )
```

```
OpenMemoDB
```

```
TRUE 1
```

```
FilerCatList GetObjectPtr
```

```
MemoDBR
```

```
CategoryCreateListV10
```

```
FilerCatList GetObjectPtr
```

```
LstGetSelectionText
```

```
MemoDBR
```

```
CategoryFind cat ! \ this cat is 255
```

```
FilerCatList GetObjectPtr
```

```
LstGetSelectionText
```

```
FilerCatPop GetObjectPtr
```

```
CategorySetTriggerLabel
```

```
closeMemoDB ;
```

```
: do-cat ( -- )
```

```
\ sets category
```

```
OpenMemoDB
```

```
FilerCatList GetObjectPtr
```

```
LstGetSelectionText
```

```
MemoDBR
```

```
CategoryFind cat ! \ this cat is 255!
```

```
CloseMemoDB ;
```

NOTE: this also returns 255

```
z" catname" drop >abs MemoDBR CategoryFind
```



By [Neal Bridges](#) on Sunday, July 2, 2000 - 06:30 pm: [Edit](#)

You can't use z" while interpreting. Is the code you show here exactly what you are executing?

Neal



By [jim purdy](#) on Sunday, July 2, 2000 - 07:58 pm: [Edit](#)

Yes, it is.

sorry, I know about the Z" it was an incomplete snip-it. my point was that any existing category returns the 255 from a categoryfind.



By [Neal Bridges](#) on Sunday, July 2, 2000 - 09:02 pm: [Edit](#)

Here's a complete snippet that works perfectly here. Give it a try:

```
\ cattest

needs newmemo
needs zstrings

: test
  OpenMemoDB
  z" Business" drop >abs MemoDBR CategoryFind .
  CloseMemoDB
;

test -> 1 ok
```

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full

Password:

name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

E-mail:

Character variables

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Character variables



By [Jim Meadows](#) on Saturday, July 1, 2000 - 11:27 pm: [Edit](#)

In an effort to conserve code space, I am looking at using "character" size variables instead of the standard word if I know the variable will always be less than 255 (e.g. a small counter, a flag, etc.). Example:

Instead of:

```
variable counter
variable LightOn
variable DoorOpen
variable regNumber
```

...

```
5 counter !
1 LightOn !
0 DoorOpen !
1000 regNumber !
```

I would use :

```
create counter 0 c,
create LightOn 0 c,
create DoorOpen 0 c,
variable regNumber
```

...

```
5 counter c!
1 LightOn c!
0 DoorOpen c!
1000 regNumber !
```

Question: is this OK and do I have to watch for any alignment problems?

Also are there any alignment issues with odd size buffers? Example:

```
create buffer1 33 allot
variable regNumber
```



By [Neal Bridges](#) on Saturday, July 1, 2000 - 11:48 pm: [Edit](#)

As long as you use C! and C@ there will be no alignment issues. This, however, will not save you any codespace -- just dataspace. Is your goal to make the resulting PRC smaller by a few bytes, or are you running out of space for your

code?

Neal



By [Jim Meadows](#) on Sunday, July 2, 2000 - 02:01 am: [Edit](#)

Ah yes, it only saves dataspace. Even so my bend to efficiency hates to use up a full word to just store an on/off flag.

As far as codespace goes, yes I am running out and am already "calling" multiple modules from a main one by using SysUIAppSwitch. I pass variables between modules in a small database.

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Where is FSIN, FCOS, FASIN, etc.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Where is FSIN, FCOS, FASIN, etc.



By [Jim Meadows](#) on Saturday, July 1, 2000 - 06:12 pm: [Edit](#)

The Quartus Forth manual lists several floating trig functions under Pronunciation of Forth Words, but I can't seem to find the file to include them. Where should I look for these?



By [Neal Bridges](#) on Saturday, July 1, 2000 - 09:19 pm: [Edit](#)

FSIN and FCOS:

<http://www.quartus.net/discus/messages/29/565.html?ThursdayJune2220000943am#POST3576?ThursdayJune2220000943am>

Neal



By [Jim Meadows](#) on Saturday, July 1, 2000 - 10:40 pm: [Edit](#)

Thanks! That will get me started!

Jim

Add a Message

Username:

Password:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

E-mail:

Initializing strings

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Initializing strings



By [Jim Meadows](#) on Saturday, July 1, 2000 - 06:03 pm: [Edit](#)

Is there a way to initialize a string in data space at compile time without using up code space? For example:

```
create MyName 30 allot
\ note: "scopy" copies a string
: initMyName MyName s" Jim Meadows" scopy ;
initMyName
```

This initializes MyName at compile time to an initial value, but I also have initMyName in the dictionary that I will never use again and the string inside initMyName takes up several bytes.



By [Neal Bridges](#) on Saturday, July 1, 2000 - 09:17 pm: [Edit](#)

needs file

```
MyName s" Jim Meadows" scopy
```

That does the trick. file provides a version of S" that works while interpreting.

Neal



By [Jim Meadows](#) on Saturday, July 1, 2000 - 10:41 pm: [Edit](#)

Ahhhh...thanks!

Jim

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Prc illegal op

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Prc illegal op



By [Jim Meadows](#) on Saturday, July 1, 2000 - 05:48 pm: [Edit](#)

I have just run into a strange problem. When I compile my program and perform a makeprc and while still in Quartus enter "go" (the main word) it runs just fine. When I exit Quartus and click on the icon I get "... has just performed an illegal operation. It performed an illegal instruction."

Any thoughts were to look? I have put debug displays with pauses to isolate it goes south when I execute OpenDB. Again, the OpenDB works fine when run under Quartus instead of stand-alone.



By [Neal Bridges](#) on Saturday, July 1, 2000 - 09:16 pm: [Edit](#)

I can't tell without looking at your sources, Jim. Send them to me and I'll track it down.

Neal



By [Jim Meadows](#) on Saturday, July 1, 2000 - 10:47 pm: [Edit](#)

I appreciate your offer, but its a lot of code. I'll try a few more things 1st. I realized it was a hard question without the specifics of the code.

I was just wondering if there was any general things I should look for that makeprc does that would be different from the regular compile ... and I realize the makeprc mainly copies the compiled code.



By [Neal Bridges](#) on Sunday, July 2, 2000 - 12:16 am: [Edit](#)

Be sure you have a form loaded. Place a MainForm in the top of your main function to be sure.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Problem with WinDrawChars

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Problem with WinDrawChars



By [Wes Matchett](#) on Saturday, July 1, 2000 - 09:36 am: [Edit](#)

I am learning how to interact with the screen and have a simple test word that is not working as expected. It should display a string 14 times down the left side of the screen - which it does, but the first two chars of the displayed string are boxes, not the correct characters. Here's the word:

```
14 constant logLength
```

```
: ShowLog ( -- )
  logLength 0 DO
    I 10 * 2 + 2 ( y x )
    s" this is a test" (addr len )
    swap > abs
    WinDrawChars
  LOOP
;
```

Any ideas on what is wrong?



By [Neal Bridges](#) on Saturday, July 1, 2000 - 12:25 pm: [Edit](#)

I'm assuming "> abs" is a typo, that you really mean >abs. I've run your loop here with no problems, Wes. Are you using 1.2.5r?

Neal



By [Wes Matchett](#) on Saturday, July 1, 2000 - 01:57 pm: [Edit](#)

Ooops - yes, that is a typo - I wonder how it got in here - must have hit a space after pasting.

Yes, I'm running 1.2.5r



By [Neal Bridges](#) on Sunday, July 2, 2000 - 12:17 am: [Edit](#)

What version Palm?

Neal



By [Wes Matchett](#) on Sunday, July 2, 2000 - 07:59 am: [Edit](#)

Its a IIIe OS v. 3.1.1

-Wes



By [Neal Bridges](#) on Sunday, July 2, 2000 - 11:51 am: [Edit](#)

And what library files are you including ahead of that snippet of code?

Neal



By [Wes Matchett](#) on Sunday, July 2, 2000 - 02:47 pm: [Edit](#)

After a bunch more testing I have isolated the problem to some initialization code - if it is not done everything is fine. But I don't know what is wrong. The loop in the [go](#) word initializes [log](#) to zeros - I have found [erase](#) does it more easily - but I'd still like to know why things were messed up. This will eventually turn into a set of words to handle a log display. Here is the complete program:

```
\ test
```

```
14 constant logLen
2 constant entryLen
logLen entryLen * constant logSize
create log logSize allot
```

```
: ShowLog ( -- )
  logLen 0 DO
    I 10 * 0 ( y x )
    s" this is a test" ( addr len )
    swap >abs
    WinDrawChars
  LOOP
;
```

```
: go
  logLen 0 DO
    log I entryLen * +
    0 0 rot 2!
  LOOP
  ShowLog ;
```



By [Wes Matchett](#) on Sunday, July 2, 2000 - 03:17 pm: [Edit](#)

After considering what is causing the problem it seems that the init loop is overwriting the first two chars of the string constant - but I don't understand

why yet.

```
/ run the loop logLen times (14)
logLen 0 DO
/ calc the position to init - this must be where
/ the problem is. It should iterate by two from
/ the beginning of the log
log I entryLen * +
// store zeros at the address just calc'd
0 0 rot 2!
LOOP
```



By [Neal Bridges](#) on Sunday, July 2, 2000 - 06:29 pm: [Edit](#)

I think what you intend is this (additions in bold):

```
14 constant logLen
2 constant entryLen
logLen entryLen * constant logSize
create log logSize cells allot
```

Neal



By [Wes Matchett](#) on Monday, July 3, 2000 - 01:55 am: [Edit](#)

I'm getting very confused about the proper size of things and how to handle addr values. The actual application needs to get chars from a form field, allocate memory to hold them, copy the data to the allocated memory, and put the addr and len of the new string in the log. [allocate](#) returns an a-addr, but `field>string` puts data into a c-addr. How do I resolve the mismatch? I can't find anything to convert between the two addr types. Perhaps I don't understand the true difference between them. My current design copys from the field to an area defined with [allot](#) in the program and from there to the log.

Also, I am unsure if this is the proper/best way to define and maintain an array of strings in forth. I have a copy of "Forth Programmer's Handbook" by Conklin & Rather, but it doesn't have forth algorithm's/examples of this scale, only examples to show how to use specific words. Is there such a language source?



By [Neal Bridges](#) on Monday, July 3, 2000 - 11:27 am: [Edit](#)

An a-addr is just a word-aligned c-addr. Your method for storing an array of strings looks fine!

Neal



By [Wes Matchett](#) on Wednesday, July 5, 2000 - 10:11 am: [Edit](#)

I think I'm being dense here. I'm sure I am overlooking something. Here is a simple test that stores 1 entry at the end of the log and then displays the log array contents:

```
\ test
needs core-ext
needs memory
( create serial log )
3 constant logLen
2 constant entrySize
logLen entrySize * constant logSize
create log logSize cells allot
log logSize cells erase

: ShowLog ( -- )
logLen 0 DO
  log i entrySize * +
  dup 2@ .s drop 2drop
LOOP
;

: AddLog
s" testing"
log logsize + entrySize -
.s 2!
;

: go
AddLog
ShowLog ;
```

The log output should show two entries of zeros and one entry containing the string. However, the first cell of the second entry has the length of the third entry. Here's what I get:

```
go <3> 552 7 544
<3> 540 0 0
<3> 542 7 0
<3> 544 552 7
```



By [Neal Bridges](#) on Wednesday, July 5, 2000 - 10:35 am: [Edit](#)

I believe you mean

```
log i entrySize * cells +
```

and

log logsize + entrySize cells -

Give that a try. Another approach would be to define

2 cells constant entrySize

Neal



By [Wes Matchett](#) on Wednesday, July 5, 2000 - 11:38 am: [Edit](#)

yep, thats what I missed - I chose the later fix and everything is working fine.

Thanks for the sharp eyes Neal.

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Gadget selection?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Gadget selection?



By [jim Purdy](#) on Friday, June 30, 2000 - 02:03 pm: [Edit](#)

I need to detect a tap in a certain area of the screen. I created a Gadget in this area but, how do you detect a hit?



By [E. Ross Helton](#) on Friday, June 30, 2000 - 03:09 pm: [Edit](#)

Hi Jim;

I used RsrcEdit to make my screen sensitive at the places I wanted it to be. Then you would have to have some code which would let your gadget know that this region is being tapped and would thus carry out your command.

The sensitivity is accomplished by setting specific pixel positions and then asking the code to check for activity at that place.

I could send you an example if you want.

Make it a good day!

Ross



By [Neal Bridges](#) on Friday, June 30, 2000 - 03:30 pm: [Edit](#)

Jim, one way is just to watch for PenDownEvents, and then check the coordinates against the region you want.

The other way is to create a button to be tapped, and watch for that event.

Neal



By [jim purdy](#) on Friday, June 30, 2000 - 06:18 pm: [Edit](#)

Ross,

An example would be very welcome.

Maybe for others too...

Thanks for all the help.



By [E. Ross Helton](#) on Saturday, July 1, 2000 - 12:45 pm: [Edit](#)

Hi Jim;

I will post one when I am at my computer where the code is located.

In the meantime, does anyone know about the microphone option on the Visor, and is there any software for using that option?

Make it a good day!
Ross



By [Neal Bridges](#) on Saturday, July 1, 2000 - 01:08 pm: [Edit](#)

The Visor microphone isn't attached to anything except a couple of pins in the Springboard slot. It's for use by Springboard modules.

Neal



By [E. Ross Helton](#) on Saturday, July 1, 2000 - 06:39 pm: [Edit](#)

Hi Neal,

Thanks! My son and I are in Chicago where he lives and he was looking at a Visor and was interested in the possible use for voice notation.

Are there any modules available at this time for this purpose?

You know it is great having the net. The first message I left you was from CompUsa and now I am elsewhere.

thanks
make it a good day!
Ross



By [Henry Olders](#) on Monday, August 14, 2000 - 12:17 am: [Edit](#)

The PalmOS 3.5 documentation refers to two events which are related to extended gadgets:

frmGadgetEnterEvent, which is sent when there is a penDownEvent within the bounds of an extended gadget, and

frmGadgetMiscEvent, which an application can use to send info to an extended gadget.

These two events do not appear to be defined in Quartus Forth. Are there plans to do so, or is this something that individuals could add, if they wanted? (if so,

how?)



By [Steve Bohrer](#) on Monday, August 14, 2000 - 12:29 am: [Edit](#)

Henry,

The current versions of Quartus only have sysstraps through PalmOS 3.0 defined; the "Updated" version will have everything through OS 3.5 . A while ago I asked about a 3.1 trap, and Neal gave this [description of how to make a sysstrap word](#).

(He also gave me words for the traps I asked about, so you could also just wait for him.)

Steve



By [Neal Bridges](#) on Monday, August 14, 2000 - 01:06 am: [Edit](#)

Events are even simpler to add than sysstraps, Henry. Check out events.txt -- that's the place to add new event names.

Neal



By [Steve Bohrer](#) on Monday, August 14, 2000 - 01:33 pm: [Edit](#)

Sorry for the mis-direction. I didn't read carefully.



By [Neal Bridges](#) on Monday, August 14, 2000 - 01:50 pm: [Edit](#)

Not a problem, Steve. How's your development going?

Neal



By [Steve Bohrer](#) on Monday, August 14, 2000 - 03:25 pm: [Edit](#)

Well enough. I have a version in field test, and it has all the features I really need so far. It's a pretty small vertical market, but I'm working with a transportation engineer who is really excited about using the Palm for data collection, so any sales will be because of him. My app is just a simple paper and pencil and clipboard replacement, for bus drivers to enter ridership data. We are doing some field trials here in Maine on Mount Desert Island with the "Island Explorer" shuttle bus service, a free shuttle funded by the island towns and Acadia National Park. Last year was the pilot year of these buses, and all the drivers counted riders with a paper and clipboard -- obviously a pain to key into Excel at the end of the day.

So, my main challenge was making something as easy for the drivers as the paper it replaces. It seems to be working okay so far.

I'd like to try and add beaming, but I think this needs to wait for launch codes.

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Problem with PrefGetAppPreferencesV10...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Problem with PrefGetAppPreferencesV10...



By [Eugene Zalyubovsky](#) on Friday, June 30, 2000 - 12:25 pm: [Edit](#)

I'm trying to store some application settings with PrefAppSetPreferencesV10 function and restore it with PrefGetAppPreferencesV10. As an exaple I've taken Neal's application Swatch. But I cannot read setting - function (PrefGetAppPreferencesV10) returns FALSE every time

I want to read preferences. So I made test application to learn storing and getting preferences.

```
\ prtest 30.06.2000 UPZ
```

```
needs ids
```

```
\ creator ID
```

```
(ID) EzA1 2Constant crid
```

```
: >store ( -- )
```

```
5 here ! \ store any number
```

```
4 here >abs 1 crid
```

```
PrefSetAppPreferencesV10 ;
```

```
: get> ( -- )
```

```
4 here >abs 1 crid
```

```
PrefGetAppPreferencesV10
```

```
\ gunction above returns false
```

```
;
```

When I looked into SavedPreferences Database, I founded record EzA1 with dump
00 01 00 05

It means version and my number 5. But my Pilot cannot read info from this database correctly. How can I fix it?



By [Neal Bridges](#) on Friday, June 30, 2000 - 01:45 pm: [Edit](#)

Your sample code works perfectly here. get> returns true.

Neal



By [Eugene Zalyubovsky](#) on Friday, June 30, 2000 - 03:59 pm: [Edit](#)

Neal, I've deleted record from SavedPreferences and created it again. All working OK!

So now I want to store string into SavedPreferences.

```
\ prtest.2
needs ids
(ID) EzA1 2Constant crid

: test-string ( -- str c )
s" this is a test" ;

: >here ( str c -- )
\ stores string in Here
dup here !
Here 1 cells + swap move ;

: >store ( -- )
test-string \ string c
dup 1 cells + rot rot \
>here \ C + 2
here >abs 1 crid
PrefSetAppPreferencesV10 ;

: get> ( -- )
\ getting length of saved string
2 here >abs 1 crid
PrefGetAppPreferencesV10
if
  here @
  chars + here >abs 1 crid
  PrefGetAppPreferencesV10
else ." bad" Then
;
```

It refuses to get length of saved string, PrefGetAppPreferencesV10 returns false. Why???

Dump in SavedPreferences looks like 00 01 00 0E ... (0E= 14 - correct length of test string).



By [Neal Bridges](#) on Friday, June 30, 2000 - 04:43 pm: [Edit](#)

You can't use PrefGetAppPrerencesV10 to get only part of the data you stored -- you can only retrieve the entire block. You'll need to save an area as large as you need, and retrieve the same area each time.

Neal



By [Eugene Zalyubovsky](#) on Saturday, July 1, 2000 - 04:54 am: [Edit](#)

Yes, but if I don't know the exact size of saving - may I read larger or smaller amount of saved data?



By [Neal Bridges](#) on Saturday, July 1, 2000 - 12:30 pm: [Edit](#)

You can't. You must pre-determine how large your preferences data will be. A workaround -- save two preferences, one short one under one creator ID that tells you the length of the other one, under the other creator ID.

Neal



By [Eugene Zalyubovsky](#) on Saturday, July 1, 2000 - 02:50 pm: [Edit](#)

Thanks, Neal. It's a very interesting method.

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WinDrawTruncChars systrap (OS 3.1 feature set)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): WinDrawTruncChars systrap (OS 3.1 feature set)



By [Steve Bohrer](#) on Thursday, June 29, 2000 - 11:36 am: [Edit](#)

Can you provide a systrap definition for:

```
void WinDrawTruncChars(ConstCharPtr pChars, Word length, SWord x, SWord y, SWord maxWidth)
```

In general, can you explain how to get from the C prototype to the definition? Where are the docs on the PalmOS trap calling conventions, eg which args go in registers vs. on the stack.

Or, is it complex enough that we should just pester you for each one?

Thanks, Steve



By [Matthew Blair](#) on Thursday, June 29, 2000 - 01:36 pm: [Edit](#)

Steve,

Here is a link to the online manual section that has the systrap definitions. Somewhere else in there is an explanation of how to get from C to Forth. I'll make a stab at it, though. In general, the arguments go on the stack in the reverse order of the C argument list. For your example above, it would be

```
WinDrawTruncChars ( maxwidth y x length &pChars. -- )
```

See also the section in the manual regarding C typedefs.

Here's the link: [PalmOS Systraps link](#)

Hope that helps,

Matthew



By [Neal Bridges](#) on Thursday, June 29, 2000 - 02:22 pm: [Edit](#)

Steve, the update has all the 3.1->3.5 calls in it. Matthew is right: the args would go

```
( maxwidth y x length &pChars. -- )
```


I'll look up the systrap number and post you an interim version a bit later today.

Neal



By [Steve Bohrer](#) on Friday, June 30, 2000 - 01:08 am: [Edit](#)

Right. I understand how to put the args on the stack. I'd just like to be able to hack together a word to let Quartus call the trap. The only examples in the library, serial.txt, seem a little cryptic. Can you explain the magic used to create your "interim version" of the trap, or is there not really any point to us knowing?



By [Neal Bridges](#) on Friday, June 30, 2000 - 01:52 am: [Edit](#)

Sure, it's simple -- there's no magic. Just a call to systrap.

```
: WinDrawTruncChars ( maxwidth y x length &pChars. -- )  
  (hex) 0a351 systrap 2drop 2drop 2drop ;
```

Neal



By [Steve Bohrer](#) on Saturday, July 1, 2000 - 08:56 pm: [Edit](#)

Okay, just to pound this the rest of the way through my head: In C, the caller cleans up the stack, so for a systrap, just drop as much as you put.

I assume the a0 and d0 words, which you note as "Primarily for use with systrap" are for getting function return values. Do traps which return a pointer put it in a0, and integer values are in d0?

What cases do I need the d0! word for?



By [Neal Bridges](#) on Saturday, July 1, 2000 - 09:12 pm: [Edit](#)

Your assumptions are correct. D0! was for use in certain callbacks.

Neal

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Advice on REFILL, SOURCE, SOURCE-ID, BLK, etc.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Advice on REFILL, SOURCE, SOURCE-ID, BLK, etc.



By [John Newell](#) on Wednesday, June 28, 2000 - 10:44 am: [Edit](#)

Hi Neal,

I am attempting an implementation of the FILE and FILE EXT word sets. I am a bit confused by some of the terms used in DPANS94. Can you help me out here?

Words like SOURCE-ID, and BLK need setting and restoring by INCLUDE-FILE and INCLUDED. Do I have to declare my own copies since I can't change the built in version of SOURCE-ID?

Does SAVE-INPUT save the value of SOURCE-ID?

For REFILL

11.6.2.2125 REFILL FILE EXT

(-- flag)

Extend the execution semantics of 6.2.2125 REFILL with the following:

When the input source is a text file, attempt to read the next line from the text-input file. If successful, make the result the current input buffer, set >IN to zero, and return true. Otherwise return false.

What does "make the result the current input buffer" mean and how do you do it. Do I need a version of SOURCE?

INCLUDE-FILE and INCLUDED say "make the file the input source". Is that done by making SOURCE return the address and size of the buffer that the data has been read into.

Thank you.

Regards

John



By [Neal Bridges](#) on Wednesday, June 28, 2000 - 02:21 pm: [Edit](#)

You're going to find it difficult to lay the FILE wordset on top of an existing kernel. You can come fairly close, though.

INCLUDED is built into the kernel; if you need to enhance it, you'll have to wrap it with additional code.

I'll confirm whether or not SOURCE-ID is saved by SAVE-INPUT tonight in the kernel sources.

"make the result the current input buffer" means make it the string referenced by SOURCE. The easiest way to do this is to read the line from the file directly into the SOURCE input buffer; that way you don't need to modify SOURCE. The tricky bit is in telling SOURCE how long the new string is; those variable aren't exposed in the dictionary.

"make the file the input source" means that SOURCE-ID changes, and thus successive REFILLS return source lines from that file.

Let me know if I can shed any additional light.

Neal



By [John Newell](#) on Thursday, June 29, 2000 - 06:49 am: [Edit](#)

Thanks for that Neal :)

SOURCE-ID isn't "exposed" either so I can't change the original.

Apropos to that, if the optional word sets are required to change variables should not all those variables be "exposed" in the dictionary?

Regards

John



By [Neal Bridges](#) on Thursday, June 29, 2000 - 09:29 am: [Edit](#)

SOURCE-ID and friends aren't variables, but rather internal kernel values reflected into the dictionary space.

You could certainly wrap SOURCE-ID to give yourself the ability to change it.

This code will return the contents of mysourceid, unless it's zero, in which case the original SOURCE-ID is returned:

```
variable mysourceid

: set-source-id ( n -- )
  mysourceid ! ;

0 set-source-id

: source-id
  mysourceid @ ?dup if  exit
  else  source-id
  then ;
```

Neal



By [Jim Hendricks](#) on Thursday, June 29, 2000 - 09:37 am: [Edit](#)

John, I would be interested in the results of your quest, I too planned on implementing the file/file ext libs but ran into the same problems as you and decided to put them on hold. I had also looked into creating a lib based on the Palm file streaming IO introduced in OS v3 I beleive but wasn't too sure of the usability of such a lib since it would not be downward compatible with previous OS's.

If you need any alpha/beta testers, you can count me in.

Jim



By [John Newell](#) on Thursday, June 29, 2000 - 11:22 am: [Edit](#)

Thank you all.

FYI - I have implemented the FILE and FILE extention word set on MemoDB with a memo as a file. This seems to work satisfactorily for the file words but it needs tidying up. I am having these problems with INCLUDE-FILE and INCLUDED though, particularly when they are nested. I will plug on.

Regards

John



By [John Newell](#) on Monday, July 3, 2000 - 09:36 am: [Edit](#)

Neal,

Everything is working (I think) except REFILL.

The definition of the FILE EXT REFILL is:

11.6.2.2125 REFILL FILE EXT

(-- flag)

Extend the execution semantics of 6.2.2125 REFILL with the following:

When the input source is a text file, attempt to read the next line from the text-input file. If successful, make the result the current input buffer, set >IN to zero, and return true. Otherwise return false.

Although the kernel REFILL seems to be able to "make the result the current input buffer", there does not seem to be a way for my REFILL (which wraps the kernel one) to be able to do this. I tries creating my own version of SOURCE to return the buffer address and size but it does not seem to be used by such words as WORD.

i.e. There is no way for a user defined REFILL to set up the variables which define the input buffer. Is that a correct statement?

I just had a thought. I want to re-interpret "set >IN to zero" to mean "set >IN to the start of the input buffer where parsing is to start".

The original INCLUDE-FILE would read the file data into the RIGHT HAND END of

a new input buffer and >IN would be set to point to the start of the data to be parsed i.e. not zero). The EVALUATE used by INCLUDE-FILE to interpret the data would have the new input buffer address and the TOTAL buffer size as parameters. Then if the buffer ever had to be REFILLED, then REFILL would also read data into the RIGHT HAND END of the input buffer and set >IN pointing to the start of the data (rather than zero).

I haven't tried it yet though. I wonder if it would work? (and there are some overheads). What say you?

Regards

John



By [Neal Bridges](#) on Monday, July 3, 2000 - 11:31 am: [Edit](#)

>IN does not hold an address. It holds an offset into the input buffer.

To change the values returned by SOURCE, you'll need me to expose a couple of internal variables. I'll do that and send you a modified kernel for testing; if all goes as planned we can make it a permanent change.

Neal



By [John Newell](#) on Monday, July 3, 2000 - 12:32 pm: [Edit](#)

Hi Neal,

I know >IN is an offset - that's what I was saying. For FILE words like INCLUDE-FILE, INCLUDED, EVALUATE, REFILL, (, etc., instead of reading into the input buffer at location zero and setting >IN to zero do this. On first use of the input buffer (via EVALUATE) set the data length to equal the buffer length (whatever the data in the buffer). For all the above words, read data into the input buffer such that the LAST character of data occupies the LAST character in the input buffer. Then set >IN to the offset of the FIRST data character. This allows for variable lengths of input and the ability to show the length of that input. I muted this idea because >IN was the one variable I could get at and change. On initial tests it appears that this might have worked although I haven't tested it thoroughly.

However, that's all academic if you are going to expose ?SOURCE? variables.

Cheers

John



By [John Newell](#) on Friday, July 21, 2000 - 08:34 am: [Edit](#)

Neal,

On July, 3rd you posted "To change the values returned by SOURCE, you'll need me to expose a couple of internal variables. I'll do that and send you a modified kernel for testing; if all goes as planned we can make it a permanent change."

Can you give me some idea of when you will be able to get round to doing those changes.

Thank you.
John



By [Neal Bridges](#) on Friday, July 21, 2000 - 11:27 am: [Edit](#)

I'll send you the modified kernel tonight, John. Thanks for the reminder.

Neal



By [John Newell](#) on Tuesday, July 25, 2000 - 06:52 am: [Edit](#)

Hi Neal,

I have received 1.2.6r. Thanks.

I don't understand though.

- 1) Am I to use obsolescent words (TIB and #TIB) to implement the File extension word set?
- 2) Are TIB and #TIB the values returned by SOURCE? Can I write into TIB and #TIB?
- 3) Does SAVE-INPUT save TIB, #TIB, and SOURCE-ID? 4) When I implement INCLUDE-FILE must TIB and #TIB be saved, set by me to point to the "current input buffer", and then be restored at the end of the included file?
- 5) The INCLUDE-FILE definition says "Store fileid in SOURCE-ID". If I wrap SOURCE-ID with my own SOURCE-ID, will core words use the new SOURCE-ID word to discover the input source?

Sorry if I seem confused but either DPANS94 is a bit vague on how to specify the "current input buffer" or I am missing something somewhere. It's almost as if the user should not be implementing extension word sets themselves but that they should be supplied as part of the Forth product which has access to core values not exposed to the user.

Regards
John



By [Neal Bridges](#) on Tuesday, July 25, 2000 - 11:51 am: [Edit](#)

- 1) TIB and #TIB are only present in the version I sent you, John, to help with your efforts.
- 2) SOURCE returns the address of the current input buffer, and the value of #TIB. You can write to #TIB, but TIB is invariant -- as we discussed earlier, the simplest choice would be to write the incoming data into the existing input buffer. If that proves to be difficult, I can expose another variable for setting the value of TIB.
- 3 & 4) Yes -- but further to 2), I may need to also expose the 'current input buffer' variable. Let me know.

5) I'll have to expose the internal SOURCE-ID for you also.

As I said on June 28,

Quote:

You're going to find it difficult to lay the FILE wordset on top of an existing kernel. You can come fairly close, though.

That still stands. You're correct; user implementation of some of the Standard wordsets requires a number of internal kernel data structures to be made public.

Neal



By [John Newell](#) on Tuesday, July 25, 2000 - 12:15 pm: [Edit](#)

Thanks for that Neal.

I'll try using the 'overwrite current input buffer' method.

John



By [Berwyn Hoyt](#) on Sunday, August 27, 2000 - 07:07 pm: [Edit](#)

John,

Did you ever finish this project? I am interested in this wordset also.

With thanks,

BerwynHoyt@marconi-online.com



By [John Newell](#) on Thursday, August 31, 2000 - 12:16 pm: [Edit](#)

Berwyn,

Thanks for you query. I got side tracked by something else. I will get back to it (but don't hold your breath).

I was unhappy with having to save the current input buffer and restoring it when INCLUDE-FILE is used.

FYI

I started this because I wanted to put the Forth libraries into a different database from MemoDB. (They shouldn't change much and were getting in the way. I kept accidentally changing them when I looked to see what they did.) This developed further into having a project database to hold a projects source, again rather than using MemoDB.

Regards

John

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Springboard memory map

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Springboard memory map



By [mike keesling](#) on Tuesday, June 27, 2000 - 08:12 pm: [Edit](#)

Eureka!

After many hours of sifting...

0x2800 0000 is the bottom of the Handspring Visor springboard module. (hmmm 24 bit address)

What this really means is that you must decode either cs0 or cs1 on the springboard module hardware.

cs0 and cs1 are pins 0 and 1 of portb on the dragonball processor.

any suggestions on the software to do direct writes to the system address bus, data bus, and pins 0 and 1 on port b?

btw, this is the unsupported method. There are api system calls (HsCardAttrGet), which let you know where the cards really are, but I have no idea how to use them...

This info is untested. I will keep you all up to date.

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Set-places command?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Set-places command?



By [James D. Purdy](#) on Tuesday, June 27, 2000 - 01:39 pm: [Edit](#)

I have a need to use floats at different resolutions. For example 1.001 1.2 etc...

I saw a thread and the "set-places" command looks like it will do the trick, but...

I can't find it in any of the libraries (It also is not in the kernal)

Any suggestions?



By [Neal Bridges](#) on Tuesday, June 27, 2000 - 01:56 pm: [Edit](#)

set-places is in the newest version of float-ext, available here:

<http://www.quartus.net/files/PalmOS/Forth/Library/float-ext.txt>

Neal

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E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Quartus, serial and USB (Handspring Visor) ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Quartus, serial and USB (Handspring Visor) ?



By [David Craig](#) on Monday, June 26, 2000 - 04:45 pm: [Edit](#)

Hi All-

I am (re)learning basic FORTH and am very impressed so far with Quartus. I am interested in interfacing Palm OS devices to devices other than computers (data loggers, like TI or Vernier LabPros/CBLs, etc.)

The handspring visor I have has a USB cradle and I am soon to acquire a standard serial cradle.

Is there any difference between USB and serial as far as Forth is concerned? Will the serial library handle both? (I don't know much about USB - its been a while since I wrote line handling programs.)

I would welcome any advice for a Palm/Quartus newbie.



By [Neal Bridges](#) on Tuesday, June 27, 2000 - 10:56 am: [Edit](#)

Thanks for your kind words!

The serial functions in the Palm OS do not operate the USB port. There are a series of library calls required to use the USB port on a Handspring Visor; these are documented in the C header files that Handspring provides at their development site. I can help you translate those to Quartus Forth as required.

Neal



By [David Craig](#) on Tuesday, June 27, 2000 - 05:03 pm: [Edit](#)

So, if I have a serial cradle will the Quartus library work? Will it simply transmit characters down the cradle line, at say 9600 baud?

In other words, is a serial cradle just a fancy serial line? The Palm hardware has a serial line, right? I may need to check with Handspring . . .

One of the devices I am interested (the TI CBL data logger) only has a serial-type port (with an odd cable style that I can adapt).

Thanks again.

-David



By [Mike Keesling](#) on Wednesday, June 28, 2000 - 01:52 pm: [Edit](#)

I have been doing serial comms to external devices I have designed on both the visor and the palm, just need the serial cradle and you're good to go. I'm working on using the springboard module interface to address a handfull of a/d d/a and other boards I have lying around. Does this sort of interface interest you?



By [rniere](#) on Wednesday, July 12, 2000 - 01:10 pm: [Edit](#)

I would be interested in a forth port for the usb calls.

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Convert float to double

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Convert float to double



By [Chris Bucsko](#) on Monday, June 26, 2000 - 02:13 pm: [Edit](#)

I'm looking for a way to convert a floating point result to a double number and leave it on the stack. In my application, I find floating point the best way to do math, but I want to use the bracket-number method to format the output string (<# # #>). This requires a double precision number, unless there's a floating point equivalent for the <# # #> words. If anyone can help, it would be appreciated. Thanks.



By [Neal Bridges](#) on Monday, June 26, 2000 - 02:21 pm: [Edit](#)

F>D will convert the integer part of a float to a double-cell integer on the stack. However, what sort of formatted output are you looking for? It may be possible to do it more simply.

Neal



By [Chris Bucsko](#) on Monday, June 26, 2000 - 05:46 pm: [Edit](#)

Thanks, Neal. Once again, I have been blinded by the obvious! I was looking at S>D and D>S, but kept looking for float>double in the library and ISO forth docs. My application is a training log for people who run, bike, swim, etc. You enter your mileage as a FP number (up to 2 decimal places), and total time as HH:MM:SS where HH, MM and SS are separate fields. I then calculate total seconds, and divide by the mileage to get seconds/mile. I found some code in 'Starting Forth' which can re-format a double number into HH:MM:SS format very nicely:

```
\ test-time 6/24/00
```

```
: sextal 6 base ! ;  
: :00 # sextal # decimal 58 hold ;  
: sec <# :00 :00 #s #> type space ;
```

So what I plan to do is keep everything in FP, since it's most accurate, then convert to a double value, then a string at the end to display. I thought about keeping everything as double values throughout, but it seems that the scaling factor would be difficult (5.25 and 525 miles look the same on the stack). I also tried using Floor to extract the integer portions of the decimal seconds to display, but Floor leaves a trailing '.'. The code above seems most elegant, and really demonstrates the beauty of Forth, in my opinion. I'm open to suggestions, though. I think this forum is fantastic!!



By [Travis Casey](#) on Tuesday, June 27, 2000 - 09:34 am: [Edit](#)

Have you considered using fixed-point math instead of floating-point? Considering that you know that you'll never have more than two decimal places, it seems to be somewhat of a waste to use floats.

With a double and fixed-point, you can have the last two digits be the decimal, and unless someone manages to run more than 40 million miles, you won't have to worry about overflow. That'll also eliminate any need to convert to double.

Starting Forth should have a section on fixed-point math, if I remember right.

--Travis



By [Neal Bridges](#) on Tuesday, June 27, 2000 - 11:17 am: [Edit](#)

If you track all distances in hundreths-of-a-mile, scaling in fixed point becomes simple. It's like keeping track of money in pennies, instead of dollars and fractional dollars.

Floating point also works, however. To display a floored floating-point number without the final '.', use (fs.) and subtract one from the length before displaying.

Neal



By [Neal Bridges](#) on Tuesday, June 27, 2000 - 11:18 am: [Edit](#)

Another suggestion to broaden your market: allow a user-configurable choice of either miles or kilometres.

Neal



By [Chris Bucsko](#) on Tuesday, June 27, 2000 - 05:56 pm: [Edit](#)

Thanks for the suggestions. Using fixed point was my first choice, but I'm still a little new, and most of the borrowed code I could find uses FP. I worked it out last night, and it works beautifully with F>D. Having a choice of miles and kilometers is a very good idea, and I will probably do it as I get better at coding.



By [Chris Bucsko](#) on Tuesday, June 27, 2000 - 06:13 pm: [Edit](#)

BTW, I'm looking for a PalmOS event which invokes the calendar. I want to date the log entries, and instead of just entering the numbers, I would like to have the calendar displayed. The user would then select the day, just like the date book app does. I have seen a couple of apps do this, and am searching through the PalmOS event ref doc. Anyone have any ideas?



By [Neal Bridges](#) on Tuesday, June 27, 2000 - 06:18 pm: [Edit](#)

Here's a thread that should help: [SelectDayV10 example](#)



By [chris bucsko](#) on Wednesday, June 28, 2000 - 02:17 pm: [Edit](#)

Thanks again!!

Add a Message

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Field Object Overlocked Error

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Field Object Overlocked Error



By [James D. Purdy](#) on Monday, June 26, 2000 - 12:57 pm: [Edit](#)

I am using the following code to basically do a directory of the MemoDB. The code works, but I get the OverLocked error when I try to EDIT any memo afer running the program containing the code.

needs NewMemo

```
: dir? ( end_index start_index  -- )
  cl_name_buf  cl_buf
  name_buf  cpointer !
  do
    i index !  GetCurrentMemo
    50. 2swap buffer >abs
    MemMove drop
    0 ReleaseCurrentMemo drop
    CR buffer 50 indexof dup >r
    buffer swap
    cpointer @  zplace
    r> cpointer @ + 1+ cpointer !
  loop  ;

: dir>list ( #_of_rec's -- )
  dup >r name_buf >abs
  SysFormPointerArrayToStrings
  MemHandleLock r> -rot
  DirListID GetObjectPtr
  LstSetListChoices
  DirListID GetObjectptr
  LstDrawList  ;
```

Any suggestions?



By [Neal Bridges](#) on Monday, June 26, 2000 - 01:19 pm: [Edit](#)

(Note: I put a \pre{ } tag around your source to preserve the indentations.)

You need to do a MemPtrUnlock on the pointer returned by GetCurrentMemo, before you do the ReleaseCurrentMemo. That should fix it.

Neal



By [James D. Purdy](#) on Monday, June 26, 2000 - 02:09 pm: [Edit](#)

I added this as shown, but I still have a crash.
"invalid handle" this time.

```
i index ! GetCurrentMemo 2dup
2>R 50. 2swap buffer >abs
MemMove drop
2R> MemPtrUnlock
0 ReleaseCurrentMemo drop
CR buffer 50 indexof dup >r
buffer swap
cpointer @ zplace
r> cpointer @ + 1+ cpointer !
```

Is this the proper way to use this command?
Sorry for the trouble I'm kind of new at this.



By [Neal Bridges](#) on Monday, June 26, 2000 - 02:19 pm: [Edit](#)

You need to do a DROP after the MemPtrUnlock. Have a look at
FindMemoInCategory as a reference for this.

Neal



By [Jim Purdy](#) on Monday, June 26, 2000 - 02:24 pm: [Edit](#)

Thanks a Million, it works great!



By [Neal Bridges](#) on Monday, June 26, 2000 - 03:54 pm: [Edit](#)

Glad I could help, Jim.

Neal

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

New word definitions

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): New word definitions



By [John Newell](#) on Monday, June 26, 2000 - 06:37 am: [Edit](#)

There are some funny definitions of words around. How about:

3DUP "three-dupe"

(x1 x2 x3 -- x1 x2 x3 x1 x2 x3)

Duplicate cell triplet x1 x2 x3.

: 3DUP

DUP 2OVER ROT ;

It only uses CORE words.

John

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Problem with D.R

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Problem with D.R



By [richard schwartz](#) on Sunday, June 25, 2000 - 01:07 am: [Edit](#)

My palm III does this:

```
123456. depth . <cr> 2 OK
d.r <cr> -499097232
d.r? stack underflow
```

I am able to get d.r to work by putting a dummy single precision integer on top of the double precision number to be displayed. It does not matter what it is; it seems to act as a place holder. Depending on the speed of execution, perhaps a dup would work equally well.

redefining d.r also works:

```
: d.r 1 d.r ;
```

But this is really klutzy and I would rather not do it.

So my question: where is there a list of all those words with documentation that explains the differences between Quartus and Leo Brodie forth? Where can I look this up and not bug you any more?

. . . Richard



By [Neal Bridges](#) on Sunday, June 25, 2000 - 01:19 am: [Edit](#)

D.R is a Standard word in [the Double-Number wordset](#).

If you check the "[Online Resources](#)" [section of the manual](#), you'll find a link to the examples in Starting Forth converted to ANS Forth. That may help.

Neal

Add a Message

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Pop! systrap menu

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Pop! systrap menu



By [Graham Lamont](#) on Saturday, June 24, 2000 - 03:41 pm: [Edit](#)

I've attempted to make inputting systrap calls easier using [Pop!](#), a great pop-up menu facility.

I have hacked a Pop menu which pastes each of the 828 systrap functions along with the stack diagram from a Pop! menu. This means each systrap is but 2taps and 3 stylus moves away. A registered version of Pop! is needed.

The menu is 2 deep, and is listed A-Z with 5 top level categories. The idea for the future is that core FORTH words can be added at level 1 of the menu.

1. Rename the "image" below to qpop.prc
 2. Load onto palm.
 3. Use Pop! import facility to load qpop.prc which is in doc format.
 4. Double-tapping in memopad etc will bring up systrap menu.
 5. Prefs in Pop! can be altered to give optimised UI
- e.g i) Set Sticky menu,
ii) alter menu size to full length (each menu has been made ≤ 15 so that no scrolling is needed if full length)

This is really just an idea, feel free to do what you like with it.
Please give any feedback as to the usefulness or otherwise of qpop.

Your Image Here



By [Neal Bridges](#) on Saturday, June 24, 2000 - 04:41 pm: [Edit](#)

Graham: interesting. The effort to put the PRC up as an image seems to have failed, though. Send it to me and I'll link it in accordingly.

Neal

Add a Message

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Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Extension Cord application

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Extension Cord application



By [Dave Bennett](#) on Saturday, June 24, 2000 - 09:21 am: [Edit](#)

I have written an application call Extension Cord. (I can feel the excitement!)
The source code and a brief tutorial on it are at my website
(www.micoks.net/~dbennett).

This application taught me two things: how to change the screen font and how to use drop down list boxes.

As usual, thanks to Neal. Also Edwin for his doc interface, and Ron for his string-constant stuff.



By [Neal Bridges](#) on Saturday, June 24, 2000 - 10:50 am: [Edit](#)

Thanks Dave! I suggest you post a compiled version, along with the sources and tutorial, at PalmGear.

Neal



By [Dave Bennett](#) on Saturday, June 24, 2000 - 11:13 am: [Edit](#)

I haven't had much success with things over there lately. Several apps that I've tried to locate or download hit 404s (empty pages). Their search engine doesn't work very well either. I have not been able to put in the name of an app and have it find it (even though it is on the site) in quite a while. I rate their site rather low on a "user experience" scale.

Dave



By [Neal Bridges](#) on Saturday, June 24, 2000 - 12:53 pm: [Edit](#)

They've been having a few techincal difficulties of late, I think. It seems pretty good today.

Neal



By [Dave Bennett](#) on Monday, June 26, 2000 - 08:00 am: [Edit](#)

I'll look into what it takes to get it up over there then.

Dave



By [Dave Bennett](#) on Thursday, July 6, 2000 - 05:22 pm: [Edit](#)

OK. I've gotten WindChillFactor and Extension Cord posted at palmgear now. I'm assembling two other apps as tutorials that I should have available soon.



By [Neal Bridges](#) on Thursday, July 6, 2000 - 05:28 pm: [Edit](#)

If you get a chance, Dave, use the Emulator to produce a couple of screenshots for your apps, and upload those to PalmGear. People like those screenshots.

Neal



By [Dave Bennett](#) on Friday, July 7, 2000 - 04:38 am: [Edit](#)

I have never gotten the emulator to work on my machine and have never actually used it. I only use my PC to come here and a couple of other places; everything else is Palm only. If you'd be so gracious as to capture something meaningful I'd gladly upload it.



By [Neal Bridges](#) on Friday, July 7, 2000 - 04:28 pm: [Edit](#)

Dave, I had a quick look -- you don't distribute compiled PRCs with your source and resources. I suggest you do, it'll make it a lot easier for non-developers to use your apps. Easier for me to make screenshots, also, as right now I'd have to install your sources and compile :)

Neal

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

E-mail:

Actual Address

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Actual Address



By [Barak Shilo](#) on Friday, June 23, 2000 - 02:28 pm: [Edit](#)

Hi,

This is concerning the infrared printing program I'm working on. I found the following header file for dragonball ez development:

```
/*-----*
* Filename: m68328.h *
* *
* This file can be used as a general include file for software *
* development on the MC68328 DragonBall platform. It contains *
* registers' definitions on the MC68328. *
* *
* Supporting staff: Perry Vo - Motorola HPESD *
*-----*/

#ifndef M68328_INCLUDED
#define M68328_INCLUDED

#define M328BASE 0xFFFF000
...
...
/* UART Registers */
#define M328_USTCNT (M328BASE+0x900) /* Status Control Reg */
#define M328_UBAUD (M328BASE+0x902) /* Baud Control Reg */
#define M328_UARTRX (M328BASE+0x904) /* Rx Reg */
#define M328_UARTTX (M328BASE+0x906) /* Tx Reg */
#define M328_UARTMISC (M328BASE+0x908) /* Misc Reg */
...
...
#endif
////
```

I'm wondering how I can find what the actual address for these registers would be on a Visor Deluxe. The M328BASE constant seems to high.

Thanks.



By [Neal Bridges](#) on Friday, June 23, 2000 - 02:39 pm: [Edit](#)

Use:

(hex) fffff000. 2constant M328BASE

Neal



By [Barak Shilo](#) on Saturday, June 24, 2000 - 06:38 pm: [Edit](#)

I tried writing a word 'p' to print the status of the ir port. Should the following work?

```
/ ir  
(hex) ffff000. 2constant M328BASE  
M328BASE (hex) 906. + constant ir
```

```
: p cr ." ir (tx) value: " ir @ . cr
```

also, if I then do a: 1 ir !
should this turn on the ir port?

one more thing, where did you get the address for M328BASE from? Isn't it greater than 4 gigabytes into memory? I mean, it didn't crash my visor, so I'm just wondering how this addressing works.
(I'm currently reading/skimming through "Starting Forth" and just got a book on 68000 assembly, so please excuse me as I've only had experience with higher level programming before this...)

Thanks,
Barak



By [Barak](#) on Saturday, June 24, 2000 - 06:43 pm: [Edit](#)

I just noticed I wrote "/ ir" in the above message. I used a backslash when I wrote it on my visor, but I guess I inverted it when I copied it here... just in case you were wondering how I got it to run.



By [Neal Bridges](#) on Saturday, June 24, 2000 - 06:58 pm: [Edit](#)

Here's something a bit closer to the mark:

```
\ ir  
(hex) ffff000. 2constant M328BASE  
M328BASE (hex) 906 m+ 2constant ir
```

Note the use of 2constant. More simply:

```
(hex) ffff906. 2constant ir
```

Also

1 ir !a

is the required method to write to a 32-bit address.

Neal



By [Barak Shilo](#) on Saturday, June 24, 2000 - 08:07 pm: [Edit](#)

Hi,
I tried the following:

```
\ ir
(hex) ffff906. 2constant ir
: p cr ." ir (tx) value: " ir @a . cr
```

It works, but I can't tell if it's doing anything.
I went into Quartus and did/got the following:

```
include ir ok
p
ir (tx) value: -29952
ok
0 ir !a ok
p
ir (tx) value: -32000
ok
1 ir !a ok
p
ir (tx) value: -32000
ok
```

Can you tell me what's going on? Is there a way to tell if I'm turning the transmitting IR diode on?



By [mike keesling](#) on Sunday, June 25, 2000 - 01:14 pm: [Edit](#)

Try looking at the visor's ir port with a video camera. (black and white is better).
If you don't see anything, look at a remote for your vcr. If you see flashing when you press a button, your camera is sensitive to ir.



By [Ron Doerfler](#) on Sunday, June 25, 2000 - 09:37 pm: [Edit](#)

Radio Shack sells a little card that has some material on it that glows orange when an IR LED is on and pointed at it.



By [Barak Shilo](#) on Sunday, June 25, 2000 - 11:43 pm: [Edit](#)

Thanks for the idea Mike! I tried it with my Panasonic Palmcorder, and it works very well.

when I do a:

(hex) ffff ir !a

I see that the IR turns on until I do:

0 ir !a

It was very satisfying to see that this actually works.

Now I'd really appreciate it if someone could explain to me why the address (ffff906) is so high. Also, what would be the best way to time the intervals between ir pulses? I need to send 30.5 microsecond pulses. Thanks.



By [Neal Bridges](#) on Monday, June 26, 2000 - 12:18 am: [Edit](#)

Re the high memory address of the control registers, this from the Motorola docs:

Quote:

The on-chip resources use a reserved 4,096-byte block of address space for their registers. This block is double-mapped to two locations—0xFFFFF000 (24-bit) and 0xFFF000 (32-bit)—at reset. The DMAP bit in the system control register disables double-mapping in a 32-bit system. If you clear this bit, the on-chip peripheral registers appear only at the top of the G address range starting at 0xFFFFF000.

Neal



By [Neal Bridges](#) on Monday, June 26, 2000 - 12:19 am: [Edit](#)

As regards microsecond timing on the Palm -- years back I read an article on just that. I suggest a search of the 'pilot.programmer' newsgroup, as I believe that was where I saw it mentioned.

Neal



By [mike keesling](#) on Monday, June 26, 2000 - 03:25 am: [Edit](#)

Could someone please post the web address where I can find these documents?(the ones regarding the hardware registers)

Also Barak,

Are you interested in developing springboard modules. I'm trying to work out a way to interface the visor to a personal robot, and am quite stuck...



By [Neal Bridges](#) on Monday, June 26, 2000 - 11:37 am: [Edit](#)

The Motorola docs can be found via the Quartus Forth manual, in the [Online](#)

[Resources](#) section.

Neal



By [Barak Shilo](#) on Monday, June 26, 2000 - 03:55 pm: [Edit](#)

Mike,
I'd like to help, but I'm pretty much a newbie to Palm OS programming and have practically zero hardware design experience. The only recommendation I can give is download some of handspring's developer docs and post a question to them if you need some specific info.

It sounds interesting though, what exactly are you trying to do?

(on a tangent, recently I've found that a springboard module that would function as a rechargeable battery pack would be very useful for me. It could come with an AC adapter to recharge it and also power the visor...)



By [Barak Shilo](#) on Monday, June 26, 2000 - 04:18 pm: [Edit](#)

Neal, I think I found the article. Does this sound familiar:

Subject: Re: Timing

Date: 05/24/1999

> Hey all, I'm building a suite of MIDI-enabled apps for the Pilot. They
> all require an element of timing; i.e. number of controller bytes per
> second, beats per minute, etc... so I have one setup for timing that
> I've been using, and I'm realizing that it isn't the most efficient;

i.e.

> I don't think that my "numbers" for doing timing are correct. I'm
using

> PilotMag & gcc for an upgraded Pilot 5000 using Geoff Smith's MIDI
> interface.

>

> While my app is running, stuff does happen every so often, but surely
> not every 5ms like I want. It seems more like 100ms or so. I can click
> on buttons too, which is the desired spec...

and it goes on. I haven't finished reading it, but thanks for the tip.



By [Neal Bridges](#) on Monday, June 26, 2000 - 04:48 pm: [Edit](#)

Radio Shack's infrared detector is a nifty little item. Here's the link:

[Infrared Detector - Cat. No. 276-1099](#)

Neal



By [mike Keesling](#) on Monday, June 26, 2000 - 07:38 pm: [Edit](#)

Barak,

My interest is both professional and personal.

I have been messing around with personal robotics for many years, and the idea of a palm-bot is a cool one. I would rather not mess around with doing all of my I/O over a serial line to another processor. I have a TON of boards I have collected over the years from a company which makes embedded FORTH processors and interface boards. I have 8 channel 24 bit quadrature reader boards, A/D, D/A, I/O, and LM-629 motion control boards, all of which stack physically, and sit on an address and data bus. The cards are memory mapped with jumpers.

Professionally, I'll probably only use serial comms to interface to some of the stuff I'm making, But I would at least like to test some of my ideas.

Just out of curiosity, what are you working on?



By [Barak Shilo](#) on Monday, June 26, 2000 - 11:17 pm: [Edit](#)

Mike, I want to make a program that will enable you to print text (and eventually graphics) via the infrared port of a Palm to an HP 82240A or [82240B](#) printer.

These printers don't use a standard IrDA protocol. I decided to do this since these are probably the cheapest portable, receipt type (thermal) printers with an infrared port. A little printer seems to be a perfect companion to a little computer. I bought an 82240A a few months ago on eBay for \$30, and I just bought an 82240B on eBay for \$50, but this one came with 6 rolls of paper, an AC adapter, and a manual. The 82240B is the newer model, and has an automatic shutoff feature, slightly improved output, and a cool little LED that lights up when it's on. So for now I have these 2 printers, and all I can do is print self-tests. In any case, I thought it would be fun to actually write a useful program, and I'll probably give it away as freeware.

If you want to see the GUI that I designed with RsrcEdit (remember, this isn't functional yet...) I posted 2 [screenshots](#).

Anyhow, that's basically what I'm doing, and trying to learn everything in the process.



By [Ron Doerfler](#) on Tuesday, June 27, 2000 - 11:04 am: [Edit](#)

Do I understand from this that the code above will turn on the IR LED and the LED will stay ON until turned OFF? I was under the impression that you could turn on the IR LED, but it would run at a certain baud rate rather than stay completely on. If you get complete ON/OFF control, that would be nice.

Also, is this different for the non-EZ Dragonball? And finally, is it true that things

would be different for Palms using the PalmIII Upgrade card, as the UART is shared between the IR port and serial port.



By [Ron Doerfler](#) on Tuesday, June 27, 2000 - 10:02 pm: [Edit](#)

Regarding timing microseconds on the Palm, Ken Krugler was nice enough to respond to my query about his demo program that I downloaded over a year ago. The program can be found at:

<ftp://ftp.transpac.com/timer>

and in addition to the PalmOS timer .PRC file, there is a directory with the source code and also a header directory.

It's actually a bit of fun to start and stop the timer in the demo program and watch it fly.

Ron



By [Barak Shilo](#) on Tuesday, June 27, 2000 - 10:56 pm: [Edit](#)

I realized that not only does the message that I found on pilot.programmer talk about millisecond timing, it doesn't even cover that completely since it's solution is to use TimGetTicks and SysTicksPerSeconds. On my visor, SysTicksPerSeconds returns 100, which means that it's only accurate to 10 milliseconds. However, I think that I could calculate the number of noops I need for a microsecond every time the program starts using these functions, and then just use noops for timing. I'll also look at that timing program...



By [Barak Shilo](#) on Wednesday, June 28, 2000 - 01:54 am: [Edit](#)

Alright... here's my plan. I wrote the following code:

```
\ micro
variable x

: calibrate    0 x !
    TimGetTicks drop
    begin dup
    TimGetTicks drop = if
        1 x +!
    else  x @ . drop exit
    then again ;
```

This code seems to work, it returns the number of times it has gone through the loop. However, when I slightly modify it to this:

```
: calibrate    0 x !
```

```
TimGetTicks drop
begin dup
TimGetTicks drop = if
  1 x +!
  else x @ constant tix drop exit
then again ;
```

I get an error message when I include the file: "Exception in file: micro tix? undefined word"

I simply want to have the value of x stored to the constant tix.

In any case, my plan is to somehow find out how many CPU cycles this loop uses every time it goes through itself (maybe someone can help me with this part...) and then multiply that number by the number of times the loop is executed. This should give me a pretty precise estimate of the number of CPU cycles in 10 milliseconds. Then I'll divide this number by 10,000 to get the number of cycles in a microsecond. From there it should be simple to set a for loop that would execute that many noops for a 1 microsecond delay. So, do you think this'll work? Thanks.



By [Barak Shilo](#) on Wednesday, June 28, 2000 - 02:07 am: [Edit](#)

ARGGGH!!! Before I was running the above code on the palm emulator and was getting pretty consistent results, only off by a few... but I just ran the calibrate word on my visor and got extremely inconsistent results (like 40, 214, 35, 167, etc) and realized why this doesn't work. The loop can start at any point in between ticks, so as a result it can start just before changing ticks and be merely a fraction of 10 milliseconds, etc. However, this should be easy to fix: all I need to add is another initialization loop that will wait for a tick and then immediately start "calibrate." In any case, the above questions still apply.



By [Jim N. Deakin](#) on Wednesday, June 28, 2000 - 05:40 am: [Edit](#)

You said:

I get an error message when I include the file: "Exception in file: micro tix? undefined word"

I simply want to have the value of x stored to the constant tix.

You can't just define a constant within a definition like that. Quartus compiles the word 'constant' into the current definition, like any other word, then runs up against 'tix' that it has never heard of.

Perhaps the simplest way to do what you want is to declare

0 VALUE tix

before the word definition, then use the word TO to store new values to it. A value word can be used just like a constant.

Jim Deakin



By [Barak](#) on Tuesday, July 4, 2000 - 12:28 am: [Edit](#)

Thanks. (I used your tip soon after you posted it... sorry for not replying sooner)



By [Barak](#) on Tuesday, July 4, 2000 - 01:11 am: [Edit](#)

I've realized a few things recently... storing ffff to the tx register does a lot more than just turn the IR on. I'm currently also going through 3 other IR related UART registers... Chapter 11 of this [motorola manual](#) details the UART registers. Also, I've found that on my Visor, a NOOP should equal about 1.5 microseconds. Should putting a NOOP in a for loop be an accurate delay timer? In any case, I'm also wondering if anybody knows how accurate the following (undocumented) API functions are (and how to use them). They're from SystemMgr.h. Thanks.

```
// Timers
```

```
Err SysTimerCreate(UInt32 *timerIDP, UInt32 *tagP,  
SysTimerProcPtr timerProc, UInt32 periodicDelay,  
UInt32 param)  
SYS_TRAP(sysTrapSysTimerCreate);
```

```
Err SysTimerDelete(UInt32 timerID)  
SYS_TRAP(sysTrapSysTimerDelete);
```

```
Err SysTimerWrite(UInt32 timerID, UInt32 value)  
SYS_TRAP(sysTrapSysTimerWrite);
```

```
Err SysTimerRead(UInt32 timerID, UInt32 *valueP)  
SYS_TRAP(sysTrapSysTimerRead);
```

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Background communication

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Background communication



By [Ronny Svensson](#) on Friday, June 23, 2000 - 09:45 am: [Edit](#)

I'm communicating in the background using Ir. I have redefined Ekey to handle the communication:

```
: EKey ( -- eventtype )  
  CheckComm 10. (EKey) ;
```

It works ok, but the communication stops when i'm changing a list. Is there some way to keep the communication running all the time? Could i use EventHandler, if so how often is the eventhandler called if there are no events? Are there any restrictions on code called from EventHandler?

Ronny



By [Neal Bridges](#) on Friday, June 23, 2000 - 10:14 am: [Edit](#)

EventHandler won't help you here. What happens is that certain GUI objects in the Palm OS have their own event handling loop (alerts, lists, etc.). To change the nature of all event handling, you'd need to patch into EvtGetEvent. Tricky, but not impossible.

Neal



By [Ronny Svensson](#) on Friday, June 23, 2000 - 10:23 am: [Edit](#)

What does it mean to "patch into EvtGetEvent"? Where do i find any info on this?

Ronny



By [Neal Bridges](#) on Friday, June 23, 2000 - 10:26 am: [Edit](#)

Search on SysGetTrapAddress and SysSetTrapAddress, in conjunction with a patch routine written in assembler. It's what HackMaster does. As I say, quite tricky.

Neal

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New Quartus App

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): New Quartus App



By [Ron Doerfler](#) on Wednesday, June 21, 2000 - 03:57 pm: [Edit](#)

Hi everyone,

Just a note to say that I've posted a new Quartus app, TeamFile, to PalmGear at <http://www.palmgear.com>. It's a checklist manager for groups such as sports teams, clubs or organizations, classrooms, etc. It's a fairly standard app compared to my others, but I needed it for my coaching and I was using it as I wrote it.

Again, the source is freely available to anyone on this forum. Drop me a line at the email address above and I'll send it.

Thanks for everyone's advice and support here.

Ron



By [Neal Bridges](#) on Wednesday, June 21, 2000 - 06:11 pm: [Edit](#)

Thanks for posting that, Ron! Another interesting package. You certainly do put Quartus Forth to good use. :)

Neal

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Password: the "Password" box empty. Your e-mail address is optional.

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Interpreting the DPANS standard

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Interpreting the DPANS standard



By [Tammy Cravit](#) on Wednesday, June 21, 2000 - 02:57 pm: [Edit](#)

As I am (still) muddling my way through debugging and testing my first Quartus application, I am finding that there are some places where the way I understand a word to behave doesn't match what's actually happening. So, I tried to look at the ANS standard, and now, instead of being merely confused, my brain is exploding. :-)

For example, the standard's definition of the words DO and LOOP read as follows:

6.1.1240 DO CORE

Interpretation: Interpretation semantics for this word are undefined.

Compilation: (C: -- do-sys)

Place do-sys onto the control-flow stack. Append the run-time semantics given below to the

current definition. The semantics are incomplete until resolved by a consumer of do-sys such

as LOOP.

Run-time: (n 1 |u 1 n 2 |u 2 --) (R: -- loop-sys)

Set up loop control parameters with index n 2 |u 2 and limit n 1 |u 1 . An ambiguous condition

exists if n 1 |u 1 and n 2 |u 2 are not both the same type. Anything already on the return stack

becomes unavailable until the loop-control parameters are discarded.

See: 3.2.3.2 Control-flow stack, 6.1.0140 +LOOP, 6.1.1800 LOOP.

6.1.1800 LOOP CORE

Interpretation: Interpretation semantics for this word are undefined.

Compilation: (C: do-sys --)

Append the run-time semantics given below to the current definition. Resolve the destination

of all unresolved occurrences of LEAVE between the location given by do-sys and the next

location for a transfer of control, to execute the words following the LOOP.

Run-time: (--) (R: loop-sys 1 -- | loop-sys 2)

An ambiguous condition exists if the loop control parameters are unavailable. Add one to the

loop index. If the loop index is then equal to the loop limit, discard the loop parameters and

continue execution immediately following the loop. Otherwise continue execution at the

beginning of the loop.

See: 6.1.1240 DO, 6.1.1680 I, 6.1.1760 LEAVE.

That's all well and good, I suppose, but that still doesn't tell me how to use the word. For example, I have no idea what the stack diagram shown there means, nor (for instance) what a do-sys is.

Can anyone give some pointers on how to read the DPANS standard and turn its definitions into something usable? For example, how do I get from what the standard said to the knowledge that I need to write (for instance):

```
: my-word
  0
  256 0 do
    i +
  loop
;
```

The standard seems really useful to those writing Forth environments, but so far I'm finding it really overwhelming in learning how to program in Forth. Any suggestions or pointers would be appreciated.

Thanks,
Tammy



By [Matthew Blair](#) on Wednesday, June 21, 2000 - 03:16 pm: [Edit](#)

Tammy - the best thing to do is to grab a copy of "Starting Forth", by Leo Brodie. That book may be somewhat hard to find, but another good tutorial is Leo Wong's pages. You can find the link to his page in the manual (Simple Forth? I think it's called...)

Good luck,

Matthew

P.S. Next best think - ask it here on the forum!



By [Steve Bohrer](#) on Thursday, June 22, 2000 - 12:07 am: [Edit](#)

I think that "Forth Programmer's Handbook" by "Edward Conklin, Elizabeth Rather, and the technical staff of FORTH, Inc." is a more approachable reference on the ANS standard words. It does not claim to be an introduction for the novice (and refers readers to "Starting Forth") but it does have enough explanation to make things comprehensible. It also has a glossary for each standard word, although these are pretty terse.

I have found this book useful for determining which words are standard words, and what they do. It also has background info that is helping me get a grip on some of the under-the-covers parts of Forth, although I'm not nearly there yet.

I have not read all of the Handbook; I have read the first few chapters, and I use it for a reference.

I ordered my copy directly from FORTH, Inc at www.forth.com (The "Forth History" pages at that site are really fun to read as well.)



By [Garth T Kidd](#) on Thursday, June 22, 2000 - 12:31 am: [Edit](#)

I know it's cheating, but is there any software out there that will take [simplified] C code and spit out some Forth that will do much the same thing? It'd be a massive time-saver.

Hmm. Just imagine the power of Pocket C cross-compiling to Quartus Forth. :)



By [Andrew Kearns](#) on Thursday, June 22, 2000 - 11:25 am: [Edit](#)

Hmm, I just finished converting a small random maze generator from PocketC to Forth and boy would I love a converter! :)

Of course this was my first attempt at Forth, so the three days I spent were more coming to grips

with Forth than anything else. I must say though, a highly optimized PocketC code took 10 seconds to run, and the first attempt at Forth (which could probably be streamlined immensely) runs faster than I can visibly time it.

Since I have a game approaching release in PocketC now I'm thinking I'd love to convert it to Forth and gain speed, and support for the new OS features such as colour or at least gray...

PocketC is very simple to use and handy for some projects but it is just too slow.

If anyone wants a recursive random maze generator algorithm in Forth I'll post it. I'm pleased to get something that finally doesn't crash my Palm. :)

Andrew



By [Neal Bridges](#) on Thursday, June 22, 2000 - 11:31 am: [Edit](#)

I'd like to see that, Andrew. I played with mazes a few years back.

Neal



By [Neal Bridges](#) on Thursday, June 22, 2000 - 11:34 am: [Edit](#)

In fact, Andrew, if you don't mind I'd like to see the original Pocket C sources also.

Neal



By [Andrew Kearns](#) on Thursday, June 22, 2000 - 03:20 pm: [Edit](#)

No problem, here is the PocketC version, this is before PocketC specific optimization. The algorithm is from usenet, I only claim the frustrations of conversion. :)

You can change x and y to any size, change the array size too of course. Sizes have to be odd.

```
// mazegen.c
/*
 * maz.c - generate a maze
 *
 * algorithm posted to rec.games.programmer by jallen@ic.sunysb.edu
 * program cleaned and reorganized by mzrally@ldbvax.dnet.lotus.com
 *
 * don't make people pay for this, or I'll jump up and down and
 * yell and scream and embarrass you in front of your friends...
 *
 * PocketC version with some changes that probably slow it down immensely. Heh.
 * Change x and y in the main function to get different sizes. The output chars
 * are customizable as well, they default to palm characters of the same width.
 * modified by Andrew Kearns - vilmos\_@hotmail.com, with apologies to the original author
 * for the mess.
 */
mazegen(int pos);

int multiple = 57; /* experiment with this? */
int offset = 1; /* experiment with this? */
int x,y,rnd;
pointer maz;

/*
```

```

* maze() : generate a random maze of size (y by x) in maz, using vc as the
* vertical character, hc as the horizontal character, and fc as the floor
* character
*
* maz is an array that should already have its memory allocated - you could
* malloc a char string if you like.
*/

```

```

int maze(pointer maz,int y, int x,char vc, char hc, char fc)

```

```

{
int i, yy, xx;
int max;
int rnd;
/* For now, return error on even parameters */
/* Alternative is to decrement evens by one */
/* But really that should be handled by caller */
max=y*x;
rnd=random(432567)+random(234324);
if (!(y & 1) | !(x & 1))
return (1);

/* I never assume... */
for (i = 0; i < max; ++i)
maz[i] = 0;

mazegen((x + 1));

/* Now replace the 1's and 0's with appropriate chars */
for (yy = 0; yy < y; ++yy) {
for (xx = 0; xx < x; ++xx) {
i = (yy * x) + xx;

if (yy == 0 || yy == (y - 1))
maz[i] = hc;
else if (xx == 0 || xx == (x - 1))
maz[i] = vc;
else if (maz[i] == 1)
maz[i] = fc;
else if (maz[i - x] != fc && maz[i - 1] == fc
&& (maz[i + x] == 0 || (i % x) == (y - 2)))
maz[i] = vc;
else
maz[i] = hc; /* for now... */
}
}
return 0;
}

```

```

/*
* mazegen : do the recursive maze generation
*
*/

```

```

mazegen(int pos)
{
int d, i, j;

```

```
int d1,d2,d3,d4,d5,d6,d7,d8;
```

```
maz[pos] = 1;
```

```
//d1
if (pos <= x * 2)
d1=0;
else
if (maz[pos - x - x])
d1=0;
else
d1= 1;
//d2
if (pos>=x*(y-2))
d2=0;
else
if (maz[pos+x+x])
d2=0;
else d2= 2;
```

```
//d3
if (pos%x==x-2)
d3=0;
else
if (maz[pos+ 2])
d3=0;
else d3= 4;
```

```
//d4
if (pos%x== 1)
d4=0;
else
if (maz[pos-2])
d4=0;
else d4= 8;
```

```
// My interpretation
// d=(d1 | d2 | d3 | d4);
while (d=d1|d2|d3|d4){
/* while (d = (pos <= x * 2 ? 0 : (maz[pos - x - x] ? 0 : 1))
| (pos >= x * (y - 2) ? 0 : (maz[pos + x + x] ? 0 : 2))
| (pos % x == x - 2 ? 0 : (maz[pos + 2] ? 0 : 4))
| (pos % x == 1 ? 0 : (maz[pos - 2] ? 0 : 8))) { */
```

```
do {
rnd = (random(297846463));
i = 3 & (rnd / d);
```

```
} while (!(d & (1 << i)));
```

```
if (i==0)
j=-x;
if (i== 1)
j=x;
if (i== 2)
```



```

j= 1;
if (i==3)
j=- 1;
maz[pos + j] = 1;
mazegen((pos + 2 * j));
//d1
if (pos <= x * 2)
d1=0;
else
if (maz[pos - x - x])
d1=0;
else
d1= 1;
//d2
if (pos>=x*(y-2))
d2=0;
else
if (maz[pos+x+x])
d2=0;
else d2= 2;

//d3
if (pos%x==x-2)
d3=0;
else
if (maz[pos+2])
d3=0;
else d3= 4;

//d4
if (pos%x== 1)
d4=0;
else
if (maz[pos-2])
d4=0;
else d4= 8;
}
return;
}

```

```

main()
{
// extern int optind;
// extern char *optarg;
char hor;
char ver;
char flo;
char TheMaze[900];

```

```

int i;

```

```

x = 25;
y = 11;
hor = '+';
ver = '+';
flo = 'x';
maz=TheMaze;

```

```

if (maze(maz,y,x,ver, hor, flo) == 0) {
clear();
for (i = 0; i < (x * y); ++i) {
puts(maz[i]);
if (((i + 1) % x) == 0)
puts('\n');
}
} else {
puts("Couldn't make the maze\n");
}

exit();
}

```



By [Andrew Kearns](#) on Thursday, June 22, 2000 - 03:25 pm: [Edit](#)

...and now here is the Forth version of the recursive maze algorithm. Don't laugh too hard, this is my first attempt at Forth. :)

To run enter:
width height maze

width and height must be odd integers, and there is a max of 31, because that is my target size, and the max for the display with a 5 pixel box per maze square.

```

\ maz
needs toolkit
needs core-ext
needs graphics
needs random
variable x1
variable y1
variable d1
variable d2
variable d3
variable d4
variable d
variable ii
variable jj
variable rnd
decimal 961 array maz
  rand rnd !
: initmaz 961 0 do 1 i maz ! loop ;

: 3dup 2 pick 2 pick 2 pick ;

: calcd1 ( n n -- flag )
2dup swap 2 * >
  if swap dup rot rot - swap - maz @ 0 =
    if 0 else 1 then else 2drop 0 then ;

: calcd2 ( n n n -- flag )
3dup rot 2 - rot * <
if swap 2 * + maz @ 0 =
  if drop 0 else drop 2 then else 3drop 0 then ;

```

```

: calcd3 ( n n -- flag )
2dup swap dup 2 - rot rot mod = if 2drop 0 else 2 + maz @ 0 = if
drop 0 else drop 4 then then ;

: calcd4 ( n n -- flag )
2dup swap mod 1 = if 2drop 0 else 2 - maz @ 0 = if drop 0 else drop 8 then then ;

: checkii ( -- n )
ii @ 1 swap lshift d @ AND ;
: calcii ( -- )
begin
  rnd @ 57 * 1 + rnd !
  rnd @ d @ / 3 AND ii !
checkii
  0<> if exit then
again ;

: calcjj ( -- )
ii @ 0 = if over -1 * jj ! then
ii @ 1 = if over jj ! then
ii @ 2 = if 1 jj ! then
ii @ 3 = if -1 jj ! then ;

: calcnewpos ( -- n n n )
dup jj @ + 0 swap maz !
2 pick 2 pick 2 pick 2 jj @ * + ;

: mazegen ( n n n -- )
dup 0 swap maz !
begin
2dup calcd1 d1 !
3dup calcd2 d2 !
2dup calcd3 d3 !
2dup calcd4 d4 !
d1 @ d2 @ OR d3 @ OR d4 @ OR d !
d @ 0<>
while
calcii calcjj calcnewpos
recurse
2drop drop
repeat ;
: draw-er-rec ( -- )
160 160 0 0 erase-rectangle ;
: drawmaze ( n n -- )
x1 ! y1 ! 0
y1 @ 0 do x1 @ 0 do
dup maz @ 1 = if 5 5 i 5 * 5 + j 5 * 5 + rectangle then 1+ loop loop drop ;

: maze ( n n -- )
initmaz dup 1 + mazegen drop
draw-er-rec drawmaze begin ekey again ;

```



By [Neal Bridges](#) on Thursday, June 22, 2000 - 03:38 pm: [Edit](#)

Thanks Andrew! I dropped in a `\pre{ }` tag around your code to keep your indentation.

Neal



By [Neal Bridges](#) on Thursday, June 22, 2000 - 04:08 pm: [Edit](#)

Andrew, it strikes me that multiplying by 57 and adding 1 is an poor way to generate a new random number. Why not use the random or ran4 library code directly?

Neal



By [Andrew Kearns](#) on Thursday, June 22, 2000 - 06:25 pm: [Edit](#)

I have to agree with you there. That was part of the original code, and experimenting in PocketC with the random function was too slow. Forth should prove no problem there though. Actually there are quite a few optimizations for the Forth code that I have discovered already. The many variables are only because I'm not used to stack manipulations yet. I need more practice.



By [Neal Bridges](#) on Thursday, June 22, 2000 - 06:30 pm: [Edit](#)

You're making very good progress. Let me know if you need any help.

Neal

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How to add note icons

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): How to add note icons



By [Matthew Blair](#) on Wednesday, June 21, 2000 - 12:16 pm: [Edit](#)

Hi all,

I would like to have a note icon adjacent to a field, similar to the list view in the ToDo application where a note can be attached to a todo item. I realize that the ToDo application uses TableManager functionality, specifically column of type "Textwithnotetableitem", but I would prefer not to use tables in my app.

So, is there another way to get that functionality short of putting a bitmap next to the field, and checking for pen taps within the bounds of the bitmap?

Thanks all,

Matthew



By [Neal Bridges](#) on Wednesday, June 21, 2000 - 02:50 pm: [Edit](#)

You could make inactive buttons with the right symbol in them (the little sheet of paper is a character in the symbol font), and activate the buttons as required.

Neal



By [Matthew Blair](#) on Wednesday, June 21, 2000 - 03:07 pm: [Edit](#)

Hi Neal,

How do I enter that character into RsrcEdit? And is there a way to view the characters in the symbol font?

Thanks,

Matt



By [Neal Bridges](#) on Wednesday, June 21, 2000 - 03:57 pm: [Edit](#)

I use a utility called "AsciiChart" for this -- search for it at PalmGear. You can select any character in any font, copy it to the clipboard, and paste it into the right place in RsrcEdit.

Neal



By [Matthew Blair](#) on Wednesday, June 21, 2000 - 04:29 pm: [Edit](#)

Neal - could you point me to the ASCII value of the note icon in the symbol font? I can't seem to find it using the "AsciiChart" utility.

Thanks,

Matthew



By [Neal Bridges](#) on Wednesday, June 21, 2000 - 05:02 pm: [Edit](#)

I've just discovered myself that AsciiChart doesn't behave properly under OS 3.5.

The little 'paper-with-folded-corner' symbol is the 11th character in the 3rd font.

: .paper 3 font 11 emit font drop ;

Neal



By [Matthew Blair](#) on Wednesday, June 21, 2000 - 09:40 pm: [Edit](#)

Thanks Neal!

Matt

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Problem with fvariable

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Problem with fvariable



By [Philippe de Rochambeau](#) on Wednesday, June 21, 2000 - 11:55 am: [Edit](#)

Hello,

The penultimate line in the 'coeff' word below causes my Palm Emulator 3.0a6 to crash although typing

```
sinph f@ v32 f!
```

in QForth after commenting out that line, as well as all the code following it (in 'coeff' and above) does not result in a crash. I cannot figure out why.

Any help on this matter would be much appreciated.

Philippe de Rochambeau

===== Code begins here =====

```
\ cubea
```

```
needs graphics
```

```
needs float-ext
```

```
needs trig
```

```
needs fatan
```

```
needs f>ss>f
```

```
fvariable v11 fvariable v12
```

```
fvariable v13 fvariable v21
```

```
fvariable v22 fvariable v23
```

```
fvariable v31 fvariable v32
```

```
fvariable v33 fvariable v43
```

```
fvariable screen_dist
```

```
fvariable rho fvariable theta
```

```
fvariable phi
```

```
fvariable th fvariable ph
```

```
fvariable costh fvariable sinth
```

```
fvariable cosph fvariable sinph
```

```
fvariable xe fvariable ye
```

```
fvariable ze
```

```
fvariable x fvariable y
```

```
fvariable z
```

```
fvariable xbis fvariable ybis
```


fvariable factor

variable cvWidth \ canvas width
variable cvHeight \ canvas height
variable xx
variable yy
variable ink

0e v11 f! 0e v12 f! 0e v13 f!
0e v21 f! 0e v22 f! 0e v23 f!
0e v31 f! 0e v32 f! 0e v33 f!
0e v43 f!
0e screen_dist f!
0e rho f! 0e theta f! 0e phi f!
0e th f! 0e ph f!
0e costh f! 0e sinth f!
0e cosph f! 0e sinph f!
0e xe f! 0e ye f! 0e ze f!
0e x f! 0e y f! 0e z f!
0e xbis f! 0e ybis f!
1e factor f!
0 cvWidth !
0 cvHeight !
0 xx !
0 yy !
0 ink !

4.5e fconstant c1
3.5e fconstant c2
50e fconstant h
5.729577951e1 fconstant rad

: black 1 ink ! ;
: white 0 ink ! ;
: move (y x) xx ! yy ! ;
: draw (toY toX --)
ink @ if 2dup yy @ xx @ line then
xx ! yy ! ;

: coeff (phi theta rho --)
v43 f! \ rho > v43
\ theta * fatan(x)/45 > th
1e fatan 45e f/ f* th f!
\ phi * fatan(x)/45 > ph
1e fatan 45e f/ f* ph f!
\ since cos returns a single
\ divide by 10,000 to get a float

```

th f@ rad f* fround f>s
dup dup 0 < swap 360 > or
if abort" degs. < 0 or > 360 in coeff!"
else cos s>f 1e4 f/ costh f! then
th f@ f>s sin s>f 1e4 f/ sinth f!
ph f@ rad f* fround f>s
dup dup 0 < swap 360 > or
if abort" degs. < 0 or > 360 in coeff!"
else cos s>f 1e4 f/ cosph f! then
ph f@ rad f* fround f>s
dup dup 0 < swap 360 > or
if abort" degs. < 0 or > 360 in coeff!"
else sin s>f 1e4 f/ sinph f! then
sinth f@ -1e f* v11 f!
cosph f@ -1e f* costh f@ f* v12 f!
sinph f@ -1e f* costh f@ f* v13 f!
costh f@ v21 f!
cosph f@ -1e f* sinth f@ f* v22 f!
sinph -1e f* sinth f@ f* v23 f!
sinph f@ v32 f!
cosph f@ -1e f* v33 f!
;

```

```

\ persp. uses values in fvars. x, y, z
\ which are input in words 'mv' and 'dw'
: perspective ( -- xbis ybis )
v11 f@ x f@ f* v21 f@ y f@ f* f+ xe f!
v12 f@ x f@ f* v22 f@ y f@ f* v32 f@ f* f+ ye f!
v13 f@ x f@ f* v23 f@ y f@ f* v33 f@ z f@ f* v43 f@ f+ ze f!

```

```

screen_dist f@ xe f@ f* ze f@ f/ c1 f+
screen_dist f@ ye f@ f* ze f@ f/ c2 f+
;

```

```

\ Given a Cartesian float value and the canvas'
\ width, compute the graphical equivalent of fX
\ as a single
: cartToGraphX ( fX -- nX )
fround f>s ( round fX, convert to single)
\ if x < 0 then nCanvasWidth / 2 + x, x is neg.
dup 0 < if cvWidth @ 2 / + then
\ if x = 0 then nCanvasWidth / 2
dup 0 = if drop 2 / then
\ if x > 0 then nCanvasWidth / 2 + x, x is pos.
dup 0 > if cvWidth 2 / swap + then
;

```

```

\ Given a Cartesian float value and the canvas'
\ height, compute the graphical equivalent of fY
\ as a single
: cartToGraphY ( fY -- nY )
found f>s \ round fY, convert to single
\ if x < 0 then nCanvasHeight / 2 + y, make y pos.
dup 0 < if negate cvHeight @ 2 / + then
\ if x = 0 then nCanvasHeight / 2
dup 0 = if drop 2 / then
\ if x > 0 then nCanvasHeight / 2 - y, x is pos.
dup 0 > if cvHeight @ 2 / swap - then
;

```

```

: mv ( x y z -- )
z f! y f! x f!
perspective ( -- xbis ybis )
\ ." ybis dans mv = " f. cr
\ ." xbis dans mv = " f. cr
\ ybis * factor converted to single
factor @ f* cartToGraphY
\ xbis * factor converted to single
factor @ f* cartToGraphX
move ( y x )
;

```

```

: dw ( x y z -- )
z f! y f! x f!
perspective ( -- xbis ybis )
\ ." ybis dans dw = " f. cr
\ ." xbis dans dw = " f. cr
\ factor * ybis converted to single
factor @ f* cartToGraphY
\ xbis * factor converted to single
factor @ f* cartToGraphX
draw ( y x )
;

```

```

: main
200e rho f!
70e theta f!
30e phi f!
30 factor f!
3e screen_dist f!
160 cvWidth !
160 cvHeight !

```

```

black

```

phi f@ theta f@ rho f@ coeff
page
h h -1e f* h -1e f* mv
h h h -1e f* dw
h -1e f* h h -1e f* dw
h -1e f* h h dw
h -1e f* h -1e f* h dw
h h -1e f* h dw
h h -1e f* h -1e f* dw

h h h -1e f* mv
h h h dw
h -1e f* h h dw
h h h mv
h h -1e f* h dw
h h -1e f* h -1e f* mv
h -1e f* h -1e f* h -1e f* dw
h -1e f* h h -1e f* dw
h -1e f* h -1e f* h -1e f* mv
h -1e f* h -1e f* h dw
;
main

===== Code ends here =====



By [Neal Bridges](#) on Wednesday, June 21, 2000 - 12:01 pm: [Edit](#)

How many items do you have on the floating-point stack at the time of the crash?

Neal

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Return from a launched application

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Return from a launched application



By [Jim Meadows](#) on Tuesday, June 20, 2000 - 05:42 pm: [Edit](#)

I have been using the sample code listed on April 22 for launching other applications to in effect create a multi-module large program. I have observed something that I want to confirm. When another compiled program is launched, if it simply terminates (without using bye) the program that launched it is re-envoked (at the beginning). I 1st thought the program that was launched would have to later launch the calling program to "return" to it, but evidently not. I use the term "return" loosely since the calling program is restarted from the beginning, not from the point it launched the other program. Is this the correct description of what happens?

I have not tried it yet, but if the launched program launches yet another module, do you know which would it would return to? (Are they stacked?).

P.S. Any progress toward an overlay version of Forth ... perhaps using FORGET to forget down to a certain level in the dictionary and then load another module onto that point - I don't ask for much do I? :-)



By [Erwin Schomburg](#) on Wednesday, June 21, 2000 - 09:29 am: [Edit](#)

Are you referring to the thread that points back to a message from Neal dating 2Feb?

That example uses SysUIAppSwitch, which is not appropriate for a pseudo-multi-segmented application. Use SysAppLaunch to call secondary apps as quasi subroutines to your "wrapper" or main application to return to where you left off from.

/Erwin



By [Jim Meadows](#) on Wednesday, June 21, 2000 - 05:15 pm: [Edit](#)

Thanks Erwin! Do you know where I can find an example of using SysAppLaunch?

Jim



By [Erwin Schomburg](#) on Wednesday, June 21, 2000 - 05:38 pm: [Edit](#)

The following is assuming the databases to be on cardnum 0 (its a quick hackup without access to references), good style would be to search through the available cardnums, else you might be up for a surprise on Visors and maybe

TRGPro's:

```
: execdelquint ( --- )  
z" Quint" drop >abs 0  
DmFindDatabase 2dup  
or if  
2dup  
>r >r 0. 0. 0. R> r> 0  
SysAppLaunch drop  
0 DmDeleteDatabase throw  
else  
2drop  
then ;
```

This looks up the "Quint" application, executes it, deletes it when it has terminated and commences execution of the calling application. I have no clue what happens if the "Quint" database is not an application.....
Again, it might be a better idea to look up the database via DmDatabaseInfo or DmFindNextByTypeCreator to verify the application status before you try to execute the thing. I'm assuming that you have the Quartus representations of the required system call parameters and can make heads and tails out of this information.

May the Forth be with you!

/Erwin



By [Erwin Schomburg](#) on Sunday, August 20, 2000 - 10:39 am: [Edit](#)

The above works OK for calling Quartus-generated applications, for others I had to make the disappointing experience that the PalmOS documentation is misleading. It says to leave LaunchFlags alone, but that is wrong, so the parameter line should at least read
>r >r 0. 0. 0 12 r> r> 0
to force UIApp and NewGlobals.

/Erwin

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WinCopyRectangle in color

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): WinCopyRectangle in color



By [Ronny Svensson](#) on Tuesday, June 20, 2000 - 02:21 pm: [Edit](#)

Could someone please explain to me how the mode parameter in WinCopyRectangle works with color. I need the functionality as in MaskDraw but i can't figure out what colour the mask should be. What's the logic of AND, OR, XOR when you are operating on color bitmaps created with Paint under Win98 and converted to resources with PilRc.

Ronny



By [Neal Bridges](#) on Tuesday, June 20, 2000 - 08:07 pm: [Edit](#)

WinCopyRectangle is an older PalmOS call -- I'm not sure that is has been ramped up to handle colour in the newer OS versions.

Palm makes some "3.5 considerations" docs available at their site; that'd be a good place to look for alternate techniques and caveats.

Neal

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Drawing bitmaps

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Drawing bitmaps



By [Ronny Svensson](#) on Monday, June 19, 2000 - 01:06 pm: [Edit](#)

I need to draw a round bitmap ontop of another bitmap. The unused pixels should be transparent. I looked at Palm Sdk Doc and it mentions WinPaintBitmap and WinSetDrawMode. I think i could use WinPaintBitmap with drawmodes WinMask and WinOverlay. But how do i call WinPaintBitmap and WinSetDrawMode? And is there some other way to do this in a pre 3.5 Palm. I need to support both Palm IIIc and the simpler models in b/w.

Ronny



By [Neal Bridges](#) on Monday, June 19, 2000 - 01:39 pm: [Edit](#)

Here's a solution:

[MaskDraw sources](#)

Neal



By [Ronny Svensson](#) on Monday, June 19, 2000 - 02:36 pm: [Edit](#)

Thanks

How do i call WinSetDrawMode and WinPaintBitmap on the IIIc?

Ronny



By [Neal Bridges](#) on Tuesday, June 20, 2000 - 10:14 pm: [Edit](#)

I'm building all the 3.5 systraps into the update. In the meantime here are the two you requested (untested):

```
: WinSetDrawMode ( newMode[>byte] -- oldMode )  
  (hex) A397 systrap drop d0 drop ;  
  
: WinPaintBitmap ( y x &bitmapP. -- )  
  (hex) A380 systrap 2drop 2drop ;
```

Neal

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Allocate vs allot

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Allocate vs allot



By [Jim Meadows](#) on Sunday, June 18, 2000 - 02:09 pm: [Edit](#)

I am looking for some wisdom on the use of allocate vs allot - when & why you should use each. Here are some starter thoughts...

allot

- the data area is part of your program
- if the program loads you already have the memory you need
- however, if you finish with the data, you cannot free the memory
- all references are with single (a) stack pointers

allocate

- the data area is not part of your program
- your program may load, but there may not be enough memory available for the extra data area
- you can free the memory if you don't need it any more
- references use double (a.) stack pointers

I specifically have a large array of about 3,000 bytes that I initialize when the program starts and use until it ends. I have used allot, but was wondering if there is any reason I should be using allocate. Also, would it make any difference if the array became 30,000 bytes instead of 3,000?



By [Neal Bridges](#) on Monday, June 19, 2000 - 12:10 pm: [Edit](#)

ALLOCATE also returns 16-bit pointers, not 32. You're thinking of (allocate), which returns 32-bit pointers.

Your thoughts are good thoughts. If you need 30000 bytes, you'll have to request it (best choice would be (allocate)) and handle any error code appropriately. That amount of dynamic RAM isn't available on older Palms, for instance.

If it's just a static array of 3000 bytes, as you say, then ALLOT is as good as any other method, with the caveat that it does expand the size of your PRC by that amount.

Neal



By [Jim Meadows](#) on Tuesday, June 20, 2000 - 04:25 pm: [Edit](#)

Thanks Neal!

By the way, I just discovered something that could be important to a released program. If you use allot, you should erase it at COMPILE time. When I took a look at a compiled .prc using Word (don't ask me why I did that) I could see portions of my source code! When I put an erase right after the allot it went away. Evidently the source code was residing in the memory area of the allot when the .prc was generated.

Example:

```
create Mydata 3000 allot
Mydata 3000 erase
```

If you don't do the erase, whatever is in memory at the time of the makeprc will get copied to the .prc!



By [Neal Bridges](#) on Tuesday, June 20, 2000 - 04:50 pm: [Edit](#)

Good thought, Jim. Unused memory sometimes contains fragments of other data.

Neal

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Re-flashing

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Re-flashing



By [Ricktherazor](#) on Sunday, June 18, 2000 - 04:36 am: [Edit](#)

How do I COMPLETELY re-flash a Japanese Palm Vx with an English OS. I have the rom software.



By [Neal Bridges](#) on Sunday, June 18, 2000 - 02:27 pm: [Edit](#)

Rick, I suggest you ask this question on the comp.palmtops.pilot newsgroup -- you'll get a broader range of answers.

Neal

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Using asm68k?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Using asm68k?



By [jd marrow](#) on Saturday, June 17, 2000 - 03:07 pm: [Edit](#)

does anyone know where can i find sample code demonstrating asm68k.txt in action?



By [Neal Bridges](#) on Saturday, June 17, 2000 - 09:22 pm: [Edit](#)

The sources to TickHack are available in the File Area. It's written using asm68k.

Neal

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Status of Quartus and tables

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Status of Quartus and tables



By [Matthew Blair](#) on Friday, June 16, 2000 - 12:48 pm: [Edit](#)

Neal/Trevor,

What is the status of tables under Quartus? As I last remember it, there was some problems with callbacks, and that under OS 3.3.

I'm curious, since I want to use a table again (yeah, I know - I'm a masochist). I tried Trevor's sample code on my IIIc, and had no problems. I did not know if the previous problems had been fixed, or if Quartus + OS 3.5 does not have the same problem, or...you get the picture.

Thanks,

Matthew



By [Neal Bridges](#) on Friday, June 16, 2000 - 12:54 pm: [Edit](#)

Trevor's code works fine, as it doesn't use callbacks. I'm still tinkering with the callback code in conjunction with the coming update.

Neal



By [Trevor Steele](#) on Saturday, June 17, 2000 - 06:39 am: [Edit](#)

Hi Matthew

Neal's advice is very sound (as always). The code in my example can actually lead to a small saving in *.prc size in certain circumstances!

Trevor



By [Matthew Blair](#) on Monday, June 19, 2000 - 08:26 am: [Edit](#)

Thanks. After I saw Neal's reply, I went back to the source module and saw that, indeed, you were not using callbacks. I guess I got somewhat confused since there were about two or three different postings in this forum with sample code for tables....

BTW Neal: is it only the table callbacks that are a problem, or is it all PalmOS functions which require a callback?

Thanks,

matt



By [Neal Bridges](#) on Monday, June 19, 2000 - 09:56 am: [Edit](#)

Quartus Forth callbacks give trouble with tables, and with database sort functions. I'm working on them presently.

Neal

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Benchmarks?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Benchmarks?



By [jd marrow](#) on Thursday, June 15, 2000 - 04:08 pm: [Edit](#)

does anyone have performance numbers for quartus forth as compared to gcc output/etc. ?

thanks...



By [Neal Bridges](#) on Thursday, June 15, 2000 - 04:53 pm: [Edit](#)

The speeds of apps written in Quartus Forth and GCC (or CodeWarrior) are comparable. Quartus Forth generates native DragonBall instructions, as does GCC. Also, no stack-frame allocation/deallocation happens in Quartus Forth, so there's virtually no overhead for subroutine calls.

Neal

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Graphics library

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Graphics library



By [mike keesling](#) on Thursday, June 15, 2000 - 02:59 pm: [Edit](#)

Am I missing something, or is there no way to erase pixels with the graphics library besides the erase rectangle functions?



By [Neal Bridges](#) on Thursday, June 15, 2000 - 03:05 pm: [Edit](#)

To erase with the more recent versions of the OS you can set the color to white and draw with it.

Neal



By [mike Keesling](#) on Thursday, June 15, 2000 - 05:15 pm: [Edit](#)

ok, I know I'm a little dense here, But I have searched the archives, and am left still unknowing. How do I set the color to white?



By [Neal Bridges](#) on Thursday, June 15, 2000 - 05:25 pm: [Edit](#)

The color.txt library file:

<http://www.quartus.net/files/PalmOS/Forth/Contrib/color.txt>

Neal



By [Mark Browne](#) on Friday, June 16, 2000 - 10:12 am: [Edit](#)

Neal,

I have two questions:

1. Presumably it is OK on OS3.5 to use 4 color-depth ?
2. How can Quartus check what kind of colour system is in use?



By [jd marrow](#) on Saturday, June 17, 2000 - 03:03 pm: [Edit](#)

erasing options: WinEraseLine (or WinInvertLine), or you can do what i'm doing: manipulate bitmaps and use WinDrawBitmap. (seems to be faster than using an offscreen window; am i dreaming?)

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Quartus Forth + Palm Portable Keyboard

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Quartus Forth + Palm Portable Keyboard



By [Neal Bridges](#) on Thursday, June 15, 2000 - 01:11 pm: [Edit](#)

Exerpted from e-mail:

Quote:

...have you tried using
Quartus Forth with the Palm Keyboard? It suddenly turns into the
ultimate
ultra-portable programming platform! It makes trying things out even
faster
than before.

I have to agree -- the [Palm Portable Keyboard](#) is beautiful, responsive, and makes data entry into the Palm a thing of joy. Highly recommended.

Neal



By [Jim Hendricks](#) on Thursday, June 15, 2000 - 01:28 pm: [Edit](#)

Dang it, Palm doesn't have it listed as compatible with the Vx. ☹

Jim



By [Neal Bridges](#) on Thursday, June 15, 2000 - 01:43 pm: [Edit](#)

Jim, AFAIK it is compatible -- the V version works fine with the Vx.

Neal



By [peter bohac](#) on Thursday, June 15, 2000 - 09:01 pm: [Edit](#)

i have a Vx (OS 3.3) and it works just fine. i am also using the 1.1 version of the keyboard driver. It certainly does make for a wonderful development tool!

-peter (=



By [Erwin Schomburg](#) on Friday, June 16, 2000 - 03:58 am: [Edit](#)

I hate "me too", but in the case of PalmKeyboard (PalmIIIC version) I must. They have been out of stock, so I got mine only last Friday, but already addicted.

/Erwin



By [Barak](#) on Monday, June 26, 2000 - 03:33 pm: [Edit](#)

Only problem is when you're controlling the ir port... :)



By [Jim Hendricks](#) on Monday, July 24, 2000 - 04:13 pm: [Edit](#)

Well, I finally got mine, and love it!

Just wondering if anyone has experienced battery problems with the Vx and the keyboard? Ever since I installed the keyboard driver, my batteries don't seem to take a full charge, and the charge time seems to be much longer. Not only that, when the keyboard driver is enabled, the unit does not seem to charge at all. I use the launcher III as a launcher but I receive the same battery measurements in the default launcher. My OS is 3.5.

Thanks, Jim



By [Neal Bridges](#) on Tuesday, July 25, 2000 - 12:39 am: [Edit](#)

Haven't had any of those problems, Jim. Are you using the latest update of the keyboard driver?

Neal



By [Jim Hendricks](#) on Tuesday, July 25, 2000 - 08:26 am: [Edit](#)

Well, after I posted the previous message, I checked the palm site and updated to OS 3.5.2 and the 1.1 keyboard driver. I will have to keep tabs on things to see if that changes things.

Jim

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COMPILE word?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): COMPILE word?



By [Travis Casey](#) on Wednesday, June 14, 2000 - 04:01 pm: [Edit](#)

Hopefully one of the old-time FORTHers here can help me... I found a copy of Thinking Forth and wanted to try out the DOER/MAKE code in it. However, it uses a word COMPILE which Brodie evidently expects all FORTHs to have (it appears in all the versions of DOER/MAKE he gives, which are for several different systems), but which Quartus doesn't have and which isn't listed in the ANS FORTH docs.

Is COMPILE, the same thing that COMPILE used to be? If not, is there some way for me to get equivalent functionality to the old COMPILE?

Thanks to anyone who can shed some light on this!

--Travis



By [Travis Casey](#) on Wednesday, June 14, 2000 - 04:08 pm: [Edit](#)

Never mind -- I just found where Neal posted a version of DOER/MAKE before.

Remind me to search the archives *before* posting next time...

--Travis

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Password: the "Password" box empty. Your e-mail address is optional.

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Strange things with float numbers

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Strange things with float numbers



By [Eugene Zalyubovsky](#) on Wednesday, June 14, 2000 - 01:46 pm: [Edit](#)

I've noticed a strange behavior in working with SOME float numbers. Here are the exaples:

1.15e f. gives 1.14999999

2.15e f. gives 2.15

0.15e f. gices 0.15000001

What is it? I have latest version of float-ext lib.

Sometimes I can get results with meny zeroes (like 270.000000000000)- these number cannot fill into my Field object . Maybe exists a function for truncating float value to custom amount of digits after comma?



By [Neal Bridges](#) on Wednesday, June 14, 2000 - 02:10 pm: [Edit](#)

Floating-point values are inherently inaccurate in certain cases. In some of those cases, the decimal value cannot be precisely stored a a binary mantissa, and in other cases, the conversion to decimal for display results in an apparent slight loss of precision where none actually exists.

To specify the number of places after the '.', the function you want is in float-ext, named set-places.

Neal



By [Chris Bucsko](#) on Monday, June 19, 2000 - 09:44 am: [Edit](#)

As I was playing with floating point numbers, I found the same problem with fitting them into my field object. How big are floating numbers? I used 40 places to 'fit' the number, though I display only 7 or so. Also, how does f. work? I can't use it in immediate mode, I get an undefined word error, even though I have float-ext, FEL and float loaded. One more question: (sorry!!) I'm looking for a floating point function which will either return the integer portion, or the decimal portion of a FP number. Is there one? My app is taking input in the form of Hrs:Mins:Secs, converting to decimal minutes and then reconverting back to Mins:Secs, so I need to get at the integer and/or decimal portion of my result. Any help would be appreciated. Thanks in advance.



By [Neal Bridges](#) on Monday, June 19, 2000 - 09:54 am: [Edit](#)

1. How many digits of a float are displayed depends on the setting of SET-PLACES.

2. F. is in float-ext. It works at the console, and inside functions with no problem:

4.141592e f. -> 4.141592 ok

4. FLOOR returns the integer part of a float.

Neal



By [Chris Bucsko](#) on Monday, June 19, 2000 - 03:43 pm: [Edit](#)

Neal, thanks for the info! I finally realized I had to type 'include float-ext' in the console to use f. I wrote a little memo,

\ test floats

include float

include float-ext

include FEL

and made a shortcut for it so I can play with floating point stuff. I'm just starting to get the hang of this...

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Tell me more about [define], [if]...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Tell me more about [define], [if]...



By [Eugene Zalyubovsky](#) on Wednesday, June 14, 2000 - 04:03 am: [Edit](#)

I want to know more about [define], [if] and other words for compilation control. Who can help me?



By [Neal Bridges](#) on Wednesday, June 14, 2000 - 02:39 pm: [Edit](#)

[IF], [ELSE], and [THEN] are Standard words allowing conditional compilation. Here's an example:

```
needs tools-ext
```

```
true constant debug
```

```
...
```

```
debug [if]
```

```
...debugging code here...
```

```
[then]
```

This will compile the debugging code, or not, depending on the true/false value of debug.

[defined] is a Quartus Forth toolkit word that returns true/false depending on whether or not the name immediately following is defined in the current search-order:

```
needs tools-ext
```

```
needs toolkit
```

```
[defined] foo [if] .( foo already defined) cr
```

```
[else]
```

```
: foo ." This is foo!" ;
```

```
[then]
```

Neal



By [Jim Meadows](#) on Wednesday, June 21, 2000 - 05:19 pm: [Edit](#)

I use [If] to perform conditional compiles of memo-based source, but it appears to not work on doc files ??? If I use [if] in a doc file that is included via docneeds, the words get compiled even if " 0 [if] [then]" is wrapped around them. Any thoughts?



By [Erwin Schomburg](#) on Wednesday, June 21, 2000 - 05:48 pm: [Edit](#)

No, this has been discussed earlier, square-bracketed IF and its relatives don't work from within doc sources.

See

<http://www.quartus.net/discus/messages/23/512.html?TuesdayJune620001214pm>

for a discussion on this. I have not managed to work around this yet and I don't make any promises.

/Erwin

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Update version of Quartus Forth?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Update version of Quartus Forth?



By [John Newell](#) on Tuesday, June 13, 2000 - 04:44 am: [Edit](#)

Hi Neal,

I (and several others) are having some problems using Quartus because of bugs, particularly with `ctlSelectEvent` not generating an event. You are offering to be supply a pre-release of Quartus Forth but I was wondering if you were in a position to give a release date of the update version that you mention every so often.

Thanks

John



By [Neal Bridges](#) on Tuesday, June 13, 2000 - 08:35 am: [Edit](#)

Hi John. It's not a pre-release, as such, just an interim version. You're welcome to it -- I'll send it out to you today.

What other issues/problems are you experiencing? Please let me know; each of them can be addressed.

The update is coming shortly -- it incorporates the `ctlSelectEvent` fix and a number of other changes, such as multi-language error reports.

Neal



By [John Newell](#) on Tuesday, June 13, 2000 - 10:13 am: [Edit](#)

Thank you Neal.

Other problems you know about already:

`LstSetListChoices`

`ctlSelectEvent`

Also in the libraries:

`using fill before allot`

Things like that.

Hmm...

I'll mention this here.

I and e.g. Norman Sunday May 28 have asked about definitions of the words in library files. Erwin and you said these were defined elsewhere. This is fine for standard Forth words and the optional word sets, but what about things like:

`\ Memo`

`\ tester` - which looks useful but I don't know how to use.

`\ doc`

etc.

Anybody who needs to use these functions have to delve into the library files themselves and work out what is going on. E.g. I did with \stuct until somebody posted an explanation. Even then I had to look into the library to really see what was happening.

These sorts of libraries all need documentation, preferably in the format used in DPANS94.

Perhaps people using your discussion forum would help, with you as editor?

Hmm...

Regards

John



By [Neal Bridges](#) on Tuesday, June 13, 2000 - 11:58 am: [Edit](#)

memo.txt is old and has been supplanted by the superior newmemo.txt. There's no separate documentation for newmemo, but there are a number of examples here in the discussion forums.

tester.txt is a handy module. It lets you write tests in the form of

```
{ test -> result }
```

```
needs tester  
decimal
```

```
{ 3 5 + -> 8 }  
{ 3 5 + -> 7 }
```

You can use this simple syntax to write test scaffolding for your own functions.

doc.txt is a module for reading compressed DOC files; it has a small example included in it that demonstrates its use.

It's generally a good idea to look at the library code to get a complete understanding of what it does. The library files are small, and the definitions are short and clear. If there are any places where this isn't true, those would be the best targets for additional documentation. Let me know!

Neal



By [John Newell](#) on Wednesday, June 14, 2000 - 08:00 am: [Edit](#)

Neal,
The libraries mentioned were just odd examples of libraries without written definitions of what their words do or how to use them, but which are made available for general use.

The point I was trying to make about word definitions was that if you are writing

an application which makes use of the libraries, or you are a "newbie", then you don't want to have to examine the library source to find out what words do nor examine a sample application for their use. YOU JUST WANT TO USE THEM. To this end there should always be at least a "Glossary" type entry for the words offered for general use, including Implementation, Compilation, and Run-Time stack effects, just as there are for all the standard Forth words.

Regards
John



By [Matthew Blair](#) on Wednesday, June 14, 2000 - 11:52 am: [Edit](#)

John,

If I can put my 2 cents in here - we can all appreciate what you would like to have out of the documentation. However, I've generally found that a simple keyword search of the message archives turns up a discussion of the library/word/feature/Palm OS quirk/etc. in question. If it does not, then a quick message to the forum will certainly yield a response in a reasonable time frame.

The point is, Neal can either dedicate his energies to documenting the library files fully, or he can focus on next major release. I personally (and I think others here also) would rather he worked on the latter, and let the user community take care of the former...

Plus, the added benefits to digging through the library code to figure out what a particular word does are (1) your understanding of Forth is almost always improved and, (2) you can tell if that word does exactly what you want - if not, you now know enough to modify it!

Matt



By [Neal Bridges](#) on Wednesday, June 14, 2000 - 03:15 pm: [Edit](#)

John's right -- in a perfect world I'd have a neat little glossary available for each library file. That doesn't exist yet, and really I'm just saying that there are viable alternatives at present, especially considering the small size of the library code.

In the meantime, if anyone needs the light turned on any specific library file, shout and I'll run up a quick glossary for it.

Neal



By [Matthew Blair](#) on Wednesday, June 14, 2000 - 04:00 pm: [Edit](#)

Which doesn't exist yet Neal? Perfect world, or neat little glossary :-)

Matt



By [Neal Bridges](#) on Wednesday, June 14, 2000 - 04:27 pm: [Edit](#)

Hehe. A little from column A, and a little from column B.

Neal



By [E. Ross Helton](#) on Wednesday, June 14, 2000 - 04:49 pm: [Edit](#)

Hey Neal;

All of my lights are out, what are you going to do for me? (ha!) Just keep up the good work!!! As you said it isn't a perfect world. Maybe someone out there who has the time can make those neat glossaries, and give you a little help.

Make it a good day!

Ross



By [John Newell](#) on Thursday, June 15, 2000 - 12:58 pm: [Edit](#)

They all hate me :(

I wasn't getting at Neal particularly. Just the whole world and especially all those helpful programmers who could be even more helpful. After all, those programmers presumably know what their libraries do and could easily create glossary entries for the defined words.

If someone else understands what a library does, they are more likely to use it (which, again presumably, is what the programmer wants) and not re-invent the wheel over and over (or round and round?).

You wouldn't have to do keyword searches of this discussion forum - well not for that sort of information.

Anybody who wants to can look at the libraries to see what is going on, and learn good (and bad?) Forth programming technique.

Neal agrees that "neat little glossaries" would help to create the "perfect world" so why not start now. If you don't start, you don't start.

I HEARBY DECLARE THAT ANY NEW FORTH WORDS SUBMITTED BY ME WILL BE ACCOMPANIED BY A GLOSSARY ENTRY FORMATTED AS DPANS94.

Regards to one and all,

John



By [Neal Bridges](#) on Thursday, June 15, 2000 - 01:16 pm: [Edit](#)

No hate here, John. It's a good suggestion, and no my list -- just not at the top right now.

I'm not sure the ANS94 format is the clearest form in which to describe Forth words, as it tends toward legalese -- necessary for a Standard, but somewhat opaque for everyday use.

Neal



By [Steve Bohrer](#) on Thursday, June 15, 2000 - 01:22 pm: [Edit](#)

Please post an example of a "useful" glossary format, or even an example of the legalistic DPANS94 format.

And, where should this go? As a comment at the top of the lib file? As a separate example file?



By [Jim Hendricks](#) on Thursday, June 15, 2000 - 01:38 pm: [Edit](#)

Neal, just a short suggestion on all this.

IMHO, docs are more useful from the community, rather than the original programmer. This is due to the original programmers familiarity with the code.

Due to the limited resources available on the Palm, Docs should always be seperate so that a user can choose to consume precious space on the handheld, or the PC.

A Wiki web (or something similar) may be a good piece of software to keep a community run document database going. This provides for a centralized but community updateable set of docs.

Just my 2 cents (worthless after inflation!)

Jim



By [wnbridges](#) on Thursday, June 15, 2000 - 02:02 pm: [Edit](#)

Steve/Jim --

Yes, the documentation should not be in the library file itself, but in DOC and HTML format.

Here's a glossary entry from the Standard:

Quote:

6.1.0140 +LOOP
plus-loop CORE

Interpretation: Interpretation semantics for this word are undefined.

Compilation: (C: do-sys --)

Append the run-time semantics given below to the current definition. Resolve the destination of all unresolved occurrences of LEAVE between the location given by do-sys and the next location for a transfer of control, to execute the words following +LOOP.

Run-time: (n --) (R: loop-sys1 -- | loop-sys2)

An ambiguous condition exists if the loop control parameters are unavailable. Add n to the loop index. If the loop index did not cross the boundary between the loop limit minus one and the loop limit, continue execution at the beginning of the loop. Otherwise, discard the current loop control parameters and continue execution immediately following the loop.

This is the 'legalese' I'm talking about. A more colloquial style, along with a simple example, would be preferable for end-user documentation.

Neal



By [Edin Hodzic](#) on Thursday, June 15, 2000 - 02:15 pm: [Edit](#)

I would prefer brief documentation to go with source code and to be accessible online, similar to emacs lisp for example. Another relevant example is javadoc. HTML and any other format could be generated from the source.

Having documentation separate from the source is sure to make documentation outdated.

Edin Hodzic



By [Neal Bridges](#) on Thursday, June 15, 2000 - 03:04 pm: [Edit](#)

Edin -- I tend to agree, in the case of large libraries of code. The Quartus Forth libraries, being small, don't present as much of an issue.

Neal

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Problem with PopupTrigger

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Problem with PopupTrigger



By [Eugene Zalyubovsky](#) on Monday, June 12, 2000 - 01:11 pm: [Edit](#)

I have a problem with PopupTrigger - I want to make some actions after user choosed item from list. I have a Price (listObject) and PricePopup (PopupTrigger). I've read examples from Code Warrior

```
if (event->eType == ctlSelectEvent)
{
    switch (event->data.ctlSelect.controlID)
    {
...
...
...
        case DetailsCategoryTrigger:
            categoryEdited = DetailsSelectCategory (&category) || categoryEdited;
            handled = true;
            break;
...
...
...
    }
```

and organized all things in listing below (positions of procedures reversed):

```
: do-event ( ekey -- )
  case
    ctlSelectEvent of
      ProcessList
    endof
  endcase
;

: ProcessList ( -- )
  event >abs itemid
    PricePopup = if
      \ ...some actions
    then
  ;
```

It seems my program did not call ProcessList word. How can I correct this problem?



By [Neal Bridges](#) on Monday, June 12, 2000 - 02:04 pm: [Edit](#)

You require an updated build of Quartus Forth that passes `ctlSelectEvents` under OS3.1 and later. Send me an email and I'll fire it off to you.

Neal



By [Eugene Zalyubosvky](#) on Tuesday, June 13, 2000 - 07:02 am: [Edit](#)

I'm not registered user of QuartusForth (I want to learn all about Forth programming for Pilot before buying registered version), but maybe you put newer unregistered version on www.quartus.net? My last unregistered version is 1.2.1U...



By [Neal Bridges](#) on Tuesday, June 13, 2000 - 08:36 am: [Edit](#)

I'll send you 1.2.6U today -- it's an interim build with the `ctlSelectEvent` fix built in.

Neal



By [Joshua Natarajan](#) on Tuesday, June 13, 2000 - 12:37 pm: [Edit](#)

Hi Neal,

I am having trouble with `popSelectEvent` not getting fired from `popuptriggers`. If this is fixed I would love to get my hands on 1.2.6U version as well.

Thank you!

Josh



By [Neal Bridges](#) on Tuesday, June 13, 2000 - 01:55 pm: [Edit](#)

Will do.

Neal



By [Eugene Zalyubovsky](#) on Wednesday, June 14, 2000 - 04:05 am: [Edit](#)

Thanks, Neal. I've got 1.2.6U version successfully. All works right.



By [John Newell](#) on Wednesday, June 14, 2000 - 08:09 am: [Edit](#)

Neal,
I also have received 1.2.6R though I haven't tried it out yet. Thank you.
John

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Deferred recursion

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Deferred recursion



By [Mark Beckman](#) on Monday, June 12, 2000 - 12:59 am: [Edit](#)

How would I get the address of a word while defineing that word? I need the address so the called word can execute the original word (the one I am in the process of defining).

['] won't do it, because the word is not yet in the dictionary.

(Although I understand and use recursion it still makes my head hurt).



By [Ronny Svensson](#) on Monday, June 12, 2000 - 03:54 am: [Edit](#)

Use recurse:

```
: q  ?dup if  dup .  1-  recurse  then ;
```

```
5 q
```

Ronny



By [Mark Beckman](#) on Monday, June 12, 2000 - 10:06 am: [Edit](#)

I knew if I did not provide and example it would be confusing but it was late...

This is not classic recursion. This is the solution I came up with :

variable 'foo

```
: foo somecondition if 'foo @ bar then ;  
' foo 'foo !
```

where bar is a word that executes the word (address) passed to it.

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Stack error alert

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Stack error alert



By [Jim Meadows](#) on Sunday, June 11, 2000 - 09:22 pm: [Edit](#)

I thought I would post a technique that has been VERY helpful to me. The following simple code gives you an immediate alert about stack problems while your program is running...

```
: go
999 \ for stack check
begin

yourprogram

dup 999 <> if \ make sure 999 is still there
90 10 at ." *Stack err: " .s
then

again
;
```

As mentioned in a recent post, Palm applications are usually designed to run continuously (typically in a begin...again type loop as shown above). The above code has helped me many times to track down a stack bug before it got out of hand. The only error it would not catch is if you left a 999 on the stack (you would use other values if that was a possibility)



By [Ronny Svensson](#) on Monday, June 12, 2000 - 03:46 am: [Edit](#)

You can save the stack-pointer on the return-stack:

```
: go
  sp@ 2>R
  begin yourprogram
    sp@ 2r@ d- or
    if ( stack error ) ... then again ;
```

or you can use depth if the stack should be empty:

```
: go
  begin yourprogram
    depth
```

```
if ( stack error ) ... then again ;
```

Ronny



By [Jim Meadows](#) on Sunday, June 18, 2000 - 01:58 pm: [Edit](#)

Thanks! Do you know if there is a similar technique for checking for stack errors in the floating point stack?



By [Neal Bridges](#) on Sunday, June 18, 2000 - 02:23 pm: [Edit](#)

Hi Jim. The equivalent to DEPTH for the floating-point stack is named FDEPTH.

Neal

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User name

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): User name



By [Jim Meadows](#) on Sunday, June 11, 2000 - 04:50 pm: [Edit](#)

I need to get the user name of a palm for registration purposes. On March 12th there is a reference to

needs ids
needs syncname

... username ...

When I use: needs syncname
I get: syncname? non-existent file

I cannot seem to find syncname in the library. Where can I get it?

Thanks, Jim



By [Neal Bridges](#) on Sunday, June 11, 2000 - 05:04 pm: [Edit](#)

<http://www.quartus.net/discus/messages/23/107.html?MondayDecember1319990759am#POST490>

Neal



By [Jim Meadows](#) on Sunday, June 11, 2000 - 08:57 pm: [Edit](#)

Thanks Neal!!

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Copy Protect & Sleep Mode

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Copy Protect & Sleep Mode



By [Jim Meadows](#) on Sunday, June 11, 2000 - 03:47 pm: [Edit](#)

Could someone point me in the right direction for the following:

1. How do you set the copy protect bit for a compiled Quartus application?
2. What code can you use in a Quartus application to keep the palm from automatically turning off?

Thanks,

Jim Meadows



By [Neal Bridges](#) on Sunday, June 11, 2000 - 04:57 pm: [Edit](#)

1. Use RsrcEdit to set the copy-protect bit.
2. Call EvtResetAutoOffTimer when you call EKEY.

Neal



By [Jim Meadows](#) on Sunday, June 11, 2000 - 09:04 pm: [Edit](#)

I must be doing something wrong. I have already tried setting the Copy Protect on my generated application using RsrcEdit but it won't toggle. Any thoughts?



By [Neal Bridges](#) on Sunday, June 11, 2000 - 10:10 pm: [Edit](#)

You have to hit 'Apply' after you set the copy protect flag.

Neal



By [JimMeadows](#) on Monday, June 12, 2000 - 10:32 pm: [Edit](#)

The problem is no check mark appears when I tap Copy Protect so I cannot set the flag at all.



By [Neal Bridges](#) on Monday, June 12, 2000 - 11:19 pm: [Edit](#)

What version of RsrcEdit and PalmOS are you using?

Neal



By [Jim Meadows](#) on Tuesday, June 13, 2000 - 05:48 pm: [Edit](#)

I am using PalmOS 3.5 (same results on 3.0 though) and RsrcEdit v1.009 03/27/00.

Can you turn on the copy protect checkmark on your version of RsrcEdit?

Jim



By [Neal Bridges](#) on Tuesday, June 13, 2000 - 05:54 pm: [Edit](#)

Just tried the latest & greatest version (1.009 03/27/00), and sure enough, that checkbox doesn't work. I suggest you write the author and ask why!

Neal



By [Jim Meadows](#) on Friday, June 23, 2000 - 02:49 am: [Edit](#)

I have notified them & am awaiting an answer.

Jim



By [E. Ross Helton](#) on Friday, June 23, 2000 - 09:01 am: [Edit](#)

Hi Jim:

Rsrcedit is up to version 1.010. Did you check to see if that version supports what you want?

It can be found at:

<http://www.individeo.net/RsrcEdit.html>

Make it a good day!
Ross

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E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Problem sending registration code to Pan Yen Yen

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Problem sending registration code to Pan Yen Yen

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Result of lstGetSelectionText

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Result of lstGetSelectionText



By [Eugene Zalyubovsky](#) on Saturday, June 10, 2000 - 01:08 pm: [Edit](#)

How to use result of function lstGetSelectionText? In documentation for Forth it returns thing like &CharPtr. Is this an local or global address? How can I convert it to string? (All my attempts gave me only Fatal Exception and reset of Pilot).



By [Neal Bridges](#) on Saturday, June 10, 2000 - 01:35 pm: [Edit](#)

That's a 32-bit address of a string. To copy it to a local buffer, you can use MemMove:

```
: copyzstring ( &charptr. dest -- )  
  >r 2dup StrLen 1+ s>d  
  2swap r> >abs MemMove throw ;
```

Use:

```
create mybuffer 40 chars allot  
\ later in the code:  
... LstGetSelectionText mybuffer copyzstring  
...  
\ and to display it:  
mybuffer dup >abs StrLen type
```

Neal



By [Eugene Zalyubovsky](#) on Saturday, June 10, 2000 - 03:56 pm: [Edit](#)

Thanks, Neal! You quickly clarified the situation (in 27 minutes after my message!). But my demo application refused to work - it generates Fatal Exception. Now I try to describe situation.

I have list object called PriceList and a field called TestField (41 chars capacity). I want to show selected element from list in field. So I've written code for handling lstSelectEvent:

```
create mybuffer 42 allot \ for ending zero  
.....  
\ your function here  
: copyzstring ( &charptr. dest -- )  
  >r 2dup StrLen 1+ s>d
```

```
2swap r> >abs MemMove throw ;
.....
: ProcessList
PriceList GetObjectPtr DUP
\ objPtr objPtr
LstGetSelection
\ objPtr SelectedItem
swap \ SelectedItem objPtr
LstGetSelectonText \ have a pointer to selected text
mybuffer CopyZString \ copying selected in MyBuffer
MyBuffer dup > abs StrLen \ have address length
TEstField String>Field ;
```

After all I get Fatal Error. (I checked all words before getting selected text - all worked good). Error is somewhere in copying string to TestField...



By [Neal Bridges](#) on Saturday, June 10, 2000 - 06:29 pm: [Edit](#)

That's > ABS, not > ABS.

Neal



By [Eugene Zalyubovsky](#) on Sunday, June 11, 2000 - 04:35 am: [Edit](#)

Neal, on my Palm this word is >ABS (without space), it's only error in message text.



By [Eugene Zalyubovsky](#) on Monday, June 12, 2000 - 02:25 am: [Edit](#)

Neal, I've found error in MY text! In listing below instead DUP should be 2DUP - address of object takes 2 cells, not 1!!!
Thank you for your patience!

```
\: ProcessList
PriceList GetObjectPtr DUP
\ objPtr objPtr
```



By [Neal Bridges](#) on Monday, June 12, 2000 - 09:28 am: [Edit](#)

Eugene, I'm glad you found it!

Neal

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Need help with Springboard port on a Visor

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Need help with Springboard port on a Visor



By [Mike Keesling](#) on Friday, June 9, 2000 - 07:17 pm: [Edit](#)

Please help.

I'm looking for anyone who is interfacing to the springboard port on a visor.

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Structures for beginners & serial communications

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Structures for beginners & serial communications



By [Mike Keesling](#) on Friday, June 9, 2000 - 07:14 pm: [Edit](#)

HELP!

Are there any examples of how to use structures?

Are there any applications out there for a terminal program



By [Neal Bridges](#) on Friday, June 9, 2000 - 08:29 pm: [Edit](#)

Do a quick search for 'struct' and 'serial', you'll turn up a collection matches in the Forum. There are also some older examples in the message archives.

Neal

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Infrared Port- Printer Driver in Forth

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Infrared Port- Printer Driver in Forth



By [Barak Shilo](#) on Friday, June 9, 2000 - 03:35 am: [Edit](#)

Hi,

I'm hoping to learn Forth this summer so I can write a driver for the HP82240B and HP82240A printer. These are cheap, receipt-type, battery operated thermal printers that were made for HP graphing calculators. I'm wondering if Quartus can directly function the IrDA port on the Visor because I heard the printer uses a non-standard 12-bit communication scheme. Apparently that's why PalmPrint and other infrared software don't support it yet (plus the fact that it's not that common...). So, how would I find out how to manipulate the infrared port with Quartus Forth?

Thanks.



By [Neal Bridges](#) on Friday, June 9, 2000 - 02:27 pm: [Edit](#)

I suspect to do what you're suggesting, you'd need to directly manipulate the DragonBall IR registers to produce the data stream you want. Quartus Forth can certainly do this, though it's not a simple task in any language.

Have a look at the HandSpring site for specifics on the Visor hardware, and the Motorola site for DragonBall register information.

Neal



By [Barak Shilo](#) on Saturday, June 10, 2000 - 05:13 pm: [Edit](#)

Thanks,

I looked on handspring's site and they don't list any info on the IR port, but I sent them an email. I also looked on Motorola's site, and couldn't find any info on the infrared register (other than a flow-chart that shows it has one). I suppose I'll send motorola an email too. It looks like I'll have to learn 68K assembly too. Oh my.

-Barak

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PalmOS *is* multithreaded!!!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): PalmOS *is* multithreaded!!!



By [Michael Chen](#) on Thursday, June 8, 2000 - 08:55 pm: [Edit](#)

In experimenting with SysUIAppSwitch, I have come across something **extremely** peculiar. Just for the record, I have a Graphite Visor Deluxe, running QF 1.2.5R. Examine the following code:

```
\ strange

needs ids

create DmSearchStateType 16 allot
18 constant cmdPBsize

variable cardnum
2variable localid

: go ( -- )
  localid >abs cardnum >abs true
  [ID] memo [ID] appl
  DmSearchStateType >abs true
  DmGetNextDatabaseByTypeCreator throw

  cmdPBsize s>d MemPtrNew 2>r
  0 2r@ MemPtrSetOwner throw

  2r> 0 localid 2@
  cardnum @
  SysUIAppSwitch throw
  beep ;
```

As far as I can tell, if the memopad application launches correctly (which it does), the beep instruction should not get executed. However, it does!! This, of course, raises the question: How long after the app gets switched to (memopad in the above example), does the current application *_actually_* terminate? I don't know, but its definately fast, putting a "key drop" in there after the beep doesn't really have much effect. It does appear, however, that the current application seems to stay running for a split second after the new app was called. Hmm.

This strange behaviour, of course, could cause problems with code getting

executed which was not meant to, so thankfully, putting a (bye) right after the "SysUIAppSwitch throw" causes the current app to terminate, which is an acceptable workaround.

I still want to know what's going on though, and I'm stumped. Anyone know why this is happening?



By [Neal Bridges](#) on Thursday, June 8, 2000 - 10:02 pm: [Edit](#)

You're not seeing multitasking. SysUIAppSwitch posts an event that tells the OS to switch to a new app; it's not until the next event-handling sequence that the event is actually processed. If you put KEY in above the BEEP, you'll never hear the BEEP.

Neal



By [Michael Chen](#) on Thursday, June 8, 2000 - 10:17 pm: [Edit](#)

Ohh...ok...thanks! What would we do without you Neal!



By [Neal Bridges](#) on Friday, June 9, 2000 - 01:36 pm: [Edit](#)

Glad to help, Michael.

Neal

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Show me please using of List and Popup Trigger...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Show me please using of List and Popup Trigger...



By [Eugene Zalyubovsky](#) on Thursday, June 8, 2000 - 01:59 pm: [Edit](#)

Show me please using of List and Popup Trigger. I've read a lot of docs but cannot understand the exact working with these controls: filling with strings, etc. Maybe somebody shows how to make it with Forth...



By [Neal Bridges](#) on Thursday, June 8, 2000 - 02:42 pm: [Edit](#)

The sources to Swatch cover this; they are a good starting place.

Neal

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How to make an exit from application?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): How to make an exit from application?



By [Eugene Zalyubovsky](#) on Wednesday, June 7, 2000 - 12:15 pm: [Edit](#)

I'm a newbie in Forth for Pilot and want to know: how can I make an "Application Exit" (like action after Alt+F4 in MS Windows)? Which function may help me?



By [Neal Bridges](#) on Wednesday, June 7, 2000 - 12:28 pm: [Edit](#)

BYE is the word you want. Bear in mind, however, that having your applications exit is not recommended by Palm. Palm applications are meant to run continously until another application (or the launcher) is selected.

Neal



By [Eugene Zalyubovsky](#) on Wednesday, June 7, 2000 - 04:34 pm: [Edit](#)

Thanks! But my first applications are very simple and will not run concurrently with others...



By [Neal Bridges](#) on Wednesday, June 7, 2000 - 04:40 pm: [Edit](#)

No Palm applications actually run concurrently. Some give the impression that they do, because they return to the same spot when you restart them. But in fact, only one application runs at a time on the Palm OS.

Neal



By [Erwin Schomburg](#) on Thursday, June 8, 2000 - 05:49 am: [Edit](#)

Neal, I also like to feed crumbs to make them ducks expecting more 8-), however, it seems to be in order to tell a newbie that **no** Palm application returns to the same spot you left it on its own behalf. Applications always (re-)start from scratch. Its only due to how clever an application programmer works to save the current status on exit of an application **and** to check and re-instantiate this saved status on application re-entry, how "seamless" this impression of concurrently running applications is presented to the user.

/Erwin



By [Neal Bridges](#) on Thursday, June 8, 2000 - 09:42 am: [Edit](#)

Re-reading my explanation, I can see the ambiguity. Thanks for the clarification, Erwin.

Neal



By [francois vignon](#) on Thursday, June 8, 2000 - 11:06 am: [Edit](#)

a kind of joke (see many many previous messages):

"Application always(re-start) from scratch. Its only due to how clever an application programmer works to save the current status on exit of an application *and* to ...": if you take quartus, you can see how clever Neal works to save the current status ... but, now, this thread is close and it's better ;-) and remember, it's a joke. (but Quartus is a good demonstration of the single task nature of palm applications)



By [Neal Bridges](#) on Thursday, June 8, 2000 - 11:41 am: [Edit](#)

Quartus Forth deliberately restarts in a clean state, but I take your point. :)

Neal



By [Michael Chen](#) on Thursday, June 8, 2000 - 01:10 pm: [Edit](#)

I know there've been numerous threads on the topic of quartus restarting cleanly, but has there ever been the idea of having the up arrow functionality like doskey remain through sessions? So you could switch to quartus and execute the "include xxxx" with just an up arrow / enter?



By [francois vignon](#) on Friday, June 9, 2000 - 04:58 am: [Edit](#)

you can put in startup.quartus:
: x S" include xxxx" EVALUATE ;
and write x for quick include

or better:

: x S" user-area marker user-area include xxxx" EVALUATE ;
marker user-area

so, when you write x <cr> you forget all definition after marker user-area and you reinclude all. so, you can, before marker user-area, include many qForth library and when you reinclude your file after edition with popupNote you don't loose time in includind library.

PS: Neal, sorry if my x isn't well writed ...

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Problem with bitmapfamily in pilrc on IIIc

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Problem with bitmapfamily in pilrc on IIIc



By [Ronny Svensson](#) on Wednesday, June 7, 2000 - 09:37 am: [Edit](#)

I have the following test application on an Palm IIIc with 1.2.5R

```
-----< Test.rcp >-----
FORM ID 1000 AT (0 0 160 160)
BEGIN
    FORMBITMAP AT (20 40) BITMAP 100
    FIELD ID 1103 AT (0 80 160 11) NONUSABLE
END

BITMAPFAMILY ID 100 "PumpBw.bmp" " " " " "PumpCo.bmp"
-----< Test.asm >-----
    appl      "Test resources", 'test'
    include "Test.res"
-----< Makeprc.bat >-----
pilrc -r test.res test.rcp
pila -t rsrc test.asm
-----< Test.txt >-----
\ Test

Needs Ids
Needs Resources
Needs Forms

(Id) test (Id) rsrc  Use-Resources

: Go  ( -- )
    1000 ShowForm
    Begin  Ekey Ekey>char Nip Until ;

' Go (Id) test MakePrc Test

1000 (Id) tFRM CopyRsrc
    100 (Id) tbmp CopyRsrc
-----
```

The last line (tbmp copyrsrc) generates a fatal alert:
MemoryMgr.c,Line:4340,NULL handle

I can run Go inside Quartus and it works ok. I can make the prc if i remove the last line, but it won't work. What am i doing wrong here?

Ronny



By [Neal Bridges](#) on Wednesday, June 7, 2000 - 09:42 am: [Edit](#)

Should be Tbmp -- upper-case T.

Neal



By [Ronny Svensson](#) on Wednesday, June 7, 2000 - 02:25 pm: [Edit](#)

Thanks!

Ronny

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Format of ToDoDB records?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Format of ToDoDB records?



By [Matthew Blair](#) on Wednesday, June 7, 2000 - 08:44 am: [Edit](#)

Hi,

Just wondered if anybody had a link to information about the format of the tododb database on the palm.

Thanks,

Matthew



By [Mike Will](#) on Wednesday, June 7, 2000 - 09:38 am: [Edit](#)

This is a good ref for all built-in app formats:

http://ourworld.compuserve.com/homepages/nseessle/frames/pilot/dat_e.htm

Mike



By [Matthew Blair](#) on Wednesday, June 7, 2000 - 12:19 pm: [Edit](#)

Thanks Mike. I am actually looking for something that describes the format on the Palm, though, and not the format of the processed database on the desktop.

At least, that's what I think your link is pointing to...

Matt



By [Matthew Blair](#) on Thursday, June 8, 2000 - 12:59 pm: [Edit](#)

Just a quick follow up - here's what I've been able to gather so far from hacking around.

Each record in the tododb is variable length, and appears to have the following structure:

First two bytes represent the due date of the todo. If value is 0xFFFF, then the todo is undated. The date is decoded as follows:

Bit:	FEDCBA9	8765	43210
	Years	Month	Day

(since 1904)

The next byte appears to toggle the completed/uncompleted flag. If value is 0x01, then uncompleted. If value is 0x81, then completed.

The next field is a zero-delimited text field containing the description of the todo. The last field is a zero-delimited text field which represents an attached note.

That's it. If anybody knows any more about the third byte, I'd appreciate hearing from them...

Thanks,

Matthew



By [Jim Hendricks](#) on Friday, June 9, 2000 - 08:19 am: [Edit](#)

Can't the todo db structure be hacked out through looking at the code for the built-in apps?

I beleive you can still get the built-in apps source through the developer section of the palmos website.

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Some DAs that will aid your development process...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Some DAs that will aid your development process...



By [Michael Chen](#) on Tuesday, June 6, 2000 - 03:43 pm: [Edit](#)

I was browsing around on

<http://member.nifty.ne.jp/yamakado/da/>

a DA (Desk Accesory, if you don't know what they are, there's some kind of FAQ there) archive. I found two DA's that really aid on-board development.

First, you need the Swipe DA launcher, available from that page as well. Using it, you can activate DAs using silkscreen "Swipes" (e.g. menu to find, etc).

ContextDA, when it's activated, detects what app you are in, and then, based on that, launches another app. I have mine set up so that if I'm QF, it launches, pedit, if I'm in pedit, it launches QF, and if I'm in rsrcedit it launches Pedit...etc...makes things a lot quicker...

TaggingDA pops up a window on the screen with a whole bunch of HTML tags. However, they are reconfigurable, so I changed them all to QF words that I used a lot. It's very useful to add "include <myapp>" so that you can swipe once to go to QF, then swipe again and tap to compile. The program will crash if you don't install the file labelled "HTMLTagDB" or something, but after you install it you can then change all the tags inside to words.

I'm not affiliated or anything...blah blah...



By [peter bohac](#) on Tuesday, June 6, 2000 - 06:23 pm: [Edit](#)

While we're on the subject of DAs, here's my list of must have DAs for QF development:

LaunchMenu (my personal favorite for DA launchers. it launches DAs and also lets you switch to any other app on your device)

daMemoPad (pops up a Memo Pad window above your current app)

SHChanger DA (quickly switch between showing and hiding private records)

NetConnect... (connect and disconnect from your dial-up internet connection)

And a few others. You can find a list of all DAs and info about them at this URL:

<http://member.nifty.ne.jp/yamakado/da/>

-peter (=



By [Doug Philips](#) on Monday, September 25, 2000 - 01:06 pm: [Edit](#)

Thanks Peter and Michael!

I hope these work out. I have several HackMaster hacks, including SwitchHack. Unfortunately, SwitchHack doesn't like to launch apps in my (just upgraded to) Visor's 8Mb Flash card. Hopefully the LaunchMenu DA will be able to do that.

Hmmm, I seem to recall another thread in the discussion forum with references to some PopUp hacks...

While these things are in the archives, I think it might be interesting to have a user updatable set of links to useful other sites...

Whadda ya think Neal? Maybe just part of the file area? I'm not sure. I was thinking of a form based "submit some links to the Quartus 'related' links page" kinda thing. It could be done manually too. I'd be willing to create a page on my website and have folks submit to me, if Neal'd be interested in putting a pointer to that web page on the Quartus Forth page, but ideally it should live on Quartus (IMHO).

-Doug "just my buck \$2.50" Philips

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Satellite Forms?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Satellite Forms?



By [Csaba Pankaczy](#) on Tuesday, June 6, 2000 - 02:52 pm: [Edit](#)

Hi,

Has anyone attempted to write Satellite Forms extensions with Quartus Forth?

Csaba



By [Neal Bridges](#) on Tuesday, June 6, 2000 - 02:54 pm: [Edit](#)

Not to my knowledge, Csaba.

Neal

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Dodging Fatal

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Dodging Fatal



By [Mike Will](#) on Monday, June 5, 2000 - 04:53 pm: [Edit](#)

I've been having a tough time lately writing a callback. The problem is that with this particular callback the PalmOS delivers parameters on the its stack, but any attempt to print them, store them, or even exit the callback results in a fatal error (because the calling routine **requires** successful completion of the callback). It's difficult to debug a routine when it must work flawlessly before it will stop crashing fatally.

What I needed was a way to have a print stack (.s) operation survive a fatal crash. Writing the stack out to a memo before the crash does the trick. Here's the code:

```
\ .sm > memo    6.5.00 MRW
\ default is "Stack Dumps" in Unfiled
```

needs newmemo

```
\ write zstring to stack dump memo
: >m ( zaddr u -- ) 2>r
  OpenMemoDB
  0 s" Stack Dumps"
  FindMemoInCategory
  0= abort" No Stack Dumps memo"
  2r> AppendCurrentMemo
  CloseMemoDB ;
```

```
create nl 10 c, 10 c, 0 c,
```

```
: .cell ( n -- ) dup abs 0 <# 0 hold
  bl hold #s rot sign #> 1-  >m ;
```

```
: .sm ( -- ) nl 2 >m
  depth 10 min ?dup if
    for i pick .cell next
  else z" stack empty" >m
  then ;
```

Notes:

- code is hardwired to use "Stack Dumps" memo in Unfiled category - this is a convenient and relatively safe place
- I arbitrarily chose 10 cells as the maximum stack depth to print
- adding comments in the memo for each stack dump is a good way to document a complex and buggy run
- a DUMP of memory to memo would be nice too, maybe later
- other possible enhancements: timestamp for each .sm, insertion of a text string to serve as a label for a .sm



By [Neal Bridges](#) on Monday, June 5, 2000 - 04:54 pm: [Edit](#)

Thanks, Mike. Were you successful in debugging the callback?

Neal



By [Mike Will](#) on Monday, June 5, 2000 - 06:18 pm: [Edit](#)

Hi Neal,

Yes and no. I've debugged the callback enough to know that the PalmOS routine ExgDBWrite is trashing my Quartus variables. We discussed this before and decided that it shouldn't happen, but it definitely does. ExgDBWrite is a complex beast -- it builds a copy of a pdb in memory and sets up some references to this buffer before beaming it out. It appears to take great liberties with shared memory. I notice that the buffer it sets up is about 2K below where my Quartus variables get stored -- is this ok? The file I'm attempting to beam is 4k bytes. By the way, when I say my variables get trashed, I mean they're overwritten en masse - even ones that I never write to.

I've also located the exact position of the fatal crash. It's when I do a 2! to one of my variables that has been commandeered by ExgDBWrite's mischief. It steals my variables' space, I write to them, and kaboom.

Mike



By [Neal Bridges](#) on Monday, June 5, 2000 - 06:25 pm: [Edit](#)

Perhaps the A5 register is being trashed. Try saving it before the ExgDBWrite, and restoring it afterward.

Neal



By [Mike Will](#) on Monday, June 5, 2000 - 07:44 pm: [Edit](#)

Is there a way to save/reload A5 in Forth or do I need the assembler?

Oh gawd. A5 is the Data Segment register? I thought we were in Motorola-land, not Intel-hell. Sorry, but my knowledge of assembler is extremely sparse beyond a Z80 or 6809.

Mike



By [Neal Bridges](#) on Monday, June 5, 2000 - 07:53 pm: [Edit](#)

A5 is the register that marks the location of dataspace in dynamic memory. Here's a bit of untested code:

```
needs asm68k
```

```
code save-a5
  prefix
  move .l a5 a7 -)
end-code inline
```

```
code restore-a5
  prefix
  move .l a7 )+ a5
end-code inline
```

Neal



By [Mike Will](#) on Monday, June 5, 2000 - 08:21 pm: [Edit](#)

Tried it. My variables still get gorched. The only difference is that other, new errors pop up after a restore-a5 upon re-entry to Quartus.

Thanks for your help, Neal. I think I'm about out of gas on this one. It looks like there's just too much weirdness going on with ExgMgr for me to figure it all out. As I've said on several previous occasions, love Quartus, hate the PalmOS.

Mike



By [Neal Bridges](#) on Monday, June 5, 2000 - 08:23 pm: [Edit](#)

Send me your code, Mike, if you don't mind. I'll see what I can do.

Neal

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Code to copy a DB

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Code to copy a DB



By [Michael Chen](#) on Monday, June 5, 2000 - 08:00 am: [Edit](#)

I need to make a backup copy of a database from my program (much the same way RSRCEdit does it), and then be able to restore it again. Format is unknown. Any ideas?



By [Winchell Chung](#) on Wednesday, June 7, 2000 - 12:46 pm: [Edit](#)

I don't know if this will help or not. My program needs a database to run. I made a version of the database and inserted it into the resource file. Upon execution, the program checks to see if the database exists on the Visor/Palm. If it doesn't, the forth word CreateCounterDB grabs the "freezed dried" version of the database from the resource and uses it to create the database on the Visor/Palm.

```
2Variable counterDBHandle
```

```
: CreateCounterDB
  \ freezed dried copy of counter db
  1000 [id] DBIM
  DmGetResource
  2dup counterDBHandle 2!
  MemHandleLock

  DmCreateDatabaseFromImage throw

  counterDBHandle 2@ MemHandleUnlock
  throw
  counterDBHandle 2@ DmReleaseResource
  throw
;
```



By [John Newell](#) on Monday, June 12, 2000 - 10:41 am: [Edit](#)

Looks interesting Winchell.

What do you mean by "I made a version of the database and inserted it into the resource file"? How did you do that?

Does the "Image" have to be an empty database with no data?

Is there a description of what the image must look like somewhere?

Is there any information anywhere on how to create an image?

There's no such a thing as DmCreateImageFromDatabase which might have been useful.

Regards

John



By [Steve Bohrer](#) on Wednesday, June 14, 2000 - 01:58 am: [Edit](#)

Code to copy a DB record by record (or resource by resource)

Here's a "brute force" database copy solution, rather than any clever tricks with DmCreateImageFromDatabase. It turned out rather larger than I'd hoped, so I'd love instructive feedback about how to factor stuff better, or do things better in general. Particularly, many of the words are factored just to make them easier for me to see, but not it ways that are at all useful as "stand alone" words. Also, what about global variables? I used a bunch for params to OS calls, and these variables waste space when my program is not duplicating a database. Also, is there a better way to factor the resource vs. record copy? Seems I have a bunch of code which is almost the same, but not enough for me to combine without a lot of extra tests.

Finally, perhaps there is a more clever aproach which would take many fewer lines of code.

Caveats:

- 1) This does not copy the db header AppInfoId or SortInfoId fields. These fields may contain the local Id of a data block, and you might want to make a copy of this block, and save the id of the copy.
- 2) The records in the copy do not have the same Unique IDs as the original; I leave them with the Unique IDs assigned by the OS. (RsrcEdit does it this way as well)
- 3) The db header attributes field is copied from the source to the new destination database before the records are copied. This is bad if (for instance) the source has the read-only flag set, since then the program will make the new database read-only, and then fail when it tries to write to it. A fix would be to write the attributes to the copy afterwards.
- 4) File stream dbs are copied record by record rather than with the stream protocols. This works (since steam files are built on top of the normal DB manager) for Palm OS 3.1, but perhaps later versions may flag it as an error.
- 5) Minimal error handling: The open files are closed, and exceptions tossed on to the caller.

Usage:

dupDb (destFileName len sourceFileName len --)

Both file names are zstrings. The name string lengths are actually ignored, but I followed Neil's convention from the DataMgr routines. This lets you use a zstring directly without a drop, e.g. z" FooDBCopY" z" FooDB" dupDB

Okay, here's some code:

```
\ dupDb 00.6.8   SKB

needs core-ext
needs DataMgr

base @ hex
0001 constant dmHdrAttrResDB
80 constant dmRecAttrDelete
base !

2variable srcDbr
0. srcDbr 2!
2variable destDbr
0. destDbr 2!

2variable dbType
2variable dbCreator
variable dbVer
variable dbAttr
variable destIdx

: throwNull ( ptr. -- ptr. )
\ thow DmLastErr if null
  2dup or 0=
  if DmGetLastErr throw then ;

: FindDB ( zaddr len -- dbID. )
  drop >abs cardnum @
  DmFindDatabase throwNull ;

: openFoundDB ( dbID. fMode -- dbr. )
  rot rot cardnum @
  DmOpenDatabase throwNull ;

: ?CloseDB ( &Dbr -- )
\ close db if dbr non-zero, & zero dbr
  dup 2@ 2dup
  or if CloseDB else 2drop then
  0. rot 2! ;
```



```

: (dbInfoArgs)    ( dbId. -- <12 items> )
\ push args for DatabaseInfo calls
2>R
dbCreator >abs dbType >abs
0. 0. 0. 0. 0. 0.
dbVer >abs dbAttr >abs 0.
2R> cardnum @ ;

: openSrcDb ( zaddr len -- dbr. )
\ Get src DB info, & open it to read
FindDB 2dup (dbInfoArgs)
dmDatabaseInfo throw
dmModeReadOnly openFoundDB ;

: openDestDb ( zaddr len -- dbr. )
\ set DB attrs from src, and open it
findDB 2dup (dbInfoArgs)
dmSetDatabaseInfo throw
dmModeReadWrite openFoundDB ;

: rezDB? ( -- flag )
dbAttr @ dmHdrAttrResDB AND ;

: createDestDb ( zaddr len -- )
\ use source db info for type,
\ creator, and resource flag.
2>R
rezDB? dbType 2@ dbCreator 2@
2R> CreateDB ;

\ *** words to copy records ***

: (srcHand&Size) ( idx -- shand. size. )
\ get src db record handle and its size
srcDbr 2@ DmQueryRecord
throwNull 2dup MemHandleSize ;

: (newDestHand) ( size. -- dHand. )
\ create new record in dest db
destIdx >abs destDbr 2@
dmNewRecord throwNull ;

: HUnlock ( handle. -- )
MemHandleUnlock throw ;

: (writeRec) ( sHand. size. dHand. -- )
\ lock handles, write dest rec, unlock

```

```

2>R
2over MemHandleLock \ size srcPtr
0. 2R@ MemHandleLock \ off dstPtr
DmWrite throw
HUnlock 2R> HUnlock ;

: (releaseDestRec)
0 destIdx @ destDbr 2@
DmReleaseRecord throw ;

: dupRec ( idx -- )
dup destIdx ! \ new rec's position
(srcHand&Size)
2dup (newDestHand)
(writeRec)
(releaseDestRec) ;

: getSrcAttr ( idx -- )
\ read attrs from idx record in src db
>R 0. 0. dbAttr >abs R> srcDbr 2@
dmRecordInfo throw ;

: setDestAttr ( -- )
\ write dbAttr to destIdx record
0. dbAttr >abs
destIdx @ destDbr 2@
dmSetRecordInfo throw ;

: recDeleted? ( -- flag )
dbAttr @ dmRecAttrDelete AND ;

: ?dupRec ( srcIdx -- )
\ dup this record unless it's deleted
dup getSrcAttr recDeleted?
if drop
else dupRec setDestAttr then ;

: dupRecords ( -- )
srcDbr 2@ dmNumRecords
?dup if 0 do i ?dupRec loop then ;

\ *** now for resources ***

: (srcRezInfo) ( idx -- )
\ get type and id of this resource
>R 0. destIdx >abs dbType >abs R>
srcDbr 2@ dmResourceInfo throw ;

```

```

: (srcRez&Size) ( idx -- shand. size. )
\ get src resource handle and its size
srcDbr 2@ DmGetResourceIndex
throwNull 2dup MemHandleSize ;

: (newDestRez) ( size. -- dHand. )
\ create new resource in dest db
destIdx @ dbType 2@ destDbr 2@
dmNewResource throwNull ;

: (releaseRez) ( rezHand. -- )
2dup HUnlock
DmReleaseResource throw ;

: (writeRez) ( sHand. size. dHand. -- )
\ write dest resource from src
2>R
2over memHandleLock
0. 2R@ memHandleLock
DmWrite throw
(releaseRez) 2R> (releaseRez) ;

: dupRez ( idx -- )
dup (srcRezInfo)
(srcRez&Size)
2dup (newDestRez)
(writeRez) ;

: dupResources ( -- )
srcDbr 2@ dmNumResources
?dup if 0 do i dupRez loop then ;

: open&copy ( -- )
openSrcDB srcDbr 2!
2dup createDestDB
openDestDB destDbr 2!
rezDB? if dupResources
else dupRecords then ;

: dupDB ( dName len sName len -- )
\ copy database "sName" to new
\ file "dName". Names are zStrings.
['] open&copy catch
\ close files, even if exception
srcDbr ?CloseDB

```

```
destDbr    ?CloseDB  
throw    \ re-throw exception  
;
```



By [Neal Bridges](#) on Wednesday, June 14, 2000 - 02:41 pm: [Edit](#)

Very nice, Steve. Thanks for posting that.

Neal



By [John Newell](#) on Thursday, June 15, 2000 - 01:01 pm: [Edit](#)

Massive!



By [Steve Bohrer](#) on Thursday, June 15, 2000 - 01:18 pm: [Edit](#)

John,

Is "Massive" good or bad? For code on the Palm, I don't think large and heavy is where I want to be.

Steve



By [Neal Bridges](#) on Thursday, June 15, 2000 - 01:20 pm: [Edit](#)

Is that a comment on the code size (125 lines of code), or an exclamation of general approval? :)

Neal



By [John Newell](#) on Friday, June 16, 2000 - 08:35 am: [Edit](#)

Hi

Exclamation of awe.

Perhaps one of you could explain what Winchell meant by "I made a version of the database and inserted it into the resource file"?

What is a Database "Image" anyway? What does DmCreateDatabaseFromImage expect to get so that it can create a database?

Regards

John



By [Michael Chen](#) on Saturday, June 17, 2000 - 01:08 am: [Edit](#)

Great! Thanks Steve...Been looking around for this (as I assume many others were) for a while! Nice work...



By [Winchell Chung](#) on Friday, June 23, 2000 - 09:57 am: [Edit](#)

Explanation of "I made a version of the database and inserted it into the resource file"

=====

Sorry, I should have been more explicit.

My app is a game. The database keeps track of all the "playing counters" that are currently on the board, and the location of each.

The program sort of assumes that this database is present in the Visor/Palm unit along with the app. However, various events could clobber the database or result in failure to install it in the first place.

So, I wrote another app that generated the database, with all the counters in their initial position. When I ran it, the database was now on my Visor.

I then ran RsrcEdit on my Visor. I opened the database and copied the data resource. I then switched to the resource file for my game app, and pasted the data resource into it as DBIM #1000.

This is the "freezed dried" version of the database I was referring to.

So when my app starts up, it looks for the presence of the database. If it isn't there, CreateCounterDB is called. That takes the "freeze dried" version of the database and uses it as a template to create a new one in the Visor RAM.

The technique is mentioned here:

http://palm.3com.com/devzone/docs/pptdg/ch06.htm#P84_5937



By [John Newell](#) on Saturday, June 24, 2000 - 12:48 pm: [Edit](#)

Thank you Winchell.

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Password:

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Quartus Programming for FlashPlug

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Quartus Programming for FlashPlug



By [Erwin Schomburg](#) on Monday, June 5, 2000 - 05:42 am: [Edit](#)

Hi there, would anybody be interested in programming under Quartus Forth for the FlashPlug, an external Flash memory drive for the PalmOS platform? The release of the API in form of a shared library is imminent. I'm currently betaing the stuff for JKS. To do this, i.e. avoid to take up the fight with CodeWarrior quirks, I'm writing the Quartus wrappers for the calls to the library. If anybody is interested, drop a note here and I'll post my stuff when the libray is publicly released by JKS.

/Erwin

BTW: FlashPlug is at <http://www.flashplug.de>



By [Neal Bridges](#) on Monday, June 5, 2000 - 09:43 am: [Edit](#)

Please do post it, Erwin.

Neal



By [Erwin Schomburg](#) on Monday, June 26, 2000 - 06:13 am: [Edit](#)

OK, the release of the PlugLib by JKS is imminent, so here comes the Quartus wrappers and a sample PlugStub to launch my Quintominoes application. Interested owners of a FlashPlug note: The library is not released as yet, mostly (english) documentation is missing, however I have been authorized by JKS to submit the "naked" pre-release version to anyone interested from the Quartus community, so drop me a mail if you want it and can't wait.

May the Forth be with you!

/Erwin

```
\ PlugLibWrap ERS 25Jun2000
\ Requires PlugLib installed on Palm
\ Only makes sense if you have FlashPlug
\ ( see http://www.flashplug.de )
```

```
Base @ decimal
needs zstrings
needs ids
```

```
(hex) 08000 constant appErrorClass
1 appErrorClass or constant ErrParam      \ invalid parameter
2 appErrorClass or constant ErrNotOpen \ library is not open
3 appErrorClass or constant ErrStillOpen \ returned from SampleLibClose if open by
others
4 appErrorClass or constant ErrMemory  \ memory error occurred

(hex) 0FFF0 constant ErrFPDiskFull
(hex) 0FFF1 constant ErrFPCommError
(hex) 0FFF2 constant ErrFPFileLimit
```

```
(hex) 0FFF3 constant ErrFPFileNotFound
(hex) 0FFF4 constant ErrFPNoDBID
(hex) 0FFF5 constant ErrFPDBOpen
(hex) 0FFF6 constant ErrFPMem
(hex) 0FFF7 constant ErrFPMissingPart
(hex) 0FFF8 constant ErrFPDBDelete
(hex) 0FFF9 constant ErrFPNoResErr
```

```
variable PlugLib#
2variable context
```

```
: RelTrap ( funcnum --- trapID )
(hex) 0a800 + ; inline
```

```
: GetErr ( --- err )
D0 drop ; inline
```

```
: GetRet ( --- ret )
D0 drop ; inline
```

```
: GetRet. ( --- ret. )
D0 ; inline
```

```
: LoadPlugLib ( --- err )
PlugLib# >abs [id] JKS4 [id] libr SysLibLoad ;
```

```
: RemovePlugLib ( --- err )
PlugLib# @ SysLibRemove ;
```

```
: InitPlugLib ( -- err )
PlugLib# >abs
z" pluglib.lib" drop >abs
SysLibFind ;
```

```
: PlugSysTrap ( # --- )
RelTrap PlugLib# @ swap systrap drop ;
```

```
: OpenPlugLib ( --- err )
context >abs 1 PlugSysTrap 2drop GetErr ;
```

```
: ClosePlugLib ( --- err )
context 2@ 2 PlugSysTrap 2drop GetErr ;
```

```
: FPLibGetLibAPIVersion
( verp. --- err )
5 PlugSysTrap 2drop GetErr ;
```

```
: FPCopyDBToPlug ( namezp. --- err )
6 PlugSysTrap 2drop GetErr ;
```

```
: FPCopyDBFromPlug
( namezp. --- err )
7 PlugSysTrap 2drop GetErr ;
```

```
: FPFindNextByTypeCreator
( namezp. handlep. creat. type. firstf[>byte] --- err )
```



```

8 PlugSysTrap 2drop 2drop 2drop 2drop drop GetErr ;

: FPGetNumParts ( --- num )
9 PlugSysTrap GetRet ;

: FPSetPart ( num --- err )
10 PlugSysTrap drop GetErr ;

: FPSetPartByName
( namezp. --- err )
11 PlugSysTrap 2drop GetErr ;

: FPGetPartName
( namep. num --- err )
12 PlugSysTrap 2drop drop GetErr ;

: FPDatabaseInfo
( creatp. typep. sortinfopp. appinfopp. modnump. backupdatep. moddatep. crdatep.
versionp. attrp. namep. handle --- err )
13 PlugSysTrap drop 2drop 2drop 2drop 2drop 2drop 2drop 2drop 2drop 2drop
2drop GetErr ;

: FPNumRecords ( handle --- num )
14 PlugSysTrap drop GetRet ;

: FPNumResources ( handle --- num )
15 PlugSysTrap drop GetRet ;

: FPGetRecord
( recnum handle --- recptr. )
16 PlugSysTrap 2drop GetRet. ;

: FPGetResource
( recnum handle --- recptr. )
17 PlugSysTrap 2drop GetRet. ;

: FPGetHandle ( namezp. --- handle )
18 PlugSysTrap 2drop GetRet ;

: FPRecordInfo
( size.p. attrp. recnum handle --- err )
19 PlugSysTrap 2drop 2drop 2drop GetErr ;

: FPResourceInfo
( size.p. IDp. typep. recnum handle --- err )
20 PlugSysTrap 2drop 2drop 2drop 2drop GetErr ;

: FPFindResource
( ID. type. handle --- recptr. )
21 PlugSysTrap drop 2drop 2drop GetRet. ;

: FPCopyDBToPlugWithRename
( newnamezp. namezp. --- err )
22 PlugSysTrap 2drop 2drop GetErr ;

: FPCopyDBFromPlugWithRename

```

```
( newnamezp. namezp. --- err )
  23 PlugSysTrap 2drop 2drop GetErr ;

: FPPresent ( --- flag )
  24 PlugSysTrap GetRet ;

: FPGetLastError ( --- err )
  25 PlugSysTrap GetErr ;

: FPPartSizeInfo
( freesize.p. freefilesp. --- err )
  26 PlugSysTrap 2drop 2drop GetErr ;

Base !
```

```
\ PlugLibTest
\ Sample on usage
needs PlugLibWrap
```

```
: pname. ( --- addr. )
  z" Quint"
drop >abs ;
: inip ( --- )
  initpluglib
  if loadpluglib throw then
    openpluglib throw
  FPPresent if
    fpgetnumparts 0 do
      i fpsetpart throw
  pname.
  FPCopyDBFromPlug 0= if leave
else cr
  ." Quint not in partition, looking up next" then loop
  pname. 0 DmFindDatabase 2dup
  or if 2dup
    >r >r 0. 0. 0. R> r> 0
    sysapplaunch drop
    0 dmdeletedatabase throw
begin closepluglib 0= until
  else 2drop begin closepluglib 0= until
  cr ." Quint not on Plug"
key drop
then
else begin closepluglib 0= until
  cr ." Plug not present" key drop
then
bye ;
```



By [Erwin Schomburg](#) on Wednesday, September 13, 2000 - 05:23 pm: [Edit](#)

Revised version due to recent library call changes. Please note that due to Forth's tweakability the sample code above needs not to be touched when using the new PlugLib, the Forth stack diagrams for the calls remain unchanged, so only recompilation with this version of the wrapper is required. I was promised that the C interface stuff and the PlugLib shared library will be up on the FlashPlug webpage before the weekend, however, I got permission to send this stuff to other

interested developers on request until the page is up to date, so just drop me a mail if you can't wait.

/Erwin

\ PlugLibWrap ERS 14Sep2000
\ Requires PlugLib installed on Palm
\ Only makes sense if you have FlashPlug
\ (see <http://www.flashplug.de>)

Base @ decimal
needs zstrings
needs ids

(hex) 08000 constant appErrorClass
1 appErrorClass or constant ErrParam \ invalid parameter
2 appErrorClass or constant ErrNotOpen \ library is not open
3 appErrorClass or constant ErrStillOpen \ returned from SampleLibClose if open by others
4 appErrorClass or constant ErrMemory \ memory error occurred

(hex) 0FFF0 constant ErrFPDiskFull
(hex) 0FFF1 constant ErrFPCommError
(hex) 0FFF2 constant ErrFPFileLimit
(hex) 0FFF3 constant ErrFPFileNotFound
(hex) 0FFF4 constant ErrFPNoDBID
(hex) 0FFF5 constant ErrFPDBOpen
(hex) 0FFF6 constant ErrFPMem
(hex) 0FFF7 constant ErrFPMissingPart
(hex) 0FFF8 constant ErrFPDBDelete
(hex) 0FFF9 constant ErrFPNoResErr

variable Pluglib#
2variable context

: RelTrap (funcnum --- trapID)
(hex) 0a800 + ; inline

: GetErr (--- err)
D0 drop ; inline

: GetRet (--- ret)
D0 drop ; inline

: GetRet. (--- ret.)
D0 ; inline

: LoadPlugLib (--- err)
PlugLib# >abs [id] JKS4 [id] libr SysLibLoad ;

: RemovePlugLib (--- err)
PlugLib# @ SysLibRemove ;

: InitPlugLib (-- err)
PlugLib# >abs
z" pluglib.lib" drop >abs
SysLibFind ;

```

: PlugSysTrap ( # --- )
RelTrap PlugLib# @ swap systrap drop ; inline

: OpenPlugLib ( --- err )
context >abs 1 PlugSysTrap 2drop GetErr ;

: ClosePlugLib ( --- err )
context 2@ 2 PlugSysTrap 2drop GetErr ;

: FPLibGetLibAPIVersion
( verp. --- err )
5 PlugSysTrap 2drop GetErr ;

: FPCopyDBToPlug ( namezp. --- err )
context 2@ 6 PlugSysTrap 2drop 2drop GetErr ;

: FPCopyDBFromPlug
( namezp. --- err )
context 2@ 7 PlugSysTrap 2drop 2drop GetErr ;

: FPFindNextByTypeCreator
( namezp. handlep. creat. type. firstf[>byte] --- err )
context 2@ 8 PlugSysTrap 2drop 2drop 2drop 2drop 2drop drop GetErr ;

: FPGetNumParts ( --- num )
context 2@ 9 PlugSysTrap 2drop GetRet ;

: FPSetPart ( num --- err )
context 2@ 10 PlugSysTrap 2drop drop GetErr ;

: FPSetPartByName
( namezp. --- err )
context 2@ 11 PlugSysTrap 2drop 2drop GetErr ;

: FPGetPartName
( namep. num --- err )
context 2@ 12 PlugSysTrap 2drop 2drop drop GetErr ;

: FPDatabaseInfo
( creatp. typep. sortinfofp. appinfofp. modnump. backupdatep. moddatep. crdatep. versionp.
attrp. namep. handle --- err )
context 2@ 13 PlugSysTrap 2drop drop 2drop 2drop 2drop 2drop 2drop 2drop 2drop 2drop
2drop 2drop 2drop GetErr ;

: FPNumRecords ( handle --- num )
context 2@ 14 PlugSysTrap 2drop drop GetRet ;

: FPNumResources ( handle --- num )
context 2@ 15 PlugSysTrap 2drop drop GetRet ;

: FPGetRecord
( recnum handle --- recptr. )
context 2@ 16 PlugSysTrap 2drop 2drop GetRet. ;

: FPGetResource

```

```
( recnum handle --- recptr. )
context 2@ 17 PlugSysTrap 2drop 2drop GetRet. ;

: FPGetHandle ( namezp. --- handle )
context 2@ 18 PlugSysTrap 2drop 2drop GetRet ;

: FPRecordInfo
( size.p. attrp. recnum handle --- err )
context 2@ 19 PlugSysTrap 2drop 2drop 2drop 2drop GetErr ;

: FResourceInfo
( size.p. IDp. typep. recnum handle --- err )
context 2@ 20 PlugSysTrap 2drop 2drop 2drop 2drop 2drop GetErr ;

: FPFindResource
( ID. type. handle --- recptr. )
context 2@ 21 PlugSysTrap 2drop drop 2drop 2drop GetRet. ;

: FPCopyDBToPlugWithRename
( newnamezp. namezp. --- err )
context 2@ 22 PlugSysTrap 2drop 2drop 2drop GetErr ;

: FPCopyDBFromPlugWithRename
( newnamezp. namezp. --- err )
context 2@ 23 PlugSysTrap 2drop 2drop 2drop GetErr ;

: FPPresent ( --- flag )
context 2@ 24 PlugSysTrap 2drop GetRet ;

: FPGetLastError ( --- err )
context 2@ 25 PlugSysTrap 2drop GetErr ;

: FPPartSizeInfo
( freesize.p. freefilesp. --- err )
context 2@ 26 PlugSysTrap 2drop 2drop 2drop GetErr ;
```

Base !

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GetControlValue usage

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): GetControlValue usage



By [James D. Purdy](#) on Sunday, June 4, 2000 - 08:42 pm: [Edit](#)

I am using GetControlValue to poll a set of check boxes.

What is returned when the box is checked? and unchecked?

thanks



By [Neal Bridges](#) on Sunday, June 4, 2000 - 10:32 pm: [Edit](#)

1 if it's checked, 0 if it isn't. I found this out on the fly with a little Quartus Forth routine, right on board the Palm.

The steps: first I created a form with a single checkbox control on it, and then this simple routine:

```
\ test-check
needs resources
needs ids
needs fields

(id) chek (id) rsrc use-resources

: go
  1000 ShowForm
  begin
    ekey drop
    2000 GetControlValue .
  again ;
```

Neal



By [Tim Hayward](#) on Thursday, August 3, 2000 - 12:26 pm: [Edit](#)

When I use the above program to look at a popup trigger it only returns 0. How can I determine the value of the trigger?



By [Neal Bridges](#) on Thursday, August 3, 2000 - 01:12 pm: [Edit](#)

Your popup trigger has an associated popup list. Use LstGetSelection to read

the current setting of that list.

Neal



By [Tim Hayward](#) on Thursday, August 3, 2000 - 02:19 pm: [Edit](#)

I have several popup triggers that refer to the same list. When you select one it drops the correct value into the popup trigger, and each popup trigger has a separate value on the screen. Can I not get to that value?



By [Neal Bridges](#) on Thursday, August 3, 2000 - 03:25 pm: [Edit](#)

You can set the text of a trigger (CategorySetTriggerLabel). I've never tried it, but perhaps CtlGetLabel will return the text in a trigger.

Neal



By [Tim Hayward](#) on Thursday, August 3, 2000 - 10:32 pm: [Edit](#)

Thanks again. That does work. Here is the code for anyone that needs it.

```
: label>string ( c-addr ctrlID -- len )
  getObjectPtr ctlGetLabel
  2dup strlen
  >r rot >abs r> dup >r s>d
  2rot 2rot memMove throw r>
;
```

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Another Quartus plug

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Another Quartus plug



By [Dave Bennett](#) on Friday, June 2, 2000 - 10:31 am: [Edit](#)

I wrote an article

(<http://www.palmpower.com/issues/issue200006/farm001.html>) on how we use Palms to manage our farming operation for palmpower magazine. I detailed the extensive list of applications we use and of course, quartus is right in there.

One of the attractions of the article was that it was an example of a "non-traditional" use of Palm technology. I don't know if anything less than 5 years old can have any kind of tradition or not, but I think our use of the Palm is where computing is going over the next 2 years. IDG has said that computing appliances (they've hedged in their latest report to get in _the_ buzzword; they're now saying "internet" appliances) will outsell PCs big time and forever more beginning in 2002.

Now I just need a bumper sticker for my tractor that says "computing happens". :)

Neal has made such a great tool for us; I'm just disappointed that more "mainstream" press isn't given to this wonderful environment for the Palm. (Of course, when your hardware and software cost less than those Windows based development environments they are trying to push I guess there wouldn't be a lot of profit left...)

Dave



By [Neal Bridges](#) on Friday, June 2, 2000 - 11:17 am: [Edit](#)

Thanks, Dave. That's an interesting article!

Neal



By [Mark Beckman](#) on Friday, June 2, 2000 - 12:36 pm: [Edit](#)

Great article! I really enjoyed reading it. You have really integrated the Palm into your life.

Oh, and a nice plug for Quartus too.

Mark



By [Mike Will](#) on Friday, June 2, 2000 - 02:11 pm: [Edit](#)

Huh, that was a good read, well done, Dave. I can testify to an expanded low range temperature. You stated 20°F at the end of your article. I've used a Palm standing in an oil field in northern Alberta in February at -30°C with no problems other than a sluggish display.

While kudos are being handed out, did anyone else read the review of the Palm IIIxe in the April issue of "Pen Computing" where the increase in performance over the IIIx is attributed (in a round about way) to the embedding of Neal's Streak Hack ? Neal -- I trust you received a large cheque from Palm Inc. for that ;)

Mike



By [Mike Will](#) on Friday, June 2, 2000 - 02:12 pm: [Edit](#)

Huh, that was a good read, well done, Dave. I can testify to an expanded low range temperature. You stated 20°F at the end of your article. I've used a Palm standing in an oil field in northern Alberta in February at -30°C with no problems other than a sluggish display.

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Mike



By [Neal Bridges](#) on Friday, June 2, 2000 - 02:15 pm: [Edit](#)

I received an email and about fifteen dollars worth of 3Com Palm Computing promotional materials, actually.

Neal



By [Mike Will](#) on Friday, June 2, 2000 - 04:24 pm: [Edit](#)

Been there, done that. Years ago Zilog Inc published a Z8 manual largely composed of routines I had written and shared with the local sales rep. They gave me a key chain, which broke about a week later. I still have it -- it reminds me to keep my mouth shut when dealing with salesmen.

Mike



By [Dave Bennett](#) on Thursday, June 8, 2000 - 07:46 am: [Edit](#)

Yeah, I've been there too. I've had too many people make too much money from my ideas without any compensation to myself that I don't talk to anyone any

more. <sigh> Kind of killed the fun part of the industry for me; not being able to have that spur of the moment, creative comaraderie.

Glad to hear about the -30C, too. I've purchased a "wet wallet" that I can use for severe inclement weather. It works well.

Dave



By [Erwin Schomburg](#) on Thursday, June 8, 2000 - 08:42 am: [Edit](#)

Going slightly more OT: Someone trying to steal a year's work worth of concepts taught me how and where to draw lines some time ago. Far from "not talking to anyone", if I'm supported out of sources for expertise in an entirely different field and I don't perceive any foreseeable (immediate) market value in sharing results from my private interests, I freely share my insights and opinions (like in here). OTOH, if e.g. someone from the consulting branch of a company asks detailed questions about the Palm world *and* it becomes clear that its not for his own device but he is getting customer money for answering to a problem, first thing is a request for compensation before I acknowledge to even have heard of the existence of these gadgets (which normally leads to termination of communication from the other side). One still might shoot a hole in the own foot, but in general a little thinking before babbling prevents from feeling cheated for too freely giving away one's achievements. Just my 0,02€.

/Erwin

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Use of FrmCustomAlert

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Use of FrmCustomAlert



By [Jim Purdy](#) on Friday, June 2, 2000 - 05:50 am: [Edit](#)

Could someone give me an example of the use of this function?

I would like to define the form with RSCedit.



By [Neal Bridges](#) on Friday, June 2, 2000 - 11:16 am: [Edit](#)

To use FrmCustomAlert, create a normal alert, with ^ 1, ^ 2, and ^ 3 in the text of the alert wherever you want your custom strings to appear.

Here's an example (requiring an appropriate resource, as above, and a suitable use-resources line). It assumes the alert resource is number 1000:

```
: string1 z" One" ;  
: string3 z" Two" ;  
: string3 z" Three" ;
```

```
string3 drop >abs  
string2 drop >abs  
string1 drop >abs  
1000 FrmCustomAlert  
.s
```

Neal



By [Winchell Chung](#) on Wednesday, June 7, 2000 - 12:38 pm: [Edit](#)

```
\ resource Talt 4000 is an alert resource with  
\ a message of "^1", an alert type of "Warning"  
\ and an "OK" button.  
\ Resource Talt 5000 is an alert resource with  
\ a title of "Confirmation", a message of "^1",  
\ an alert type of "Confirmation", one "Yes"  
\ and one "No" button.
```

```
4000 Constant MESSAGEALRT  
5000 Constant CONFIRMALRT
```

```
: DoCustomAlert  
( caddr u frmID -- u )
```

```
>r
drop >abs
0. 0. 2rot
r>
FrmCustomAlert
;

: MessageAlert
( caddr u -- )
MESSAGEALRT
DoCustomAlert drop
;

: ConfirmAlert
( caddr u -- ? )
CONFIRMALRT
DoCustomAlert 0=
;

=====
```

\ example of use

```
: IncrPhase
z" Do you wish to enter the next phase?"
ConfirmAlert if
  EnterNextPhase
then
;
```



By [Neal Bridges](#) on Wednesday, June 7, 2000 - 12:40 pm: [Edit](#)

Very nice, Winchell.

Neal



By [Winchell Chung](#) on Wednesday, June 7, 2000 - 03:55 pm: [Edit](#)

Why, thank you, sir!

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Modem Emulation for Palm ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Modem Emulation for Palm ?



By [Zvly](#) on Thursday, June 1, 2000 - 07:57 am: [Edit](#)

Greetings to each and everyone,
Would any of you have any knowledge of modem emulation via software ?

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Extracting Tbmp into bitmaps?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Extracting Tbmp into bitmaps?



By [Winchell Chung](#) on Wednesday, May 31, 2000 - 12:02 pm: [Edit](#)

In my app, I made a lot of Tbmp resources by using RsrcEdit in my Visor. Now I want to extract them and convert them into Windows *.bmp files.

I don't suppose anybody knows of a utility that can do this? The closest I found was prc2bmp.exe, but that only does tAIN resources.



By [Neal Bridges](#) on Wednesday, May 31, 2000 - 02:33 pm: [Edit](#)

There's an application called PRC2RCP.EXE; hunt for that, I believe it does what you're after.

Neal



By [Winchell Chung](#) on Wednesday, May 31, 2000 - 04:19 pm: [Edit](#)

You're amazing! That will do just what I want. Thanks!

Add a Message

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Password:

E-mail:

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List change event ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): List change event ?



By [Ronny Svensson](#) on Tuesday, May 30, 2000 - 01:24 pm: [Edit](#)

I want to know when the user has changed the selection in a list. I use LstGetSelection to get the current selection - this works ok. But i only seems to get WinEnter and WinExit events when the selection is changed. Do i have to use LstGetSelection whenever i get an WinEnter event to know when the selection has changed?

Ronny



By [Neal Bridges](#) on Tuesday, May 30, 2000 - 01:46 pm: [Edit](#)

A change to a list selection causes a lstSelectEvent, or in a popup list, a popSelectEvent. Watch for those.

<http://www.dtek.chalmers.se/groups/pilot/doc/pptdg/ch05.htm>

Neal



By [Ronny Svensson](#) on Wednesday, May 31, 2000 - 03:08 am: [Edit](#)

Do i need to use a callback to get LstSelectEvent because ekey only return WinEnter and WinExit events? I,m using 1.2.5R on a Palm IIIc.

Ronny



By [John Newell](#) on Wednesday, May 31, 2000 - 03:26 am: [Edit](#)

Neal,
I am also not getting lstSelectEvent. I thought there was a bug somewhere where lstSelectEvent was not being returned and that it was fixed in the next version of Quartus Forth? - which we are waiting for. Nudge, nudge.

Regards

John



By [Neal Bridges](#) on Wednesday, May 31, 2000 - 09:25 am: [Edit](#)

John, you're right. Ronny, for the moment, poll your list for changes; the update will fix the bug wherein LstSelectEvents are not returned under PalmOS 3.3 and later.

Neal



By [Marc](#) on Thursday, June 1, 2000 - 05:48 pm: [Edit](#)

I just use LstGetSelection before closing the form.

This is how I do it (for a pop-up list):

```
\ open the form
ddFormID PopUpForm
\ get the list object id
ddFlowListID GetObjectPtr 2>r
\ get the previously selected item
ddFlow @
\ set the item in the list as selected
dup 2r@ LstSetSelection
\ get the text of the item directly from the list
2r> LstGetSelectionText
\ set the pop-up control label
ddFlowPopID SetLabel

\ the event loop exit when a button is pressed
\ (assume there is only an OK button)

begin
ekey
ctlSelectEvent =
until

\ get the value of the selected item from the list
ddFlowLstID GetObjectPtr
LstGetSelection
\ memorise the value
ddFlow !

Return to main Form
```

That is it.

Hopes it can help.



By [Ronny Svensson](#) on Tuesday, June 6, 2000 - 03:10 am: [Edit](#)

I use a pupolist in the form header to change forms just like in prefs. So i need to know when the user makes a new selection in the list so that i can change form.

Ronny

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Debugging - what am I doing wrong here?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Debugging - what am I doing wrong here?



By [Tammy Cravit](#) on Tuesday, May 30, 2000 - 12:45 pm: [Edit](#)

As a followup to my last message, in addition to general debugging strategies, this is the word I am currently stuck on...I can't for the life of me see what I'm doing wrong, so if anyone can help, I'd appreciate it.

The word that's crashing is update-roll-display; I've included a few of the other words and variables that it uses for context. The contents of "rolls" is set elsewhere in the program, and I've tested it from the console, so I know it works.

The controls being updated are numbered from 1051 to 1059.

```
1050 constant ResultsBase
```

```
create rolls 9 cells allot
rolls 9 cells erase
```

```
: elem@ ( var i -- elem )
  cells + @ ;
```

```
: num>label ( num controlid -- )
  >r
  0 <# 0 hold #s #>
  drop >abs
  r> SetLabel
  ;
```

```
: update-roll-display ( -- )
  9 for
    rolls i elem@
    ResultsBase i + 1+
    num>label
  next
  ;
```

Thanks in advance!
Tammy



By [Neal Bridges](#) on Tuesday, May 30, 2000 - 01:18 pm: [Edit](#)

1. Does num>label work?
2. What is the crash?

Neal



By [Tammy Cravit](#) on Tuesday, May 30, 2000 - 01:51 pm: [Edit](#)

Neal,

I think num>label works, but I'm not sure how to test it in isolation. Is there an easy way that I can pop up my form, invoke num>label with arguments I know to be correct, wait a while, and then return to Quartus's console?

The crash I get is a generic "Fatal Error" dialog, with a Reset button.

Thanks for the help,
Tammy



By [Neal Bridges](#) on Tuesday, May 30, 2000 - 01:58 pm: [Edit](#)

To debug this, I'd replace update-roll-display with

```
: update-roll-display
  1 1051 num>label ;
```

If that works, I'd extend it to

```
: update-roll-display
  1 1051 num>label
  2 1052 num>label ;
```

and so on.

Neal

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Debugging Forth code?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Debugging Forth code?



By [Tammy Cravit](#) on Tuesday, May 30, 2000 - 12:37 pm: [Edit](#)

I'm working on my first Quartus Forth program (and my first attempt at writing *anything* in Forth, for that matter), and am now into the debugging stage. I'm a little unclear at how exactly to go about debugging my code.

For example: I have a word that updates the labels of a bunch of PushButton controls with values generated in my code. When it runs, it updates some of the values and then crashes before I can really see what it's doing. How can I watch the stack while it's running, or interrupt it for a peek at the stack, so I can debug the problem?

I guess I just need to know some general strategies/techniques for debugging a Forth program with a GUI -- I can test some of the underlying algorithm words from the console, but once I get into the GUI, I'm not sure how to debug it.

Thanks,
Tammy



By [Neal Bridges](#) on Tuesday, May 30, 2000 - 01:19 pm: [Edit](#)

What I do is

needs graphics

and then at some key point in the code,

0 0 at .s

This causes the stack to be displayed at the top of the screen.

Neal

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Docinc library problems?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Docinc library problems?



By [John Newell](#) on Tuesday, May 30, 2000 - 07:16 am: [Edit](#)

Neal,

Preamble:

I have not got any doc files with Quartus libraries so the following results are thought results rather than actual results. However, I think they would apply to docinc.

So:

I was using the docinc library as the basis for a library which would include other libraries from a MemoDB style database (not MemoDB itself). I hit a couple of problems.

1) memoneeds (originally docneeds), etc. does the following:

```
: MemoNeeds ( "name" -- )
```

```
0 parse MemoNeeded ;
```

This means that it takes the WHOLE of the parse area as the name. When I said: MemoNeeds libname \ Comment

I got a not found error because it looked in the database for a memo called 'libname \ Comment'. I tried changing the code to:

```
bl parse MemoNeeded
```

which loaded the library but gave a stack underflow error afterwards. I thought that EVALUATE saved and restored the current 'input' information?

2) More of a problem:

if the library used the [IF], [ELSE], [THEN] words then, when [IF] was evaluated, the word wasn't interpreted properly and the following words are compiled even though the value FALSE was on the stack. i.e.

```
FALSE
```

```
[IF]
```

```
: fred ." Hi" ;
```

```
[THEN]
```

and the fred word gets compiled. Perhaps a different version of REFILL is needed? I haven't gone into that yet.

As I said, I haven't got any doc libraries but I should think these would be problems within docinc.

Summary:

1)

```
DocNeeds libname \ Comment
```

fails with not found.

2)

[IF], [ELSE], [THEN] are not interpreted properly.

Any thoughts?

Regards

John



By [Erwin Schomburg](#) on Tuesday, May 30, 2000 - 08:50 am: [Edit](#)

1) Don't read what exactly you are doing, but EVALUATE does not save or restore anything, but falls back into interpreting from console input when its specified input buffer is exhausted. Generally, if one branch of a conditional does nothing and the other one crashes on a stack underflow I'd check my stack balance.

2) is a known (at least to me and some others like Jim Hendricks) problem. { [IF]} as the word [IF] is vectored to, parses words from memo input until end of line (character zero) or buffer exhausted, then starts parsing again and on and on until an [ELSE] or a [THEN] is encountered if its bound to skip input, i.e. the condition is false (same applies to { [ELSE]} if the conditon was true and the [ELSE] part needs skipping).

A memo is offered to the interpreter as one contiguous input buffer. In docinc on the other hand the interpreter is fed from an input buffer the text is decompressed into line by line and kicked into life via the EVALUATE word for each decoded line. The { [IF]} word does not know how to read a next line (or a next buffer) from a doc file into an EVALUATE buffer, so the concepts clash, end of to skip area is seen to be on the same line the [IF] statement is found on.

I might get around to wrap docinc into a layer where [IF] and its relatives are vectored into words that work while interpreting from a docfile.

/Erwin



By [Jim Hendricks](#) on Tuesday, May 30, 2000 - 09:29 am: [Edit](#)

Item #1 is a problem that already has a solution in the current DocInc module. Instead of using DocInclude, and DocNeeds, use DocInclude" and DocNeeds". These forms parse for a closing quote mark (") rather than the end of the current input line.

As Erwin stated above, I am aware of problem #2 and wanted to help find a solution, but alas, my job as a programmer has been keeping me too busy on other than Palm programming. My idea on fixing the problem were to modify the decompress/evaluate loop to handle this situation. It sounds like Erwin's vectoring replacement words though would be a better solution.

Jim



By [John Newell](#) on Wednesday, May 31, 2000 - 04:11 am: [Edit](#)

Erwin and Jim,

Thanks for your prompt replies.

1) MemoNeeds libname \ Comment

causes a problem if it is nested in another MemoNeeds call (it's OK if the source is the user input device - Palm). The manual says that EVALUATE "saves the current input specification". So I expected that after the nested MemoNeeded call in

```
: MemoNeeds ( "name" -- )
```

```
0 parse MemoNeeded ;
```

that the previous EVALUATE call would take up where it left off but it causes an exception. The same problem occurs with

```
MemoNeeds" libname" \ Comment
```

One way round it was to use

```
: MemoNeeds ( "name" -- )
```

```
bl parse
```

```
0 parse 2drop
```

```
MemoNeeded ;
```

This works OK but, of course, ignores the rest of the parse area.

2) I haven't tried it yet but it is possible that REFILL could be used here.

According to the manual, when [IF] exhausts the parse area it is refilled as with REFILL. This sort of implied to me that [IF] pretends that the parse area is indefinitely long and continuously filled. Interpretation of code is done between [IF] and [ELSE] (true condition) or between [ELSE] and [THEN] (false condition). A return to the statement after the EVALUATE would only occur after the [THEN] has appeared in the parse area. I know the manual says that REFILL returns false and takes no other action if the input source is EVALUATE (but it's not really because we are reading from a file and just using EVALUATE to interpret). Any thoughts on any of that? In fact, in tests, REFILL is called when [IF] is EVALUATED but I haven't taken this any farther yet.

I just had a quick look at DPANS94, A.15.6.2.2533 but haven't taken that any farther yet.

Regards

John



By [John Newell](#) on Tuesday, June 6, 2000 - 12:14 pm: [Edit](#)

FYI,

I got 2) working by REFILLing the EVALUATE buffer (which I know you are not supposed to do) but then got a problem with 'safe' so this wasn't entirely satisfactory.

When I called EVALUATE I had to give it the maximum possible buffer length (because REFILL can't report the size of the new data it has put into the buffer) but then compiletime and anytime words in the 'safe' library assume that if >IN has not reached the buffer length value (from SOURCE) that there are more words to come and you get a missing name error.

All in all I think this approach is not feasible because of these types of collateral effects. (Also it is illegal). I think it needs an implementation of the File-Access word set. I am looking at that now.

Regards

John

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Databases

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Databases



By [Michael Chen](#) on Monday, May 29, 2000 - 11:18 pm: [Edit](#)

I guess I am still a little unclear on how to open a database, open a record, and then write or read data in my own format from it. Anyone have some sample code? Thanks!



By [John Newell](#) on Tuesday, May 30, 2000 - 07:40 am: [Edit](#)

Michael,

Yes - I have problems with all those dmXXXXX system calls. Which ones do you need, in what order do you use them and why.

Have a look in the memo and DataMgr libraries. (A memo is one database record in MemoDB.)

I know memo has got words for manipulating categories but it does create new records and release them to the database (NewMemo, ReleaseCurrentMemo), get and set record info (GetCurrentMemoAttr, setCurrentMemoAttr), read records (GetCurrentMemo), get number of records in database (MumMemo), get record size (CurrentMemoSize), tests if record is deleted (CurrentMemoDeleted?), and resizes records (GrowCurrentMemo). It even uses some of these words to find a record, write a new record and append to an existing one.

DataMgr opens, closes, and creates databases.

I found them both quite useful to see what was going on when I was first accessing my own databases.

Regards

John



By [Michael Chen](#) on Tuesday, May 30, 2000 - 04:47 pm: [Edit](#)

Thanks for the pointer!



By [Michael Chen](#) on Tuesday, May 30, 2000 - 04:54 pm: [Edit](#)

Thanks for the pointer!



By [Chris Bucsko](#) on Monday, June 5, 2000 - 10:01 am: [Edit](#)

also check out the code from:

<http://www.quartus.net/files/PalmOS/Forth/Library/>

There's a file called db-example.txt which offers an example of how to open a database in Forth. Like you, I'm also trying to 'get a handle' on databases, both from Quartus and a PalmOS perspective. My main confusion is how to create fields in a database, the records part seems sort of straightforward. Hope this file helps you...



By [Michael Chen](#) on Tuesday, June 6, 2000 - 08:08 am: [Edit](#)

Thanks!

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Newbie - Library Documentations

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Newbie - Library Documentations



By [Norman](#) on Sunday, May 28, 2000 - 10:31 am: [Edit](#)

Hi, I'm a newbie in forth.....

I've found a lot of library files in the file area...but can;t seems to find any documentations accompanying them....

As some of the words defined in these library files are not very easy to understand and with little comments.



By [Neal Bridges](#) on Sunday, May 28, 2000 - 11:48 am: [Edit](#)

Have a look at

[Documentation for Selected Library Words](#)

Neal



By [Norman](#) on Monday, May 29, 2000 - 03:23 am: [Edit](#)

I've gone thru that already but it only covers a few of the many words.....



By [Erwin Schomburg](#) on Monday, May 29, 2000 - 05:20 am: [Edit](#)

Most of the words are plain implementations of the standard. You can either get the doc-formatted version Neal provides in the file area or go to <http://www.taygeta.com/forth/> and run the site through iSiloWeb, so you'll have a hyperlinked reference to carry around on your Palm.

/Erwin



By [Neal Bridges](#) on Monday, May 29, 2000 - 11:48 am: [Edit](#)

Erwin's right, Norman -- most of the library code is implementations of Standard words. If there's anything that remains a mystery, though, please post about it and I'll document it here.

Neal

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PWM

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): PWM



By [Graham Lamont](#) on Saturday, May 27, 2000 - 08:16 am: [Edit](#)

I'm trying to get some sounds by directly manipulating the PWM registers.
I try this simple procedure to try setting up a 50% duty cycle at ~500Hz.

8192 (hex) ffff502 ! \ Period reg
4096 (hex) ffff504 ! \ Width reg
16 (hex) ffff500 ! \ie sets bit 4 PWMEN

Not a squeak from my Visor. (No I'm not using the emulator :-)
Also

272 (hex) ffff500 ! \ie sets bit 4 and 8
doesnt work

Sampling the counter:

ffff506 @ .

Always yields 0. So contrary to the 68328 User Manual, ffff500 bit4 doesn't seem to get everyting going.

Any ideas ?

Thanks Graham



By [Neal Bridges](#) on Saturday, May 27, 2000 - 11:16 am: [Edit](#)

You need to use a 32-bit address, and the !a and @a words, for example:

272 (hex) ffff500. !a

Neal



By [Graham Lamont](#) on Thursday, June 1, 2000 - 01:44 pm: [Edit](#)

Thanks Neal,
The . at the end of the hex number has cleared some problems up.1

Unfortunately my attempts to directly manipulate the PWM registers seems to be blocked by the System Control Register at FFFFF000, which is disallowing writes to the Dragonball registers.

Graham



By [Neal Bridges](#) on Thursday, June 1, 2000 - 04:06 pm: [Edit](#)

The PalmOS itself writes to those registers; a peek at the OS source might be helpful.

Neal



By [Craig Comstock](#) on Monday, June 5, 2000 - 10:06 pm: [Edit](#)

Any ideas on this? I was trying some of the same things. Do you know how to free up memory resources so Palm OS doesn't protect the hardware registers?

What does MemSemaphoreReserve|Release do?

What does MemHandleLock do?

I was looking at MTI waveplayer in RsrcEdit and saw the MemHandleLock. I looked at the PalmOS SDK and MemHandleLock doesn't look promising, and MemSemaphore... is undocumented.



By [Neal Bridges](#) on Monday, June 5, 2000 - 10:08 pm: [Edit](#)

MemHandleLock is used to fix a region of allocated memory in place. MemSemaphore* is used to protect/unprotect storage RAM. Neither is what you want.

Have you looked at the DragonBall documentation from Motorola? I believe it outlines the steps required to access the various registers.

Neal



By [Craig Comstock](#) on Monday, June 5, 2000 - 11:00 pm: [Edit](#)

Any pointers... I've got the manual but I'm afraid I'm rather a newbie... last time I programmed Assembly was on the TRS-80!



By [Neal Bridges](#) on Monday, June 5, 2000 - 11:57 pm: [Edit](#)

No assembly should be required to write/read the DragonBall registers, just @a and @ etc... but there are certain registers that control the read/write status of certain other registers, etc.

Neal



By [Craig Comstock](#) on Tuesday, June 6, 2000 - 10:30 am: [Edit](#)

Would that be the Chip-Select Logic? It seems like there are four groups that you can setup. If I set one up (if Palm OS let's me do it) will that hose Palm OS? I wonder...



By [Neal Bridges](#) on Tuesday, June 6, 2000 - 10:43 am: [Edit](#)

I don't believe the chip-select registers are involved in any way with the PWM registers.

Neal



By [Neal Bridges](#) on Tuesday, June 6, 2000 - 03:12 pm: [Edit](#)

At

<http://199.104.132.208/ProdCat/psp/0,1250,MC68328~M934310090795,00.html>

there's a PDF describing how to send DTMF using PWM -- it looks like the included source shows the steps required to reprogram the PWM.

Neal



By [Graham Lamont](#) on Tuesday, June 13, 2000 - 01:44 pm: [Edit](#)

The main problem I come up with is that the System Control Register (SCR) 0x(FF)FFF000 is set permanently to 0x38 by the OS.

This means that amongst other things the Supervisor Only bit is set and the dragonball registers are non-writable :(
The disassembler by Per Harald Myrvang seems to recognise this.

See the *very* brief description ch4 in 68328UM, about system control.

Neal must be right about the source of palmos containing the secrets, since PWM IS the only way to produce sounds. Perhaps the Hwr functions are needed ??



By [Neal Bridges](#) on Tuesday, June 13, 2000 - 02:00 pm: [Edit](#)

What model of Palm do you have? I just did a quick experiment and I'm able to change that register's contents (what exactly I'm changing I'm not sure, as I haven't checked the manual, so I don't recommend you try this for fun -- use appropriate values instead):

(hex) ffff000. @a (hex) . -> 3800
(hex) 0000 (hex) ffff000. !a
(hex) ffff000. @a (hex) . -> 2000

Neal

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Systrap memory locations

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Systrap memory locations



By [Graham Lamont](#) on Saturday, May 27, 2000 - 08:13 am: [Edit](#)

I hope this question isn't too stupid:

I'm trying to locate some systraps so I can have a look at their disassembly.
I've got SysTraps.h which says :

```
// Regular traps start here and go up by 1's  
#define sysTrapBase 0xA000  
typedef enum .....List of Traps
```

"Go up by 1's", is that 1 word?
0xA000,0xA002,0xA004.....
or
0xA000,0xA001,0xA002 (surely not?)

And do 0xA000 etc. contain 16 bit vectors to the start of the routines ?

Thanks for your patience
Graham



By [Neal Bridges](#) on Saturday, May 27, 2000 - 11:13 am: [Edit](#)

That's not how it works. The trap is trap #15; the systrap number is a parameter to the routine at that vector. The Palm OS subtracts (hex) A000 from the systrap number, looks up the address of the ROM routine, and calls it.

Neal

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Hardware buttons and other key events

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Hardware buttons and other key events



By [Michael Chen](#) on Wednesday, May 24, 2000 - 06:03 pm: [Edit](#)

How can I intercept hardware buttons and other keys like menu, calculator, find, and home on the silkscreen? I need this for two reasons...

1. games, for which I actually need to know which button was pressed
2. not allowing an exit of my app via the hardware / silkscreens, so I can give my palm with my app running to someone who doesn't really know much about palms, and they cant mess anything else up.

hopefully this should be an easy question!



By [Erwin Schomburg](#) on Thursday, May 25, 2000 - 05:36 am: [Edit](#)

You need to split up the function of EKEY to intercept the hardware buttons and you also need to supress further event handling by the system when you have handled a hardwarebutton event:

2variable timeout. 20. timeout. 2!
variable hard

```
: evtloop ( --- )  
begin  
begin  
timeout. event >abs EvtGetEvent  
event @ ?dup until  
hndleevents \ handle your events, set "hard" when  
\ handling a hardwarebutton event  
hard @ 0= if  
HandleEvent then  
0 hard !  
again ;
```

see also the sources to the Quintominoes application for this method in context with an actual implementation.

/Erwin



By [Michael Chen](#) on Thursday, May 25, 2000 - 07:15 am: [Edit](#)

Thanks, that should do it!!

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Allot and here in standalone apps

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Allot and here in standalone apps



By [Geert Bosch](#) on Wednesday, May 24, 2000 - 05:37 pm: [Edit](#)

As I'm trying to put the pieces of my calculator together, I get stuck on creating a working standalone executable.

The reason seems to be that the data segment is a fixed size and is read-only as well. As my application uses "allot" to allocate arbitrary sized numbers, this fails right away. Everything works just fine in the Quartus environment.

Redesigning the application to only use the stack is not really an option as that would get way too messy. An alternative could be to make my own implementation of "here" and "allot" plus all related words, but I hope there is a better solution.

Does anybody have suggestions?



By [Geert Bosch](#) on Wednesday, May 24, 2000 - 06:04 pm: [Edit](#)

I searched through the archive and saw this is a known problem. If I would use ALLOCATE, would that mean using double-word pointers? I hope not... Wouldn't it be possible to allocate one piece of dynamic memory of a predetermined size, copy the data segment and then modify the Forth words like ",", "here" and "allot" so they work correctly?

If people think this would be doable, I'd really appreciate pointers on how to do this...

Thanks in advance for any help here! :-)



By [Neal Bridges](#) on Thursday, May 25, 2000 - 01:14 am: [Edit](#)

That's not a bad thought, Geert -- allocating a block and using it -- though I wouldn't redefine HERE and ALLOT and so on, but rather make my own differently-named versions of each.

Neal



By [Geert Bosch](#) on Thursday, May 25, 2000 - 06:25 am: [Edit](#)

The issue is that I'm using "!", "@" and "," quite a bit. It will be a lot of work to convert to another scheme and keep track of the different kinds of pointers. I'm also a bit worried about efficiency, as I can just meet my criteria now (all

calculations take less than 0.2 sec).

It seems to me that it should be simplest to prepare a new data segment and then swap the internal data segment pointer of quartus to that area.

The advantage is that in that case I can keep using the full Forth language in both the testing environment and the standalone app, something I had assumed would be possible all along. This also makes it much easier to reuse existing code.

As you're the one who knows best whether this is possible or not, could you give me some advice here? I'd like to make such a "data segment switch" word, which can be used by anybody who runs into the same issues.

-Geert



By [Neal Bridges](#) on Thursday, May 25, 2000 - 09:36 am: [Edit](#)

It's not easy to switch the data segment pointer; the OS uses it internally, and gets upset if you move it around.

You wouldn't need to keep track of different kinds of pointers if you create a new ALLOT, HERE, ! and @ and , -- they'd still be 16-bit pointers. And the overhead would be very small indeed. I think it's still a good plan.

Neal



By [Geert Bosch](#) on Thursday, May 25, 2000 - 11:23 am: [Edit](#)

I'll see if I can find a way to get this all to work. In the mean time I've found a pretty good workaround, which might be interesting for others as well.

Given that it is still possible to write to the data allocated before calling MakePRC, I used the following scheme:

```
create dsmark \ Start of space for allot
: dspace here over dup allot 0 fill ;
: go-dspace dsmark here - allot go;
1000 dspace
' go-dspace (id) Helo MakePRC Hello
```

This works fine, but has as obvious disadvantage that all this empty space will be wasted in the data segment of the PRC.

But... what I'm going to do is to fill this space with data like bitmaps in various color depths. At run-time I copy the ones needed for the actual device to a separate ALLOCATED area and draw it from there.

-Geert



By [Neal Bridges](#) on Thursday, May 25, 2000 - 11:39 am: [Edit](#)

Clever!

Neal



By [Marc](#) on Friday, May 26, 2000 - 04:02 pm: [Edit](#)

I ran in the same issue, I am taking info from a memo and parsing it. First version used @ and i and 16bits arithmetics. The I used allocate to stop wasting memory in the PRC (at that time I still had only 1M memory). Then with the new os allocate can return a 32 bits pointer, making my program die when allocate could not give me something in the 16bits range. Now I reverted to allot, but I have more memory, still quite frustrating.

Should you come with an elegant solution I would be happy to try it. I still haven't had much time to learn the details of Forth :-).

Cheers

Marc

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DmGetNextDatabasebyTypeCreator (ewwwwww...)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): DmGetNextDatabasebyTypeCreator \(ewwwwww...\)](#)



By [Ed Mittelstedt](#) on Wednesday, May 24, 2000 - 12:03 pm: [Edit](#)

This systap is a bear. It is used to iterate through databases, given a wildcard creator and/or type.

Every time I call it, it gives me a fatal exception. I was hoping someone could look at it and see what I'm doing wrong, cuz I can't! :)

I had to create a variable containing the (ID) fields outside of the defintion, cuz (ID) within the definition didn't work. (If someone could tell me how I could have gotten this to work rather than what I did below that would solve other problems I am having with stuff inside definitions)

```
2variable dbcreator
(id) 0adw dbcreator 2!
2variable dbtype
(id) card dbtype 2!
```

Please note that the rest of this code is all within a word definition. I am using tinylocals to hold the addresses.

```
\ create the database list
2 cells allocate drop to L0 \ dbID
1 cells allocate drop to L1 \ cardNo
16 cells allocate drop to L2 \ stinfo
L0 >abs
L1 >abs
true
dbcreator 2@
dbtype 2@
L2 >abs
true
DmGetNextDatabasebyTypeCreator
```

Boom. Fatal Exception.



By [Neal Bridges](#) on Wednesday, May 24, 2000 - 12:34 pm: [Edit](#)

Inside a definition, use [ID] rather than (ID).

You are not properly allocating the DmSearchState buffer -- have a look at this working example of DmGetNextDatabaseByTypeCreator:

<http://www.quartus.net/discus/messages/23/231.html?TuesdayMay920000235pm#POST1311>Neal



By [Ed Mittelstedt](#) on Wednesday, May 24, 2000 - 01:00 pm: [Edit](#)

Ok, using:

```
create DmSearchStateType 16 allot
variable cardnum
2variable localid
```

instead of

```
2 cells allocate drop to L0 \ dbID
1 cells allocate drop to L1 \ cardNo
16 cells allocate drop to L2 \ stinfo
```

worked.

The big question is why? Why is allocate the wrong way? To me they are the same, they allocate a memory source and supply an address for it.

Coming from a strong C and Delphi background, I'm trying to keep variables local. By using the example above that worked, I would need to have many global variables in my program.



By [Neal Bridges](#) on Wednesday, May 24, 2000 - 01:36 pm: [Edit](#)

It's just possible your allocates are not succeeding. Try a THROW instead of a DROP after each one.

Neal

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OS Callback in Quartus?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): OS Callback in Quartus?



By [Mike Will](#) on Wednesday, May 24, 2000 - 08:59 am: [Edit](#)

Hi.

Is it possible to write a general callback for the Palm OS in Quartus? I need to write a function that will be referenced as the first parameter to ExgDBWrite in the Exchange Manager Library. I guess the question is: Can the PalmOS call into Quartus?

Thanks

Mike



By [Neal Bridges](#) on Wednesday, May 24, 2000 - 09:54 am: [Edit](#)

The callback and end-callback words allow for this, as in:

```
: myfunction
  callback
  ..callback code here...
end-callback
;
```

Note that the callback code can't change the values or order of values on the stack, so PICK finds a use.

Neal



By [Mike Will](#) on Wednesday, May 24, 2000 - 04:51 pm: [Edit](#)

Great, thanks Neal.

I was afraid I'd have to resort to CW or some similar nightmare.

Mike



By [Mike Will](#) on Monday, May 29, 2000 - 08:39 pm: [Edit](#)

Hi folks.

I'm having problems with a callback and wonder if anyone might see the problem here. I'm using the ExgMgr to beam a database. I've included the C version and Quartus version of the required callback:

```
static Err WriteDBData(const void* dataP, ULong* sizeP, void* userDataP)
{
Err err;
*sizeP = ExgSend((ExgSocketPtr)userDataP, (void*)dataP, *sizeP, &err);
return err;
}
```

```
: WriteDBData
( udataP. sizeP. dataP. -- err)
callback
2rot 2dup udataP. 2!
2rot 2dup sizeP. 2!
2rot 2dup dataP. 2!
Err >abs sizeP. 2@ 2@a
dataP. 2@ udataP. 2@
( &Err. size. &dataP. &userDataP.)
ExgSend ( #sent.) sizeP. 2@ 2!a
Err @ s>d d0! ( return err)
end-callback
;
```

Notes:

- the stack manipulation is ugly because I need to use explicit variables for debugging. (You go down the rabbit hole in a callback and most I/O and return stack operations are unusable)
- dataP. sizeP. userDataP. are all 2variable's
- Err is a simple variable
- the callback runs ok, but FataIs upon return to the PalmOS, which called it (via exgDBWrite)
- ExgSend always returns 1 byte sent, error of 0, regardless of db being beamed. The inputs to ExgSend all look ok.

Any ideas on this or any other Beaming code you have lying around would be helpful.

Thanks

Mike



By [Neal Bridges](#) on Monday, May 29, 2000 - 09:59 pm: [Edit](#)

Your callback code is assuming that the arguments to the callback are waiting on

top of the data stack -- check that. The return address for the routine is in the way on top of the stack; this may be throwing you off. Have a look, see if what you're receiving is what you expect.

Also, you can use return-stack manipulations within a callback. The data and return stacks are swapped in memory during a callback, so the data stack acts as the return stack.

Neal



By [Mike Will](#) on Monday, May 29, 2000 - 10:37 pm: [Edit](#)

Thanks, Neal. Just to clarify:

- 1) "arguments to the callback are waiting on top of the data stack -- check that" - I thought they would be on the return stack, which becomes the data stack while inside a callback, no?
- 2) "return address for the routine is in the way on top of the stack" - What do I do with it, stow it and put it back before end-callback?
- 3) I would dearly love to "Have a look, see if what you're receiving is what you expect". Any ideas? Remember, it's crashing before I can look at any of my variables and .s doesn't work in a callback. This routine still Fatal's even if it's just a stub. Here's a grin -- I'm considering writing a routine to Beep out values from the stack using a high pitch for 1 and a low pitch for 0. How's that for desperation???

Cheers

Mike



By [Neal Bridges](#) on Monday, May 29, 2000 - 11:08 pm: [Edit](#)

- 1) Right -- the return stack becomes the datastack inside the callback. The arguments are there, on what looks like the data stack. On the very top, however, is the return address.
- 2) Yes -- you can stow it and return it later.
- 3) Hehe. No need really. Drop values into variables and examine the variables on exit, so you can get the order straight. No beeping required.

callback/end-callback have never had a lot of weight put on them; they're under review for ways I can make them better.

Neal



By [Mike Will](#) on Monday, May 29, 2000 - 11:21 pm: [Edit](#)

Ok.

I assume the return address is 32 bits.

Examining variables on exit is difficult because they're lost after a Fatal, which is the one and only result of this code :(

Your guidance is much appreciated, as always

Mike



By [nbridge](#) on Tuesday, May 30, 2000 - 12:08 am: [Edit](#)

Understood -- I'm not suggesting you use your code as it stands, but rather back away a bit and look at the order of parameters in a simple callback, for instance:

```
2variable x
```

```
: test
  callback
  2over x 2!
  end-callback ;
```

```
: show
  1 2 >r >r
  test
  r> r>
  2drop
  x 2@ .s
;
```

```
show
```

Neal



By [Mike Will](#) on Tuesday, May 30, 2000 - 10:23 am: [Edit](#)

Right. But the problem is that even with such a stubby little callback, it still crashes. This beast **requires** a lot of work to be done with the `exgSocket` struct or it just locks up.

However, I did make progress last night. By fudging some of the return values (`exgSocket`, error returned), I managed to get my callback failing gracefully (an `ExgMgr` error) instead of a Fatal. Thus, I did get to look at the stack as you outlined above.

Now for the interesting news. The return address is **not** on top of the stack. The three parameters listed in the entry diagram are all there, and they're all correct. I suspect that the return address is under these three params, not on top of them. This ain't no event handler and we're not in Kansas anymore, Dorothy. Also, the error result that gets kicked around by ExgMgr is 32 bits! Wow, that one was hard to find because everywhere else I've looked in the OS it's 16 bits. With those two gems revealed, my callback does indeed run.

It successfully sends out all the bytes in the first chunk, but generates an error (non-fatal) as follows:

Beam:Error:Memory: (0x01EE)

I am now proceeding to work on that one, with the benefit of being able to see the stack.

Cheers

Mike



By [Mike Will](#) on Tuesday, May 30, 2000 - 10:30 am: [Edit](#)

One more thing, just to clarify. The test code you gave me in your last post won't help because the parameters that are passed to my callback come from the PalmOS, not from me. I need to see what ExgMgr is handing me (which as I said, I finally managed to do). The problem is not one of debugging Forth but rather of wrestling control away from the PalmOS long enough to peek at the stack.

Mike



By [Neal Bridges](#) on Tuesday, May 30, 2000 - 02:09 pm: [Edit](#)

My error Mike; I was looking at interim (read "broken") versions of callback/end-callback. Sorry for the confusion.

I'm very glad you found the stumbling blocks!

Neal



By [Mike Will](#) on Tuesday, May 30, 2000 - 02:27 pm: [Edit](#)

No problem, thanks Neal.

I'm wondering what the effect of calling a PalmOS function from within a callback is. When I call ExgSend from my callback, it works, but then returns a mysterious memory error that looks pretty stackish to me.

Any thoughts?



By [Neal Bridges](#) on Tuesday, May 30, 2000 - 03:09 pm: [Edit](#)

The systrap mechanism:

The number of the systrap is placed on the data stack, and the internal systrap routine is called. This routine swaps the data and return stacks for the duration of the systrap, and calls the systreap. When the systrap returns, the arguments (if any) are removed from the data stack, and the return values (if any) are placed on the data stack.

I can't see anything there that would return a mysterious memory error. Is it the first call to ExgSend that fails, or successive calls?

Neal



By [Mike Will](#) on Tuesday, May 30, 2000 - 09:34 pm: [Edit](#)

It's the first call that returns the memory error. ExgSend actually runs properly (sending out all bytes requested) but then returns this error. ExgDBWrite (a sort of governor for the ExgSend calls) then exits gracefully showing the 0x01EE error passed from ExgSend.

Just so I understand: the stacks are switched because the PalmOS uses the return stack to pass parameters, and has no explicit data stack ?

Mike



By [Neal Bridges](#) on Tuesday, May 30, 2000 - 09:51 pm: [Edit](#)

The PalmOS uses one stack, the one called the 'return stack' in Quartus Forth. The data stack is a construct of the Forth environment, but it has the same structure as the return stack, so it's a simple matter to swap the two stack pointers when making system calls.

Neal



By [Mike Will](#) on Wednesday, May 31, 2000 - 11:21 pm: [Edit](#)

Ok Neal, I think I have an inkling of why my callback continues to crash.

I notice that a lot of my variables are getting munched. I may have a war (at least, a skirmish) going on between Quartus and the PalmOS for dynamic memory allocation. ExgDBWrite is a nifty little routine that converts a palm database to desktop pdb format, DYNAMICALLY IN MEMORY, for the duration of a Beaming operation. I love this routine. I NEED this routine. However, it seems to be trashing my Quartus data space.

Is this a possibility? Has this type of situation been discussed before? Is there hope for saving my app?

Thanks

Mike



By [Neal Bridges](#) on Thursday, June 1, 2000 - 01:02 am: [Edit](#)

The creation of a new dynamic region should not ever trash the existing regions, Mike. What are you seeing fail exactly? Why do you think your data is being trashed?

Neal



By [Mike Will](#) on Thursday, June 1, 2000 - 08:02 am: [Edit](#)

Oh, good. I was hoping there was some sort of proper allocation scheme at work.

I check all variables before calling ExgDBWrite, they're good. Then I call ExgDBWrite, which sets up memory in preparation for a Beam, then calls my callback (repeatedly). Upon exit (a graceful error), about half of my variables are full of garbage (even the ones I never touched). I tried Allot'ing a chunk of 'safety zone' memory at the point where the trashing begins, resulting in a Fatal.

I'm learning a lot about Quartus<-->PalmOS interfacing here, so I'll push on and bug you only if I get stuck. I'm rather enjoying the exercise.

Cheers

Mike

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Hwr Function Docs ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Hwr Function Docs ?



By [Mike Will](#) on Tuesday, May 23, 2000 - 12:37 pm: [Edit](#)

Greetings.

I can't seem to find any Palm docs for the Hwr functions such as HwrEnableDataWrites, HwrSleep, etc. Anyone know where they are?

Many thanks



By [Neal Bridges](#) on Tuesday, May 23, 2000 - 01:32 pm: [Edit](#)

They're undocumented, hence the difficulty in finding documentation. If you apply for permission from Palm to download the OS source excerpts, there's some info in there.

Neal



By [Mike Will](#) on Tuesday, May 23, 2000 - 02:13 pm: [Edit](#)

Oh.

Thanks Neal



By [Mike Will](#) on Tuesday, May 23, 2000 - 03:04 pm: [Edit](#)

My application for insider information is in the mail.

I did find a bit of useful stuff in "hardware.h" in the WinSDK docs for OS 3.0. For example here's a useful word for checking the battery voltage, given that:

Voltage = (level + hwrVoltStepsOffset) / hwrStepsPerVolt

where:

hwrStepsPerVolt = 78

hwrVoltStepsOffset = 0

```
\ find battery voltage in centivolts
: battery ( -- u ) HwrBatteryLevel 100 * 78 / ;
```

eg.

battery . 287 ok

My results:

fresh batteries (at least, as fresh as Jewel Osco in Chicago sells), about 295 centivolts

old batteries (giving persistent battery warning), about 190 centivolts

Also, see Neal's SysBatteryInfo note from November 19, 1999 which does pretty much the same thing (I think).

Mike

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PalmOS Tasks

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): PalmOS Tasks



By [Douglas Atique](#) on Monday, May 22, 2000 - 05:57 pm: [Edit](#)

Has anyone used the PalmOS SysTask* API functions?

I have found them in the Quartus Systraps document but the PalmOS official reference doesn't seem to mention them (that I could find).

There are some interesting things that I want to try with multiple tasks in Quartus and I would like to know whether I can create a second task inside Quartus and what I should look out for.

Regards,

Douglas



By [Neal Bridges](#) on Monday, May 22, 2000 - 05:59 pm: [Edit](#)

As far as I understand, Douglas, the Palm OS kernel doesn't permit any additional tasks to be assigned via that mechanism -- something to do with the licensing agreement between Palm and the underlying multitasking kernel vendor.

Neal



By [Douglas Atique](#) on Monday, May 22, 2000 - 06:51 pm: [Edit](#)

I heard something like "you could but you shouldn't because the system performance will go down". I also heard that the HotSync utility uses a second thread to do the job while the main task waits for an event from the Cancel button, to make the HotSync responsive.

Anyway, can I at least try to call them?

Regards,

Douglas



By [Neal Bridges](#) on Monday, May 22, 2000 - 07:06 pm: [Edit](#)

My understanding is that the OS itself is compiled with exactly the number of threads it uses; there is no additional slot available for application use.

Neal



By [Michael Rowe](#) on Tuesday, May 23, 2000 - 03:44 am: [Edit](#)

At the Palm Source in Munich, we were told that the kernel was made by the company Kadak, and if more threads were required, one could talk with them

directly concerning changes.

mrr



By [Neal Bridges](#) on Tuesday, May 23, 2000 - 04:44 pm: [Edit](#)

[Kadak's web site](#)

Neal

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Needs and Include code

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Needs and Include code



By [John Newell](#) on Monday, May 22, 2000 - 04:12 am: [Edit](#)

Neal,
Would you mind posting (or telling me where I can find) the Forth code for the Needs/Include Quartus words? It would save me re-inventing the wheel. Thank you very much.
John



By [Bill McCarthy](#) on Monday, May 22, 2000 - 09:36 am: [Edit](#)

John,

There are not libraries with these words since they are both included in the shipped prc.

From `disasm`, we can see that:

```
: include parse-word included ;
```

I would also like more info in `needs` to better understand how Quartus keeps track of what's been loaded.

Bill



By [John Newell](#) on Monday, May 22, 2000 - 11:00 am: [Edit](#)

Hi Bill,
Yes, I looked and there are no libraries which include these Forth words (nor could I find them posted anywhere in this discussion forum). I assumed that Neal would have written the routines in Forth to include them in the prc and could make them available to us (me).
The routines must be similar to those in the Doc and DocInc libraries I guess, or rather those in Doc and Docinc must be similar to them. Have a look at Docinc to see how Quartus keeps track of the 'needs' and 'include' files.
I could work out how to do something similar myself for a MemoDB type of database but was just being lazy and trying to save myself a bit of work.
Regards
John



By [Neal Bridges](#) on Monday, May 22, 2000 - 11:21 am: [Edit](#)

NEEDS and INCLUDE are built directly into the kernel, for reasons of convenience.

They do in fact function similarly to their counterparts in the docinc library code. Names of included files are stored in a reserved wordlist, which NEEDS checks before performing an INCLUDE.

Neal`



By [John Newell](#) on Tuesday, May 23, 2000 - 04:12 am: [Edit](#)

OK Neal.

Does that mean that neither the Quartus words nor Quartus itself are written in Forth?

I'll have to doc-tor the docinc and memo library files to come up with a 'memoinc' library.

It looks like Erwin Schomburg has done a lot of the work required in the docinc library file.

Thanks

Regards

John



By [Winchell Chung](#) on Tuesday, May 23, 2000 - 09:10 am: [Edit](#)

Erwin Schomburg is the pendultimate Quartus Forth guru, second only to creator Neal Bridges himself.



By [Neal Bridges](#) on Tuesday, May 23, 2000 - 09:44 am: [Edit](#)

John -- many Quartus Forth words are written in Forth, as you can see in all of the library files. The kernel itself is written in hand-coded assembler.

Neal



By [John Newell](#) on Tuesday, May 23, 2000 - 10:39 am: [Edit](#)

On the fourth day not later
or so I have heard
he Quartus brought Forth
in the Palm of his hand.

The OS is tricky
The libraries are sticky
With code that is sickly
They help you most quickly

Neal to the creator
and Schromburg the guru
when Bridges need crossing
they're there to guide you.



By [Neal Bridges](#) on Tuesday, May 23, 2000 - 12:19 pm: [Edit](#)

Shall I open a 'Forth Poetry' section? :)

Neal



By [John Newell](#) on Tuesday, May 23, 2000 - 12:32 pm: [Edit](#)

I'm not sure you should call it poetry. In fact, I'm sure you **SHOULDN'T**. Let's call it an aberration instead. ;~)



By [Barry Marks](#) on Thursday, May 25, 2000 - 07:47 pm: [Edit](#)

Neil, I think you have a great idea. If the world can have obfuscated c, why not rhyming forth? Why not iambic pentameter?



By [Neal Bridges](#) on Friday, May 26, 2000 - 11:20 am: [Edit](#)

I think haiku might be more appropriate. :)

Neal



By [Erwin Schomburg](#) on Monday, May 29, 2000 - 05:44 am: [Edit](#)

I've been a bit lazy Quartus-wise the last couple of weeks, so I just stumbled over this thread.

Although I know a thing or two about programming in general and Forth in particular, the praise thrown at me here is heart warming but entirely too much. I certainly do not qualify for the "guru" label, I have not written a line of code for a living in the last ten years. Like the docinc module header says, its merely based on some tidbits I discussed with Neal, which he then sorted out to make it a working module, together with a consistent naming of the functionalities.

May the Forth be with you!

/Erwin



By [Neal Bridges](#) on Monday, May 29, 2000 - 11:47 am: [Edit](#)

Don't be too hasty to dodge credit, Erwin -- you wrote the first implementation of the docinclude library that I based my revisions on. Thanks again for that!

Neal



By [Jim Hendricks](#) on Tuesday, May 30, 2000 - 10:04 am: [Edit](#)

Don't let Erwin fool you all! Just look at the Archives to see how many times Erwin helped someone out, Erwin's help has been second only to Neal. And while Erwin has not programmed for a living for the last ten years, look at the apps he has programmed for fun, lot's of tidbits that we can all learn from.

Erwin, don't be so modest, take a bow, you deserve it!

Jim



By [E. Ross Helton](#) on Tuesday, May 30, 2000 - 07:04 pm: [Edit](#)

Hi Jim;

I would add my comments about Erwin. He has been a real source of help to many and I include myself in that group.

He usually is very persistant in getting to the bottom of a problem and helping to get it solved.

Kudos to him!!!

Make it a good day!

Ross

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Text to CNOT location?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Text to CNOT location?



By [Brian](#) on Saturday, May 20, 2000 - 07:37 pm: [Edit](#)

I've got a Mac and would like to use Quartus Forth, but I can't find the Text to CNOT program. The url <http://home.sprintmail.com/~bbeeler/ttc/> no longer works. Does anyone know an alternate location for the program?



By [Neal Bridges](#) on Saturday, May 20, 2000 - 11:17 pm: [Edit](#)

I don't seem to have a copy myself, unfortunately -- the filename, though, was "texttocnot_1.0.sit.hqx" -- if anybody has it I'd be please to hear from them.

Neal

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AppStop event

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): AppStop event



By [Ed Mittelstedt](#) on Friday, May 19, 2000 - 06:29 pm: [Edit](#)

I'm having trouble defining exactly when an appStop event occurs. When I am running my app within the QF environment, the only way to stop my app is tap on the silk screen 'home' key. By tapping on this key, will this create an appStop event?

I created some code off the event to pop up an alert, but when I tapped on the silk screen, the alert never popped up. Ok, so maybe its too late in the lifetime of the app to do graphical operations once an appStop event occurs. So lets go to the newmemo include and create a simple memo upon an appStop event. Again nothing. What am I missing?



By [Neal Bridges](#) on Friday, May 19, 2000 - 08:59 pm: [Edit](#)

You can do anything at all after receiving the AppStop event, including ignoring it (though this would not be wise).

The 'Home' silkscreen button does in fact generate an AppStop event.

Can you show your code?

Neal



By [Ed Mittelstedt](#) on Tuesday, May 23, 2000 - 03:40 pm: [Edit](#)

It seems to be ignoring the appStopEvent completely when I tap on the Home silk screen button.

mnuNewBM and mnuOpenDB are constants.

```
: DoMainEvents
  dup menuEvent = if
  event >abs itemid
  mnuNewDB = if
    showNewDBForm
  then
  event >abs itemid
  mnuOpenDB = if
    showOpenDBForm
```

```

then
    then

    appStopEvent = if
3000 frmAlert drop
    then
;

```



By [Neal Bridges](#) on Tuesday, May 23, 2000 - 03:48 pm: [Edit](#)

I see the problem, and I apologise -- I was confused earlier and doubtless misled you. I had thought you were referring to the ByeThrow, not the actual AppStopEvent.

The AppStopEvent itself is handled internally -- the application just exits. If you want notification of application exit, you can still have it with no problems -- just watch for the ByeThrow, as per the example in the manual.

<http://www.quartus.net/products/forth/manual/events.htm>

Neal



By [Steve Bohrer](#) on Wednesday, May 24, 2000 - 12:53 am: [Edit](#)

Post your own stop event. Not really useful, but I coded it as part of porting the CodeWarrior tutorials to Forth, as a way to learn the PalmOS and Quartus and RsrcEdit. The early phases of the tutorials have an "Exit" button which posts an appStopEvent. (I'm not sure why they do this rather than just switching to a different app)

```

\ moreEvents 4.24.00 skb
\ post events, get event data
\ w/o >abs

```

needs events

```

24 constant SizeofEvent
\ Event struct has a union 8 bytes
\ into event record. This field is the
\ "item id" for many types of events
event 8 + constant EventDataOffset

```

```

: id@ ( -- id )
    EventDataOffset @ ; inline

: setEventType ( eventType -- )
\ clear event record, set type
event SizeofEvent 0 fill

```

```

event ! ;

: postEvent ( -- )
  event >abs EvtAddEventToQueue ;

: postKeyEvent ( charVal -- )
  keyDownEvent setEventType
  eventDataOffset !
  postEvent ;

: postStopEvent ( -- )
  appStopEvent setEventType
  postEvent ;

```

And, a simple test for the above (although you can just try them out directly):

```
\ eventTest    4.24.00  skb
```

```
needs moreEvents
```

```

variable keyVal
char A keyVal !

: go ( -- )
  begin ekey
    dup keyDownEvent = if
      id@ dup emit
      [char] X = if postStopEvent then
        then
        penDownEvent = if
          keyVal @ postKeyEvent
          1 keyVal +!
        then
      again ;

```

P.S. Does anyone know if there is a later version of the CodeWarrior tutorials w/ source anywhere public? I can only find v2.0 on Palm's site.



By [Ed Mittelstedt](#) on Wednesday, May 24, 2000 - 11:37 am: [Edit](#)

Thanks Steven for your example. That looks like a good way to keep the ekey loop intact with functionality to catch appStop.

Thanks Neal for your reference to the manual. I have a question about the attached code:

```
-257 constant byeThrow
: go ( -- )
  MainForm ." Go ahead, start another app." cr
  begin
    ['] key catch
    byeThrow = if
      ." Exiting in 5 seconds!"
      500. SysTaskDelay
      (bye)
    then
  drop
  again ;
```

How can I integrate this with an existing ekey loop? I tried to place them in the same word (DoMainEvents), one running after the other, but the appStop code completely takes over, ignoring other events.

Could I replace the ['] key with a simple ekey?



By [Neal Bridges](#) on Wednesday, May 24, 2000 - 11:40 am: [Edit](#)

The example in the manual is only illustrative. In practice I'd do something like this:

```
: do-event ekey ...handle event here... ;

: go
  begin ['] do-event catch
    byeThrow = if
      ...handle it appropriately...
    then
  again ;
```

Neal



By [Ed Mittelstedt](#) on Wednesday, May 24, 2000 - 12:09 pm: [Edit](#)

Perfect. Muchos Gracias, senior Neal.

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Number to String

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Number to String



By [John](#) on Friday, May 19, 2000 - 12:17 pm: [Edit](#)

Pardon me....I really a newbie in Forth Programming.....but I'm really interested in learning it....

Let say I want to convert a number...say 1234 to a string "1234", how do I do it?



By [Jim Hendricks](#) on Friday, May 19, 2000 - 12:31 pm: [Edit](#)

Do a keyword search on <# or #s or #> or pictured or format. That should bring up various discussions in the past on how to use the pictured number formatting to create string representations of numbers.



By [John](#) on Friday, May 19, 2000 - 12:55 pm: [Edit](#)

Can't seems to understand <# , #, #S HOLD and #>

anyone can help?



By [Travis Casey](#) on Friday, May 19, 2000 - 01:38 pm: [Edit](#)

I'll give it a shot. Here goes:

<# tells Forth that what follows is a pattern for converting a number into a string.

#> tells Forth that the pattern is over; Forth then gives back an address and count telling where the system can find the created string and how long it is.

converts one digit of a number and adds it to the string; note that Forth goes from right to left, so it goes through the number in "reverse" order.

#S tells Forth to convert all the digits that still haven't bee converted and add them to the number.

HOLD is used to add a particular character to the string, to help you in formatting strings.

Here's an example, to convert and print a phone number:

```
: .PHONE ( u. -- )
  <#          ( start converting )
  # # # #    ( convert the last four digits )
  [CHAR] - HOLD ( add a - to the string; note
                that since Forth goes in
                reverse order, it's added
                in front of the last four
                digits )
  #S          ( convert the rest )
  #>          ( put out pointer and count )
  space type  ( print it )
;
```

So, with this definition loaded, you should be able to do:

```
5551634. .phone
```

and you'd see:

```
555-1634 ok
```

```
--
```

Travis



By [John](#) on Friday, May 19, 2000 - 02:28 pm: [Edit](#)

Thanks a million.....I'm much clearer now.....



By [Ron Doerfler](#) on Friday, May 19, 2000 - 03:16 pm: [Edit](#)

...and one other point that causes problems sometimes--the "pictured numeric output" process that utilizes <#...#> requires a double-length number on the stack, so if you wanted to print a single, such as your 1234, you either have to enter it as a double using "1234." or if it's on the stack already, do S>D to convert the stack value to a double, or just add 0 to the stack, which becomes the upper word of the double anyway.

Great job, Travis!

Ron



By [Neal Bridges](#) on Friday, May 19, 2000 - 03:38 pm: [Edit](#)

I agree with Ron -- well described, Travis. The only related word you didn't discuss is SIGN.

Neal



By [Jim Hendricks](#) on Monday, May 22, 2000 - 09:02 am: [Edit](#)

One other thing to watch is the value of BASE. Most assume 10, but this can be changed, and the rules for pictured number output is to do the conversion based on base! 🧐



By [Barry Marks](#) on Wednesday, May 24, 2000 - 01:54 pm: [Edit](#)

Travis, I want to thank you, too. I haven't needed to use those words yet but I've read a number of descriptions of how they're used and yours is the one that I understood.

Barry

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Categories Revisited

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Categories Revisited



By [Mike Will](#) on Thursday, May 18, 2000 - 04:54 pm: [Edit](#)

In February, Dan Poirier posted the following bit of code:

```
:findCategory ( z-addr -- cat )  
>abs MemoDBR CategoryFind ;
```

e.g. (this bit not tested)

```
z" CategoryName" drop findCategory  
dup 255 = if abort" category not found"  
then
```

I can't seem to get it working. I use the memo db. All I get is invalid memory card # errors.

Question 1: has anyone managed to get this to work?

Question 2: is there anything wonky about the memory card number on a Palm IIIxe ? (I assume it's 0)

Thanks much

Mike



By [Bill McCarthy](#) on Thursday, May 18, 2000 - 06:50 pm: [Edit](#)

Mike,

Dan's code won't compile unless you include the `newmemo` library.

In your example, where are you initializing the 2variable `_MemoDBR'?

Bill



By [Mike Will](#) on Thursday, May 18, 2000 - 09:49 pm: [Edit](#)

Bill, thanks for the response.

Yes, I'm using memo library dated Feb 11, 1999 by AC. Here's a more complete look at the test I'm running:

needs memo

```
:findCategory ( z-addr -- cat )  
>abs MemoDBR CategoryFind ;
```

```
: test0 OpenMemoDB  
z" catName" drop findCategory  
CloseMemoDB ;
```

```
test0  
.S
```

At which point my IIIxe chokes with "Fatal Alert: MemoryMgr.c, Line:3282, Invalid card #"

I've tried opening and closing the MemoDB without the FindCategory, all works fine.

Thanks

Mike



By [Dan Poirier](#) on Friday, May 19, 2000 - 07:38 am: [Edit](#)

I don't see what might be wrong either. I'm still using my routine on my Palm III every day. And I am also using AC's memo library of Feb 11, 1999.



By [Ron Doerfler](#) on Friday, May 19, 2000 - 10:04 am: [Edit](#)

Works on my Palm III as well, returning 255. I also used the same library memo for 2/11/99.

Ron



By [Mike Will](#) on Friday, May 19, 2000 - 11:17 am: [Edit](#)

Hmmmm.

It works on my PalmIII as well, but not on my PalmIIIxe. Is anyone else using OS 3.5? Why it's choking on the card number is also a mystery since that's not a parameter to CategoryFind.

Thanks for taking the time to test this

Mike

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Recursion

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
Recursion



By [Ed Mittelstedt](#) on Thursday, May 18, 2000 - 03:22 pm: [Edit](#)

Hi guys. I did a search on this and came up with nothing. Does QF support recursion?



By [Neal Bridges](#) on Thursday, May 18, 2000 - 04:10 pm: [Edit](#)

It does. It has the CORE word RECURSE as part of the kernel.

Have a look at this link:

<http://www.quartus.net/discus/messages/23/316.html?MondayApril320001144am#POST2579>

Neal

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Strange bug!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Strange bug!



By [Michael Chen](#) on Wednesday, May 17, 2000 - 08:09 pm: [Edit](#)

I posted this message, but I guess Neal moved it to "Everything else!" because it didn't seem to pertain to Quartus Forth...He was right...I never referred to it. What I meant was, is there any way I can workaround this bug in my program using QF :)

There is a strange bug in OS 3.5 (found it on an IIIxe, and have heard of it on IIIfc also, but I'd betcha its all 3.5 machines)...Strange but destructive...

Any call to DmSetDatabaseInfo that changes any application database's attributes (e.g. backup bit, read only, beamable, etc), will move it to its default category in Launcher.

Not so big of a deal...except...my program, SafeSync (<http://www.pointopia.com/m1ke08>), sets the backup bit for ALL databases (among other things...similar to backupall).

The problem? on OS3.5, *ALL* applications get moved back to their default categories (for the most part, 'Unfiled').

Bad.

After doing some investigation, I've found out that OS 3.5 has a new file on it called 'psysLaunchDB', type 'lnch', creator 'psys'. Using "pz", an onboard palm archiver, I did the following test on POSE:

1. Move some stuff around to different categories
2. add psysLaunchDB to a zip file, effectively backing it up
3. SafeSync (set all backup bits, which triggers the bug and moves all the apps to the default categories).
4. Look at Launcher. Yep, they moved alright.
5. Go into pz and view info on the psysLaunchDB. Looks like it was modified...
6. Unzip my pz archive.
7. Look at Launcher again. Categories back! Great! Everything was right how it was before a SafeSync.

Now...to the important part of the message...How can we avoid this problem? :) I have been able to think of two solutions

1. Somehow be able to read all the categories of all the apps into some kind

of array, then when i'm finished, move em back.

2. Somehow back up the psysLaunchDB and then restore it after my program does its stuff...

(3). This isn't a solution. It may work, but I tried something like it on POSE and I had to hard reset my POSE. I tried changing the type of psysLaunchDB to "XXXX". That way maybe PalmOS couldn't find it? But then the palm crashed when I tried to go back to launcher, because the system file couldn't be found. I don't know whether it would crash if you didn't go back to launcher before you changed it back...but there are ways to screw up a system that way...Lets say they ran safesync, which "hid" psysLaunchDB by changing creatorid to XXXX. Then they did a soft reset because of some soft crash..OOPS! Messed up system. So I dont think that is a solution...

Anyone have any ideas? This is a pretty major bug in the OS in my case, and even if not for my user's sake, I would like to be able to use OS 3.5 , and I personally would like to use my program:).

Does anyone have any clue as to how to fix this problem?



By [Neal Bridges](#) on Thursday, May 18, 2000 - 10:28 am: [Edit](#)

I suppose you might take note of the category of each app before you change its attributes, and set it back afterward.

Neal



By [Neal Bridges](#) on Thursday, May 18, 2000 - 10:38 am: [Edit](#)

...thinking about it, I suppose also the internal format of the launcher database is undocumented. In that case, your suggestion (2) looks most viable to me.

Neal



By [Michael Chen](#) on Thursday, May 18, 2000 - 08:06 pm: [Edit](#)

Hmm...ok...Now all I need is a routine to backup a DB (either to "memory" or to actually another DB) and then restore it. I saw some posts earlier on duplicating a database, but the solution was never posted...Any ideas?

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Help with event problem..

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Help with event problem..



By [R. Flower](#) on Wednesday, May 17, 2000 - 07:19 pm: [Edit](#)

Hi again.. Now that I've been able to get past my initial hurdle, I'm now running into another problem, and I'm sure that I'm doing something really stupid.. So, I'm wondering if anyone can spot anything really silly that I'm doing in my code so far. Basically, I've got a custom date selection form that comes up where you can select the month & year (no day).. Everything is working OK so far, except when you hit either the "Ok" or "Cancel" buttons. When you hit either one, you get a notice from POSE saying something like "Object not in form". What I basically want to do is to use this kind of like a subroutine where a user hits a button on another form, invoking "do-selectDate", which will return once the date selection has completed. Is this a bad idea? Should I re-integrate this code in with the rest of my application? Is it bad to have two or more event loops in this situation? I was really trying to keep this code separate (as much as possible) from the rest of my application. Anyway, here's the code :

```
\ DateSelect
\ Allows the user to select a special format date
\ only month & year
needs safe
needs DataMgr
needs zstrings
needs ids
needs core-ext
needs double
needs resources
needs Events
needs condthens

(ID) DNOB (ID) rsrc use-resources

\ Date Form constant ID's
2001 constant Date.Form
6502 constant Date.Form.Button.UpArrow
6503 constant Date.Form.Button.DnArrow
6504 constant Date.Form.Button.OK
6505 constant Date.Form.Button.Cancel
6506 constant Date.Form.Button.MonthSelect
6507 constant Date.Form.Button.YearSelect

variable LoopSelectDone
```

```

: do-DateSelect-control ( -- )
  event >abs itemid cond
  dup Date.Form.Button.OK = if
    \ extract selected date
    0 LoopSelectDone !
  else dup Date.Form.Button.Cancel = if
    \ cancel was selected
    0 LoopSelectDone !
  else dup Date.Form.Button.UpArrow = if
    \ Up Arrow was selected
  else dup Date.Form.Button.DnArrow = if
    \ Down Arrow was selected
  else dup Date.Form.Button.MonthSelect = if
    \ Month selection
  else Date.Form.Button.YearSelect = if
    \ Year selection
  then ;

\ Handle the Date Selection buttons
: handle-date-event ( ekey -- )
  ctlSelectEvent = if do-DateSelect-control then ;

\ Deal with the selection of a specific date
: do-selectDate ( -- )
  -1 LoopSelectDone !
  Date.Form FrmPopupForm
  begin
    ekey handle-date-event
    LoopSelectDone @ 0=      \ loop exits when = 0
  until ;

```



By [Neal Bridges](#) on Thursday, May 18, 2000 - 10:17 am: [Edit](#)

You're getting "Object not in form" for this reason:

<http://www.quartus.net/discus/messages/23/337.html?FridayMarch1020000424pm>

Neal



By [R. Flower](#) on Thursday, May 18, 2000 - 12:11 pm: [Edit](#)

Ok.. I got past that hurdle, but now another question arises.. Is it not possible in Quartus to invoke a Quartus word (from the console obviously) that uses the GUI in some manner and have it (the word definition) return back to the console when it's done?

Just curious.. It doesn't seem like it can, but I'm really just curious from a

debugging point of view..

Thanks!

-- Rick



By [Neal Bridges](#) on Thursday, May 18, 2000 - 01:44 pm: [Edit](#)

Yes, certainly you can. You simply need to execute MainForm after you're done with your other form.

Neal

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Newbie needs help with begin/until construct...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Newbie needs help with begin/until construct...



By [R. Flower](#) on Tuesday, May 16, 2000 - 05:57 pm: [Edit](#)

Hi.. I'm trying to create a loop that has an ability to exit based on a variable. I've created the code below, but I can't seem to make it loop.. It always goes through the loop once.. Can someone enlighten me on the begin/until construct?

```
\ Test9876
```

```
variable test  
5 test !
```

```
begin  
  test @ .          \ print current value  
  test @ 1 - test !  \ count down by 1  
  test @ 0=          \ check to see if 0 yet  
until
```



By [Bill McCarthy](#) on Tuesday, May 16, 2000 - 06:27 pm: [Edit](#)

R,

All beginners and anyone testing code should use the `safe` library. It would have given you enough info so you would know that `begin` and `until` should not be used outside a definition.

Bill



By [R. Flower](#) on Wednesday, May 17, 2000 - 06:22 pm: [Edit](#)

Thanks.. I actually never even gave that a second thought.. I am using safe in my regular code that I'm working on, but for this small "test", I didn't..

Thanks for the prompt reply.. I did as you suggested and the loop worked fine!

Yeeha..!

-- Rick

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Color Bitmaps

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Color Bitmaps



By [Norman](#) on Tuesday, May 16, 2000 - 12:02 pm: [Edit](#)

I'm a newbie in Forth....so pardon me for my ignorance.....

I'm now trying to display a color bitmap on my palmIIIc created by tealpaint and using RscEdit.

I've tried to use the below code but the bitmap just doesn't show.....

Anyone can help? Thanks a lot

```
: showbmp ( # y x -- )
2>r
[ID] Tbmp DmGetResource
2dup MemHandleLock
2r> 2Swap WinDrawBitmap
MemHandleUnlock throw
;
```



By [Neal Bridges](#) on Tuesday, May 16, 2000 - 12:41 pm: [Edit](#)

That code looks like it should work, Norman. The only thing missing is a DmReleaseResource, but that won't stop it from displaying.

Do monochrome bitmaps display properly with your code?

Neal



By [Norman](#) on Tuesday, May 16, 2000 - 11:40 pm: [Edit](#)

I've tried using a monochrome bitmap but still no luck...

Okay, I'll describe the steps I did....

First, I used RsrcEdit to create a Resource DB with Creator: aaaa Type: bbbb

Inside this resource db is a 32x32 1 bit Tbmp with ID: 2000 Type: Tbmp

My Forth source code is as follows:

```
\ bmptest
needs ids
```


needs resources

(id) aaaa (id) bbbb use-resources

```
: showbmp (# x y -- )  
2>R  
[ID] Tbmp DmGetResource  
2DUP MemHandleLock  
2R> 2SWAP WinDrawBitmap  
MemHandleUnlock Throw  
;
```

Next, I go to QuartusForth and type:
needs bmptest
showbmp

I only get an "ok" and the bitmap is not displayed.

I'm really getting confused.....please help....
Thanks a milion.



By [Jim Hendricks](#) on Wednesday, May 17, 2000 - 09:11 am: [Edit](#)

Your example of what you type from Quartus is missing the arguments for showbmp. Your stack diagram for showbmp would mean you would call it as:

2000 10 50 showbmp

Was this just a typo? Because without the arguments you should get a stack underflow.

Jim



By [Norman](#) on Wednesday, May 17, 2000 - 03:30 pm: [Edit](#)

Sorry, it's a typo..... I did pass the correct arguments to the showbmp....but it just won't work.....



By [Neal Bridges](#) on Wednesday, May 17, 2000 - 04:10 pm: [Edit](#)

Norm, I duplicated your code and resources exactly; it works fine. I had to add 'needs core-ext' to your code to allow 2> R and 2> R.

Is it possible you have another resource database, creator aaaa, type bbbb, with a blank bitmap #2000?

Neal



By [Ron Doerfler](#) on Wednesday, May 17, 2000 - 04:13 pm: [Edit](#)

I was just about to post the same thing about the duplicate database (been there, done that). It works fine on mine as well after including core-ext.

Ron



By [Norman](#) on Thursday, May 18, 2000 - 06:14 am: [Edit](#)

I've checked, no duplicate databases.....I've also added the core-ext but it still won't show....just displayed "ok"...

Btw, did u all tried out on a PalmIIIc? Cause mine is a PalmIIIc



By [Ron Doerfler](#) on Thursday, May 18, 2000 - 09:37 am: [Edit](#)

Mine was a Palm III (upgrade) running OS3.3

I'm a little confused about your comment that you added core-ext and it still didn't work. If you didn't have it included before, your code should have complained that it couldn't compile 2>R. Are you sure you aren't including other files, perhaps in your startup.quartus, without knowing it? Perhaps with another version of showbmp?

Ron



By [Neal Bridges](#) on Thursday, May 18, 2000 - 10:24 am: [Edit](#)

I'll check it on the IIIc later today -- but there's no reason for it to fail there. I've been using WinDrawBitmap on the IIIc without any trouble.

Neal



By [Norman](#) on Thursday, May 18, 2000 - 11:03 am: [Edit](#)

I'm using the eval version of Quartus Forth...has this got anything to do with it?



By [Neal Bridges](#) on Thursday, May 18, 2000 - 11:04 am: [Edit](#)

Nothing at all, Norman. The only difference between the evaluation version and the full version is the ability to generate stand-alone apps.

Neal



By [Norman](#) on Thursday, May 18, 2000 - 11:23 am: [Edit](#)

Hey guys...I changed the name showbmp to shwbmp and it works!!
Finally....really happy to see my bmp appears on the screen :)



By [Neal Bridges](#) on Thursday, May 18, 2000 - 11:37 am: [Edit](#)

Norman, that suggests to me that you have two different memos named 'showbmp'. Glad you got it sorted out!

Neal

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Use of CtlSetLabel

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Use of CtlSetLabel



By [Tammy Cravit](#) on Monday, May 15, 2000 - 06:44 pm: [Edit](#)

I'm working on my first Quartus application, and I am trying to update the captions of a bunch of PushButton controls to reflect values I am generating.

I have a word (thanks, Neal) which I have renamed num>str that converts a number to a string -- it leaves a c-addr and length on the stack. My question is, how can I stuff that into the control label?

From reading the docs, I am guessing something like:

```
: str>ctl ( c-addr length controlid -- )
  swap drop \ Discard the length
  GetObjectPtr \ Get the control pointer
  CtlSetLabel \ Set the label
;
```

However, I am still new to Forth, so I want to make sure I'm on the right track...my understanding of how Forth handles strings is fuzzy at best, so any comments are welcome.

Thanks!
Tammy



By [Neal Bridges](#) on Monday, May 15, 2000 - 07:13 pm: [Edit](#)

Hi Tammy. Use SetLabel from Forms.txt -- and you'll need to pass it a 32-bit address of a zero-delimited string. Here's a shortcut, a function that will take an integer, and put it as a string in the control you specify:

needs Forms

```
: num>ctl ( u controlid -- )
  >r
  0 <# 0 hold #s #> drop >abs
  r> SetLabel ;
```

Neal



By [Tammy Cravit](#) on Monday, May 15, 2000 - 07:49 pm: [Edit](#)

Neal,

Thanks for the reply. Can you explain how the chunk of code which reads

```
0 <# hold #s #> drop >abs
```

works? I'm still trying to get my head around Forth's lexicon, and the above looks more like line noise than program code to me. :-)

Thanks!
Tammy



By [Neal Bridges](#) on Monday, May 15, 2000 - 09:06 pm: [Edit](#)

Those are "pictured numeric output words". They do look a bit scratchy, but they're really not so hard.

On the stack already: (u) our integer.

```
\ Make the integer a double-cell value by putting a zero cell above it on the stack:
  0 ( u. )
\ Initialize the numeric output buffer:
  <# ( u. )
\ Place a zero-byte at the end of the buffer:
  0 HOLD ( u. )
\ Fill the buffer from right-to-left with the ASCII representation of the integer:
  #S ( 0. )
\ End the process, leaving a c-addr and a length on the stack:
  #> ( c-addr length )
\ Drop the length:
  DROP ( c-addr )
\ Convert the c-addr into a 32-bit address for passing to the Palm API:
  >ABS ( &zstring.
```

Neal



By [peter bohac](#) on Tuesday, May 16, 2000 - 05:13 pm: [Edit](#)

i have been lurking here for a few weeks and trying to pick up Forth in my spare time. i decided to try some of the code in this thread, but i am not getting the results i expect.

When i start up Quartus and enter

```
123. <# #s #> .s
```

i get 337 3 (the address varies occasionally). So then i tried

type

and i get 333, but this isn't what i would expect. i have tried converting other integers, with and without a null terminator (0 hold) and even looking at the values at c-addr and i am not getting my number converted into a string.

What am i doing wrong?

Thanx,

-peter (=



By [Bill McCarthy](#) on Tuesday, May 16, 2000 - 06:12 pm: [Edit](#)

Peter,

` .s ` uses the same transient area - hence it's writing over the initial result.

Try: 123. < # #s #> type

Bill



By [Neal Bridges](#) on Tuesday, May 16, 2000 - 06:32 pm: [Edit](#)

This thread exactly addresses the problem you're seeing, Peter:

<http://www.quartus.net/discus/messages/23/197.html?FridayFebruary1820000634am>

Neal



By [peter bohac](#) on Tuesday, May 16, 2000 - 10:00 pm: [Edit](#)

Ahhh. Thankyou both such such quick (and informative!) responses. i knew there was something that i was not understanding correctly.

Now i guess i need to learn to use the search functionality so i don't add to the signal to noise ratio
=P

-peter (=

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Strange behaviour of bitmap

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Strange behaviour of bitmap



By [Michael Chen](#) on Monday, May 15, 2000 - 07:34 am: [Edit](#)

I need to tile a screen fully with small bitmaps (for a game). The following code does not seem to place the bitmap where it should be placed, and the whole bitmap does not seem to be shown (the bitmap is overridden by some white space on the left hand side).

needs bitmap

```
8 10 bitmap filled
2 base ! \ switch to binary
1111111111 ,
1111111111 ,
1111111111 ,
1111111111 ,
1111111111 ,
1111111111 ,
1111111111 ,
1111111111 ,
1111111111 ,
1111111111 ,
decimal

: go
  MainForm
  0 0 filled
  key ;
```

Does anyone know why this is happening?

Also, how can I draw this bitmap onto an offscreen image then draw the image onscreen? Thanks!



By [Neal Bridges](#) on Monday, May 15, 2000 - 09:11 am: [Edit](#)

Do this:

```
8 10 bitmap filled
2 base ! \ switch to binary
1111111111000000 ,
1111111111000000 ,
```

1111111111000000 ,
1111111111000000 ,
1111111111000000 ,
1111111111000000 ,
1111111111000000 ,
1111111111000000 ,
1111111111000000 ,
decimal

The simplest way to fill a large area is using rectangle from graphics.

Neal



By [Jim Hendricks](#) on Monday, May 15, 2000 - 10:07 am: [Edit](#)

Michael, if you check in the contributor section of the files area, you will see the sources to my analog clock source. In this app, I am using an offscreen window to doublebuffer my graphics. Give it a look and see if this is what you are after. If you need any help interpreting my mess, just ask away and I will try and help you.

Jim



By [Winchell Chung](#) on Monday, May 15, 2000 - 03:59 pm: [Edit](#)

This might help (or just might make things worse)

MaskDraw draws Tbmp resources through a mask to an off-screen bitmap.

Off>OnScreen draws the offscreen window onto the onscreen window.

This was extracted from my application, I have not checked to be sure I included all the required code.

```
\ =====  
\ maskDraw 22jan00 WDC  
\ allows drawing Tbmps through  
\ masks
```

```
\ Required library code:  
needs ids  
needs resources  
needs struct  
needs double
```

```
\ Constant definitions:  
\ graphicModes  
0 constant drawMode  
\ 1 constant eraseMode
```



```

\ 2 constant invertMode
\ 3 constant mergeMode

\ ScrOperation
0 constant scrCopy
\ 1 constant scrAND
2 constant scrANDNOT
3 constant scrXOR
\ 4 constant scrOR
\ 5 constant scrCopyNOT

\ Variable declarations
2variable offScreenImageWin
2variable offScreenMaskWin
2variable maskDrawWin
2variable tmpHandle
2variable error
2variable RscHandle
rect: drawRect
variable drawX
variable drawY

\ Variable default initializations:
0. offScreenImageWin 2!
0. offScreenMaskWin 2!
0. maskDrawWin 2!

\ maskDraw default to the
\ current active window.
\ Use this to set it to another
\ window.
: initmaskDrawWin ( WinHandle. -- )
  maskDrawWin 2!
;

: initOffScreenWin
( height width -- WinHandle. )
  2>r
  error >abs drawMode >byte
  2r>
  WinCreateOffscreenWindow
;

: drawTile ( y x ID-no -- )
  [id] Tbmp
  DmGetResource
  2dup or 0=

```

```

abort" picture not found"
2dup RscHandle 2!
MemHandleLock
WinDrawBitmap
RscHandle 2@ MemHandleUnlock
throw
RscHandle 2@ DmReleaseResource
throw
;

: drawImageInWindow
( y x imageID &offWin -- )
    2@
    WinSetDrawWindow
    tmpHandle 2!
    drawTile
    tmpHandle 2@
    WinSetDrawWindow
    2drop
;

: maskDraw
( y x MskID ImageID height width -- )
\ assumes that mask and image
\ have same height and width
\ check for un-init maskDrawWin
maskDrawWin 2@ d0= if
    WinGetActiveWindow
    maskDrawWin 2!
then

\ init draw rectangle
0 drawRect x !
0 drawRect y !
drawRect width !
drawRect height !
\ init offscreen windows
drawRect height @
drawRect width @
initOffScreenWin
offScreenImageWin 2!
drawRect height @
drawRect width @
initOffScreenWin
offScreenMaskWin 2!
\ Fill Offscreen Windows
0 0 rot

```

```
offScreenImageWin  
drawImageInWindow  
  0 0 rot  
offScreenMaskWin  
drawImageInWindow
```

```
drawX !  
drawY !
```

```
\ draw mask with ANDNOT  
scrANDNOT >byte  
drawY @  
drawX @  
drawRect >abs  
maskDrawWin 2@  
offScreenMaskWin 2@  
WinCopyRectangle
```

```
\ draw image with XOR  
scrXOR >byte  
drawY @  
drawX @  
drawRect >abs  
maskDrawWin 2@  
offScreenImageWin 2@  
WinCopyRectangle
```

```
0 offScreenImageWin 2@  
WinDeleteWindow  
0 offScreenMaskWin 2@  
WinDeleteWindow
```

```
;
```

```
: Off>OnScreen  
  SCRCOPY >byte  
  0 0  
  mapViewRect >Abs  
  WinGetActiveWindow  
  offScreenMap 2@  
  WinCopyRectangle
```

```
;
```

```
: OffscreenDrawStart  
  offScreenMap 2@  
  InitmaskDrawWin
```

```
;
```

```
: OffscreenDrawEnd
  0. InitmaskDrawWin
;
```

```
=====
```

```
\ example of use:
```

```
=====
```

```
: GetTileAt ( y x -- tile )
\ Returns tileID of tile at location x,y
\ on the map. The map is an array.
;
```

```
: ScreenTile>ScreenXY
( tileY tileX -- screenY screenX )
\ Returns the x,y pixel co-ords of
\ the slot for a tile at screen tile
\ position tileX, tileY.
\ i.e., tileX,tileY 0,0 is for the tile
\ currently occupying the upper left corner
\ of the screen.
Swap
TILE_HEIGHT *
Over
\ in a hex map, even rows are shifted down
\ by half a tile height.
viewLeft @ + IsEven? If
  HALF_HEIGHT +
Then
Swap
\ in a hex map, the columns overlap
TILE_WIDTH_OVERLAP *
;
```

```
: DrawMap
\ view_width and view_height are the
\ screen dimension in tile widths and
\ tile heights.
VIEW_WIDTH -1 Do
  VIEW_HEIGHT 1 + -1 Do
    J I ScreenTile>ScreenXY
    HEX_MASK_BMP
    \ the map can scroll on the screen.
    \ viewLeft, viewTop contain the map
    \ x,y co-ords of the tile currently
    \ occupying the upper left corner of
```

```
\ the screen.  
J viewTop @ +  
I viewLeft @ +  
GetTileAt FIRST_HEX_BMP +  
TILE_HEIGHT  
TILE_WIDTH  
MaskDraw  
  
loop  
loop  
;  
  
: DrawMapView  
  
OffscreenDrawStart  
  
DrawMap  
\ DrawCounters  
  
Off>OnScreen  
  
OffscreenDrawEnd  
;
```



By [Michael Chen](#) on Monday, May 15, 2000 - 04:39 pm: [Edit](#)

Thanks Guys!!

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How to include resources from another DB?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): How to include resources from another DB?

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How to include resources from another DB?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): How to include resources from another DB?



By [Daniel Wee](#) on Sunday, May 14, 2000 - 11:46 pm: [Edit](#)

I'm trying to build a HACK with control panels and all but one of the problems I am facing is the problem of HackMaker wiping out the PRC file along with all the associated resources everytime I rebuild the Hack.

What I'd like to have is a way to include my tFRM2000 and tFRM3000 resources from another separate file that doesn't get deleted during a Hack rebuilt. How hard would it be to do this?

Thanks.



By [Neal Bridges](#) on Monday, May 15, 2000 - 12:15 am: [Edit](#)

You'll need to cobble together a routine that copies the resources from one database to another -- not too terribly hard. If you make it a general-purpose sort of thing it'll doubtless find use elsewhere.

Neal

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Serial sample: what does this do?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Serial sample: what does this do?



By [Wes Matchett](#) on Sunday, May 14, 2000 - 11:27 pm: [Edit](#)

I found a sample of using the serial library from the archives in a message called "Re: Serial Manager help" dated July 14, 1999 written by Neal.

I'm studying it in order to understand serial processing, but I do not understand this portion:

```
serSettings: mysettings
temp serGetSettings .s

9600. mysettings serSet.baud 2!
temp serSetSettings .s
```

mysettings does not appear anyplace else in this code or in serial.txt. I have a guess that the first line is creating a serSettings structure called mysettings and that the third line is storing the baud rate into that structure. Is this correct?

Also, the sample only defines two words: test and terminal. There are several commands outside the word definitions, including those listed above. What is the processing sequence for the sample? Are the 'global' commands executed when the file is included, so that terminal is called right at the end, and then the serial port is closed?

I have not used this file yet - I'm a bit wary of executing code that I don't understand.

Any help is most welcome.

Wes



By [Wes Matchett](#) on Monday, May 15, 2000 - 12:33 am: [Edit](#)

Well, I got bold and ran the code. (I was pretty confident about the assumptions made in my previous post.) First I made some corrections found in the archive (renamed temp to mysettings, moved the serSetRecvBuff above the processing loop, and added a swap to serSetRecvBuffA.

Everything runs fine, except once something is received it never gets cleared from the receive buffer, so it gets displayed over and over forever, with new receive data being added to it. I tried adding a serRecvFlush right after the buffer display - but that didn't work, the buffer is no longer continuously displayed, but the first char is displayed for everything that comes in.

What is the proper way to remove data from the buffer?

Also, in a follow-up archive post Neal said the proper way to shut down term is to "watch for the application exit and close the serial port". How is the application exit sensed?

Thanks,
Wes



By [Jonathan Lerwill](#) on Monday, May 15, 2000 - 03:21 am: [Edit](#)

"watching for the application exit"

Hi Wes,

When a Quartus app. exits a -257 exception is generated, your app can CATCH it, by encapsulating the main word in a CATCH -- THROW sequence, and this execute a word just before the app exits. Niel suggests using code structured like the example below.

/Jonathan

```
-257 CONSTANT byeThrow

: closedown
\ Your Shutdown Code
;

:go [' ] run CATCH
      DUP byeThrow =
      IF do_closedown THEN
      THROW (bye) ;
```

BTW: I've bought Midstorms so that my friends children can play with it. Of course I feel obliged to test it so that I can help them :-)
Have you tried pbForth ?



By [Wes Matchett](#) on Monday, May 15, 2000 - 09:15 am: [Edit](#)

Hi Johnathan,

Thanks for the info. I'll be implementing it this evening.

Yes, I've got pbForth. In fact, that is the whole reason I started learning Quartus. At first I did not consider learning pbForth just to use on the RCX, but my plans have changed. After finding Quartus I plan to use a single language, forth, on all platforms: RCX, Palm, PC.



By [Jonathan Lerwill](#) on Monday, May 15, 2000 - 03:09 pm: [Edit](#)

Forth on a PC

Forth is a great language for small systems but unless you are experienced in both Forth and the Win32 API I think that creating Windows applications would be a lot of hard work.

PLUG START

My employer makes an excellent product for painlessly creating 16/32-bit Windows executables.

<http://www.visual-prolog.com>

The current version doesn't interface easily to an OCX but does to DLLs or standard .obj files

or modules written in C.
PLUG END

/Jonathan



By [Neal Bridges](#) on Monday, May 15, 2000 - 03:46 pm: [Edit](#)

For a Win-based PC Forth, have a look at the evaluation version of SwiftForth, available at <http://www.forth.com>.

Neal



By [Bill McCarthy](#) on Monday, May 15, 2000 - 09:43 pm: [Edit](#)

Swiftforth looks very good. They offer a 30-day free trial. The major drawback is the price. The basic system is \$395. The Pro version, including most system source, is \$1,995. They were offering a sale for \$195 (I think), but I found no reference to that on their site.

A free forth for Windows is Win32Forth by Tom Zimmer, et al. It's available at:

<http://www.taygeta.com/forthcomp.html>

Bill



By [Neal Bridges](#) on Monday, May 15, 2000 - 11:38 pm: [Edit](#)

True -- most commercial Forth systems are quite expensive. Quartus Forth is an extremely low-priced commercial Forth development environment.

Neal



By [Dave Bennett](#) on Wednesday, May 17, 2000 - 03:56 pm: [Edit](#)

I often ridicule people who spent more for their development environment than I did for my hardware (Palm Vx) and software (Quartus, RsrcEdit, & SmartDoc). :) In 21 years of development, this is the best ever Neal!

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Hacks

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Hacks



By [Michael Chen](#) on Sunday, May 14, 2000 - 01:58 pm: [Edit](#)

I have been trying to learn some more about QF programming, and I wanted to figure out how to make a hack...I looked at the TickHack source and the HackMaster API, and figured out some of it, but from what I can tell, the hack has to be written in asm68k...does that really mean I have to learn it in order to write hacks? I have been reading the docs and it looks like the words "[", "]", or "cs," might help me...



By [Daniel Wee](#) on Sunday, May 14, 2000 - 06:52 pm: [Edit](#)

Hi Michael,

I believe learning assembly is mandatory for building hacks with QF. If you have prior background in this, it will help greatly in understanding TickHack's source. Otherwise, it will be a tad confusing in spite of its' excellent documentation.

I just succeeded in building my own Hack and I am beginning to understand quite a bit more about how this who system works. Neal's help has been invaluable, as you can see from the way he's been answering my queries in this forum.



By [Michael Chen](#) on Sunday, May 14, 2000 - 08:10 pm: [Edit](#)

Thanks...

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Mark/Releasewords using R stack

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Mark/Releasewords using R stack



By [Geert Bosch](#) on Sunday, May 14, 2000 - 11:11 am: [Edit](#)

In my high precision calculator project, I allocate numbers in the data segment using allot and friends.

Frequently intermediate results are not needed after a while, and I use a mark/release scheme to clean up the unused space:

```
here > R \ Mark current position
\ do calculations, using R@ to refer
\ to first number allocated in mark/release
\ area.
```

```
R> here - allot \ Release
```

Now of course I'd like to encapsulate this functionality in Forth words, but things go wrong if I mess with the R stack accross words, which I can understand :-)

What is the best way to make words for this? I looked at the "MARKER" functionality, but that seems to be something different? I would prefer not to use global variables, as reentrancy is needed at times.

Related question: how much space can I expect to be able to use with ALLOT? This will limit nesting of parens and size of numbers in my calculator...

-Geert



By [Neal Bridges](#) on Sunday, May 14, 2000 - 12:29 pm: [Edit](#)

With ALLOT, you can get at least 12K, even on the original Pilot 1000. On newer models, you can get about 30K.

MARKER is for use during compilation, not run-time. If you want to factor out words with return-stack manipulations in them, INLINE is your friend. For instance:

: rdrop r> drop ; inline

Neal



By [Geert Bosch](#) on Sunday, May 14, 2000 - 03:57 pm: [Edit](#)

Thanks! I actually already changed my code to use inline, but I thought there might be a better method that would be more standard. Good to know this really is the way to do it :-)

BTW, the calculator is coming along fine, and Quartus Forth on the Palm is big fun! It seems to have enough speed to reach my goal of doing operations with up to 100 decimal digits in less than a second, while smaller sizes are instantaneous!

I ended up not using CORDIC, as the table sizes would be prohibitive for high precision (they grow with the square of the nr of bits...), so I'm using old-fashioned series now.

-Geert

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Bug in asm68k?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Bug in asm68k?](#)



By [Daniel Wee](#) on Saturday, May 13, 2000 - 12:41 pm: [Edit](#)

I am playing around with the in-line assembler and I am experiencing some problems which might point to a bug in the asm68k. I'd appreciate it if someone can verify this problem, or point out what I am doing wrong here. Here goes.

I am trying to compile 2 instructions in PREFIX mode. What I want is as follows:-

```
btst.l #1,d0
movea.l $017c.w,a0
```

Now, what I think should be the coding for this in the inline assembler should be:-

(hex) 017c constant GAlmGlobalP

```
btst .l d0 1 #
move .l GAlmGlobalP .w a0
```

but it doesn't work. Both of these instructions won't compile right. A couple of things might work:-

```
btst .l d0 1
```

gets me:-

```
btst.l d0,d0
```

and:-

```
move .l GAlmGlobalP # a0
```

compiles but this is not what I want. I even tried a work-around for this:-

```
move .l GAlmGlobalP a7 -)
move .l a7 )+ a0
```

but the second line still won't compile. I'm not sure if these are bugs but I've tried just about everything I can think of. Please help!!!!

Thanks.



By [Neal Bridges](#) on Saturday, May 13, 2000 - 06:23 pm: [Edit](#)

You can only have one size directive in an asm68k line. If you have both .l and .w, the second one will override the first.

btst takes this sort of arguments:

```
btst .b d0 3 #
```

#) and L#) are the wide and long immediate address specifiers. Try

move .l GAlmGlobalP #) a0

Neal



By [Daniel Wee](#) on Sunday, May 14, 2000 - 04:55 am: [Edit](#)

Thanks Neal. That worked. What I don't understand is by btst won't accept a long specifier?

Secondly, why is the order such that the destination precedes the data. For example: -

move.b #3,d0 becomes move .b 3 # d0

but:-

btst.b #3,d0 becomes btst .b d0 3 #

I wasn't aware of the use of #) before but thanks for the heads up. I really appreciate it.

I do have a question, how do I specify an label for a relative jump?



By [Neal Bridges](#) on Sunday, May 14, 2000 - 12:46 pm: [Edit](#)

From the M68000 Family Programmer's Reference Manual, BTST, page 2-56:

Quote:

When a memory location is the destination, the operation is a byte operation, and the bit number is modulo 8.

(Italics are mine.)

BTST takes one of these two parameter types:

BTST (ea Dn) or

BTST (ea n #)

It's ordered differently than MOVE for consistency -- the 68000 BTST opcode is specified as either

register/effective address

or effective address/bit number

whereas the MOVE opcode is

destination/source

The parameter order for the instructions in the asm68k assembler reflect the internal opcode ordering.

If it's troublesome for you, simply amend BTST to take its parameters in the other order. This is a strength of the assembler -- it's entirely available in source form.

Neal



By [Neal Bridges](#) on Sunday, May 14, 2000 - 12:47 pm: [Edit](#)

Re: labels for relative jumps -- they're not presently supported. Use the structured control words

IF/ELSE/THEN, BEGIN/UNTIL and so on.

Neal



By [Daniel Wee](#) on Sunday, May 14, 2000 - 06:47 pm: [Edit](#)

Does the IF ELSE structure allow multiple conditions like: -

<condition> IF ELSE <condition> IF
<condition> ELSE THEN

Also, how would I implement in assembler something like a SWITCH - CASE type statement? I do find that in some cases, allowing to branch labels actually allow for more efficient coding though. Are we likely to see labels implemented in a future incarnation of asm68k.

Concerning the BTST sepcifier, I believe that the manual says that BTST ea Dn, it accepts a long specifier to allow testing of all 32-bits of Dn. This cannot currently be done with the assembler I think.



By [Neal Bridges](#) on Sunday, May 14, 2000 - 08:06 pm: [Edit](#)

It does allow such structures.

I want to add labels to the assembler. I've never implemented a switch/case type structure using asm68k; I'd like to see whatever you come up with.

With BTST (ea Dn), the Dn register contains the bit number to test at the address specified by ea.

Neal



By [Daniel Wee](#) on Tuesday, May 16, 2000 - 02:16 pm: [Edit](#)

How hard would it be to actually add the labels feature to the assembler? I am thinking of some apps in which the lack of branching to labels, or even calling of subroutines, can be rather difficult.

Secondly, are there any other assemblers for QF which basically accept a regular assembler mnemonics and syntax? Would it be hard to build one in QF. The idea is I can write normal assembly in a separate file and have QF compile it with the assembler and include it as a resource. Is this very difficult to do?

Thanks.



By [Neal Bridges](#) on Tuesday, May 16, 2000 - 03:02 pm: [Edit](#)

You can certainly call named subroutines --

```
code subroutine
...
end-code

code foo
...
] subroutine [
...
end-code
```

There is no existing assembler for Quartus Forth that accepts strict Motorola assembler syntax. In prefix mode, asm68k syntax isn't all that different. It'd be a fair bit of work to close the remaining gap.

Neal



By [Neal Bridges](#) on Tuesday, May 16, 2000 - 04:37 pm: [Edit](#)

Re labels -- predefined labels would work. A very simple implementation (only good for backward branches):

needs asm68k

```
: definelabel ( "name" -- )
  create 0 , does> @ ;
: label ( "name" -- ) cshare ' >body ! ;
```

```
definelabel $1
```

```
code myword
```

```
  ...
  ...
label $1
  ...
  ...
  bra $1
end-code
```

I'll leave the matter of forward branch resolution as an exercise for the proverbial student :)

Neal



By [Daniel Wee](#) on Tuesday, May 16, 2000 - 08:31 pm: [Edit](#)

Thanks for the example Neal. I am wondering if the branch will end up as an absolute or a relative branch? Will the compiler automatically decide or will it simply default? Or can we include a short specifier, for example?

From the example above, it would appear that to branch backwards, I would have to explicitly compute a negative offset. It seems like this is something best achieved within the assembler itself.

Secondly, am I right in saying that asm68k is a single pass assembler? In other words, the labels are evaluated only as they are encountered?

Thirdly, I found that with IF ... THEN type of constructs, there is no check jump range in the IF statement. So, if the target is out of range, you will end up with some negative offset and you won't even know it. I found this out because I kept looking at the actual code that was being produced and was surprised that it was jumping backwards instead of to the end of the clause.



By [Neal Bridges](#) on Tuesday, May 16, 2000 - 10:33 pm: [Edit](#)

You're right, there's no check to see if the IF/THEN is larger than a short jump. Because asm68k is single-pass, IF is resolved when THEN is encountered, so all branches are presumed short. If you want them by default to be long, you'll need to redefine the control structures slightly.

Neal

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32-bit pointer help!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): 32-bit pointer help!



By [James D. purdy](#) on Saturday, May 13, 2000 - 11:29 am: [Edit](#)

I need to change the sign of a variable length (float) sequence like this.

f1 f2 f3 fn n

n is the number of floats.

I have been trying to use the stack pointer to fetch and store them in-place. the code listed "attempts" to do this.

My problem! It seems that I can not advance the pointer past the first item (8e). The program runs, but only the first item in the list is processed and the item count is lost.

the return stack looks like this.

2e 5.1e 1e 9.1e 3e 4.25e1 -8e 0

My suspicion is that I am not adding the offset correctly.

Any Ideas?

\ test
needs float
needs float-ext

```
: celld+ 1 cells s>d d+ ;  
: dfloatd+ 2 cells s>d d+ ;
```

```
: _neg (f1 f2 f3 f4 n -- -f1 -f2 -f3 n)  
dup >r sp@ celld+ r>  
0 do  
2dup 2dup 2@a  
-1e f* 2over  
2!a dfloatd+  
loop 2drop ;
```

```
: ii 2e 5.1e 1e 9.1e 3e 4.25e1 8e 7 _neg ;
```



By [James D. Purdy](#) on Saturday, May 13, 2000 - 12:37 pm: [Edit](#)

This version is my secons attempt, it also has some problems!

```
: _neg dup
>r sp@ >rel cell+ r>
0 do
dup dup f@
-1e f* over
f! 2 cells +
loop
drop ;
```



By [Bill McCarthy](#) on Saturday, May 13, 2000 - 04:41 pm: [Edit](#)

James,

Part of your post indicates that you think floats are on the data stack. Another part indicates that you think they are on the return stack. Actually, they're on their own stack.

I'm using an undocumented word 'fp0' that Neal used when he made 'f.s' public.

```
\ _neg
```

```
needs core-ext ( for ?DUP )
```

```
: _neg ( n -- n )
( F: f1 f2 .. fn -- -f1 -f2 .. -fn )
dup fp0 fdepth floats - swap 0 ?do
  dup dup f@ fnegate f! float+
loop drop ;
```

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My first step

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): My first step



By [Wes Matchett](#) on Saturday, May 13, 2000 - 12:45 am: [Edit](#)

At one point during the last two days I mentioned to Neal that I was in my crawling stage of learning Forth. Thanks to his help I am posting my first step... a variation of the tip calculator, QTip, mentioned at the end of Steven Donahue's On-Board Development Tutorial. This version is a bit less-sophisticated. The user inputs the check value and tip percent (defaults to 15%). The calculator displays the tip and total check amount for three tip percents: the user requested percent, and 20% and 25%. so if the user only inputs the check amount, the calculator provides the tip and total check for 15%, 20%, and 25%.

I've been evaluating Quartus Forth for a stable, feature rich, usable language for developing various personal tools for my palm and to interface my palm with my Mindstorms RCX. I guess its time to register and get down to some serious programming. J

I'd really appreciate anyone's critique of my forth words. I also bundled two functions passed to me from Neal into stringkit.txt file, one of which, **string>float**, is required for the calculator:

```
\ qtip 00.5.13 12:14 am WDM
needs dblmath
needs Events
needs Fields
needs float-ext
needs graphics
needs ids
needs resources
needs stringkit
(ID) wdma (ID) rsrc use-resources
1000 constant TipForm
1201 constant checkFld
1301 constant percentFld
1401 constant tip1Fld
1402 constant tip2Fld
1403 constant tip3Fld
1501 constant total1Fld
1502 constant total2Fld
1503 constant total3Fld
1600 constant CalcBtn
create check 7 cells allot
create percent 7 cells allot
```

```

: calc-tip ( F: check pcnt -- tip total )
  100E f/ fswap
  fdup frot f*
  fdup frot f+
  fswap ;

: calc-totals ( -- )
  check checkFld Field>string
  check swap string>float
  fdup
  ( calc the user requested tip percent )
  fdup
  percent percentFld Field>string
  percent swap string>float
  calc-tip
  (f.) tip1Fld string>Field drop
  (f.) total1Fld string>Field drop
  ( calc the 20% tip)
  fdup 20e calc-tip
  (f.) tip2Fld string>Field drop
  (f.) total2Fld string>Field drop
  ( calc the 25% tip )
  25e calc-tip
  (f.) tip3Fld string>Field drop
  (f.) total3Fld string>Field drop
  checkFld FieldFocus ;

: show-panel ( -- )
  TipForm ShowForm
  s" 15" percentFld string>Field
  drop beep
  checkFld FieldFocus ;

: do-event ( ekey -- )
  ctlSelectEvent = if
    event >abs itemid
    CalcBtn = if
      calc-totals
    then
  then ;

: go show-panel
  2 set-places
  begin ekey do-event again ;

```

\ stringkit 00.5.13 12:14 am
 needs string

```

: string>float ( c-addr u -- ) ( F: -- r )
  -TRAILING
  0 >r \ negative flag, false to start

```

```

begin
\ Attempt float conversion:
  2dup >float 0= while \ failed
\ If string is empty, return 0E:
  dup
  0= if 2drop 0e r> drop exit then
\ If first char is '-', update flag:
  over c@
  dup [char] - = if r> drop >r
  else drop then
  1 /string
repeat
2drop r> if fnegate then ;

: indexof ( c c-addr u -- n )
  0 rot rot
  bounds ?do
    over i c@ = if leave then
    1+
  loop
  nip ;

```



By [Neal Bridges](#) on Saturday, May 13, 2000 - 09:52 pm: [Edit](#)

Thanks for posting your code, Wes!

Neal



By [Wes Matchett](#) on Tuesday, May 16, 2000 - 01:23 am: [Edit](#)

Sorry, I can't resist posting two images of QTip. I received my registration codes today and the first thing I did was make it into a stand-alone PRC.

If posting images is not appropriate here (I haven't seen anything that says so) let me know and this will be my last.

I plan to use QTip on a regular basis J

This is the form upon opening:

QTip

Check: \$

Tip: % 15 20 25

Tip: \$

Total: \$

Calculate

and this is the results of a calculation:

QTip

Check: \$ 37.28

Tip: % 15 20 25

Tip: \$ 5.59 7.45 9.31

Total: \$ 42.87 44.73 46.59

Calculate



By [Neal Bridges](#) on Tuesday, May 16, 2000 - 09:09 am: [Edit](#)

Looks good, Wes! Images are fine here.

Neal



By [Wes Matchett](#) on Tuesday, May 16, 2000 - 09:25 am: [Edit](#)

Thanks agan Neal for all your help, and for Quartus itself. I don't remember ever turning out a productive application so soon after learning the language as I have just done with forth. I regret I didn't learn it many years ago.



By [Neal Bridges](#) on Tuesday, May 16, 2000 - 11:20 am: [Edit](#)

Glad to help, Wes, and glad too that you're enjoying Quartus Forth! Forth is a beautiful language.

Neal



By [Chris Bucsko](#) on Thursday, May 25, 2000 - 04:27 pm: [Edit](#)

I can't tell you how helpful this code is! I also started with Steve Donahue's tutorial, and am able to create and navigate forms, but input was a great mystery to me. I still have some questions, though and was hoping someone could give me a little help with the following stuff:

1. Do all floating point numbers need 7 cells? Is the FP format in the ISO Forth Doc?

2. When you declare 'create check 7 cells allot' and then use 'check' in the code what happens? Does the address for check get put on the stack?

3. How does 's" 15" percentFld string>Field' work? Does 's" 15"' put this char on the stack? I saw something like this in Duco in the word :item>button (id -- char)

```
firstitemid -  
s" MDCLXVI/*+ -=wraek" drop + c@;
```

This looks like a pointer into the string using firstitemid -, but from there I'm a little lost. Thanks for the help, and this is a great forum!



By [Neal Bridges](#) on Thursday, May 25, 2000 - 05:00 pm: [Edit](#)

A float is four bytes long, or 2 cells in Quartus Forth -- not 7 cells.

1 floats . -> 4

In Duco, the buttons are numbered 2000, 2001, 2002, etc. I subtract 2000 (firstitemid) from that, to get a value 0,1,2, etc. I use that value as an index into the string, and then act based on the character at that position. It's just a mechanism to make the code a bit easier for me to read and test.

Neal



By [Wes Matchett](#) on Thursday, May 25, 2000 - 08:19 pm: [Edit](#)

Chris, I'm pretty new at this fourth stuff, but since I wrote the code I'll try to give an explanation for each of your points....

1&2) The word sequence 'create check 7 cells allot' makes a 7 cell buffer and puts the address of this buffer on the stack. 'check checkFld Field>string' copies chars from the form field of index 1201 (checkFld) into the buf (check) and 'check swap string>float' puts the equivalent floating point value on the F stack. The biggest key to understanding how floating point works is to realize that it is done on it's own stack.

The check buffer is never used to do floating point math. I chose 7 to hold input of the size '9999.99'. So as long as the bill (check) is less than \$10,000 the app should work fine! ;) If you leave out the cents then you can enter a larger value.

3) s" 15" creates a buffer that contains "15" and places the address on the stack. 'percentFld string>Field' uses that address and places the contents in the form field with the index of 1301 (percentFld).

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String search for a char

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): String search for a char



By [Wes Matchett](#) on Friday, May 12, 2000 - 06:15 pm: [Edit](#)

Is there a method written to search a string for a char? something like: indexOf (char c-addr u -- n)



By [Neal Bridges](#) on Friday, May 12, 2000 - 08:36 pm: [Edit](#)

needs toolkit

```
: indexof ( c c-addr u -- n )
  0 rot rot
  bounds ?do
    over i c@ = if leave then
      1+
  loop
  nip
;
```

In use, this will return the index, or the length of the string+ 1 if it is not found.

Neal

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

ANS/Quartus Reference Material

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): ANS/Quartus Reference Material



By [Simon Jackson](#) on Friday, May 12, 2000 - 01:51 pm: [Edit](#)

i need a good AVAILABLE reference on ANS forth to make this product useful to me. I have an interest in developing a data compression solution for archiving onboard apps into VERY small size.

Could you suggest a good book in print

tried forth programmers handbook but out of print borders in uk.



By [Simon Jackson](#) on Friday, May 12, 2000 - 01:53 pm: [Edit](#)

by the way do you accept sterling cheques and for how much as credit card bad option for me.



By [Neal Bridges](#) on Friday, May 12, 2000 - 02:02 pm: [Edit](#)

Hi Simon. As far as I know, the Forth Programmer's Handbook is not out of print -- it can be ordered direct from <http://www.forth.com>.

The Standard itself is also a good reference, and is provided free in electronic form with Quartus Forth.

Cheques are no problem; I will email you with the details.

Neal

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More assembler difficulties - Help!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): More assembler difficulties - Help!



By [Daniel Wee](#) on Friday, May 12, 2000 - 05:08 am: [Edit](#)

Hi,

I am beginning to grapple with some of the issues of both Forth and assembler. If anyone here can help me with the following translation problem, I'd really appreciate anyone can point out solutions to my problems. This is basically a port of the StayUpIfOff Hack for the Palm which prevents the app buttons from turning on the Palm if the UP button is depressed. The code basic code segment for that in C is as follows:-

```
void MySysTrapSleep (Boolean untilReset, Boolean emergency) {
    DWord keystate, temp;
    void (*oldtrap)(Boolean, Boolean);
    FtrGet (mycreator, myresourceid, &temp);
    oldtrap = (void (*)(Boolean, Boolean)) temp;
    oldtrap(untilReset, emergency);

    if (untilReset || emergency) { return; }

    keystate = KeyCurrentState();
    while (keystate & keyBitPageUp
        && !((AlmGlobalsPtr) GAlmGlobalsP)->triggered) {
        HwrSleep (0, 0);
        keystate = KeyCurrentState();
    }
}
```

This is a very simple piece of code actually but I am running into some trouble with the assembly because I am not too sure about using branching in the Forth context and the condition testing. Here is what I have

```
code trap
    prefix
    link -4 a6
    move .l d4 a7 -)
    move .l d3 a7 -)
```

```

move .b 8 a6 d) d3
move .b 10 a6 d) d4
pea -4 a6 d)
move .w trapID # a7 -)
move .l crid # a7 -)
trap 15 sysTrapFtrGet cs,
movea .l -4 a6 d) a0
move .b d4 a7 -)
move .b d3 a7 -)
jsr a0 )
adda .w 14 # a7
tst .b d3
0= if      \ is this how I do multiple conditions
    tst .b d4
0= if \ with nested ifs?
    begin \ This is where I really get stuck
        trap 15 sysTrapKeyCurrentState
        btst .l 1 # d0
        0<> if
            movea .l (hex) 017c .w a0
            btst .b 6 # 8 a0 d)
            0= if \ How do I get the condition
                then \ for the while part?
            then
        while
            clr .l a7 -)
            trap 15 sysTrapHwrSleep
            addq .w 4 a7
        repeat
    then
then
move .l -12 a6 d) d3 \ restores d3 and d4
move .l -8 a6 d) d4 \ can I simply do "a7 -)"
unlk a6
end-code

```

In the code above, d3 and d4 are used as register variables.

My main problem lies with getting the condition for the WHILE part to work. There are 2 conditions but I don't want to add code to combine the two conditions. How do I do this?

Secondly, what does "cs," do? I notice that there is a cs, after the trap call in TickHack but I can't quite figure out its purpose. Do I need it for all my trap calls?

Thirdly, during compile, I get an error saying that "movea" is an undefined word? Why so? I think the online manual lists it as a reserved assembler word.

Fourthly, I am using a direct definition for (hex) 017c which is for GAlmGlobalP structure. Is this defined somewhere so I won't have to hardcode the address?

I am sure there are many more errors in there and if any of you can help me along, I'd really appreciate it. Thanks.



By [Neal Bridges](#) on Friday, May 12, 2000 - 09:24 am: [Edit](#)

The asm68k version of WHILE takes a condition, for instance 0= , just as IF would.

cs, compiles a 16-bit value inline into the code of an assembler routine, and is used in TickHack to place the systrap calls after the 'trap 15' instructions. Perhaps a macro could be written to hide it, but I've never felt the need.

MOVEA is not defined, nor is it documented in the manual, nor is it required -- just use MOVE. The asm68k module can tell when you're using address parameters and compiles the right opcode.

To define a constant for use in your routine, place:

(hex) 017c constant GAlmGlobalP

above the routine, and use GAlmGlobalP in place of the (hex) 017c.

Neal



By [Daniel Wee](#) on Saturday, May 13, 2000 - 01:21 am: [Edit](#)

Hi Neal,

Thanks for the clarification on that.

One of the things I am trying to do is to work out a way to do: -

<condition> AND/OR <condition> ...

However, as I understand in, in the assembler, the conditions are not actually put on any stack and therefore I cannot do something like: -

```
prefix
tst .w d2
0=
tst .w d3
```

```
0<>
] AND [
if .... then
```

So, if I needed to do multiple condition testing, how should I do it here?

Secondly, if I wanted to do branching, how do I specify a relative target? Ie, place a label on a location?

Thanks.



By [Daniel Wee](#) on Saturday, May 13, 2000 - 03:45 am: [Edit](#)

More problems Neal.

In the PREFIX mode, how do I write:-

```
btst.l #1,d0
```

I thought it would be:-

```
btst .l 1 # d0
```

but that doesn't work. Neither does:-

```
btst .l d0 1 #
```

However, the following two works but which is right?

```
btst .l d0 1
btst .l 1 d0
```

Secondly, regarding the MOVEA problem. I am trying to write:-

```
movea.l $017c.w,a0
```

so I do the following:-

```
(hex) 017c constant GAlmGlobalP
```

```
code trap prefix ...
```

```
move .l GAlmGlobalP .w a0
```

But that doesn't work. Neither does


```
move .l GAlmGlobalP a0
```

I am running out of ideas what to try with these. Please advise. Thanks.



By [Daniel Wee](#) on Saturday, May 13, 2000 - 12:57 pm: [Edit](#)

Sorry for this slew of questions but I am really learning things that I cannot find in the manual. Okay, here goes another:-

Why is:-

```
trap 15  
sysTrapFtrGet cs,
```

different from:-

```
trap 15 sysTrapFtrGet cs,
```

When I compile this, I get different resulting codes. Am I missing something here? Thanks.



By [Neal Bridges](#) on Saturday, May 13, 2000 - 06:25 pm: [Edit](#)

In prefix mode, you must place each assembler mnemonic on its own line. In the second case, 15 sysTrapFtrGet cs, is fully evaluated before trap is assembled, which is not correct. Use the first form.

Neal

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How do I build TickHack

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): How do I build TickHack



By [Daniel Wee](#) on Thursday, May 11, 2000 - 10:27 am: [Edit](#)

Hi,

I'm trying to learn how to build a Hack using Quartus and I'm looking at TickHack because that's the only example available here. However, what I'd like to know is how I can actually build this project? Do I do it the same way as I would build HelloWorld for example?

I'd appreciate it if someone can give me an example. Thanks.

Daniel



By [Neal Bridges](#) on Thursday, May 11, 2000 - 12:36 pm: [Edit](#)

Add TickHack.txt and HackMaker.txt as memos in your MemoPad. Install TickRsrc.prc via the desktop install utility.

Then from the Quartus Forth console,

```
include tickhack
```

Neal



By [Daniel Wee](#) on Thursday, May 11, 2000 - 01:57 pm: [Edit](#)

Hi Neal,

Thanks. I figured that out a little before I came here. I have another problem though. When I look at HackMaker, it says that to have an About box, I should create one tFRM 3000 in TickRsrc. However, I find that such a form has already been created. Okay, no problem there but when I go to HackMaster and I look at TickHack, I find that there is no associated "?" for the info. Am I misunderstanding something here? Thanks.

Daniel



By [Neal Bridges](#) on Thursday, May 11, 2000 - 03:05 pm: [Edit](#)

I added the "About" resource by hand using RsrcEdit.

Neal



By [Daniel Wee](#) on Thursday, May 11, 2000 - 06:53 pm: [Edit](#)

Yes Neal. But the About doesn't show up in the compiled Hack. When I go to Hackmaster and look at the Hack, there is no associated "?" that indicates that there is an info box even though the About resource is there in TickRsrc already. Why is this so?



By [Neal Bridges](#) on Thursday, May 11, 2000 - 07:04 pm: [Edit](#)

Hmm. Are you sure there's a tFRM3000 in the compiled app, and that you don't by chance have two TickHacks in memory? HackMaster just checks for the presence of tFRM3000.

Neal



By [Daniel Wee](#) on Thursday, May 11, 2000 - 11:24 pm: [Edit](#)

Ahhh, I see, you mean I need to add the tFRM3000 directly to the compiled app. I thought it was added to TickRsrc instead of TickHack. I will give this a shot and see what happens.

On a related issue, I was wondering if it is mandatory to use assembly instead of plain Forth for the code segment? If you were to do it in Forth, what would the implications be?

Thanks for the hint.



By [Neal Bridges](#) on Thursday, May 11, 2000 - 11:28 pm: [Edit](#)

If you used Forth for the code segment of the hack, you would have to set up special scaffolding code so that the hack could set up and destroy a data stack each time it was called. You'd also have to preserve and restore all registers around the trap, and be very careful only to use words that have no dataspace dependencies. All in all, it's not worth the trouble.

HackMaster modules are routines that attach themselves directly to operating system functions, and as such need to be as small, clean, and efficient as possible. Assembler is the way to go. Forth makes it easy to write clean, modular assembler.

Neal



By [Daniel Wee](#) on Thursday, May 11, 2000 - 11:45 pm: [Edit](#)

Thanks Neal. I guess that answers all my questions. Now, I've got to get used to the syntax for the Quartus assembler. I am far more used to regular syntax and would prefer to be able to "link" in a piece of code assembled separately, maybe

with something like OnBoard assembler?

I'll keep working at this. Thanks.



By [Daniel Wee](#) on Thursday, May 11, 2000 - 11:48 pm: [Edit](#)

Sorry, one more thing to add. Hackmaster allows for a configuration panel. In trying to provide such a panel would I be constrained by the need to stay with assembly as well or is it okay to use Forth for that panel.

Secondly, does HackMaker support building in such a panel? If so, what do I need to do?



By [Neal Bridges](#) on Friday, May 12, 2000 - 12:40 pm: [Edit](#)

To create a control panel for a HackMaster module, as per HackMaster's documentation, you need a tFRM2000 and a code2000 resource. A slight extension of the functionality in HackMaker.txt will copy the code resource in for you, and you can move the tFRM resource in with RsrcEdit.

Neal



By [Daniel Wee](#) on Saturday, May 13, 2000 - 08:12 am: [Edit](#)

Does the code2000 resource need to be in assembly as well or can that be in regular Forth?

I will take a look at HackMaker when the time comes for me to work on the panel. Thanks Neal.



By [Neal Bridges](#) on Saturday, May 13, 2000 - 08:35 am: [Edit](#)

Again, to do the code2000 resource in Forth you'd have to scaffold it and take the other precautions. I recommend assembler.

Neal



By [Daniel Wee](#) on Sunday, May 14, 2000 - 04:57 am: [Edit](#)

Oh, okay. I guess it just means I will have to get more familiar with this assembler mnemonics and syntax.

Another question I have about TickHack is why was the constant sysTrapSysHandleEvent defined? I don't see it being used anywhere in the code? Is it okay if I just leave this out?



By [Neal Bridges](#) on Sunday, May 14, 2000 - 12:30 pm: [Edit](#)

I must have left it in by accident, Daniel. Leave it out.

Neal

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A Newbie looking for an answer....

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): A Newbie looking for an answer....



By [Wes Matchett](#) on Wednesday, May 10, 2000 - 11:49 pm: [Edit](#)

I have jsut started learning fourth and have Steven Donahue's tutorial. I am embarking on writing the tip calculator described at the end of the document. The app display's fine, but nothing happens when I press the 'calulate' button.

Here is the program:

```
\ qtip 5/9/2000 WDM
needs ids
needs resources
needs Events
needs Fields
(ID) wdma (ID)  rsrc use-resources
1000 constant TipForm
1300 constant checkValue
1301 constant tipPercent
1302 constant tipValue
1400 constant CalcBtn
create temp 5 cells allot
: show-panel ( -- )
  TipForm ShowForm ;
: do-event ( ekey -- )
  ctlSelectEvent = if
    event >abs itemid
    CalcBtn = if
      temp checkValue Field>string
      temp tipValue string>Field
    then
  then ;
: go show-panel
  begin ekey do-event again ;
```

I have no idea how to determine what is wrong. IN addition to the solution I am also interested in guidance on how to debug fourth. For instance - is it possible to write to an area, like a log or console, in order to determine what is happening, if anything, when the button is pressed?



By [Neal Bridges](#) on Thursday, May 11, 2000 - 09:25 am: [Edit](#)

For openers --

```
CalcBtn = if
  temp checkValue Field>string
  temp tipValue string>Field
```

This is the code that is meant to run when the button is pressed. To see if it does run, put a beep in there.

Once you know it is running, ask yourself why it's not working. Check that you're passing the right arguments each function -- in this case, Field>string and string>Field.

Neal



By [Wes Matchett](#) on Thursday, May 11, 2000 - 10:25 am: [Edit](#)

Thanks for the beep hint, that will help debug things. I couldn't find it in any of the docs I'm looking at - is that standard forth?

I added a beep after the CalcBtn = if line, but it sounds the same as without it. I get a single beep when the button is pressed - not two.

Both Field>string and string>Field take the same arguments, an address (temp) followed by a field (either checkValue or tipValue), so I think the arguments are correct.

One problem I'm having is that there seems to be so many different places to look up words; I don't know where to find what I need. I'm having difficulty finding the word to do what I need (beep for instance).



By [Neal Bridges](#) on Thursday, May 11, 2000 - 10:55 am: [Edit](#)

That's not quite right--

Field>string takes a c-addr and a fieldID, and returns a length.

String>field takes a c-addr, a u (the length of the string), and a fieldID, and returns an Err.

A quick place to look for non-Standard words in Quartus Forth is <http://www.quartus.net/products/forth/manual/specific.htm>. With experience will come familiarity.

Neal



By [Wes Matchett](#) on Thursday, May 11, 2000 - 11:58 am: [Edit](#)

Ah, that's my problem....

I was interpreting the U as a type definition of unsigned (too much C in my blood) and not as a separate argument.

The code now looks like this, which works fine:

```
CalcBtn = if
  temp checkValue Field>string
  temp swap tipValue string>Field
  drop
then
```

I now need to calc the tip value - but I don't know how to get the string into a number. I've seen s>d used for this in several files, but I can't find its definition. I just triple checked the specific doc, so I know it's not there [J](#). The example I'm looking at does this:

```
\ Get the integer and store to temp
temp intgr Field>string
\ Convert the string to a number
0 s>d rot temp swap
>number
```

Can you explain this snippet?

I've been looking at the specific doc, but I missed the beep command - sorry L.



By [Neal Bridges](#) on Thursday, May 11, 2000 - 12:31 pm: [Edit](#)

S>D is a Standard word that converts a signed single-cell value to a signed double-cell value. It isn't "string to double".

Here's a snippet that does the same thing as your quoted snippet, but without using S>D:

```
( length )
0. rot temp swap ( 0. c-addr length )
>number ( number. c-addr1 u1 )
```

From there you can drop the c-addr1 u1 and you're left with the double-cell representation of the number in the field.

Neal



By [Wes Matchett](#) on Thursday, May 11, 2000 - 02:08 pm: [Edit](#)

Sorry to be so rudimentary, but would you explain why this works? I have no idea what 0. means. I think it must put two items on the stack since rot would seem to require three and at that point there is only one (length). Am I totally off base?

I have downloaded the Forth ANSI standard and found \b[S>D} in it, thanks.



By [Neal Bridges](#) on Thursday, May 11, 2000 - 02:46 pm: [Edit](#)

0. puts a double-cell value of zero on the stack.

0. .s -> <2> 0 0 ok

Any number ending with a . is a double-cell value.

12345. .s -> <2> 12345 0 ok

12345678. .s -> <2> 24910 188

Neal



By [Wes Matchett](#) on Thursday, May 11, 2000 - 02:47 pm: [Edit](#)

I've found the answer, the >number standard word does the conversion. 0. is the double-cell number to add the converted value into.

I think I'm getting the hang of this.



By [Wes Matchett](#) on Thursday, May 11, 2000 - 02:49 pm: [Edit](#)

Heh, you beat me to the answer Neal, barely. J



By [Wes Matchett](#) on Thursday, May 11, 2000 - 02:52 pm: [Edit](#)

Hmmmm..

But your post brings up more questions. What are .s and <2>?



By [Neal Bridges](#) on Thursday, May 11, 2000 - 03:07 pm: [Edit](#)

.S is a Standard word, from the TOOLS wordset. It displays the current contents of the stack. In Quartus Forth, if there are two items on the stack, .S might display:

```
<2> 52 14
```

Neal



By [Wes Matchett](#) on Thursday, May 11, 2000 - 03:55 pm: [Edit](#)

I'm stumped again...

How do I divide using d values?

/ is for integers and I can't find an equivalent word for doubles.



By [Neal Bridges](#) on Thursday, May 11, 2000 - 04:23 pm: [Edit](#)

Have a look at this:

<http://www.quartus.net/discus/messages/23/221.html?MondayJanuary3120000752pm#POST1200>

Neal



By [Wes Matchett](#) on Thursday, May 11, 2000 - 07:04 pm: [Edit](#)

I'd like to set the tip percent to a default value, but I don't know how to place a string constant in the source. I want to do something like

```
"4.5" tipFld string>Field
```

Can I define a constant string like this?

```
"4.5" contant defaultTip
```



By [Neal Bridges](#) on Thursday, May 11, 2000 - 08:09 pm: [Edit](#)

```
s" 4.5" tipFld string>Field
```

By the way, it looks like you want to do a floating-point calculation, so the previous code with >number won't cut it. Use this for converting a string to floating-point:

<http://www.quartus.net/files/PalmOS/Forth/Contrib/stringtofloat.txt>

Neal



By [Wes Matchett](#) on Friday, May 12, 2000 - 12:40 am: [Edit](#)

Neal, thanks again for all your help. You have definitely jump-started my forth learning curve.

You read my mind, I'm about to deal with the floating point issue. But isn't this just the first half of the picture? How do I convert the calculated value back to a string? Considering that when I looked at string>float I have a host of questions, I don't think I know how to write float>string.

I've been taking one thing at a time, step by step. Gotta learn to walk before you can run. I think I'm about to graduate into the crawling stage. *shrug* Until someone develops a knowledge implant there is no other way to learn.



By [Wes Matchett](#) on Friday, May 12, 2000 - 12:56 am: [Edit](#)

hmmmm...

I just tried to use `string>float` and I get this error:
`-trailing? undefined word`

I see that `-trailing` is part of the standard String word set - why isn't it known?

What parts of the forth standard are/aren't part of Quartus Forth?



By [Travis Casey](#) on Friday, May 12, 2000 - 08:59 am: [Edit](#)

String, and the other word sets except for Core, are optional -- a standard Forth doesn't have to include them, and/or can have them be part of a loadable module instead of "built-in".

If you look at the "ISO/ANS Compliant Documentation" section of the manual, you'll see a breakdown of what Quartus provides "built-in". It states there that all of String is provided except for `-TRAILING`, `CMOVE`, and `>CMOVE`.

However, many of the words that aren't included as built-ins are in modules in the library; in the case of `-TRAILING`, it's in the "string" module.

If you keep all or most of the library memos on your Palm, as I do, you might try doing what I do -- if a Forth word doesn't seem to be available, hit Find and try to find it. Any memos that it's mentioned in will come up, and if any of those are Forth libraries, you can look in them and see which one defines it.

--Travis



By [Neal Bridges](#) on Friday, May 12, 2000 - 09:28 am: [Edit](#)

You'll find `-TRAILING` defined in the updated `string.txt`:

<http://www.quartus.net/files/PalmOS/Forth/Library/string.txt>

Neal



By [Wes Matchett](#) on Friday, May 12, 2000 - 09:40 am: [Edit](#)

I have the "string" module and most of the others on my Palm, as you suggest. However, it seems that the version in the `ulibtxt.zip` file is not the latest version - it was missing the `-TRAILING` word. Checking revealed that other files are also not the latest version: "trig" and "float-ext".



By [Neal Bridges](#) on Friday, May 12, 2000 - 10:02 am: [Edit](#)

You are correct, Wes -- there is an update in the pipe that has all the updated files in one archive, and an updated Quartus Forth.

In the interval, all updated library files are available in the File Area.

Neal



By [Wes Matchett](#) on Friday, May 12, 2000 - 10:17 am: [Edit](#)

Thanks.

I'm working through `string>float` to determine how to do the reverse - is there already a way or am I on the right track?



By [Neal Bridges](#) on Friday, May 12, 2000 - 12:29 pm: [Edit](#)

What you want is (f.) from float.ext:

<http://www.quartus.net/files/PalmOS/Forth/Library/float-ext.txt>

Neal



By [Wes Matchett](#) on Friday, May 12, 2000 - 01:52 pm: [Edit](#)

Well, the app runs - but nothing gets placed in tipFld. I suspect something is wrong with calculating the tip:

```
\ qtip 5/9/2000 WDM
needs dblmath
needs Events
needs Fields
needs float-ext
needs ids
needs resources
needs string
(ID) wdma (ID)  rsrc use-resources
1000 constant TipForm
1300 constant checkFld
1301 constant percentFld
1302 constant tipFld
1400 constant CalcBtn
create check 7 cells allot
create percent 5 cells allot
: calc-tip
  check checkFld Field>string
  check swap string>float ( check now on F: )
  percent checkFld Field>string
  percent swap string>float ( percent now on F: )
  100E F/ F* ( calc tip -> divide percent by 100, multiply check by result )
  (f.) tipFld string>Field ( store tip in tipFld )
  drop ;
: show-panel ( -- )
  TipForm ShowForm
  s" 4.5" percentFld string>Field
  checkFld FieldFocus ;
: do-event ( ekey -- )
  ctlSelectEvent = if
    event >abs itemid
    CalcBtn = if
      calc-tip
    then
  then ;
: go show-panel
  begin ekey do-event again ;
```

I placed string>float into the "string" module. This is probably not the proper place for it since it would get trashed whenever a new version of the file is released, but it seemed like where it belongs.



By [Neal Bridges](#) on Friday, May 12, 2000 - 02:10 pm: [Edit](#)

The string module is just for Standard words from the STRING wordsets. I suggest you place it elsewhere or it will, as you say, be overwritten by updates.

To isolate the error in your code, try placing a known string in the field, instead of using (f.):

```
s" 1234.56" tipFld string>Field
```

Neal



By [Wes Matchett](#) on Friday, May 12, 2000 - 02:56 pm: [Edit](#)

The results are as expected - the string appears in tipFld. Is there a way to examine the stack contents after each command while in a form?



By [Neal Bridges](#) on Friday, May 12, 2000 - 03:58 pm: [Edit](#)

The method I prefer is:

needs graphics

and then in the code, in the event loop:

```
0 0 at .s
```

This will display the stack's contents at the top of the screen.

Neal

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A@ command

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): A@ command



By [James D. Purdy](#) on Wednesday, May 10, 2000 - 08:05 pm: [Edit](#)

this command is defined as:

A@ (a1 -- a2) fetch address from address a

I guess in otherwords, get the contents of a1, but treat it as an address.

is there a Qforth equiv?



By [Neal Bridges](#) on Wednesday, May 10, 2000 - 08:30 pm: [Edit](#)

For 16-bit target addresses, use @ (or 2@ to fetch a 32-bit address). If the target address is itself a 32-bit address, use @a or 2@a.

Neal

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How do create an procedure alarm

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): How do create an procedure alarm



By [Markus Biermaier](#) on Tuesday, May 9, 2000 - 12:34 pm: [Edit](#)

Is it possible to create a procedure alarm in Quartus Forth? The C macro is "AlmSetProcAlarm (procP, ref, alarmSeconds)".

If it is possible I would like to know how to access the pointer to function "procP" - and perhaps a little sample.

Many thanx in advance.

Markus



By [Neal Bridges](#) on Saturday, May 13, 2000 - 08:02 am: [Edit](#)

I've never tried this myself. A few points for starters: xt> abs will convert an xt to an absolute address; this is the address you need to pass as the procedure pointer. Your callback function will need to have this structure:

```
: myfunction
  callback
    ...here the return stack is now the data stack, until end-callback
    ...only place code here that doesn't leave permanent changes on either stack...
  end-callback ;
```

Neal



By [Markus Biermaier](#) on Monday, May 15, 2000 - 04:40 am: [Edit](#)

Thank you.

I'll try it too. If anyone has some experience with this topics, I would like to hear.

Markus

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Quartus Specific Words

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Quartus Specific Words



By [Michael Chen](#) on Monday, May 8, 2000 - 10:30 pm: [Edit](#)

Some of the systrap words dont seem to be documented at <<http://www.palm.com/devzone/docs/palmos/frames.html>>, like sysbatterydialog and sysnewownerid, and some others too..where can i find docs for all the ones not at the url i mentioned? Also, what word should I use for free ram? thanks...



By [Michael Chen](#) on Tuesday, May 9, 2000 - 04:59 pm: [Edit](#)

Clarifaction..what word will return the amount of free ram?



By [Neal Bridges](#) on Wednesday, May 10, 2000 - 10:52 am: [Edit](#)

The undocumented sysstraps are just that, undocumented. Palm strongly discourages their use.

If you're set on working with them, apply for the license to see the Palm OS sources (<http://www.palm.com/devzone>) -- there's more information in there.

In terms of RAM, are you looking for the amount of free dynamic RAM, or storage RAM?

Neal



By [Michael Chen](#) on Wednesday, May 10, 2000 - 05:47 pm: [Edit](#)

OK thanks..

Hrm, not quite sure what dynamic ram is...I think what I want is storage ram...the one when you go to Launcher->Info or Launcher->Delete...e.g. 250k free for programs to be installed...

I tried the MemCardInfo which supposedly will put a double value in the absolute address of a 2variable...so lets say i put it into 2variable free. Then, I tried to do a free 2@ d. and it was wrong..could u send me some code that does it right? Thanks!



By [Neal Bridges](#) on Wednesday, May 10, 2000 - 07:13 pm: [Edit](#)

Try this code. freemem takes a card number, and returns the number of bytes.

showmem gives a display of freespace on each card in the system.

Most Palms have one card only; TRGPro and Visor devices can have more than one card.

```
\ memfree 00.5.10 6:13 pm NAB
```

```
2variable freev
```

```
2variable maxv
```

```
variable freecard
```

```
: freemem ( cardnum -- bytes. )
    freecard !
    0.
    freecard @ MemNumHeaps 0 do
    maxv >abs freev >abs i
    freecard @ MemHeapID
    MemHeapFreeBytes throw
    freev 2@ d+
loop ;

: showmem ( -- )
    MemNumCards 0 do
        ." Card " i . ." : "
        i freemem 0 d.r ." bytes free" cr
    loop ;
```

```
cr showmem .s
```

Neal



By [Michael Chen](#) on Wednesday, May 10, 2000 - 08:46 pm: [Edit](#)

Hmm, everything seems like it should work...except...

needs memfree

Card 0 : 410286 bytes free

stack empty

ok

Launcher --> Info

Free Memory: 254k of 1920k

I know the launcher one is correct...

how can I get from 410k to 254k? is there some conversion i'm missing?



By [Neal Bridges](#) on Wednesday, May 10, 2000 - 10:32 pm: [Edit](#)

What PalmOS version are you running?

Neal



By [Neal Bridges](#) on Wednesday, May 10, 2000 - 10:34 pm: [Edit](#)

Scratch that -- I think it's just adding in the RAM in the dynamic heap, the first heap on the card. Try changing 0 do to 1 do.

Neal



By [Michael Chen](#) on Wednesday, May 10, 2000 - 10:44 pm: [Edit](#)

I'm running 3.1, with 3.1.1 update...so...3.1.1...

I'm assuming you meant to make it
"freecard @ MemNumHeaps 1 do"
not
"MemNumCards 0 do"

Well, anyway, now it returns 265154 for card 0 (running a iiie, so thats the only card), while I have 210k free according to launcher

this is strange... :P



By [Neal Bridges](#) on Wednesday, May 10, 2000 - 11:15 pm: [Edit](#)

It's not particularly strange. Let's try an additional conditional that will read the free memory only from storage heaps.

```
: freemem ( cardnum -- bytes. )
  freecard !
  0.
  freecard @ MemNumHeaps 0 do
  maxv >abs freev >abs i
  freecard @ MemHeapID
  dup MemHeapDynamic if
    drop 2drop 2drop
  else
    MemHeapFreeBytes throw
    freev 2@ d+
  then
  loop ;
```

Neal



By [Michael Chen](#) on Thursday, May 11, 2000 - 07:15 am: [Edit](#)

Hmm, seems to be same problem : (



By [Neal Bridges](#) on Thursday, May 11, 2000 - 09:14 am: [Edit](#)

On my Visor, the value reported by this code overshoots the launcher "info" value by just over 50000 bytes also. I suspect this is a deliberate adjustment by the launcher.

Neal



By [Neal Bridges](#) on Thursday, May 11, 2000 - 04:40 pm: [Edit](#)

Curiously, the difference (53K on the Visor I'm using here) only occurs on card 0. Free space on card 1 is reported with full accuracy.

Neal



By [Michael Chen](#) on Thursday, May 11, 2000 - 04:55 pm: [Edit](#)

Hmm, possibly, but I have entered some debugging printouts into the memfree program and have found out the following...

at the moment, on my palm iiiie (1 memory card) 2MBs, I have 190k free according to the launcher

the following heap sizes are on it, and the true or false is what memheapdynamic returns

99382 false
194638 true
49866 true

So, the first one doesn't get added because it is a dynamic heap...good...the second one looks remarkably like the right number ($194638 / 1024 = 190!$ yay!), and the third one is, of course, how much the program is off by...now...i could of course just use the second heap on each card. but i dont think that would work on all machines...the question is, what is that third heap? why is it getting added? or more specifically, the question is, what's going on? :p



By [Neal Bridges](#) on Thursday, May 11, 2000 - 05:02 pm: [Edit](#)

Found it. Change MemNumHeaps to MemNumRAMHeaps. The 'extra' heap must be a ROM heap.

Note that having made that change, the program breaks when reading the flash

ROM card on the Visor. To fix it, add

needs core-ext

at the top, and change the do in freemem to a ?do. Then it stops breaking, but reports the freespace on the ROM card as 0 bytes, so you'd have to go to a bit of extra trouble to write a general-purpose routine.

Neal



By [Michael Chen](#) on Thursday, May 11, 2000 - 05:24 pm: [Edit](#)

Ahh!! Thanks!!! :) Just to confirm because I don't have a visor, this reports correctly minus the free space on a springboard module?



By [Neal Bridges](#) on Thursday, May 11, 2000 - 08:42 pm: [Edit](#)

No, the opposite -- it reports 0 bytes RAM free on a flash ROM module. If you want a report of the freespace, you'll need to do a bit more work.

Neal



By [Michael Chen](#) on Friday, May 12, 2000 - 05:30 pm: [Edit](#)

What about the free RAM that is not on the inserted flash ROM module in the Visor?



By [Neal Bridges](#) on Friday, May 12, 2000 - 05:35 pm: [Edit](#)

I don't understand the question, Michael.

Neal



By [Brette Blatchley](#) on Monday, July 17, 2000 - 01:06 am: [Edit](#)

Anyone have a problem with MemHeapFreeBytes crashing the system? (PalmOS 3.5 on a IIIxe)

This routine would crash after it read a couple of heaps, but it would report the first 2 OK. I suspect that the ones it crashed on were ROM heaps, but I'm not sure. The SDK does not hint at any such problem

I changed MemNumHeaps to MemNumRamHeaps after reading this thread, and no more crashes (and I get an accurate measure of storage (omitting the dynamic heap, of course)).

Here's my code:

\MemSize

needs core-ext
needs dblmath

2variable maxP
2variable freeP

: MemHeapSize (heap# card# --)
 MemHeapID >r

r@ MemHeapCompact throw

r@ MemHeapDynamic if \ if so, leave early...
 0. freeP 2!
 0. maxP 2!
 r> drop
 exit
 then

maxP >abs
 freeP >abs
 r> MemHeapFreeBytes throw

;

: MemSize (-- free.d max.d)
 MemNumCards 0 do 0. 0.
 i MemNumRamHeaps
 0 do
 i j MemHeapSize
 maxP 2@ d+ 2swap
 freeP 2@ d+ 2swap
 loop
 loop

;

: MemSizeK (-- free max)
 MemSize
 1024 dm/ 2>s rot rot
 1024 dm/ 2>s swap

;

page
MemSizeK

```
. .( k max, ) . .( k free) cr
```

Was I doing something wrong???

Thanks for any insights!

-Brette

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Beam, Delete, and Info

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Beam, Delete, and Info



By [Michael Chen](#) on Monday, May 8, 2000 - 08:14 pm: [Edit](#)

From what I can tell from all my research, this could be a hard question to answer...I need to be able, from my app, to show the beam, delete, and info dialogs from the Launcher...I can launch creator-id "lnch" with a given launch code (hopefully its just a integer launch code!) but I need to know what it is...I can't find it defined in the palmos references or any .h files I can find anywhere or on any newsgroups anywhere...If you have some C code or anything that does this, post it, maybe I can get what I need from that...Anyway...anyone know how to do this?



By [nbridges](#) on Monday, May 8, 2000 - 09:23 pm: [Edit](#)

I'm not sure that's possible, Michael -- at least I've never seen documentation on the launch-codes accepted by the built-in Launcher app.

Neal



By [Michael Chen](#) on Monday, May 8, 2000 - 09:55 pm: [Edit](#)

hmm...anyone have the source to Launcher? ;)



By [Wade Carlson](#) on Tuesday, May 9, 2000 - 03:20 pm: [Edit](#)

I think I read somewhere on the Palm Developer site that you have to send in an application and be approved and then they will give you the sources.



By [Michael Chen](#) on Tuesday, May 9, 2000 - 05:00 pm: [Edit](#)

Hmm...ok il check it out..thanks

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> 4k source files

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): > 4k source files



By [James D. Purdy](#) on Monday, May 8, 2000 - 04:37 pm: [Edit](#)

I have been porting some data analysis stuff from another system. One of the commands (least squares fit) is larger than 4K by itself.

I have been using Pedit and Pedit32 to edit the files.

My Question(s)

(1) does any one know how I can compile code from a Pedit32 DB? They are stored similar to a memo pad file.

(2) does any one have a small poly-fit (least sq) routine?



By [Barry Marks](#) on Monday, May 8, 2000 - 06:28 pm: [Edit](#)

If you have SmartDoc or one of the other doc editors, you can use that instead of Pedit32 and use docinc and docneeds. Quartus can read the doc files.

Barry



By [James D. Purdy](#) on Tuesday, May 9, 2000 - 01:54 pm: [Edit](#)

The Doc inclusion works Great!

Thanks.



By [Winchell Chung](#) on Tuesday, May 9, 2000 - 03:56 pm: [Edit](#)

I sometimes write large Forth blocks on my Win98 machine with a programmer's text editor (the MSVC++ development environment).

This gives me access to advanced searching functions when writing code.

{ of course, if I was a *real* Forth programmer, my blocks wouldn't be so large that I *needed* a search feature, but we won't go into that... }

I use Qex to convert the *.txt file into a *.prc file, ready for loading into the Palm/Visor.

Since my Visor has other vital data on it, I am leary of testing crash prone software on it. Therefore I load it into POSE and test the code there.

The load-compile-test cycle is pretty quick, with most of the time being taken in the "compile" part.

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Direct Access to record

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Direct Access to record



By [Marc](#) on Monday, May 8, 2000 - 08:07 am: [Edit](#)

Hi,

I want to store information in a DB. This information will be indexed by mmyyyy (month year). What is the easiest method to retrieve such information ?

I though about using the record identifier. Is it a good idea ? Any standard function to lookup a record in palmos?

Thanks for you advise.

Marc.



By [Neal Bridges](#) on Monday, May 8, 2000 - 09:58 am: [Edit](#)

Depending on the number of records, a simple sequential search may suffice. If there are a large number of records, there are other techniques: for instance, keep them sorted and use a binary search.

Neal



By [marc](#) on Tuesday, May 9, 2000 - 06:35 pm: [Edit](#)

ok, but can i use the record id to have direct access to a record or is it an unrecommended method or unusable for that purpose ?

Marc



By [Neal Bridges](#) on Wednesday, May 10, 2000 - 10:51 am: [Edit](#)

As I recall, the record ID is not guaranteed to be unique always -- if you have a large number of deletions and insertions, you stand a chance of having a record occur that has the same record ID as a previous record.

Neal

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E-mail:

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Thanks guys!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Thanks guys!



By [Michael Chen](#) on Sunday, May 7, 2000 - 12:20 pm: [Edit](#)

Thanks for all your help guys...I have finally been able to release my first two programs, Speedy and Lights. Speedy allows quick access to your programs and Lights is a puzzle game. Please tell me what you think! I'm curious to know whether others find my programs useful...Both written in Quartus Forth of course...You can download them at <http://www.pointopia.com/> and click "palm software" at the top, or just go directly to <http://www.pointopia.com/m1ke08> to download them.

I don't want to bother anyone with this message, so please don't take it the wrong way...



By [Neal Bridges](#) on Sunday, May 7, 2000 - 02:13 pm: [Edit](#)

No bother, Michael. Thanks for letting us know!

Interesting programs -- glad we could help.

Neal

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Date / Time Dialogs...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Date / Time Dialogs...



By [Jamie](#) on Wednesday, May 3, 2000 - 07:16 pm: [Edit](#)

Finally feel like I'm starting to get the hang of this...

Can anyone give me a sample or a 2 minute lesson on how to pull up the standard date and time dialogs when I press a button I have defined as a selector trigger ?

Also, from following the thread about Edit menus I got everything but how to display the Graffiti help dialog. Any suggestions ?

Once again, I have to commend everyone here for the help I've gleaned from other's posts. Thanks

Jamie



By [Neal Bridges](#) on Wednesday, May 3, 2000 - 09:58 pm: [Edit](#)

Here's a brief discussion on the standard date dialog, for starters:

<http://www.quartus.net/discus/messages/23/86.html?MondayNovember2219990230pm>

Neal



By [Ron Doerfler](#) on Wednesday, May 3, 2000 - 10:46 pm: [Edit](#)

Hi Jamie,

In the example I gave, if that's what you are referring to, I didn't do the Graffiti Help Dialog because I didn't think it was needed. I haven't tested this at all, but it appears that there is this API call in the docs:

`SysGraffitiReferenceDialog`

Purpose: Pop up the Graffiti Reference Dialog.

Prototype: `void SysGraffitiReferenceDialog (ReferenceType referenceType)`

Parameters: `referenceType`

Which reference to display. See `GraffitiReference.h` for more information.

Result: Nothing returned.

and from `GraffitiReference.h`:

```
typedef enum
{
    referenceAlpha,
    referencePunc1,
    referencePunc2,
```

```
referencePunc3,  
referenceExtended,  
referenceAccent,  
referenceDefault = 0xff // based on graffiti mode (referenceAlpha)  
} ReferenceType;
```

so help for alphanumeric symbols would have 0 on the stack, Punc1 would have 1, etc.

I really don't know if this is what you use, but it seems likely to me.

Ron



By [Ron Doerfler](#) on Wednesday, May 3, 2000 - 11:09 pm: [Edit](#)

Hmm, I see from the Quartus systrap reference document (stackdia.txt or stackdia.pdb) that you have to convert the reference to a byte value using >BYTE before you call SysGraffitiReferenceDialog.

Ron



By [Jamie](#) on Thursday, May 4, 2000 - 01:58 pm: [Edit](#)

Thanks to both.

Ron - you're right. The graffiti dialog shouldn't be necessary, but I'm trying to stick to the GUI model of the built-in apps...

I'll have to get over my irrational fear of C and start looking into Palm's doc's before wasting people's time here...



By [Ron Doerfler](#) on Thursday, May 4, 2000 - 02:49 pm: [Edit](#)

It's not a waste of time for me--if I can provide an answer or suggestion, it's simple for me to send it, and if I'm not sure of the answer (as in the Graffiti Help question) it can be a benefit to me as well to look at it. As it is, there are many questions that I can't contribute to at all.

Ron

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Trigonometry

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Trigonometry



By [Gary Wiese](#) on Wednesday, May 3, 2000 - 04:14 pm: [Edit](#)

Does Quartus support trig functions and if so how do I use them?

Sin, Cos, Tan, ArcSin, ArcCos, Arctan.

Thanks

Gary



By [Neal Bridges](#) on Wednesday, May 3, 2000 - 04:36 pm: [Edit](#)

trig.txt provides COS and SIN to three decimal places of accuracy. I'll be adding FSIN and FCOS and some others to the kernel.

Here's an implementation of FATAN that I wrote last year:

```
\ fatan 4/28/99 1:39 pm NAB

: f+u ( u -- ) ( F: r -- r+u ) 0 d>f f+ ;

: f*u ( u -- ) ( F: r -- r*u ) 0 d>f f* ;

: FATAN ( r -- arctan )
  fdup ( F: r r )
  fdup fdup f* fswap ( F: r r^2 r )
  1 20e f* f>d drop abs 14 +
  ( 1 count )
  0e ( F: r r^2 0 )
  do ( F: r r^2 val ) ( -- )
    \ val=(i*i*r^2)/(i+i+1+val):
    i 2* 1+ f+u ( F: r r^2 tb )
    fover i i * f*u ( F: r r^2 tb ta )
    fswap f/ ( F: r r^2 ta/tb )
    -1 +loop ( F: r r^2 val )
    fswap fdrop ( F: r val )
    \ val=r/(1+val):
    1e f+ f/ ( F: arctan ) ;
```

Neal



By [Gary](#) on Wednesday, May 3, 2000 - 04:57 pm: [Edit](#)

Write now it does not have any of the arc functions? Could you give me a small example of how to use them in a program? I tried in the interpreter mode and here is what I got.

```
needs trig ok
45 sin cr .
7071 ok
```

I will be needing some of the arc functions for what I am trying to do, is there any way to do this with what quartus has now?

I would like to enter .7071 and get back 45 can this be done yet?

Thanks
Gary



By [Neal Bridges](#) on Wednesday, May 3, 2000 - 10:37 pm: [Edit](#)

To enter .7071 and get back 45, you want FASIN. Here's an implementation based on the definition of FATAN I provided above. Note that angles are expressed in radians.

```
needs fatan
```

```
: FASIN ( r1 -- r2 )
  fdup fdup fnegate f* 1e f+ fsqrt
  f/ fatan ;
```

Here's rad>deg and deg>rad:

```
57.2957795130823e fconstant radsize
```

```
: deg>rad ( deg -- rad ) radsize f/ ;
: rad>deg ( rad -- deg ) radsize f* ;
```

Use:

```
.7071e fasin rad>deg fs. -> 0.44999447e2
```

Neal



By [Geert Bosch](#) on Thursday, May 4, 2000 - 01:05 pm: [Edit](#)

I am writing an arbitrary precision calculator in Quartus Forth. To my great joy I found an excellent implementation of Knuths classical algorithms in the Forth Scientific Library (#47). It is amazing to see how fast 69! is calculated (calculation plus display of all 98 decimals is instantaneous, no perceptible

delay). By default I use base 10000 as this makes for fast and accurate input/output conversion and fits nicely in a cell.

Now what I'm curious about is whether anybody knows about implementations of CORDIC algorithms in Forth. It might be relatively easy to code something based on Cody's book on elementary functions, but those algorithms (often based on polynomials) don't scale well to a high number of digits.

Regards,
Geert

PS. I will release full sources of the calculator



By [Neal Bridges](#) on Thursday, May 4, 2000 - 01:25 pm: [Edit](#)

CORDIC isn't a complicated algorithm. I toyed with it a bit last year. It's an iterative algorithm, the number of iterations dependent on the precision of the inputs.

It's straightforward to write it in Forth. Let me know if you need a hand.

I look forward to seeing your calculator! I did a bit of work with bignum calculations in the SCX calculator, but only for the basic arithmetic functions.

Neal



By [Neal Bridges](#) on Thursday, May 4, 2000 - 01:33 pm: [Edit](#)

CORDIC in a nutshell:

<http://www.ezcomm.com/%7Ecyliax/Articles/RobNav/sidebar.html>

Neal



By [Geert Bosch](#) on Thursday, May 4, 2000 - 02:38 pm: [Edit](#)

Thanks for the link. As always the devil is in the details here... I'll let you guys know what will be going on.

BTW, it's only a few days since I started with Quartus Forth and I'm definately hooked... :-)
It's a great development environment...

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New Conduit development software

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): New Conduit development software



By [Wade Carlson](#) on Wednesday, May 3, 2000 - 01:20 am: [Edit](#)

Check out this new Palm conduit development software. I haven't tried it out yet, but it looks very useful for those of us who want to develop conduits using Visual Basic! The documentation looks great and it appears to be free as long as you follow certain restrictions.

<http://www.ehand.com/ehand/d.asp?p=487>



By [rniere](#) on Tuesday, August 1, 2000 - 05:18 am: [Edit](#)

Delphi informant has run two articles on it the last two months using e-hand ... seems to be a good tool so far. I'm working with the examples as I write this. I want to find ways to link delphi applications directly from enterprize data without using http. So I'm going to be working a lot with the database file format on the pc. I'm still doing lots of homework and playing with FORTH. There are lots of things I'd like to use forth for. Springboard module support for large reference works is also high on the list.
any resources anyone can point me to would be very helpful.
Thank for having such a kewl community,
Randy Niere
KC
also: rniere@inprise.com



By [Neal Bridges](#) on Tuesday, August 1, 2000 - 11:37 am: [Edit](#)

It's not too hard to set up the flash memory on a Springboard module to launch your application; from there, it's standard PalmOS all the way. The HandSpring site documents the process of making a Springboard memory module launch your app-of-choice. Let me know if I can be of assistance!

Neal

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New utility: Save to Host

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): New utility: Save to Host



By [Neal Bridges](#) on Tuesday, May 2, 2000 - 02:31 pm: [Edit](#)

This looks handy -- it's a Palm app that runs in the Palm OS Emulator, and lets you move text back and forth from the desktop. It looks like it could be useful for Quartus Forth developers.

<http://www.palmgear.com/software/showsoftware.cfm?prodID=7033>

Neal



By [Erwin Schomburg](#) on Wednesday, May 3, 2000 - 05:21 am: [Edit](#)

I honestly find more use in squeezing doc format files through makedoc either direction (DocInOut making this step a drag/drop operation) and drag/drop the resulting .pdb into POSE or export it from POSE via the built in db-exporter.

YMMV.

/Erwin

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Char and zstrings

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Char and zstrings



By [Michael Chen](#) on Monday, May 1, 2000 - 07:30 am: [Edit](#)

Suppose I have a char on the stack...

```
.s <1> 65
```

And a zstring defined...

```
: mystring z" test" ;
```

how can I append this to the string so it becomes

```
mystring type testA ok
```

Also, I have a memo called "\fix" with the "array" fix and the "LstSetListChoices" fix, but I still can't get LstSetListChoices to work..does anyone have an example? Also, I've heard of a new beta version of forth...does that fix the lstsetlistchoices and array bug? if so, Neal, could you send me a copy? thanks!



By [David C. Haas](#) on Monday, May 1, 2000 - 10:55 am: [Edit](#)

Here are some words I have found useful:

```
\ zstrings-ext 2000.4.12 DCH
```

```
needs core-ext      \ for 2>r and 2r>
```

```
: zplace  ( c-addr1 u c-addr2)
  \ Copy string c-addr1 u to c-addr2
  \ as a zero-terminated string
  swap 2dup 2>r move
  0 2r> + c! ;
```

```
: zlength  ( c-addr -- u)
  >abs StrLen ;
```

```
: zappend  ( c-addr1 u c-addr2)
  \ Append the string c-addr1 u
  \ to the zero-terminated string at
  \ c-addr2
```

```
dup zlength + zplace ;

: ztype ( c-addr -- )
  \ Type the zero-terminated
  \ string at c-addr
  dup zlength type ;
```



By [Michael Chen](#) on Monday, May 1, 2000 - 06:13 pm: [Edit](#)

That'll do it! Thanks!



By [Michael Chen](#) on Monday, May 1, 2000 - 06:23 pm: [Edit](#)

Ah..but after I examined it more closely..I realized..how can I use it to append a char...i.e. a number (A=65) to a zstring?



By [Neal Bridges](#) on Monday, May 1, 2000 - 06:33 pm: [Edit](#)

Here's a bit of untested code using David's string words:

```
create buf 0 c, 0 c,
create string 0 c, 40 chars allot

: mystring z" Hello" ;

: go
  mystring string zappend
  [char] A buf c!
  buf string zappend
  string drop ztype ;
```

Neal



By [Michael Chen](#) on Monday, May 1, 2000 - 07:25 pm: [Edit](#)

Hmm, neal, seems to give a

MemoryMgrNew.c,
Line 4128, Invalid handle

[Reset]



By [Neal Bridges](#) on Monday, May 1, 2000 - 08:13 pm: [Edit](#)

As I said, untested. Try this:

```
: go
  mystring string zappend
```

```
[char] A buf c!  
buf 1 string zappend  
string drop ztype ;
```

If that fails too, I'll actually test it. :)

Neal



By [Michael Chen](#) on Monday, May 1, 2000 - 08:18 pm: [Edit](#)

Neal,

```
include test ok  
go  
go? stack underflow
```

(go to last error)

```
string drop ztype ;
```

sorry to bother you :)



By [Neal Bridges](#) on Monday, May 1, 2000 - 08:57 pm: [Edit](#)

Take out the 'drop' from the last line.

Neal



By [Michael Chen](#) on Monday, May 1, 2000 - 09:02 pm: [Edit](#)

Aha! Perfect! Thanks guys!! :)



By [Michael Chen](#) on Monday, May 1, 2000 - 11:24 pm: [Edit](#)

Another question along the lines of this, about StrNCaselessCompare...The stack diagram is:

```
StrNCaselessCompare (n. &s2. &s1. -- n)
```

I am a little confused as to how to make a "n." as opposed to an "n". What I need to do is check if the first x characters of string one are the same as the first x characters of string two, x being the length of string one...example:

```
: s1 z" abcdefg" ;  
: s2 z" abcd" ;
```

now, heres how I need to execute it:

```
s2 drop zlength ( see above post )
s1 drop >abs s2 drop >abs
strncaselesscompare
0=
```

and now the stack should contain a nonzero value, because the first 4 characters of s1 and s2 were the same...however, I find it only works if I do:

```
4.
s1 drop >abs s2 drop >abs
strncaselesscompare
0=
```

so the question is, how to make an "n." from the value that StrLen returns, which appears to be a "u".

thanks for your help!



By [Neal Bridges](#) on Monday, May 1, 2000 - 11:53 pm: [Edit](#)

To make a double cell n. from a single cell n, use S>D. If it's an unsigned value, use 0 instead of S>D.

Neal



By [Bill McCarthy](#) on Tuesday, May 2, 2000 - 12:17 am: [Edit](#)

Michael Chen wrote:

```
>s2 drop zlength ( see above post )
>s1 drop >abs s2 drop >abs
>strncaselesscompare
```

In your first line you drop the length then recompute it. You also fail to provide the required double. How about:

```
s2 nip 0 ( the length is >=0 and <=255 )
```

Bill



By [Neal Bridges](#) on Tuesday, May 2, 2000 - 04:02 pm: [Edit](#)

Reading all this reminds me that I dislike zero-terminated strings. They're inefficient. They allow you to refer to a string only by its starting address, but at the cost of having to re-scan it to find its length every time you want to manipulate it.

Neal



By [Michael Chen](#) on Wednesday, May 3, 2000 - 07:31 am: [Edit](#)

Thanks!!



By [Michael Chen](#) on Wednesday, May 3, 2000 - 07:29 pm: [Edit](#)

Another related question...Problem: I need to remove the last character from a zstring...for example:

```
: s z" abcdefg" ;
```

I need to do

```
s ( something )
```

so that

```
s ztype -> abcdef
```

of course, either this or a "substring" function to return the first n characters of any zstring would work too (as long as it returned them with a zero termination at the end)

thanks in advance!



By [David C. Haas](#) on Thursday, May 4, 2000 - 09:11 am: [Edit](#)

Michael, if your objective is to display the string, this should suffice:

```
s 1- type
```

If you need to have the string in a buffer for another use:

```
create buf 10 allot  
s 1- buf zplace  
buf ztype
```



By [Michael Chen](#) on Thursday, May 4, 2000 - 08:56 pm: [Edit](#)

Thanks...And another question...Let's say I have

```
create string 32 allot
```

then I call some systrap...say...DmDatabaseInfo...that places something into

that, because I passed string >abs to it. Now, I have an array...

```
128 array myarray
```

And I need to fill this array with all sorts of different values of string...

```
string 0 myarray !  
( change the contents of string )  
string 1 myarray !  
( change the contents of string )  
string 2 myarray !
```

and so on. I have found, after a LONG debugging session, that this seems to be putting the same (address, I guess) into myarray, so if string changes, all the contents in myarray change, and even worse, all the cells in myarray are the same! I think my analyses is right, but I'm not sure. Anyone know a solution? Thanks!



By [Neal Bridges](#) on Thursday, May 4, 2000 - 09:22 pm: [Edit](#)

... I'm not clear what you mean, 'all sorts of different values of string'. What exactly are you trying to fill the array with?

Neal



By [Michael Chen](#) on Thursday, May 4, 2000 - 09:56 pm: [Edit](#)

Hmm, heres a more specific explanation...

I need to have an array that contains the names of all the databases on the system. The way that I am retrieving database info (DmDatabaseInfo) stores things like creator-id and database name in places that are created with commands such as:

```
create db-name 32 allot
```

I can treat db-name just like a string...

```
db-name ztype  
db-name >abs strlen  
etc...
```

So I figured I could just add it to the array like one...

```
0 DmNumDatabases 0 do  
( get the name of the "i"th database into db-name somehow )  
db-name i myarray !
```

loop

However, this seems to cause ALL the cells of myarray to contain the value of the last database (below example is assuming VendorsDB is the last database on the system...i.e. the one left in db-name when the loop ends).

```
0 db-name @ ztype -> VendorsDB
5 db-name @ ztype -> VendorsDB
```

The only explanation I was able to come up with was that when I executed "db-name i myarray !", I wasn't really adding the string itself to the array, but rather some kind of pointer to an address. When DmDatabaseInfo changed the data stored at db-name >abs, the data that was pointed to changed too. Therefore, each cell of the array contained a pointer to the same part of memory, which, at the end of the loop, would contain the name of only the last database...

My terminology and analysis may not be completely correct due to my newness at FORTH and Quartus Forth, but I hope that's enough information to describe my problem.

Thanks in advance!



By [Neal Bridges](#) on Thursday, May 4, 2000 - 10:19 pm: [Edit](#)

You're attributing a much larger function to ! than it has. ! stores a single cell (16 bits) at an aligned address -- nothing more.

If you want to store a series of pointers to strings, it's fine -- but you'll need a different buffer to hold each string.

Neal



By [Michael Chen](#) on Thursday, May 4, 2000 - 10:23 pm: [Edit](#)

Hrmm...Let me take a step back then..maybe my solution wasn't so practically implementable in Forth. I need to have a quick-to-access array of all the DBs on the system. Currently, my program works fine by scanning all the DBs each time. However, I figured it would be faster if I didn't have to scan each time. I don't think making a separate buffer for each db name would be practical in my situation. How could I get a set, list, or array of strings that contained all the dbs on the system without doing that?



By [Michael Chen](#) on Thursday, May 4, 2000 - 10:28 pm: [Edit](#)

To clarify the above message slightly, when I say "all the DBs on the system", I really mean "zstrings containing the name of each of the DBs on the system"



By [Neal Bridges](#) on Thursday, May 4, 2000 - 10:30 pm: [Edit](#)

I haven't played with the DB calls lately, but I'd go for finding the actual 32-bit address of each database name in memory, and storing those in an array.

The problem here isn't a Forth issue -- it's a space issue. If a given Palm has a large number of databases, there may not be enough dynamic RAM available to copy them all. Using them in-place is a workable idea.

Neal



By [Michael Chen](#) on Thursday, May 4, 2000 - 10:40 pm: [Edit](#)

Gotcha! Thanks!



By [Michael Chen](#) on Thursday, May 4, 2000 - 10:52 pm: [Edit](#)

Hmm..ok..one quick modification needed on following code posted above:

```
create buf 10 allot
s 1- buf zplace
buf ztype
```

what if the string is already stored in buf...then how can i remove a char from it...

```
buf 1- buf zplace
```

and

```
buf dup zlength 1- buf zplace
```

doesn't seem to work either :(

what am I doing wrong?



By [Neal Bridges](#) on Thursday, May 4, 2000 - 11:17 pm: [Edit](#)

Michael, give some thought to the way a zero-terminated string is stored in memory. Let's take the string "Hello" for instance, shown here as hexadecimal values:

H	e	l	l	o	\0	ASCII character
48	65	6C	6C	6F	00	Value of character
0	1	2	3	4	5	Memory address (example only)

If you want to 'shorten' this string by one byte, you must store the zero-byte

terminator at position 4, instead of position 5.

Neal

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Cut/Copy/Paste/etc. Edit Menu Functions

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Cut/Copy/Paste/etc. Edit Menu Functions



By [Ron Doerfler](#) on Monday, May 1, 2000 - 02:15 am: [Edit](#)

Hi everyone,

I started a new thread title, but this refers to the recent discussions on using the default Edit menubar on a form to automatically get the editing functions. There were questions on using it with ShowForm rather than PopUpForm, and in any event I'm not sure how other menu functions on that menubar would work as well, so I thought I'd post a little code that works for me to add the editing functions directly. It turns out to be fairly simple.

First, to avoid creating it from scratch, you can copy the Edit submenu from MemoPad or wherever and paste it into your own menubar using RsrcEdit. Then delete the Graffiti Help item--I didn't bother with it. Change the menu item IDs to whatever are convenient, and assign them to the constants listed at the start of the file:

```
\ editmenu  043000 RWD
```

needs condthens

```
\ The following menu resources must  
\ be previously defined as constants.
```

```
\ UndoID  
\ CutID  
\ CopyID  
\ PasteID  
\ SelAllID  
\ KeyBdID
```

```
: edit-menu  
( eventtype -- eventtype)  
FrmGetActiveForm FrmGetFocus  
cond dup 0< if  
  drop \ No focus  
else  
  FrmGetActiveForm FrmGetObjectPtr  
  event >abs 8 m+ @a  
  dup UndoID = if drop FldUndo  
  else dup CutID = if drop FldCut  
  else dup CopyID = if drop FldCopy
```

```
else dup PasteID = if drop FldPaste
else dup SelAllID = if
  drop 2dup FldGetTextLength
  0 2swap FldSetSelection
else dup KeyBdID = if
  drop 2drop SysKeyboardDialogV10
else drop 2drop
thens ;
```

Then call edit-menu in your event handling code in series with your other menu code. For example, your code might look like:

```
: go ( -- )
begin \ event loop
ekey cond
dup menuEvent = if
  edit-menu \ Editing
  list-menu \ Non-editing
else dup ctlSelectEvent = if
  list-buttons
thens drop
again ;
```

As you can see, it's surprisingly simple to implement the Edit functions yourself since most are API calls anyway.

Cheers,

Ron

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Pushbutton highlighting and CtlHitControl

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Pushbutton highlighting and CtlHitControl



By [Marcia Elliott](#) on Sunday, April 30, 2000 - 10:52 am: [Edit](#)

I want to use pushbuttons because they stay highlighted when you tap them, but I want to be able to turn off the highlight when something else happens in the program.

I have this idea that CtlHitControl would do this for me. To make sure that I can correctly provide &pControl to CtlHitControl I tried the following code:

```
variable lastbutton  
0 lastbutton !
```

```
: unhighlight ( &pControl itemid -- itemid)  
swap lastbutton @ dup 0> if  
CtlValidatePointer 40 40 at .  
else drop then  
lastbutton !  
;
```

```
\ switchbuttons goes inside the event loop  
: switchbuttons ( ctlselectevent --)  
dup event >abs itemid  
dup FirstButton = if  
unhighlight  
else dup SecondButton = if  
unhighlight  
then then drop  
;
```

When I run this code I get the following error message and have to reset:
SystemMgr.c, line: 112, unimplemented

I substitute the word CtlHitControl for CtlValidatePointer and I get a fatal exception, I leave out either word and I don't have to reset (the . displays a 9). I've moved the first dup around in switchbuttons, still having to reset with every try.

Can anyone suggest something for me to try?



By [Neal Bridges](#) on Sunday, April 30, 2000 - 11:51 am: [Edit](#)

Have a look at the Swatch sources; there buttons are highlighted and unhighlighted under program control.

Neal



By [Marcia Elliott](#) on Monday, May 1, 2000 - 02:53 am: [Edit](#)

Thank you for the quick help!

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Some more questions...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Some more questions...



By [Michael Chen](#) on Saturday, April 29, 2000 - 03:24 pm: [Edit](#)

I am constantly amazed by the helpfulness of the people on this board...so I've come up with two more questions to ask you guys :)

First, I'm trying to port the following code to Forth, but I keep freezing or crashing my palm:

```
char* temp = MemPtrNew(33);
MemMove(temp, "xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx", 33);
MemPtrSetOwner(temp, 0);
```

Anyone have any solutions?

Secondly, I am trying to make a List resource control, but I can't figure out how to make LstSetListChoices work. Any suggestions?

Thanks!



By [Neal Bridges](#) on Sunday, April 30, 2000 - 12:03 am: [Edit](#)

A literal translation of your code:

```
needs zstrings
```

```
2variable temp
```

```
: string z" xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx" ;
```

```
\ In Forth, you normally wouldn't use a variable to store the result.
33 s>d MemPtrNew temp 2!
```

```
\ I'd use MemSet here.
string s>d  rot >abs  temp 2@  MemMove throw
```

```
0 temp 2@  MemPtrSetOwner  throw
```

Neal



By [Neal Bridges](#) on Sunday, April 30, 2000 - 12:05 am: [Edit](#)

Note you could use S" instead of Z" in the preceeding code, and then you

wouldn't need zstrings.

Neal



By [Michael Chen](#) on Sunday, April 30, 2000 - 10:01 am: [Edit](#)

Thanks! That looks like it works. However, I have a question. After lots of systrap calls I've been seeing "throw." What does it do?



By [Neal Bridges](#) on Sunday, April 30, 2000 - 10:40 am: [Edit](#)

If THROW is given a non-zero (error condition), it generates an exception that can be caught with CATCH, or simply left to display a pop-up exception message on-screen. If it's given a zero, it's just like DROP.

Neal



By [Michael Chen](#) on Sunday, April 30, 2000 - 04:17 pm: [Edit](#)

ahh, i see...ok thanks!

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Bugs and fixes

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Bugs and fixes



By [Jim N. Deakin](#) on Friday, April 28, 2000 - 07:10 am: [Edit](#)

Hi, Neal.

I was just wondering if there was a definitive list of errors and patches for Quartus. I know of three separate problems, that were going to be fixed in a future release (and maybe they have been), where you supplied a simple fix to be included. These were the array definition in \toolkit, which was mentioned recently, the MS definition, from a while back, and the LstSetListChoices bug, which has just bitten me, and which I found a reference to in earlier notes. The problem is that I can't tell if I have them all, or whether I'm patching a problem you've already fixed. A definitive memo to be loaded after all library memos might be useful.

Cheers,
Jim



By [Neal Bridges](#) on Friday, April 28, 2000 - 10:30 am: [Edit](#)

I'm gathering all the fixes together into a new release; they'll all be documented there.

Neal

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Duplicating a database

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Duplicating a database



By [John Newell](#) on Friday, April 28, 2000 - 06:41 am: [Edit](#)

Hi everyone,

I am interested in duplicating a database (programmatically). I was wondering if anyone had done something similar and what method is easiest - quickest.

Regards

John



By [Neal Bridges](#) on Friday, April 28, 2000 - 02:51 pm: [Edit](#)

Playing with this a while ago, I came up with a clever (but not finished!) method for using `DmCreateDatabaseFromImage` to duplicate an existing database. I'll see what I've got on file.

Neal



By [John Newell](#) on Tuesday, May 16, 2000 - 07:26 am: [Edit](#)

Hi Neal,

Did you come up with anything on this subject? Thanks.

John



By [Neal Bridges](#) on Tuesday, May 16, 2000 - 09:11 am: [Edit](#)

Hi John. Looking at my earlier efforts, I have not yet found a way around the roadblock I encountered... using `DmCreateDatabaseFromImage` on an existing database causes an "AlreadyExists" error, as the new database has the same name/creator/type as the old. I believe the system can be tricked into doing it anyway, but haven't worked out exactly how yet.

Neal



By [Neal Bridges](#) on Tuesday, May 16, 2000 - 03:34 pm: [Edit](#)

I've had another thought based on `ExgDBWrite` and `ExgDBRead`. I'll poke at it a bit and see how tricky it is.

Neal



By [Michael Chen](#) on Wednesday, May 17, 2000 - 04:40 pm: [Edit](#)

This would be extremely helpful to me too if you find a way...

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OS 4 + ARM

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): OS 4 + ARM



By [Graham Lamont](#) on Thursday, April 27, 2000 - 03:46 pm: [Edit](#)

Neal, have you heard anything about OS4 being on an ARM processor, and do you think you'll be porting Quartus ?

Graham



By [Neal Bridges](#) on Thursday, April 27, 2000 - 07:13 pm: [Edit](#)

I have heard the rumours. If they go that way, I think it likely they'll have 68000 emulation on the ARM, and hence both Quartus Forth and its generated apps will run. If it's advantageous, I'll port the system to ARM native-code.

Neal

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Benchmark

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Benchmark



By [Allan Mak](#) on Thursday, April 27, 2000 - 07:08 am: [Edit](#)

Any benchmark for corresponding 3Com PDA device? Compare w/ TRGPro?
Thanks!



By [Neal Bridges](#) on Thursday, April 27, 2000 - 12:18 pm: [Edit](#)

http://www.trgpro.com/product/faq_trgpro.html#speed

Neal



By [ken butterfield](#) on Friday, July 14, 2000 - 12:53 pm: [Edit](#)

Hi Neal

I am using the oct 199 registered version of QUARTUS and I am trying to use popselectevent. I notice in the discussions that you had a beta version in Dec 1999 that fixed problems in this area. Is there a registered version with these updates?

Thanks, Ken B



By [Neal Bridges](#) on Friday, July 14, 2000 - 01:15 pm: [Edit](#)

There is indeed; I'll send it out to you tonight.

Neal

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DmGetDatabase

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): DmGetDatabase



By [Michael Chen](#) on Wednesday, April 26, 2000 - 09:04 pm: [Edit](#)

I have looked up DmGetDatabase in palmos docs and it looks like it returns the localid of the "next" database? I can't seem to figure out exactly how to use it though...

0 DmGetDatabase

doesn't seem to return a localid...although I may be wrong..In any case, whether it does or doesn't how can I cycle through a list of all the databases of application type, and furthermore, when I get them, how can I get their (ID) creatorid, and their name as a string? Thanks.



By [Jim N. Deakin](#) on Thursday, April 27, 2000 - 06:47 am: [Edit](#)

This is similar to what you want, I think. The main difference is that I know the creatorid I'm looking for. With DmGetDatabase, you'll need to find the number of databases on a card, and specify the index and card number to get a localID. The card No. and localID are then used in the DmDataBaseInfo call. In your case the first two 0. stack items would be pointers to 2-char variables which would receive the creatorID and type. Check the call spec.

```
\ listDocDBases
```

```
needs ids
```

```
needs toolkit
```

```
\ First, a utility word to
```

```
\ print a null-terminated string.
```

```
: ZPRINT ( a -- )
```

```
begin
```

```
  dup c@ dup
```

```
while
```

```
  emit
```

```
  1+
```

```
repeat
```

```
2drop ;
```

```
\ Doc file Creator and Type...
ID READ ID TEXT
```

```
( I need to recheck the sizes below)
create NameBuf 32 allot
create DmSearchState 32 allot
2variable stateInfoP
DmSearchState >abs stateInfoP 2!
2variable dbID
variable CardNo
```

```
: GNDBBTC ( first?[T/F] -- err )
>r dbID >abs CardNo >abs false
READ TEXT stateInfoP 2@ r>
DmGetNextDatabaseByTypeCreator ;
```

```
: ID-Doc ( -- )
0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
NameBuf >abs dbID 2@
CardNo @ DmDatabaseInfo throw ;
```

```
: go
\ get first matching database
true gndbbtc
0= if id-doc
begin
    false gndbbtc ( get next database)
0= while
    id-doc NameBuf zprint cr
repeat
then ;
```



By [Michael Chen](#) on Thursday, April 27, 2000 - 09:56 pm: [Edit](#)

Thank you, Jim, for the code, but it needs a slight modification to do what I want...I do not, in fact, know the creator-id, I need a list of applications that the user can choose from...



By [Jim N. Deakin](#) on Friday, April 28, 2000 - 06:19 am: [Edit](#)

I realized that, but I thought it would be enough to give you a start. OK look at this example, edited from the previous one.

It only looks at card 0, so it's OK for now, but future hardware releases might have more cards to check.

In the GO word, I use DmNumDatabases (cardnum -- n) to find how many

databases there are on the card. I iterate through the databases using a do loop, and use the loop index and DmGetDatabase to get the LocalID's.

I've slightly modified ID-Doc (and should really rename it ID-Database I suppose) so it has the addresses of DBCreator and DBType on the stack, and can return values in them.

After running ID-Doc, I check to see if the type is appl, and if it is I print the name.

```
\ listDBasesDemo
```

```
needs ids
needs toolkit
needs double
```

```
\ First, a utility word to
\ print a null-terminated string.
: ZPRINT ( a -- )
begin
  dup c@ dup
while
  emit
  1+
repeat
2drop ;
```

```
\ app filetype...
ID appl
```

```
( I still need to recheck the size below)
create NameBuf 32 allot
2variable dbID
2variable DBCreator
2variable DBType

: ID-Doc ( -- )
DBCreator >abs
DBType >abs
0. 0. 0. 0. 0. 0. 0. 0.
NameBuf >abs dbID 2@
0 DmDatabaseInfo throw ;
```

```
: go
```

```

0 DmNumDatabases
0 do
  i 0 DmGetDatabase ( LocalD. )
  dbID 2! id-doc
  DBType 2@ appl D= if
    NameBuf zprint cr
  then
loop ;

```



By [Michael Chen](#) on Friday, April 28, 2000 - 08:21 am: [Edit](#)

Jim, It probably would have been enough, but I am so new at Forth that I wasn't able to figure it out. However, the second piece of code is exactly what I want! Thanks!



By [Bill McCarthy](#) on Friday, April 28, 2000 - 06:49 pm: [Edit](#)

Michael,

DmGetDatabase requires both an index and the card number on top. It returns a local ID. In the code below, `info` grabs the creator, type and name from a local ID. `show` displays that information. `go` loops through all the databases in card 0 (returned by DmNumDatabases) and displays their creator, type and name.

This short piece of code requires no libraries:

```

\ inf 0.4.28 WJMc Name DB's

2variable creator
2variable dbtype
create dbname 32 allot

: info ( dbID -- )
  >r >r creator >abs dbtype >abs
  0. 0. 0. 0. 0. 0. 0. 0.
  dbname >abs r> r>
  0 DmDatabaseInfo throw ;

: show ( -- )
  cr creator 4 type 2 spaces
  dbtype 4 type 2 spaces
  dbname dup >abs StrLen type ;

: go ( -- )
  0 DmNumDatabases 0 do
    i 0 DmGetDatabase info show
  loop ;

```

Bill



By [Michael Chen](#) on Friday, April 28, 2000 - 11:22 pm: [Edit](#)

Thanks for your help!!

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Arrays of structures

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Arrays of structures



By [Barry Marks](#) on Wednesday, April 26, 2000 - 08:12 pm: [Edit](#)

Is there any good way to have arrays of structures in Quartus without inventing it myself? I don't think I'm ready to do that yet.

I've already started this with a number of similar arrays and that will work for me, but I just wondred if I'm missing a cleaner way.

Barry



By [Travis Casey](#) on Thursday, April 27, 2000 - 11:30 am: [Edit](#)

Here's a first pass from me:

```
\ sizedarray 00.4.27 11:00 am TSC

: sizedarray ( size howmany "name" -- )
  create >r aligned r> over , * here over allot swap 0 fill
  does> swap over @ * + 1 cells + ;
```

This can be used thusly:

```
needs struct
needs sizedarray

struct
  1 cells a
  2 cells b
end-struct mystruct

sizeof mystruct 5 sizedarray myarray

\ store 2 into field a of struct #3 in "myarray"
2 3 myarray a !

\ retrieve it and show it
3 myarray a @ .
```

You may want to look at the "Storing into a structure" thread as well. I've tried

to ensure that each thing within a sizedarray will always start on an even byte-boundary with this, but if your structure doesn't keep everything aligned, you're still going to run into problems.

Note that the array indexes are from 0 to n-1, where n is the number of things you have in the array. This doesn't do bounds checking.

It's grabbing space by using allot, which I understand can be a bad thing at runtime. If you're not going to know the size of the array until runtime, you may have to rework this.

This has received almost no testing. The example works, but I can't say much more than that.

Anyone else who wants to improve it or offer a better way, please do!

--Travis



By [Barry Marks](#) on Thursday, April 27, 2000 - 04:39 pm: [Edit](#)

Thanks. I wasn't asking for someone to code it for me. Not that I could have done that myself yet. I thought there might already be a method for that. But thanks. I'll take a close look at this.

What is the objection to using allot at runtime?

What I'm looking at would be an array of 6 or 8 copies of a structure with about 6 or 8 cell sized items. Since the structure elements are all cell size, wouldn't that eliminate alignment problems?

I've already begun it using several arrays instead of an array of structures. It's pretty simple but I guess I like thinking in terms of structures from c. Would several arrays be more commonly used in Forth?

Barry



By [Erwin Schomburg](#) on Friday, April 28, 2000 - 04:26 am: [Edit](#)

Uh oh, time to chime in again. Once again, the objection against using ALLOT at runtime: The point of the matter is that ALLOT basically just increments the value returned by HERE. When it feels like it will run out of allocated dynamic memory to honor the request, it grabs another small chunk to accomodate the current ALLOT request plus a little more, so it does not have to do this every time something is ALLOTed. This works **only** in the Quartus environment, as soon as you compile a stand alone application the compiler generates and copies a data area the size of HERE plus some safety to the application under construction. This data area is of static size as seen from the stand alone

application when it is run. It follows that when you try to ALLOT from within a stand alone application at runtime you will likely end up with a fatal due to an attempt to access unallocated memory (at best).

/Erwin



By [Barry Marks](#) on Friday, April 28, 2000 - 12:01 pm: [Edit](#)

How do you allocate memory for an array at runtime in a standalone app, then?

Barry



By [Travis Casey](#) on Friday, April 28, 2000 - 01:03 pm: [Edit](#)

You can do it using ALLOCATE. ALLOCATE is part of the ANS standard memory-allocation wordset. However, to get ALLOCATE in Quartus, you'll need to include the memory library memo.

If all your stuff in a structure is cell-sized, you shouldn't have any problems with alignment using my SIZEDARRAY. If you want to have some stuff that isn't an even byte length, you can simply put all the non-even-sized things at the end, like so:

```
struct
  1 cells smallnum
  2 cells bignum
  1 chars aletter
  35 chars astring
end-struct astruct
```

Since only word or doubleword accesses have to be aligned, this will work fine. Note as well that my SIZEDARRAY will pad an odd-sized structure by one byte, to make sure every structure in the array starts on an even boundary.

You can find a lot more discussion of this in the thread about structures I mentioned before, including someone's code to make it easier to build "safe" structures.

I'm pretty new to Forth myself, so I don't know whether experienced Forth folks typically use parallel arrays instead of arrays of structures. Anyone? Anyone? Buehler?

--Travis

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Fun with Fonts!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Fun with Fonts!



By [Winchell Chung](#) on Tuesday, April 25, 2000 - 03:39 pm: [Edit](#)

I managed to make a custom font work in my app. For your general entertainment, I'll outline what I had to do to manage this feat.

I'm sure there is a less Rube Goldberg approach to this, I'm open to suggestions to streamline the process.

[1] First you have to make your font. I used FontEditor from <http://www.sochi.com/~sandy/fe/> (pay the shareware fee or you won't be able to save the font!)
Save it on your Palm/Visor as, for instance, myFont.pdb

[2] I am unsure if Backup Buddy NG is required at this point, but you have to hotsynch your Palm/Visor and have it save myFont.pdb to your desk computer (I'm assuming a Windows machine, Linux and Mac gurus are free to chime in with solutions for their machines)

[3] Now you need some kind of hex editor program. I just used the source code editor in MSVC++. You have to open myFont.pdb, delete the first 88 bytes, and save the result as something like pFNT03e8.bin . (0x03e8 = 1000, the desired resource ID). After you delete, the first two bytes should be 90 00.

[4] Now it gets goofy. Download and install Pila, the Palm assembly language development environment. (it's free!)

[5] In the \samples\pila\sample\ folder, move the following files to the \bin\ folder: sample.asm, sample.bat, sample.bmp, sample.rcp.
Then move pFNT03e8.bin into the \bin\ folder as well.

[6] Edit sample.asm .
At the top with the equates, add the following:
`fontMain equ 1000`

At the bottom with the resources, add the following:
`res 'pFNT', fontMain, "pFNT03e8.bin"`

[7] Assemble the program by double clicking on sample.bat. The program sample.prc will be generated.

[8] Double click on sample.prc to have the installation tool queue it for hotsynching to your Palm/Visor. Then do a hotsynch to install it.

[9] On your Palm/Visor, run the indispensable RsrcEdit program. Find Sample asm, open it, select and copy the pFNT 1000 resource.
Now find your application's resource, and paste pFNT 1000 into it.

[10] Add the following words to your app:

```
2Variable fontHandle0
Variable oldFont
```

```
: InitFont
  1000 [id] pFNT DmGetResource
  2dup fontHandle0 2!
  MemHandleLock

  129 >byte
  FntDefineFont throw
  129 >byte
  FntSetFont oldFont !
;

: ReleaseFont
  fontHandle0 2@ MemHandleUnlock
  throw
  fontHandle0 2@ DmReleaseResource
  throw
  oldFont @ >byte FntSetFont throw
;
```

[11] Finally, in your application's GO word, call InitFont at the start. In your event loop, on an appStopEvent, you should call ReleaseFont

The above code does not obviously crash my program, but otherwise I cannot guarantee it is bug free. I welcome an analysis by the older and wiser Forth gurus on the list.



By [Winchell Chung](#) on Tuesday, April 25, 2000 - 03:47 pm: [Edit](#)

Ummm, let's have some links here:

Font Editor is available at

<http://www.sochi.com/~sandy/fe/>

BackupBuddy NG is available at

<http://www.palmgear.com/software/showsoftware.cfm?sid=40736220000314142054&prodID=566>

Pila is available at

<http://www.massena.com/darrin/pilot/>

RsrcEdit is available at

<http://www.individeo.net/RsrcEdit.html>



By [Ron Doerfler](#) on Tuesday, April 25, 2000 - 04:47 pm: [Edit](#)

Wow! Just a note on [2]--can't you just set the backup bit for the pdb file in RsrcEdit to back it up on the PC, rather than using BackupBuddy NG? If it's just a database, this should work.

Ron



By [Jim Hendricks](#) on Tuesday, April 25, 2000 - 05:04 pm: [Edit](#)

Can't PilRC be used to both disassemble fonts authored on the Palm but also allow creation of your own fonts?

If this is correct, that averts alot of steps, and also eliminates the need to register the Font Editor.

It should be also noted that the font system calls you are making are OS 3.0 and above so the appropriate code should be added to the app to ensure the minimum OS requirement.

Jim



By [Winchell Chung](#) on Wednesday, April 26, 2000 - 04:24 pm: [Edit](#)

I'll bet setting the backup bit in RsrcEdit will do the trick! Thanks Ron!

Jim, I don't know a lot about PilRC, perhaps you are right.

Does anybody know how to use a custom font in a dialog?

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Bug in Toolkit?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Bug in Toolkit?



By [Matthew Burke](#) on Monday, April 24, 2000 - 03:48 pm: [Edit](#)

I have been going nuts over why

1000 array mem

wouldn't work on my IIIc or the VII I used to own. While reading though the thread on JimH's BrainF*** interpreter, I noticed the word Oallot and after comparing its definition with that of array's, I wonder if array ought to be:

```
: array (cells <name> -- )
  create cells here over allot swap 0 fill
does> swap cells + ;
```

Note that as it stands now, fill is called before allot.



By [Neal Bridges](#) on Monday, April 24, 2000 - 03:55 pm: [Edit](#)

That's a known bug in array -- sorry it bit you. I'll update that file!

Neal

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KeyDownEvent

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): KeyDownEvent



By [Michael Chen](#) on Sunday, April 23, 2000 - 09:23 pm: [Edit](#)

I need to retrieve a character from a keyDownEvent.

I know how to do ekey and get to the keyDownEvent part, and I'm stuck as to what to do with the event command. I have looked in the PalmOS api, and I know the structure for keyDownEvent is event-->data.chr is the char that was typed...but when i do event, it puts 280 on the stack...heres what I did

```
ekey  
(wrote an 'o')  
event  
.S <2> 4 280
```

how can I get the 'o' out of this?



By [Neal Bridges](#) on Sunday, April 23, 2000 - 10:14 pm: [Edit](#)

Do an EKEY>CHAR on the event itself, it'll return the character and true if it is a character event, false otherwise.

Neal



By [Michael CHen](#) on Sunday, April 23, 2000 - 11:33 pm: [Edit](#)

Thanks!

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Can't create .PRC with Palm OS v.3.3 (German)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Can't create .PRC with Palm OS v.3.3 (German)



By [Gerald Wutschitz](#) on Sunday, April 23, 2000 - 04:00 am: [Edit](#)

I'm a registered user of Quartus (Version 1.2.5R.)

Everything works fine, but when try to create a standalone PRC file I always get this errormessage:

Schwerwiegender Fehler

MemoryMgrNew.c,
Line: 3138, NillID

Reset

The translation of the title is "fatal error"

Any hints for me?



By [Neal Bridges](#) on Sunday, April 23, 2000 - 09:54 am: [Edit](#)

Are you running HackDeleteHack? It's known to conflict, and to cause that error.

Neal



By [Michael.Rowe](#) on Sunday, April 23, 2000 - 10:03 am: [Edit](#)

Below is a message which I posted previously. I am still making my executables on my Palm III (German). This error occurs with all hacks uninstalled.

mrr

By Michael Rowe on Friday, April 7, 2000 - 05:39 am:

I am having trouble creating an executable on either an 8mb Visor or Vx: I get the error message "MemoryMgrNew.c Line: 3138, Nill Id". This problem also occurs when making an executable for a trivial program. However, everything works fine on the 3mb Palm III. I am using 1.2.6R but the problem also occurs with 1.2.5R. Could this be a problem of using short pointers to the heap by makePRC?

regards, mrr



By [Neal Bridges](#) on Sunday, April 23, 2000 - 10:06 am: [Edit](#)

Michael, I must have missed this one while I was away -- sorry.

MakePRC doesn't use short pointers to the heap, nor are there any incompatibilities with the Visor. I'd appreciate it if you could send me a short example that reproduces the problem, so I can reproduce in on a Visor here, and track down the issue.

Neal



By [Michael Rowe](#) on Sunday, April 23, 2000 - 10:18 am: [Edit](#)

Below is a program which causes the crash.

regards, mrr

needs tools-exec
needs ids

```
: hello ." hello" cr ;  
: go hello ;  
' go (id) MEMT MakePRC Hello
```



By [nbridges](#) on Sunday, April 23, 2000 - 10:26 am: [Edit](#)

That compiles here without any error on a stock Visor Deluxe.

What is in 'tools-exec'?

Neal



By [Michael Rowe](#) on Sunday, April 23, 2000 - 10:49 am: [Edit](#)

tools-exec includes some files which I use frequently. I have removed the "needs tools-exec" line and the crash still occurs. I am running the Lanuch'Em program loader. I noticed previously that this causes the first few Quartus heap requests to return addresses which do not fit in short pointers, so this problem might have a similar origin.

I can hard-reset my Visor, and reinstall Quartus without Lanuch'Em and test if the problem goes away, if this would be useful. However, I like Launch'Em and will not give it up unless I have to.

mrr



By [Neal Bridges](#) on Sunday, April 23, 2000 - 11:08 am: [Edit](#)

If Launch'em is causing MakePRC to fail, I'd like to know -- please do test without it. If it's the problem, I'll investigate further.

Neal



By [JR Rodriguez IV](#) on Sunday, April 23, 2000 - 01:14 pm: [Edit](#)

Hi Neal,

When I install TrashHack, I can't create a PRC file and have to reset my Palm, actually it resets by itself.

Can this be fixed, bec I rely on TrashHack alot, since I have a habit of deleting and undeleting different types of apps several times during a day.

Thanks. 8-)

JR



By [Gerald Wutschitz](#) on Sunday, April 23, 2000 - 03:36 pm: [Edit](#)

Hi Neal,

I found the problem.

I removed "IrLink 1.5" and all works fine.

Thanks,

Gerald



By [Neal Bridges](#) on Sunday, April 23, 2000 - 06:10 pm: [Edit](#)

Gerald -- great! I'll make a note.

JR -- I have no idea what TrashHack is doing wrong, but I'll see if I can figure it out and protect the system against it. Generally, when there's this sort of problem, it's a hack that doesn't take care not to trash various CPU registers.

Neal



By [Michael Rowe](#) on Monday, April 24, 2000 - 12:29 pm: [Edit](#)

Good work Gerald,

after deinstalling IrLink 1.5, I can now write executables as well!

mrr

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Launching Applications

Quartus Handheld Software: Discussion Forum: [Quartus Forth \(PalmOS version\)](#): Launching Applications



By [Michael Chen](#) on Saturday, April 22, 2000 - 11:42 pm: [Edit](#)

I am new to FORTH and Quartus Forth, and have not yet registered it. I will register as soon as I can figure out some of the following things...If anyone could help me with some code examples (full code examples..I haven't even the vaguest idea how to do these things):

1. Launch an application based on creator id (e.g. "memo"), or based on app name (e.g. "Memo Pad").
2. Depending on method above, being able to make a popup list of all apps, and when one is selected, being able to launch the app.

To get a general idea of what I mean, I want to, in the end, design a sort of "launcher" type program. Programs will be able to be assigned to graffiti letters. So...in my preferences screen I want to be able to assign programs to letters much the same way as programs are assigned to hardware buttons in Preferences | Buttons. Then, later, when that stroke is entered, it will run the application. You don't need to explain (at least right now) how to implement the whole thing. I'm just totally confused on how to make systrops work and all that stuff, so if anyone knows how to make #1 and #2 above work in forth, that would be great! If not, then even just a simple equivalent of the pseudo code below:

```
launch("memo"); <-- to launch memopad
```

or

```
launch("Memo Pad"); <-- to launch memo pad
```

would be alright for starters

To give you an idea of what I know, this is about all I can do:

```
3 4 + .
```

:) Anyways...QForth looks really promising and I hope it can do what I want! Thanks for all your time!



By [Neal Bridges](#) on Sunday, April 23, 2000 - 12:19 am: [Edit](#)

This should get you started -- it's a short script that launches the MemoPad.

<http://www.quartus.net/discus/messages/23/231.html?WednesdayFebruary220000309pm#POST1311>

Neal



By [Michael Chen](#) on Sunday, April 23, 2000 - 10:00 am: [Edit](#)

Thanks Neal!



By [Michael Chen](#) on Sunday, April 23, 2000 - 10:38 am: [Edit](#)

OK, so I installed the program and it works fine, but I was wondering if anyone could help me or point me to a place where it could tell me the answers to the following questions so that I can understand the example better...

1. What do the following words do: >abs (ID) throw s>d 2&

2. Why 2variables and 2constants? Why are they different from variables and constants?

3. And in the part that says "\ Allocate a system-owned dynamic region: ", why is that needed, and when is it used?

I guess what I'm looking for is basically some kind of detailed forth words reference, and also a palm programming tutorial on systrops or something. Thanks!



By [Neal Bridges](#) on Sunday, April 23, 2000 - 11:11 am: [Edit](#)

The Palm systrops are all documented in the PDF SDK documentation available at <http://www.palmos.com>.

The Quartus Forth specific words (> ABS, etc.) are documented in the Quartus Forth manual.

2CONSTANT and 2VARIABLE are documented in the ANSI Forth Standard, provided in electronic form with each copy of Quartus Forth.

SysUIAppSwitch is a complicated Palm OS call -- part of what it requires is a system-owned region of memory, so the system can de-allocate it when the launched app terminates.

Neal



By [Michael Chen](#) on Sunday, April 23, 2000 - 11:24 am: [Edit](#)

Thanks again!



By [Michael Chen](#) on Sunday, April 23, 2000 - 11:51 am: [Edit](#)

I guess I'm slowly starting to understand this. Now, what I'm looking to do is create a word which will launch the creator id thats on the stack...so the first thing I did was try to put the whole thing in a word, so instead of having it run memopad when i

```
include launchmemo
```

```
it will launch it when i, for example
```

```
include launchmemo  
go
```

```
although, when I tried that, that, i got the following error
```

```
DmSearchStateType? undefined word
```

```
so, then I tried moving that line and the next two out of the word, and i get
```

```
memo? undefined word
```

```
what's going on?
```



By [Neal Bridges](#) on Sunday, April 23, 2000 - 06:08 pm: [Edit](#)

You can't just blindly put : and ; around a section of Forth code and expect it to always work as a function; changes are often required.

Here's the modified script for you to study (untested):

```
\ launchmemo
```

```
needs ids
```


needs core-ext

```
create DmSearchStateType 16 allot
variable cardnum
2variable localid
```

```
18 constant cmdPBsize
```

```
: launchmemo ( -- )
\ Find the MemoPad application:
  localid >abs  cardnum >abs  true
  [ID] memo  [ID] appl
  DmSearchStateType >abs  true
  DmGetNextDatabaseByTypeCreator throw
```

```
\ Allocate a system-owned dynamic region:
  cmdPBsize s>d MemPtrNew 2>r
  0 2r@ MemPtrSetOwner throw
```

```
\ Launch the app:
  2r> 0 localid 2@  cardnum @
  SysUIAppSwitch throw ;
```

Neal



By [Michael Chen](#) on Sunday, April 23, 2000 - 07:59 pm: [Edit](#)

I have one word to say about Quartus, and I'm sure you've heard it before: Unbelievable. I have been programming for a long time now, but have never encountered FORTH before. A while after I recieved my Palm IIIe, I was tempted to write programs for it. I've tried many development environments, but something draws me towards Quartus Forth. I'm not sure whether it's the simplicity or the elegance. Maybe it's the fact that the author and many other people strive to help both the new (like me) and the experienced. Congratulations Neal. I have never known a product/support package as good as this. That's what brought me to register Quartus Forth today. Thanks!



By [Michael Chen](#) on Sunday, April 23, 2000 - 08:00 pm: [Edit](#)

By the way...the example code worked after I changed

```
\launchmemo
```

```
to
```

```
\launch (or anything else)
```

```
because apparently
```

```
include launchmemo
```

```
also caused the launchmemo word to be executed
```

```
but, that's what I was looking for..thanks.
```



By [Neal Bridges](#) on Monday, April 24, 2000 - 09:51 am: [Edit](#)

Thanks for the kind words, Michael -- and thanks for your registration!

Neal

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Development Environment ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Development Environment ?



By [secristr](#) on Saturday, April 22, 2000 - 10:03 pm: [Edit](#)

Can I write ANSI Forth elsewhere and easily send it to/from Quartus on a Palm somehow ?

Thanks,
rcs



By [Neal Bridges](#) on Saturday, April 22, 2000 - 10:55 pm: [Edit](#)

Yes -- you can use GForth on the desktop to write ANSI Forth, and then paste that into the Palm Desktop software to synchronize it into your Palm.

Neal

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Use of GoType! Keyboard ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Use of GoType! Keyboard ?



By [secristr](#) on Saturday, April 22, 2000 - 10:02 pm: [Edit](#)

Can Quartus Forth be used with the GoType! keyboard ? If so, how ?

Thanks,
rcs



By [Mark Beckman](#) on Saturday, April 22, 2000 - 10:07 pm: [Edit](#)

What do you mean ? I used a GoType keyboard all the time with Quartus and it works fine. I have one of the function keys defined to start quartus, so moving back and forth from Memo to Quartus is a single keystroke.

One thing: If you are using an older driver get the 1.6 (or better) drivers from the landware site. These deal with auto power offs much better.



By [rcs](#) on Sunday, April 23, 2000 - 01:37 pm: [Edit](#)

Thanks Mark. I am new to the Palm so am not yet acculturated as to how things are done. The idea of moving back and forth from Memo to Quartus had not occurred to me. I guess one essentially cut-and-pastes back-and-forth all of the time and can't use it directly (no biggie, I just didn't understand that). I need to figure out the function key trick then. Thanks for the driver tip !

Regards,
rcs



By [Jonathan Lerwill](#) on Sunday, April 23, 2000 - 05:33 pm: [Edit](#)

I Use SwitchHack <http://www.deskfree.com/> to switch between Quartus and Memopad using one grafiti stroke

Regards
Jonthan Lerwill



By [Mark Beckman](#) on Sunday, April 23, 2000 - 11:26 pm: [Edit](#)

Actually I don't do much in the way of cut and past between the Memo pad and Quartus. I have a shortcut (i) setup to mean "include " and I just include what ever memo I am working on. I recomend testing each word as you create it, against a full range of inputs if possible. This will make debugging later much easier!

Its hard to beat the defined keys in GoType! for task switching but when I am using grafitti (which is most of the time) use Phlegm hack instead of Switch hack. Its cheaper (free) and has some nicer features. I got it at pilotgear.com



By [Neal Bridges](#) on Monday, April 24, 2000 - 11:13 am: [Edit](#)

While I'm working heads-down on a specific project, I put

include project

at the bottom of startup.quartus -- that way it loads and compiles each time I start Quartus Forth.

Neal

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Textalign

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Textalign



By [Gary](#) on Saturday, April 22, 2000 - 04:48 pm: [Edit](#)

Hi, I am trying to put a paragraph of text in the middle of the screen. I tried textalign and got a fatal error. I used type.center. Here is what I wrote.

needs textalign

```
: go MainForm type.center
." Maintext here" cr type.center
." more text here" cr type.center
." still more here" begin key drop again ;
go
```

I get a fetal error when I try to run this.



By [Neal Bridges](#) on Saturday, April 22, 2000 - 06:50 pm: [Edit](#)

." is not what you want to use. Here's what works:

needs textalign

```
: go
  MainForm
  s" Maintext here" type.center cr ;
```

Neal



By [Gary Wiese](#) on Saturday, April 22, 2000 - 10:02 pm: [Edit](#)

I tried it and I get a bunch of nonsense and a go? stack underflow error.

This what I type:

```
\ owner
```

needs textalign

```
: go MainForm
s" main text" type.center cr ;
```

include owner

Here is a whole line of box's and a few symbols..

Exception in file: owner

go? stack underflow



By [Neal Bridges](#) on Saturday, April 22, 2000 - 10:57 pm: [Edit](#)

My error --

needs textalign

```
: go
  MainForm
  s" Maintext here" 80 type.center cr ;
```

The '80' specifies what pixel will be at the center.

Neal



By [Gary Wiese](#) on Sunday, April 23, 2000 - 01:10 am: [Edit](#)

Thanks I got it to work. Now for another question. How do I use the fonts lib?

For example, how do make the font of the text change to a very large or very small font. I try some things, but they didn't work.

Could you give a small example?

Thanks

Gary



By [Neal Bridges](#) on Sunday, April 23, 2000 - 10:02 am: [Edit](#)

The fonts library source is a simple enum, listing the IDs of the built-in fonts.

There are only a few fonts available on the Palm, in fixed sizes. Here's how you switch to a font to use it:

needs fonts

```
largeFont font drop
.( This is the large font) cr
```

```
boldFont font drop
.( This is the bold font) cr
```

```
stdFont font drop
.( This is the standard font) cr
```

Neal



By [Gary](#) on Sunday, April 23, 2000 - 01:07 pm: [Edit](#)

Could you please explain the differences in these?

. "
z"
s"
.(

I see these used and can't find any documentation on them. They all seem to do the same thing.

Happy Easter
Gary



By [Travis Casey](#) on Sunday, April 23, 2000 - 03:33 pm: [Edit](#)

Well, I'm not Neal, but I'll take a shot at it.

First off, you need to understand that Forth has two modes: compile and interpret. When you're inside a colon-definition (between a : and a ;), you're in compile mode. When you're not, you're in interpret mode. (Actually, that's a vast oversimplification, but it'll do for right now.)

Some Forth words only work in compile mode, and some only work in interpret mode. Why? Don't ask me -- I didn't create this thing. :-)

. " and .(do the same thing, except that . " works in compile mode and .(in interpret mode. Both of them display all the text up to the next " -- however, . " does it whenever a word containing it is run, while .(does it when it's typed in. (Again, oversimplifying.)

z " and s " are used to define strings that can be used by other words. Each of these allocates a bit of memory, copies the data you give into it, and returns the address of that memory and the length of the string that was created.

s " just makes the string you request, and is a standard part of Forth. z " makes the string you request and tacks the value '0' onto the end of it. This is how C usually represents printable strings -- the z " stuff exists to make it easier for Forth programs to communicate with libraries written for C programs -- like the PalmOS system libraries.

Note that both s " and z " only work in compile mode. Further, z " isn't standard Forth -- Quartus defines it in a library for people to use, but unless you have "needs zstrings" or "include zstrings" in your program, you won't be able to use

z".

So, in summary:

```
.(  -- echoes text right now (interpret mode)
."  -- echoes text when this word is run (compile mode)
s"  -- creates a text string for later use (compile mode)
z"  -- creates a C-compatible text string for later use
      (compile mode, needs 'zstrings' library)
```

--Travis



By [Gary](#) on Sunday, April 23, 2000 - 09:26 pm: [Edit](#)

Thanks for the help, its a lot more clear now.

I did understand about the two modes interpret and compile. I did not know about the differences in

```
.(
."
.s
z"
```

Thanks again
Gary

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External libraries?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): External libraries?



By [Winchell Chung](#) on Saturday, April 22, 2000 - 04:03 pm: [Edit](#)

I'm still bumping the 44k limit on an application. I seem to recall that an app cannot be bigger than 64k or something like that, but in any event, my app is huge.

Currently I'm in a loop: [1] Factor to scrounge more codespace, [2] use up the newly freed codespace to implement the next feature.

Meanwhile, could somebody endorse/shoot down my latest nefarious scheme to get more codespace?

I noticed that the application "MoonInfo" requires something called an "external library" (MEW3_lib.prc).

I cannot find documentation on this, but it seems analogous to a Win98 Dynamic Link Library (DLL).

If so, this would seem to be a way to bypass the 44k limit. Assuming a Quartus app can access these libraries. And assuming that I haven't totally misunderstood what these things are.

I'm interested because the next major feature of my game would work well in such an external library. The "two human player" version is working reasonably well. For a "human vs the Palm/Visor" version, the game AI would logically fit in an external library.

Any charitable souls out there who would care to allow me to bask in the light of your programming knowledge? <grin>



By [Neal Bridges](#) on Saturday, April 22, 2000 - 06:47 pm: [Edit](#)

One way to do it is to create a second sub-app -- call it a library if you wish -- and launch it from the first app. You can give it a database type of something other than 'appl', so it doesn't show on the application launcher.

Give that some thought. It's a simple idea, and it'll give you the room you need.

Neal



By [Winchell Chung](#) on Saturday, April 22, 2000 - 08:09 pm: [Edit](#)

Sounds good to me! I'll give it a try.



By [Jonathan Lerwill](#) on Wednesday, May 3, 2000 - 06:28 pm: [Edit](#)

Sub-Apps

Neal, I've been experimenting with your proposed sub-app solution to the "Calling the same (library) code from several apps" problem. Do you have any words of wisdom about how to pass arguments and retrieve results ?

/Jonathan



By [Neal Bridges](#) on Wednesday, May 3, 2000 - 09:55 pm: [Edit](#)

I'd pass them as features, using the Ftr* calls.

Neal



By [Jonathan Lerwill](#) on Thursday, May 4, 2000 - 11:23 am: [Edit](#)

It seems that these can only pass a DWORD unless the OS is 3.1 or newer :-)
This would be fine for a return value. Will I, in the next release, be able to pass a structure by using the cmdPBP pointer of the sysLaunchApp call. If so is the next release in beta.

/ Jonathan



By [Neal Bridges](#) on Thursday, May 4, 2000 - 11:40 am: [Edit](#)

Version 2 is not yet in beta.

Another option for passing parameters is to pass them as application preferences, using PrefGetAppPreferences and PrefSetAppPreferences.

Neal



By [Jonathan Lerwill](#) on Thursday, May 4, 2000 - 05:21 pm: [Edit](#)

That's what I've done. It's nice to, at least once, have found a solution before you suggested it. I'll look forward to hearing more about v2 "shortly". I work for a company that makes a PROLOG compiler so I understand that "shortly" means "in the future" :-)

/ Jonathan

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I can't seem to get the registered version to create a PRC file! 8(

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): I can't seem to get the registered version to create a PRC file! 8(



By [JR Rodriguez IV](#) on Saturday, April 22, 2000 - 03:05 pm: [Edit](#)

Although I'm a computer college graduate, I haven't really programmed anything since the mid-80's.

I've learned Basic, Turbo Pascal, C & C++, all during the DOS and Apple days.

Anyway, I want to start off again with my Palm, and while trying out the test programs in the unregistered manual's first few pages, I can't seem to get Quartus Forth to create the hello.prc file.

I really need a lot of help in re-learning how to program again.

I hope to meet someone VERY PATIENT here who is willing to receive and send me e-mail about general juvenile Quartus Forth programming questions.

I'd love to post my questions here, but maybe at a later date, when I'm a bit better than grade 1.

Hope you can help me with hello.prc, or if you can direct me to a book that I can read, not just a tutorial, but a complete book, or something like that.

Thank you,

JR



By [Neal Bridges](#) on Saturday, April 22, 2000 - 03:47 pm: [Edit](#)

```
\ hello
```

```
needs ids
```

```
: go
  MainForm
  ." Hello, World!"
  begin key drop again ;
```

```
' go (id) Helo MakePRC Hello!
```

This code will create a stand-alone PRC that displays "Hello, World!". Give it a try

-- let me know where you have problems with it, if any.

We're all very patient here, and happy to answer questions; you can email me directly, or post messages right in this forum.

Good luck, and let us know how it goes!

Neal



By [JR Rodriguez IV](#) on Sunday, April 23, 2000 - 12:57 am: [Edit](#)

Unfortunately, I still get the error:

Exception in file: hello
MakePRC? Invalid registration code

I copied that word for word.

JR



By [JR Rodriguez IV](#) on Sunday, April 23, 2000 - 04:28 am: [Edit](#)

Yes! It works now!

Thank you very very much!

I failed to enter the registration code.

Sorry.

I'll be in touch, many many more times I'm sure.

8-)

JR



By [Neal Bridges](#) on Sunday, April 23, 2000 - 09:59 am: [Edit](#)

JR, glad you got it working. Let us know if you have any other trouble!

Neal

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Database advice sought

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Database advice sought



By [Dave Bennett](#) on Saturday, April 22, 2000 - 06:49 am: [Edit](#)

I'm designing a new application that will require a database for information storage.

I would like to use the default datamanager stuff and was wondering if someone could

give me a quick "run through" on pros, cons, & gotchas from their own experiences.

In my application the data will be displayed in many different views, organized variously

with different leading fields depending on the purpose of the viewing. Also, I need to be

able to balance the data inside the application via infrared between two or more Palms.

(The ideal is to have a master palm that everyone syncs their database to.)

Any thoughts will be greatly appreciated.

Thanks.

Dave



By [Jim Hendricks](#) on Monday, April 24, 2000 - 09:37 am: [Edit](#)

Just as a heads up, the built in datamanager only manages records. If you need fields within a record, you must define your own management scheme for this. Additionally if you need indexing (for searches) you need to create this scheme yourself. Finally, if you need any form of relational data, you need to define the mechanism. I understand that MobileDB is a relational DBMS, but I don't know if they expose an API for apps written in other than their forms based apps.

Hope this helps, Jim

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Newbie code critique needed

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Newbie code critique needed



By [Rick F](#) on Friday, April 21, 2000 - 12:51 pm: [Edit](#)

Hi.. long after I got my registration code for Quartus, I'm finally playing around a bit.. I finally made up my mind to write a US Savings Bond program as my example application. Anyway, I'm starting off with my coding by writing the database stuff first. So far, I've written some code to open/create my database used to store each bond record. Can you all please check my code and see if I'm doing anything too far off.. I've found that if I invoke the "OpenBondDB" word, it works the first time and leaves a single value on the stack (assumed to be my database pointer -- is there a better way than issuing a "." to print the stack?) If I then invoke the "CloseBondDB" word, I get an exception 525 or something like that. By the way, I'm doing this from within Pose 3.0a5. Thanks for any input!

-- Rick

Here's the code :

```
\ Bonds
\ CreatorID is 'Bond'
needs safe
needs DataMgr
needs zstrings
needs ids

\ Declare all types & variables..
: BondsDBname z" BondsDB" ;
ID DATA ID Bond

: dbExist? ( z-addr -- flag )
\ z-addr is the address of a
\ null-terminated database name
\ see zstrings
\ upon return, flag is a double-cell 0
\ if database doesn't exist
>abs 0 ( using card number 0 )
DmFindDatabase
\ return false if not existing
or 0= 0= ;

\ Open the Bonds database, create
```

```
\ if necessary (if it doesn't exist)
: OpenBondDB ( -- dbr. )
BondsDBname dbExist?
if
dmModeReadWrite BondsDBname
OpenDB
then
DATA Bond BondsDBname
CreateDB ;

: CloseBondDB ( dbr. -- )
CloseDB ;
```



By [Rick F](#) on Friday, April 21, 2000 - 04:08 pm: [Edit](#)

Never mind! I found the database example in the library file area.. I had looked for that the other day and didn't find it. Anyway, a closer look at the site, revealed the file in question.. So, off I go to back to coding..

-- Rick



By [Neal Bridges](#) on Friday, April 21, 2000 - 10:23 pm: [Edit](#)

Glad to hear it, Rick. Let us know if you need any help!

Neal

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How to use exceptions?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): How to use exceptions?



By [Eugene Zalyubovsky](#) on Friday, April 21, 2000 - 08:10 am: [Edit](#)

I couldn't find word NOT, so made it myself:

```
: not ( bool -- !bool )
  1 enough? \ stack not empty
  if
    if false else true then
  else
    \ Generation of exception
  then
;
```

I want to make "safe word", so i check the fact that stack is not empty. If it's empty, I want to generate exception. How can I do this?



By [Travis Casey](#) on Friday, April 21, 2000 - 09:44 am: [Edit](#)

There's an easier way to define NOT:

```
: not ( bool -- !bool )
  0= ; inline
```

As for checking the stack, you can use the word DEPTH to get the current stack depth, and THROW to generate an exception. With NOT, you could do this:

```
: not ( bool -- !bool )
  depth 0= if -4 throw then
  0= ;
```

You probably don't want to inline this version.

--Travis



By [Neal Bridges](#) on Friday, April 21, 2000 - 01:01 pm: [Edit](#)

Here's an alternate version:

: not (x -- bool) 1 enough? 0= ;

Neal

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0000000000000000 , 0000000000000000 ,
0000000000000000 , 0000000000000000 ,
0000000000000000 , 0000000000000000 ,
0000000000000000 , 0000000000000000 ,
decimal

since these bitmaps are monochrome, sending the data as binary data makes it easier to visualize your image. Since , stores data as a cell (16 bits) the bitmap data must be broken up into 16 bit chunks. Additionally, each row of bitmap data must be cell aligned so even though we only have 20 columns in our data, it must be stored as 32 bits per row for the cell alignment. In the example data above, the bitmap is all blank (all zero's) you put in the example above the 1's where you need "on" pixels.

3. Draw bitmap to screen

40 50 mybitmap

Since mybitmap is an actual word, it's action is to display itself, using the top 2 items on the stack as it's x & y (I forget which order)

Hope this helps!

Jim



By [Neal Bridges](#) on Monday, April 17, 2000 - 03:35 pm: [Edit](#)

Also relevant: [telephone.txt](#)

Neal



By [Dave Bennett](#) on Monday, April 17, 2000 - 04:35 pm: [Edit](#)

I'll give it a whirl.



By [Dave Bennett](#) on Tuesday, April 18, 2000 - 05:01 pm: [Edit](#)

In the telephone text example I don't see the typical : sss ; configuration.

Is the whole part before the Example: part of the definition of the bitmap?

Does it have to be included in a word itself?

Dave



By [Neal Bridges](#) on Tuesday, April 18, 2000 - 05:03 pm: [Edit](#)

The whole part before the "Example:" defines the word 'telephone' -- a graphical object that draws itself at the specified coordinates. You can use the resulting object either while interpreting, or while compiling.

Neal



By [Dave Bennett](#) on Tuesday, April 18, 2000 - 05:05 pm: [Edit](#)

Never mind. I got it to work! And it looks good, too.

I guess I need a guideline as to when to use the bitmap lib vs. using bitmaps stored in resources.

Dave



By [Neal Bridges](#) on Tuesday, April 18, 2000 - 07:07 pm: [Edit](#)

I use bitmap whenever the bitmaps are tiny.

Neal

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Quartus Forth on Palmpower magazine

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Quartus Forth on Palmpower magazine



By [Alex Alava](#) on Monday, April 17, 2000 - 01:54 am: [Edit](#)

Hi All,
There is an article on Quartus Forth on the latest issue of palmpower magazine written by Mark Lawson.

www.palmpower.com

Good exposure

Alex

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Is there a way to make "." print offscreen?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Is there a way to make "." print offscreen?



By [Winchell Chung](#) on Friday, April 14, 2000 - 12:08 pm: [Edit](#)

I am doing some "double buffering", drawing to an offscreen bitmap and then copying it to the main window.

Alas, I just discovered that the "." and "." words always print to the main screen.

Is there any easy way to direct their output to an offscreen bitmap? Or am I stuck drawing alphabetic and numeric bitmaps?



By [Neal Bridges](#) on Friday, April 14, 2000 - 12:19 pm: [Edit](#)

Those words always print to the currently active window. You can change the active window -- as I recall -- with WinSetActiveWindow.

Neal



By [Winchell Chung](#) on Friday, April 14, 2000 - 04:17 pm: [Edit](#)

D'OH!!! <smacks forehead>
I'm always overlooking the obvious...

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E-mail:

Beware! Bad C++ habits!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Beware! Bad C++ habits!



By [Winchell Chung](#) on Friday, April 14, 2000 - 12:05 pm: [Edit](#)

I have got to stop blindly assuming that when I am programming in Forth that I am just using funny-looking C++.

Example, I just got the dreaded "Dictionary Overflow" message. And indeed a `csunused u.` revealed that I had about 140 bytes left.

Looking around for things to streamline, I quickly discovered that I was misusing the Constant Forth word.

In C++, I had formed the habit of utilizing the `#define MYCONSTANT 0` construct to assign meaningful names to numbers. I had been absent-mindedly doing the same thing with Constant.

Inspection revealed that I had lots of places where I defined a constant, then only used the constant in one place.

I replaced the constant with a number (and a comment) in all these places. My codespace free jumped from 140 to 2552!!!

Now it is factoring time. And pruning, I also noted that I had a few words defined in case I needed them, but turns out that they were never used.



By [Neal Bridges](#) on Friday, April 14, 2000 - 12:20 pm: [Edit](#)

You must have a big app on the go, Winchell. Are you using 1.2.5R?

Neal



By [Winchell Chung](#) on Friday, April 14, 2000 - 04:15 pm: [Edit](#)

Yes, I'm using 1.2.5R, `csunused reports` 44314 free before compiling my app.

It *is* a largish app, about 3670 lines of code. The *.prc file is about 42K. I guess I'm pushing the limits.

I did manage to free more space by factoring and otherwise `r/e/m/o/v/i/n/g///s/t/u/p/i/d///c/o/d/e/` making the code more efficient. I've got about 3400 free now, that should be enough.

But when I am done, I'll have an Ogre cybertank on my Visor!



By [Neal Bridges](#) on Friday, April 14, 2000 - 05:21 pm: [Edit](#)

I'm not sure what that is, but it sounds impressive. :)

Neal



By [Ron Doerfler](#) on Friday, April 14, 2000 - 10:13 pm: [Edit](#)

A few things to consider:

1. If you don't include safe.txt, you save a few thousand bytes on an app your size.
2. I've found that systrap calls consume a number of bytes, so you can put ones that you use more than a couple of times into their own Quartus word and just call that.
3. Looking through your included library files, you will no doubt see a lot of words that you don't use--you can extract the ones you need into a file included just for your app. Watch out, though, for other included library files that include the original library file.
4. Factor, Factor, Factor. In my case, if I'm not forced to go back through my code and do major re-factoring, it's pretty inefficient.

Ron



By [Winchell Chung](#) on Sunday, April 16, 2000 - 05:58 pm: [Edit](#)

Mr. Doerfler, thanks for the pointers! Especially the one about systrap calls.

Mr. Bridges, "Ogre" is an ancient paper and cardboard wargame that I was involved with back in the late 1970's. There was an IBM PC, Atari 800, and C64 versions in the early 1980's.

I thought it would be nifty to port it to the Palm/Visor platform. So far it has gone pretty smoothly. Quartus Forth does the job!

In the remote possibility that anybody wants more info, you can read about "Ogre" at <http://www.sjgames.com/ogre/>



By [Garth T Kidd](#) on Sunday, April 16, 2000 - 08:16 pm: [Edit](#)

Ogre! Ogre! Wahooooooooo!

Deem begging for beta-testing included.



By [Winchell Chung](#) on Monday, April 17, 2000 - 10:51 am: [Edit](#)

Mr. Kidd, you will be receiving a present by email in a couple of days.
And let this be an inspiration to you as to what one can accomplish with Quartus.



By [Travis Casey](#) on Monday, April 17, 2000 - 11:39 am: [Edit](#)

I actually have a copy of the paper "Ogre", and would like to beg to be a beta-tester. :-)

--Travis



By [Winchell Chung](#) on Monday, April 17, 2000 - 03:35 pm: [Edit](#)

You are on the list as well, Mr. Casey!

By the way, you might want to examine your copy of Ogre and see who did the illustrations in the rulebook...

More at <http://www.clark.net/pub/nyrath/ogre.html>

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Storing into a structure

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Storing into a structure



By [Barry Marks](#) on Thursday, April 13, 2000 - 06:15 pm: [Edit](#)

I'm getting a crash on the following:

0 2579 !

That's storing into a structure that begins at 2306 and is 1584 bytes long. The address 2579 is a single cell. I'm getting these numbers from .s placed at strategic locations within the code. The address 2579 is within the i-data member of the structure...the bitmap data bits.

Given those numbers I can't see how that store could cause a problem but it gives a fatal error. I've checked all these numbers very carefully, but since I don't know what I'm doing in Forth yet that doesn't mean they're right, although I think they are.

Is a structure read-only for any reason?

Does anyone have any idea what could cause this?

Should I consider programming in BF instead?

I found out this was where my problem was last night and I've been trying to figure it out ever since. I just can't see a problem.

Barry



By [Neal Bridges](#) on Thursday, April 13, 2000 - 11:39 pm: [Edit](#)

2579 is an odd address -- you can't store a 16-bit value at an odd address on the DragonBall CPU. Use two C! or ensure that the address is aligned first.

Neal



By [Barry Marks](#) on Friday, April 14, 2000 - 11:56 am: [Edit](#)

Ah! Thank you. I thought I was losing my mind. :)

I did know that. I've seen it mentioned here a few times. But it never occurred to me.

I do have to write a 16 bit value there so I'll write 2 8 bit values at consecutive addresses. Presumably that's legal.

That's kind of bad for graphics, isn't it?

Barry



By [Neal Bridges](#) on Friday, April 14, 2000 - 12:21 pm: [Edit](#)

I'm not sure I understand -- bad how?

Neal



By [Barry Marks](#) on Friday, April 14, 2000 - 02:31 pm: [Edit](#)

Bad when you're writing a sprite. This sprite lies within a 16 bit area and is first shifted right a number of bits (depending on the x coordinate) and then written to the proper address. It would be nice to be able to do a 16 bit write.

I didn't mean it as a major complaint. It's a minor point.

Barry



By [Neal Bridges](#) on Friday, April 14, 2000 - 05:20 pm: [Edit](#)

Ok -- I understand. Two byte-sized writes are still pretty fast.

Neal



By [jimh](#) on Friday, April 14, 2000 - 05:21 pm: [Edit](#)

Barry, how about this

```
: 2c! ( n addr -- )  
>r dup 8 rshift r@ c!  
255 and r> 1+ c! ;
```

Jim



By [Barry Marks](#) on Friday, April 14, 2000 - 07:20 pm: [Edit](#)

That's not quite what I'm doing but it's close. I'm using similar code but it didn't occur to me to make a separate word of it. I think I'll do that.

One of the problems I'm having with the word I'm working on is that it's too long. It's made up of about 20 words. Maybe more. I know better but I was just feeling my way through this and it just kept growing. I need to start thinking in terms of words like that.

Breaking things down that small is inefficient in c if you overdo it because of the overhead of a function call. But I guess the overhead isn't as much here and it

probably will reduce the amount of shifting around of numbers I'm doing on the stack.

Actually in c I might make something like that into a macro.

Barry



By [Barry Marks](#) on Saturday, April 15, 2000 - 05:50 pm: [Edit](#)

Jim, I just made the 2c! word and by the time I had it working I realized that it was what you had showed me in your post. I guess I was confused. :)

I guess it takes time to learn to keep the stack straight in my mind.

Barry



By [Bill McCarthy](#) on Saturday, April 15, 2000 - 09:47 pm: [Edit](#)

There is a cost to `2c!`. If `even` and `odd` are even and odd address constants, `1000 even !` takes about 3.72 microsecs on my device. `1001 odd 2c!` takes 18.10 microsecs. You can arrange structures to avoid this problem by ordering the fields and/or using padding.

Here's an extention to `struct` which assures proper alignment. I noticed that floats in Quartus are aligned on addresses divisable by 4, even though cell alignment is quite adequate on my IIIx. If this is true on the other supported platforms, perhaps Neal should eliminate this wasteful restriction. Meanwhile, it's easy to redefine `floats` and 'float+' near the top of your startup file.

At the end is two sample structures. Note the padding hit between `sizeof bad` and `sizeof good`.

```
\ struct-ext 0.4.15 WJMc
```

needs struct

```
: structdoes ( offset n offset -- )
  create , + does> ( o -- o+n) @ + ;

: char: ( o n "fieldname" -- )
  chars over structdoes ;

: cell: ( o n "fieldname" -- )
  cells swap aligned tuck structdoes ;

: 2cell: ( o n "fieldname" -- ) 2*
  cells swap aligned tuck structdoes ;
```

```
: float: ( o n "fieldname" -- ) floats
swap faligned tuck structdoes ;
```

\ Order is important - Examples:

```
struct
  1 char: c1    1 cell: n
  1 char: c2    1 2cell: d
  3 char: c3    1 float: f
end-struct bad
```

```
struct
  1 float: ff    1 2cell: dd    1 cell: nn
  1 char: cc1    1 char: cc2    3 char: cc3
end-struct good
```



By [Neal Bridges](#) on Saturday, April 15, 2000 - 10:36 pm: [Edit](#)

Floats are four bytes each, so aligning them on four-byte boundaries is wise.

Neal



By [Barry Marks](#) on Sunday, April 16, 2000 - 12:08 am: [Edit](#)

All the writing to the struct is within the bitmap data and that could be aligned either odd or even depending on the x coordinate. I don't know of any way to avoid writing to odd addresses. The address to be written to can be anywhere within a 1500 byte range.

I'm shifting 8 bits within 16 bits to get the correct position. I suppose I could shift it within 32 bits and guarantee an even address but that would be even slower.

Barry



By [Neal Bridges](#) on Sunday, April 16, 2000 - 12:19 am: [Edit](#)

If speed becomes a bottleneck, re-write 2c! in assembler.

Neal



By [Bill McCarthy](#) on Sunday, April 16, 2000 - 12:44 am: [Edit](#)

Neal Bridges said on Saturday, April 15, 2000 - 10:36 pm:

>Floats are four bytes each, so aligning them on four-byte boundaries is wise.

Doubles are also four bytes each, but are cell aligned. With space a premium, so

should float.

Bill



By [Neal Bridges](#) on Sunday, April 16, 2000 - 09:57 am: [Edit](#)

There's no separate word for aligning doubles. ALIGNED and ALIGN align for cells.

here align . -> 508

508 1+ aligned . -> 510

FALIGN and FALIGNED are used for float-alignment. This means:

here falign . -> 508

508 1+ faligned . -> 512

This doesn't waste space -- and because floats can be stored at any even address, you can use ALIGN and ALIGNED where you wish:

509 aligned 1 floats + . -> 514

Neal



By [Neal Bridges](#) on Sunday, April 16, 2000 - 10:06 am: [Edit](#)

To shed a bit more light:

If a given address *a* is aligned for cell (two-byte) storage, then the ALIGNED value of *a+1* will be the next highest cell-location in memory that doesn't step on the first cell. This would be true even in systems that allowed you to store a cell at any address, even or odd.

Likewise, if a given address *a* is float-aligned, then the FALIGNED value of *a+1* will be the next highest float-location in memory that doesn't step on the first float.

Neal



By [Barry Marks](#) on Sunday, April 16, 2000 - 12:29 pm: [Edit](#)

<<< If speed becomes a bottleneck, re-write 2c! in assembler. >>>

The sprites in this will move so slowly that it won't be possible to make them smooth with pixels this large, I suspect. Speed is no problem.

I'm just trying to be efficient as I can while I learn. I could probably get away

with being pretty sloppy. In fact, I probably will, not knowing what I'm doing. :)

However, I probably will start learning some 68k asm pretty soon. I did some for a couple of months about 15 years ago, but that's about it. I have done a lot of 6809 asm but that was even longer ago.

Which reminds me of a question I've been meaning to ask. We're using 16 bit addresses in Forth, in a 32 bit system. Where is the other 16 bits? Is there a base register? I remember there was an 8 bit base register on the 6809, and it made for some pretty fast code. There was also pc relative addressing that kept everything position independant. How is Forth doing it? Or do I need to read the 68k manual to understand?

Barry

Barry



By [Neal Bridges](#) on Sunday, April 16, 2000 - 03:25 pm: [Edit](#)

The A5 register is the base register for dataspace. All generated code is position-independant.

Neal

Add a Message

Username:

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Self printing Forth word

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Self printing Forth word



By [Edin Hodzic](#) on Wednesday, April 12, 2000 - 04:18 am: [Edit](#)

Here is a self printing Forth word. Doesn't work great on QF console though.

```
: w s" : w s over 5 type 34 emit 32 emit 2dup type 34 emit 5 - >r 5 + r> type ;"  
over 5 type 34 emit 32 emit 2dup type 34 emit 5 - >r 5 + r> type ;
```

A shorter version is most likely possible :-).

Edin Hodzic



By [Neal Bridges](#) on Wednesday, April 12, 2000 - 11:03 am: [Edit](#)

Clever, Edin!

Neal



By [E.](#) on Thursday, April 13, 2000 - 12:26 am: [Edit](#)

```
$ cat quine.fth  
cr  
.( include quine.fth )  
cr  
$ cat quine2.fth  
: me  
S" see me" evaluate ;  
$
```

The first one is mine, the second one is not.

I think they're both cheating. :)

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

BrainF***

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): BrainF***



By [Jim Hendricks](#) on Tuesday, April 11, 2000 - 04:51 pm: [Edit](#)

BrainF*** referred to as bf from here out is the smallest Turing complete language in existence. To learn more of bf follow this link [Wierd Programming Languages](#)

As a simple play around with Quartus, I came up with the following BF implementation. Currently the input instruction is not implemented yet. For real flexibility, the output needs to be filtered to allow control codes. Have fun!

\ bf

needs toolkit

needs case

create codespace 5000 chars 0allot

create memory 5000 chars 0allot

variable codelength

0 codelength !

variable codePointer

0 codePointer !

variable memPointer

0 memPointer !

: cAt (char addr len -- addr | 0)

0 do

1+ dup c@ 2 pick

= if

swap drop unloop exit

then

loop

2drop 0 ;

: cInc (caddr --)

dup c@ 1+ swap c! ;

: cDec (caddr --)

dup c@ 1- swap c! ;

```

: Inc ( addr -- )
1 swap +! ;

: Dec ( addr -- )
dup @ 1- swap ! ;

: curAddr ( -- addr )
memPointer @ chars memory + ;

: curVal ( -- n )
curAddr c@ ;

: bf> ( -- )
memPointer Inc ;

: bf< ( -- )
memPointer Dec ;

: bf+ ( -- )
curAddr cInc ;

: bf- ( -- )
curAddr cDec ;

: scanFor] ( -- )
[char] ] codeSpace codePointer @ +
codeLength @ cAt ?dup 0= if
  codeLength @ 1+ codePointer !
else
  codeSpace - codePointer !
then ;

: bf[ ( -- | loopRet )
curVal 0= if
  scanFor]
else
  codePointer @
then ;

: bf] ( loopRet -- | loopRet )
curVal 0= if
  drop
else
  dup codePointer !
then ;

: bf. ( -- )

```

```

curVal emit ;

: bfc: ( "string" -- )
-1 parse tuck
codespace codelength @ +
swap move codelength +! ;

bfc: >+++++++
bfc: [<+++++++>-]<.
bfc: >+++++++[<++++>-]<+.
bfc: ++++++..+++
bfc: [-]>+++++++[<++++>-]<.
bfc: >+++++++[<++++>-]<.
bfc: >+++++++[<++++>-]<.
bfc: +++-----.[-]>
bfc: >+++++++[<++++>-]<+.

: bfInterpret ( char -- )
case
  [char] > of bf> endof
  [char] < of bf< endof
  [char] + of bf+ endof
  [char] - of bf- endof
  [char] [ of bf[ endof
  [char] ] of bf] endof
  [char] . of bf. endof
endcase ;

: getCode ( -- n )
  codeSpace codePointer @ chars +
  c@ codePointer Inc ;

: bfExec ( -- )
begin
  codePointer @ codeLength @ <
while
  getCode bfInterpret
repeat ;

bfExec

```



By [Neal Bridges](#) on Tuesday, April 11, 2000 - 11:41 pm: [Edit](#)

Very neat, Jim!

Neal



By [Jim Hendricks](#) on Wednesday, April 12, 2000 - 09:15 am: [Edit](#)

Can't take credit for the idea (although I don't know that I would want to take credit for it!)

I implemented this mostly as an exercise, but also wanted to play with BF where ever I happened to be, with a language that is as RISC as possible, it is a real brain exercise to create anything of use with BF. I think though the reward is that BF pushes your brain to it's limit on problem solving, hopefully then making you a better programmer in those languages (like Quartus Forth) that can produce real results!

Jim



By [Barry Marks](#) on Wednesday, April 12, 2000 - 03:00 pm: [Edit](#)

I've just been on your site and I followed some of the links and found myself reading the Intercal manual. They have succeeded in making a different approach to programming.

I particularly like the interleave operator that takes 2 32 bit integers and produces a result that is the "interleaving" of their bits. I can't think of a use for that offhand, but you never know when you might need that. :)

Slightly more useful is the select operator that produces a result that is all the bits in operand 1 selected by 1 bits in operand 2. Why has this important feature been left out of Forth?

Barry

Barry



By [Neal Bridges](#) on Wednesday, April 12, 2000 - 03:26 pm: [Edit](#)

It's there: AND

Neal



By [Jim Hendricks](#) on Wednesday, April 12, 2000 - 05:25 pm: [Edit](#)

BTW, Barry, the site I referred to in my e-mail is not my site, it's someone else's. As you can see, it's a list of many languages classified as "Weird". At least the author of that web site does not consider Forth to be Weird! BF is the 2nd language mentioned on the site, right after intercal.

Neal, AND is not the same as Intercal's interleave operator. Intercal's interleave

operator takes 2 16 bit integers and mixes the 2 together with all odd bits from the first integer, all even bits from the second integer, resulting in a 32 bit integer.

Jim



By [Neal Bridges](#) on Wednesday, April 12, 2000 - 11:56 pm: [Edit](#)

Thanks, Jim. I was interpreting Barry's description too literally, and had forgotten my INTERCAL education. :)

Neal



By [E.](#) on Thursday, April 13, 2000 - 12:32 am: [Edit](#)

Okay, pardon my apparent density, but what am I missing?

From my point of view:

Barry: "I particularly like the interleave operator [...]"

<no response>

Barry: "Slightly more useful is the select operator that produces a result that is all the bits in operand 1 selected by 1 bits in operand 2. [Where is it?]"

Neal: "AND."

Now, the confusing part is that I think Neal's right.

So either I'm parsing Barry wrong, I'm assuming that Neal is answering the question that he's not answering, or I'm Missing The Joke.

After today at work, I'm voting for "Missing The Joke".



By [Neal Bridges](#) on Thursday, April 13, 2000 - 08:55 am: [Edit](#)

I don't have my INTERCAL manual at hand -- but the select operator functions slightly differently than Barry's description, I believe. At any rate, have a look at INTERCAL -- it's good for a laugh.

Neal



By [Barry Marks](#) on Thursday, April 13, 2000 - 10:18 am: [Edit](#)

As I understand the select operator, bits are selected from operand 1 if the corresponding bit of operand 2 is 1. It's selected whether the operand 1 bit is 1 or 0. The result is the selected bits from operand 1 right justified in (I think) 32

bits, zero filled on the left.

This is very useful. Just think of all the things you could do with it. And when you do, please let me know. :)

Barry



By [E.](#) on Thursday, April 13, 2000 - 10:25 am: [Edit](#)

Oh. Okay. That's not AND at all. :)

All the things you could do with it... Hm...

Making thumbnails of bitmaps?



By [Jim Hendricks](#) on Thursday, April 13, 2000 - 11:18 am: [Edit](#)

What to do with INTERCAL operators...

Hmm...

In the words of the INTERCAL manual

The other major importance of INTERCAL lies in its seemingly inexhaustible capacity for amazing one's fellow programmers, confounding programming shop managers, winning friends, and influencing people. It is a well-known and oft-demonstrated fact that a person whose work is incomprehensible is held in high esteem. For example, if one were to state that the simplest way to store a value of 65536 in a 32-bit INTERCAL variable is:

```
DO :1 <- #0$#256
```

any sensible programmer would say that that was absurd. Since this is indeed the simplest method, the programmer would be made to look foolish in front of his boss, who would of course happened to turn up, as bosses are wont to do. The effect would be no less devastating for the programmer having been correct.

BF can fall into this category as well, except that BF's goal was not to produce a language unlike any other language, but instead to produce the smallest possible compiler which in turn means the smallest number of instructions. BF is RISC to the Max! While BF is baffling, once you get your brain in gear around it, you can apply your skills as a programmer in other languages to actually produce stuff in BF (kids, don't try this at home!).

The acute thinking required to produce anything of value in BF is my goal because it sharpens my mental problem solving abilities. Intercal on the other

hand requires re-thinking, I don't see much value in that beyond the humor of it, and the challenge to oneself if your of that mindset.

Jim



By [Matthew Burke](#) on Monday, April 24, 2000 - 03:01 pm: [Edit](#)

Arrgh! I had been working on a BrainF*** interpreter in QForth up until the point that I quit my job and had to give my PalmVII back.

Now I finally have a spiffy new IIc and was going to finish up my app when I see I've been beaten to the punch!

Anyway, nice job Jim! I will continue to work on mine because what I have planned out has a GUI and allows you to step through execution of your program, etc.



By [Jim Hendricks](#) on Monday, April 24, 2000 - 04:53 pm: [Edit](#)

Cool, I would be interested in your version. I have not implemented the input word yet and all that is really implemented is the basic interpreter.

My plans were also to provide a debugger, as well as provide a video driver which would allow the output word to do more than just place a character at the current TTY cursor. The driver was planned to be like the original ANSI driver common on DOS machines years ago which allowed ANSI escape sequences to do cursor positioning, color changing etc.

Additionally I planned to provide reading BF source from a memo or doc file.

I only hacked together the current interpreter so I could experiement with BF so my plans to extend my BF would be delayed by other projects I am working on and have more priority on my todo list.

If you need beta testers etc. for your BF, drop me an E-line.

Jim



By [Matthew Burke](#) on Wednesday, April 26, 2000 - 09:16 pm: [Edit](#)

Bad News. I'm sending my IIc back and, as they're back ordered, it's going to be TWO 1/2 WEEKS before they send me a replacement!!!

But what can you do? Like other IIc owners, I am having no luck with the Graffiti input---and it's not like this is my first Palm, so I don't think it's me.



By [Neal Bridges](#) on Thursday, April 27, 2000 - 12:19 pm: [Edit](#)

I've had no problem with my IIIc -- though perhaps I'm just lucky.

Neal



By [Matthew Burke](#) on Sunday, November 19, 2000 - 04:26 pm: [Edit](#)

Better Late than Never?

Ok, so time has slipped away from me somewhat. It took going through three IIIc units before I got one that worked properly. And life somewhat intervened so I didn't get back to this as promptly as I'd hoped.

Anyway, in case it's of use here is my version of a BF interpreter as I left it a few months ago. It reads the "source code" from a memo and you can single step through the program. I haven't made a lot of progress on the GUI, but I'll post what I have just in case it's of interest to someone. You'll have to figure out the resources because I managed to lose the resource database.

The interpreter....

```
\ bf 99.8.25 12:49 pm MMB
```

```
needs safe
needs case
needs defer
needs events
needs toolkit
needs zstrings
needs newmemo
```

```
1000 constant size
size array a
: clear 0 a size 0 fill ;
```

```
variable p
2variable pAddr
variable pLen
variable ip
variable #step
variable ireg
variable ?run
: run true ?run ! ;
: halt false ?run ! ;
: reset 0 p ! 0 pLen ! 0 ip !
  halt 0 #step !
```

```

0. pAddr 2! clear ;
reset

: inc      ( a -- ) 1 swap +! ;
: dec      ( a -- ) -1 swap +! ;
: fetch    ( -- c ) pAddr 2@ ip @ s>d
  d+ c@a ;
\ also respect end-of-memo
: skip ( c -- )
  begin fetch over = invert
  while ip inc repeat drop ;
: process case
  [char] > of p inc endof
  [char] < of p dec endof
  [char] , of noop endof
  [char] . of p @ a @ emit endof
  [char] + of p @ a inc endof
  [char] - of p @ a dec endof
  [char] ] of 1 - ip ! endof
  [char] [ of p @ a @
    0= if [char] ] skip
      else ip @ then
endof
endcase ;

: ~eop? ip @ pLen @ 2dup
  = >r > r> or invert ;

\ fetch fetch dup thechar ! ;

: .state ." p-> " p @ . ." ip-> " ip @ .
  ." instr: " ireg @
  emit ." '" cr
  ." step-> " #step @ . cr
  size 0 do i a @ . 2 spaces
  loop cr ." s-> " .s ;

\ add run?
: step ( .state)
  ~eop? if fetch process
  ip inc #step inc then ;

variable loaded
: loaded? loaded @ ;
: loaded! true loaded ! ;
: ~loaded! false loaded ! ;
~loaded!

```

```

\ change to ( c-addr u -- ior )
: load reset
  loaded? if false
    releasecurrentmemo drop
    CloseMemoDB ~loaded!
  then dup ip !
  OpenMemoDB
  0 rot rot findmemoincategory
  1 = if
    getcurrentmemo pAddr 2!
    currentmemosize pLen !
    loaded!
  else 0 pLen !
  then ;

: cont? 1. (ekey) nilEvent = ;
: go begin cont? while step repeat ;
: do ( a n -- ) load go ;

: hello z" #hello.bf" ;
: prog z" #prog.bf" ;

```

And the GUI code...

```

\ pbfi 99.8.23 3:47 pm MMB

```

```

needs safe
needs events
needs ids
needs resources
needs case
needs Fields

```

```

needs bf

```

```

(ID) pBFi (ID) rsrc use-resources
2000 constant MyMainForm
2001 constant RunMenuItem
2002 constant HaltMenuItem
2002 constant StepField
2004 constant ipField
2006 constant pField
2008 constant a[p]Field

```

```

2010 constant instField
2003 constant StepMenuItem
2004 constant ResetMenuItem
2011 constant ClearMenuItem
2021 constant LoadMenuItem
2100 constant LoadForm
2102 constant LoadButton

-257 constant byeThrow

: .state #step @ . 2 spaces
  fetch emit cr .s cr ;

: show-main ( -- )
  MyMainForm ShowForm
  100 currenty ! ;

: show-load ( -- )
  LoadForm ShowForm ;

: do-menu      event >abs itemid
  case
  LoadMenuItem of
    \ show-load
    LoadForm FrmPopupForm
  endof
  RunMenuItem of run
  endof
  StepMenuItem of step
  endof
  HaltMenuItem of halt
  endof
  ResetMenuItem of reset
  endof
  ClearMenuItem of clear
  endof
  endcase ;

: display ( d fld -- )
  >r <# #s #> r>
  string>field drop ;

: do-event ( ekey -- ) case
  menuEvent of do-menu endof
  ctlSelectEvent of
    event >abs itemid
    LoadButton = if

```

```

    show-main hello load
then
  endof
  keyDownEvent of
    event >abs itemid
[char] q = if MainForm abort
then
  endof
  nilEvent of
    ?run @ if
#step @ s>d StepField display
ip @ s>d ipField display
p @ s>d pField display
p @ a @ s>d a[p]Field display
step
then
  endof
endcase ;

: go show-main
  begin 10. (ekey) do-event again ;

```

One day I would like to be good at Forth programming, so feel more than free to email me with comments, suggestions about the code.



By [Ron Doerfler](#) on Monday, November 20, 2000 - 06:22 pm: [Edit](#)

Just a note to say that I had never heard of these weird languages before, and the original posts on this subject prompted me to have a look at them. How intriguing! In addition to BF, Befunge93 in particular is a mechanism for fascinating puzzles. I get Games magazine's World of Puzzles, and I find this sort of thing right up my alley (and theirs, I would think...).

So I'll have a go at your BF code and play with it. Thanks Jim and Matthew!

Ron



By [Jim Hendricks \(Jimh\)](#) on Tuesday, November 21, 2000 - 09:20 am: [Edit](#)

Your welcome Ron. I have to review my weird languages again to remember Befunge93.

And Matthew, I have been very busy of late on non Palm stuff. I do still plan on checking out your implementation though, thanks for posting it.

Jim



By [Matthew Burke](#) on Wednesday, November 22, 2000 - 10:21 am: [Edit](#)

Jim, now that I've dug this stuff up, I've had a few more thoughts on it. I think menus aren't the right "feel" for a BF emulator. Buttons would do better.

I've been playing around with sample code for tables and also looking at the source for Pilotgone (a go game recorder) and have almost finished putting together a module for selecting memos that allows you to filter which memos get displayed. The goal is to let you load a memo into the BF interpreter and to only show memos that start with the appropriate string---say #bf to emulate Unix shell scripts.



By [Jim Hendricks \(Jimh\)](#) on Wednesday, November 22, 2000 - 11:50 am: [Edit](#)

Matthew, I started a short eval of your BF interpreter. The first thing I noticed is that you are working with cells rather than bytes for the working BF memory. Additionally, I seem to recall seeing somewhere that the BF memory was to be 5000 bytes.

Since I don't see your GUI, I can't really comment on how the various functions ought to work. If you have a working version of your BF interpreter, with the GUI, you should be able to attach the file to this thread so that it can be downloaded and the resources can be pulled out via rsedit.

Add a Message

Username:

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Quartus and pedit32

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Quartus and pedit32



By [Barry Ekstrand](#) on Tuesday, April 11, 2000 - 04:16 pm: [Edit](#)

Hi,

Is anyone using pedit32 as their editor, or more to the point, how can I tell Quartus that I want it to look for the source file in the pedit32 database? Is this something that would simply be added to the startup.quartus file?

Barry



By [Neal Bridges](#) on Tuesday, April 11, 2000 - 04:46 pm: [Edit](#)

That's something I'm looking to add to the kernel -- the ability to select a different memo database. It's not there yet.

Neal



By [Barry Ekstrand](#) on Tuesday, April 11, 2000 - 05:57 pm: [Edit](#)

I know I'm in way over my head, but would it be possible to use the pedit32 database in a fashion similar to using doc files, i.e., with special libraries similar to doc.txt and docinc.txt?

Barry



By [Neal Bridges](#) on Tuesday, April 11, 2000 - 09:13 pm: [Edit](#)

Barry -- yes, it would. In this case, though, simpler and easier that I should extend the kernel.

Neal



By [Barry Marks](#) on Tuesday, April 11, 2000 - 10:47 pm: [Edit](#)

Glad to hear it. I bought both Pedit and Pedit32 last week and I had given up on Pedit32. Actually I'm not really sure 4k isn't going to be enough for me.

Pedit is great. If anyone hasn't tried it, take a look.

I guess the only thing I don't like about it is that it has too many features. Oh well. :)

Barry



By [Neal Bridges](#) on Tuesday, April 11, 2000 - 11:23 pm: [Edit](#)

I agree about the featuritis in Pedit.

4K works quite well I find -- it forces me to factor my code better.

Neal



By [Barry Marks](#) on Wednesday, April 12, 2000 - 01:36 pm: [Edit](#)

While you're adding stuff, I have a suggestion, if it's not already there.

Looking through the PalmOS manual I found that a lot of stdio functions are included for debugging purposes. I'm not sure all those same capabilities don't already exist in Forth but I know how to use the c-like functions already and debugging has been slow for me.

I looked for access to these functions in the Quartus systraps list but I didn't find them. It occurred to me that a nice addition to Quartus (if it's not already there in a form I don't recognize) is a generic systrap word tht we could use for any systrap we choose. Kind of like Borland C's int86 or intdos. Maybe a word called systrap that takes the systrap number as one of it's parameters.

Barry



By [Bill McCarthy](#) on Wednesday, April 12, 2000 - 01:50 pm: [Edit](#)

Barry,

I think you're looking at the macros, not the functions. The macros show which API calls are made. Those API calls are in the Quartus Systraps (at least those I checked out) when they call an Str... function. They are not in the Quartus Systraps when they call an Sio... function.

Bill



By [Barry Marks](#) on Wednesday, April 12, 2000 - 03:02 pm: [Edit](#)

Thank you. I missed that. I'll take another look.

Barry



By [Travis Casey](#) on Wednesday, April 12, 2000 - 03:51 pm: [Edit](#)

Quartus has a generic systrap word -- SYSTRAP. It's in the list of Quartus-specific words in the manual.

For debugging, Quartus' text-output words (TYPE, EMIT, etc.) will still work even when a form is on the screen -- they'll just overwrite the part of the form they come out on top of. I just used this yesterday in debugging a new addition to an app with a form.

You can use the WINDOW-BOUNDS word to get the address of the data structure Quartus uses to bound where its text output will go, and use that to restrict output to a blank area on a form, if you wish.

--Travis



By [Marc](#) on Tuesday, May 9, 2000 - 06:48 pm: [Edit](#)

These are my two debug words, not pretty but so usefull.

```
: debug
0 0 at ." ~~~~~~"
0 0 at .s
s" ---" type
key drop ;
```

```
: debugs
0 0 at ." ~~~~~~"
0 0 at type cr .s
key drop ;
```

The various string print are there to make sure I can see what just got printed. Usually 0 0 at is in the titlebar which is fine with me.

Marc



By [Neal Bridges](#) on Wednesday, May 10, 2000 - 12:30 pm: [Edit](#)

Looks good, Marc. Thanks.

Neal



By [Kris Johnson](#) on Friday, September 29, 2000 - 01:29 am: [Edit](#)

This thread has been dead for a while. Is there any news on the pedit/pedit32 support front?

Specifically:

- Will Last Error be able to open pedit/pedit32/peditPro?
- Will Quartus Forth be able to read pedit32 source files?

Thanks,
-- Kris



By [Neal Bridges \(Nbridges\)](#) on Friday, September 29, 2000 - 06:42 pm: [Edit](#)

A small change to the kernel results in it nicely reading memos from pedit32, and Last Error works fine as well. I mean to add a configuration item to allow you to set this; in the meantime, if any of you are anxious to get your hands on it, let me know and I'll e-mail you the modified kernel.

Neal



By [Mark Browne](#) on Monday, October 2, 2000 - 04:54 am: [Edit](#)

Will this also be able to call the ordinary pedit (pedit04) instead of memopad in the event of an error in loading a memo?

Mark Browne

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Dot-quote interpretation semantics

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Dot-quote interpretation semantics



By [Peter Hogarth](#) on Tuesday, April 11, 2000 - 02:15 pm: [Edit](#)

Hi:

What are they?

e.g.

Assuming I include the following code,

why does:

```
\ test
: go ." hello" ; go
```

work

but not:

```
\ test
page ." hello"
```

?



By [Neal Bridges](#) on Tuesday, April 11, 2000 - 03:05 pm: [Edit](#)

." is for use within a definition only. Use .(while interpreting.

Neal



By [Bill McCarthy](#) on Tuesday, April 11, 2000 - 03:16 pm: [Edit](#)

Here's what the standard says:

=====

6.1.0190 ."

dot-quote CORE

Interpretation: Interpretation semantics for this word are undefined.

=====

Of course for interpretation you can use:

.(Hello)

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PARSE

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): PARSE



By [Jim Hendricks](#) on Tuesday, April 11, 2000 - 01:44 pm: [Edit](#)

Is there a way to use parse to scan something other than the input buffer? I need to scan a string for a specific character and don't want to re-invent the wheel when parse already does what I want just not against my buffer.

Jim



By [Neal Bridges](#) on Tuesday, April 11, 2000 - 01:46 pm: [Edit](#)

PARSE is specific to the input buffer. Some wheel re-inventing is required -- fortunately they're very tiny wheels.

Neal



By [Jim Hendricks](#) on Tuesday, April 11, 2000 - 03:26 pm: [Edit](#)

Shucks, so I caught a place where Forth is not by standard completely reusable!
J

So then, how's about this def:

```
: cAt ( char addr len -- addr | 0 )  
  \ parse string at addr of len length for first  
  \ occurrence of char, return address of this  
  \ occurrence, or zero if not found
```

```
0 do  
  1+ dup c@ 2 pick  
  = if  
    swap drop unloop exit  
  then  
loop  
2drop 0 ;
```

Jim

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Anybody got a "DmCopyCategory" ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Anybody got a "DmCopyCategory" ?



By [Winchell Chung](#) on Tuesday, April 11, 2000 - 09:58 am: [Edit](#)

I'm trying to copy (NOT move) all the database records in one category into another (i.e., so both categories wind up being identical).

The PalmOS provides DmMoveCategory, which is close, but not quite what I want.

My program has fought me tooth and nail to prevent my implementing this feature. I figured that the time it filled the target category with multiple copies of the first record in the source category was due to adding the new records at the beginning of the database instead of the end. Or something like that.

Anyway, I am taking a moment out from my struggles with this hydra-headed monster to ask if anybody has already done this in Quartus Forth? And if so could they find it in their hearts to share the source code?

Thanks in advance!

(What is this for? I'm writing a game, and want the ability to load and save games in progress. Category 0 will be for the current game, and the others will be for storing saved games. No sense in cluttering up the machine with separate databases, no?)



By [John Newell](#) on Friday, April 28, 2000 - 06:30 am: [Edit](#)

Hi Winchell,

Did you ever get any reply to your request? I am interested in doing something similar.

John



By [John Newell](#) on Tuesday, May 16, 2000 - 07:30 am: [Edit](#)

Hi Winchell,

Just jogging the subject - did you hear anything?

John

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Problem calling a compiling word from a definiton

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Problem calling a compiling word from a definiton



By [Jonathan Lerwill](#) on Monday, April 10, 2000 - 07:51 pm: [Edit](#)

If I call the compiling word ARRAY (contained in toolkit) from a home made compiling word I get, as expected an array. My problem is that the original run-time action isn't executed.

```
/**
: array ( cells <name> -- )
  create cells here over 0 fill allot
  does> swap cells + ;
**/
```

My thought was to create a new-array that placed the indexed value on the stack by executing the original code followed by @

```
: my-arrarray ( name -- value)
  100 ( # of elements) array
  DOES>
    ( Call original code "swap cells +" here )
    @
;
;
```

Can this be done ?

Regards

Jonathan Lerwill



By [Neal Bridges](#) on Monday, April 10, 2000 - 10:46 pm: [Edit](#)

You cannot do it that way -- the DOES> in my-array overrides the first instead of extending it.

With a simple factoring, you get what you want:

```
: array-action swap cells + ;
: array
  create cells here over 0 fill allot
  does> array-action ;

: my-array
  100 array
  does> array-action @ ;
```

Neal



By [John Newell](#) on Tuesday, April 11, 2000 - 08:21 am: [Edit](#)

Neal's answer is fine.

However, something else in Jonathan's code triggered the following:

create cells here over 0 fill allot

This sequence of words gives me trouble when the number of cells is relatively large.
e.g.

create 500 cells here over 0 fill allot
create 500 cells here over 0 fill allot
allot? Insufficient dynamic memory

I have found that:

create cells here over allot swap 0 fill

does work.

create 500 cells here over allot swap 0 fill
create 500 cells here over allot swap 0 fill
ok

It seems FILL overwrites something if the data space has not yet been ALLOTed. Can Neal comment on this?

John



By [Bill McCarthy](#) on Tuesday, April 11, 2000 - 12:55 pm: [Edit](#)

John,

As Neal mentioned recently, Quartus only has about 256 bytes free. As some of that gets used, more is allocated to bring it back to 256. You're writing 1000 bytes without allocating space - and hence the error message.

Allocate first, then fill. BTW, you can use 0allot in the toolkit.

Bill



By [John Newell](#) on Wednesday, April 12, 2000 - 04:39 am: [Edit](#)

Thank you Bill. I hadn't seen Neals comment. However, the method of clearing and allocating that Jonathan used seems to be in common usage (I've used it, copying other people's code). In fact, in toolkit, ARRAY uses it although 0ALLOT doesn't.

John



By [Neal Bridges](#) on Wednesday, April 12, 2000 - 11:04 am: [Edit](#)

ARRAY doesn't FILL and then ALLOT -- it just ALLOTs.

0ARRAY, however, ALLOTs, and then FILLs, as you must do.

Neal



By [Neal Bridges](#) on Wednesday, April 12, 2000 - 11:06 am: [Edit](#)

My error! The ARRAY in toolkit does in fact FILL, and then ALLOT -- a bug I fixed in the upcoming update.

Neal



By [John Newell](#) on Tuesday, April 18, 2000 - 04:20 am: [Edit](#)

Neal,

You might also want to look at z" in zstrings. I think I'm reading it right when I say that it puts the zero byte on the data stack before the SLITERAL and ALLOT which reserves space for the

string and zero byte.

John



By [Neal Bridges](#) on Tuesday, April 18, 2000 - 10:05 am: [Edit](#)

In Z", the 0 is on the data stack before the SLITERAL and ALLOT, but that does no harm. Problems only arise if you try to use memory at HERE before you have ALLOTed it.

Neal



By [John Newell](#) on Tuesday, April 18, 2000 - 01:13 pm: [Edit](#)

Yes.....

But doesn't the C! put the zero byte into HERE+ <string length> before the memory is SLITERALed and ALLOTed? Couldn't that be writing past the end of the data stack before it is extended?

John



By [Neal Bridges](#) on Tuesday, April 18, 2000 - 01:23 pm: [Edit](#)

You're using 'data stack' to describe dataspace -- I understand what you're saying, though.

You're quite right -- the C! is storing the 0 before the ALLOT. However, during compilation, dataspace always has 256 bytes available beyond HERE, so it's not a problem in this case.

Neal

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Fatal Error - Why?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Fatal Error - Why?



By [Bill McCarthy](#) on Monday, April 10, 2000 - 06:06 pm: [Edit](#)

I thought I would begin learning about Doc files by starting with database files. Here's some simple code to open one of the forth Doc files and read about its size. The opening and closing work fine leaving out the DmDatabaseSize call. However the DmDatabaseSize call generates a fatal error.

Any ideas?

needs DataMgr
needs zstrings

```
: zname z" QForth Words" ;  
2variable dbP
```

```
2variable dbyteP  
2variable tbyteP  
2variable recsP
```

```
DmModeReadOnly zname OpenDB dbP 2!
```

```
dbyteP >abs tbyteP >abs recsP >abs  
dbP 2@ 0 DmDatabaseSize throw
```

```
dbP 2@ CloseDB
```



By [Barry Marks](#) on Monday, April 10, 2000 - 08:47 pm: [Edit](#)

According to the PalmOS docs, DmDatabaseOpen, used in openDB returns 0 if it cant open the database. And if the database is NULL it can return a fatal error.

Have you checked the return from openDB?

Barry



By [Bill McCarthy](#) on Monday, April 10, 2000 - 11:50 pm: [Edit](#)

Barry,

Thanks for your input. You're correct that DmDatabaseOpen returns 0. if it can't open the database. But there is no need to check OpenDB's return since, as I read the code, it always returns a valid address if it returns. Should

DmDatabaseOpen return 0., a -38 is thrown (non-existent file).

After spending some time with on online API reference, I believe I've confused the database ID with the DmOpenRef of the open database. I'll experiment later.

Bill

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TCPIP Communications

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): TCPIP Communications



By [Robb Canfield](#) on Monday, April 10, 2000 - 05:04 pm: [Edit](#)

Has anyone created words to allow easy TCPIP communications via Port/Socket? Or maybe even an HTML, POP3, IMAP or TELNET interface. I need to code some small utilities and FORTH seems just the right tool, but I would rather not have to re-invent all of the standard(?) network calls and error trapping.



By [Dave Bennett](#) on Tuesday, April 11, 2000 - 09:04 am: [Edit](#)

I've been looking in this direction myself, putting it off as long as possible. I need a decent browser for my Palm and none seem to exist. At least, the ones that exist are dead. HandWeb sells on PalmGear, but you cannot call or email the company (no response in over 6 months of trying). The Palmscape project hasn't been updated in almost a year and again, no email response.

This is too big an undertaking for me at this time, but I would support any effort in this direction with some coding help and testing.

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Stupid newbie ZString question

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Stupid newbie ZString question



By [Winchell Chung](#) on Monday, April 10, 2000 - 11:50 am: [Edit](#)

I have an integer, which I wish to convert to a zero-terminated string that I can feed to FrmCopyLabel.

I tried the following, but it does not seem to work:

```
: Num>ZString ( u -- c-addr u )  
  0 <# #s 0 hold #>  
;
```

Have mercy on a Forth novice and show me the error of my ways!



By [Bill McCarthy](#) on Monday, April 10, 2000 - 12:13 pm: [Edit](#)

Winchell,

The ascii number is built from right to left. You want to `0 hold` before you `#s`.

Bill



By [John Newell](#) on Monday, April 10, 2000 - 12:47 pm: [Edit](#)

I'm afraid that will only put an ASCII 0 at the end of the string and you want a hex 00. You will have to tag it on the end:

```
: Num>ZString ( u -- c-addr u )  
  0 <# #s #>  
  2dup chars + 0 swap c!  
;
```

I think you are allowed to in the pictured numeric output string buffer. Note that the pictured numeric output string buffer is used by other number display words. If you do anything else which uses it you will change it. e.g. type, etc.



By [John Newell](#) on Monday, April 10, 2000 - 12:54 pm: [Edit](#)

Sorry, type doesn't use it but to quote ANSI X3.215-1994:

"Words that display numbers may be implemented using pictured numeric output

words. Consequently, . (dot), .R, .S, ?, D., D.R, U., and U.R could also corrupt the regions".



By [John Newell](#) on Monday, April 10, 2000 - 01:26 pm: [Edit](#)

Sorry yet again - the solution is correct but the reason isn't. HOLD always adds its character to the beginning of the output string.

I think I'll keep quiet now.

John



By [Winchell Chung](#) on Monday, April 10, 2000 - 02:17 pm: [Edit](#)

Man, I *love* this board. All sorts of high powered help who are patient with novices!

Thanks for the assist!



By [Jim Hendricks](#) on Monday, April 10, 2000 - 02:48 pm: [Edit](#)

Doesn't hold take the value on the stack as it stands, without conversion to it's ASCII char value? If so then hold should be able to be used to tack on a null character to the end of a pictured numeric output.

Jim



By [Neal Bridges](#) on Monday, April 10, 2000 - 03:58 pm: [Edit](#)

Quite right, Jim. 0 HOLD puts a zero-byte (not a "0" character). [CHAR] 0 HOLD would put a character "0".

Neal



By [John Newell](#) on Tuesday, April 11, 2000 - 04:30 am: [Edit](#)

That was part of my appology for misleading Winchell. However, I still currently believe that HOLD puts its byte at the BEGINNING of the pictured numeric output buffer, so you still need some other way to zero-terminate Winchell's string. Is there a better, simpler way than:

2dup chars + 0 swap c!

?

John



By [Neal Bridges](#) on Tuesday, April 11, 2000 - 08:20 am: [Edit](#)

You can just do the 0 HOLD first --

< # 0 HOLD #S #>

Neal



By [John Newell](#) on Tuesday, April 11, 2000 - 08:51 am: [Edit](#)

I see the light. The HOLD characters just get shuffled along the output buffer as other characters get added to the start by # or #S . I didn't realize that.

Thanks

John



By [Neal Bridges](#) on Tuesday, April 11, 2000 - 01:49 pm: [Edit](#)

The HOLD characters don't get shuffled. Here's what happens.

```
12345. <#
```

```
\ at this point the output buffer is empty
```

```
0 HOLD
```

```
\ at this point the output buffer is a zero-byte
```

```
#S
```

```
\ now the output buffer is 12345 plus a zero-byte
```

```
#>
```

Neal



By [John Newell](#) on Wednesday, April 12, 2000 - 07:01 am: [Edit](#)

OK, they don't shuffle - it was an illusion.

Each character generated between <# and #> gets added at the start of the buffer. As each character is added, the buffer address moves to the left.

e.g.

```
12345. <#
```

```
0 HOLD
```

```
\ output buffer: is a zero-byte
```

```
[CHAR] A HOLD
```

```
\ output buffer: A plus a zero-byte
```

```
#
```

```
\ output buffer: 5A plus a zero-byte
```

```
[CHAR] B HOLD
```

```
\ output buffer: B5A plus a zero-byte
```

```
#s
```

```
\ etc.
```

```
[CHAR] C HOLD
```

```
#>
```

and we end up with:

```
( -- c-addr u ) 339 9
```

C1234B5A plus a zero-byte.

John

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Assert0, assert1, etc

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Assert0, assert1, etc



By [Barry Marks](#) on Monday, April 10, 2000 - 11:37 am: [Edit](#)

I've used assert(a few times but when I looked in the assert lib file it also has assert0(assert1(and so on. I was hoping these would give an indication of which one was failing but I can't seem to make them work right at all.

Can you give me some information on how to use them? I keep thinking I saw them discussed in here but I've looked through all the archives and done a keyword search on current messages and I can't find it.

Barry



By [Travis Casey](#) on Tuesday, April 11, 2000 - 04:13 pm: [Edit](#)

It's in the manual, under "Documentation for Selected Library Words." The different versions are for different assertion levels: assert0(is triggered if the assertion level is 0 or higher, assert1(if the assertion level is 1 or higher, and so on.

--Travis

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Greek character pi

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Greek character pi



By [Dave Bennett](#) on Monday, April 10, 2000 - 08:51 am: [Edit](#)

I need to use the greek character pi on some display screens to explain circle math. Is there a way to generate this character on the Palm?

Dave



By [Neal Bridges](#) on Monday, April 10, 2000 - 10:52 am: [Edit](#)

Draw it as a tiny bitmap. The bitmap library is handy for this.

Neal

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Newbie questions about fields and interface

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Newbie questions about fields and interface



By [Eugene Zalyubovsky](#) on Sunday, April 9, 2000 - 11:52 am: [Edit](#)

I use a Field control to show some information like time, date etc. I have Field5000 element in my work form with ID 5000 and have Editable, Usable and SingleLine properties for it. No problem in this case - I can set text of this field using String>Field function. But this text is editable!!! I don't want it, but if I uncheck Editable property for Field5000, I cannot see text I already set into Field.

Maybe, there are other methods to make elements, updated from program?
Thanks.



By [Bill McCarthy](#) on Sunday, April 9, 2000 - 01:51 pm: [Edit](#)

Eugene,

As you've noticed, String>Field doesn't work with editable fields. There was a lib called string2anyfield that does work. A search of the message base came out empty and I didn't see the file in the lib or contrib sections.

I emailed it to you.

Bill



By [Eugene Zalyubovsky](#) on Monday, April 10, 2000 - 09:43 am: [Edit](#)

Thanks for a message! Code from it works pretty well! But standard String>Field WORKS with editable fields and doesn't work with non-Editable field.

Thanks!



By [Bill McCarthy](#) on Monday, April 10, 2000 - 12:21 pm: [Edit](#)

My first sentence should have been: "As you've noticed, String>Field doesn't work with non-editable fields."



By [Andrew Glassby](#) on Monday, July 17, 2000 - 10:23 am: [Edit](#)

Bill,

Is there any chance you could email me the same string2anyfield lib since I am having the same "problem"!

Would be much appreciated if you could!

AndrewG



By [Neal Bridges](#) on Monday, July 17, 2000 - 10:58 am: [Edit](#)

I found it in the message archives, and placed it here:

<http://www.quartus.net/files/PalmOS/Forth/Contrib/>

Neal



By [Andrew Glassby](#) on Monday, July 17, 2000 - 02:31 pm: [Edit](#)

Neal,

Thanks for that!

I can now finish off that app safe in the knowledge that those Gremlins will not murder it!!!

Regards

AndrewG

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Exception 537 when compiling

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Exception 537 when compiling



By [Dave Bennett](#) on Saturday, April 8, 2000 - 10:07 am: [Edit](#)

I am getting an exception 537 when compiling. Which seems to indicate that a resource already exists if I read the docs correctly. However, there are no duplicates that I can locate. Is there a way to search for this kind of thing?

Dave



By [Barry Marks](#) on Saturday, April 8, 2000 - 10:37 am: [Edit](#)

Could that be a mixup of resource numbers where a number is duplicated? Are you using 1001 twice?

Barry



By [Barry Marks](#) on Saturday, April 8, 2000 - 10:39 am: [Edit](#)

Something else just occurred to me. There are some resource numbers that Quartus uses internally. I don't remember what they are but I think I saw them in the manual. Could you be using one of those?

Barry



By [Dave Bennett](#) on Saturday, April 8, 2000 - 10:40 am: [Edit](#)

I'm using 1000 four times, but for different objects. One is a tVer, one a tAIB, one a tAIN, and one a tFRM. I've read elsewhere on this forum that it is OK to do this as long as they are not the same kind of resource. I may try changing some of these around and see if that helps.



By [Dave Bennett](#) on Saturday, April 8, 2000 - 10:42 am: [Edit](#)

I don't think I'm stepping on anyone's toes. I only have 1000, as described above, 1020 and 1021 which are both buttons, 1030 and 1031, which are both information alerts.



By [Dave Bennett](#) on Saturday, April 8, 2000 - 11:13 am: [Edit](#)

OK. I gave everything a unique ID number, and am still getting a 537. I don't think that's where the problem lies at this point.

Here is the make file for other eyes to ponder.

--- start

\ make-tm 4/8/00 8:37 am DMB

needs docinc

docneeds TapeMeasure

needs ids

1000 constant IconBitmap \ my bitmap

1001 constant VerString \ my version string

1005 constant tmFID \ form id

1020 constant tmTID \ title button id

1021 constant tmMID \ info button id

1030 constant tmTForm \ title button info alert

1031 constant tmMForm \ info button info alert

' go (id) DMBD MakePRC TapeMeasure

tmFID (id) tFRM copysrc

tmTForm (id) Talt copysrc

tmMForm (id) Talt copysrc

IconBitmap (id) tAIB copysrc

VerString (id) tver copysrc

--- end

Dave



By [Dave Bennett](#) on Saturday, April 8, 2000 - 11:32 am: [Edit](#)

SOLVED!

The message was

537 0129 dmErrAlreadyExists

which didn't seem likely since I was just creating it. Finally, the lights went on and I realized that the source code was in a doc file named "TapeMeasure". When I was trying to create the program I was naming it "TapeMeasure". The error was referring to the fact that a record named "TapeMeasure" already existed because each doc file is a record in the resource database. I changed the source file name to TapeMeasureSrc and everything worked fine.

Dave



By [Neal Bridges](#) on Saturday, April 8, 2000 - 10:20 pm: [Edit](#)

Thanks, Dave! That's one for the FAQ -- not a frequently asked question, in this case, but too useful a bit of knowledge to omit.

Neal



By [Ed Berozet](#) on Monday, June 5, 2000 - 05:00 pm: [Edit](#)

FWIW, I just encountered this same message and for the same reason. I noticed that when I attempt to do the ' go (id) ... line from the command line, I got an exception 538. Ultimately, my fix was the same. I'm glad it's so easy to search this site!

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Writing to Doc files?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Writing to Doc files?



By [Bill McCarthy](#) on Friday, April 7, 2000 - 11:08 am: [Edit](#)

The doc lib shows how to open and read doc files, but I couldn't find examples of creating and writing to doc files - I want to extend redirection to doc files.

Could someone point me to where I can find an example?

BTW, in extending redirection, I'm now using >memo to redirect to a memo and planning to use >doc to redirect to a doc. What's a good choice for ending redirect? >vid? >form? Any other suggestions?

Thanks,

Bill



By [Jim Hendricks](#) on Friday, April 7, 2000 - 08:58 pm: [Edit](#)

The doc lib does not facilitate writing to Doc, only reading. Erwin and I were discussing this offline a few weeks ago and we both agreed that whomever provides doc write ability from QForth will have provided the community with an invaluable tool. Source code for Doc writing is available at multiple resources on the net, but expect it to be in C. I found the code for Doc writing in some source code for converting DOS text files into Compressed DOC.

Hope this helps, since I have been considering Doc writing from QForth now for a few months but haven't gotten bold enough to try and implement it! Good Luck!

Jim

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Forth Debugging is Bliss!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Forth Debugging is Bliss!



By [Winchell Chung](#) on Thursday, April 6, 2000 - 04:40 pm: [Edit](#)

Man, I love the way Forth debugs.

I'm working on my huge Quartus app, a wargame with a scrolling map.

Yesterday I added more playing tokens to the game than I had done before, and started moving the map around.

Boom! I got an "application ran out of stack space" error.

My blood ran cold. It has been my experience that while using MSVC++ writing Windows apps, memory leaks are notoriously hard to find. I mornfully contemplated looking forwards to a week of tedious debugging.

Waitaminut! This is *Forth*. Who cares that it is a GUI application, Quartus will still give you access to the CLI.

Start up Quartus. Include my app. Manually run the "init game" word. Manually do a map update. Do .s, stack is empty. Manually do an info area update. Do .s, still good. Manually do a mini-map area update. Do .s, WHAT'S THIS!?! Tons of garbage on stack!

A cursory inspection of the work in question revealed that one word it called in a loop was NOT consuming all of it's input values on the stack. So the stack naturally filled up.

A quick change of one "OVER" into a "SWAP", and suddenly the bug was *gone*. In about five minutes flat. Instead of five days.

I *love* Quartus Forth!



By [Ron Doerfler](#) on Thursday, April 6, 2000 - 04:50 pm: [Edit](#)

I've found that typing the stack depth to a corner of the screen at a common return point is a good way to detect and locate stack runaway. I had a stack overflow after many tens of thousands of Gremlins that I was able to locate in a very short amount of time that way. Next time I'll do it for the duration of the coding so I don't encounter it later in POSE.

Ron

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PopupForm vs ShowForm

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): PopupForm vs ShowForm



By [JimMeadows](#) on Thursday, April 6, 2000 - 03:07 pm: [Edit](#)

I would like to pop up a sequence of forms and when finished return to the original form as it was. I use ShowForm to display the original form. If I then use PopupForm followed by FrmReturnToForm and PopupForm for the next pop up, the original form is briefly displayed which is undesirable:

```
100 ShowForm
...
101 PopupForm
...
100 FrmReturnToForm (original is briefly seen)
102 PopupForm
...
100 FrmReturnToForm (original is briefly seen)
103 PopupForm
...
100 FrmReturnToForm (return to original)
```

I have tried not using FrmReturnToForm until the end but it does not display the original form.

```
100 ShowForm
...
101 PopupForm
...
102 PopupForm
...
103 PopupForm
...
100 FrmReturnToForm (returns to original but displays 102???)
```

Any suggestions?

- Jim



By [Jim Meadows](#) on Thursday, April 6, 2000 - 03:35 pm: [Edit](#)

I just realized that the 2nd example above would probably leave several forms open. I have also tried using show form after the 1st popup form but this too causes the original form to briefly flash on the display:

100 Showform
...
101 PopupForm
...
102 Showform (100 is briefly displayed)
...
103 Showform (100 is briefly displayed)
...
100 FrmReturnToForm (returns to original OK)



By [Ron Doerfler](#) on Thursday, April 6, 2000 - 04:56 pm: [Edit](#)

Go to the blank form with "ShowForm BlankFormID" before your first popup form, and then reload your original form when you're done?



By [Ron Doerfler](#) on Thursday, April 6, 2000 - 04:59 pm: [Edit](#)

Excuse me, that should be "BlankFormID Showform" of course.



By [Jim Meadows](#) on Thursday, April 6, 2000 - 06:29 pm: [Edit](#)

Thanks for the suggestions ... I would like to not have to reload the original if possible though. Since the system is capable of saving and restoring a form I hoped it would be a matter of just using the right calls. (The original gets drawn on by the user).

- Jim



By [Jim Meadows](#) on Monday, April 10, 2000 - 10:14 am: [Edit](#)

I finally decided just to redraw the original form as Ron suggested. I use only showforms now & no longer have the form flash problem.

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Latest Version?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Latest Version?



By [Tom Affinito](#) on Tuesday, April 4, 2000 - 02:41 am: [Edit](#)

Hi Neil,

I'm wondering if you can post what the latest released version is somewhere on your website. I'm always trying to keep my software up-to-date, and it's really hard with a lot of the Palm software.

I've seen a new Quartus version for PalmOS 3.5 talked about in many of your discussions, but I haven't received anything new from you in my email since (I think) last Fall. If there were a public version posted, many of us could let you know if we got accidentally dropped.

Thanks for all your great work!



By [Neal Bridges](#) on Tuesday, April 4, 2000 - 08:05 am: [Edit](#)

Tom -- you weren't accidentally dropped. I had hoped to ship an update before my overseas trip (I'm there now)... didn't make it. It'll go out when I return.

Neal



By [Tom Affinito](#) on Tuesday, April 4, 2000 - 08:32 pm: [Edit](#)

Thanks for the info Neil...Hope you're having fun overseas!



By [Neal Bridges](#) on Wednesday, April 5, 2000 - 06:14 am: [Edit](#)

I am indeed, thanks Tom!

Neal



By [Douglas Atique](#) on Wednesday, April 12, 2000 - 03:56 pm: [Edit](#)

Neil,

Are you talking about v1.2.6?

I am on v1.2.5R and curious about the next release.

Douglas



By [Neal Bridges](#) on Wednesday, April 12, 2000 - 04:50 pm: [Edit](#)

I am indeed talking about 1.2.6 -- 1.2.7, now. Coming as soon as possible.

Neal

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Not receiving some events in an ekey event loop

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Not receiving some events in an ekey event loop



By [Bill Yeo](#) on Monday, April 3, 2000 - 02:27 pm: [Edit](#)

Recently I discovered that my ekey event loop is not receiving a number of events: winEnterEvent, frmLoadEvent, and frmOpenEvent. This really messes up my code, since I want to update the display as soon as the form appears on the screen.

Is ekey eating these events and dealing with them internally, or am I doing something wrong?

I am using a Palm Vx, by the way.

Thanks,
Bill



By [Neal Bridges](#) on Tuesday, April 4, 2000 - 08:08 am: [Edit](#)

frmLoadEvent and frmOpenEvent are not passed to applications. Use ShowForm to display your forms; it returns as soon as they are displayed on screen, so you can immediately start drawing without waiting for any events at all.

I'll check on WinEnterEvent.

Neal



By [Jim Hendricks](#) on Tuesday, April 4, 2000 - 09:27 am: [Edit](#)

Neal, the WinEnterEvent has to be working at least some of the time since my Analog Clock code relies on WinEnterEvent for enabling and disabling full screen painting while a menu is pulled down.

Jim



By [Neal Bridges](#) on Tuesday, April 4, 2000 - 10:04 am: [Edit](#)

Yes, I believe WinEnterEvent is working fine -- I suspect Bill was waiting for it to happen the first time a form is loaded, which it doesn't.

ShowForm should do the trick. Let me know, Bill.

Neal



By [Bill Yeo](#) on Tuesday, April 4, 2000 - 06:19 pm: [Edit](#)

Neal,

Thanks, your solution works just fine: ShowForm does the trick.

Bill

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Set the Backup bit on created databases

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Set the Backup bit on created databases



By [Wade Carlson](#) on Sunday, April 2, 2000 - 10:15 pm: [Edit](#)

Does anybody know of any easy way to set the backup bit programmatically on a database that your program has created? I'm sure it has to do with setting the dmHdrAttrBackup attribute using DmSetDatabaseInfo, but I am very unclear how to set all the different attributes within ONE attributes Pointer.



By [Trevor Steele](#) on Monday, April 3, 2000 - 03:57 am: [Edit](#)

Hi Wade

I have used the following library to set the database backup bit. It is based on the \newmemo library but changed to work for general databases and a few new words such as setDatabaseBackupBit added. Sorry I haven't time to isolate the necessary words but have a sift through it and see if it will suit your purposes.

```
\ DataMgr-ext 99.11.26 07:00 TS
\ store DBcreator in creator
\ store DBType in DBType
```

```
needs core-ext
needs tools-ext
needs toolkit
needs zstrings
needs ids
needs DataMgr
```

```
15 constant categoryMask
(hex) 80 constant deleteMask
```

```
variable _index
variable _attrP
variable dbIDP
variable _sSize
2variable _sPtr
2variable creator
2variable DBType
2variable _DBPtr
```

```
: DBPtr  _DBPtr 2@ ;
```

\ Support Routines

```
: NewRecord ( len -- ptr. )  
  s>d _index >abs DBPtr  
  ( len. &index. DBR. ) DmNewRecord  
  MemHandleLock ;
```

```
: ReleaseCurrentRecord  
  ( dirty -- err )  
  _index @ DBPtr  
  DmReleaseRecord ;
```

```
: getCurrentRecordAttr ( -- attr )  
  0. 0. _attrP >abs _index @ DBPtr  
  DmRecordInfo drop _attrP @ ;
```

```
: setCurrentRecordAttr ( attr -- err )  
  _attrP ! 0. _attrP >abs _index @  
  DBPtr DmSetRecordInfo ;
```

```
: getCurrentRecordCategory  
  ( -- cat )  
  getCurrentRecordAttr  
  categoryMask and ;
```

```
: setCurrentRecordCategory  
  ( cat -- )  
  getCurrentRecordAttr  
  categoryMask invert and or  
  setCurrentRecordAttr drop ;
```

```
: QueryRecord ( index -- handle. )  
  DBPtr DmQueryRecord ;
```

```
: GetCurrentRecord ( -- ptr. )  
  _index @ QueryRecord  
  MemHandleLock ;
```

```
: NumRecord ( -- n )  
  DBPtr DmNumRecords ;
```

```
: CurrentRecordSize ( -- size )  
  _index @ QueryRecord  
  MemHandleSize d>s ;
```

```

: CurrentRecordDeleted? ( -- del_flg )
  getCurrentRecordAttr deleteMask
  and ;

: GrowCurrentRecord ( size -- ptr. )
  CurrentRecordSize + s>d
  _index @ DBPtr DmResizeRecord
  MemHandleLock ;

: DatabaseID ( z-addr u -- ID. )
  drop >abs cardnum @
  DmFindDatabase ;

: getDatabaseAttr ( z-addr u -- attr )
  2>r 0. 0. 0. 0. 0. 0. 0. 0. 0. _attrP
  >abs 0. 2r> DatabaseID cardnum @
  DmDatabaseInfo drop _attrP @ ;

: setDatabaseAttr
  ( z-addr u attr -- err )
  _attrP ! 2>r 0. 0. 0. 0. 0. 0. 0. 0. 0.
  _attrP >abs 0. 2r> DatabaseID
  cardnum @ DmSetDatabaseInfo ;

```

\ Main Access

```

: OpenCurrentDB ( -- )
  dmModeReadWrite creator 2@
  DBType 2@
  DmOpenDatabaseByTypeCreator
  2dup or 0= throw _DBPtr 2! ;

: CloseCurrentDB ( -- )
  DBPtr dmCloseDatabase throw ;

: setDatabaseBackupBit
  ( z-addr u -- )
  2dup 2>r getDatabaseAttr 8 or
  2r> rot setDatabaseAttr drop ;

: WriteNewRecord ( z-addr len -- )
  \ index = index of new Record
  0 _index ! 1+ dup NewRecord
  2>r s>d rot >abs 0. 2r@
  ( length. &data. offset. DBR. )
  DmWrite throw
  2r> MemPtrUnlock throw
  true ReleaseCurrentRecord throw ;

```

```

: WriteNewRecordInCategory
( cat z-addr length -- )
\ index = index of new Record
WriteNewRecord
setCurrentRecordCategory ;

: FindRecordInCategory
( cat c-add u -- success)
\ if success = 1, index is valid
_sSize ! _sPtr ! NumRecord 0 ?do dup
  i _index ! dup 255 = rot
  getCurrentRecordCategory = or
  CurrentRecordDeleted? 0= and if
    GetCurrentRecord 2dup _sSize @
    s>d 2swap _sPtr @ >abs
    strNCompare 0= if
      MemPtrUnlock drop
      0 ReleaseCurrentRecord drop
      unloop drop 1 exit
    else MemPtrUnlock drop
      0 ReleaseCurrentRecord drop
  then
  then
loop drop 0 ;

: AppendCurrentRecord ( z-addr u -- )
\ requires a valid "index"
dup >r 1+ s>d rot >abs
CurrentRecordSize 1- s>d
r> GrowCurrentRecord 2dup 2>r
DmWrite drop 2r>
MemPtrUnlock drop
true ReleaseCurrentRecord drop ;

: setCurrentDB ( creator. type. -- )
DBType 2! creator 2! ;

0 [if]
(ID) TRSS (ID) DATA setCurrentDB
: string1 z" hello world!" ;
: string2 z" abcdefg" ;
: test \ creates database
false DBType 2@ creator 2@
z" NewDB" createDB ;
: test0 \ tests write in category
OpenCurrentDB 6 string1

```

```
WriteNewRecordInCategory
CloseCurrentDB ;
: test1 \ tests find in category
OpenCurrentDB
6 string1 FindRecordInCategory
CloseCurrentDB ;
: test2 \ tests appending Record
OpenCurrentDB string2
AppendCurrentRecord
CloseCurrentDB ;
[then]
```

Best regards

Trevor



By [Wade Carlson](#) on Monday, April 3, 2000 - 06:38 pm: [Edit](#)

That will at least get me started. I have also figured out that the value of the dmHdrAttrBackup attribute is a value of 8. I guess where I am having trouble is knowing how / when I need to AND or OR the value with the current value of the attribute pointer.



By [Neal Bridges](#) on Tuesday, April 4, 2000 - 08:09 am: [Edit](#)

The general rule: AND to check a bit, OR to set it.

Neal

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Password: the "Password" box empty. Your e-mail address is optional.

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Timing Your Code

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Timing Your Code



By [Bill McCarthy](#) on Sunday, April 2, 2000 - 04:30 pm: [Edit](#)

I was timing execution and decided to write a word to automate the process. The word `tf` times whatever follows it on the line. It is completely self contained (requiring no library code). Here's the code:

```
\ time_following 0.4.2 WJMc
\ assumes ticks are .01 secs

: tf ( ... "<stuff to time>" -- ... )
  source dup >r >in @ tuck - >r +
  r> TimGetTicks >r >r evaluate
  TimGetTicks r> r> d- cr <# #
  # [char] . hold #s #> type
  ."  secs" r> >in ! ;
```

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How do I capture output?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): How do I capture output?



By [Bill McCarthy](#) on Friday, March 31, 2000 - 04:07 pm: [Edit](#)

Can I redirect output to a memo file so I move the results to my PC?

I've seen examples of writing output to strings and appending to a memo. But I want to capture output from existing code. For example, suppose I want to capture the output from ``WORDS``. How do I do that?

TIA,
Bill



By [Neal Bridges](#) on Saturday, April 1, 2000 - 07:43 am: [Edit](#)

Bill, to do that you'd need to be able to 'redirect' the built-in TYPE word. This isn't simple in Quartus Forth version 1; version 2 will make it possible. Version 2 is still in the works.

In your own applications, redirection is a simple matter, however. Just write your own TYPE and EMIT and vector them accordingly. Let me know if you need an example

Neal



By [Bill McCarthy](#) on Saturday, April 1, 2000 - 03:34 pm: [Edit](#)

Neal, an example would be very helpful.

While on the subject of vectoring, Win32for places a decimal point to the right of OK for each element on the stack. I've modified that behavior to follow that with a colon for each element of the float point stack. So if there are three elements on the stack and two on the floating point stack, ``OK`` would read ``OK...::``. How can this be done with Quartus?

Thanks, Bill



By [Neal Bridges](#) on Sunday, April 2, 2000 - 11:15 am: [Edit](#)

Again, version 1 doesn't easily support vectoring. It can be done, but it's awkward. If you can wait for version 2, it'll be easier.

Neal



By [Bill McCarthy](#) on Sunday, April 2, 2000 - 08:17 pm: [Edit](#)

I got that message about the lack of vectoring support in Ver 1. I was asking about the example you mentioned your 4/1 7:43am reply.

Playing around, I wrote a word ``redir (c-addr u --)`` to open a new memo and set a variable ``redir?``, and a word ``redirend`` to end it and reset the variable. Then:

```
: type redir? @ if type>memo else type then ;
```

```
: emit redir? @ if emit>memo else emit then ;
```

One would also need to rewrite all output words used in the app to use the replacement ``type`` and ``emit``.

But how do I handle ``cr``? I thought I could just send a z-string of decimal 10 followed by zero and a length of 1. Testing, ``10 emit`` produces a little box. Could you please tell me how to send an end of line to the memo?

Thanks,

Bill



By [Bill McCarthy](#) on Monday, April 3, 2000 - 12:50 am: [Edit](#)

Neal, although I don't know why ``10 emit`` doesn't give a new line, I have a simple redirection working fine. If the ``file`` lib is included, ``s"`` can be interpreted.

Example of use. Suppose you want to execute a word called ``myprog`` with output to a memo called ``myprog output``:

```
s" myprog output" redir myprog redirend
```

Bill

```
\ redirection 0.4.2 WJMc
```

```
needs memo
```

```
create buf 132 allot
```

```
variable redir? 0 redir? !
```

```
: s>z ( c-addr u -- z-addr u )  
  tuck buf swap chars move buf  
  over chars + 0 swap c! buf swap ;
```

```

: c>z ( char -- z-addr u )
  buf c! 0 buf char+ c! buf 1 ;

: redir ( c-addr u -- )
  openMemoDB s>z writeNewMemo
  -1 redir? ! ;

: type redir? @ if
  s>z appendCurrentMemo
  else type then ;

: emit redir? @ if
  c>z appendCurrentMemo
  else emit then ;

: cr redir? @ if
  10 c>z appendCurrentMemo
  else cr then ;

: space bl emit ;
: spaces dup 0> if 0 do space loop
  else drop then ;

: redirend closeMemoDB 0 redir? ! ;

: d.r >r tuck dabs <# #s rot sign
  #> r> over - spaces type ;
: d. 0 d.r space ;
: .r >r s>d r> d.r ;
: . s>d d. ;

```



By [Ron Doerfler](#) on Monday, April 3, 2000 - 01:56 am: [Edit](#)

Hi Bill,

Apparently the Quartus console uses CR instead of LF to go to the next line (no doubt to meet the ANS standard), and it doesn't know how to interpret the LF code 10. However, your code does successfully implement linefeeds within the memo that you redirect the output to, so I think you have a winner. Your redefined CR works in both modes.

By the way, I see that you can use a word you're redefining while you're redefining it--interesting.

Ron



By [Bill McCarthy](#) on Monday, April 3, 2000 - 12:56 pm: [Edit](#)

Ron,

That behavior on redefining is guaranteed by ANS. When defining a word, the new definition is not visible in the dictionary until the definition is complete. The standard defines the word RECURSE to access the execution address of the word in process of being defined.

Bill



By [Bill McCarthy](#) on Monday, April 3, 2000 - 01:47 pm: [Edit](#)

To All,

The following definition should be at the bottom of my `redirection` lib:

```
: ." postpone s" postpone type ; immediate
```

There are probably other output words in the PRC that need to be redefined so they can be used with redirection.

If anyone uses this lib, place the `needs` at the top of your startup file so other libs use the redirecting words.

Bill



By [Neal Bridges](#) on Tuesday, April 4, 2000 - 08:14 am: [Edit](#)

Thanks Bill!

Neal

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Calling systraps

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Calling systraps



By [Matthew Blair](#) on Friday, March 31, 2000 - 09:48 am: [Edit](#)

I would like to modify the setup to a PalmOS systrap. Essentially, I would like to set a region in memory that would be ordered in the same way as the systrap parameters are placed on the stack, and point to that region in memory for the systrap.

For example, for a `FldNewField` call, I would allocate memory, place the properties of the new field in the allocated memory, and call the `FldNewField` systrap with the arguments in the allocated memory. Then, if I wanted to call that systrap again with the same parameters, I would not have to waste time loading the stack with all those arguments again.

In my application I expect that I will be calling `FldNewField` many times with different parameters repeatedly. The parameters vary in a set (but unknown at compile-time) pattern. So if I can do what I've described above, I can merely set up an array of pointers to argument structures, and call the systrap directly.

Hope I've explained that well enough! Any help is appreciated...



By [Dave Ruske](#) on Friday, March 31, 2000 - 10:23 am: [Edit](#)

Just a couple thoughts...

I'm fairly new to the Palm OS... haven't really waded in very far yet... but if it's set up like most others I've worked with, `FldNewField` and other APIs will expect parameters on the stack. I suppose you could use assembly to switch the stack before and after the call (if the CPU supports it), but the OS itself will need stack space for its own operations so you'll need a good chunk of memory to do this.

Sounds like a lot more trouble than its worth unless you need the kind of blinding speed one might require in a very tightly coded interrupt handler.

If there's a lot of repetition in the parameters to a given function, I usually just wrap it in a function of my own that takes only the changing parameters as arguments. Of course, that's still pushing arguments on the stack. It's clean, but carries the expense of an additional call (IMHO, usually a small price to pay for the additional abstraction and savings in code size.)

One other thing you could do that's halfway between those approaches would be to set up your parameters somewhere in memory and then block copy them onto

the stack, poke the changed parameters, then make the call. It might be slightly faster than loading up the stack, but you pay the price in added complexity and (most likely) code size.



By [Matthew Blair](#) on Friday, March 31, 2000 - 10:48 am: [Edit](#)

I was thinking about your last suggestion, and looked in the manual at the sp@ and sp! words. If I set the data stack pointer to the area of memory which contains the arguments, then call the sysstrap,...

(1) How would I set the stack pointer back? Guess I would need to place the old stack pointer somewhere in the new area, but where?

(2) Do I need to allocate extra space for the OS?

Matt



By [Jim Hendricks](#) on Friday, March 31, 2000 - 11:40 am: [Edit](#)

your #2 question needs to be expanded to do you need to allocate extra space for Quartus as well since I believe using the Quartus sysstraps names calls words that may do additional stack manipulations prior to calling the actual sysstrap. For the question of allocating extra space for the OS, the additional question would be is Quartus's data stack the system stack? If Quartus's data stack is not the system stack then you would need to consider manipulating the system stack directly prior to a direct sysstrap call instead of using the Quartus named sysstrap calls.

Jim



By [Matthew Blair](#) on Friday, March 31, 2000 - 11:52 am: [Edit](#)

The easiest approach, I think, is to use sp@ to get the data stack pointer, compute the negative offset required to hold all the parameters, and use the resulting address as the starting point for a block move. And then store the new stack pointer via sp!. However, I'm not sure what that buys me over transferring the parameters onto the stack one-by-one...

I guess I want to see what's involved in the other approach before making an implementation decision...

Matthew



By [Erwin Schomburg](#) on Friday, March 31, 2000 - 02:12 pm: [Edit](#)

Getting all the parameters set up for a system call is tedious either way round. I personally would look if I could factor out what I really need, then wrap a word around it to push what's required on stack. Let's assume something requiring a

setup like (a b c x y z --) for the system call, where only x and y are of relevance to my purpose. I then would write a word containing code to this effect:

```
0 constant a
35 constant b
13 constant c
23 constant z
: mysyscall ( x y -- )
>r >r a b c r> r> z origsyscall ;
```

All other approaches may lead to the same result, but I see a fat chance to shoot yourself in the foot with all too tricky stack manipulations.

Just my HO, YMMV.

/Erwin



By [Matthew Blair](#) on Friday, March 31, 2000 - 02:46 pm: [Edit](#)

Hi Erwin, thanks for weighing in. Unfortunately, none of the parameters are constant in this case. So it looks like I can either go the traditional route, or try to optimize with the chance that I may end up as a one-legged QF developer :)

Thanks again,

Matthew



By [Dave Ruske](#) on Friday, March 31, 2000 - 03:18 pm: [Edit](#)

Not sure what I'd suggest... is the goal raw speed or a "cleaner" method of using FldNewField?

Speed of pushing/popping seems very fast in QF, and given the limited screen size of the typical Palm platform the number of displayable fields seems likewise limited.

For example,

needs core-ext

```
: test  ( -- )
    100 0 do 1234567. loop
    100 0 do 2drop    loop ;
```

```
: tests  ( x -- )
    0 ?do test    loop ;
```


100 tests
.s

executes in a fraction of a second on my Palm Vx. FldNewField takes sixteen parameters, far short of 200 cells, so it seems to me like it'd take a HUGE number of fields on a form for an optimization of its parameters to make any difference. I don't know the internals of FldNewField, but I'd wager it takes far more time to execute than it takes QF to load up the stack.

If the goal is to clean up the use of FldNewField (and with that many parameters cleaning is certainly in order!), one could simply write a definition of MyFldNewField which takes a single structure on the stack, then unpacks it and calls the FldNewField systrap. You could modify only the parameters in your structure as needed without having to muck with every one every time you made the call.



By [Matthew Blair](#) on Saturday, April 1, 2000 - 11:02 am: [Edit](#)

I realize that this may turn out to be a dead end - however, I would like to reach that conclusion after testing both methods...plus I'm curious as to how one might do this :)

Thinking about it some more, perhaps one way to do this would be to write asm code to move the stack pointer into another register, put the address of the memory location into the stack pointer, and call trap # xxxx. Then the return parameter (a pointer to the new Field) should be in A0. Put the stack pointer back where it belongs, and put the contents of A0 on the data stack and exit.



By [Neal Bridges](#) on Sunday, April 2, 2000 - 11:54 am: [Edit](#)

That's pretty much what systrap already does, Matthew -- you won't save any time that way.

The overhead for a systrap is very low indeed -- are you really running into a performance problem?

Neal



By [Matthew Blair](#) on Thursday, April 6, 2000 - 08:48 am: [Edit](#)

No, no performance problems yet... As I thought about it, I realized that I should not be calling the FldNewField functions as much as previously thought. So, the need for speed is already met.

However, I am still curious about the possibilities, primarily because I'm curious about the internal workings. With that in mind...

I think that I should rephrase my question: If I wanted to call a PalmOS api function, and I wanted to use a separate contiguous area of memory to hold the function arguments (separate from the area pointed to by the a7 register), how would I do that? I've already tried the direct approach described above, and it doesn't seem to work.

Matt



By [Neal Bridges](#) on Thursday, April 6, 2000 - 04:07 pm: [Edit](#)

The simplest solution would be to copy the arguments from your separate memory area to the stack, and then make the API call as per usual.

Neal

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DocInclude is behaving most rudely to me...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): DocInclude is behaving most rudely to me...



By [Winchell Chung](#) on Thursday, March 30, 2000 - 11:14 am: [Edit](#)

I'm trying to develop a large application, using Docinc's DocNeeds and DocInclude (as explained on Mr. Schomburg's marvelous web page: <http://home.t-online.de/home/Erwin.Schomburg/indexe.htm>)

Unfortunately, DocNeeds isn't co-operating. It would compile up to a point, then choke. If you go to the error, it shows the end of the last "needed" file, indicating that compilation choked with the immediately following "DocNeeded" file.

After playing with this, I have come to the conclusion that the Docinc library doesn't like source code that has DocNeeded file nested more than two deep. (I could be mistaken, but that seems to be the simplest explanation)

I managed to make the program compile by merging all the source code into one titanic document. I don't like this approach, as it blurs the distinction between the various app-specific libraries/lexicons I was developing.

Can anybody offer any advice?
Thanks in advance!



By [Wade Carlson](#) on Thursday, March 30, 2000 - 06:43 pm: [Edit](#)

There are some likely bugs in the docinc library. I have noticed that if any doc files contain a number of bookmarks it would also cause it to hang. Whoever created the docinc library probably needs to take another look at the Doc file format. I, myself, am not quite sharp enough to do so. See the following link: <http://www.quartus.net/discus/messages/23/237.html>



By [Erwin Schomburg](#) on Friday, March 31, 2000 - 04:06 am: [Edit](#)

There is no implicit limit on the nesting depth for docincludes. However, the last error shown is the last error that occurred in a memo-ed library module. For obvious reasons that is somewhere in the docinc module when compiling from a doc file. If you want to see where in your source doc file the compilation choked, preceede your build call (the makeprc line) with

```
1 more
1 echo
2drop
```

The most likely reason is a name conflict, doc file names for inclusion are case sensitive and names containing leading and trailing spaces require the usage of docneeds" to capture such a name with the Quartus parser.

/Erwin



By [Dave Bennett](#) on Friday, April 7, 2000 - 07:49 am: [Edit](#)

Where do I put the "include docinc" and "docneeds FileName"? In a memo that is a startup file for my project?

I've been using SmartDoc for some time and really like it (especially since I can print directly from it). I don't like juggling multiple memos and want to use the doc format for my source code.

Dave



By [Jim Hendricks](#) on Friday, April 7, 2000 - 09:21 am: [Edit](#)

I put it in my startup.quartus memo.

All my source is in DOC format, the only memo's I maintain for Quartus is the startup, and all the libs since I haven't made the effort to port them to DOC.

Jim

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My fields are possessed by the forces of evil!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): My fields are possessed by the forces of evil!



By [Peter Graif](#) on Thursday, March 30, 2000 - 12:48 am: [Edit](#)

Hi all,

I've written a fairly simple application that is supposed to handle a bit of plain arithmetic. In addition to three or four fields, the main (and only) form holds five push buttons.

Now here's my problem: as I was going through the development process quite smoothly, I noticed that occasionally when I'd push one of the push buttons, strange gobbeldy-gook would appear in one of the fields. At first, I figured that this was all just me making some dumb mistake. Since then, I've cut the program down so that all it does is load the form, allot a few cells worth of variables, and then load an empty event loop. Even when I do this, it still happens.

Is there still hope???

Cheers,
Peter



By [Matthew Blair](#) on Thursday, March 30, 2000 - 10:11 am: [Edit](#)

Peter,

Why don't you post your code so that we can take a look at it...it's kind of hard to make statements about hope for the future just from what you've given us to work with :)

Matthew



By [Peter Graif](#) on Thursday, March 30, 2000 - 01:50 pm: [Edit](#)

Of course. Sorry for not posting it earlier. :)

I've isolated the problem a little bit further. It seems to happen during a word that I've written to take the contents of one field, turn it into a number (using StrAToI), manipulate that number, then post it back into a different field. What seems to happen, is that occasionally (but not always) extra numbers get tacked onto the end. For example, if I load the number 100 into the first field, the number 1000 might be put into the second field when I run my word.

Here's the relevant code:

```

needs resources
needs events
needs ids
...
needs fields

(id) nrky (id) rsrc use-resources

create holder 7 allot ( general purpose buffer )

\ takes contents of numeric field, and leaves
\ the contents on the stack
: getField ( fieldID -- intContents )
  holder swap Field>string drop
  holder >abs StrAToI drop ;

\ places an integer into a field
: putField ( fieldID intContents -- )
  0 holder >abs StrIToA 2drop
  holder dup >abs StrLen
  rot string>Field drop ;

\ do the calculation on the two fields.
\ their IDs are 1730 (source) and 1733 (target)
: calc ( -- )
  1730 getField 1733 swap putField ;

\ nil event (blank here)
: nil ( -- ) ;

\ event loop
: eventLoop ( -- )
  begin
    50 0 (ekey)
    dup nilEvent = if nil
    else dup ctlSelectEvent = if
      calc beep
    else dup keyDownEvent = if
      drop beep exit
    then then then
      drop
    again ;

\high level word
: go ( -- )
  1009 ShowForm eventLoop ;

```

I think that's everything relevant. The code is actually about five times longer than that, but this is the smallest bit that still produces the error. Let me know if you see anything that might be causing the problem.

My guess is that it has something to do with the way I buffer the strings using holder. Unfortunately, I'm still too new at this to figure out exactly what I'm doing wrong.

Thanks for any help in advance. Feel free to toss out any comments about bad coding style, too. I've never been formally taught programming before, so I'm sure I've made all sorts of egregious mistakes that all the experts here are just cringing at. :)

Have a good one,
Peter



By [Matthew Blair](#) on Thursday, March 30, 2000 - 02:16 pm: [Edit](#)

Hi Peter,

One thing stands out pretty quickly -- In your getField word, it looks like you are implicitly assuming that the memory location pointed to by holder contains a zero-terminated string. I don't believe this to be the case (in general), since Field>string determines the string length via FieldGetTextLength, which returns the length of the string minus the null terminator. Hence, the call to MemMove, within Field>string does not place a null terminator there for you.

If you modify your getField word as follows:

```
\ takes contents of numeric field, and leaves  
\ the contents on the stack  
: getField ( fieldID -- intContents )  
  holder swap Field>string  
  holder + 0 swap !  
  holder >abs StrAToI drop ;
```

that may do the trick.

Hope that helps,

Matthew



By [Travis Casey](#) on Thursday, March 30, 2000 - 02:46 pm: [Edit](#)

Alternatively, instead of using a system call to StrAToI, you could use the native

Forth world >number:

```
\ takes contents of numeric field, and leaves  
\ the contents on the stack  
: getField ( fieldID -- intContents )  
  holder swap Field>string  
  0. 2swap >number drop drop drop ;
```

also, putField could be written as:

```
: putField ( intContents fieldID -- )  
  >r 0 <# #S #> r> string>Field ;
```

(note that I've reversed the order of the parameters, to make the stack handling a little easier.)

--Travis

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Dynamic form object creation

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Dynamic form object creation



By [Matthew Blair](#) on Wednesday, March 29, 2000 - 02:42 pm: [Edit](#)

Just a question about Palm OS workings -- there are API calls to add new objects (controls, fields, etc.) to forms at runtime, but I have not seen any to remove the objects that were added dynamically. If I put a blank form up (FrmDrawForm), add objects to that form (FldNewField, CtlNewControl, etc.), and then erase that form (FrmEraseForm), does that release all of the memory that was allocated to the dynamic objects?

Thanks for any help,

Matthew



By [Travis Casey](#) on Wednesday, March 29, 2000 - 03:11 pm: [Edit](#)

You can use FrmRemoveObject to remove an object. FrmEraseForm erases a form from the display, but doesn't erase it from memory. FrmDeleteForm erases a form from memory, but doesn't erase it from the display.

The docs for FrmRemoveObject mention that it does not free memory outside the form data structure that may be allocated to an object (it gives an example of the memory allocated to the string in an editable field). FrmDeleteForm's docs say that "Any memory allocated to objects in the form is also released," which I'd take to mean that it does release such memory.

--Travis



By [Matthew Blair](#) on Wednesday, March 29, 2000 - 03:20 pm: [Edit](#)

Thanks Travis -- looks like that will fill the bill!

(Now where did I put my Dr. Pepper?)

Matt

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Multiple databses with same creator and type

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Multiple databses with same creator and type



By [Jim Meadows](#) on Wednesday, March 29, 2000 - 10:27 am: [Edit](#)

If anyone has used multiple databases with the same creator and type perhaps you can help me.

I need to have multiple databases that the user can select from. I would like them to all have the same creator and type (so I can use something like DATA for the type and not change it for each database). The databases would be identified therefore by their unique names.

I cannot use DmOpenDatabaseByTypeCreator since they all have the same creator and type. Before I proceed I wanted to make sure I am headed in the right direction.

Give the database name, I think I will need to use DmFindDatabase (&nameP. cardNo -- LocalID.) to get the local ID of the database then use DmOpenDatabase (mode dbID. cardNo -- DmOpenRef.) to open the database. Is this correct?

To provide the user with a list of available databases to open would I need to use DmGetNextDatabaseByTypeCreator with newSearch true and then repeat it with newSearch false until no more matches found (I think). Since this returns the local ID of the database, what is the easiest way to then get the name of the databases to display to the user?

- Jim



By [Travis Casey](#) on Wednesday, March 29, 2000 - 11:12 am: [Edit](#)

DmDatabaseInfo will give you the name (and a lot of other stuff as well), given the CardNo and dbID. However, I'm not sure how to use it to get that under Quartus... from the Quartus docs, it looks like Quartus just gives back the error value it returns, and doesn't give back any modified values it may have returned.

Neal? Is there a way to get those return values back?

(Hmm... it looks like MemCardInfo has the same problem as well...)

--Travis



By [Matthew Blair](#) on Wednesday, March 29, 2000 - 11:56 am: [Edit](#)

I'm not Neal, but I'll take a stab at the question anyway (from Travis).
DmDatabaseInfo takes as arguments pointers to memory locations where you would like the information placed. If you are not interested in a particular piece of info, you merely pass the NULL pointer.

Example of usage: say you want the name and attribute flags of the database on a particular card and has local ID dbID:

```
name create 20 cells allot
variable attrflags ( this may not be the right size )

( not interested in )
0. ( creator )
2dup ( type )
2dup ( sortinfoID )
2dup ( appinfoID )
2dup ( modnum )
2dup ( bckupdate )
2dup ( moddate )
2dup ( crdate )
2dup ( version )
( are interested in )
attrflags >abs
name >abs
dbID 2@
cardnum @
DmDatabaseInfo

name 20 type
attrflags @ .
```

Hope that helps,

Matthew



By [Jim Meadows](#) on Wednesday, March 29, 2000 - 01:33 pm: [Edit](#)

Thanks! I'll give it a try.

- Jim



By [Travis Casey](#) on Wednesday, March 29, 2000 - 02:31 pm: [Edit](#)

Arg... I should have noticed that those were pointers. Don't mind me, I just need more sleep. Or caffeine. Where did I put that Dr. Pepper?

--Travis



By [Barry Marks](#) on Wednesday, March 29, 2000 - 08:21 pm: [Edit](#)

I read about the card number in the docs yesterday but I thought it said that currently there is only one card.

Is cardnum a constant or did I misunderstand?

Barry



By [Wade Carlson](#) on Thursday, March 30, 2000 - 12:27 am: [Edit](#)

cardnum is pretty much just a constant (set to 0). Probably there for future use. Read the DataMgr library for more info.



By [Erwin Schomburg](#) on Thursday, March 30, 2000 - 04:58 am: [Edit](#)

I wouldn't bet my application on constant cardnum = 0 when you don't want nasty mails from Visor cum Springboard users.

/Erwin



By [Dave Bennett](#) on Thursday, March 30, 2000 - 08:54 am: [Edit](#)

Yeah. And I like the fact that "deck" and "card" are heavily used in XML. We need an ANSI terminology oversight committee!! :)



By [Garth T Kidd](#) on Friday, March 31, 2000 - 09:09 pm: [Edit](#)

MemNumCards!

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Arcfour problem

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Arcfour problem



By [Steve Gibson](#) on Tuesday, March 28, 2000 - 07:53 pm: [Edit](#)

I'm using the arcfour module to encipher a multi-line field of plain text. Occasionally I get the following fatal error:

Field.c, Line: 1815, Invalid character pos

I'm using Field>string to put the text into a buffer and am passing this buffer and a string length variable to arcfour. Once arcfour has converted it, the cipher text is loaded back into the field with a string>field. This is the point where it is occasionally crashing -- it gets a certain amount of the ciphertext entered but then proceeds to "go fatal". In fact, I've isolated it to crashing on the FldInsert call. From what I can tell, the error only seems to crop up when there are several lines of text that are being converted. I thought that maybe it had a problem with carriage returns, but sometimes it works with a few of those thrown in...so now I'm not sure what is causing this error.

Is it possible that arcfour is generating non-printable characters or something and causing FldInsert to choke?

Steve



By [Neal Bridges](#) on Tuesday, March 28, 2000 - 08:00 pm: [Edit](#)

Absolutely. ArcFour can generate any byte at any time; the output is quite random. FldInsert expects text.

To put encrypted text in a field, convert it first to, say, hexadecimal. The byte sequence

0 255 13 65 7

would then be

00FF0D4107

Neal

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New application ideas?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): New application ideas?



By [Neal Bridges](#) on Monday, March 27, 2000 - 05:01 pm: [Edit](#)

I occasionally get mail from beginners wondering what project they should embark on, or what programs need writing. I thought it might be wise to start a discussion thread where such ideas can be collected -- post away!

Neal



By [Barry Marks](#) on Monday, March 27, 2000 - 06:00 pm: [Edit](#)

I usually begin learning a language without trying to produce anything useful. Instead, I design little exercises that will teach me things I don't know. Trying to make them useful at the same time muddies up the exercise.

An example of the kind of exercise I'm talking about is using a loop to create a pattern of asterisks on the screen. Not like the big F in Starting Forth, but by using cursor positioning. I just play with that a while.

I did that in Quartus and then I started moving bitmaps with the bitmap word, making sure there was a 0 border so the bitmap would be a moving object without having to erase.

The field input program I did was the same kind of exercise. I didn't know how to input data. I couldn't figure it out by reading about it. It's a pretty basic function. So I made up an exercise.

I'm writing a simple little Air Traffic Controller game that I saw once in Dos and have since written (as an exercise) on a couple of different platforms.

I think playing and experimenting is the best way to learn a language. That's how we learned English. But then as soon as you can do something useful, do it. Unless you're retired. :)

Simple games can be real good exercises for learning. Another good game to use as an exercise is Sokoban. It's a little more difficult than the one I'm doing now, but not a lot.

Someone posted a very nicely done game of Lines written in Quartus. That should be very simple to write except for the part that decides if it can make a move or not. But that's why it's a good exercise.

And there's that old standby, Conway's Game of Life. That's a little more advanced but it's something everybody should write at some point.

I've saved the best for last. A great source of useless exercises are the books by A. K. Dewdney. He wrote the Computer Recreations column in Scientific American for years and his books are based on that column. Most are in the form of little exercises or programming puzzles to solve in various aspects of computer science.

I've done a number of them over the years on my palmtop and they've been a great source of fun and a good way to pass time in the doctor's waiting room or while waiting for lunch or standing in line.

Barry



By [Dave Ruske](#) on Tuesday, March 28, 2000 - 10:10 am: [Edit](#)

"Life" does make a good beginner's exercise... very simple rules, but you can spend a lot of time optimizing (for memory or speed) and working towards an elegant implementation. There's also a lot of variation you can come up with for inputting the starting patterns. You could use grayscale or color to show cell age, allow the cell size to be adjusted, have a generation counter, single-step/free-run modes, etc. It's silly, but kind of fun.

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Bitmaps, again

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Bitmaps, again



By [Barry Marks](#) on Monday, March 27, 2000 - 04:02 pm: [Edit](#)

I've been unable to make an 8x8 bitmap work. I can't find anything about WinDrawBitmap that should prevent it.

I've tried to find something in the bitmap word that would prevent it but I'm not really sure what it's doing.

Should an 8x8 bitmap work? I thought I read somewhere that the requirement was that each line should be a multiple of 8 bits but I can't find that now.

Barry



By [Neal Bridges](#) on Monday, March 27, 2000 - 04:39 pm: [Edit](#)

They work:

```
8 8 bitmap box
2 base !
1111111100000000 ,
1000000100000000 ,
1000000100000000 ,
1000000100000000 ,
1000000100000000 ,
1000000100000000 ,
1000000100000000 ,
1000000100000000 ,
1111111100000000 ,
decimal
```

Neal



By [Barry Marks](#) on Monday, March 27, 2000 - 04:51 pm: [Edit](#)

Perfect! Thanks.

Barry



By [Barry Marks1](#) on Monday, March 27, 2000 - 06:26 pm: [Edit](#)

That won't work for me because there's no transparency.

When I do DbGetResource and MemHandleLock I have the bitmap and I think that's what I'm going to have to use. But I can't find any documentation on the form that is in. I've been looking in the 3.1 docs since I'm doing this on my IIIx.

Can anyone point me to some documentation on the format of this bitmap? Is it actually the bitmap or a structure pointing to it? If it's a structure, what is it? etc.

Barry



By [Neal Bridges](#) on Monday, March 27, 2000 - 07:51 pm: [Edit](#)

The data in a bitmap resource is the bitmap structure itself, as defined in the Palm SDK header file, bitmap.h.

Neal



By [Winchell Chung](#) on Tuesday, March 28, 2000 - 02:22 pm: [Edit](#)

Barry, you might try finding the thread on this board entitled "Drawing Bitmaps Through a Mask" and see if the code there can help you.



By [Neal Bridges](#) on Tuesday, March 28, 2000 - 02:58 pm: [Edit](#)

Here's the link to Winchell's bitmap-masking code (thanks again Winchell!):

<http://www.quartus.net/discus/messages/23/200.html?FridayJanuary2820000731pm#POST1218>

Neal



By [Barry Marks](#) on Tuesday, March 28, 2000 - 07:37 pm: [Edit](#)

Thanks. I downloaded the include files for PalmOS 3.0 (I think, it's not too clear which os it's for) and I found what I needed. I also found it in the teal bitmap code you guys mentioned. I'll study this one too.

I think I see how to do it now but I'm getting lost in all the details. I just have to fit all the parts together. This GUI stuff just doesn't come easily to me. It would be so much easier to just manipulate the screen directly. What's the world coming to! :)

I am glad I'm doing it on the IIIx. 98% of my graphics programming has been with 1 bit pixels. Learning color is going to be the next hurdle.

Barry

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RsrcEdit for OS3.5

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): RsrcEdit for OS3.5



By [Erwin Schomburg](#) on Monday, March 27, 2000 - 08:06 am: [Edit](#)

We have been listened to. Version 03/26/00 1.008 of RsrcEdit is out at <http://www.individeo.net/RsrcEdit.html>

One hint, since Rogers's docs are not yet up to it: To edit an icon or bitmap in the deeper-depth versions, tap the titlebar when editing a bitmap to see the other members of the family.

/Erwin



By [Neal Bridges](#) on Monday, March 27, 2000 - 10:15 am: [Edit](#)

Thanks for the heads-up, Erwin! And of course, thank you, Roger!

Neal



By [Barry Marks](#) on Monday, March 27, 2000 - 11:08 am: [Edit](#)

I just tried RsrcEdit 1.008 and it lets you create color bitmaps just fine but it still garbles the color bitmap if you import it from TealPaint.

I've notified the author.

Barry



By [Gary Clark](#) on Sunday, April 2, 2000 - 12:18 pm: [Edit](#)

Looks like 1.009 is out and it fixed the TealPaint problem.

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Analog Clock with source

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Analog Clock with source



By [Jim Hendricks](#) on Sunday, March 26, 2000 - 04:24 am: [Edit](#)

****NEW****

Analog Clock, written in Quartus Forth!!

Neal has been kind enough to post my Analog Clock with full source to the contribution section of the File area. While Analog Clock doesn't balance your checkbook, or allow you to zap them pesky aliens off your screen, it does demonstrate some standard programming methods written in Quartus using the Palm API's.

Namely, Analog Clock uses:

- doublebuffering for flicker free screen refreshes
- Menu activation detection for screen update suspension to avoid overdrawing the menu
- Use of Neal's trig functions to plot circular data layout

Analog Clock is released as Freeware with full source in hopes of providing another example of a fully functional and hopefully professional program written in Quartus.

Hope this code helps someone in their quest for learning Quartus & Palm programming.

Jim



By [Barry Marks](#) on Sunday, March 26, 2000 - 09:47 am: [Edit](#)

I'm about to do some drawing with buffering in order to get my sprites drawn in proper order on the background. I've been trying to figure out how to do that with the PalmOS API. I haven't looked at your code yet but I will. I suspect it's just the example I need.

But I have looked at your clock and it really looks good. I particularly like the long tapering hands. And the openness of the design. Very nicely done.

Barry



By [Jim Hendricks](#) on Thursday, March 30, 2000 - 11:40 am: [Edit](#)

Thanks for the compliments, sorry it has taken me so long to respond but I have

been out of the country with limited internet access. I am now home and have over 200 e-mails to plow through etc... Uhgh.

If you have any questions on the clock, fire away. It's purpose is to help everyone learn as well as tell the time! ;-)

Jim



By [Barry Marks](#) on Thursday, March 30, 2000 - 01:57 pm: [Edit](#)

Thanks. I'll probably have questions about both. :)

Barry



By [Jim Hendricks](#) on Thursday, March 30, 2000 - 03:11 pm: [Edit](#)

No problem Barry, I just put 2 and 2 together between this thread and the thread on a small game using bitmaps and sprites... heh, heh, heh... Well, since in that other thread you refer to a 3.5 OS call for maintaining a bitmap in memory, I guess my code in clock for using doublebuffering is just what the doctor ordered since I beleive it uses all API calls that are available in all OS flavors (I can't confirm that though). You will see in my clock app though that I am doublebuffering the whole screen. There is no problem though, and I had experimented with buffering just a small bitmap with the ability to copy it anywhere on the screen (your idea for a sprite!). From what I recall from researching the API calls for the doublebuffering, there is also the ability to set paint modes which may allow you to do the copy from the buffer to simulate transparency. I know there were discussions previously on bitmap transparency, but I don't know if this was the method used. What I would envision for a game that required sprites would be a whole screen (or the portion of the screen that your sprite is bounded to) buffer. You can clear any part of the buffer the same way you can clear portions of the screen, and you can then lay down your sprites in the order in which they need to be layered. I don't know what the consequences though are of constantly refereing to your bitmaps directly from the resource as opposed to copying those bitmaps into their own buffers. I will be very interested in what progress you make.

Jim



By [Ron Doerfler](#) on Thursday, March 30, 2000 - 04:02 pm: [Edit](#)

If you want to use double-buffering in order to do an OR function between the ON pixels of the different overlapping bitmaps, as well as to get the flicker-free effect, there is a good article at http://oasis.palm.com/devzone/knowledgebasearticle.cfm?article_id=1148 which I have used to code double-buffering for the beginnings of an animated game. First, I would ignore the section on gadgets--I think it's unnecessary (which you

can interpret as I have no idea what they really are). The rest is quite handy, and describes setting up the offscreen window that Jim uses, switching the draw window to it and copying bitmaps onto it with an OR function, then changing the draw window back to the screen and copying the offscreen window onto it (without the OR, just a COPY). To save you from looking through header files, use 4 >BYTE for the scrOR mode and 0 for the scrCopy mode for WinCopyRectangle.

I also copy all my bitmaps into little off-screen windows first for quick copies to the screen-size offscreen window (and saving the handles and pointers in double-cell arrays), but you don't have to. I can try to extract my preliminary code and post it--it does work fine. I'll try to do that in the next day or so if there is interest.

Ron Doerfler



By [Jim Hendricks](#) on Thursday, March 30, 2000 - 04:35 pm: [Edit](#)

Interesting article Ron, and gadgets aren't really that hard, they just allow you to create your graphic elements so that they act like the controls that you normally work with in the gui. A gadget is like a visual basic ocx control, or a PowerBuilder UserObject, or even in java, an object extending from panel. Basically they allow your control to generate events specific to your control so you can handle events from your control the same way you would with all the other built-in control types. My opinion of gadgets for game programming is, don't use them. I think the extra overhead in game programming is unnecessary since your GUI for a game most likely doesn't use any of the components of the standard GUI. Just my opinion though!

Jim



By [Barry Marks](#) on Thursday, March 30, 2000 - 05:43 pm: [Edit](#)

I think what I'm doing is a lot simpler than you realize. I have a 112x112 field and some little 8x8 airplane bitmaps (maybe 12x12, im still experimenting with the look). The screen updates will be slow, maybe 2 or 3 a second. What I had planned for each update, before reading your ideas above, was to have the field in a buffer and copy it into another buffer. Then or the planes (6 at most) into the other buffer and then draw that buffer with WinDrawBitmap.

I had planned to do the oring with Forth words but I haven't really looked into that yet. I just assumed there's an or. Calculating the address should be fairly straightforward.

I didn't know about WinCopyRectangle. That will do it for me. Forth might be easier. I might try both ways and see.

Thanks for the pointer to that article. It looks like it might also be useful.

A question about gadgets. I was thinking about finding a way to have the buttons the user pushes to control the planes also give feedback. There isn't room for much status information on this small screen. So I thought maybe when the user selects a plane the buttons could indicate its status. For example the button that he would press to send it to 1000 feet could be highlighted or reversed if the plane is at 1000 feet or on it's way to 1000 feet.

Is this what gadgets do? I had thought about possibly doing this with 2 buttons in the same place with different fonts or different borders or some such and selecting the active ones with the program. I haven't tried that yet. Would gadgets would be better?

This program is simple enough that I could do all the graphical parts in c or asm in dos in an hour or two. I'd estimate that I've spent 15 or 20 hours and I don't have the graphics in sight yet. It's a good thing forth lets you develop code so fast. :)

Barry

Barry



By [Jim Hendricks](#) on Friday, March 31, 2000 - 11:19 am: [Edit](#)

I think with the gadgets, if each of your planes are gadgets, when clicked on, the event is going to identify the gadget that the click occurred on. Without gadgtets, you would need to compare the x & y values for the clicked (pentap) event against the known positions of your planes to determine if the click occured within one of them. The gadgets may be an easier approach for you for this particular application for the purposes of simplifying event handling, but they probably come at the cost of losing your double buffering since I don't know weather you can have your gadgets draw to an offscreen window or not. Once again, this is my interpretation of the gadgets, I have no actual coding experience with them since I opt for controlling everything myself so I always know what is going on when and where.

From the time consumption aspect, you have to factor in experience. My guess is that your experience with c, asm, and Dos go way back, whereas your experience with Qforth and Palm is just a small blip on the radar screen of your total programming experience. As I have been warming up to Qforth and the Palm, I am seeing much faster turn around times for coding then I did a year ago. I still don't think I code faster then I could with C in Dos, but I think I may be approaching the coding speed I would have with C in Palm.

Jim



By [Barry Marks](#) on Friday, March 31, 2000 - 05:14 pm: [Edit](#)

I was joking about the time I'm spending on this. I realize it's part of the learning process. In any case it's just for fun and I'm not in a hurry. I'm having a hard time learning Forth because I'm learning the GUI at the same time and I'm sort of allergic to GUIs, but I'm getting there.

I've toyed with Forth for about 20 years but I never wrote anything more than about 20 or 30 lines long in it. I've always known if I really got into it I would find it efficient and fun. But it was easier to stick with what I knew. At this point I'm pretty glad there wasn't a true on-board C compiler or assembler for the Palm when I got it. If there had been I'd have probably gone the way of least resistance.

As for the gadgets I was asking about them for the buttons so they could give status information. But that's a minor problem that I can solve a number of different ways. I assume I can programmatically change the font or the border on a button. If so that'll do it. If I can reverse the color, that'll be better, but not really necessary. The bitmaps for the planes have to be checked by coordinates in any case for collision detection.

Barry



By [Barry Marks](#) on Friday, March 31, 2000 - 05:35 pm: [Edit](#)

I forgot a question I was going to ask. I can't find Tbmp anywhere. Forth seems to recognize it and use it but 'Tbmp gets an undefined word error. It doesn't seem to be in any library file that I can find.

What is it? Where is it?

And another question. I keep seeing throw used after MemHandleUnlock in these samples. It seems that that would be a very safe call. What is the possible error?

Barry



By [Neal Bridges](#) on Saturday, April 1, 2000 - 07:48 am: [Edit](#)

You need to define 'Tbmp' if you wish to use it. There are two ways:

needs ids
id Tbmp

or in your code,
(id) Tbmp when interpreting
[id] Tbmp when compiling.

MemHandleUnlock is a safe call, yes. If it fails, it fails because it is being passed an invalid handle; it generates a fatal exception at that point, however. I put THROW after it just for completeness, so that if a later PalmOS returns an error from that call, it'll be handled.

Neal



By [Barry Marks](#) on Saturday, April 1, 2000 - 10:18 am: [Edit](#)

Welcome back.

I'm using [id] Tbmp but I haven't been able to figure out what [id] does.

Another thing I don't understand. I have a struct called bmap: that is 3210 bytes long but sizeof bmap: returns 1202. This is the same structure that's in tealbitmap.txt. I just changed the name. Am I using sizeof wrong?

I tried using sizeof field (field is the name of the area defined using bmap:) but I get the same answer.

Barry



By [Jim Hendricks](#) on Saturday, April 1, 2000 - 03:50 pm: [Edit](#)

I don't know if I am off track here since my forte is not GUI's either!

All resources are identified through it's type ID, Tbmp is one such ID. These ID's are actually numbers (32bit) but are usually coded as 4 character sequences to allow for human readable sequences like Tbmp. Honestly though, I don't think there is any requirement what ID is used with what resource, but if you use ID's for a resource that are not standard, tools like rsrcEdit won't be able to identify the content of the resource and give you the appropriate editor. When using the OS API's for loading resources, so long as the resource identified by it's typeID and SequenceID results in a resource structure compatible with the OS call your OK.

Therefore, simply put, id, [id], and (id) all turn a 4 character sequence into the appropriate 32 bit value.

Jim



By [Barry Marks](#) on Saturday, April 1, 2000 - 04:37 pm: [Edit](#)

I'm not trying to do this in a non-standard way. I just was/am confused about what Tbmp is and what [id] is and how they work together and what they do. I still don't really understand them. But I've gotten past the immediate problem.

I was still getting crashes and I wanted to know what was going on to try to find the problem.

I've spent the entire day since about 6:00 am trying to find the cause of the crashes and I finally did. Some numbers without dots to make them doubles and then using swap instead of 2swap on them. I'm glad it wasn't something hard. This took 3 days to find. :)

I learned a lot in the process. Sometimes screwups can be pretty valuable.

Barry



By [Neal Bridges](#) on Sunday, April 2, 2000 - 12:01 pm: [Edit](#)

.S is your friend. To find stack problems, such as you had, use .S to determine that what is on the stack is what you need.

Neal



By [Barry Marks](#) on Sunday, April 2, 2000 - 12:57 pm: [Edit](#)

I did use .s to find the problem. It helped a lot. I just didn't always know when I was looking at something that was wrong. That's why this was so useful. I had to dig.

I never was able to get sizof to work. Entering it from the console after including the file with the structure, it works perfectly. But included in that file it returns 0. It is positioned after the structure declaration and after defining the memory.

sizeof bitmap: is what I used in both cases. Any idea? I just put the numeric value in and avoided the problem but I'd like to use sizeof.

Barry



By [Jim Hendricks](#) on Sunday, April 2, 2000 - 02:34 pm: [Edit](#)

I have found screwups to be one of the most valuable learning tools! It forces the nagging curiosity in you to solve the problem, and thus understand the problem, not just work around it. You just have to hope that your screwups don't come at the cost of something actually breaking, or something devastating like a HDD format when you don't have a backup (Thankfully never experienced but I have done the old "del *.*" without checking what dir I was in!)

Can't help you with the sizeof, I haven't used structs much in Quartus but I thought that sizeof is just maintained as a variable within the word that the structure defines. Time to look at the source to structs again and expand my knowledge.

Jim



By [Neal Bridges](#) on Monday, April 3, 2000 - 09:42 am: [Edit](#)

Barry, I'm guessing you're trying to do this:

```
: go
  sizeof bitmap: .
;
```

or something similar. That doesn't work, because sizeof is a parsing word. Do this:

```
sizeof bitmap: constant bitmapsize
```

```
: go
  bitmapsize .
;
```

Neal



By [Barry Marks](#) on Tuesday, April 4, 2000 - 12:10 am: [Edit](#)

That's exactly what I was doing. Thank you.

Barry

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Profiling

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Profiling](#)



By [Matthew Blair](#) on Saturday, March 25, 2000 - 12:56 pm: [Edit](#)

Seeing the recent threads on 'reverse execution' and 'safe.txt', I was wondering how hard it would be to write a Forth word that would operate in the following way: during compilation, for each new word, store the name of the word and compute the number of bytes of codespace used by that word. When compilation of all words in a source file is finished, write the results to a memo.

I looked at safe.txt, thinking that I could perhaps replace the colon definition and semicolon to do what I want. However, the code is at this point beyond my level of understanding.

Thanks,

Matt



By [Neal Bridges](#) on Saturday, March 25, 2000 - 04:12 pm: [Edit](#)

That's certainly possible.

Start with the template at

<http://www.quartus.net/discus/messages/23/366.html?FridayMarch2420000724am#POST2376> and see where that takes you.

Neal



By [Matthew Blair](#) on Monday, March 27, 2000 - 07:40 am: [Edit](#)

Hi Neal,

I entered the code in that message and ran it as is. I assume that the purpose was to spit out the name of every definition being compiled -- correct? It only spit out the name of one definition in my case. Could you advise on your setup (the message stated that you had tested the code) so that I can start from the same base as you?

Thanks,

Matthew



By [Neal Bridges](#) on Monday, March 27, 2000 - 10:11 am: [Edit](#)

Matthew, that code does not display the names of words as they are being compiled. It redefines : and ; so that each new definition will, when it is run, in addition to doing whatever it is supposed to do, report "Entering <name>". It is meant as a template, to show how to extend the defining words.

After including that code,

```
: hello 42 . ;  
hello -> Entering hello  
42 ok
```

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New Quartus App

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): New Quartus App



By [Ron Doerfler](#) on Friday, March 24, 2000 - 04:12 pm: [Edit](#)

Hi everyone,

I've just posted on PalmGear my new Quartus app, Expedition ES. As with ActiveKey, the source code is freely available to anyone on this forum-just drop me a line at my email address above. The default format is 3-column Word97, but if you want it in another format let me know. Keep in mind that in the 3-column format it's 20 pages long, so in other formats it will no doubt be even longer.

Again, thanks are due to Neal and others here for their support.

Cheers,

Ron



By [Neal Bridges](#) on Friday, March 24, 2000 - 04:17 pm: [Edit](#)

Wow, 20 pages, 3 columns. I'd like to see it, Ron. Impressive.

Neal



By [Ron Doerfler](#) on Friday, March 24, 2000 - 05:14 pm: [Edit](#)

Actually, it would be more impressive if it were just 10 pages. 8^)

Ron



By [Neal Bridges](#) on Friday, March 24, 2000 - 05:22 pm: [Edit](#)

You write excellent code, Ron -- it's just a very large app. Largest Quartus Forth app to date, I believe.

Neal

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Tables anew

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Tables anew



By [Dave Bennett](#) on Friday, March 24, 2000 - 08:54 am: [Edit](#)

I've created a table on my form using RsrcEdit. When I select preview, it does not display. Is this normal? The Palm reference docs talk about a visible flag that doesn't appear on the RsrcEdit table creation screen...

Dave



By [Matthew Blair](#) on Friday, March 24, 2000 - 09:06 am: [Edit](#)

Perfectly normal.

However, if you are running OS 3.3, you should be aware that there are problems with tables + QF + OS 3.3. See an earlier thread where Trevor posted source code for a hand-rolled Table Manager -- if you go that route, you do not need to add a table definition in the resource file nor do you need to call the Palm Table Manager functions...

Matthew



By [Neal Bridges](#) on Friday, March 24, 2000 - 09:14 am: [Edit](#)

Tables only display if they have data in them to display. That data is placed there by your application.

The problem Trevor found related strictly to table functions requiring a callback; otherwise tables are fine.

Neal



By [Dave Bennett](#) on Friday, March 24, 2000 - 09:21 am: [Edit](#)

Well, since I'm just using a table for a display only purpose to show static data, I should be fine. Thanks.



By [Matthew Blair](#) on Friday, March 24, 2000 - 11:55 am: [Edit](#)

Yep. Guess I should have been more clear about the problem. Sorry Neal! Didn't mean to imply any shortcomings in QF...

Matthew



By [Neal Bridges](#) on Friday, March 24, 2000 - 12:06 pm: [Edit](#)

Oh not to worry Matthew -- didn't think you did, I just didn't want to scare anybody off using tables :)

Neal



By [Barron Snyder](#) on Friday, March 24, 2000 - 12:15 pm: [Edit](#)

What exactly is a callback? Is it when you do something with a selected row from the table?

Thanks,
Barron



By [Neal Bridges](#) on Friday, March 24, 2000 - 12:16 pm: [Edit](#)

Callbacks use the callback/end-callback words. You need them only if you want to draw your table cells in some special way.

Neal



By [Joe Meehan](#) on Friday, March 24, 2000 - 01:14 pm: [Edit](#)

I've been trying to use a callback to implement a load data procedure to use with TblSetLoadDataProcedure on text table items under System 3.0.2. The sample code posted to this list has been very helpful, and my callback does seem to load the data, but the table is only drawn partially and most cells seem inactive. I've been thinking that probably I am somehow corrupting the table structure with my code, but this thread and one previous about callback problems with 3.3 seem possibly relevant. Are there any callback problems with 3.0.2? If not, does someone have a functioning load data callback that I could look at?

By the way, I've been lurking in the shadows here for a while, and this is certainly one of the most helpful lists I've ever seen. Thanks.



By [Trevor Steele](#) on Friday, March 24, 2000 - 03:19 pm: [Edit](#)

Hi Joe

The example in the "Help with tables" thread illustrates a callback used with the TblSetCustomDrawProcedure, unfortunately I've not used the TblSetLoadDataProcedure. The callbacks I have used successfully were under OS 3.0, which I had extracted from my own Palm III when I first started using POSE. I'm really not sure if 3.0.2 gives any problems. If some cells are inactive it would certainly suggest that something is amiss. I was at that stage for quite some time when I started playing with tables :-)

Best regards

Trevor



By [Neal Bridges](#) on Friday, March 24, 2000 - 03:24 pm: [Edit](#)

Tables are far from simple to use in the Palm OS. I've played with them a bit myself, but never had the need (or the patience) to use them in an app.

Neal



By [Dave Bennett](#) on Friday, March 24, 2000 - 05:13 pm: [Edit](#)

Now you're scaring me. :)



By [Neal Bridges](#) on Friday, March 24, 2000 - 05:23 pm: [Edit](#)

Hehehe. Boo!

Neal



By [Joe Meehan](#) on Friday, March 24, 2000 - 05:32 pm: [Edit](#)

I did find the example in the "Help with tables" thread quite useful. I never would have gotten this far without it. I'll plug away at it a little longer, I'll post again if I have any breakthroughs.

Joe

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Graphics: color or mono?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Graphics: color or mono?



By [Barry Marks](#) on Thursday, March 23, 2000 - 10:28 pm: [Edit](#)

I'm going to try a simple game that will use bitmaps and very simple sprite animation. I have both a Palm IIIx and a IIIfx. It looks like all the simple tools are geared to mono. RsrcEdit, for example. That's ok. I can use the IIIfx to do this. It's just for learning. But how much more difficult would it be to do it in color on the IIIfx? I don't see much info about how to use color.

Barry



By [Neal Bridges](#) on Thursday, March 23, 2000 - 11:01 pm: [Edit](#)

You can use the newest Pilrc on the desktop to create 'family' bitmaps. These contain both monochrome and colour versions of the same image; the OS automatically draws the right one.

Hopefully RsrcEdit will soon support colour bitmaps.

Neal



By [Barry Marks](#) on Thursday, March 23, 2000 - 11:14 pm: [Edit](#)

Thanks. I'll look at it. But I think I want to avoid the desktop so maybe I'll wait for RsrcEdit.

Barry



By [Neal Bridges](#) on Thursday, March 23, 2000 - 11:18 pm: [Edit](#)

You can develop everything with monochrome bitmaps, and then extend them to colour later.

Neal



By [Jim Hendricks](#) on Friday, March 24, 2000 - 03:48 am: [Edit](#)

Just a thought, I posted a few months ago a suggested update to the bitmap library that would allow creation of greyscale bitmaps using the new (OS3.3+) bitmap structure. I don't think this structure has changed for color, although my implementation did not include bitmap family support. This may be a starting place to allow onboard greyscale and color bitmaps until rsrcedit comes up to speed. I don't think that the suggested changes to the bitmap library have been posted anywhere within files so you will have to search this forum for my original post with the code. I believe in the contrib code, or lib code there is example code for saving a bitmap to a resource db, combined with the bitmap changes to support grayscale and color, you may be able to code your bitmaps and then save them in resources.

Jim



By [Barry Marks](#) on Friday, March 24, 2000 - 11:04 am: [Edit](#)

I don't see anything in the contrib area that sounds like it might be about storing bitmaps to a resource db. However, the problem I have at the moment is the exact opposite.

I have the bitmap in RsrcEdit. I imported it on the 3x (I'm gonna keep it simple with mono till I know what I'm doing) from a TealPaint database using that feature in RsrcEdit. RsrcEdit does that nicely, even letting me resize it since TealPaint won't.

RsrcEdit let me put it in the resource db but not in the form. But that's really better for me since I want to modify it each time (adding sprites) and draw it into the form.

I've been reading the PalmOS docs and I think I've found the info that will tell me how to do all of that except getting it out of the resource and into a bitmap that has a pointer, etc. that can be used by those functions. Actually I'm not sure yet if they need a pointer to the bitmap or to a structure describing it. But all I have now is the ID of the bitmap within the resource.

Reading through this stuff I'm beginning to suspect that I have to use database functions to get it from the resource database. But I don't see anything that really indicates that. Only hints. Can anyone confirm that?

Also, if that is the case, does the code break when I make a standalone prc that includes the resources? Does it then use it's own prc as the resource database? And if so, does that mean I have to make a prc'able version and a non-prc'able version for testing?

Also also, are there any samples of this in the file area? I've been through a lot of the files over time but I don't remember seeing anything using a bitmap in a resource that later gets drawn onto the form.

Or is this a poor way to go about it? I could use a bitmap like the one in the telephone example but it seems like it would be big and unwieldy. The bitmap is 112x112 at present.

I could have the program draw it. It's not too complex for that. But I had expected this to be the better/easier way. Drawing it will take a bit of doing.

I'm sorry but I think I've just run out of questions. Any suggestions will be appreciated.

Barry



By [Neal Bridges](#) on Friday, March 24, 2000 - 11:41 am: [Edit](#)

LCD.txt gives an example of drawing bitmap resources on the screen. Here's another general-purpose routine:

```
: DrawBitmapResource
( y x id dtype --)
DmGetResource 2dup >r >r
MemHandleLock
WinDrawBitmap
r> r> 2dup MemHandleUnlock drop
DmReleaseResource drop ;
```

Example of use (assumes you have a resource 'Tbmp 1200' containing your bitmap):

needs ids

```
80 80 1200 (id) Tbmp DrawBitmapResource
Neal
```



By [Barry Marks](#) on Friday, March 24, 2000 - 11:48 am: [Edit](#)

Thanks. I had just found DMGetResource and I wasn't able to figure out what to give it for the type. Your example solved that.

I'll look at LCD, too.

I thought this was going to be a very simple project. :)

Barry



By [Neal Bridges](#) on Friday, March 24, 2000 - 11:56 am: [Edit](#)

For small bitmaps, I'd use the bitmap library. For larger bitmaps, resources are really not hard to use.

Neal



By [Neal Bridges](#) on Friday, March 24, 2000 - 03:31 pm: [Edit](#)

Jim -- I never posted that bitmap modification because I wanted to extend it to allow for family bitmaps, which I haven't yet done. It does work to make colour bitmaps, at 8-bit depth.

Neal



By [Neal Bridges](#) on Friday, March 24, 2000 - 11:43 pm: [Edit](#)

By the way, here's the link to Jim's former posting with his updated bitmap.txt:

<http://www.quartus.net/discus/messages/23/173.html?TuesdayMarch1420000449pm#POST1088>

Neal



By [Barry Marks](#) on Saturday, March 25, 2000 - 11:07 am: [Edit](#)

Neal, your code worked for getting the bitmap out of the resource and putting it on the screen. Thanks.

I've been reading about bitmaps in the PalmOS docs and it seems that only OS 3.5 supports transparency in bitmaps. Since my IIIx is 3.0, I guess I'll have to do the transparency myself. Can you confirm that I'm not overlooking something?

Also, the PalmOS manual indicates that BMPCreate followed by WinCreateBitmapWindow is needed to create something in memory that I can move the resource bitmap into and then draw on and then move to the screen. But it says this is only in 3.5. How would this be done in 3.0?

Also, do you know anything about how safe it is to upgrade Palm OS's? I remember a failed upgrade on a Compaq laptop that ruined the rom. Fortunately Compaq gave me a new motherboard.

HP on the other hand, has a 64k non-writable section in it's flash rom that contains everything needed to do the upgrade and can do it after a failure as easily as not. Do you know if Palm has anything like this?

I keep running into nice ways to do things that the OS on my IIIx doesn't support. I don't really care about making this work on all Palms. I'm doing it for fun and to learn. Later when it's less of a fight for me I'll consider that.

But I'm a little bit nervous about upgrading flash roms.

By the way, I looked at the LCD code and it helped me understand what's going on. But the code doesn't work. The resource creator id is the same as in your Qrsc that's used for input. Also a number of words were undefined. >r and bounds were a couple. I found them and included

needs statements and changed the creator id and finally got it to the point where it crashes PalmOS when run from the Quartus console. I'm not sure if that's something I've done or something I don't know about. Or maybe it's only supposed to work in a compiled word.

Barry



By [Neal Bridges](#) on Saturday, March 25, 2000 - 01:14 pm: [Edit](#)

Hi Barry.

Bitmap transparency is, as I recall, an OS3.5 specific feature.

For dynamic bitmaps in Quartus Forth, I'd recommend using bitmap.txt -- very simple.

The Palm OS upgrade process is pretty safe; they have complete recovery instructions should something go wrong. I've used their utility a number of times with never a problem.

LCD.txt works fine. It requires that the LCD resources be installed on your Palm. Those resources have a creator ID of 'p4ap' and a type of 'LCDs' -- it's perfectly valid to have more than one resource database with the same creator ID, as long as the type differs.

Neal



By [Barry Marks](#) on Saturday, March 25, 2000 - 01:54 pm: [Edit](#)

I have the LCD resource. I did change the creator ID to LCDs. Could that be the problem since it's the same as the type name? I changed it in the code as well. It does crash and the needs statements for core-ext and toolkit were needed.

I'll play with it. Anyway the code was helpful.

The dynamic bitmaps will be sprites and I will use bitmap. I've been playing with that for a while and it works fine. But there's also the 112x112 field and that's in a resource. I want with each iteration to draw the bitmap sprites onto a copy of the field and then copy the whole thing to the window.

I think I see how to do that in 3.5 so maybe I will go ahead and upgrade the 3x.

Thanks

Barry



By [Neal Bridges](#) on Saturday, March 25, 2000 - 02:55 pm: [Edit](#)

I'm not sure how you're crashing LCD, Barry -- appreciate it if you could show me a code snippet.

Neal



By [Barry Marks](#) on Saturday, March 25, 2000 - 03:36 pm: [Edit](#)

The popup says Fatal Alert. Then "MemoryMgr.c, Line: 4340, NULL handle". Then a reset button which turns black when I touch it and the palm locks up tight. Using the reset hole restores it ok.

This happens whether typed from the console or on a compiled word. It happens with 5 go, (go being a word that contains 40 40 lcdigit) or when I type 5 40 40 lcdigit from the console. The same problem occurs when I use 48 lcdemit from the console or within a word.

LCD.txt is exactly as I downloaded it except for the addition of the following 2 lines:

needs core-ext
needs toolkit

It won't run without those

Barry

Barry



By [Neal Bridges](#) on Saturday, March 25, 2000 - 03:43 pm: [Edit](#)

My fault, Barry. The code is working; the comment is misleading.

```
char 5 80 80 LCDdigit
```

works. It's important to pass the character, and not the value 5.

In a definition:

```
: go  
  [char] 5 80 80 LCDdigit  
;
```

I'll amend the file.

Neal



By [Barry Marks](#) on Saturday, March 25, 2000 - 03:53 pm: [Edit](#)

That acts like it's working but it just blanks out something at that spot on the IIIc. It took a few different coordinates to figure that out. I thought nothing was happening at first. I guess it's designed for the mono, which is tied up now upgrading the os.

char 5 converts 5 to 53. on lcdemit i was using the numbers 48 and 49 thinking it was like emit. That didn't help.

Barry



By [Neal Bridges](#) on Saturday, March 25, 2000 - 04:09 pm: [Edit](#)

You said you changed the resource IDs. You shouldn't need to -- it should be

Name: LCD (this doesn't matter much actually)

Creator: p4ap

Type: LCDs

Try that.

Neal



By [Barry Marks](#) on Saturday, March 25, 2000 - 04:17 pm: [Edit](#)

I'll change that back but I must have done something else wrong. 53 lcdemit doesnt crash now. I still can't see it but thats because of the color.

I was only able to get my 3x upgraded to 3.3 even though I have the 3.5 rom. Do you know anything about how to do that?

Barry



By [Neal Bridges](#) on Saturday, March 25, 2000 - 04:24 pm: [Edit](#)

If you have the right ROM -- has to be the right one for your chipset, available through the Provider Pavillion if you're signed up as a developer -- you can use the 'Advanced' button on the 3.3 upgrade software to specify a different ROM image. You have to take your own full backup first.

The LCD library code should display LCD digits on any Palm, colour or otherwise. The LCD digit bitmaps are only 1-bit monochrome, but the newer OS has no trouble displaying those on a colour screen. I'm using it right now under OS3.5 on a IIc.

Neal



By [Barry Marks](#) on Saturday, March 25, 2000 - 05:13 pm: [Edit](#)

I'm not a developer. I don't do any programming sitting at a desk. I've done 35 years of that and now I don't have to any more. Hence the Palm. Before that it was an HP 200lx. I have a Thinkpad for programming on the front porch.

I got the 3.5 rom by following a url on one of the palm newsgroups. But the 3.3 upgrade program doesn't have an advanced tab. Probably because it's not the developer's version. 3.5 should be released soon so I'll wait.

I've found out what the problem is with LCD. I downloaded it and re-installed the resource file and it worked just fine. Then I looked at the bitmaps in RsrcEdit and they were blank. And they no longer printed. So it seems RsrcEdit clobbers mono bitmaps if you open them on the 3c. Or something like that.

I opened 3 of them and they were blank and wouldn't print. The rest, which I hadn't opened in RsrcEdit printed fine. Before using RsrcEdit, they all printed fine.

With that in mind I think I'm lucky that the upgrade to 3.5 didn't take on the 3x. I suspect it's the OS that makes the difference and not the hardware.

Barry



By [Neal Bridges](#) on Saturday, March 25, 2000 - 05:24 pm: [Edit](#)

You're right Barry; under OS3.5 RsrcEdit does appear to mangle monochrome bitmaps. Have to let the RsrcEdit author know about that.

Neal



By [Jim Hendricks](#) on Sunday, March 26, 2000 - 04:14 am: [Edit](#)

Just a quick note since I have been out of comms for a day in a half (I am right now at one of those Surf Stations, what a pain feeding a computer coins so I can feed my wired habit!)

Neal, no problem on not posting the bitmap stuff, I contributed it to the Quartus community for them to decide if it has any value to them, it did for me so that's why I posted it.

Barry, the lib I was refering doesn't seem to be in the files area right now, although I only did a

quick scan, Neal may recall the lib, it is Bitmap-DOL dated 2/5/99, I don't see a reference in the memo as to who the author was. I haven't tried it but there is a saveimage word.

Jim



By [Barry Marks](#) on Sunday, March 26, 2000 - 09:55 am: [Edit](#)

Jim, Neal posted a link to the lib the other day. I have it. I haven't looked at it yet. Yesterday got a little hectic so I just worked on the bitmaps and screen layout in RsrcEdit whenever I got a small chunk of time.

You guys probably don't realize how hectic retirement can be. :)

Neal, I have the edit field app you helped me with. I've started making a tutorial with it but that won't happen overnight. Would it be useful to post the source and the resource now? I'll be happy to. Go ahead. Say yes. Force me to comment it. :)

Barry



By [Neal Bridges](#) on Sunday, March 26, 2000 - 10:00 am: [Edit](#)

Hehe. You bet, post away.

Neal



By [Jim Hendricks](#) on Thursday, March 30, 2000 - 11:49 am: [Edit](#)

Barry, when I was refering to the Bitmap-DOL code dataed 2/5/99, this was for code that allows saving a bitmap structure as a resource in a DB. That means that using Neal's bitmap lib, or my extensions for grayscale allow dynamic creation of the actual bitmap structures, then using bitmap-DOL, you can save them as resources. This would then allow you to handle the bitmaps as regular resouce bitmaps in your programs instead of dynamically creating them. (ie. you dynamically create them once in a throwaway app, once they are in the resouce db, your real program uses the resources.) I haven't personally used the bitmap-DOL lib myself to do this, just recall seeing a save bitmap word. If you want a look at the bitmap-DOL lib, I can repost it here. I don't know who the author of the bitmap-DOL lib file is since it is not commented but since it was made available by Neal, I assume it is usable for public consumption.

Jim



By [Barry Marks](#) on Thursday, March 30, 2000 - 01:55 pm: [Edit](#)

I misunderstood and found tealbitmap that was signed "DOL". Thinking that's what you were referring to I've been studying it. Actually it's been helpful but it's a little different than what I'm doing.

It does create a bitmap structure and then load a bitmap from the TealPaint database and fill the structure. I think TealPaint has a little different format but not very different. I'm currently trying to do the same thing from a resource bitmap. I've gotten far enough that it crashes so I'm making progress. :)

If you could repost bitmap-DOL I would appreciate it. Since Neal isn't here to put it up, if you can't make it available yourself my email is barry@fbtc.net.

Thanks

Barry



By [Jim Hendricks](#) on Thursday, March 30, 2000 - 02:59 pm: [Edit](#)

No, Barry, I was wrong, once you said tealbitmap, I looked back at the files archives looking for teal, I found tealbitmap which is the memo I am refering too. I guess it helps to know what you are looking at!

The structure in tealbitmap though is the bitmap structure for a 1bpp image. If you look at the graphics.h file in the SDK, it details the modifications for grayscale and color, namely that the first 2 bytes (1 cell) of the previous filler is now a version number and a bitdepth. I don't have the graphics.h file handy right now but it also has fields for family bitmaps etc.

I don't know what the purpose of save-image is in the tealbitmap but I recon that if it doesn't do this right now, it should be easily modified to take a bitmap that was defined dynamically from neal's or my own version of bitmap and save it to a resource database as a resource. Although this may be a moot point with rsrcedit now supporting grayscale and color bitmaps.

Jim



By [Barry Marks](#) on Thursday, March 30, 2000 - 05:00 pm: [Edit](#)

I'm doing this on the 3x and using 1 bit/pixel and the old structures and functions. I started this before I knew the new ones existed. In any case, most of my graphics programming has been done with 1 bit depth. So I'm more familiar with it.

What I'm trying to do is get the bitmap from the resource and into the buffer defined by the structure. I have that coded and it crashes but I haven't worked on it long yet.

The next step is to copy the bitmap, or some small sprites into it and then draw it. I think that'll be the easy part. I have a lot of samples of the drawing and the sprites should be easy enough. I've done a lot of this but not in Forth.

The tealbimap file did show me most of what I needed. Getting the bitmap from TealPaint is similar, I think, to getting it from a resource.

As soon as I get past this crashing, I think I'll be over the hump on this one. As soon as I get over the crashing. :)

Barry



By [Jim Hendricks](#) on Friday, March 31, 2000 - 11:23 am: [Edit](#)

My original Analog clock code read a bitmap from a resource, drawing into an offscreen window sized the size of the bitmap. The bitmap itself contained 2 icons so to display the icons on the screen, I was using wincopyrectangle to copy from the bitmaps offscreen window to my screen's offscreen window, then finally using wincopyrectangle to copy from my offscreen screen to my real screen. If you want, I can try to look up my original code and see if I can't post it for you.

Jim



By [Barry Marks](#) on Friday, March 31, 2000 - 05:02 pm: [Edit](#)

Ok thanks.

I spent some time looking over your code in Analog Clock last night. I understood most of it. I must be learning something.

I'm still trying to get past this crashing. I'm not getting anywhere trying to figure it out but I'm learning a lot in the process so it's worth sticking with.

I may switch to what youve described above. But first I want to make it work this way.

Barry

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Using asm68k

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Using asm68k



By [Matthew Blair](#) on Wednesday, March 22, 2000 - 12:22 pm: [Edit](#)

Hi,

I've been interested in using the assembler capabilities of QF, and so I've been looking through the manual to understand asm68k better. Here is under+ reproduced from the manual:

```
code under+ ( a b c -- a+c b )
  tos 2 sp d) add
  ] drop [
end-code
```

I understand assembly, but I'm not sure what's exactly happening here. Could someone explain this simple example in detail? Specifically, I would be interested in the effect that each word has...

Thanks in advance,

Matthew



By [Neal Bridges](#) on Wednesday, March 22, 2000 - 03:59 pm: [Edit](#)

```
tos 2 sp d) add
```

This adds the Top Of Stack register (TOS) (the 'c' item) to the stack item two bytes down from the stack pointer (the 'a' item).

```
] drop [
```

This steps into 'compile' mode using] (the assembler normally operates in interpret mode, but still lays down code -- a bit counter-intuitive but logical in terms of the implementation). We compile drop and then step back into interpret mode with [.

If] drop [is too confusing for you, replace it with its assembler equivalent:

```
sp )+ tos move
```

Neal



By [Matthew Blair](#) on Thursday, March 23, 2000 - 07:53 am: [Edit](#)

Ah - I see now that my problem was in not recognizing that the assembler

portion is in interpret mode. I wasn't sure how the assembler words were being "acted on" by QF. Thanks for the explanation!

BTW, there is a trivial error in the asm68k documentaion. In the addressing modes section, the entry for postincrement register indirect shows)+ for the syntax, but +) for the example.

Thanks again,
Matt



By [Neal Bridges](#) on Thursday, March 23, 2000 - 10:34 am: [Edit](#)

Thanks! Fixed in the online version.

Neal

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Compiling at Run Time?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Compiling at Run Time?



By [Travis Casey](#) on Wednesday, March 22, 2000 - 11:57 am: [Edit](#)

Is there a way to access the compiler, or even some of the compiler's features (like tokenization) at runtime? I'd like to write a dice app for games that will also do arbitrary calculations -- e.g., write:

3d6+4

in a text field, press a button, and get the result. I can see how to use the package with

let

to do this for a pre-set formula, but I'd like to let the user enter a formula at runtime.

(I realize that it's a bad idea to let people run arbitrary code, but this isn't going to be a distributed app -- only three or four people are going to use it.)

I can write a parser that will take a string, parse it out, and then do the calculations -- I've done it before in other languages -- but I was wondering if there was some "cheat" to get Quartus itself to do this for me.

--Travis



By [Neal Bridges](#) on Wednesday, March 22, 2000 - 12:01 pm: [Edit](#)

No cheat is available. The Quartus Forth interpreter cannot be exported to a stand-alone app. A simple infix arithmetic parser is really easy to write in Forth, though. Let me know if you need a hand.

Neal



By [Travis Casey](#) on Wednesday, March 22, 2000 - 12:14 pm: [Edit](#)

Thanks for confirming that -- I didn't figure there would be, but it can't hurt to ask. :-)

Between work, wife, and child, it'll probably be a few days before I can find time to get a first draft of the parser written. Once I have one, I'll post it up for suggestions.

Thanks!

--Travis



By [Travis Casey](#) on Tuesday, March 28, 2000 - 01:51 pm: [Edit](#)

Here's my first draft of the parser. I'm using the parameter stack as a number stack and the return stack for an operator stack, which works, but I'm wondering if there's a better way to do it. It just seems a bit inelegant, especially as it makes it hard to factor the main word.

Here it is:

```
\ calc 3/28/00 1:40 pm TSC
```

```
needs safe
```

```
needs case
```

```
variable strpos
```

```
variable count
```

```
variable curop
```

```
\ return the priority of an operator
```

```
: oppriority ( op -- priority )
```

```
  case
```

```
    [char] - of 1 endof
```

```
    [char] + of 1 endof
```

```
    [char] * of 2 endof
```

```
    [char] / of 2 endof
```

```
    0 of 0 endof
```

```
  endcase ;
```

```
\ is op1's priority greater than op2's?
```

```
: greater ( op1 op2 -- result )
```

```
  >r oppriority r> oppriority > ;
```

```
\ does the operation that's on the top of
```

```
\ the stack
```

```
: doop
```

```
  case
```

```
    [char] - of - endof
```

```
    [char] + of + endof
```

```
    [char] * of * endof
```

```
    [char] / of / endof
```

```
  endcase ;
```

```
\ the main show; written as one large
```

```

\ definition since it uses the return
\ stack.
: calc ( str u -- n )
\ store the string info and put a
\ flag on the return stack
count ! strpos ! 0 >r
\ initial loop; parse the input, acting
\ on what parts of it we can
begin
  strpos @ c@ ( get current character )
  dup 47 > swap 58 < and if ( is it a digit? )
    0 0 strpos @ count @ >number ( get the number )
    count ! strpos ! ( storing the new position )
    drop ( and dropping the high byte )
  else ( it's not a digit )
    strpos @ c@ ( get the current character again )
    curop ! ( tuck it away for a moment )
\ do previous operators until we find one of
\ equal or lower precedence than this one
    begin curop @ i greater 0= while
      r> doop
    repeat
      curop @ >r ( put the operator on the stack )
      strpos @ 1+ strpos ! ( update string info )
      count @ 1- count !
    then
\ repeat until there's no more string left
count @ 0 = until
\ now, go back and do any remaining operators
begin
  r> dup 0 <> if ( 0 is our flag )
    doop
  else
    drop exit
  then
again ;

\ set of tests to see if it's working right

: test1 s" 14-12" calc . ; ( = 2 )

: test2 s" 3*4+6" calc . ; ( = 18 )

: test3 s" 6+3*4" calc . ; ( = 18 )

: test4 s" 2+10/2" calc . ; ( = 7 )

```



```
: test5 s" 20-3*5-1" calc . ; ( = 14 )
```

This version only supports single-length integers and the + - * / operations. Spaces are not allowed in formulas, and it does not attempt any error handling. Use at your own risk.

However, it does do order of operations correctly, and the basis is there for adding more operations. My own version has an extra operator for dice, but I left that out of this.

I'm planning on adding support for parentheses and error checking, but wanted to get feedback on the basic way I'm doing things first.

Thanks!

--Travis



By [Neal Bridges](#) on Tuesday, March 28, 2000 - 02:18 pm: [Edit](#)

Not bad. I'd use a BEGIN/WHILE/REPEAT loop at the end, instead of the BEGIN/IF/ELSE/EXIT/AGAIN you have. I'd use tester.txt to create the tests. I'd also implement a small operator stack, just so (as you say) you could factor appropriately.

Neal



By [Travis Casey](#) on Tuesday, March 28, 2000 - 03:05 pm: [Edit](#)

Two questions for you, Neal (that's what they all say, right? :-):

- Can you show an example of how to use tester.txt? I'm a bit lost looking at it.
- I seem to recall seeing code for implementing a stack somewhere on the message boards, but can't find it now. Do you have any clue where it might be, or am I misremembering? (I've been reading this site daily and reading three different FORTH books, plus looking at other FORTH sites, so I may be remembering something I saw elsewhere.)

Thanks!

--Travis



By [Neal Bridges](#) on Tuesday, March 28, 2000 - 03:06 pm: [Edit](#)

needs tester
decimal

TESTING SOMETHING

```
{ 3 5 + -> 8 }
```

I don't remember if I've ever posted any stack code; I'll hunt around a bit.

Neal



By [Neal Bridges](#) on Tuesday, March 28, 2000 - 03:19 pm: [Edit](#)

Give this a try:

```
\ stacks 00.3.28 3:09 pm NAB
```

```
: stack ( size "name" -- )
  create
  cells dup here cell+ dup ,
  + , allot ;
```

```
: push ( item stack -- )
  1 cells over +! @ ! ;
```

```
: pop ( stack -- item )
  dup @ @ -1 cells rot +! ;
```

Example:

```
10 stack mystack
23 mystack push
42 mystack push
mystack pop . -> 42
mystack pop . -> 23
```

The stacks created by this code have a stack pointer, and an upper limit, so you can add underflow and overflow checking as required. Your code should never need it, however, as you're using a sentinel value at the bottom of your stack.

Neal



By [Travis Casey](#) on Tuesday, March 28, 2000 - 03:19 pm: [Edit](#)

Ah, I see... just an automated way to do a series of tests. I was thinking it was more of a runtime stack checker, which is why I was confused.

I probably won't use it because I've got a ton of debugging code in the version I'm working on -- I cut it all out for the post here, so people trying to figure out how it works wouldn't have to wade through lots of dup s" number fetched = " debug things. But thanks... that is interesting.

I'll probably pull up the `assert.txt` module instead and use it to help me test things.

Again, thanks, though... and anything you can bring up about doing a stack would be appreciated. If nothing else, I suppose I can adapt the linked list code that's in an old message here...

--Travis



By [Neal Bridges](#) on Tuesday, March 28, 2000 - 03:23 pm: [Edit](#)

Give the code I posted a try. Stacks are simply arrays with an associated pointer; a linked-list is overkill for that.

Neal



By [Travis Casey](#) on Tuesday, March 28, 2000 - 03:34 pm: [Edit](#)

Looks like we were posting at the same time... I only meant the `tester.txt` code, not your stack code (which looks good).

I was thinking in terms of a linked list because I like having "unlimited" space available, but it's not really needed for this application.

Thanks again, Neal. You run a class act here.

--Travis



By [Neal Bridges](#) on Tuesday, March 28, 2000 - 03:40 pm: [Edit](#)

Thanks, Travis. Glad to help!

Neal



By [Neal Bridges](#) on Tuesday, March 28, 2000 - 03:46 pm: [Edit](#)

Travis--

: test5 s" 20-3*5-1" calc . ; (= 14)

Shouldn't that be (= 4) ?

Neal



By [Travis Casey](#) on Wednesday, March 29, 2000 - 10:28 am: [Edit](#)

Whoops... you're right. It does calculate it as 4 -- I just slipped up putting those

comments in.

--Travis



By [Neal Bridges](#) on Wednesday, March 29, 2000 - 10:45 am: [Edit](#)

That's why tester is so handy -- the comments are tested against the code automatically, they have to be right.

Neal

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WindChillFactor correction

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): WindChillFactor correction



By [Dave Bennett](#) on Wednesday, March 22, 2000 - 10:04 am: [Edit](#)

I've updated the files on my site www.micoks.net/~dbennett for WindChillFactor. Seems I left in a string>Field when it should have been string>anyField. That should resolve the problems people were having.

The test is 30 degrees and 5 mph. This should display 26 as the result when the Wind Chill Factor button is pressed.

Dave



By [Bill McCarthy](#) on Wednesday, March 22, 2000 - 08:01 pm: [Edit](#)

Dave,

I noticed that with "large bold" for the output field, the underline (which you specify in the resource) does not show on my Palm IIIx.

Since this is a test app which will be compiled many times, perhaps OPG is not the best choice for a single formula. Here's a forth version with rounding added at the end and not allowing the answer to be greater than the temp:

```
: wcf ( F: temp speed -- wcf )  
  fdup fsqrt .3034e f* fswap  
  -.02029e f* f+ .4743e f+ fover  
  91.4e f- f* 91.4e f+ fround fmin ;
```

Bill



By [Dave Bennett](#) on Thursday, March 23, 2000 - 08:20 am: [Edit](#)

Neal showed me that if you put

needs opg
debug on

the formula translation to RPN shows up for the let statement. It becomes a tool for translating algebraic formulas to RPN.

Dave



By [Bill McCarthy](#) on Friday, March 24, 2000 - 02:27 am: [Edit](#)

OPG is a great tool. I've used it frequently with Win32Forth and will probably use it regularly with Quartus.

I was just commenting that (1) it seems like overkill to slow down compiling, on one of these slow little computers, by loading opg for one simple formula, (2) you should round before you $d > f$, and (3) you should not allow the WCF temp to be greater than the actual temp.

As I've mentioned before, the underlining is not showing up in the output field on a Palm IIIx - even though the resource specifies underlining. What device are you using?

Bill



By [Dave Bennett](#) on Friday, March 24, 2000 - 05:23 am: [Edit](#)

There has never been any underlining shown on my Palm IIIs, V, or Vx since I started working on program. I'm not sure what the issue is with this, but I like it without the underlining displayed myself.

The time for the compile is only invested once so it really isn't a consideration in the overall use of the program.

I don't see a $d > f$, do you mean the $f > d$ line? This may be a valid point if you've found a set of numbers that will result in the wcf being greater than the temperature.

The weather folk's formula should take care of the validity of the output; not me.

Dave



By [Barry Marks](#) on Friday, March 24, 2000 - 11:09 am: [Edit](#)

I ran into the problem of the underlining not showing up, too. I increased the field height (to 12 with the font I'm using) and that fixed it.

Barry

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Query about safe.txt

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Query about safe.txt



By [John Newell](#) on Wednesday, March 22, 2000 - 09:05 am: [Edit](#)

Neal :)

Could you say a few words on the use of safe.txt and what it does for you. I can't find this information anywhere else and don't want to wade through safe.txt to work it out for myself. Thank you.



By [Neal Bridges](#) on Wednesday, March 22, 2000 - 09:21 am: [Edit](#)

safe.txt provides protection against:

- mismatched : and ;
- accidental use of compile-only words (like IF/THEN) while interpreting
- invalid values in BASE
- unaligned address access by ! @ and friends
- division by zero

Neal



By [Neal Bridges](#) on Wednesday, March 22, 2000 - 09:27 am: [Edit](#)

Additionally, as a side-effect of the : ; matching, it will find control-structure mismatches of all sorts (IF without THEN, etc.).

Neal



By [Kristopher Johnson](#) on Thursday, March 23, 2000 - 07:39 am: [Edit](#)

Is there anything special one must do to get the benefits (other than "needs safe")?



By [Neal Bridges](#) on Thursday, March 23, 2000 - 08:54 am: [Edit](#)

Just that. :)

Neal



By [Dave Bennett](#) on Thursday, March 23, 2000 - 10:09 am: [Edit](#)

Neal,

The : ; matching takes a hit when using "let" from opg as the "let" statement

has to end with a :.

Dave



By [Neal Bridges](#) on Thursday, March 23, 2000 - 10:38 am: [Edit](#)

No, it doesn't. There's no conflict. The : at the end of a "let" is parsed directly by OPG itself.

If you're having a problem, can you illustrate it?

Neal



By [Dave Bennett](#) on Thursday, March 23, 2000 - 05:48 pm: [Edit](#)

Safe acts the same on my system whether there is a missing ; or not. That's why I thought there was a problem with opg's :. If I have a missing ;, save doesn't "do" anything; the program just fails to load. The same behavior if safe isn't "needed". I expect safe to somehow alert me to a problem. The fact that it wasn't with a regular ; issue made me believe it was just glossing over the : in opg.



By [Neal Bridges](#) on Thursday, March 23, 2000 - 06:12 pm: [Edit](#)

I suppose I could extend safe to grumble if a definition is not terminated by the end of a file; I'm not sure it happens very often, though.

Neal



By [Dave Bennett](#) on Thursday, March 23, 2000 - 08:27 pm: [Edit](#)

It isn't important to me. It was just a test that I ran to decide if safe did anything for me. I just happened to test it in the same file that opg was used in.



By [John Newell](#) on Wednesday, April 5, 2000 - 04:43 am: [Edit](#)

I did have a problem using 'safe'. I am calling :NONAME inside a colon definition. :NONAME, with 'safe', leaves 2 cells on the stack (colon-sys and xt), not just the xt that the standard definition uses. This threw out my expectation of the stack size.

I thought that perhaps :NONAME should only leave colon-sys on the stack if not compiling. However, I guess this would throw out 'safe's ; checks though I haven't tried this.

Any ideas?



By [Neal Bridges](#) on Wednesday, April 5, 2000 - 06:44 am: [Edit](#)

John, what is it you're trying to do that breaks with safe?

Neal



By [John Newell](#) on Wednesday, April 5, 2000 - 08:21 am: [Edit](#)

Hi,
OK, I am doing something like this:
: OLD: : ;

OLD: DOCOLON (--)
DOES> (a-addr --)
@ EXECUTE
;

OLD: : ("name" --) (C: -- a-addr xt)
.
. put c-addr u (address of "name") on stack
.
CREATE HERE
0 , \ For xt
. other word data area setup
.
DOCOLON
:NONAME
\ stack should be (c-addr u a-addr xt)
OVER POSTPONE LITERAL
2SWAP POSTPONE SLITERAL
.
etc. to build start of word checks before it executes
.
;

OLD: ; (C: a-addr xt --)
OVER POSTPONE LITERAL
etc. do end of word checks
POSTPONE ;
SWAP ! \ Store xt
; IMMEDIATE

After :NONAME, stack should be:

(c-addr u a-addr xt)

but it is

(c-addr u a-addr colon-sys xt)

if 'safe' is used (because the 'safe' redefinition of :NONAME puts "colon-sys" on the stack).

And don't suggest I do it a different way. I think it's valid code which does work (without safe').

What say you?



By [Neal Bridges](#) on Wednesday, April 5, 2000 - 06:32 pm: [Edit](#)

In a Standard system, :NONAME leaves an xt and a colon-sys on the stack -- there's no telling how many cells are in a colon-sys. So your code, while it may work on some systems, will not work reliably on more than one system, or even the same system extended (as per safe).

Neal

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

WindChillFactor

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): WindChillFactor



By [Dave Bennett](#) on Monday, March 20, 2000 - 03:14 pm: [Edit](#)

I have posted a small Quartus Forth application on my website called WindChillFactor. I wrote this, with considerable help from Neal & others, as a learning exercise. It is a very simple app that takes input (temperature & windspeed) from a user, caculates the wind chill factor, and displays it.

It is available at www.micoks.net/~dbennett and is in the file wcf.tar.gz and includes the source, the resource file, and a brief readme.



By [Neal Bridges](#) on Monday, March 20, 2000 - 03:23 pm: [Edit](#)

I think most users would find it more accessible as a .zip -- if you wish I can convert it for you.

Neal



By [Dave Bennett](#) on Monday, March 20, 2000 - 03:35 pm: [Edit](#)

I used zip on my Linux box for the first time to create wcf.zip in the same location. If you would check out that it actually did what I expected it to... :)

Dave



By [Neal Bridges](#) on Monday, March 20, 2000 - 03:44 pm: [Edit](#)

Looks right!

Neal



By [Barry Marks](#) on Monday, March 20, 2000 - 04:13 pm: [Edit](#)

Thanks for the sample. I've been fighting all week to do something similar (but less useful) and I got it working just today, thanks to Neal.

Yours was the sample I needed but BEFORE I got mine working. :)

Barry



By [Dave Bennett](#) on Monday, March 20, 2000 - 04:29 pm: [Edit](#)

I know what you mean. The lack of samples that demonstrate basic functions in

very simple packages can not be underestimated. Too often someone creates a monolithic app that does everything, making it almost impossible to tell how to do or just test the simple things without tracing through tons of unrelated code.



By [Neal Bridges](#) on Monday, March 20, 2000 - 05:06 pm: [Edit](#)

That's a big reason this forum exists. As always, tell me what you need an example for, and I'll produce one.

Neal



By [Barry Marks](#) on Monday, March 20, 2000 - 05:37 pm: [Edit](#)

It's hard to tell you what is needed when I don't know myself. I just have to figure it out as I go along.

There are a lot of examples but I haven't done enough yet to tell which are the parts that do what I want to do.

The Donaho tutorial is what is needed, but it doesn't go far enough. I'm going to try to write something like that for the little app I did as I clean it up. No promises, but if it turns out ok I'll send it to you.

Doing that might help me better understand what I did, but I'm not sure I understand it well enough to make a useful tutorial out of it.

Barry



By [Neal Bridges](#) on Monday, March 20, 2000 - 05:43 pm: [Edit](#)

I look forward to seeing it.

In the meantime, as you go along, when you hit a bump, shout -- glad to help, as always.

Neal



By [Dave Bennett](#) on Monday, March 20, 2000 - 05:52 pm: [Edit](#)

Barry,

I always find it helpful to do two things when learning. First, have a firm goal in mind of what you are trying to learn. In my case, it was get input, do something with it, display output. Period. No more, no less. The simplest thing I could think of that would be useful to me was the Wind Chill Factor app. :)

The second thing is to draw out exactly what it will do, what data it'll display, etc. at the onset and do not change it. Change orders are not allowed in

educational apps I do for myself. :)

Dave



By [Bill McCarthy](#) on Monday, March 20, 2000 - 07:07 pm: [Edit](#)

Dave,

Thanks for the sample. It unzipped OK, but I the app doesn't show up in my Palm IIIx or my POSE launchers. The resource does show up in RsrcEdit. Likewise, the prog appears in the Info screen of the Launcher.

Bill



By [Barry Marks](#) on Monday, March 20, 2000 - 08:07 pm: [Edit](#)

I had a pretty firm goal. Similar to yours. I wanted to have an input field and an output field and pass the input to the output. I felt that would give me a simple understanding of what I think are pretty basic functions.

Unlike yours, being useful wasn't a concern with mine. I've never worried about being useful with exercises. That helps keep them simple and lets me focus on what I'm really trying to learn.

I didn't really care what it looked like. I wasn't sure what the possibilities were so I didn't worry about that. The end product isn't very pretty but I'll label the fields and center them or something. Or not.

But my goal was constant. Learn how to do it. :)

Neal, thanks again.

Barry



By [Jim Hendricks](#) on Tuesday, March 21, 2000 - 03:46 am: [Edit](#)

Shortly, once I work out some final cleanup issues with the code etc., I will be releasing an analog clock application. While it is probably a little larger than most tutorial's, and does involve a few advanced math uses, I think it could probably be turned into a tutorial. It uses direct drawing to the screen, double-buffered graphics, trig functions for plotting points at various circle diameters, a touch of grayscale, timed event handling, and just basic form, menu, alert and help resources. After I post the code and app, I will have to eval it for turning into a tutorial.

Jim



By [Dave Bennett](#) on Tuesday, March 21, 2000 - 08:43 am: [Edit](#)

Barry,

The PRC file is the resource file, not an application. You have to load it onto the palm, then the src file into your memo application, then run that from inside Quartus Forth.

I'll leave the compilation as an exercise for the user. It does compile fine however and I have beamed it to two other Palms, both Palm IIIs, where it executes with no problem.

Dave



By [Barry Marks](#) on Tuesday, March 21, 2000 - 09:46 am: [Edit](#)

Thanks. I realize that. It ran for me just fine once I got the ocb or ojb or whatever that was.

Barry



By [Gary Wiese](#) on Tuesday, March 21, 2000 - 05:38 pm: [Edit](#)

I have it loaded on my Palm IIIx. Now how do I get it onto the memo files on the palm?



By [Bill McCarthy](#) on Tuesday, March 21, 2000 - 05:48 pm: [Edit](#)

I was waiting for others to post what they had to do to make the program do something useful. Some here appear to claim that the program works (i.e. produces a readable result).

On my Palm IIIx and on POSE, I can enter the temp and wind speed. There is no output field and the big push button behaves like its been pushed but nothing happens.

Here's how I got it almost working:

First I changed to font in field1042 from large bold to large. Now the code shows an underlined output field on the screen but the push button still produces no output.

Second I changed field1042 to Editable. Now the answer appears when the push button is pressed.

Third, I noticed that the code leaves stuff on the stack. This turns out to be the Err result of the word String>Field. A 1 means OK, a 0 means error. One could do a `0= throw` or `drop`.

OK, so now it works but does it produce a useful result? Try 32 degrees with 0 wind speed. I get a result of 63. Is this suppose to mean that if the temp is at freezing but there is no wind, then it feels like 63 degrees??? <g>

Bill



By [Barry Marks](#) on Tuesday, March 21, 2000 - 06:23 pm: [Edit](#)

Well, it did run just fine. I was in a hurry then and didn't really get a chance to try it out. I just ran it and terminated it and left.

I just tried it again and it runs just fine. I put in the temperature and the wind speed and hit the WindChillFactor button and it beeps but nothing happens. It doesn't actually give me the wind chill. Do I have to register to get that? :)

Barry



By [Bill McCarthy](#) on Wednesday, March 22, 2000 - 02:44 am: [Edit](#)

One other thing I found. The output field can be updated with Editable unchecked. Just use String>anyField instead of String>Field. It doesn't return anything, so we don't have to deal with the error code.

Suppose we add another button to end the application, for example. We'll get a 9 from ekey no matter which button is pressed. What word fetches the field ID?



By [Neal Bridges](#) on Wednesday, March 22, 2000 - 09:24 am: [Edit](#)

event >abs itemid

will return the ID of the button.

One note -- it's bad practice to have an 'exit' button on your app. The usual practice is to have your applications run until another application is started, the way the built-in apps work.

Neal



By [Dave Bennett](#) on Wednesday, March 22, 2000 - 09:57 am: [Edit](#)

Hmmm. That should be string>anyField, not string>Field. I wasn't able to get string>Field to work correctly for some reason. Changing it to string>anyField will solve the problem. I'll get the corrected files up on my website later this morning.

string>anyField is available in the PhoneDecode application.

The test is 30 degrees, 5 mph. Should return 26 when the windchillfactor button

is pressed.

Neal is right about the exit button. Palm apps don't need and should not have "exit" buttons. The user moves from app to app as needed. As a matter of curiosity, where would an "exit" button return you to??

Dave



By [Barry Marks](#) on Wednesday, March 22, 2000 - 11:09 am: [Edit](#)

Grrrr. Not having a proper, clean exit bothers me. I see that it would be out of place here. But that's either a design flaw in the Palm or I'm getting old and set in my ways. :)

What does `string>anyfield` do different than `string>field`? It looks a lot more complicated.

Barry



By [Neal Bridges](#) on Wednesday, March 22, 2000 - 11:13 am: [Edit](#)

Barry -- you can exit a Palm app; obviously each app exits, and cleanly, whenever another app is started. There's no flaw. It just isn't the accepted design philosophy on the Palm; rather, each app stays running until you tap the silk-screened application button, or choose another application via the hard-buttons.

In effect, the silk-screened Application button is the exit button for all applications.

Neal



By [Dave Bennett](#) on Wednesday, March 22, 2000 - 11:30 am: [Edit](#)

Barry -- Here's how I think of it. The Palm is a virtual computer always running all applications that I need simultaneously. (Just like my Linux box!) I just "change" to the one I currently need to use. "Exiting" an application is something I used to do in DOS. :)

Let's not get ugly here- the word "old" worries me.

Dave



By [Travis Casey](#) on Wednesday, March 22, 2000 - 11:35 am: [Edit](#)

`string>Field` takes a string and uses PalmOS functions to insert it into the field. In so doing, the data is copied from its current location into the field's text

storage space, and the field's position pointer is updated.

For example, if you use `string>Field` to insert 20 lines of text into a 4 line field, the field will be showing the last 4 lines of text when it's done.

`string>anyField` does things a bit differently. It creates a new memory space for your string, copies your string into it, tells the field to use this memory space as its data space, and then tells the field to redraw itself.

This is faster, because the field only redraws once (when you use `string>Field`, it redraws for every character inserted -- you can see this happening if you insert a large block of text) and the field's "cursor position" will either be at the top of the text or will be where it was before -- I'm not sure, and haven't tested to find out.

--Travis



By [Travis Casey](#) on Wednesday, March 22, 2000 - 11:42 am: [Edit](#)

About the lack of an exit button -- you can think of it as being as if all Windows apps simply exited when you pressed the little "close" button on the title bar, or when you chose "close" from the little menu on the title bar.

Any application that needs to save any state needs to have exit code -- the only thing that differs from Windows is that apps don't create their own "exit" buttons or "exit" item on the menu -- they simply use the one the OS provides.

You can have an exit button or exit menu entry if you really want -- I've seen Palm apps that have them. But when the provided exit button (the Apps button) is always handy, why go to the trouble?

(Now, it may make sense if your app is overriding the Apps button to do something else -- but if that's the case, you should make sure it's well-documented in any README you distribute, and possibly via a popup that comes up when you start the app.)

--Travis



By [Bill McCarthy](#) on Wednesday, March 22, 2000 - 12:59 pm: [Edit](#)

Why I wanted an Exit Button:

While developing apps from Quartus, I would like to get back to the OK prompt when I hit the Exit Button (by exiting the work used to invoke the app and doing a ``1000 showform``. If the app was launched normally, it wouldn't need an Exit Button, but if one exists it should merely do a ``bye``.

Neal showed me how to detect which button was pressed earlier in this thread. Now all I need to know is how my app can tell how it was invoked.

Bill



By [Barry Marks](#) on Wednesday, March 22, 2000 - 01:52 pm: [Edit](#)

I wasn't trying to say I want an exit button. I understand the Palm philosophy and I don't have a problem with it. But not including an exit from a program is a silly mistake on any other system. It's just deeply ingrained after all these years.

When I write a program and don't create a way out, I want to look over my shoulder to see who's laughing at me. :)

Thanks for the explanation about string>anyfield.

Barry



By [dbennett](#) on Monday, July 10, 2000 - 09:14 am: [Edit](#)

Has anyone ran this application on a Visor? I have a user who downloaded it telling me that he loaded it onto his Visor with no problem, but cannot find an icon anywhere to start the application. He sees it on the apps listing (I've never seen a Visor, but I suspect he's talking about something like the Palm pulldown "information" listing.), but can't find it in any grouping.

Thanks.



By [Neal Bridges](#) on Monday, July 10, 2000 - 02:21 pm: [Edit](#)

I'm guessing your Visor user downloaded the resources PRC, rather than the executable.

Neal

Add a Message

Username:

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Fields and strings

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Fields and strings



By [Barry Marks](#) on Monday, March 20, 2000 - 12:05 pm: [Edit](#)

I have a little mini-app now that can respond to a button push, write a string to an output field when the button is pushed, and let me enter data into an input field before the button is pushed.

What I don't know how to do is copy the string from the input field to a variable so that I can write that to the output field. I think I don't understand Forth's string handling.

field>string seems like my answer but it wants a c-addr and I haven't been able to find definition of a c-addr. Can you tell me what that is, or better, point me to some documentation of the various phrases in the stack effect comments.

I saw field>anystring in PhDecode but I think he's using that for some special reason. Is that correct? Isn't field>string the simple way to do this? I want to do it the simple way first, if possible.

I understand the difference in zstrings and counted strings. But I don't understand which words work with which. Is there an explanation of that somewhere?

Barry



By [Neal Bridges](#) on Monday, March 20, 2000 - 12:22 pm: [Edit](#)

field>string is the ticket. A string is a (c-addr len) -- that is, an address and a length. A c-addr is just the address.

```
create entry 40 chars allot

: getfield
  entry myFieldID field>string
  ." You entered: " entry swap type
;
```

Neal



By [Barry Marks](#) on Monday, March 20, 2000 - 12:45 pm: [Edit](#)

Ok, but when I use the word entry it only returns the address and string>field needs the length. How do I get that?

I realize that it's returned by field>string and I can save it but isn't there a more general way?

Is entry a zstring or a counted string after field>string? Is there any reference that tells me what produces which kind of string?

Barry

Barry



By [Neal Bridges](#) on Monday, March 20, 2000 - 01:42 pm: [Edit](#)

I believe it's a zstring. Try

entry dup >abs StrLen type

Neal



By [Barry Marks](#) on Monday, March 20, 2000 - 02:10 pm: [Edit](#)

Closer and closer. :)

That works. I'm printing the data that I put in the input field into the output field. But every other time I get a garbage character at the end.

I tried this at the Quartus console:

```
/pre {
```

```
create v1 allot 20
```

```
: str s" abc" ;
```

```
str v1 swap move
```

```
v1 dup >abs StrLen type
```

```
OK abc^ &((^ etc.
```

```
}
```

```
Doing a .s after Strlen, I see <2> 548 8
```

Confusion reigns.

I can see the value of having both counted strings and zstrings, but it's easy to get lost till you know what you're dealing with.

But, the good thing is now I'm finally getting a glimmer of light about how fields work.



By [Neal Bridges](#) on Monday, March 20, 2000 - 02:15 pm: [Edit](#)

The example code you just posted is faulty. A string created with s" is not a zero-delimited string. StrLen only works with zero-delimited strings, such as those created with z".

Replace s" with z" in your code and it will make more sense.

By the way -- I just checked the library source. The string returned by Field>string is NOT a zero-delimited string; you'll have to track the length yourself, or deliberately add the extra zero-byte.

Neal



By [Barry Marks](#) on Monday, March 20, 2000 - 02:37 pm: [Edit](#)

Playing around with this I crashed and after that it worked just fine. No more garbage characters. So I must have had something corrupted in memory, I guess.

Barry (who can finally sort of handle fields :)



By [Neal Bridges](#) on Monday, March 20, 2000 - 02:50 pm: [Edit](#)

It may be working by accident. If there happens to be a zero-byte in memory at the right spot, StrLen will work -- but you can't rely on that.

Neal



By [Barry Marks](#) on Monday, March 20, 2000 - 03:47 pm: [Edit](#)

Thanks. I wrote my previous message before I could see your previous message, even though now yours comes first. We were probably posting at the same time.

I added: buf + 0 swap c! (length was already there) to put a 0 at the end. It seems to be working.

I want to erase the output field each time before writing to it since if the second write to it is shorter the trailing characters don't get overwritten.

I've found FldEraseField and it wants a pointer to the field type structure on the stack. Looking in the PalmOS docs I don't see a function to give me a pointer to the field type structure. Is there a Quartus word to do that?

Barry



By [Neal Bridges](#) on Monday, March 20, 2000 - 04:19 pm: [Edit](#)

FldEraseField doesn't erase the contents of the field -- it erases the entire field object from the screen.

To remove the contents of a field, use String> field to put a zero-length string in it.

Neal

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Reverse execution token (xt) words

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Reverse execution token (xt) words



By [John Newell](#) on Monday, March 20, 2000 - 04:46 am: [Edit](#)

Can you help me with these queries?

1) Is it possible to find the xt of the currently executing word (given that you don't know its name).

i.e. : >EXECUTE (-- xt) ...

2) Given the xt can you find the words name.

i.e. : FIND> (xt -- c-addr n) ...

3) Given the a-addr (of an xt) can you find the xt.

i.e. : BODY> (a-addr -- xt) ...

Thanks



By [Neal Bridges](#) on Monday, March 20, 2000 - 09:27 am: [Edit](#)

xt> name will return the name of a definition, given its xt. Have a look at `disasm` for an example of its use.

An xt is already an address, an offset in code-space. xt> abs will convert it into a 32-bit address.

What use would >EXECUTE be to you? Perhaps there's some other way to achieve what you're after.

Neal



By [John Newell](#) on Monday, March 20, 2000 - 11:01 am: [Edit](#)

Thanks for the reply. As for >EXECUTE, I am redefining : and ; to include automatic stack checking. If a stack mismatch is found at ; time, then I want to issue a message, including the name of the word with the mismatched stack. So, if I can find the that word's xt, I can find its name. Alternatively:

4) At compile time, : can leave the new words xt on the stack which ; picks up and stores in the word's dataspace. I couldn't get my mind round including that xt in code executed at run time.

e.g.

OLD: ; (a-addr xt colon-sys --)

POSTPONE DEPTH

.

What code goes here so that xt will be on the stack at execution time?

POSTPONE xt>name

.

```
.  
POSTPONE ;  
SWAP CELL+ CELL+ ! \ Save xt in dataspace  
; IMMEDIATE
```

I'm starting to understand Forth and enjoy its flexibility but it's a bit heavy at times.



By [Neal Bridges](#) on Monday, March 20, 2000 - 11:19 am: [Edit](#)

You're trying to do obscure sorts of things, hence the heaviness :)

Have you tried safe? It handles stack checking for : and ;. It doesn't report the name of the current definition, but could be extended to do so.

Neal



By [Neal Bridges](#) on Monday, March 20, 2000 - 11:21 am: [Edit](#)

Or are you talking about run-time stack checking, rather than compile-time?

Neal



By [Neal Bridges](#) on Monday, March 20, 2000 - 11:28 am: [Edit](#)

Ok, looking at your code, it looks like you want to do run-time stack checking... I'm not sure why you want to do this. Are you trying to ensure that the stack is the same on entry and exit of each word you define? How then would you handle words that consume two cells, or consume one and return two?

Neal



By [John Newell](#) on Monday, March 20, 2000 - 12:07 pm: [Edit](#)

Thanks for the reply. As for >EXECUTE, I am redefining : and ; to include automatic stack checking. If a stack mismatch is found at ; time, then I want to issue a message, including the name of the word with the mismatched stack. So, if I can find the that word's xt, I can find its name. Alternatively:

4) At compile time, : can leave the new words xt on the stack which ; picks up and stores in the word's dataspace. I couldn't get my mind round including that xt in code executed at run time.

e.g.

```
OLD: ; (a-addr xt colon-sys -- )  
POSTPONE DEPTH
```

```
.  
What code goes here so that xt will be on the stack at execution time?  
POSTPONE xt>name
```

.
.
POSTPONE ;
SWAP CELL+ CELL+ ! \ Save xt in dataspace
; IMMEDIATE

I'm starting to understand Forth and enjoy its flexibility but it's a bit heavy at times.



By [Neal Bridges](#) on Monday, March 20, 2000 - 12:17 pm: [Edit](#)

Read that the first time. What made me think you're wanting to do run-time checking is the use of "POSTPONE DEPTH". POSTPONEd code happens at run-time, not at compile-time.

If it's compile-time checking you want, have a look at how safe.txt does it. To have the name reported also, simply preserve the name in a buffer when : executes. Here's a snippet that redefines : and ; to just report when each definition is complete:

```
needs toolkit
create namebuf 32 chars allot

: :
  >in @ >r
  :
  r> >in !
  parse-word namebuf place ;

: ;
  ." Finished compiling " namebuf count type cr
  postpone ;
; immediate
```

Neal



By [John Newell](#) on Monday, March 20, 2000 - 12:39 pm: [Edit](#)

Sorry. Posted same reply twice.

Here is a quote:

A.3.2.3 Stacks

The only data type in Forth which has concrete rather than abstract existence is the stack entry. Even this primitive typing Forth only enforces by the hard reality of stack underflow or overflow. The programmer must have a clear idea of the number of stack entries to be consumed by the execution of a word and the number of entries that will be pushed back to a stack by the execution of a word. The observation of anomalous occurrences on the data stack is the first line of

defense whereby the programmer may recognize errors in an application program. It is also worth remembering that multiple stack errors caused by erroneous application code are frequently of equal and opposite magnitude, causing complementary (and deceptive) results.

For these reasons and a host of other reasons, the one unambiguous, uncontroversial, and indispensable programming discipline observed since the earliest days of Forth is that of providing a stack diagram for all additions to the application dictionary with the exception of static constructs such as VARIABLES and CONSTANTS.

Yes, I am checking stack at RUN time. The current implementation of stack checking expects something at the start of the stack description comment.

e.g.

```
: new_word ( <xy> <normal stack description> )
```

...

where

x = single digit number of cells on the stack when new-word is call and

y = single digit number of cells on the stack when the word exits.

So for a word defined as:

```
: new-word ( <21> n1 n2 -- n3 )
```

the new : definition checks that there are at least 2 cells on the stack at the start of the call. The new ; definition checks that the stack depth is only one less than at the start of the word (2 minus 1).

So, when one of these checks fail, an error message is produce, naming the word and the error and then ABORTing.

A program would have:

NEEDS StackCheck \ New : and ; definitions

at the beginning. All new words would then have automatic stack checking.

However, the (<xy> <normal stack description>) scheme means that the new word will compile even after StackCheck is removed.

THIS IS ALL WORKING CURRENTLY (appart from displaying the words name).

Planned enhancement is to remove the <xy> scheme and scan the stack description comment and try to work out from its description what the stack requirements are.



By [Neal Bridges](#) on Monday, March 20, 2000 - 03:08 pm: [Edit](#)

Ok. Understood. Here's a snippet that will store the name of each word within that word, for display when the word exits.

needs core-ext

: :

```

>in @ >r : r> >in !
parse-word postpone sliteral
postpone 2>r ;

: exitmsg ." Exiting: " ;

: terminate-sequence
postpone exitmsg
postpone 2r>
postpone type postpone cr ;

: ;
terminate-sequence
postpone ;
; immediate

: exit
terminate-sequence
postpone exit
; immediate

```

Note we also enhance EXIT, for words that use it.

Another somewhat more elegant technique would be the method used in `tinylocals.txt`.

Neal



By [John Newell](#) on Tuesday, March 21, 2000 - 06:03 am: [Edit](#)

```

:(
Don't you mean:
needs core-ext
: OLD: : ;
::
>in @ >r : r> >in !
parse-word postpone sliteral
postpone 2>r ;

```

OLD: exitmsg ." Exiting: " ;

```

OLD: terminate-sequence
postpone exitmsg
postpone 2r>
postpone type postpone cr ;

```

```

OLD: exit
terminate-sequence

```

postpone exit
; immediate

OLD: ;
terminate-sequence
postpone ;
; immediate

with ; redefined after EXIT.
Anyway, that version works.
(I'd forgotten about EXIT - thanks)

Still, is there no way for a word to get its own xt. I'd have thought that a word like RECURSE must be able to do that?

Point 4) didn't make sense. However, I would like to leave a value, available at compile time, on the stack at run time.

I thought that:

```
: c-word ( -- n ) ( C: n -- )
```

literal

```
postpone dup
```

```
postpone *
```

```
; immediate
```

```
: r-word ( -- n )
```

```
5 c-word
```

```
1+
```

```
;
```

might put n on the stack when a r-word which calls c-word is run, but it doesn't. I get Stack Underflow. I'm missing something. Can you help?

Thanks.



By [John Newell](#) on Tuesday, March 21, 2000 - 06:15 am: [Edit](#)

Hi Neal,

Just for your information, I started this stack checking stuff because bad stack handling on my part forced me to do a HARD reset of my PalmV.

When I ran a program the stack was wrong and the program started printing lots of rubbish to the screen and not stopping. I did a reset but the screen started flashing between a blank screen and the Palm startup screen. Pressing reset with the power button I got the message asking if I wanted to do a HARD or SOFT reset. If I selected SOFT the Palm just started flashing again. The only way I could stop it was doing a HARD reset. (I think that description of what happened is right.) Good job I had done a sync not long before.

Cheers



By [Erwin Schomburg](#) on Tuesday, March 21, 2000 - 07:08 am: [Edit](#)

Just a little plug here, before you do the hard stuff if a soft reset does not get you out of the cycle, try a warm reset, that is push the reset button while holding the scroll-up button. This allows you to bypass all system initialisations (i.e. of your corrupted application). You will then have a fair chance to delete the offending stuff before you do a proper, system initialising soft reset.

/Erwin



By [Neal Bridges](#) on Tuesday, March 21, 2000 - 09:11 am: [Edit](#)

John; yes, your reinterpretation (using OLD:) of my untested code is correct. Sorry about that. Glad you got the sense of it.

There is a no external method of determining the xt of the word currently being compiled, unless it is a :NONAME word. There is a rather complicated work-around for this; if the above technique doesn't do enough for you, let me know and I'll see what I can put together.

It is extremely rare to throw your device into a state that it requires a hard-reset. It can happen, if you manage to overwrite all of lower memory. safe.txt protects against this to a large extent. And backups are essential when developing.

As to your point #4 -- here's what I think you're trying to do:

```
: c-word ( C: n -- )
  postpone literal
  postpone dup
  postpone * ; immediate

: r-word
  [ 5 ] c-word ;
```

I can't understand why you'd want do to that, but anyway the above code works. The straightforward way is:

```
: c-word dup * ;
: r-word 5 c-word ;
```

Neal



By [John Newell](#) on Tuesday, March 21, 2000 - 10:41 am: [Edit](#)

Thanks for all your contributions on these queries, both Neal and Erwin. I will try putting them into practice.

Before I go, could you explain why you have to POSTPONE literal when the manual says:

6.1.1780 LITERAL CORE

Interpretation: Interpretation semantics for this word are undefined.

Compilation: (x --)

Append the run-time semantics given below to the current definition.

Run-time: (-- x)

Place x on the stack.

This suggests to me that it should compile and append the run-time semantics without the POSTPONE. Is it something to do with IMMEDIATE?.



By [Neal Bridges](#) on Tuesday, March 21, 2000 - 11:02 am: [Edit](#)

```
: five [ 5 ] literal ;
```

LITERAL is a Standard word that, when encountered at compile time, takes the top value on the stack and compiles it into the current definition as a literal value. The word five above will act as a constant, placing 5 on the stack when it is run.

```
: doliteral  
  postpone literal ; immediate
```

By using POSTPONE, we are telling the system that we don't want to perform LITERAL right now, during the compilation of doliteral, but rather later, when doliteral itself is encountered during another definition.

```
: five [ 5 ] doliteral ;
```

This will have the same result as the first example.

Neal



By [Erwin Schomburg](#) on Tuesday, March 21, 2000 - 11:03 am: [Edit](#)

If you compile a definition like

```
: three 3 ;
```

literal is compiled inherently and immediately when this definition is compiled, placing code to put the value 3 on stack when this word is executed. So literal has done its intended task at compile time and is no longer visible or existent in this definition at execution time.

If OTOH you compile a definition that shall *lateron*, i.e. in another definition, place code to put a literal onto stack into the *then* current definition, you need to POSTPONE its actions until you are inside the definition that provides for the value intended to put on stack.

/Erwin



By [John Newell](#) on Wednesday, March 22, 2000 - 08:41 am: [Edit](#)

Since you are being so helpful, can I push you a little bit more. I want to type out a word's name when it is executed. e.g.

NEEDS core-ext

```
: DOCOLON ( c-addr u a-addr -- a-addr )
```

```
DOES> ( i*x a-addr -- j*x )
```

```
sliteral \ <<<- doesn't work because compile time stack isn't available
```

```
type \ <print out word name>
```

```
@
```

```
EXECUTE \ child
```

```
;
```

```
: OLD: : ;
```

```
OLD: : ( "name" -- a-addr xt colon-sys )
```

```
>IN @
```

```
PARSE-WORD \ Get c-addr u of word name
```

```
ROT >IN !
```

```
CREATE HERE
```

```
0 , \ For xt of child
```

```
DOCOLON \ Build Does> processing
```

```
:NONAME \ Build child
```

```
;
```

```
OLD: ; ( a-addr xt colon-sys -- )
```

```
POSTPONE ;
```

```
SWAP ! \ Save child xt
```

```
; IMMEDIATE
```

```
: tryit ." says hi" ;
```

```
tryit
```

I know I could save the name myself in the new words data field but can't I use sliteral (or equivalent) somewhere to compile in the location of the name string? I think I may be flogging a dead horse here. Compile time stack doesn't seem to be available to DOES> and this stops me from doing what I want. Is that right?. Just say and I will stop this thread.

Thanks.



By [Neal Bridges](#) on Wednesday, March 22, 2000 - 09:18 am: [Edit](#)

Your present approach looks extraordinarily complicated... go back to the earlier message with OLD: -- a slight modification of that will let you report the name at entry, instead of at exit.

Neal



By [Neal Bridges](#) on Wednesday, March 22, 2000 - 09:44 am: [Edit](#)

Here it is:

```
: sayname ." Entering " type cr ;

: :
  >in @ >r : r> >in !
  parse-word postpone sliteral
  postpone sayname ;
```

Neal



By [John Newell](#) on Wednesday, March 22, 2000 - 10:51 am: [Edit](#)

Yes, but I want to do other things in the DOES> portion of the definition before executing the body of the word, which is why :NONAME is used and the xt EXECUTED at the end of the DOES>.

Just tell me it can't be done with sliteral and I will give up asking. Ta.



By [Neal Bridges](#) on Wednesday, March 22, 2000 - 11:11 am: [Edit](#)

It can be done, but I think you're approaching it from the wrong angle.

You want to extend : and ; with new functionality, and you want access to the definition's name as part of that functionality. Ok. Here's a general template (tested):

```
: entry-extension ( c-addr u -- )
\ c-addr u is the name of the current definition
  ." Entering " type cr
;

: exit-extension ;

: old: : ;

: :
  >in @ >r : r> >in !
  parse-word postpone sliteral
  postpone entry-extension ;

old: old;
  postpone ;
; immediate
```

```
old: ;  
  postpone exit-extension  
  postpone ;  
; immediate
```

```
old: exit  
  postpone exit-extension  
  postpone exit  
old; immediate
```

Of course you can add other functionality to the entry-extension and the exit-extension.

Neal



By [John Newell](#) on Friday, March 24, 2000 - 07:24 am: [Edit](#)

I am still playing. I was misunderstanding what : and :NONAME words do for you. Appart from starting a new word defintion, they set a 'compile mode' flag so that following words are not run but compiled into the new word. This means that the redefinitions of : and :NONAME can include extra run-time words after calling the original : and :NONAME words. These extra words are run, when the new word is used, before the words which make up that new word. Is that clear?

The redefintion of : and ; I am trying to make stores information in data-space (HERE) (by scanning the stack description comment following the new words name) for later use when a new word is run. They check stack use both BEFORE and AFTER the word runs, displaying a message including the name of the word and what mis-use was attempted/made of the stack, before ABORTing.

I have made this work now using the :NONAME scheme I outlined in an earlier post but haven't got it working yet trying to extend your scheme, avoiding the use of :NONAME and >DOES.

I'll keep trying and ask for further assistance if necessary. Thanks.

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Development on Linux

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Development on Linux



By [Vadim Zaliva](#) on Monday, March 20, 2000 - 03:24 am: [Edit](#)

Hi!

After a while I am trying to get back to my idea of developing few small apps for pilot.

Because of amount of important information on my pilot, I am not longer see it possible to use my PalmV for development.

Linux is my primary platform. Does anybody use it for Pilot development using Quartus forth?

I guess you have to use xcopilot... What is your setup? Any tricks, suggestions?

Thanks!

Vadim



By [Vadim Zaliva](#) on Monday, March 20, 2000 - 04:43 am: [Edit](#)

Here is first problem I encountered:

Loaded latest quartus and library into emulator w/o problem byt executing following words from quartus console:

```
needs memo  
dir
```

produce following error message:

```
"MemoryMgr.c, Line:3926,  
Invalid handle"
```

after listing some entries.

Is it emulator problem, or there is a bug in the library?

Sincerely,
Vadim



By [Neal Bridges](#) on Monday, March 20, 2000 - 09:33 am: [Edit](#)

Vadim, is that the only problem you've encountered so far?

dir in memo.txt can fail if there are deleted memos that have not been purged... it isn't meant as production code, just as a simple example of using the memo library.

Neal



By [Dave Bennett](#) on Monday, March 20, 2000 - 03:07 pm: [Edit](#)

Vadim,

If you are using Linux and pilot-xfer to backup or sync your Palm, there is another step you need to take. Do a pilot-xfer --purge to remove the deleted records from your Palm. While they are "deleted", they are not removed from the database. This purge step takes only a few seconds and performs this task.

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Storing data in a Resource

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Storing data in a Resource



By [Jim Meadows](#) on Monday, March 20, 2000 - 01:07 am: [Edit](#)

The current implementation of my application uses an external resource that contains several bitmaps and data about those bitmaps. I am storing the data in strings. Should I be using something other than strings to store the data? (it is non-character data, but appears to read/write OK).

I want the bitmaps and data to be stored together and want to use standard calls to display the bitmaps. I read the strings to get the additional data about the bitmaps.



By [Neal Bridges](#) on Monday, March 20, 2000 - 09:40 am: [Edit](#)

I'm not sure what you mean exactly, Jim. A string is just a sequence of bytes in memory; doesn't have to be character data.

If your implementation is working well, there you go :)

Neal



By [Jim Meadows](#) on Monday, March 20, 2000 - 10:51 am: [Edit](#)

I wanted to make sure I had not overlooked anything. Since the strings in resources do not have to be zero terminated I didn't think a zero byte in the middle of my string data would hurt anything.

The data could be stored as records in a regular database but I couldn't think of an easy way to also include the bitmaps in the same database. So I went with a resource database containing bitmaps and strings for the data.



By [Neal Bridges](#) on Monday, March 20, 2000 - 10:56 am: [Edit](#)

Sounds like a good plan.

Neal



By [Jim Meadows](#) on Friday, March 24, 2000 - 05:14 pm: [Edit](#)

Do you know if there a limit to the size of a resouce? I am using Pilrc and Pila to generate the resource but when I get to about 500K in size pila crashes. (I am storing several 256 color bitmaps in the resource).



By [Neal Bridges](#) on Friday, March 24, 2000 - 05:24 pm: [Edit](#)

A single resource can be up to 64K minus (if I recall correctly) 16 bytes in size, but you can have any number of resources in a given resource database.

Neal



By [Neal Bridges](#) on Friday, March 24, 2000 - 05:27 pm: [Edit](#)

I've never tried to build anything that large with Pila. You might try building several resource databases, and merging them on-board the Palm with RsrcEdit. Alternatively, leave them as multiple resource database and have more than one use-resources line in your source code.

Neal



By [Jim Meadows](#) on Monday, March 27, 2000 - 03:49 pm: [Edit](#)

Thanks for the suggestions. What I finally wound up doing is using separate resources and opening them at run time as I need them.

Jim



By [Neal Bridges](#) on Tuesday, March 28, 2000 - 03:48 pm: [Edit](#)

That works pretty cleanly, and there isn't much overhead.

Neal



By [Erwin Schomburg](#) on Wednesday, March 29, 2000 - 05:51 am: [Edit](#)

Chiming in with a caveat: Do not use resources you intend to write to that are part of your application database (as opposed to a resource database that is accessed by your application). Under OS3.5 modified applications loose their link to the assigned category and go into "unfiled" after they have been invoked.

/Erwin



By [nbridges](#) on Wednesday, March 29, 2000 - 11:44 am: [Edit](#)

Is that so? Curious. At any rate, it's better not to have your applications modify their own resources -- if they do, they can't be put in flash, or made read-only (e.g. in a Visor module).

Neal



By [Erwin Schomburg](#) on Wednesday, March 29, 2000 - 03:40 pm: [Edit](#)

It is so, found out while bughunting with the author of Earth&Sun, after he made it OS3.5 compatible it dropped out of visible existence whenever called up. Wanna hear about another one? I just stated to haunt Alexander Hinds with this one: BB NG 1.21 does not pick up Quartus for backup in the ROM_Files folder when its in Flash under FlashPro 1.08.

/Erwin



By [Erwin Schomburg](#) on Wednesday, March 29, 2000 - 04:12 pm: [Edit](#)

...and the answer was "p4pr" is all lowercase, so BB NG thinks it is a OS system database not to be backed up (which have reserved the crIDs that come in all lowercase) when its found in flash.....

/Erwin



By [Neal Bridges](#) on Wednesday, March 29, 2000 - 05:11 pm: [Edit](#)

Ah, well it's a valid ID because it contains a number. The Palm-reserved IDs are four lowercase alphabetic.

Neal



By [Erwin Schomburg](#) on Wednesday, March 29, 2000 - 11:28 pm: [Edit](#)

I know and had this mentioned, I think Alexander is beginning to see the point in this.

/Erwin

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Updated library module: string.txt

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Updated library module: string.txt



By [Neal Bridges](#) on Saturday, March 18, 2000 - 07:23 pm: [Edit](#)

I've updated string.txt to add the Standard word -TRAILING. The new file is here:

<http://quartus.net/files/PalmOS/Forth/Library/string.txt>

Neal

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Changes to Rsrc's not backed up

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Changes to Rsrc's not backed up



By [Wade Carlson](#) on Saturday, March 18, 2000 - 04:12 pm: [Edit](#)

Has anybody else had trouble with changes to resources made in RsrcEdit that aren't backed up during a HotSync. I use Backup Buddy, but for some reason, when I make changes to a resource used for my app with RsrcEdit, Backup Buddy doesn't sense that it has changed, and it doesn't get backed up. Unfortunately, my palm crashed bad the other day, and everything was restored with Backup Buddy EXCEPT for my Resources (they were all my initial created resource without any of the changes I had made over the months). I lost a lot of work! I think the problem probably has to do with RsrcEdit not setting the 'dirty' flag or something. I suppose I should email the author of RsrcEdit, but I wanted to see if anybody noticed the same, and also I do not feel as if I should be emailing him with problems as I am not a registered user of RsrcEdit (shame on me, I know!)



By [Jim Hendricks](#) on Saturday, March 18, 2000 - 06:12 pm: [Edit](#)

Honestly I have not experienced this, I too am a user (registered, so pat myself on the back) of Backup Buddy and my own resource DB's have always backed up.

Jim



By [Neal Bridges](#) on Saturday, March 18, 2000 - 06:39 pm: [Edit](#)

A database will only be backed up (either by HotSync or BackupBuddy) if it's 'backup' flag is set. Was the flag set on the databases you're talking about?

Neal



By [Wade Carlson](#) on Saturday, March 18, 2000 - 07:03 pm: [Edit](#)

Actually the 'backup' flag was set, but that shouldn't matter anyways, because backup buddy backs up even files without their 'backup' flag set. I had a version of my resource backed up, it's just that it was the initial created resource, and didn't have any of the updated changes I made over the months. When backup buddy does a hot sync, it doesn't back up every single file every time you hot sync (that would take forever), just the ones that have changed. I think it knows which ones have changed by whether the 'dirty' bit is set or something. I would guess that RsrcEdit isn't honoring this 'dirty' bit properly.



By [Neal Bridges](#) on Saturday, March 18, 2000 - 07:11 pm: [Edit](#)

You might be right, Wade. Worth a note to RsrcEdit's author, anyway.

I make a habit of explicitly setting the backup bit on my databases; that may be why I haven't encountered this problem.

Is this with the latest version of RsrcEdit?

Neal



By [Neal Bridges](#) on Saturday, March 18, 2000 - 07:22 pm: [Edit](#)

Another thought -- I lost a resource database once, but I was able to pull the resources back out of a compiled version of the app. Don't know if it'll apply in your case, but it worked on the one occasion where I accidentally deleted a resource database while flying overseas.

Neal



By [Wade Carlson](#) on Saturday, March 18, 2000 - 07:53 pm: [Edit](#)

Actually, that's what I ended up doing, pulling the resource out of the compiled app. I ALWAYS have the backup bit set, and I'm using version 1.007. Anyways, I've been able to reproduce the problem.

Start with one of your resources within RsrcEdit that contains a Form with a button control. Open the form and the button control and change the button control to a PushButton. Hit OK and then Done. Now do a Hot Sync (with backup buddy enabled) and supposedly your changes will be 'saved'. Now delete the resource from your palm, and reinstall the one saved on your desktop. The changes you just made are not there!



By [Neal Bridges](#) on Saturday, March 18, 2000 - 07:59 pm: [Edit](#)

I suspect (but Roger can confirm) that RsrcEdit is not changing the 'last modified date'.

Neal



By [Matthew Blair](#) on Saturday, March 18, 2000 - 08:06 pm: [Edit](#)

Wade,

I'm a little late in this thread, but just wanted to add a 'me too'. I had the pleasant experience of finally getting my user interface to a point that I was satisfied with; then, I started experimenting with the database routines. On a lark, I deleted via PalmOS calls from the QF console the compiled version of my app. Unfortunately, I made the mistake of setting the resource data base creator

ID to the same as my app's creator ID. Gaaack!

To make a long story short, I thought BackupBuddy would take care of my problem. After hotsync, much to my horror, I saw a version of my UI that was definitely not recent.

So, you are not alone!

Matthew



By [Ron Doerfler](#) on Saturday, March 18, 2000 - 11:18 pm: [Edit](#)

I also found this out recently with BackupBuddy. I'm still not sure if it is skipping it every time or intermittently. Now I move the old backup copy to another directory on my PC before I hotsync, and BackupBuddy backs up the latest version. Would be nice to not have to remember to do that.

I was just going to mention it here.

Ron



By [Neal Bridges](#) on Sunday, March 19, 2000 - 12:24 am: [Edit](#)

Definitely mention it to the RsrcEdit author, at www.individeo.net.

Neal



By [Erwin.Schomburg](#) on Sunday, March 19, 2000 - 05:16 am: [Edit](#)

No such problems on my side, but if its not too late to mention, if you set BB NG to archive deleted items you can always retrieve the resources from the latest archived build of the application you deleted together with its resource file.

/Erwin



By [Wade Carlson](#) on Sunday, March 19, 2000 - 12:32 pm: [Edit](#)

Actually, I've narrowed down the problem even more. It seems to miss changes whenever you make ANY change to any PRE-EXISTING Form within a resource. It seems to be failing to reset the 'last modified date' as Neal had mentioned. If you add a new form, or delete a form from the resource, it will update the last modified date and get backed up.

I will email Roger Lawrence. For a temporary workaround (a big pain), delete all your resource files from your Desktop username backup folder prior to doing every hot sync. All my resource names all end in rsrc so I just search for *rsrc.* in that directory and delete them all.



By [Dave Bennett](#) on Monday, March 20, 2000 - 04:24 pm: [Edit](#)

I had a similar problem in the past under Linux. It seems that sync is somehow to blame. I quit using sync and use only backup and that solved the problem. I never need to sync to anything so backup works for me.

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POSE and fields

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): POSE and fields



By [Trevor Steele](#) on Monday, March 20, 2000 - 05:14 am: [Edit](#)

Hi Neal

Yes the do event was a typo again!! I have tried POSE 3.0a5 and the OS 3.3 non debug ROM and it seems to have cured the problem in that 1,000,000 Gremlins are achieved without protest. Whoopee :) What is this telling us? Is software OK if it performs under the non debug ROM but not under the Debug version?

Best regards

Trevor



By [Neal Bridges](#) on Monday, March 20, 2000 - 09:30 am: [Edit](#)

I think it is, Trevor. I do my basic testing under the debug ROM; when the app performs as expected, I will Gremlin it there first. If it passes a sizeable number of Gremlins there, I'm happy; I then test it under the debug for a full million.

Neal



By [Trevor Steele](#) on Monday, March 20, 2000 - 09:49 am: [Edit](#)

Thanks Neal. Time to test some apps now !!

Trevor



By [Neal Bridges](#) on Monday, March 20, 2000 - 09:55 am: [Edit](#)

Whoops -- I mean, if it passes a sizeable number of Gremlins under the debug ROM, I then test it under the NON-debug for a full million.

Neal



By [Trevor](#) on Tuesday, March 21, 2000 - 05:08 am: [Edit](#)

Hi Neal

I figured that's what you meant and guess what, the first app tested has passed a full million!!

Trevor



By [Neal Bridges](#) on Tuesday, March 21, 2000 - 09:36 am: [Edit](#)

That's great!

Neal

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Memory use.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Memory use.



By [Jim Meadows](#) on Monday, March 20, 2000 - 01:01 am: [Edit](#)

Does csunused work differently? (i.e. there is always a fixed amount of code space that decreases)



By [Neal Bridges](#) on Monday, March 20, 2000 - 09:40 am: [Edit](#)

Yes, csunused responds predictably; it has a fixed (not floating) upper limit.

Neal



By [Barry Marks](#) on Monday, March 20, 2000 - 11:33 am: [Edit](#)

What effect does allotting a negative number of cells have?

Also, if there are 254 bytes and you use a cell to make a variable, that would seem to bring it down to 252. Why would that cause more to be allocated? Is 254 the threshold?

Just curious.

Barry



By [Neal Bridges](#) on Monday, March 20, 2000 - 11:53 am: [Edit](#)

256 is actually the threshold. It starts at 254 (for no special reason) but stays at at least HERE+256 thereafter.

A negative ALLOT moves the HERE pointer back, but doesn't shrink the amount of dynamic memory used.

Neal



By [Barry Marks](#) on Monday, March 20, 2000 - 12:14 pm: [Edit](#)

Thanks.

Does this have any practical application or is it only useful as an illustration?

For example, would it speed things up enough to be worthwhile if you know you're going to be using about 8k (or more) by getting that much from Quartus ahead of time and avoiding multiple allocations?

Or would that just save a trivial amount of time as the program loads?

Barry



By [Neal Bridges](#) on Monday, March 20, 2000 - 12:19 pm: [Edit](#)

An extremely trivial amount of time would be saved. Not worth the effort. I showed the example merely to illustrate the dynamic allocation mechanism.

Neal

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Field test help needed

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Field test help needed



By [Neal Bridges](#) on Saturday, March 18, 2000 - 07:29 pm: [Edit](#)

I've added stringtofloat.txt to the Contrib file area. It's a function for converting strings to floats. It handles positive and negative values, skips leading and trailing blanks, and handles scientific 'e' notation.

[stringtofloat.txt](#)

Neal



By [Neal Bridges](#) on Saturday, March 18, 2000 - 07:30 pm: [Edit](#)

Oh by the way, that file requires the recently-updated version of string.txt, available in the Library section.

Neal

Add a Message

Username:

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OS3.5 POSE Debug ROM Problems

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): OS3.5 POSE Debug ROM Problems



By [Jim Meadows](#) on Monday, April 3, 2000 - 04:48 pm: [Edit](#)

I finally found out the combination that causes the scrolling problem in POSE. Using preferences/buttons, I have assigned one of the hard key buttons (eg the address button) to start up Quartus. After making a change to my source I can just press the button to startup Quartus and perform a compile. Since I have my startup file configure to automatically do a compile, this becomes a one keypress compile.

It works great on a palm and I thought it did OK under POSE. However, if I am in smartdoc and have just made a change and then press the hard key to switch to Quartus, the scrolling-stuck-on problem appears some of the time. As long as I exit smartdoc and tap on Quartus to start the compile I never see the problem. Strange.

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Question about next release

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Question about next release



By [Jonathan Lerwill](#) on Saturday, April 1, 2000 - 06:27 am: [Edit](#)

Thanks for the advice Neal.

I have some code that I use for generating registration keys. It would be nice if the function could be loaded and accessed from several applications.

Maybe I meant "Shared Libraries" or as you suggested "compiled modules" that function like a Windows DLL. Is this possible ? if so any chance of a HOW-TO ?

Regarding Lists in listboxes.

I've created a sample app. that contains a listbox with 5 items. I am able to display the index of the selected item and to retrieve its text.

I'm also able to change the list contents and still display the index of the selected item. But I'm unable to retrieve its text :-(

One more thing. I'd like a simple example of the recurse word. I havn't been able to locate the fib.txt file that you named in a previous posting.

BFN /Jonathan



By [Neal Bridges](#) on Saturday, April 1, 2000 - 08:02 am: [Edit](#)

The function call to use is LstGetSelectionText. There's a recent example in the Forum; if you need another, let me know.

RECURSE is a word you'll probably never need, but here's a Fibonnaci implementation that uses it:

```
: fibonnaci ( n1 -- n2 )
  dup 3 < if
    drop 1
  else
    dup 1- recurse
```

```
swap 2 - recurse
+
then ;
```

Neal



By [Matthew Blair](#) on Saturday, April 1, 2000 - 08:49 am: [Edit](#)

I don't know if this helps, but an example of where I used the recurse word was in a app I wrote to compute gas mileage. The app had a database that stored odometer reading, gallons purchased, etc. in each record. When I calculated the mileage, I would use recurse like so:

```
: FindGalsSinceLastFillup (d1. u -- d2. )
1- dup ReadFuelRecord
ReadMisc drop invert if
  rot rot ReadGals d+
  rot recurse
else drop then ;
```

ReadMisc returned several values, one of which was a boolean indicating whether or not the record in question was a fillup. If it was not, then the number of gallons was incremented by the amount returned by ReadGals. It would then recurse and repeat.

Hope that helps,

Matthew



By [Matthew Blair](#) on Saturday, April 1, 2000 - 10:58 am: [Edit](#)

Forgot to add a piece of crucial information: the argument 'u' is the record number to read...so if the record read in that iteration was not a fillup, the previous record would be read...

Matthew



By [Barry Marks](#) on Saturday, April 1, 2000 - 11:20 am: [Edit](#)

There are times when recursion can really simplify coding. A good example is in the game Sokoban. In order to know if you can move a block right when there's another block to the right you have to know if you can move that block to the right, which you can only do if you can move the next block to the right, etc.

It's not that hard to do this in a loop but recursion makes it really simple. At least in c. And there will never be enough blocks to make you worry about stack overflow.

Barry



By [Jim Hendricks](#) on Saturday, April 1, 2000 - 03:59 pm: [Edit](#)

I tend to agree with Neal on not needing RECURSE. I have yet to find a solution that requires recursion in any language. Yes, I have used recursion, and yes it has resulted in fewer lines of code. The resulting code though is extremely hard to debug mostly from a conceptual standpoint since my finite mind has a problem trying to mentally trace though a recursive process. Therefore I must say that anytime I have used recursion in any code, it has more or less boiled down to trying to prove my programming prowess, and less to do with creating efficient or maintainable code. I opt that in real world coding, the extra bytes for looping always pays off in the end.

Jim



By [Barry Marks](#) on Saturday, April 1, 2000 - 04:48 pm: [Edit](#)

I find recursion in certain situations, like the one in Sokoban, to simplify the code. Setting up the recursion is a little tricky conceptually but it's a small isolated problem that once solved, can usually be forgotten and taken for granted.

I don't use a lot of recursion but I've always felt comfortable using it in that sort of situation.

The first time I ever took a test while applying for a job, it was to study a piece of code and explain what it did. It used recursion, which I hadn't used then. I'd never even coded in a language that allowed it, other than asm. This was a minicomputer Basic that did allow it.

I knew what it was and I was finally able to figure out what it did. But I took too long and I didn't get the job. I quickly got to work learning about recursion.

Barry



By [Jim Hendricks](#) on Sunday, April 2, 2000 - 02:46 pm: [Edit](#)

It's funny you would mention Sokoban since that is the program I am currently working on. All the game logic is complete and now I am working on learning Palm databasing since I want to put the level data in a database rather than coding the data in the code, makes it more flexible for a level editor and user defined levels. I did not choose recursion for the same reasons I specified above, although another game I have implemented in java and now plan on eventually coding in Qforth for the Palm is a game called Cyberbox. Various versions are floating around for this game but in principle it varies from sokoban in that it's

not just the players move and potentially 1 box that need to be tracked, there could be a whole lineup of pieces that need moving and in this case recursion can be handy. (In fact now that I recall, I recursively coded it in java since it was simplest to code with plans of flattening it into a loop later but never did)

I think on the conceptual side my biggest hang-up with recursion is first with the recurse trap that ends the recursive chain, if not coded correctly you have a runaway process that is a bear to track down, especially if your trap only fails under certian conditions. I then always have a problem for some reason in following the chain backwards after the trap has occured. I don't know why this is since I never seem to have a problem following it forward until encountering the trap!

Yes recursion is a principle that needs to be known though, I am one of those idiots who includes them in tests to prospective programmers, not because I expect them to use recursion, but because if you can follow and understand a recursive process, you can probably follow any other logical sequence!

Jim



By [Barry Marks](#) on Sunday, April 2, 2000 - 04:39 pm: [Edit](#)

I just realized reading your post that I was wrong in naming Sokoban. You only push one block. I started coding a version of a game called Beast that used to come with Word Perfect Office, lo those many years ago, on my palmtop. It was that game that pushed a number of blocks.

I also always discussed recursion with prospective programmers, too. I didn't give any tests. I just discussed a number of programming topics with them. Recursion was important because I used it and they'd be working with some of my code. I didn't expect them to have experience with recursion. There wasn't much of it and what there was was pretty simple. But they had to grasp the idea and be able to discuss it comfortably.

Barry



By [Jim Hendricks](#) on Monday, April 3, 2000 - 11:44 am: [Edit](#)

Just curious, what's the gist of the Beast game? I was a long time user of WordPerfect (before Microsoft converted my office)-:) and I don't recall the game, or rather I should say I don't recall games shipping with WP!

I ask only because my gaming ediction is tied to those kind that focus more on thinking, and less on timing and hand-eye coordination (not that I don't find myself Dooming now and again)

Jim

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Typo in serial.txt ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Typo in serial.txt ?



By [LGLisle](#) on Thursday, March 30, 2000 - 02:26 pm: [Edit](#)

Hello all,

Sorry I'm slow to get back on this. The note I have indicated that "needs toolkit" needed to be added to LCD.txt Since I haven't had a need to use it, I haven't checked to see if it is in my copy.

--- L. Greg Lisle

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Memory footprint of a Quartus standalone application..

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Memory footprint of a Quartus standalone application..



By [peter bohac](#) on Thursday, June 1, 2000 - 07:07 pm: [Edit](#)

What is the purpose of the "pref 1" resource? i noticed that this was included in a PRC i built, but i am not using preferences and did not specifically add this.

Thanx,
-peter (=



By [Neal Bridges](#) on Thursday, June 1, 2000 - 08:46 pm: [Edit](#)

The 'pref' resource defines the application launch flags, stack size, and heap size. It isn't actually used yet but applications are required to include it to pave the way for future PalmOS enhancements.

You get one of them by default in each Quartus Forth generated stand-alone app, 10 bytes long.

Neal



By [peter bohac](#) on Thursday, June 1, 2000 - 09:40 pm: [Edit](#)

Thanx for fulfilling my curiosity, Neal. After reading your response i started thumbing thru the various PRCs installed on my Vx (OS 3.3) using RsrcEdit. Interestingly enough, i did not find any other apps with a "pref 1" resource. i did not look at all my installed apps (too many!), but of those i did, most had a "pref 0" resource 10 bytes long, and some did not have any pref resources at all.

-peter (=



By [Neal Bridges](#) on Thursday, June 1, 2000 - 11:45 pm: [Edit](#)

Well, I daresay you could remove it and never notice it missing. For 10 bytes, I'd leave it there.

Neal

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Getting Started

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Getting Started



By [James Steven Graham \(Steve\)](#) on Thursday, December 7, 2000 - 11:02 pm: [Edit](#)

Alan,

I'm just getting into some programming in Forth and noticed your post (from many months ago). I first got involved with medical information systems in 1983 and have worked with them for most of the time since. I think the Palm would be an ideal platform to harness the power of computers in a hospital.

Did your project get off the ground? If so, what is the status now?

Steve Graham

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Open Firmware and OS-less Forth

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Open Firmware and OS-less Forth



By [Scott Schad](#) on Thursday, March 30, 2000 - 11:28 pm: [Edit](#)

This is an interesting thread. If memory serves, you used to be able to drop into the OpenBoot Forth interpreter on a Sun SparcStation by pressing control+L1+A. One could actually type in and execute Forth programs while in this mode. Best to try this on someone else's computer...



By [Neal Bridges](#) on Friday, March 31, 2000 - 08:39 am: [Edit](#)

I've done that Scott -- works well!

Neal

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Maximum code?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Maximum code?



By [Jim Meadows](#) on Monday, May 8, 2000 - 12:33 am: [Edit](#)

I am beginning to approach the 40K limit so I may have to split my application up and use the launch sub-apps approach. Just thought I would check before doing that and see if anything had been developed to compile just the words that are actually used.



By [Neal Bridges](#) on Monday, May 8, 2000 - 01:04 am: [Edit](#)

Stand-alone apps already do that -- compile only the words used. But I take it you mean during compilation. That poses certain difficulties; there isn't anything like that in the works at present.

Neal



By [Jim Meadows](#) on Monday, May 8, 2000 - 11:22 pm: [Edit](#)

I thought that that was the case for the stand-alone apps, but is there any way to generate a stand-alone without compiling everything?



By [Neal Bridges](#) on Monday, May 8, 2000 - 11:33 pm: [Edit](#)

I'm not sure I understand the question, Jim.

Code is read from source files to create an executable image in memory. A stand-alone app is generated from that by recursively extracting only the code that is required by the application.

Neal



By [Jim Meadows](#) on Monday, May 8, 2000 - 11:41 pm: [Edit](#)

Ok...if I understand the process you must compile everything 1st in memory, then the makeprc extracts the pieces needed for the stand-alone app (and only extracts the words actually used). However, since everything must be compiled 1st, you are limited because you may run out of memory while compiling and not have the chance to generate a reduced size stand-alone app. Have I described it correctly?



By [Neal Bridges](#) on Monday, May 8, 2000 - 11:50 pm: [Edit](#)

Yes. It's only in recent days that developers like yourself have been creating very large apps with Quartus Forth. It's a pleasure to see it happening! The

system is expanding, and my goal is to allow multi-segment apps, eliminating the current ceiling.

Neal



By [Jim Meadows](#) on Monday, May 8, 2000 - 11:59 pm: [Edit](#)

Thanks for the feedback ... I just wanted to make sure I was not overlooking something before I went the sub-app approach. I think Quartus is great & have been very pleased with what I have been able to do with it!



By [Neal Bridges](#) on Tuesday, May 9, 2000 - 02:35 pm: [Edit](#)

Glad to hear that, Jim. Keep us posted!

Neal

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Cool code editing hack

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Cool code editing hack



By [Zvly](#) on Monday, May 29, 2000 - 04:24 pm: [Edit](#)

As far as (Mid April of this year) there was no version of Eedit running fine on 3.5 OS.

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How to do dynamic arrays?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): How to do dynamic arrays?



By [Michael Rowe](#) on Saturday, March 18, 2000 - 02:31 am: [Edit](#)

I use linked lists using 16 bit pointers, with relative little trouble. The only problem I have encountered thus far is that programs started from some third party launchers (ie. Launch 'Em) on devices with 8Mb of memory get invalid pointers for the first few blocks that are ALLOCATED (I have not observed this problem for programs launched from the Palm launcher). Subsequent blocks are OK. A minor change to ALLOCATE which discards out of range blocks avoids the problem. It might be worth while to include this change in the release distribution.

As I am not a Forth coding wizzard, I find that the short pointers make the coding effort easier.

mrr



By [Erwin Schomburg](#) on Saturday, March 18, 2000 - 08:14 am: [Edit](#)

The point is, you can tweak the code and restrict useable number of objects for your own purposes as you like. But as soon as you start to distribute its a no go to say, sorry folks only for use with built in launcher. Or sorry, although you have over 100k dynamic free, only as many dynamic objects as happen to be able to share the same segment as the other application data.

/Erwin



By [Neal Bridges](#) on Saturday, March 18, 2000 - 09:55 am: [Edit](#)

There was a posted fix to ALLOCATE a while back; I haven't tried it but it looked like it would help.

Neal



By [Michael Rowe](#) on Monday, March 20, 2000 - 04:25 am: [Edit](#)

Concerning Erwin's comment on this matter:

ALLOCATE in its present form is of limited utility, as its use results in applications which do not run on all platforms. I personally find this unacceptable. The alternative of burning some heap to fix the problem is IMHO an acceptable solution:

1. as only one app runs at a time, no one else could have used the wasted memory anyway
2. when the app terminates, the heap is returned to its original state

I think it would be worthwhile updating the Quartus library with the fix mentioned in Neal's message, or something similar.

mrr



By [Neal Bridges](#) on Monday, March 20, 2000 - 09:41 am: [Edit](#)

Michael, I'm poking around to find a better solution presently. If none emerges I'll use the one suggested.

Neal



By [Matthew Blair](#) on Wednesday, March 29, 2000 - 07:54 am: [Edit](#)

Hi -- I finally got around to writing code for a doubly linked list that uses double-cell absolute memory addresses. Thought I would post it here in case anybody else is interested. Please note that I have not taken the time to optimize this code yet, but any suggestions would be welcomed. Code currently consumes ~600 bytes of codespace.

To use the linked list, you should have allocated at least 4 cells for each link, and the first 4 cells are reserved for link pointers. You must allocate memory before calling add-link; conversely, when calling remove-link, a 32-bit absolute memory address is returned which you can then (free), or reuse as you wish.

```
needs condthens
needs core-ext
```

```
2variable headPtr
2variable tailPtr
variable lcount
```

```
\ initialize ptrs
0. 2dup
headPtr 2! tailPtr 2!
0 lcount !
```

```
: next-link ( &a. -- &a+1. )
  2 cells s>d d+ 2@a ;
```

```

: prev-link ( &a. -- &a-1. )
  2@a ; inline

: add-link ( a. -- )
\ a. is the 32-bit absolute address
\ of the link. It is assumed that
\ the 1st 4 cells are reserved for
\ use by the LL code
\ is this the first link?
  lcount @ 0= if
\ point head to this link
    2dup headPtr 2!
\ prev. link is NULL
    0. 2over 2!a
  else
\ point tail->next to this link
    2dup tailPtr 2@ 2 cells s>d d+ 2!a
\ point this->prev to tail
    tailPtr 2@ 2over 2!a
  then
\ point this->next to NULL
    2dup 2 cells s>d d+ 0. 2swap 2!a
\ point tail to this
    tailPtr 2!
    1 lcount +! ;

: link-addr ( n -- a. )
\ find address of nth link
  headPtr 2@ rot 1 ?do
    next-link
  loop ;

: remove-link ( n -- a. )
\ removes nth link and
\ returns address for
\ deallocation
  link-addr
  cond
\ is this first link?
  2dup headPtr 2@ d= if
\ put next link in headPtr
    2dup 2 cells s>d d+ 2@a
    2dup headPtr 2!
\ make next link head
    0. 2!a
\ is this last link?
  else 2dup tailPtr 2@ d= if

```

```

\ put prev link in tailPtr
  2dup 2@a 2dup tailPtr 2!
\ make prev. link tail
  2 cells s>d d+ 0. 2!a
\ link in middle
  else
\ make prev link point to next
  2dup prev-link 2 cells s>d d+
  2over next-link 2over 2over
  2swap 2!a
\ make next link point to prev
  2!a
  thens ;

```

Here's an example of usage:

```
include Mem
```

```

: test
  8 (allocate) throw add-link
  8 (allocate) throw add-link
  8 (allocate) throw add-link
  2 link-addr 2 remove-link .s ;

```

test simply creates a three-element linked list and removes the middle link. The stack should have 4 items present after execution of test, and should consist of two identical double-cell addresses.



By [Matthew Blair](#) on Wednesday, March 29, 2000 - 11:58 am: [Edit](#)

Whoops - made a small teeny mistake :)

After the 'thens' in remove-link , please place a:

```
-1 lcount +!
```

so that the link count will be updated...

(Going back into my little corner to save face)

Matt



By [Winchell Chung](#) on Tuesday, May 9, 2000 - 04:04 pm: [Edit](#)

You are not the only one saving face in your corner.

I went to all this trouble implementing a linked list because I wanted a dynamic array.

Turns out that I can get all the functionality I needed by making a simple Palm database and using random file i/o (i.e., using the existing PalmOS API instead of re-inventing the wheel)

Boy is my face red!



By [Neal Bridges](#) on Tuesday, May 9, 2000 - 04:27 pm: [Edit](#)

Don't feel badly Winchell -- be grateful you found the simpler way now rather than later!

Neal

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Am I misunderstanding < # #S #> ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Am I misunderstanding < # #S #> ?



By [Andrew Glassby](#) on Sunday, July 16, 2000 - 09:09 am: [Edit](#)

Hi,

Sorry to but in here but I am having a problem with this picture formatting technique, and I thought that this was the most appropriate place to ask the question. Many apologies if I have stepped out of line!

Could someone please explain where I am going wrong, or if I am experiencing a bug? (Unlikely though!)

I have been experimenting with the following:

```
12345e f>d <# # # # #s #> type
```

or

```
12345e f>d <# #s #> type
```

these return 12345 ok

but if I try to put a bit of formatting information into this like:

```
12345e f>d <# # # [char] / hold # # #s #> type
```

I just get gibberish with the last two digits displayed!! I expected 123/45 to be displayed.

Have I totally missed the plot here?

I would be grateful if someone could guide me through the forest!!

In anticipation.

AndrewG



By [Erwin Schomburg](#) on Sunday, July 16, 2000 - 10:57 am: [Edit](#)

Replace [char] with plain char when you try this outside a definition.

```
12345e f>d <# # # char / hold # # #s #> type
```

works, also

```
: t f>d <# # # [char] / hold # # #s #> type ;  
12345e t
```

will produce the same result. Read up on compile vs. interpret mode behaviour of words, but take it that you should never use a library supplied word that starts with a square bracket outside a colon definition.

/Erwin



By [Andrew Glassby](#) on Monday, July 17, 2000 - 04:12 am: [Edit](#)

Erwin
Thanks for your advice, much appreciated!

AndrewG

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Memory Allocation

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Memory Allocation



By [Michael Rowe](#) on Friday, April 7, 2000 - 05:39 am: [Edit](#)

I am having trouble creating an executable on either an 8mb Visor or Vx: I get the error message "MemoryMgrNew.c Line:3138, Nill Id". This problem also occurs when making an executable for a trivial program. However, everything works fine on the 3mb Palm III. I am using 1.2.6R but the problem also occurs with 1.2.5R. Could this be a problem of using short pointers to the heap by makePRC?

regards, mrr



By [Kristopher Johnson \(Kdj\)](#) on Wednesday, October 25, 2000 - 12:14 pm:

[Edit](#)

Has anyone considered fixing ALLOCATE by allotting a "heap" of bytes in dataspace and then writing your own memory-allocation routines? This seems like a reasonable fix, as long as you don't need a huge heap.

I may play with this myself, just for fun, but if anyone has already done it, or has good reasons why it shouldn't be done, I'd like to hear about it.



By [Neal Bridges \(Nbridges\)](#) on Wednesday, October 25, 2000 - 01:21 pm:

[Edit](#)

It's not a bad idea. You'd want to keep all the allocated memory within 64K of the dataspace base pointer, so that it can be addressed directly wiht a single-cell.

Compare this to Ron's notion (in another thread) about calling ALLOCATE in a loop; the net result may be similar.

Neal



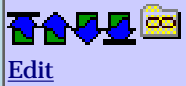
By [Kristopher Johnson \(Kdj\)](#) on Wednesday, October 25, 2000 - 07:10 pm:

[Edit](#)

What bothers me about the "ALLOCATE in a loop" strategy is that there is no guarantee that it will eventually succeed, especially as Palm continues to evolve the OS.

Does anyone know, in general, how many times you have to call ALLOCATE in new Palm OS versions before it succeeds?

-- Kris



By [Neal Bridges \(Nbridges\)](#) on Wednesday, October 25, 2000 - 09:53 pm: [Edit](#)

It should eventually always succeed, as blocks of dynamic RAM outside of the 64K range of the dataspace pointer are eventually exhausted.

Neal



By [Doug Philips \(Dgou\)](#) on Wednesday, October 25, 2000 - 10:14 pm: [Edit](#)

I have to agree with Kristopher, its an inelegant solution with dubious termination conditions. Much as I would counsel against writing yet another memory manager (and debugging it, and testing it, and ...)... I don't know... Given the code that is already written, without changing it, there aren't a lot of options. I'll take this as a lesson and use the full blown abs address pointers if I truly need ALLOCATE like semantics. Shame we can't use ALLOT and FORGET in compiled code. J

-Doug



By [Steve Bohrer \(Skb\)](#) on Thursday, October 26, 2000 - 11:07 pm: [Edit](#)

Can you clarify that last from Doug: "can't use ALLOT in compiled code"?

I thought ALLOT was okay for compile time use in stand-alone programs, but that it can fail in stand-alone programs when used for dynamic run-time memory allocation. Is this true? (Perhaps my confusion is the meaning of "compiled code", i.e. a stand-alone executable vs. compile-time / run-time.)

Please cast the light on this issue yet again.



By [Neal Bridges \(Nbridges\)](#) on Thursday, October 26, 2000 - 11:11 pm: [Edit](#)

You have it right, Steve: ok at compile-time, not at run-time.

Neal



By [Doug Philips \(Dgou\)](#) on Thursday, October 26, 2000 - 11:46 pm: [Edit](#)

Sorry for the confusion. I meant to say that compiled code cannot call ALLOT at run-time of a stand-alone app. That is, calls to ALLOT which are in compiled code are a no=no. Using ALLOT when compiling code is OK.

-Doug



By [Geert Bosch](#) on Saturday, October 28, 2000 - 10:22 pm: [Edit](#)

Actually, I find that it works just fine to ALLOT memory in a compiled application after it starts. There is just one catch: the total amount of allotted memory can never be more than the amount at compile time, so you'll first have to free some memory.

In the arbitrary precision scientific calculator I'm writing, I use ALLOT all over the place to allocate variable-sized big numbers. At program startup I just copy 5K of graphics to a newly (ALLOCATE)d region and then free that for later use by my program. Works like a charm :-)



By [Kristopher Johnson \(Kdj\)](#) on Sunday, October 29, 2000 - 12:37 pm: [Edit](#)

I've put my money where my mouth is, and created implementations of ALLOCATE, FREE, and RESIZE that use dictionary data space rather than the Palm OS routines.

Code is available here: http://kristopher_d_johnson.tripod.com/heap.html

This is not thoroughly tested yet. Let me know if you find any problems or have suggestions for improvement.



By [Doug Philips \(Dgou\)](#) on Monday, October 30, 2000 - 12:04 am: [Edit](#)

Geert,

Wait, how does the ALLOCATE(d) memory get into the ALLOT pool? Or do you mean that the memory which you ALLOTed, then copied, is then FREEd? Sorry for dense, must be the time-change (Grrrr).

Kristopher,

Haven't looked at it yet, but thanks for making it available. Actually, I've read the page you pointed us to, but not the code. I guess when I think about the kind of heap usages that I typically write, I see the limit of a 16 bit address as being a problem. (I'd like to be able to work with more than 32/64K of text in one piece, for example, to manipulate books/reference manuals, etc.). But it should be dandy for smaller applications that have variable but bounded memory allocation needs. Thanks again!

-Doug



By [Kristopher Johnson \(Kdj\)](#) on Monday, October 30, 2000 - 09:19 am: [Edit](#)

I agree that if you are doing "serious" memory allocation, 32-bit addresses are the way to go. But single-cell addresses are so much easier to use that I think it is worthwhile to have a way to use ALLOCATE in simple applications.

I'm also playing around with a partial implementation of the Blocks wordset. This provides an easy way to have a large virtual address space without using lots of dictionary space, and it allows one to use single-cell addresses. I'll post it when it's finished.

-- Kris



By [Neal Bridges \(Nbridges\)](#) on Monday, October 30, 2000 - 11:18 am: [Edit](#)

Good work, Kristopher. Thanks!

Neal



By [Doug Philips \(Dgou\)](#) on Monday, October 30, 2000 - 11:38 am: [Edit](#)

Kristopher, et. al. (interested parties),

I'm a bit confused, as long as one has a symmetric set of operators (fetch, store, increment, decrement, and save to and/from variables and return stack), then I'm not sure how the size of the address can be "easier" or harder. Its just a blob on the stack. When you get to the level of addressing such things as memory mapped devices, then, maybe, it'd be an issue... Sorry to be clueless, I'm not picking on you personally, but I've heard this expressed before and finally decided to ask about it.

-Doug



By [Jim Hendricks \(Jimh\)](#) on Monday, October 30, 2000 - 11:52 am: [Edit](#)

Just my 2 cents on the easier issue.

The stack for QForth is 16bit, so when working with 16bit addresses, store, fetch, etc. are standard operations. When working with 32bit addresses, you are now dealing with 2 cells of data, or double number data. you now can't use the standard store and fetch, but the double equivalents. To make things worse, you may also be working with words that expect a 16 bit address on the stack. If these are words you wrote, the rewrite is simple, but if you didn't write it, the rewrite is a bit more complex.

As I said, just my 2 cents.



By [Kristopher Johnson \(Kdj\)](#) on Monday, October 30, 2000 - 08:06 pm: [Edit](#)

A single 16-bit cell is the "natural" way to address things in Forth. When you start using 32-bit addresses, you have to start using double-cell words and the Quartus-specific words @A, !A, and so on. And you can no longer use standard Forth words such as MOVE, CELL+, CHAR+, COMPARE, FILL, and SEARCH; you have to write 32-bit equivalents.

If you use 32-bit addresses, you are precluded from using DO...+LOOP with an address as the loop variable, which is an efficient way to walk through an array.

And as Jim mentioned, it can get confusing when you have to mix 16-bit and 32-bit addresses. Mixing DUP, OVER, ROT, and SWAP with 2DUP, 2OVER, 2ROT, and 2SWAP gives lots of room for dummies like me to make errors.

And the differences can't always be hidden behind "accessor words". For example, what if you have two addresses on the stack and you need to access the one under the top? In that case, you have to know the size of the items to determine whether to use SWAP, 2SWAP, ROT, or whatever.

Finally, I think code that uses 32-bit addresses throughout is going to be larger than equivalent 16-bit code. (I may be wrong on this, and code size is not an issue to most people.)

Simplicity should always be the goal. It's not "hard" to use 32-bit addresses, but it is a step up in complexity. Whether that complexity is justified depends a lot upon the application.

If you are manipulating lots of large (>64K) memory buffers, then your application may indeed be simpler if you use 32-bit addresses throughout. Similarly, if you make lots and lots of system calls, use of 32-bit addresses throughout will eliminate the need to call >ABS and >REL all over the place.

But, if your program doesn't use a lot of memory, using 16-bit addresses throughout can make your code simpler.

-- Kris



By [Doug Philips \(Dgou\)](#) on Tuesday, October 31, 2000 - 12:42 pm: [Edit](#)

Jim, Kris,

Thanks for the replies. (not to preclude anyone else from chiming in!)

Although cell size (16 bits) was mentioned, I think that it is a red-herring, the real issue is number of cells, not cell-width. As to the "standard" words taking only single-cell addresses, that is true, one would have to reimplement those to use dual-cell addresses. And I agree that can be a kind of "hard"ness.

As for keeping track of what is on the stack, well, this ain't no Algol like language that does all that for you. Forth gives you more control over the system, and that control comes at the price of knowing what you are doing, more so than with Algol like languages. This is in part what makes Forth harder to learn, but also what makes it more powerful. This is probably not so much an issue for someone learning Forth as their first computer language, as they don't bring their history with other languages whose compilers sort things out for them. J .

So, I guess my response is that if you are having trouble with the number and type of items on the stack, then perhaps a refactoring/restructuring of the problem is in order. Forth will punish you for coding too soon, but it will also let you code sooner to play around with ideas. (i.e. Forth is fickle that way). Its much harder in Forth, I grant, to just bludgeon your way through to a finished program. That is Forth's way of asking you to slow down and re-think what you are doing and one of the things I like about Forth. But I concede that it does inhibit picking up the language, or at least proficiency in it.

Or have I missed the boat???????????????????? J

-Doug



By [Kristopher Johnson \(Kdj\)](#) on Tuesday, October 31, 2000 - 07:06 pm: [Edit](#)

I think you're on the same boat I am, but maybe we're at opposite ends. :-)

When I re-read my reply after posting, I realized I should have made it clearer that single-cell vs. double-cell is the real issue, not number of bits or absolute vs. relative.

But I would disagree that refactoring/restructuring will always fix any problems with stack usage. If you have just two items on the stack, one of which is single-cell and one of which is double-cell, then even a simple "swap" or "over" operation becomes complex. (Yeah, I know, you just need to define a couple of new words to handle it. But it's better to not need new words, isn't it.)

Maybe I'm just stupid or lazy, but I find that using single-cell values is easier than using double-cell values.

As a simple exercise, I implemented two standard words, CMOVE (&src &dst u --), and CMOVEA (&src. &dst. u --), in Forth. The first uses single-cell addresses, whereas the second uses double-cell addresses. The double-cell version is more complicated (uses more words), and the compiled code is larger and takes longer to run, so I consider it to be "harder" than the single-cell version. I believe that most comparisons of single-cell vs. double-cell usage would yield similar results. I don't believe it's fair to say that there is no real difference between the two ways of doing things, and that you can factor your way out of anything.

I certainly still have a lot to learn about proper stack usage. (Take a look at my HEAP-REALLOCATE function--Yuck!). But I think sticking to single-cell values is a good general rule.

Maybe I've missed the boat?

-- Kris



By [Doug Philips \(Dgou\)](#) on Tuesday, October 31, 2000 - 11:56 pm: [Edit](#)

Kris,

Perhaps that is you at the other end of the boat, but I'm in enough of a fog bank that I'm not sure. J .

I'm not so sure I agree with you on the "better not to need new words." I've been reading Charles Moore's recent writings and he advocates writing short words, and not worrying about how many you have. The dictionary is a tool to be used, not conserved. I'm beginning to think I understand what he is getting at.

To come back more to the topic at hand, CMOVE and CMOVEA are words I would think would be prime candidates for assembly implementation in any event, and that level of complexity would depend a great deal on the underlying processor.

As to factoring your way out of anything, I think perhaps there is less simplicity there than it appears. Or rather that that factoring is not just dividing up the problem you've chosen to solve into better words, but to rethink the problem itself.

As for single vs. double simplicity, I stick with the idea that an address blob on the stack is an address blob on the stack. However, traditionally Forth has been written to assume that everything on the stack is a single cell, and so there is a flourishment of operators built with that assumption. But its just an assumption. Forth, more than any language, is built around the idea that you should question assumptions. Don't assume you need local variables. Don't assume you need OO, or Catch/Throw or ... or even, I would assert, that you need to submit to the tyranny of a single-celled world view. Whatever is simplest for your application is what is right. Just because some words "come with" your Forth doesn't mean that they are somehow priveleged or more worthy than any that you write. This is different than code re-use or trying not to reinvent the wheel.

Actually, I'm quite becoming quite keen on the idea of having a block-ish interface to all this 2celled memory. It would involve more copying of data, which seems iffy, but its still a half=baked idea, and it does complicate working with data that spans, or is larger than, one block.

But then maybe we're just standing on adjacent docks in the fog and there is no boat! J

-Doug



By [Kristopher Johnson \(Kdj\)](#) on Wednesday, November 1, 2000 - 01:24 am:

[Edit](#)

I've been reading Charles Moore's writings too. One thing I noticed is that he

thinks the double-cell words should not be part of the CORE wordset. That was one of my reasons for "rehabilitating" ALLOCATE instead of just giving in and using double-cell addresses everywhere.

No one is trying to impose a single-celled tyranny upon you. Feel free to abandon all assumptions and preconceptions, and design your own language from scratch for every application--I certainly won't stop you. But I reserve the right to stick with my own narrow-minded, unimaginative world view.

To get back to the topic of this thread, I think ALLOCATE is useful in that it allows one to use single-cell addresses for dynamically allocated memory chunks. I and others find this to be beneficial in some circumstances. If you don't need such a facility for your application, or don't see its usefulness, then you don't need to use it. (ALLOCATE) is still available, and you can always create something else if it suits you.

-- Kris



By [Jim Hendricks \(Jimh\)](#) on Wednesday, November 1, 2000 - 08:50 am: [Edit](#)

16bit -vs- 32bit is the the basis for the single cell -vs- double cell problem. If Quartus was a 32bit Forth, rather than a 16bit Forth, then 32bit addresses could be worked with the native provided operators, rather than the double wordset. So yes, the problem is single cell -vs- double cell, but that is driven by my data size of 16bit or 32bit addresses.

Now to Chuck Moore. Yes, the dictionary is there to use, but in Chuck's own history, he was driven to write and re-write to ultimately head toward the best efficiency. So # of words is not so much an issue, but small concisely written words, and words that don't overlap the functionality of other words. This would also mean, if you can use a word already written, do it. By extension this would mean, if you can do it with 16bit addresses, do it, because it leverages what you already have, and it is the most concise way to go. I haven't read any of his recent work, but I would gather that his choice to not have the double words as part of the core is also driven by his desire that the core be the simplest most basic words that all other words (including double words) can be derived from. It's a minimalistic view that has made Forth so fun to work with.

Now to the argument that there is nothing more privileged or worthy about the words that come with your Forth implementation, I would have to disagree. I don't want to code in assembler. In many Forths, the words coded in the kernel, weather core, or extension, are coded in assembler. This means that they will intrinsically be faster and tighter than anything I can write using just the dictionary. Were I willing to write in assembler, then your argument would be true, but since I want to stick with just Forth, I try to use the built in words as much as possible, rather than roll my own.



By [Doug Philips \(Dgou\)](#) on Wednesday, November 1, 2000 - 03:51 pm: [Edit](#)

Kris,

No offense was intended. I certainly don't feel compelled to use words that might not be the right fit for my problem just because they are already written. I was trying to suggest that you let the problem drive the solution, and then if the predefined single cell words "fit", that's great. It seemed like you were suggesting that you wanted to take the hammers you had (single-celled words) and find some nails that you could pound. I would argue that Forth has always been about building the tool that will solve your problem, not finding problems that you have the tools to solve.

In any event, I find the fact that ALLOCATE might fail not because the memory isn't available, but simply because it is too far away to be a flaky implementation of ALLOCATE (Sorry Neal, I gotta call 'em like I see 'em). In this case, I'm much more for a separate implementation that reserves the space needed at compile time, so that if ALLOCATE fails it is because there isn't enough memory.

As to narrow-mindedness or unimaginative, that I'm not qualified to comment on.

Have a day!

-Doug



By [Doug Philips \(Dgou\)](#) on Wednesday, November 1, 2000 - 03:59 pm: [Edit](#)

Jim,

I agree with your first two paragraphs.

As to the third, it is certainly true that assembly implemented words will be faster than high level words. Is not one of Forth's goals to make word invocation fast so that you won't have to choose between "ideal" factoring for program design clarity or big bloated words that avoid calling other words because "subroutine calls" are too expensive? Again, I would agree with Chuck that simpler is better, and even he has thrown away a lot of what is in the ANS Forth Standard as being too much, and not well suited to most problems to be solved. In any event, as many have argued and shown in the CS literature, worrying about efficiency before worrying about good design is going to hamper good design. Conversely (well, not really conversely, but it sounds good), CM has argued for simplicity and efficiency by simplifying the problem and the solution, not by assembly coding or favoring assembly coded words over colon definitions. As the addage goes: Make it right, then make it fast. With the quick experiment time that Forth allows, that is even truer. Faster algorithms will beat assembly coded poor algorithms most if not all of the time.

-Doug

[Edit](#)

By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 1, 2000 - 05:50 pm:

With an optimizing native-code Forth like Quartus Forth, there's very seldom any need to drop down to assembler for speed reasons. The difference between compiled Quartus Forth source and the equivalent hand-coded assembler averages to about a factor of two, as regards speed.

In a processor-intensive app (rare on the Palm), there might be one or two bottleneck words in an application that need to be tuned for speed; generally, there are none.

Neal

[Edit](#)

By [Michael Rowe](#) on Thursday, November 2, 2000 - 05:09 am: [Edit](#)

There is another aspect to this 16/32 bit heap pointer issue other than the stack: building lists and trees from the heap can become very expensive when node size is small and one is stuck with long pointers (particularly when nodes contain multiple links). In such cases it can be more efficient to discard that part of the heap which lies beyond the reach of short pointers and use ALLOCATE instead of (ALLOCATE).

-mrr

[Edit](#)

By [Doug Philips \(Dgou\)](#) on Thursday, November 2, 2000 - 03:05 pm: [Edit](#)

Michael, et. al.,

Quite right. Esp. if your "data" is in the relationships represented by the pointers rather than in the nodes themselves, so to speak. If all the structures you want will fit in the address-space of a single-cell address, you're pretty much done. But, you also have the option of shrinking the individual node size by replacing pointers with a smaller sized index into a table of pointers (which could be either single or double cell addresses), depending on how many different objects you'll want to reference, etc.

All of these options are trade-offs to be made based on the problem you're trying to solve, which was my (poorly stated) point in the first place.

My apologies to anyone I have offended, it was my intent to discuss ideas only, not the people who may or may not hold them.

-Doug

[Edit](#)

By [Kris Johnson \(Kdj\)](#) on Friday, December 1, 2000 - 08:50 am: [Edit](#)

I ran across another implementation of the standard memory allocation words that may be of interest to people here:

<ftp://ftp.taygeta.com/pub/Forth/Applications/ANS/memory.fth>

I haven't tried it myself. It claims to be ANS Forth, so it should work with Quartus.

-- Kris

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Status of Float package ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Status of Float package ?



By [Andrew Glassby](#) on Friday, July 7, 2000 - 11:37 am: [Edit](#)

Neil

Can I resurrect you point about MathLib?

At the risk of being totally out of my depth, being new to Q4th, I am interested in IEEE precision on the Palm Vx and I think MathLib might be the way to go. I am not too sure how to do double maths on a Floating point problem like $3.145 * 2.00045$ since f>d only carries out the transformation on the integer part (I understand).

I have written an application (a brent method poly. root finder) which uses FP mathematics. The way I will be developing this app further will rely heavily on the "Floating" part of FP mathematics, ie there will not be a fixed number of decimal places supplied to the algorithm etc... Right now the results are a little quirky and error prone when trying to work to larger than only a few decimal places, probably MY clumsy programming technique :- (

Could you give me some pointers on implementing an interface to MathLib? or an alternative way of carrying out IEEE precise floating point maths

Having only spent a short while working with Q4th I am amazed at how quickly I have got an application compiled and running (after a fashion, OK OK !!)
Brilliant!!!!

Andrew



By [Neal Bridges](#) on Friday, July 7, 2000 - 10:20 pm: [Edit](#)

Hi, Andrew. I have done some rough work on MathLib, but nothing ready for release yet. How many places of precision do you need? Here's the built-in floating-point:

needs float-ext

$3.145e 2.00045 f * f \rightarrow 3.1449999$

Neal



By [Andrew Glassby](#) on Sunday, July 9, 2000 - 03:41 pm: [Edit](#)

Neil,

The current application looks for a precision of about $1e-6$. I think I might have

mis-coded a little somewhere along the line since when I input coefficients with greater than 5 decimal places the algorithm fails to converge. For example a change in one coefficient from 0.01655 to 0.016549 causes a failure to converge. My translation from C to Forth might be suspect (Original algorithm is from Numerical Recipes in C)

My ultimate goal is to encompass the Brent algorithm into a Chemical Property package. The precision may well stay at 1e-6 for Brent, however other parts of this package will have coefficients down to 1e-14 !! OK with EXCEL but I'm not sure with Q4th or PalmOS!!

Hope this tells you enough about what I'm up to!!

AndrewG



By [Andrew Glassby](#) on Wednesday, July 12, 2000 - 05:28 am: [Edit](#)

Neal (finally got it right!!),

I've continued to work with my Brent algorithm and it appears that my clumsy coding and translation from C were the main culprits in the application not solving.

I also found that the algorithm is VERY sensitive to the initial bracket. This also caused failure to converge on numerous occasions. After re-visiting "Numerical Recipes in C" I found a useful Bracketting algorithm which appears to work quite happily! It hasn't failed just yet!

Thanks for the advise earlier, it made me persist with the Q4th functions which DO work well!

I'm just debugging the application and putting in more robust error protection and hope release it to the Palm world very soon.

Just a few weeks from starting this project to termination, that's some programming platform!

AndrewG



By [Neal Bridges](#) on Wednesday, July 12, 2000 - 02:15 pm: [Edit](#)

Andrew, glad to hear that. Sounds like you're having fun. I'm looking forward to seeing your app!

Neal

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TRGpro

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): TRGpro](#)



By [John Ballenthin](#) on Friday, July 14, 2000 - 02:33 pm: [Edit](#)

Similarly, I am trying to understand how to call the TRGPro compact flash FAT filesystem library. Being a novice at Quartus + the TRG, I cannot decipher how to extract the systrap# from the header files; e.g. the ffslib.h header very nicely lists:

```
/* open the library */  
extern Err FfsLibOpen(UInt16 libRef) FFS_LIB_TRAP(sysLibTrapOpen);
```

with FFS_LIB_TRAP macro as:
#define FFS_LIB_TRAP(trapNum) SYS_TRAP(trapNum)

but nowhere can I find sysLibTrapOpen defined. I have grep the entire group of files in the library to no avail.

Can you give me any help on how to find the various constants to call the various shared library functions for the systrap?

I writing a data logger to take data from the serial port and store it in the CF card for an instrument on a high altitude research aircraft. The palm seems ideal if I can get over this stumbling block.

John



By [Neal Bridges](#) on Friday, July 14, 2000 - 03:20 pm: [Edit](#)

For an example of opening an external library, have a look at serial.txt. I'd like to look at the ffslib.h header -- is it available on the web?

Neal



By [John Ballenthin](#) on Friday, July 14, 2000 - 03:59 pm: [Edit](#)

I have looked at serial.txt, but the problem remains on how to find the constant to give to the systrap function.

The TRGPro developer page is at:
<http://www.trgpro.com/developer/developer.html>

The example codewarrior file exercising the ffs functions is in the file:
ffs_ex.zip on that page. The ffslib.h header is in this archive.

I badly need some help to get over this hump. Thankyou for whatever you can provide.

John



By [Neal Bridges](#) on Friday, July 14, 2000 - 04:14 pm: [Edit](#)

From that file (ffslib.h):

```
#define FfsLibName          "Ffs.lib"
```

This is the name of the shared library (like "Serial Library" in serial.txt).

The rest of the constants are in the enum later in that file:

```
typedef enum {  
    FfsLibTrapGetLibAPIVersion = sysLibTrapCustom,  
    FfsLibTrapGetdiskfree,  
    FfsLibTrapFindfirst,  
    FfsLibTrapFindnext,  
    FfsLibTrapFinddone,  
    FfsLibTrapFileOpen,  
    FfsLibTrapFileClose,  
    FfsLibTrapRead,  
    FfsLibTrapWrite,  
    etc...
```

These start at sysLibTrapCustom (hex A805) and go up.

That should get you started -- let me know!

Neal



By [Erwin Schomburg](#) on Saturday, July 15, 2000 - 07:56 am: [Edit](#)

To see a slightly more transparent method than that shown in serial.txt (thats at least what I think 8-)) on how to build the Quartus wrappers around a shared library, see <http://www.quartus.net/discus/messages/23/521.html?MondayJune2620000613am#POST3627?MondayJune2620000613am>

Note that you need to set up the required parameters in the reverse order than given in the C prototype and don't get mixed up in byte values, 16bit values, 32bit values and 32bit pointers to buffers and all of the aforementioned value types.

/Erwin



By [Erwin Schomburg](#) on Saturday, July 15, 2000 - 08:05 am: [Edit](#)

Ah, Neal forgot to tell, Open and Close are always at offset 1 and 2 respectively (hex A801, hex A802), then come Sleep and Wake, which only the OS uses and programmers should leave alone, so the fun stuff (always?) starts at hex A805, as Neal mentioned.

/Erwin



By [Neal Bridges](#) on Saturday, July 15, 2000 - 08:39 am: [Edit](#)

I agree, Erwin's example is cleaner than serial.txt and is a good place to start.

Neal

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Greyscale bitmaps

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Greyscale bitmaps



By [Steve Bohrer](#) on Wednesday, May 24, 2000 - 01:56 am: [Edit](#)

Temporary variables for OS call return values: Is there some kind of defining word magic that can make it easy to use the stack (as in Garth's March 14 2000 post) or perhaps temporary space at here, for return value buffers?

I'm thinking of calls like DmDataBaseInfo, which take a bunch of pointers to space to put results in to, or NULLs to skip a value.

The usual approach is to define variables (or 2variables) for the values you care about. But, this feels wasteful, since I only use my words with DmDataBaseInfo in a tiny part of my program, and all those variables sit around the rest of the time.

As Neal notes above "Try dull code first; get that to work. Later, if it's necessary, make it clever." I guess I can't really say it is "necessary" to have temporary buffer space rather than global variables, and I should not waste time fussing about it. But, this seems like a generic sort of problem that some Forth wizard can solve (or has solved!)

If the deeply clever code is captured in a few easy-to-use words, then all of our code can be less dull.

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Sorting Databases

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Sorting Databases



By [Steve Bohrer](#) on Wednesday, August 2, 2000 - 02:04 am: [Edit](#)

DmQuickSort is fixed by callbacks A4 setup

The OS DmQuickSort routine in OS3.1 uses A4, so DmCompareFunc callbacks suffered from the same lack-of-stack as List Draw callbacks do in OS3.3

Here is a simple database sort. The key is installCbStack...removeCbStack. See ["Simpler fix for OS3.3 callbacks"](#).

My compare func takes an offset via the "other" arg, as my records have some other stuff before the z-strings I wish to compare. Pass 0 for the offset if your records start right off with the string data. I do not use the sortInfo or appInfo arguments.

I use both StrCaselessCompare and StrCompare, as per the PalmOS notes for StrCompare:

Quote:

If you need to perform a true alphabetical sort, use StrCaselessCompare before using StrCompare, as in the following code:

```
Int16 result = StrCaselessCompare(a, b);
```

```
if (result == 0)
result = StrCompare(a, b);
return(result);
```

```
\ sortDb 00.8.1 skb
\ Sort text records in a database
```

```
needs callbacks \ for A4 setup
```

```
: compRecs ( CALLBACK )
\ Args: offset &rec2. &rec1.
\ skip offset bytes, compare rest
\ caseless comp, strComp if =
\ (Ignores sortInfos and appInfo)
```

```
installCbStack callback
  \ offset is buried under ptrs.
2>R rot dup >R M+  \ offset rec2
0 rot rot      \ restore stack depth
R> 2R> rot M+   \ offset rec1
2over 2over    \ dup both pointers
StrCaselessCompare dup 0= if
  drop StrCompare
  >R 0. 0. R>   \ restore stack depth
then
0 d0!   \ return result for C
end-callback removeCbStack ;
```

```
: sortDb ( offset Dbr. -- )
\ NOTE: Must call allocCbStack before
\ using this routine!
2>R ['] compRecs xt>abs 2R>
DmQuickSort throw ;
```



By [Neal Bridges](#) on Wednesday, August 2, 2000 - 11:50 am: [Edit](#)

That's great news, Steve. Thanks.

Neal

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Version 2?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Version 2?](#)



By [francois vignon](#) on Monday, March 27, 2000 - 07:04 am: [Edit](#)

And font selection ?



By [Dave Bennett](#) on Monday, March 27, 2000 - 07:36 am: [Edit](#)

I like the cooperative multi-tasking. Are you implementing it as a threads kind of thing?



By [Neal Bridges](#) on Monday, March 27, 2000 - 09:40 am: [Edit](#)

Font selection, Francois? What do you mean?

Dave -- it's cooperative multitasking, so not quite threads, but handy.

Neal



By [Matthew Blair](#) on Monday, March 27, 2000 - 09:43 am: [Edit](#)

Again, my ignorance is on full display but...

What is cooperative multitasking, and how is it handy?

Matt



By [Neal Bridges](#) on Monday, March 27, 2000 - 10:13 am: [Edit](#)

Have a look here:

<http://devworld.apple.com/techpubs/macos8/OSSvcs/MultiPServices/MultiprocessingRef/MP.5.html>

Neal



By [Matthew Blair](#) on Monday, March 27, 2000 - 10:18 am: [Edit](#)

Thanks! -- Matt



By [francois vignon](#) on Monday, March 27, 2000 - 10:55 am: [Edit](#)

font selection: the font for quartus console.

by default the font is small. I have tried "1 font" in startup.quartus, but it doesn't work ...



By [Neal Bridges](#) on Monday, March 27, 2000 - 02:28 pm: [Edit](#)

One way to do this at present is to use RsrcEdit to change the font of Field1103 in tFRM1000, inside Quartus itself.

Another way is to use "FontHack123", available at PalmGear.

Neal



By [Francois Vignon](#) on Tuesday, March 28, 2000 - 07:10 am: [Edit](#)

the change of the font of Field1103... doesn't work. by the way, the input is effectively changed, but after return, the display is redraw in standard font :-)



By [Neal Bridges](#) on Tuesday, March 28, 2000 - 08:55 am: [Edit](#)

I'll add that to my list, Francois. Again, FontHack123 will let you override the font.

Neal



By [Francois Vignon](#) on Tuesday, March 28, 2000 - 10:29 am: [Edit](#)

Thanks Neal.



By [Francois Vignon](#) on Wednesday, March 29, 2000 - 02:58 am: [Edit](#)

Hi Neal. I have installed Font Hack 123. it's work fine.

a small reflexion about all: what is the better way for you and for us ? having qForth with integrated editor, many features (like font selection) and so one or qForth more lite with this feature made by external tool (like popupnotes, fonthack, etc.) ?

in the first case: you have a beautiful tool (for the price ;-))

in the second case: you have a good tool (because the externals tools are shared by other app and globally it's make all smaller)
to meditated ...



By [Neal Bridges](#) on Wednesday, March 29, 2000 - 09:31 am: [Edit](#)

Certain features are not hard to add; I don't want to get into the editor-writing business, though, as that's a full-time job all by itself, and it's already been done.

I believe external editors are the way to go.

Neal



By [LGLisle](#) on Sunday, April 2, 2000 - 08:11 pm: [Edit](#)

Neal,

I certainly understand your choice to avoid writing an editor, they can be the monster that ate Manhattan. However, a nice-to-have would be a memo _viewer_.

You're in the dentist's waiting room, debugging some code, and can't remember the spelling of a word you defined last week. If you could just pop up the memo and take a peek without losing the current state

Of course this may be better as an optional library function, but I'm not sure how you would do a popup form as an addon. I'm still struggling with GUIs and forms.



By [Bill McCarthy](#) on Sunday, April 2, 2000 - 08:37 pm: [Edit](#)

Try the following:

<http://www.benc.hr/popnote.htm>

Bill

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Skeleton wanted, please!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Skeleton wanted, please!



By [Doug Philips](#) on Tuesday, October 10, 2000 - 07:44 pm: [Edit](#)

QRPAS Super Skeleton!

Nearly one year later...

Bear with me, this might be a bit long, but if I can get my idea across quickly, I will.

I've been using RsrcEdit to play around with the layouts for my "What's New" thread project. Actually for a simpler stepping stone project, but be that as it may...

As I was playing with RsrcEdit, and with its adjust and preview modes, I had an epiphany (I do work for IBM, so I don't have to pay any royalties to use that term. J , esp. if on "own time.").

Looking back through this thread, and having glanced at the source and snippets and what not in the library/files section of this site, I realized that I was seeing something that I had seen umpteem times before. Event loops with dispatch code.

Event loops with dispatch code that is practically boiler plate except that it still feels like C in Forth. I say that because of the C philosophy that you can't really do dynamic dictionary lookup things like you can in Forth.

So my epiphany is that I should be able to write (or help write! Gulp!) a generic "simple app" skeleton. Simple because it'll give you a simple app. Extend it for a twisted/killer app.

Here's the gist:

Use RsrcEdit (or whatever, just git your resources into the Palm) to create your app's interface.

Load the Quartus Rabid Prototype App Skeleton into Quartus.

Tell it your resource DB file name (just like in RsrcEdit). Tell it your startup Form.

QRPAS then opens the DB, analyzes all the resources, and creates a skeleton app. The "glue" to all of this is xt tables for each control. For example, if you have a button with ID 100, QRPAS will look for a button100 word, if it isn't defined, you'll get an error. If it is defined, it'll load it's xt into the right table. If all your resources have "handlers" defined, then you'll get a working app. If any

are missing, you'll get a list of the words you haven't defined yet.

QRPAS does all the event handling, invoking your handler words as appropriate, passing an event (or a pointer) on the stack, and expecting a "handled it" flag in return.

QRPAS would provide a pretty simple callback-esque API, for example, having a "switch to this form" word, a "pop up this dialogue word", etc.

If it turns out that QRPAS is enough to get your (i.e. my!) app working, then you call its "generate app" word, passing a few of the needed names/IDs, and, assuming you've got the registered version of Quartus... Tra La! A simple app!

Wouldn't solve the issues of beaming (can Quartus apps send/receive beam data? Isn't that a launch code (I need HTML links in my brain to keep this all straight!)) nor of access to the DB for storing and updating persistent App data, but it would give me a fast leg up on my current projects if QRPAS already existed!

So, what do you think? Worth persuing? Anyone want to help out? (My time available for PalmOS programming is a few hours a week, therefore I want more/better accelerator tools).

-Doug



By [Neal Bridges \(Nbridges\)](#) on Wednesday, October 11, 2000 - 04:14 pm:

[Edit](#)

Doug, it sounds interesting. You might want to look at the "easy fields" work that Travis Casey has been working on; it goes a long way toward accelerating certain types of interface programming.

Neal



By [Travis Casey \(Travis\)](#) on Wednesday, October 11, 2000 - 04:44 pm: [Edit](#)

I've been thinking of another possible addition to ezUI (the current name that I'm calling the "easyfields" stuff), that's much like what Doug was talking about. Here's the direction of my thoughts right now:

The field stuff makes it pretty easy to get info into and out of fields. The event loop, however, still has to be coded. In most cases, it's pretty simple... essentially just a big case statement (of big series of if statements, for those who don't like case). It, then, seems like a prime candidate for some type of automation.

A generic event loop pretty much just has to look for ctlSelectEvent events, match them to which control was pressed, and then run appropriate code for that control. (Yes, that leaves out a lot of interesting things like drag-and-drop,

but it ought to cover better than 50% of simple apps, I'd say.) The key to me seems to be to have some way of registering functions with an event handler; something like:

```
... startup code ...
```

```
: my-func .... ;
```

```
1010 button my-button
```

```
' my-func onpress my-button
```

This would register an association between my-button and my-func with the event loop, so that if my-button is pressed, my-func would be called.

This seems like a simple thing to do... the main reason I haven't done tried to do it yet is because I wasn't sure if people really wanted it.

Of course, nothing's going to write your program for you, but this gives an effect almost like using a tool like Visual Basic -- it eliminates the need to rewrite or cut-and-paste a lot of "boilerplate" UI code.

I do have a "getid" method in the current version of ezUI for each control type, which returns the ID of the control. People who want to mix the simple stuff that ezUI can do with more complex interaction can use that so they at least don't have to store the control ID somewhere else in their application.

The one thing I'd really like ezUI to do that it doesn't (and probably won't) is arrays of similar controls. I've been thinking about ways to do that that won't require either writing a second version of everything or add excess code to the apps of people who don't need that, but haven't come up with anything yet.

A couple of other things I've been thinking about:

First, a module for using the v2.0 and above application preferences stuff. Using the v1.0 application preferences is pretty simple and already shown in several applications, but I like the ability to store multiple preferences, and the ability to store variable-length preferences and find out the size of them from the OS before reading them back in. I've got some code written for this, but haven't actually tried it yet.

Second, something to eliminate some of the "boilerplate" code required in using Palm databases right now. That's on a back burner right now, though, since I haven't made much use of the DB stuff yet.

I've got the date and time input parts of ezUI working... had been wanting to make fixedfield and floatfield types before posting an updated version, but I

think I'll lay off on those and try to write some documentation and clean up my examples instead. Look for me to put up a pointer to the stuff by Thursday. Since it's five or six memos and a form now, I won't be putting the code up on the board here, but I will post a pointer to it.

--Travis



By [Doug Philips \(Dgou\)](#) on Wednesday, October 11, 2000 - 05:29 pm: [Edit](#)

Great stuff!

After searching for "easyfields" and "easy fields" I think I'm caught up.

Easy fields would have been my next step "outward" from a QRPAS core. J

I like the "registration" idea, but didn't suggest it because it makes it harder for the event dispatcher to know if everything that should be defined is. I was going for more simplicity rather than generality. Also, it looks like the 'registration' mechanism has more flexibility in terms of specifying tap-down, tap-drag, etc. which QRPAS definitely wasn't about, though I'm not against. I was trying to focus more on a prototyping tool.

My concern was that using QRPAS would be easy, and I'd prefer not to create something as hard to learn to use as the PalmOS API! J . Just as you focussed on the duplication of field getting and setting code, I was focussed on the duplication inherent in the event dispatching. I don't see these are a priori intertwined, nor do I see them as mutually exclusive.

I'm not particularly sanguine about tying fields to variables (I like helper functions, meta-boiler plate such as we've been talking about), but I prefer to avoid magic... I guess I would look at it more as in being able to register words to be invoked whenever field editing events came in, and then those registered words could make the decision about whether to copy from the fields, etc. So I see the existing ezUI as a great toolkit, and QRPAS as another kit that could quite easily work together. Or perhaps I'm mis-understanding the field/variable tying that you and Neal have been playing with.

I agree, having meta-boiler plate for DB access would be great. Like you, I have no need of it yet, and I would hope it could be another kit that would "play nice" with ezUI and QRPAS.

Similarly with accessing Preferences. One might even generalize this to all the various APIs on the PalmOS! J

I'm still doing my form layouts in RsrcEdit, so haven't gotten to the point where I need to push on this harder, so I'm looking forward to your new ezUI!

One principle that drove my initial idea about this was making it a simple meta-boilerplate, rather than a complete one. Not that some GUI elements should be ignored, but that the overall architecture be one that abstracts the PalmOS into simpler units. Ideally something that could be used indefinitely, but not necessarily something that you'd want to use, say, for a drawing program. A toolkit for apps of a certain simplicity in user interface, perhaps. Longer term, the lessons learned from experience could be used to create a QRPAS/ezUI/ez<XX> of more sophistication, though I personally lean heavily towards simplicity, and would expect that through refinement it would become simpler rather more complex, and hopefully that would also result in more generality. ;-)

Oh, I'm really rambling now! "Back to you..." ("you" being anyone who wants to jump in!)

-Doug

-Doug



By [Travis Casey \(Travis\)](#) on Wednesday, October 11, 2000 - 06:25 pm: [Edit](#)

That all sounds in line with what I want to do, really... but let me take some of your points one by one and talk about them:

Registration: I'm thinking of a **very** simple interface for registration. Probably the only things you'd be able to "register" would be buttons -- just about anything else you'd want to do in a simple app (e.g., text fields, checkboxes) is already handled for you by the OS. There would be a way to tie in your own "call this after checking all the button registrations" code for anyone who wants to do something more complex, but those doing a simple app could just ignore that.

Events: My thought on events is that the most common events being responded to are UI events, which is why I was thinking that would be a good thing to tie into ezUI. If someone wants to write a more general event handler loop, I'd be happy to make ezUI use it. :-)

Tying fields to variables: Neal's code that he was working on did that; mine doesn't. I think it's potentially a neat idea, and might implement it as another layer you could "pull in", but as it stands, you do "get mycontrol" to get the contents/value of a field/control and "X set mycontrol" to set the contents/value of one.

I agree with you on keeping such "boilerplate" simple... I don't intend ezUI to try to do everything. In fact, that's why it's so many memos... for most apps, you'll only need two of those memos, and one of them "needs" the other, so all you'll have to put in your app is "needs ezUI". The date and time ones are each a separate memo, with a couple of support memos needed for them. The basic

idea is not to force people who don't need/want the date and time stuff to include it (especially since the time one, in order to work on all versions of the Palm, has to have its own form resource).

I'll probably make separate "ezFixed" and "ezFloat" memos for those sorts of fields as well, since someone who's using one probably won't be using the other.

The preferences and possible DB stuff would each stand alone as well -- you wouldn't have to use any of the ezUI stuff to use them.

If I can do it, I'll make any "auto-event-handling" stuff be a separate module as well, so people using ezUI don't **have** to use it unless they want to.

I believe in the old principle that "simple things should be easy, and hard things should be possible." The hard is already possible... I'm working more on the "simple should be easy" part with this. :-)

--Travis



By [Doug Philips \(Dgou\)](#) on Wednesday, October 11, 2000 - 09:56 pm: [Edit](#)

Travis,

I think we are on the same wave-length, esp. regarding your last paragraph. J

I admit here my ignorance of the subtleties of the GUI objects. When you say "buttons" are you using that term to cover pop-up lists, and the like?

As the specifics... I agree, what I was looking for mainly was the event dispatching. You are referring to ezUI as if it were already an event dispatcher, and I must admit that I missed the messages about that, though perhaps I was searching for the wrong keywords.

With the simple event registration that you are talking about, it should be possible, perhaps even simple, to detect missing handlers for active objects. If we have any difference it might be in that my focus is on rabid prototyping, with a skeleton that would be useful in the final program. As I see it, the skeleton support code could do a lot at interpret time before the stand alone app is generated.

As I read your note I realized that one of the reasons that I dislike tying fields to variables is that it complicates the kinds of screens/forms that I like to use (and therefore write) on which one has a confirm and a cancel button. If field changes are tied to variables, then I have to do all the work of saving initial values to restore on 'cancel'... perhaps that is due to wanting to use forms which are interactive/responsive, rather than only data input collection... I'm not sure about this. Or maybe I am. I want the user to control the interface, and my code to control its data in response to the interface changes. Perhaps its just my

background in transaction processing with the "presumed abort" semantics. J

I like the "bolt on" approach you're taking, I think that it is the right way to go.

So returning again to the end of your message, it sounds like you've got the event loop stuff in progress already, and all I need do is kibitz from the sidelines and wait for your posting of code. I'd be lyin' if I didn't say I find the timing on this most fortuitous for me! J

Thanks!!

-Doug



By [Travis Casey \(Travis\)](#) on Wednesday, October 11, 2000 - 10:07 pm: [Edit](#)

Well, it's not an event dispatcher yet... I've been talking about what I plan to do, not about what's done. Give me a week or so, though, and it will be. :-)

By "buttons", I mean just that... buttons. Little things that have labels, and when a user clicks on them, the app responds. I specifically don't mean popup triggers or the "pushbutton" type of buttons that are used to make one of several choices.

The OS will actually handle popup lists for you -- all you have to do is correctly associate the list with the popup trigger. Someone could intercept a popup trigger's event if they wanted to do something besides popup a static list, but I don't plan to support that.

Once I put up the code and examples, it should all be clearer. BTW, it may be Monday before I can do that... for some reason, I was thinking today was Tuesday when I did my earlier message, so I thought I'd have two days to do it before I had to go out of town Friday. Since it turns out I only have one day, I don't know if I'll be able to have it ready that fast.

--Travis



By [Doug Philips \(Dgou\)](#) on Wednesday, October 11, 2000 - 10:58 pm: [Edit](#)

Travis,
A week, I can live with J J !

Ok, I wasn't sure how genericly you were using 'button.'

As for dynamic lists... I'm not sure about that. One of the things I want to be able to do is have a pop up list that the user can add items to... The standard "category style" is to do that with a list selection itself. Though I could use a button instead. Since I'll need way more than 16 options, I can't really piggy

back on categories anyways. On the other hand I don't see the need for the list to change as its being selected either. ;-) This gets into that pesky memory management issue of when the app is supposed to allocate and free memory, versus when the API will do it to. But, it is a diversion, not relevant to what ezUI is doing. And as I flesh out the interface in RsrcEdit, I'm looking to simplify those too.

So far I'm still in the play around with what to put where on the interface, when to switch forms, etc. so a lot of this may change as it evolves.

There is no rush. While I had read most of your messages about ezUI and its predecessor, I didn't realize you were going in this direction when I posted my message! Its interesting synchronicity, and I'd be glad to play with your code whenever it is available. When I get to the point of wanting to do that which I want to do ASAP, but as life dictates won't be until next week, it'll probably be posted anyways. If I were going to be writing this myself, I'd be starting to play with it now, just to get a good head start. Please don't confuse my enthusiasm for the project with an impatience for code.

Hope you have a safe and fun trip!

-Doug



By [Doug Philips \(Dgou\)](#) on Thursday, October 19, 2000 - 08:45 pm: [Edit](#)

Whew! Ok, now that I've started looking more at the ezUI, simple-handler, and examples, I think I'm getting a handle on my confusion, and a better idea of what I want in QRPAS. First, before I try to articulate that, some questions and "do I understand this right"s:

Is there a reason some functions need an event on the stack itemid, and some just know which event they're working on coords@? This kind of apparent inconsistency seems gratuitously aggravating.

The "standard" event loop is buried in EKEY, right? But if so, doesn't that reverse the event loop test if (!ApplicationHandleEvent(...)) FrmDispatchEvent(...) part of the loop? (see page 74 of the O'Reilly book Palm Programming, though I have found the Dummies guide to be much more readable and informative).

From within the form's event handler, callback and end-callback play games with the return and data stacks... Does that have any caveats, gotchas, warnings, etc? I couldn't find any (yet) in the Quartus docs.

-Doug



By [Neal Bridges \(Nbridges\)](#) on Thursday, October 19, 2000 - 09:15 pm: [Edit](#)

Apples and oranges: itemid is not an event, it's the ID of an object in the current form.

EKEY takes care of the event loop for you, avoiding the half-page or so of event-handling code that every Palm app written using C has.

A search in the forum for callback and end-callback will turn up various caveats and snippets.

Neal



By [Doug Philips \(Dgou\)](#) on Thursday, October 19, 2000 - 09:33 pm: [Edit](#)

Neal,

Thanks, but I'm still wanting more meat to th answers. J

My point was not in what itemid returned, but in the discrepancy between the fact that itemid requires the event to be on the stack, where as coords@ uses some magical global "current event" instead. That kind of inconsistency makes reading code harder, and so I was intending to ask for the reason why one function is an "extract data from event given on the stack" and the other was an "extract data from magical global variable" function.

I understand that EKEY has hidden the event loop. What I don't understand is how it can get it right. If you look at the code I've refered to, the promulgated "boiler plate" is to give the application a chance to process the event before passing it to the system's form event handler (which then can decided to invoke the form specific event handler). It sure seems like EKEY must be doing things in the opposite order (if not, I'm quite curious to know 'how' it works), and from what I've read about PalmOS programming, I don't know what the implications of reversing the order of those two event processing functions is.

Will look up callback on the forums.

Thanks!

-Doug



By [Neal Bridges \(Nbridges\)](#) on Thursday, October 19, 2000 - 10:37 pm: [Edit](#)

Ah, I understand your question much better now. Thanks.

I initially designed the words requiring an 'itemid' so that they could be used in callbacks as well as in application code, with the event-buffer of your choice. If you find you'd rather have them access the EKEY event buffer, it's easily done. Let me know if you need an example of how to wrap them.

As for EKEY's order of operations: simply put, EKEY waits for an event, and

then passes it through all the required event handlers in the Palm OS. If an event is not handled by the OS, it's passed out to the application on the stack. This may be turned-around in relation to some of the published C boilerplate, but it works quite well and is actually more efficient -- the only events the application looks at are those that the OS didn't want.

Neal



By [Travis Casey \(Travis\)](#) on Thursday, October 19, 2000 - 10:53 pm: [Edit](#)

And, it should be noted, if you want to intercept events the OS does do things with, you can use EvtGetEvent instead of ekey. You can do what you want with the event, and then use a word (HandleEvent, if I remember right) to pass it on to the OS event handlers. If you want, you could also set the eventhandler variable to call a callback, so you could:

1. Get the event and do something before PalmOS gets it.
2. Let PalmOS do its event handling stuff.
3. Look at the event again after PalmOS handles it, in your callback.

An example of such a chain might be if you wanted to prevent certain characters from being written into a field. In Step 1, you could check if that field had the focus, and, if it did, filter out events for those characters. (You can't do that with ekey because the fields get the events before ekey gives them to you.)

Another thing to note is that you could have your code change the function that gets called in step 3 during run time. This might be useful, for example, if you had multiple forms and wanted to write separate event handlers for each one to simplify debugging and make what's going on more apparent.

Actually, Neal, at what point does the eventhandler callback get called? I'm assuming that things are passed by all the internal PalmOS handlers first, so that it gets it at the same point that an ekey loop would, but the documentation doesn't say for sure...

--Travis



By [Doug Philips \(Dgou\)](#) on Thursday, October 19, 2000 - 11:01 pm: [Edit](#)

Thanks!

Well, as to rappin' versus unwrapped... I like the precedent set by the EKEY (EKEY) difference.

So I suppose I would lobby (but its too late, the interface is set) for foo to be

the word that gets data out of an event stored in the magic place, and (foo) to be the word that gets data out of an event on the stack.

BEGIN GENERIC RANT: On of the things that makes Forth a harder language to learn than Algol like languages is that one cannot tell from looking at the code that uses/invokes a word just how many parameters from the stack it will use, (nor how many it will return J).. Having similar words that take different numbers/kinds of data from the stack only makes the learning process harder.
END GENERIC RANT

Now, if I could only keep straight all the different "Form" words and what defaults they set up... J ...

Suggestion: As a pedagogical device, it would be interesting to have a working, high-level/Forth definition of EKEY esp. for us poor sops trying to translate from programming books based on C. And perhaps the same for the Form loading/setting/etc. words. I know it would help me to understand what pieces I need, and to see what I might want to do differently if I don't want to use the words you've already provided.

-Daddy-o "The lights going on, but its not very bright yet" D'gou
(aka Doug)



By [Doug Philips \(Dgou\)](#) on Thursday, October 19, 2000 - 11:21 pm: [Edit](#)

Travis,
Thanks for the "summary/recap".

For QRPAS, I don't mind the processing that EKEY does, for I want a simple set up. You're list does indicate that there would be the possibility of a more robust/sophisticated skeleton too.

Actually, from the code I've seen in the 3rd party books, it seems as if the OS functions do the form event handling callbacks. I'm still not clear about why some events are examined by the app before it passes them off the OS Form handling function, which itself can then invoke the specific forms callback function. I'd suggest a new list:

1. Get the event before the PalmOS can do anything with it.
2. Pass it off to the PalmOS.
- 2.5 PalmOS decides to call the form callback function.
3. If no one else has handled it, look at it again.

The reason I questioned Neal on EKEY was that steps 2.5 and 3 are reversed

from the boiler-plate C code that is published, and I wondered if that would have any semantic implications or if the C boiler plate code was just done that way for historical, rather than functional, reasons.

-D'gou

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Respond to launch codes

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Respond to launch codes



By [Samer Kanjo](#) on Monday, August 14, 2000 - 02:37 pm: [Edit](#)

I was interested in launch codes myself. When is version 2 scheduled to be released?



By [Neal Bridges](#) on Monday, August 14, 2000 - 02:54 pm: [Edit](#)

I'm not announcing a date for it yet, but work is in progress.

Neal



By [Steve Bohrer](#) on Monday, August 14, 2000 - 03:29 pm: [Edit](#)

Seems like launch codes could be a tough nut. What is a forth app to do without its globals? Can you setup what we need even if the OS doesn't?

Do you have any betas so we can help play with various implementation schemes?



By [Samer Kanjo](#) on Monday, August 14, 2000 - 08:44 pm: [Edit](#)

Launch codes provide the extremely important ability to communicate between applications and the OS, will all currently defined launch codes be supported? What about the launch parameter block and launch flags?



By [Neal Bridges](#) on Monday, August 14, 2000 - 10:37 pm: [Edit](#)

Launch codes are only important for a specific subset of applications, primarily ones that want to receive alarms, or transfer data during HotSync. I'm still working on the launch code mechanism for Quartus Forth; it's integral to the normal launch process, so it isn't cast in stone yet. I'll be looking for testers by and by -- I'll keep you posted.

Neal



By [Steve Bohrer](#) on Tuesday, August 15, 2000 - 01:48 am: [Edit](#)

From what I read (please point the way if I am mistaken), beam receivers need launch codes as well. Also, any apps that want to respond to the silk-screen "Find" button. (This could be a pretty big subset :-)



By [Neal Bridges](#) on Tuesday, August 15, 2000 - 08:57 am: [Edit](#)

You're right Steve -- those too.

Neal



By [Alfred Salton](#) on Thursday, August 17, 2000 - 02:13 pm: [Edit](#)

Palm-wide (global) finds require launch codes as well. While the ability to search for a specific text string across all installed applications may be optional for casual users, it is essential for business usage with a large amount of stored data.



By [Samer Kanjo](#) on Friday, August 18, 2000 - 12:26 pm: [Edit](#)

Neal,

Perhaps you should look at the launch codes listed in the Palm OS SDK again. Applications can respond to more than just alarms or HotSyncs. "Phone Lookup" in the Date Book, To Do List, and Memo Pad applications is accomplished using the sysAppLaunchCmdLookup launch code on the Address application (Communication between applications).

IMHO, a reliable and stable application needs to be able to respond to all launch codes and launch flags and accept the launch parameter block. In fact, I think that this is so important that I will not use Quartus for my commercial apps until it has been added.

Not so quietly waiting :)



By [Neal Bridges](#) on Friday, August 18, 2000 - 01:32 pm: [Edit](#)

Samer, I've never denied the usefulness of being able to handle launch codes, for certain classes of application.

As for commercial apps -- while Quartus Forth can certainly be used to create commercial applications, it is primarily a hobbyist-targeted system, and priced accordingly. And within that market, the lion's share of apps do not require launch codes.

That being said, I'm working on it.

Neal



By [Samer Kanjo](#) on Friday, August 18, 2000 - 02:58 pm: [Edit](#)

I think this is starting to get off the subject of this thread but now I am wondering, what are your objectives with Quartus Forth? I can envision Quartus being a multi user application tool. I like the fact that I can write applications

with some sophistication on the device itself. Collaboration can be achieved by beaming files between team members or by interacting with a team repository on the net. Maybe my vision of Quartus does not match yours. If that is the case then I guess I should stick with C.



By [Neal Bridges](#) on Friday, August 18, 2000 - 03:07 pm: [Edit](#)

I have never thought about Quartus Forth as a tool for collaboratively developing applications, but it would do so just as well as C.

Neal



By [Samer Kanjo](#) on Friday, August 18, 2000 - 03:14 pm: [Edit](#)

What I should have said was that I would stick with C on the PC using CodeWarrior or similar. I guess I could check out Pocket C for the Palm but I like Forth. Perhaps I should be more objective.

Anyway, what do you think about collaborative development using Quartus?



By [Neal Bridges](#) on Friday, August 18, 2000 - 03:38 pm: [Edit](#)

I believe the choice of development language is not an important factor when considering collaborative development. Generally, my thoughts on effective collaboration are these:

1. The product has to be fully designed in advance.
2. There has to be one mind that holds all the design details.

Once you have both of those, and a suitable management and communication structure, groups of developers can collaborate to produce the finished product.

Neal



By [Samer Kanjo](#) on Friday, August 18, 2000 - 03:50 pm: [Edit](#)

Agreed. The language is independent of the technique.

What about your vision of Quartus Forth? Is Quartus a part-time gig for you? Why are you doing any of this?

I just want to know where you're coming from.



By [Neal Bridges](#) on Friday, August 18, 2000 - 07:04 pm: [Edit](#)

Forth is an excellent programming language that, while in widespread use, doesn't get the press it deserves.

Forth is also a perfect fit for handheld devices -- concise source code for small screens, fast compilation speeds, and tight, fast executables.

From the first moment I heard about the Palm (then the Pilot), my vision was to create a decent portable Forth development environment. I'm doing my small part to make Forth more visible and accessible to a wider audience.

Neal

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Newbie Request

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Newbie Request



By [Kit Latham](#) on Wednesday, November 1, 2000 - 08:50 am: [Edit](#)

Can someone please explain why

```
: dum ( a n - ) 0 do dup i + u. loop drop;
```

does what I would expect but adding @ as below causes fatal exceptions?

```
: dump ( a n - ) 0 do dup i + @ u. loop drop ;
```

Thanks

Kit



By [Kristopher Johnson \(Kdj\)](#) on Wednesday, November 1, 2000 - 09:06 am:

[Edit](#)

@ only works with aligned addresses, and causes a fatal exception if an odd address is passed to it. You can use C@ to read a byte from any address.

So, if you want to write out the individual bytes, do this:

```
: dump ( a n - )  
  0 do dup i + c@ u. loop drop ;
```

If you want to show cells (where the argument n is the number of cells), do this:

```
: dump ( a n - )  
  0 do dup i cell+ @ u. loop drop ;
```

-- Kris



By [Kristopher Johnson \(Kdj\)](#) on Wednesday, November 1, 2000 - 09:08 am:

[Edit](#)

Whoops. That second definition should be:

```
: dumpcells ( a n - )  
  0 do dup i cells + @ u. loop drop ;
```

(Note use of "CELLS +" instead of "CELL+".)

-- Kris



By [Kit Latham](#) on Wednesday, November 1, 2000 - 11:29 am: [Edit](#)

Thanks Kris, has that always been the case, I don't remember it from last time I did 4th but then that was a long time ago

Kit



By [Kristopher Johnson \(Kdj\)](#) on Wednesday, November 1, 2000 - 06:01 pm: [Edit](#)

The Fatal Exception is not a Forth thing--it's a limitation of the Motorola 68000 family processors. Multi-byte memory accesses must be on aligned address boundaries. Lots of CPUs have the similar limitations.

But even if misaligned accesses were allowed by the CPU, I still think that your code is "wrong". The index increases by one byte in each iteration, yet you try read a full cell, which is at least two bytes in almost all Forths. So I think you mean to either use C@, to read the bytes one at a time, or you need to add CELLS after I to read a cell at a time.

-- Kris



By [Kit Latham](#) on Thursday, November 2, 2000 - 07:21 am: [Edit](#)

You are quite right, thanks for the help.

Kit

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Strange Edit Menu behavior on PopUp Form

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Strange Edit Menu behavior on PopUp Form



By [Steve Bohrer](#) on Friday, April 28, 2000 - 12:12 am: [Edit](#)

MBAR 10000 works with PopupForm, does NOT work with showForm

I was excited to find this thread, as I'd not known about the system event handler. I'm happy to learn that all I need to do to get automatic Edit Command handling is use the proper IDs for the menu items. So, I tried a simple test, one form with one field, MBar ID of 10000, showForm, and loop on Ekey. The System Edit Menu appeared, but it did not work at all.

I poked around a bit, and found that Neal's input.txt works just fine. But, input.txt uses PopupForm. So, I tried my simple test with PopupForm, and, the menu works great.

The code below is a near-minimum test of the system menu with a simple form. "Doesn't-work" uses showForm, and "works" uses PopupForm. I used a resource file with only two items, as follows:

Form 5000 : 0, 0, 160, 160; usable; MBar ID = 10000.

Field 5001 : 20, 20, 120, 120; editable; usable; underlined; maxChars = 100.

Any clues?

```
\ mbar10000 4.27.00 skb
\ Test automagic menu bar handler
\ works with popupForm, but not
\ with showForm
```

```
needs resources \ also ids
needs forms
```

```
(id) p4ap (id) test use-resources
```

```
5000 constant editForm
```

```
\ =====
```

```
: doesnt-work ( -- )
\ menu has no effect w/ showForm
  editForm showForm
  begin
    Ekey drop
  again ;
```

```
\ =====
```

```
: works ( -- )
\ Menu is just fine with PopupForm,
\ ( But, we need to page first, or else
\ the Quartus text shows through.
```

```

\   Why is the form transparent when
\   popped up ? )
  page
  editForm popupForm
begin
    Ekey  drop
again ;

```

From the description of FrmDispatchEvent (which Neal's Handle-event might call), it may be the case that the form event handler installed by ShowForm returns True for the System Edit Menu events, which prevents FrmDispatchEvent from calling FrmHandleEvent. Instead, the system menu events are returned by EKey. (As a check, I handled the various Edit Menu item events, and called FldUndo, FldCut, etc. in response. This indeed made the edit menu work properly with ShowForm.)

Of course, this hypothesis fails if Neal installs the same event handler for both ShowForm and PopupForm, or if he does not call FrmDispatchEvent in either case.

As another check, I tried calling FrmHandleEvent directly from my EKey loop. This DOES make the system edit menu work properly, which may confirm the hypothesis that FrmHandleEvent is not getting called for system edit menu events. However, calling FrmHandleEvent makes "manual" text selections get cleared, probably because FrmHandleEvent is called twice for some events. This test word is "kinda-works", which uses the same setup as above.

```

: kinda-works ( -- )
\ explicitly call FrmEventHandler
\ (although Neal says we shouldn't
\   need to, as Ekey does.)
\ Menu items work, but manual
\ selections get un-selected.
editForm showForm
begin
    Ekey if
        event >abs
        FrmGetActiveForm
        FrmHandleEvent
    then
again ;

```

[Aside on PalmOS Documentation: Actually, it is still not clear to me how I would have found out about such magic as the System menu and its resouce IDs from the Palm OS docs. After reading about it here, I went back and looked for more info. I found only a brief reference in section 27, the Forms reference, in the discussion of FrmHandleEvent. The complete entry follows: "menuEvent : Checks if the menu command is one of the system edit menu commands. The system provides a standard edit menu that contains the commands Undo, Cut, Copy, Paste, Select All, and Keyboard. FrmHandleEvent responds to these commands."

This is a little spare for me to have figured out without the discussion here. Is there some large chunk of Palm Docs that I have not found? Where is there more info about handy things

like system menu handlers?]



By [Neal Bridges](#) on Friday, April 28, 2000 - 12:23 am: [Edit](#)

I'll check on the internal handlers for ShowForm, see why the edit menu doesn't respond there. As a work-around, as you've found, PopupForm does the trick.

I'm not sure where the system edit menu is documented in the Palm SDK; I came across it when browsing other apps. There are not too many such hidden items.

Neal



By [Steve Bohrer](#) on Friday, April 28, 2000 - 12:51 am: [Edit](#)

Yah, but PopupForm was a little funny in that my main form seems "transparent"; the field lines were overlayed on top of the Quartus logo and startup text. I "fixed" this by calling page first, but it seems odd.

I have not experimented to guess the cause of this. Does Popup form need a modal form, or perhaps a dialog style frame (like input.txt) ?

I think I'll just wait for your fix; your response time usually is pretty amazing.



By [Neal Bridges](#) on Friday, July 28, 2000 - 04:32 pm: [Edit](#)

Not so amazing in this case, I'm afraid :)

Just a status-update -- I haven't reached this on my list yet. But I've used PopupForm successfully as a replacement for ShowForm on forms that need the default "Edit" menu behaviour, and everything seems to be working well, so that's one viable workaround for the time being.

Another is to call the Cut/Copy/Paste/etc. features yourself, as illustrated by Ron Doerfler:

<http://www.quartus.net/discus/messages/23/454.html?MondayMay120000215am#POST2952>

Neal

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SelectDay (&title. &year. &day. &month. selectDayBy[>byte] -- Boolean)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): SelectDay (&title. &year. &day. &month. selectDayBy[>byte] -- Boolean)



By [A.Schönfeld](#) on Saturday, November 4, 2000 - 05:52 pm: [Edit](#)

I would really like to see an example like this for the selectTime call !



By [Neal Bridges \(Nbridges\)](#) on Saturday, November 4, 2000 - 08:00 pm: [Edit](#)

Here's some tested code. It's hairy, but then the SelectTime call itself is hairy, so that's to be expected. This code simplifies its use somewhat.

I've defined SelectTimeV33, as this is the new name of the old SelectTime sysstrap, not yet reflected in the kernel.

The title is hard-coded; this can be easily changed.

I've typed this in rather than HotSyncing (I'm not in the lab), so please let me know if it works for you. If it's ok, I'll put it in the File Area.

```
\ selecttime 00.11.4 7:58 pm NAB  
needs zstrings
```

```
: mergetime ( h m -- hm )  
  >byte or ;  
  
: splittime ( hm -- h m )  
  dup 255 and swap 8 rshift ;  
  
: SelectTimeV33 ( ... -- flag )  
  41563 sysstrap  
  2drop 2drop 2drop 2drop  
  d0 drop 255 and ;  
  
: choosetime ( em eh sm sh startOfDay timed? -- em eh sm sh flag )  
  0= >r >r  
  mergetime >r mergetime r>  
  r>  
  z" Select a Time" drop >abs  
  r>  
  sp@ 8 m+ 2dup 2 m+  
  SelectTimeV33 >r
```

```
>r splittime r> splittime  
r> 0<> ;
```

Example:

```
25 5 15 20 8 true choosetime .s
```

Neal



By [Neal Bridges \(Nbridges\)](#) on Saturday, November 4, 2000 - 09:27 pm: [Edit](#)

Make that:

```
: choosetime ( sm sh em eh startOfDay timed? -- sm sh em eh flag )
```

Neal

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Error on compilation

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Error on compilation



By [Doug Philips](#) on Friday, September 29, 2000 - 10:26 am: [Edit](#)

Inquiring minds want to know! J

What was wrong with the old code, it sure seems to be OK at first glance...

-Doug

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Handspring Visor, anyone?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): Handspring Visor, anyone?



By [Kit Latham](#) on Thursday, October 19, 2000 - 10:30 am: [Edit](#)

Hi

Has anyone used the hardware interrupt that comes back from the Springboard?
Does it appear as an event in Q4th?

I am developing a number of simple Springboard interfaces and would be grateful for any help I can get as I am new to Palm and my 4th is pretty rusty.

Thanks in advance

Kit



By [Neal Bridges \(Nbridges\)](#) on Thursday, October 19, 2000 - 01:18 pm: [Edit](#)

Hardware interrupts don't appear as events in the Palm OS, so therefore they don't appear as events in Quartus Forth. If you wrote a small interrupt handler for that interrupt, it could certainly place an application-specific event on the event queue, which would then appear as an event in your app; that'd be one way to go.

Neal



By [Kit Latham](#) on Friday, October 20, 2000 - 02:37 am: [Edit](#)

Thanks for that, would an interrupt handler have to be written in asm or could Q4th do it?

If so can you give any hint as to how? I know it is a big subject but, as I said, I am pretty new to this and a clue would be very welcome!

Kit



By [Neal Bridges \(Nbridges\)](#) on Friday, October 20, 2000 - 11:29 am: [Edit](#)

I'd use the Quartus Forth assembler to write the interrupt handler. Can you paint a general picture of what you are trying to interface to? That'll help save me from describing solutions that might not be workable for your gadget.

Neal



By [Kit Latham](#) on Monday, October 23, 2000 - 08:06 am: [Edit](#)

I am designing a very simple interface from the Visor to a PIC on the

Springboard. The PIC will handle various real time tasks which is what it is good at; and the Visor will handle the GUI which is what it is good at. I have an 8 bit data interface which works fine but I really wanted to use the /IRQ line from the Springboard to the Visor as a status line to signal to the Visor when the PIC needs attention.

If this turns out to be too tricky I will probably use a 4 bit data interface leaving 4 lines for signalling but that would need polling from the Visor which would mitigate against battery life.

Any suggestioins gratefully received.

Kit

PS One has to admire the speed of response on this forum!!

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"File" I/O

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#): "File" I/O



By [Kristopher Johnson \(Kdj\)](#) on Monday, October 2, 2000 - 10:58 am: [Edit](#)

Has anyone out here created the File words for Quartus Forth yet (open-file, read-line, etc.)?

If not, I may do so as part of my hypothetical literate-programming tool.

For the initial effort, I think I'll only support Doc files, but I'd like my architecture to be extensible to support memos, pedit32, and whatever else people might want to add. To support these multiple document types, I think I'd want the following "file access methods":

```
1 enum fam
  fam Doc-r/w    \ read-write
  fam Doc-r/o    \ read-only
  fam Doc-w/o    \ write-only
  fam memo-r/w
  fam memo-r/o
  fam memo-w/o
  fam memo32-r/w
  fam memo32-r/o
  fam memo32-w/o
  \ etc.
```

The high-bit of the FAM can be set to mark it as a "binary" access method rather than line-oriented. (I will not implement binary FAMs, however.)

I will probably only implement the read-only and write-only access methods. (read/write gets complicated).

The only words I'll implement to begin with are CREATE-FILE, DELETE-FILE, OPEN-FILE, READ-LINE, READ-FILE, WRITE-LINE, WRITE-FILE, CLOSE-FILE, and whatever support words are helpful in implementing these.

Anyone have any comments/suggestions?



By [Doug Philips](#) on Monday, October 2, 2000 - 11:01 pm: [Edit](#)

Kristopher,

Interesting idea!

I guess I'm not a literate programmer, but my Forth/Factoring/Object design sense prickles at the enum you've listed. Perhaps I am mis-understanding its use. The words you're planning to implement, the FILE words, are an API. I guess I was expecting you to specify an API for the under the covers backend implementations, rather than just enumerating the possibilities.

I like the general idea though! (Hmmm, how about TODO and clipboard and ... J) I guess I was just thinking illiterately!

It would be cool, but perhaps not what you had in mind, to have a "plug-in" kind of architecture for the back end of your FILE api implementation.

Well, scraped from my brain, those are my thoughts and comments.

-Doug



By [Kristopher Johnson \(Kdj\)](#) on Tuesday, October 3, 2000 - 07:54 pm: [Edit](#)

Sorry, I was misreading the spec. I didn't realize that the standard "file access methods" were defined as R/W, W/O, and R/O.

I do want some way that different "filesystems" (Doc, memo, etc.) can be plugged in to the system. When you call OPEN-FILE, you'll need some way to specify which filesystem you're using. How about use of a prefix, like

```
s" /Doc/mydoc.txt" r/o open-file
s" /memo/mymemo" r/o open-file
```

Or maybe there can be some variable that controls it, like this:

```
fsDoc filesystem !
s" mydoc.txt" r/o open-file
fsMemo filesystem !
s" mymemo" r/o open-file
```

Which is preferable? Or can someone suggest a better way?

In either case, each filesystem needs a unique id number or prefix or something to distinguish it. That was the purpose of the enum I gave.



By [Doug Philips](#) on Tuesday, October 3, 2000 - 09:36 pm: [Edit](#)

Kristopher,

I can't say that I'm personally sanguine about the text prefix ("/Doc/...") but I can't say I hate it either. I also don't like the "... filesystem !" approach either. I guess I'd prefer that each back end-plug define a "enable me word" that can be used to set that plug-in to be used for "originating" words (such as open-file). Once opened, I should be able to switch to a different back end and open another file with a different back end, and use both simultaneous (at least I'd like to be able to do that, so, say, I could shuffle a DOC file into memos, or visa versa). So back to my suggestion:
useDocFileI/O s" Foo" w/o open-file ...
useMemoFileI/O s" Foo" r/o open-file ...

I think there is a precedent for this style, but at the moment my adled brain can't recall where I've seen it in a Forth system...

-Doug

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QUARTUS

Welcome to Quartus!

Quartus
65 Scadding Avenue
Suite 809
Toronto, Ontario
CANADA M5A 4L1

info@quartus.net

Quartus

Welcome to daVinci Forth 1.1.

Build: 1999.08.07 5:36:43pm

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Quartus Forth (Royal daVinci version)

[Quartus Handheld Software: Discussion Forum](#): Quartus Forth (Royal daVinci version)

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-

Welcome to Quartus Forth (Royal daVinci version), for questions, comments and discussion of the Royal daVinci version of the [Quartus Forth](#) on-board compiler.

You may enter any of the discussions below by clicking on the appropriate link. Or, to start a new discussion of your own, click on the "Create New Conversation" button.

Prime & GCD

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(Royal daVinci version\)](#): Prime & GCD



By [Penree`](#) on Sunday, April 9, 2000 - 09:32 pm: [Edit](#)

How do i get prime and gcd to work:
copy and pasted em into the memo
goto Quartus daVinci Forth
type include prime 7?
type include gcd
gcd 12 3?
i could never get these to work!



By [Neal Bridges](#) on Monday, April 10, 2000 - 08:19 am: [Edit](#)

Forth works using a stack; the values for a function need to be on the stack before the word itself.

```
include gcd
36 15 gcd .
```

Neal



By [Penree](#) on Monday, April 10, 2000 - 02:56 pm: [Edit](#)

with a period?



By [Neal Bridges](#) on Monday, April 10, 2000 - 04:52 pm: [Edit](#)

. is the Forth function that displays the value on top of the stack.

Neal



By [Nicholas J. Penree](#) on Tuesday, April 11, 2000 - 07:04 pm: [Edit](#)

i got gcd to work that way but not prime!



By [Neal Bridges](#) on Tuesday, April 11, 2000 - 09:15 pm: [Edit](#)

```
include prime
```

```
31 prime? .
15 prime? .
```

Neal

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Quartus example code

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(Royal daVinci version\)](#): Quartus example code



By [Penree](#) on Sunday, April 9, 2000 - 04:29 pm: [Edit](#)

Posted By: MarkT at daVinciWorld forums:

Thank you Neal for a great development enviroment for the daVinci! If others out there have not yet tried this, you should. I post here the text of three small files, which when loaded into the daVinci allow you to capture button push (screen and hardware) and screen pen events (to draw on the screen). The beauty of Quartus is that it allows on board development, much of this was done in the car (waiting for ferries) or at my in-laws (Christmas holidays).

code:

FILE #1

```
\ events    00.1.4 MAT
hex
3 constant ev.pen
5 constant ev.button
a constant ev.ok
c constant ev.tools
d constant ev.up
e constant ev.down
1 constant b.left
2 constant b.right
3 constant b.up
4 constant b.find
6 constant b.down
1 constant p.down
2 constant p.up
4 constant p.move
: sbutton# ( EventAddress - )
    @ 18 rshift ff and ;
: button# ( EventAddress - )
    6 + @ ff and ;
: event# ( EventAddress - #)
    @ 18 rshift ff and ;
: pen# ( EventAddress - # )
    @ 10 rshift ff and ;
```

```

: penx ( EventAddress - x )
@ ff and ;
: peny ( EventAddress - y )
  2 + @ ff and
;
decimal

```

File #2

```

\ rline  99.12.29 MAT
needs graphics
: rline ( y x - )
  cy @ cx @ 2over cx ! cy ! line ;

```

File #3

```

\ ev_test  00.1.4 MAT
needs case
needs events
needs rline
: event_test
  page 300 0 do
    -1 (ekey) if
      event dup event# case
      ev.pen of
        dup pen# case
          p.down of dup peny cy !
            penx cx ! endof
          over peny
          rot penx rline
        endcase
      endof
      ev.button of
        button# case
          b.left of ." B_left " endof
          b.right of ." B_right " endof
          b.up of ." B_up " endof
          b.down of ." B_down " endof
          b.find of ." B_find " endof
        endcase
      endof
      swap drop
      ev.up of ." up " endof
      ev.down of ." down " endof
    enddo
  end

```



```
        ev.ok of ." ok " endof
        ev.tools of ." tools " endof
    endcase
then
loop
;
ev_test
```

Neal could you get this to work because I couldn't?!?



By [Neal Bridges](#) on Sunday, April 9, 2000 - 08:16 pm: [Edit](#)

I haven't tried it. Maybe you could tell me what problem you're having.

Neal



By [Penree](#) on Sunday, April 9, 2000 - 09:03 pm: [Edit](#)

it says :

```
Exception infile: ev_test
ev_test? undefined word
```



By [Neal Bridges](#) on Sunday, April 9, 2000 - 10:24 pm: [Edit](#)

The defined word is named event_test, so change the last line to event_test and it should work. Simple typo in the posted code.

Neal

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Dictionary space

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(Royal daVinci version\)](#): Dictionary space



By [username](#) on Monday, March 27, 2000 - 01:37 pm: [Edit](#)

Hi Neal,

As I mentioned before, I have been trying to port the disassembler from the Palm version of Quartus to the daVinci. I have coded my own versions of select, end-select and xt and have made it about 2/3 of the way through and now I am getting an 'out of dictionary space' error. Is this likely to be a real error or do I have something else wrong which is using up too much space? The only additional includes besides the disassembler are core-exts, case and select (just select, end-select and xt).

Thanks,
Mark



By [Neal Bridges](#) on Monday, March 27, 2000 - 02:27 pm: [Edit](#)

Very likely you're running out of space, Mark. Check it with 'unused'.

The evaluation version of daVinci Forth has a quite-small codespace, and the disassembler is quite large.

Neal

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Asm question

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(Royal daVinci version\)](#): Asm question



By [username](#) on Tuesday, March 21, 2000 - 12:24 pm: [Edit](#)

Hi,
I tried to make a code word using:
`\ test`

```
needs asm68k
hex
code test
80 # d7 .l move
end-code
```

and by manual dumping of data saw this being compiled as:

```
move.l #$800070,d7
```

I could easily be doing something wrong, but could you check to see that you are getting correct compilation of this instruction?

Thanks,
Mark



By [Neal Bridges](#) on Tuesday, March 21, 2000 - 02:34 pm: [Edit](#)

The byte sequence for that assembly should be

```
2E 3C 00 00 00 50
```

Can you tell me what byte sequence you're getting from the daVinci version of asm68k? That'll help me track the bug down.

Neal



By [username](#) on Tuesday, March 21, 2000 - 03:34 pm: [Edit](#)

Hi Neal,

I am getting:

```
2E 3C 00 80 00 70
```

Note that I am in hex so 80 is 80, not 50.

I think that the problem stems from the fact that in the palm version the long value is a double and is treated as 2 values compiled by cs, cs,. In the daVinci version this should become simply , but is w, w,.

Mark



By [Neal Bridges](#) on Tuesday, March 21, 2000 - 03:37 pm: [Edit](#)

You are correct -- I'll need to fix that. Thanks.

Neal



By [username](#) on Tuesday, March 21, 2000 - 04:46 pm: [Edit](#)

Hi Neal,

I really was making a longer code word. Inspired by your floodfill for the palm, I wanted to convert it for the daVinci and so I needed a routine to check whether a screen pixel is on or off. I came up with the following (with a bit of reverse engineering of the NexusDrawDot routine):

\ pixel? 20.3.2000 MAT

needs asm68k

code PixSet? (y x -- f)

```
SP )+ d0 .l move      \ d0=y, drop y
d0 d1 .l move         \ d1=y
4 # d0 .l lsl         \ d0=y*16
2 # d1 .l lsl         \ d1=y*4
d1 d0 .l add          \ d0=>line
1040 #) d0 .l add     \ d0=>screen line
d7 d1 .l move         \ d1=x
3 # d1 .l asr         \ d1=line byte
d1 d0 .l add          \ d0=>screen byte
d0 a0 .l movea        \ a0=> "
d7 d0 .l move         \ d0=x
7 # d0 .b andi        \ d0=bit pos
80 # TOS .l move      \ TOS=$80
d0 TOS .l asr         \ TOS=bit mask
a0 ) TOS .b and       \ TOS=screen pixel
```

end-code

: PixClr? (y x -- flag)

PixSet? invert ; inline

Once we get the immediate long word move sorted out, can you see any other potential problems with this word? If not, consider it donated to the cause.

P.S. I realize that I should use the `GetDisplayPtr` function to make it portable to other versions than the 256K version, but I didn't want to complicate my first code word that much. Once its working, I will probably re-code it that way. If I do, I'll re-post it.

Cheers,
Mark



By [Neal Bridges](#) on Tuesday, March 21, 2000 - 04:53 pm: [Edit](#)

Clever. Does the "1040 #) d0 .l add" suffer the same bug as the other ".l move" instruction?

There's a processor register that lets you read the starting address of the LCD screen -- that'd be a really quick way to get the start address of the screen without using any system calls. Disassemble `GetDisplayPtr`, and you'll see it.

Neal



By [username](#) on Wednesday, March 22, 2000 - 01:04 am: [Edit](#)

Hi Neal,

The "1040 #) do .l add" compiles correctly, but "xxxxxxx L#) do .l add" doesn't. It causes code-end to be called a control structure mismatch.

`GetDisplayPtr` just returns the contents of `$1040`. There is another function, `GetDispWinPtr` which returns the contents of `$2058` and there is `SetLCDPtr` to set the LCD register but it seems that there is no function to read the LCD register. No big deal, a simple read from `$fffa00` gets it and can be done at compile time on the daVinci (since one can only distribute source code at this point anyway).

Good luck with the bug hunting!
Mark

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Benchmark 2.0 now available!

[Quartus Handheld Software: Discussion Forum: Other Quartus Products:](#)
Benchmark 2.0 now available!



By [Neal Bridges \(Nbridges\)](#) on Monday, October 16, 2000 - 11:39 am: [Edit](#)

The popular Benchmark app has been updated to include the new Visor Platinum. Check it out!

<http://www.quartus.net/products/benchmark/>

Thanks to all who assisted in providing timing data.

Neal



By [Erwin Schomburg \(Esc\)](#) on Monday, October 16, 2000 - 05:00 pm: [Edit](#)

So a) you "defected" to the Visor camp and b) those apparently do sport no longer plain 20MHz DrangonBalleZ's on steroids (no waitstates, same as you get with CruiseControl on plain Palms) but really have the 30+Mhz processors on board. Cool.

/Erwin



By [Neal Bridges \(Nbridges\)](#) on Monday, October 16, 2000 - 07:29 pm: [Edit](#)

No defection, or at least not a recent one-- I've had a Visor Deluxe in the lab for a year now.

The Platinum is a nice improvement. With CruiseControl, it benches at 243%!

Neal



By [Dan Poirier](#) on Tuesday, October 17, 2000 - 07:17 am: [Edit](#)

Have you noticed if the increased speed has a significant effect on battery life?



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 17, 2000 - 11:39 am: [Edit](#)

I haven't had the Platinum for long, but I'd say so far that it doesn't hurt the battery life much.

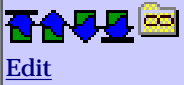
Neal



By [Richard Chamberlain](#) on Wednesday, October 18, 2000 - 02:07 am: [Edit](#)

Out of curiosity, Neal, you seem to have a lot of palm devices hanging around - which one do you carry round with you?

Richard



By [Neal Bridges \(Nbridges\)](#) on Wednesday, October 18, 2000 - 10:02 am:

[Edit](#)

Right now, I'm carrying a Platinum, to try it out. Before that, for the last year I carried either a IIIC or a Vx for daily use.

When travelling, I take a Visor with an 8 meg flash Springboard module; it takes batteries, which means I don't need to pack a cradle for recharging, and the flash module gives me a backup for my work.

Neal



By [Dave Bennett \(Dbennett\)](#) on Thursday, October 19, 2000 - 09:08 am: [Edit](#)

One thing I've done about recharging is this. I purchased a connector that allows you to attach any 9v battery to it to recharge your Palm Vx. Then I bought a small solar panel designed for recharging 9v nicad batteries. I mated these two together, plug them into my Palm Vx directly, and let it recharge while I'm driving. This combined with the approximately 5 minutes a day it is in the recharger doing a sync keeps it fully charged, even though I use it a lot.



By [Neal Bridges \(Nbridges\)](#) on Thursday, October 19, 2000 - 01:19 pm: [Edit](#)

Very slick recharging solution, Dave! 😊

Neal



By [Andrew Kearns](#) on Thursday, October 19, 2000 - 11:39 pm: [Edit](#)

Dave I like your solution to recharging. I am wondering where you got your parts? I've recently upgraded to the IIIC and one of the things I miss is the flexibility of those AAA batteries.

Andrew



By [Dave Bennett \(Dbennett\)](#) on Friday, October 20, 2000 - 06:42 pm: [Edit](#)

I got the solar 9v recharger from Edmund Scientific and the 9v emergency Palm V(x) recharger from Tech Center Labs.

<http://members.aol.com/gmayhak/tcl/e-charge.htm>

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Testers needed for new Benchmark app

[Quartus Handheld Software: Discussion Forum: Other Quartus Products:](#)
Testers needed for new Benchmark app



By [Neal Bridges \(Nbridges\)](#) on Tuesday, October 10, 2000 - 06:39 pm: [Edit](#)

Hello! I'm working on an update of the Benchmark app, and I'd like volunteers to run an executable I'll send, and tell me what number it returns.

I need to know the results for stock units, i.e. without any overclocking, or CruiseControl, or StreakHack:

Palm Pro
Palm m100
Palm IIIxe
Palm V
Palm Vx

The lab here is missing a couple of these units, and a couple of the others are no longer 'stock' units.

Your help is appreciated! Let me know.

nbridges@quartus.net

Neal

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LeftHack and ClearHack

[Quartus Handheld Software: Discussion Forum: Other Quartus Products: LeftHack and ClearHack](#)



By [Lucy](#) on Monday, April 3, 2000 - 10:45 am: [Edit](#)

I have a peculiar problem of having all my underlining gone one day, after several rounds of adding/deleting items in PopHack. This goes paradoxically with your great product, ClearHack. Could you help suggest ways to restore my underlining in DateBook, To Do List, Find, etc, please?

Thanks a lot.

Lucy



By [Neal Bridges](#) on Tuesday, April 4, 2000 - 08:21 am: [Edit](#)

Lucy, it should be as simple as disabling ClearHack, and then resetting your Palm. Let me know if you need more help -- I haven't used PopHack, but I'd be happy to download it and walk you through whatever steps are required.

Neal



By [Holger Klawitter](#) on Sunday, July 30, 2000 - 04:24 pm: [Edit](#)

How does LeftHack find the correct table?
I have written an application where LeftHack refuses to use the correct one, no matter what IDs I assign to scrollbar and/or table.

Regards/ Mit freundlichem Gruß
Holger Klawitter



By [Neal Bridges](#) on Sunday, July 30, 2000 - 08:07 pm: [Edit](#)

Hi Holger. LeftHack doesn't seek out any given table on the form; it moves only forms that span the entire form. I'm checking into a problem now wherein it may be confused by multiple tables on one form; I'll keep you posted.

Neal



By [Holger Klawitter](#) on Monday, July 31, 2000 - 02:45 am: [Edit](#)

Hi Neal,

I my case there are four tables

present (two small ones, one spanning the whole form (w=160) and one with the coordinates (0,11,153,111) whereas the scrollbar has (153,11,7,111). Oddly, one of the small ones is being rearranged.

Regards/Mit freundlichem Gruß
--Holger Klawitter



By [Neal Bridges](#) on Monday, July 31, 2000 - 11:20 am: [Edit](#)

Holger, in your case there will continue to be problems. The reason is this: in the Palm OS, scrollbars are not integrated into their GUI objects, but instead are distinct objects, drawn separately. There's no practical way for LeftHack to know that a given scrollbar is associated with a given table, and this causes problems with a few apps.

The very best solution: make your app "Lefty" aware:
<http://www.strout.net/pilotsoft/lefty/intro.shtml>

By monitoring the "Lefty" flag, and drawing your forms accordingly, you'll avoid LeftHack and still have an app that works for both sinister and dexter users.

Neal



By [Holger Klawiter](#) on Monday, July 31, 2000 - 04:07 pm: [Edit](#)

Normally scrollbars have the same height and vertical position as the field/table affected. Couldn't this be utilized for some kind of heuristics?

Anyway, I'll check with Lefty.



By [Jane Burton](#) on Friday, December 15, 2000 - 04:05 pm: [Edit](#)

Hi. I am trying out lefthack and really love it. I intended to register, but I find that it is causing troubles with my digitizer sensitivity and with the data encryption program Palmsafe by portable products. Any suggestions so that I might continue to use both programs? Thank you for your help. By the way, I use a Palm Vx running OS v3.3



By [Neal Bridges \(Nbridges\)](#) on Friday, December 15, 2000 - 04:37 pm: [Edit](#)

LeftHack has no effect on the digitizer, Jane -- it doesn't intercept any of that part of the system. Any problem you're seeing with the digitizer is unrelated to LeftHack.

As for the encryption program -- the only way it could possibly interfere with it is by moving some of the screen elements inappropriately -- is that what is happening?

Neal



By [Jane Burton](#) on Friday, December 15, 2000 - 09:23 pm: [Edit](#)

The data I entered in Palmsafe are now hidden i.e. I can't see the list of my entries. When I use the Find search it returns an unrelated entry--it is all mixed up. The developer said there have been reported incompatibilities when LeftHack is installed.

Thanks for your attention to my concerns. Any suggestions? Seems that I'll have to choose one or the other...?

Jane



By [Neal Bridges \(Nbridges\)](#) on Friday, December 15, 2000 - 10:47 pm: [Edit](#)

There may be interface issues with LeftHack, but it would in no way affect a Find operation.

Neal



By [Jane Burton](#) on Saturday, December 16, 2000 - 10:26 pm: [Edit](#)

Hi Neal,

Thanks so much for your prompt responses to my questions. I tried disabling Left Hack and using Palmsafe and everything was fine, my entries were all in a visible list and all the details were there on a tap or a Find command. Great! Now I want to register Left Hack and I can keep both programs. Thanks again for your attention to my concerns.

Jane



By [Neal Bridges \(Nbridges\)](#) on Sunday, December 17, 2000 - 02:12 pm: [Edit](#)

Jane, I'm glad you want to keep LeftHack -- not entirely sure I understand the problem. I'll have to look into it.

Neal

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Graffiti area wear

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Graffiti area wear



By [Ronny Svensson](#) on Monday, December 4, 2000 - 03:58 am: [Edit](#)

Hi

I have seen some posting regarding wear of the graffiti area, and using tape to protect it. So i'm wondering how durable the palm screen is. Is it needed to protect it with some tape - if so what kind?

Ronny



By [Ron Doerfler](#) on Monday, December 4, 2000 - 07:51 am: [Edit](#)

One popular thing to do is cover it with a strip of 3/4" Scotch Removable Magic Tape (#811-the blue box). It is easily removed when worn out, although it lasts a long time. It's what I do. It's surprising how the touch is transmitted so easily, and after awhile you get to like the friction when you write with the stylus. The original friction decreases a lot early on as you write on the tape and it's a pleasant amount after that, I think.

I've had my Palm for a few years (the _original_ PalmPilot 1000 upgraded to Palm III), and I think it's been a good idea. I didn't have the tape on for about a month awhile back, and my Graffiti area got scratched in that time, which is annoying--I think I had a poor stylus.

There's also ClearWrite or some name like that, which you can buy in office supply stores to cover the entire screen. I haven't used it.

Ron



By [Gary Wiese](#) on Monday, December 4, 2000 - 04:43 pm: [Edit](#)

I have and didn't like it. It has a texture to it that makes it hard to get use to. And it's also harder to see the screen. I think I am going to try the tape ideal. My first palm is very scratched, but it still works ok. There is a lot of saw dust around from my job which makes it hard to keep clean. Your right about the stylus's that come with the unit, ther're really bad. I found that a good stylus really does help.



By [John McKeon \(Jmckeon\)](#) on Monday, December 4, 2000 - 08:00 pm: [Edit](#)

I noticed that the graffitti area felt like it was getting worn so I got the 811 Scotch tape which works great. Then one day, while I work, I took it off because

it wore out. Having no replacement tape on hand I wiped the graffitti area clean and used it without the tape. Surprisingly, there was no worn out feeling. I figure either the adhesive filled any scratches or it removed the grit that gave it the _feeling_ of being scratched.

I still use the tape to preserve the silk screen surface rather than wait til it actually does wear or get scratched 😊



By [Kris Johnson \(Kdj\)](#) on Tuesday, December 5, 2000 - 01:40 pm: [Edit](#)

I've seen some people selling Visor styluses on eBay. Makes sense for Visor users: Handspring makes you buy a package of five (for \$15), but I doubt too many people actually need five styluses.

-- Kris



By [Ron Doerfler](#) on Tuesday, December 5, 2000 - 02:37 pm: [Edit](#)

>Having no replacement tape on hand I wiped the
>graffitti area clean and used it without the
>tape. Surprisingly, there was no worn out
>feeling. I figure either the adhesive filled any
>scratches or it removed the grit that gave it
>the _feeling_ of being scratched.

I just had exactly the same experience. I replaced the tape because after some months it got a hole in it, and after I wiped the adhesive off, the scratches (which I can still see are fairly severe) feel so smooth. After I removed the tape, but before I wiped the adhesive off, I could feel the scratches with the stylus. I think I recall that you can use wax furniture polish to "smooth" scratches on the screen by filling them in. I put new tape on just the same.

Ron

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Forth floating point format conversion

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Forth floating point format conversion



By [Andrew Egerton](#) on Wednesday, November 15, 2000 - 10:01 am: [Edit](#)

I'm writing a program in C++ that will take a C++ floating point (IEEE standard) and alter it into the Forth floating point format to be read into a binary file. Unfortunately, as far as I am aware of, ANSI C won't let me fiddle with the individual bits for a float, nor will it let me, say, point to the float's specific addresses using a non-float pointer. Has anybody else tried to do a conversion like this?



By [Steve Bohrer \(Skb\)](#) on Wednesday, November 15, 2000 - 10:49 am: [Edit](#)

The usual way for C code (I don't know about C++ !) to mess with the internals of a multi-byte data type is to use a union or a cast to map a variable of the type to an array of unsigned chars. Obviously, the details in any code of this sort are totally compiler dependent, so you need to work out tests to determine if you are generating nonsense or not.

Further, if you are looking at a host computer's disk-image of a Palm file, you have to worry about the Palm file format's byte ordering as well, which may not match the host's byte ordering.

A simple union example (not checked by a real compiler!):

```
#define BYTES_PER_DBL 8

union floatBits {
    double d;
    unsigned char b[BYTES_PER_DBL];
} fbits;

/* Then, to get at part of a double */

fbits.d = someDoubleValue;
firstBits = fbits.b[0]; /* the first byte */
nextBits = fbits.b[1]; /* etc, etc */
```

Some compilers can be persuaded to give you the bits of a variable by casting the variable to a pointer to unsigned char, and then indexing the result. (On the other hand, some compilers fuss about this being an illegal lvalue.) The cast can be hidden in a macro:


```
#define BYTEOF(var,idx) (((unsigned char *)&(var))[idx])

/* for example: */
double someDouble;
unsigned char someBits;

someBits = BYTEOF(someDouble, 2); /* get third byte of someDouble */
```



By [John McKeon \(Jmckeon\)](#) on Wednesday, November 15, 2000 - 09:37 pm:

[Edit](#)

You can also use a union with a bitfield struct
(also not tested)

```
struct {
  Ulong fld1 : 1; // one bit wide bitfield
  Ulong fld2 : 5; // five bits wide
  Ulong fld3 : 1;
  .
  .
  .
  Ulong fld32 : 1;
} mystruct
```

so that mystruct.fld1 accesses bit 1 and fld2 accesses bits 2-6, etc.

Then declare the union above as

```
union floatBits {
  double d;
  mystruct m;
} fbits
```

```
fbits.d= adouble;
if (fbits.m.fld1 == 0) // positive???
```

HTH



By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 28, 2000 - 08:36 pm: [Edit](#)

Have a look at the Contrib file area:

<http://quartus.net/files/PalmOS/Forth/Contrib>

floatlib.zip contains routines for converting IEEE floats to/from Quartus Forth floats.

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Microsoft Anti-Linux Propaganda

[Quartus Handheld Software: Discussion Forum: Everything else!:](#)
Microsoft Anti-Linux Propaganda



By [Neal Bridges \(Nbridges\)](#) on Saturday, October 21, 2000 - 03:36 pm: [Edit](#)

If you've been following Microsoft's struggles, this might interest you:

<http://www.quartus.net/msad/>

Neal



By [Dave Bennett \(Dbennett\)](#) on Saturday, October 21, 2000 - 05:31 pm: [Edit](#)

Nothing about slipstreaming windows versions on an almost daily basis over the last decade that I can find. 😊 Or of the built in incompatibility of each new release of Windows with past versions.



By [Doug Philips \(Dgou\)](#) on Sunday, October 22, 2000 - 02:04 am: [Edit](#)

Thanks Neal!

I wonder if that will show up in any publications (or TV) in MicroSoft's home country/turf...

In a parody of that beauty commercial:

"Don't hate us because we're successful" -MS

My reply:

"No, of course not, when there are sooooo many other reasons!" He He He.

-D'gou

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Overclocking

[Quartus Handheld Software: Discussion Forum: Everything else!:](#)
Overclocking



By [charles](#) on Sunday, October 8, 2000 - 09:00 pm: [Edit](#)

what is the actual danger to overclocking a palm with a program like afterburner and will it nullify a warranty. im sure a purist would say hands off (no pun intended!!!) but in real world terms what does this do? cut the life from 10years to 5?? if so i'll take it??? next question does normal day to day uses benefit much??? i have a palmIIIxe with 8mb and 3.5.2 os

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Broke my !#@\$!* screen, AGAIN!

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Broke my !#@\$!* screen, AGAIN!



By [Steve Bohrer \(Skb\)](#) on Friday, October 6, 2000 - 01:30 am: [Edit](#)

(A chance to rant, unrelated to Quartus)

The first time was when my Palm was just two weeks old, and it slipped out of my hand as I was taking it from my pocket. It fell onto a stone floor from about chest high, so I guess at least I felt it had good cause to break. Plus, as my system was so new, Palm replaced it (with a refurbished unit) for free!

This time, however, it slid off my desk (less than three feet) onto a wood floor. Not a fatal fall I thought, but the graffiti area and a top corner of the screen cracked. Sigh. Everything but touch input works, so I can hot-sync, but I expect the next alarm that sounds will be pretty annoying, as I'll be unable to press the OK button. (I have 3alarm, and I have it set to repeat 10 times at 40 sec intervals.) Also, since I've had this thing for 7 months now, I expect I'll get to pay the \$100 swap fee.

Palm's web site suggests the m100 enclosure is more rugged, but it is not the enclosure I've had trouble with.

I know there are lots of rugged cases that would protect my Palm when it's in the case, but my problem is being a klutz when I have it out to use it. Plus, it barely fits in my pocket as is.

Steve



By [Mark Browne \(Markbrowne\)](#) on Friday, October 6, 2000 - 05:23 am: [Edit](#)

Hey Steve,

I can't offer anything but sympathy, but that you have. Good luck with getting the replacement free.

Mark



By [Neal Bridges \(Nbridges\)](#) on Friday, October 6, 2000 - 11:42 am: [Edit](#)

Which model did you drop? The V series units (metal case) have taken some spectacular falls here, and survived. So has the Visor Deluxe.

Neal



I have a IIIe, which I got because it was cheap and I did not know if I'd actually use it enough to justify spending more. Now that I've had it a while, I'm kind of panicked at the thought of a week without it. I suppose I should have two, for backup, but it seems kinda wasteful to have one lying around idle. Also, if it needs a new screen every six months, I guess I really can't call it "cheap".

I looked at the ["horror stories" at pdaGeek](#), to try and get a sense of how fragile different models are. (Hardly a statistically valid sampling!) Seems many Palm IIIs and Visors broke their screens just from being dropped, but the Palm Vs seem to break only when something lands on them.

Then again, I'm sure it depends quite a bit on which part of the device lands first. We need scientific testing, with a repeatable "PDA Basher", to determine if one type really is more rugged than another.

The support person at Palm's "busted screen hotline" (888-956-PALM) says they don't have refurbished IIIe's in stock, so I need to return mine for repair, rather than swapping it. Same \$100 fee, but I'll get an empty box on Tuesday, rather than a replacement system. I ship mine to Palm, and they should fix and return it within five days.

She also said that she has not personally had any broken screen m100s yet, but can't say if they are really more rugged, or just not many have been dropped yet. She did not have data about the relative number of busted screens by type of device.

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Moon phase algorithm?

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Moon phase algorithm?



By [Joanna Kurki](#) on Sunday, September 10, 2000 - 03:50 pm: [Edit](#)

I'm looking for algorithm for calculating moon phases. It should work correctly for years 1200-2100, and give times (or at least days) of new and full moon (minimum).

This goes for RPG use (Werewolf, the Apocalypse... played on medieval era)



By [Neal Bridges](#) on Sunday, September 10, 2000 - 08:00 pm: [Edit](#)

Is +/- a day or so acceptable? I have a simple integer algorithm, but it drifts a bit as you move away from the 20th century.

Neal



By [Ron Doerfler](#) on Sunday, September 10, 2000 - 09:01 pm: [Edit](#)

A formula, along with an explanation of the different interpretations of the moon phases that different formulas use, can be found at <http://www.moonstick.com>. (I'm not associated with this at all, but I did buy one of the moonsticks and find it fascinating.)

The formula is given as an answer to one of the questions under the "assorted questions and answers" link, as well as in the moonstick manual downloadable as a PDF file. Please look in both places, as the last term is described in more detail in the manual. I hesitate to give the formula directly here because of the qualifications that the page author gives on the definitions he uses. The moonstick does not incorporate the last term of the formula, but even without that term the formula is spec'd to be within 1.5 hrs. of the full moon from 7000BC to 11,000AD. (The moonstick accuracy is more like 3 hrs. due to human accuracy in using it).

Ron

(who really likes mechanical analog computers like astrolabes, sundials and such)



By [Neal Bridges](#) on Monday, September 11, 2000 - 11:37 am: [Edit](#)

I like those gadgets too, Ron -- sliderules included. I'd forgotten about the MoonStick. I came across it a few months back and meant to order one... I'll have to do that.

Neal



By [Joanna Kurki](#) on Monday, September 11, 2000 - 04:52 pm: [Edit](#)

Wow... That thingjaming looks really cool. And it fits much better to year 1216 (or so) atmosphere than PalmV .. :-)

Looks like I'll need to get one of those soon.
Thaks for the link.

Joanna

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scan barcodes

[Quartus Handheld Software: Discussion Forum: Everything else!](#): scan barcodes



By [jhaki](#) on Thursday, September 7, 2000 - 12:19 pm: [Edit](#)

is there an adapter for a palm 3 or 7 to scan bar codes ??

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Forth Books for sale.

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Forth Books for sale.



By wmarcy@stny.r.com on Monday, September 4, 2000 - 04:52 pm: [Edit](#)

Hi people, I have come across a set of books that I thought might be of interest to some of you, they are:

"Forth Programmers Handbook", Fourth Edition. Sells new for \$50.00, this copy is in liek new condition (spine not even bent). \$35.00, plus \$3.00 shipping.

"Thinking Forth", By Leo Brodie, great condition, a great companion to the elusive Forth best seller "starting forth". \$20.00 plus \$3.00 shipping. (2 copies 20.00 each)

"Starting Forth", By Leo Brodie, you, this is the hard to find book of Forth. Copies are as rare as hens teeth. great shape, \$25.00 plus \$3.00 shipping.

"Discover Forth", by Thom Hogan, a great into to learning and programming forth. good condition.
\$20.00 plus \$3.00 shipping

Cash/MO or CC through PayPal.

Let me know at email: { wmarcy@stny.rr.com, wmarcy@stny.rr.com }

These will nto last.

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Strange problem

[Quartus Handheld Software: Discussion Forum: Everything else!:](#)
Strange problem



By [Dave Bennett](#) on Tuesday, August 29, 2000 - 09:44 pm: [Edit](#)

I had a problem a couple of weeks ago when my Palm Vx suddenly crashed with a fatal reset. At the time I thought it was an app I was writing, but that turns out to have been wrong. Resetting does not work, it returns with a "chunk underlock" message and the reset button; which does not work.

I did a hard reset and experimented at length a couple of weeks ago with loading apps. Although I had a full backup, I had to reinstall all apps from their distribution files- anything else caused the same condition to prevail.

Today, after not doing anything with my Palm Vx since the previous problem (the farm calls) other than running apps, I turned it on to find, my old friend: "chunk underlock" and the reset button.

I can successfully reset if I hold the scroll up button; but this of course doesn't load my hacks. If I bring up hackmaster, disable a hack, then try to make it active, right back to the "chunk underlock".

<sigh> Does anyone have any idea of how to trouble shoot this issue? Thanks.



By [Neal Bridges](#) on Tuesday, August 29, 2000 - 11:06 pm: [Edit](#)

Dave, a full backup (Penguin Backup, or Backup Buddy), followed by a hard reset and a full restore, should solve whatever confusion the device has. A pain, but it will likely do the trick.

Neal



By [Neal Bridges](#) on Tuesday, August 29, 2000 - 11:08 pm: [Edit](#)

... but I see you've done something like that. Odd. Restoring your backup apps and data into the POSE Emulator might be revealing -- at least it should report which app is causing the underlock.

Neal



By [Dave Bennett](#) on Wednesday, August 30, 2000 - 04:06 pm: [Edit](#)

Well, I've kind of tracked it down. (I hope!)

One thing that was consistent the last time and this time was the missing Network.lib stuff. Both times there were no networking services available after the crash. Attempting to go to the network option in Prefs or to access the modem to dial out generated the "no network services available" or "network.lib not found" messages.

I reinstalled all of my software and databases except any that had anything to do with networking access. I recently downloaded and installed an application called NetTime.prc that checks the time on internet servers and sets the clock on the Palm. "Pretty slick I thought". WRONG! It set the clock all right, but apparently had other problems that caused a lot of grief.

I have not reinstalled that package so I'll see if that was the problem over the next few weeks.



By [Neal Bridges](#) on Wednesday, August 30, 2000 - 04:27 pm: [Edit](#)

Glad you've been able to get closer to the problem, Dave. Thanks for the update.

Neal

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Char-Ware programming effort

[Quartus Handheld Software: Discussion Forum: Everything else!:](#)

Char-Ware programming effort



By [Barry Ekstrand](#) on Thursday, August 24, 2000 - 08:56 am: [Edit](#)

As some of you will recall, I have had an ongoing effort to develop Char-Ware (charitable shareware) programs, where all proceeds from registration are donated to the Juvenile Diabetes Foundation. I undertook this effort about a year and a half ago as a desire to do something to support medical research to find a cure for Juvenile Diabetes, which has afflicted my youngest daughter (she is now 5-1/2 years old and has been living with getting 6 finger prick blood tests and 3 shots of insulin per day for over 2 years). I bought Quartus Forth so I could work on my projects in whatever spare time I might have, coding directly on my Palm device. Although I began with absolutely no knowledge of Forth and only programming experience that was dated 20 years to a bit of Fortran and BASIC, with support of this Forum and especially from Neal and Erwin, I have managed to learn enough that my first Quartus app, LoanPayment, has continued to improve through several releases. I am working on another update that should be finished within a couple of weeks.

The real reason for this posting is to let other Quartus developers know the success of the Char-Ware project, and to ask others to join it. In the first year, LoanPayment and BBEConvert (an RPN calculator program add-in package) brought in some \$8,000 in donations to JDF. This is far more than I could ever hope to donate directly myself, so I consider the effort of trading my programming time for the donations very successful. I want to note that PalmGear HQ joined me from the start in this effort by donating the profit from their normal service charge along with me to JDF. PGHQ actually makes my life extremely simple by forwarding the registration fees directly to JDF, who then let me know they have received the payments.

While the \$8,000 is a good start and my efforts continue, the real opportunity would be to see other programmers join the effort by donating their time as well in developing programs that likewise would have their registration fees donated to JDF. I know there are a number of you that have put your apps out as freeware and therefore aren't into this for personal gain, and I am hoping some of you will be willing to add your talents by developing Char-Ware package yourself. The Quartus community is already a great one, and I hope others in it will join me in this cause. As a parent of an afflicted child, I can add that funding research to find a cure for this disease is the most meaningful thing I can do outside of the day-to-day efforts to control her blood sugar levels.

If anyone would like to join the effort, or has any questions at all, please contact me, and thanks to all for letting me get on my soapbox with this plea.

Regards,

Barry Ekstrand

<http://members.aol.com/EkstrandBB>



By [Erwin Schomburg](#) on Thursday, August 24, 2000 - 12:34 pm: [Edit](#)

I wish you good luck with this campaign, may many not needing the programming money for bare necessities of living join in.

I have various and very personal reasons not to join, not least one of them being sitting on the other side of the big duck pond, however, glad to help out with knowledge and guesswork whenever your programming efforts hit a brick wall.

/Erwin



By [Barry Ekstrand](#) on Thursday, August 24, 2000 - 03:13 pm: [Edit](#)

Erwin,

Thanks for the words of support. Your tutoring has been a big factor in the success so far, and I appreciate your willingness to continue to help with the effort in this manner - and you can bet I'll take you up on it!

Barry



By [Trevor Steele](#) on Friday, August 25, 2000 - 05:15 am: [Edit](#)

Barry

I think what you have achieved is quite amazing and wish you much further success.

Best regards and wishes

Trevor

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Difficulty opening pdf Forum archives

[Quartus Handheld Software: Discussion Forum: Everything else!:](#)

Difficulty opening pdf Forum archives



By [Barry Ekstrand](#) on Thursday, August 24, 2000 - 08:32 am: [Edit](#)

I have been unable to get the pdf Quartus Forum archives to open, apparently because of their size. My IE browser does load Adobe Acrobat and appears to be trying to load the file, but after a couple of minutes it finishes with a blank page looking at me. I am connected to the net via a T1 link, so modem speed isn't an issue. Has anyone else had this problem?

Barry



By [Neal Bridges](#) on Thursday, August 24, 2000 - 10:40 am: [Edit](#)

I haven't had any other reports of difficulty. Perhaps you might have more success if you downloaded the files, and then opened them.

Neal



By [Erwin Schomburg](#) on Thursday, August 24, 2000 - 12:43 pm: [Edit](#)

Seems to be related to IE and your system's setup. At home I have no problems reading attachments that are bound to be opened by IE, at work the blank IE window pops up, re-try *while* an IE window is open gets me the contents into it. In short, I back up the download and try again advise.

/Erwin



By [Barry Ekstrand](#) on Thursday, August 24, 2000 - 03:17 pm: [Edit](#)

Undoubtedly it is the system setup. I tried to reload with the blank window but had no success, then went ahead and downloaded the files. That went well, and now I can open them up from the hard disk.

Barry

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Problems reading Forth Doc files with Palm

[Quartus Handheld Software: Discussion Forum: Everything else!:](#)

Problems reading Forth Doc files with Palm



By [JoannaK](#) on Monday, August 21, 2000 - 04:31 pm: [Edit](#)

Hi

I'm new with Palm (purchased slightly used Palm V less than week ago, it's my first) and one of the first things I installed was Quartus Forth.. It works Ok, but for some unknown reason I can't view forth reference doc files with Doc reader I have installed.

I'm using MobiPocket reader (www.mobipocket.com ?) has anyone used this??? It can be used (at least, not had time to test more) e-books from their www-site. Any recommendations for better (hopefully not too expensive) Doc readers?

I have not yet registered Quartus (or RsrcEdit or hackmaster or silverScreen or...) ... I believe I'll register soon, as it's quite amazing to have full programming environment on one's palm...

Joanna

PS: it's nice to see some things keeping up on time. Having used Forth since C64 (hesForth and SuperForth) and Amiga era (JForth.. Thanks to Mike Haas and others..)



By [Neal Bridges](#) on Monday, August 21, 2000 - 08:16 pm: [Edit](#)

Hi, Joanna. Nice to hear from a Forth veteran!

I had a quick look at the Mobipocket site -- I didn't see anything there that says it'll read Doc files. There are a number of packages available that do -- PalmGear shows 83 items in a "Doc Software" advanced search.

Myself, I'm still using the original Doc reader from way back when.

Neal



By [Steve Bohrer](#) on Tuesday, August 22, 2000 - 12:49 am: [Edit](#)

CSpotRun is a compact (17kb) freeware DOC reader. Just the basics, but well done.

Steve



By [Erwin Schomburg](#) on Tuesday, August 22, 2000 - 08:17 am: [Edit](#)

Shameless plug: For hints towards a more or less complete On-Palm design environment with Quartus at its core, see my pages at <http://home.t-online.de/home/Erwin.Schomburg> in general and <http://home.t-online.de/home/Erwin.Schomburg/howtoe.htm> in specific.

In addition I'd also recommend the iSilo HTML reader, with this you could cram selected parts from Palm's web-based SDK documentation into your machine as a mobile reference, intact hyperlinks and all. The complete treat is 1124k, a heavy but bearable burden on an 8MB device.

/Erwin



By [JoannaK](#) on Tuesday, August 22, 2000 - 08:26 am: [Edit](#)

Thanks.. CSpotRun did what i needed. Besides I like idea of auto smooth scroll and screen rotation... (New machine, new tricks... And lot new to learn :-)

Those Mobibook files are Doc files (they have same Creator and Type ID:s as regular doc files as I found with RsrcEdit) with HTML'ish formatting, this formatting is clearly visible while opening this Ebook on CSpotRun... Looks like reading HTML-source :-)

Neal: see page: <http://www.mobipocket.com/en/eBooks/Contribution.asp>
There are short instructions how to make 'HTML DOC eBook'...



By [Matthew Blair](#) on Tuesday, August 22, 2000 - 12:02 pm: [Edit](#)

Also, an addition to Erwin's "shameless" plug - I've used iSilo to bring in Neal's hyperlinked Quartus manual. That's kind of handy also for newbies like me....

Matt

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Sync to the emulator

Quartus Handheld Software: Discussion Forum: [Everything else!](#): Sync to the emulator



By [Tim Hayward](#) on Tuesday, July 18, 2000 - 01:19 pm: [Edit](#)

I cannot figure out how to sync to the palm emulator without a null modem cable. I have tired to set it up to network sync but it doesnt seem to work. Can someone describe the steps or point me in the right direction?



By [Neal Bridges](#) on Tuesday, July 18, 2000 - 01:29 pm: [Edit](#)

The instructions are on this page:

<http://oasis.palm.com/dev/kb/faq/1674.cfm>

Neal



By [Erwin Schomburg](#) on Wednesday, July 19, 2000 - 08:30 am: [Edit](#)

Look also in the backyard (this forum)

<http://www.quartus.net/discus/messages/23/255.html?FridayFebruary1120000844am#POST1480>

/Erwin

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Creator id page at palm

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Creator id page at palm



By [Dave Bennett](#) on Friday, July 7, 2000 - 04:50 am: [Edit](#)

Is this page working for anyone? I went there this morning and it was "unavailable".



By [Dave Bennett](#) on Friday, July 7, 2000 - 04:58 am: [Edit](#)

Never mind... another one of those pages that requires javascript... :(

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New site with Quartus connection

[Quartus Handheld Software: Discussion Forum: Everything else!](#): New site with Quartus connection



By [Hans Nordstrom](#) on Wednesday, June 28, 2000 - 03:55 pm: [Edit](#)

-All,

I´ve finally launched my own site, with some information connecting to Quartus. The URL is:

<http://www.abc.se/%7Em989/>

I publish glossarys for the enclosed librarys, one in library order and one in alphabetical order.

I also publish a Memo file with extended colors.

On one of the pages I´ve gathered links to people knowledgeable with Quartus, besides Neal :-). If there´s someone who´d like to be added to the link page, please send an email.

You are invited to visit my site.

Any comments, remarks and suggestions are welcome.

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Software expert required

[Quartus Handheld Software: Discussion Forum: Everything else!:](#)
Software expert required



By [Terry Irwin](#) on Tuesday, June 20, 2000 - 05:31 pm: [Edit](#)

I am looking for someone with experience writing software for the Palm. This will involve a database and interrogation of the diary. I want to record Continuous Professional Development "points" and have experience of working on a similar project in the past on the Psion 3a. There is a small commercial potential and I can pay for work done on completion. Ownership of the software is negotiable.

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Mac User

[Quartus Handheld Software: Discussion Forum: Everything else!:](#) Mac User



By [teng wei](#) on Sunday, June 18, 2000 - 01:06 pm: [Edit](#)

I'm a Mac User.

Where will I be able to download software to my Visor?

Any idea will be helpful. Many thanks



By [Neal Bridges](#) on Sunday, June 18, 2000 - 02:33 pm: [Edit](#)

Hi Teng. All the Palm software on this site can be installed on a Visor. Only StreakHack is specific to the Palm.

Neal

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Re-flashing

[Quartus Handheld Software: Discussion Forum: Everything else!:](#)
Re-flashing



By [Ricktherazor](#) on Sunday, June 18, 2000 - 04:38 am: [Edit](#)

How do I COMPLETELY re-flash a Japanese Palm Vx with an English OS. I have the rom software.

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W

[Quartus Handheld Software: Discussion Forum: Everything else!:](#) W



By [Dave Bennett](#) on Friday, June 16, 2000 - 09:35 am: [Edit](#)

Neal,

Are you looking at anything for the W windowing system that is coming on the Yopy? (the linux based handheld device from Samsung being produced by GMate?) It's a stongarm processor running at 200mhz and is set to be released later this summer. (www.yopy.org)

Dave



By [Neal Bridges](#) on Friday, June 16, 2000 - 09:55 am: [Edit](#)

I haven't looked into that yet, Dave. The device sounds interesting.

Neal



By [Dave Bennett](#) on Saturday, June 17, 2000 - 08:35 am: [Edit](#)

It looks _very_ interesting. Built in MP3 player, microphone, speaker, headphone jack, and many other things. There are pictures at the referenced site and FAQ also. Projected price range is in the \$400 - \$600 range for the 32mb or 64mb version.

Dave



By [Barry Marks](#) on Wednesday, June 28, 2000 - 08:40 pm: [Edit](#)

Compaq now has a beta Linux download for their new IPaq, which is similar to the Yopy with most of the same features, but available now. It comes with Pocket PC but you can flash the rom with their Linux. It looks like Linux is catching on.

I did a little reading on it today and it even has a subset of X written by 2 of the guys that originated X windows.

It also uses a Strongarm (at 206 MHz) so the same Forth might work on both of them.

Barry



By [Neal Bridges](#) on Wednesday, June 28, 2000 - 08:55 pm: [Edit](#)

For a Linux machine, I suggest trying to recompile Gforth for it.

Neal



By [Dave Bennett](#) on Saturday, July 1, 2000 - 01:47 pm: [Edit](#)

I've used Linux exclusively on my desktop since 1996. However, I do not believe it is the ultimate solution for every problem or environment, no matter what gyrations legions of highly skilled people put it through. I have personally created very stripped, customized versions of the Linux OS for specifically tasked PCs and it has worked well. But I have a real aversion to reinventing the wheel.

What about using the old Amiga OS (pre-emptive multitasking and fantastic graphics in 256k) as a PDA solution?

Dave

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How can i put software in my daVinci

[Quartus Handheld Software: Discussion Forum: Everything else!](#): How can i put software in my daVinci



By [Finn](#) on Wednesday, June 14, 2000 - 04:46 pm: [Edit](#)

Can I use daVinci Link to put applications software in daVinci, or is ther somthing else to do?



By [Neal Bridges](#) on Wednesday, June 14, 2000 - 05:13 pm: [Edit](#)

The daVinci desktop software can be used to install .app files, yes.

Neal

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Arcfour

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Arcfour



By [Jim Hendricks](#) on Tuesday, May 23, 2000 - 11:53 am: [Edit](#)

Neal, I am in the process of working on an RC4 implementation in java, my code base comes from an RC4 implementation built in PowerBuilder by myself years ago. The PowerBuilder version had some perversions due to limitations in PowerBuilder. My java version will have a switch to allow compatibility with the PowerBuilder version, or compatibility with true RC4. My text for implementing RC4 was and is Applied Cryptography second edition by Bruce Schneier. Since for testing purposes, I need an already implemented RC4 to compare results against, I chose your RC4 implementation. Low and behold, I found an incompatibility and am now wondering whose implementation is correct. My implementation is identical logically to yours, except that I don't reset j (feedback) between Sbox initialization (from key) and actual cypher. In your implementation, you reset j after Sbox initialization.

What was your source for your implementation? I wish my implementation to be a proper RC4 but in Bruce Schneier's book, I see no reference to resetting J between Sbox initialization and actual cyphering.

Thanks, Jim



By [Neal Bridges](#) on Tuesday, May 23, 2000 - 12:17 pm: [Edit](#)

My reference:

<http://www.cs-ipv6.lancs.ac.uk/ipv6/documents/standards/general-comms/internet-drafts/draft-kaukonen-cipher-arcfour-03.txt>

The bit I believe you're referring to:

Quote:

4. Set j to zero and initialize the S-box like this:

Neal



By [Neal Bridges](#) on Tuesday, May 23, 2000 - 12:22 pm: [Edit](#)

Oops -- here's the whole relevant quote:

Quote:

4. Set j to zero and initialize the S-box like this:

```
for (i = 0; i < 256; i = i + 1)
{
j = (j + S [i] + S2 [i]) % 256;
temp = S [i];
S [i] = S [j];
S [j] = temp;
}
```

5. Initialize i and j to zero. If superuser privileged program sniffing is feared (that is, always) set also the S2 array and the key array to zero. That gives a slightly better protection since the key is believed to be not feasible to calculate after it has been zeroed and thus forgotten.

arcfour.txt was verified against the test vectors documented in the aforementioned draft.

Neal



By [Jim Hendricks](#) on Tuesday, May 23, 2000 - 03:03 pm: [Edit](#)

I went to the link, and yes, I am refering to the j initialization that occurs at step 5.

I guess now the question is weather "arcfour" is really compatible to RC4, or weather the j initialization is an oversight in Bruce's book.

I'm siding more with an oversight in the book though because the source you provide is a standard which should be compatible, and I haven't found anything on the web to contradict that.

Thanks, Jim



By [Neal Bridges](#) on Tuesday, May 23, 2000 - 06:36 pm: [Edit](#)

Here are four test vectors, reportedly from BSAFE2, an official RC4 product:

Test vector 0

Key: 0x01 0x23 0x45 0x67 0x89 0xab 0xcd 0xef

Input: 0x01 0x23 0x45 0x67 0x89 0xab 0xcd 0xef

0 Output: 0x75 0xb7 0x87 0x80 0x99 0xe0 0xc5 0x96

Test vector 1

Key: 0x01 0x23 0x45 0x67 0x89 0xab 0xcd 0xef

Input: 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00

0 Output: 0x74 0x94 0xc2 0xe7 0x10 0x4b 0x08 0x79

Test vector 2

Key: 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00

Input: 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00

0 Output: 0xde 0x18 0x89 0x41 0xa3 0x37 0x5d 0x3a

Test vector 3

Key: 0xef 0x01 0x23 0x45

Input: 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00

0 Output: 0xd6 0xa1 0x41 0xa7 0xec 0x3c 0x38 0xdf 0xbd 0x61

Neal



By [Jim Hendricks](#) on Wednesday, May 24, 2000 - 09:33 am: [Edit](#)

Thanks, they all work! (Using j initialization prior to cypher streaming)

Jim

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Curious Javascript message on forums?...

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Curious Javascript message on forums?...



By [Al Thomas](#) on Thursday, May 18, 2000 - 09:54 pm: [Edit](#)

Hi Neal;

Been away a while, and since returning I consistently get the following warning whenever I read a thread on any of the discussion groups. Is this anything you can explain, or do I have some local problem as far as you can see? TIA

Javascript security warning

A script wants to read the password in the form. For security reasons, Opera does not permit this.

Do you want to give the script access to your password?

(followed by the Yes and No buttons)

Using Opera 3.60b3 on Win95. As far as I know, there have been no material changes to my platform while I was away. What password? Any ideas?



By [Neal Bridges](#) on Thursday, May 18, 2000 - 10:06 pm: [Edit](#)

Never seen it, Al, and I've made exactly no changes to the discussion forum software.

Neal



By [Al Thomas](#) on Friday, May 19, 2000 - 10:21 am: [Edit](#)

Thanks Neal; so much for an easy answer<g>. Time to get out the sleuth hat and see what's up. Have a good day! alt



By [Hans Nordstrom](#) on Thursday, May 25, 2000 - 05:11 pm: [Edit](#)

Hi Al,
I've found this in the Tipday.txt in the Help directory for Opera.
"If you get a message telling you that a script wants to access your password, and you don't like this at all, ask the web master of the site(s) to stop doing JavaScript syntax checks on passwords. You cannot disable this option in Opera."
Hope it helps.



By [Neal Bridges](#) on Friday, May 26, 2000 - 01:47 pm: [Edit](#)

All I can suggest is trying a more recent beta of Opera. As near as I can tell, the only way you can stop that silly warning from Opera is to disable JavaScript on the client side.

Opera is up to 4.0 beta 4.

Neal



By [Al Thomas](#) on Friday, May 26, 2000 - 07:01 pm: [Edit](#)

Thanks to both Hans and Neal; after going back out on the road Monday I crashed my laptop hard and reinstalled from scratch. Problem is resolved. Odd sort of bug... mostly I really like Opera, it being small and fast. A good weekend to you both.

Add a Message

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Password:

E-mail:

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Palming in the Rain

[Quartus Handheld Software: Discussion Forum: Everything else!:](#)

Palming in the Rain



By [Dave Bennett](#) on Wednesday, May 17, 2000 - 03:51 pm: [Edit](#)

PalmPower magazine will be carrying an article I wrote about using the Palm to manage my farming operation in the June issue. One thing missing from the article that I just resolved was the issue of using my Palm in heavy rain or inclement weather situations.

The May issue of PalmPower had an article about using Palms while diving. The author used a Ewa-Marine "water wallet" to store his palm in. Some reported diving as much as 300' with their Palm inside such a bag.

I purchased one of these (\$29) and as luck would have it, it rained today. I was outside most of the morning working on a community project with my Palm Vx inside the "water wallet". I could not only see through the bag as well as if it was not there, input was just as good as if it was not present as well!

A very good product for the serious Palm user who wants to compute any time, any where.

Dave

Add a Message

Username:

Password:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

E-mail:

Graffiti on Palm Vx

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Graffiti on Palm Vx



By [Dave Bennett](#) on Wednesday, May 17, 2000 - 03:47 pm: [Edit](#)

I thought there was already a discussion going on about this, but here's my 2cents worth after much work with the Palm Vx.

The graffiti is "screwed up" on it. It is definitely different than previous versions. What I have discovered over the past few months though is that there are two problems that cause the frustration some have voiced.

First, I found that unlike Palm IIIs or the Palm V that if I hold the Palm Vx straight up and down, not turned like a piece of paper I would be writing on, the recognition improves considerably. On previous Palms I tilted the top of the device 10 degrees or so to the left as I would a sheet of paper when writing.

Secondly, the recognition of the characters has changed somewhat, being more exacting than previous Palms. A lot more in some instances. I was so frustrated with losing over half of my input speed when I first got the Palm Vx that I considered dumping it. However, I am now back up to speed (most of the time) and usually am in a "type ahead" situation with my Palm, leading it by two or three input strokes.

I think that Palm should have said something about this difference because it was significant. Ds, Ps, Bs, Rs and Ms are my biggest problems. That and spurious characters appearing. Forming an R and seeing an "i" appear makes no sense whatsoever. And I've had this happen enough times to know that something is awry inside the Palm recognition engine. I sure hope they get this cleaned up in the next version of the OS. It has been extremely aggravating.

Dave



By [Neal Bridges](#) on Wednesday, May 17, 2000 - 03:50 pm: [Edit](#)

Dave, to my knowledge they didn't change the recognition engine at all... and my Vx responds identically to the older units.

Are you running any accelerators on your system? CruiseControl might improve things for you.

Are there any scratches (faint or otherwise) in your Graffiti area?

Neal



By [Dave Bennett](#) on Wednesday, May 17, 2000 - 04:05 pm: [Edit](#)

No scratches, it was mint when I bought it. It is very well used now. I can do a B at any time, on demand, that looks OK and get an M. By very slightly turning the orientation 1 degree clockwise to vertical or just past to the right, it doesn't happen. Or, but curving the end of the B all the way back up to the top of the input area it doesn't happen.

I can do an R that looks perfect that will give me the signal for a shortcut. (Frustrating at first, but I've actually learned to use this at times to avoid the tap before making the shortcut graffiti!) :(I haven't learned exactly where the difference/problem is with this.

I don't have CruiseControl, but I do use MiddleCaps Hack and have never had a problem with it before. (I have 5 or six hacks: MiddleCapsHack, ShiftHack, Parenthesis Hack, ClipHack, PhlegmHack, and 3AlarmHack.)

Dave



By [Jim Hendricks](#) on Wednesday, May 17, 2000 - 04:07 pm: [Edit](#)

I would tend to agree with Dave, I moved from the III to a Vx & from day 1 have noticed the recognizer is fusier, and many times does make strange choices like Daves R = I example.



By [Neal Bridges](#) on Wednesday, May 17, 2000 - 04:29 pm: [Edit](#)

Try CruiseControl, Dave. It reduces the wait-states and makes the system run much faster; this may help.

Neal



By [Dave Bennett](#) on Friday, June 2, 2000 - 09:28 am: [Edit](#)

Jim,

Here is an interesting article that details two kinds of bugs that can affect graffiti input.

<http://www.geocities.com/SiliconValley/Campus/9054/tapbuga.html>

I've eliminated the tapbug from my situation, now to experiment with the other issues.

Dave



By [Jim Hendricks](#) on Friday, June 2, 2000 - 12:34 pm: [Edit](#)

Ouch! Thanks Dave for the pointer, I too don't have the tapbug, I'm using OS 3.5. I Do however suffer from screen degradation (mesured by using the Graffiti practice app that comes with OS 3.1 and greater). I tried the fingernail massage, and that improved the situation, but not completely.

I do write alot on my Palm, Now how to solve the problem!

Add a Message

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I need some help with my daVinci, please!!!

[Quartus Handheld Software: Discussion Forum: Everything else!](#): I need some help with my daVinci, please!!!



By [Rui Palma](#) on Tuesday, April 25, 2000 - 09:16 am: [Edit](#)

Hi, everyone

I was given a daVinci 2MB 3 days ago. It worked just fine, I inputed some data, drew some sketches, etc., etc., everything ok. I turned it on, turned it off or just let it sleep and there was no problem. Then, it refused to turned on, just with no "warning" (it's no batteries problem and the switch works ok, as you'll see). I tried to reset and it worked, the callibration screen showed up and it started working again. However, although I chose "Yes" to preserve the data found, I lost everything.

Again I put some data (couple of phone and to do's), made my preferences... and it happened again. It seems I can only turn it on (because the switch is working perfectly after the reset) and off like 10 or 12 times a day. Then it gets to a moment where it just doesn't turn on and I have either to reset or to remove one battery to make the callibration screen to show up... just to find out I've lost everything.

I appeal to anyone who knows daVinci to tell me: is this a problem of the user (is there any trick I don't know) or of the machine? I will appreciate your help! Thanks!

Rui



By [Neal Bridges](#) on Tuesday, April 25, 2000 - 09:47 am: [Edit](#)

Rui, you might want to drop by www.davinciworld.com and ask there in the daVinci Forum... you'll get a broader range of responses. It sounds like a hardware problem to me -- or maybe just a really bad pair of batteries.

Neal

Add a Message

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Password:

E-mail:

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Serial (Hotsync) Cables

[Quartus Handheld Software: Discussion Forum: Everything else!:](#) Serial (Hotsync) Cables



By [Dave Ruske](#) on Thursday, April 20, 2000 - 11:51 am: [Edit](#)

Does anyone know of a third-party supplier for serial cables that'll work with a Palm V/Vx? Palm will only sell these with A/C and international adapters, which we have no real use for, and \$50 seems a bit steep for just a serial cable.

Hopefully the new Pocket PC will make Palm a little bit more reasonable with their pricing and policies...



By [Neal Bridges](#) on Thursday, April 20, 2000 - 02:37 pm: [Edit](#)

I don't know of a provider, but this is a link to the physical description of all the connectors:

<http://palmos.com/dev/tech/palmhardware/>

Neal



By [Jamie](#) on Thursday, April 20, 2000 - 04:20 pm: [Edit](#)

Dave :

Check your local equivalent of "Staples / Business Depot" (a big chain in Canada, maybe US as well)

I notices them in the flyer they sent out here in Ottawa last week... If I recall though it was \$40 anyways (though that is Can\$)

Jamie



By [Jamie](#) on Tuesday, April 25, 2000 - 05:30 pm: [Edit](#)

Correction: Going through the junk mail before garbage day, and it was Radio Shack and the cables are 29.95 Canadian. (That's somewhere between \$18 and \$22 US, it changes from hour to hour...)

Sorry 'bout that. (I'll verify BEFORE posting next time...)

Jamie



By [Guy](#) on Wednesday, June 14, 2000 - 12:38 am: [Edit](#)

A company named Mark/Space seems to have them.

<http://www.markspace.com/cables.html>

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Article in April PalmPower

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Article in April PalmPower



By [Mark Lawson](#) on Tuesday, April 4, 2000 - 10:28 am: [Edit](#)

Just to let you know, PalmPower have finally printed an article I wrote on QF. It's at www.palmpower.com - hope it helps!



By [Neal Bridges](#) on Wednesday, April 5, 2000 - 06:22 am: [Edit](#)

It's at

<http://www.palmpower.com/issues/issue200004/quartus001.html>

Thanks, Mark!

Neal



By [Kip DeGraaf](#) on Saturday, April 8, 2000 - 10:56 pm: [Edit](#)

Little errata to add. On

<http://www.palmpower.com/issues/issue200004/quartus002.html> the shaded box should read:

: hello ." Hello World" ;

right?

By the way, very nice article!

Add a Message

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Password:

E-mail:

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Best Development Palm for Quartus

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Best Development Palm for Quartus



By [Steve Bohrer](#) on Thursday, April 6, 2000 - 05:19 pm: [Edit](#)

This is probably common knowledge, but I did not find it until after I had purchased my Palm.

If you register as a Palm developer (free), you can buy hardware with a developer discount. The discounted prices seem comparable to the lowest I found on the web, but you are buying direct from Palm rather than from a possibly sketchy discount house.

Registered developers can also download debug ROMs for POSE.

Steve Bohrer



By [Barry Marks](#) on Thursday, April 6, 2000 - 10:21 pm: [Edit](#)

I like the light weight of the Vx and since I wear suspenders that's an important factor when I'm out and about. I've been thinking of getting one. But several things I've seen, including Erwin's post above, make me think it doesn't come with the flip cover like the 3 series. Can anyone tell me if it does? I haven't been able to get a definite answer from the Palm website.

If I had to add the weight of a case, that would kind of destroy the advantage.

Barry



By [Dave Bennett](#) on Friday, April 7, 2000 - 08:07 am: [Edit](#)

I've used a Palm V, now a Vx since they came out. I remove both sytli so I can hold it more securely when writing on it. I do not use any kind of case or cover on it. It lives in my shirt pocket (with a button) with my Cross PDA pen. If it isn't there, it is in my bib-overalls pocket, snapped shut.

It seems the makers of bib-overalls were years ahead of their times in designing their clothing line. There are TWO breast pockets with snaps that seem to be designed for the Palm V form factor. Of course, this means that Palm Vx can fit in one and your Palm modem can fit in the other.

I've never had a problem with the screen surface getting scratched. I always place it in my pocket facing in. I've never had a problem with dust or dirt either. And I take my Palm with me everywhere. It has been subjected to rain, snow, mud, dust (gravel roads), and lately a lot of horse manure (I'm bringing in loads

of compost for our market garden.).

I agree with Neal on the writing. My Palm III's do not feel the same for writing at all. My Palm V feels about the same, but I have noticed a difference in the accuracy of the grafitti between the V and the Vx. The Vx is not as forgiving of messy strokes as my V was. :(

I generally recharge my battery daily since I use my Palm for everything. It is my main computer, period.

Dave



By [Jim Hendricks](#) on Friday, April 7, 2000 - 09:30 am: [Edit](#)

Barry, the Vx does come with a flip cover, except that it's not a hard plastic one like the III's, instead it's a bonded leather one. It slides into one of the rail slots and has a rubber hinge so that it flips easily to the back when in use. So far I have been happy with it, in fact I received from 3Com the free leather monogram cover that they were offering over Christmas this year and don't use it because the hinge is also leather and makes flipping the cover to the back while using a real pain!

Jim



By [Barry Marks](#) on Friday, April 7, 2000 - 02:25 pm: [Edit](#)

Thanks for the information. Does the leather flip all the way back and out of the way? And does it stay over the screen pretty well in your pocket?

I think I'd worry about it if the screen was uncovered in my pants pocket and my shirt pockets aren't safe if I lean forward. And there are obvious dangers in my back pocket. :)

I'm very tempted to get one, though.

Barry



By [Jim Hendricks](#) on Friday, April 7, 2000 - 09:02 pm: [Edit](#)

The provided screen does flip all the way to the back because of the rubber hinge. I have had no problems with it staying over the screen in my pocket, but since it is just a flip cover, I still get pocket lint on the screen :-(but that's a small price to pay for such a small profile unit with a very simple cover.

The only problem with the Palm Vx with it's cover, and I assume with most other covers is that the cover pushes on the hard buttons on the bottom and turns on

your unit, as well as suppresses alarms. I am currently using 2 hacks to get around this problem and that has worked very well for me!

Be tempted, it's a great unit!

Jim



By [Garth T Kidd](#) on Friday, April 7, 2000 - 09:59 pm: [Edit](#)

I'm very tempted by the IIIc.

I'm not very tempted by every application programmer and their pet yak rushing out needless colour versions of their applications. Many are making their software harder to understand, not easier, and code bloat abounds. Sigh.



By [Petr Antos](#) on Sunday, April 23, 2000 - 05:12 pm: [Edit](#)

>The Vx is not as forgiving of messy strokes as my V was. :(

I have heard about overclocked palms have problems with graffiti ... may be Vx (20 Mhz) OS needs update, but for now there are possibility to slow down Vx to 16MHz, this may help you, IMHO.

Generally you would save battery power too, and you will see your apps running like most of palm users see...

Petr



By [Petr Antos](#) on Sunday, April 23, 2000 - 06:47 pm: [Edit](#)

(at first, excuse me for my bad english but DBA (direct brain access) from my fingers :-)

(also, I hope I am not off-topic, as there are important things about hardware specific development for EZ / VZ processors; if you decide I will post new thread, of course :-)

I have Vx a I am completely NEWBIE TO PALM. My Vx is unfortunately with German 3.5 OS and I need English. Official response from palm support says that language change is impossible! My last two weeks was filled up with scanning web about possibility to reflash Vx ... even to available OS 3.3! Now, after several mistake assumptions I know, that Vx as equipped with DragonBall EZ needs newer look on its hardware architecture, since EZ has even basic memory mapping registers unpredictably different than old 68328 The DragonBall...now seems to me that even official reflashing utils fails me due to EZ processor !!!

For reflashing thing I found most useful sites of Till Harbaum and Tim Charon.

MEMINFO utility from Till Harbaum doesn't work correctly on my PalmVx ... since source is bundled, I found (quite lately) that it does not "play" with EZ processor too. Till also wrote OS_FLASH tool, but I am now researching his C-source what will happen to my Vx if I do try it ...

Almost all about OS reflashing is now known to me IMHO :), but for now main discourage for me bases on fact, that my dumped German 3.5 bigROM slightly differs (!?!?!?!?) from appropriate downloadable image from Palms web site :-((.... smallROM portion seems to be slightly device specific, so my next challenge will be to query all of OS services about versions, revisions, build timestamps and so on, to sync all infos before I will run any reflashing tool on my device ...

I hope, quartus 4th helps me a lot! Currently, I have installed GNU PRC-Tools with PilotMAG IDE but, due to "something wrong", he didnt find sdk headers, but I will need it to possibly correct some portions of OS_FLASH code to work with bigger 3.3 or 3.5 rom images ... will be better,...

As I want to develop for palm mainly, I am looking for available tools to do. Neals Forth seems to be one of best selections as I was pleased to play with 4th on 8bit atarixl 10 years ago and Neals implementation generality for palm is amazing !!!

Can anyone help me with reflashing of my Vx or with PRC-tools ???

Thanks a lot for your interest! After "englishizing" of my palm I will be pleased to use Quartus 4th!!!

Nice to mail you again! (no more long messages :-)

Petr



By [Neal Bridges](#) on Monday, April 24, 2000 - 12:04 pm: [Edit](#)

Thank you for your kind words about Quartus Forth!

My understanding is that when you dump the ROM from the device, it's slightly different in size from the one you download from 3Com, but otherwise identical.

I have heard tell that you can use the standard Palm OS upgrade tool to re-flash any language version onto your Palm Vx. Bear in mind I haven't tried this myself.

For GCC work, the tools are found at <http://www.palm.com/devzone/tools/gcc/>.

Neal



By [aalava](#) on Monday, July 10, 2000 - 02:34 pm: [Edit](#)

I finally got a Vx and I just wanted to give my input on a very good case for the Palm V/Vx. Vaja makes excellent leather cases in both the notebook style and the flip-top style as in the III series. I have been using one for about a month and very satisfied with it. They now make a case that is now hot syncable. If any one is interested its at:

http://www.vaja.com.ar/vaja/catalogo.nsf/htmlmedia/e_frameset_palm.html

I bought mine direct from Argentina but it is now available at directcases.com. There are reviews on it at the-gadgeteer.com.



By [Winchell Chung](#) on Tuesday, July 11, 2000 - 10:21 am: [Edit](#)

I don't have a Vaja, but I've read some glowing reviews. They make a version for the Handspring Visor as well.

<http://discussion.visorcentral.com/Forum3/HTML/000644.html>

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Strange bug!

[Quartus Handheld Software: Discussion Forum: Everything else!:](#)
Strange bug!



By [Michael Chen](#) on Wednesday, May 17, 2000 - 06:03 pm: [Edit](#)

There is a strange bug in OS 3.5 (found it on an IIIxe, and have heard of it on IIIc also, but I'd betcha its all 3.5 machines)...Strange but destructive...

Any call to DmSetDatabaseInfo that changes any application database's attributes (e.g. backup bit, read only, beamable, etc), will move it to its default category in Launcher.

Not so big of a deal...except...my program, SafeSync (<http://www.pointopia.com/m1ke08>), sets the backup bit for ALL databases (among other things...similar to backupall).

The problem? on OS3.5, *ALL* applications get moved back to their default categories (for the most part, 'Unfiled').

Bad.

After doing some investigation, I've found out that OS 3.5 has a new file on it called 'psysLaunchDB', type 'lnch', creator 'psys'. Using "pz", an onboard palm archiver, I did the following test on POSE:

1. Move some stuff around to different categories
2. add psysLaunchDB to a zip file, effectively backing it up
3. SafeSync (set all backup bits, which triggers the bug and moves all the apps to the default categories).
4. Look at Launcher. Yep, they moved alright.
5. Go into pz and view info on the psysLaunchDB. Looks like it was modified...
6. Unzip my pz archive.
7. Look at Launcher again. Categories back! Great! Everything was right how it was before a SafeSync.

Now...to the important part of the message...How can we avoid this problem? :)
I have been able to think of two solutions

1. Somehow be able to read all the categories of all the apps into some kind of array, then when i'm finished, move em back.
2. Somehow back up the psysLaunchDB and then restore it after my program does its stuff...
- (3). This isn't a solution. It may work, but I tried something like it on POSE and I had to hard reset my POSE. I tried changing the type of psysLaunchDB to

"XXXX". That way maybe PalmOS couldn't find it? But then the palm crashed when I tried to go back to launcher, because the system file couldn't be found. I don't know whether it would crash if you didn't go back to launcher before you changed it back...but there are ways to screw up a system that way...Lets say they ran safesync, which "hid" psysLaunchDB by changing creatorid to XXXX. Then they did a soft reset because of some soft crash..OOPS! Messed up system. So I dont think that is a solution...

Anyone have any ideas? This is a pretty major bug in the OS in my case, and even if not for my user's sake, I would like to be able to use OS 3.5 , and I personally would like to use my program:).

Does anyone have any clue as to how to fix this problem?

Add a Message

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E-mail:

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Quartus Software Products

 Benchmark	How fast is your Palm? Benchmark tests your Palm system and accurately reports how fast it runs relative to other models.
 Clearhack	Do dots drive you to distraction? ClearHack removes those annoying dotted underlines in the MemoPad, To Do List, Address Book, etc.
 Quartus Forth	Quartus Forth is a complete development environment and compiler that runs entirely on-board the Palm.
 LeftHack	Southpaws unite! LeftHack shifts most scroll-bars over to the left-hand side of the screen.
 LightHack	Having trouble reading your Palm in the dark? LightHack reverses the backlight on your Palm, so that light becomes dark, and dark becomes light.
 The Oracle	A hundred questions a day. Here's something that might help.
 PassPhrase	Need help choosing a new, secure password? Give PassPhrase a try!
 SCX Calculator	The SCX calculator is an easy-to-use, high-precision, large-digit calculator that has built-in Cost/Sell/Margin buttons for quick retail and sales calculations.
 SecretAgent	Who's looking over your shoulder? SecretAgent hides your password from prying eyes.
 ShiftHack	ShiftHack turns control over shifting back to you!
 StreakHack	Does your Palm show 'streaks' on the screen? This can help.
 SwatchHack	Swatch Internet Time -- on your Palm!
 TickHack	Tick tick tick! TickHack adds audible feedback to your Graffiti input -- handy when you're looking away from your Palm while you write.

Welcome to Neal Bridges' Place on the Web

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A Quote from *The Prisoner*:

"We desire that these proceedings be conducted in a civilized manner, but remind ourselves that humanity is not humanized without force."

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