Subject: New age of GUI
Posted by Mindtraveller on Tue, 14 May 2013 07:33:24 GMT
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As you all may know we are entering post-PC era. This means that good old Windows/X window interface becomes something which is used more and more rarely each day.

Still U++ strong basis of excellent algorithms and compiled well under both PC and ARM, it could make the next step into the future era providing high efficiency on new platforms. Recently I've successfully compiled U++ under ARM and assured its lightness and speed regardless of CPU archicture.

The most interesting thing is that U++ supports Rainbow which means we MAY have interface on any device, even through framebuffer. But U++ DOESN'T have this interface because the only GUI paradigm it supports is good old fashioned windowing.

I think it is time to discuss new approach to user interface which will become a basement of future support for post-PC devices like tablets. As of popular Android, it mostly uses Java calls for GUI, so IMO this still means we have to draw and process GUI in U++ by ourselves.

So what could this approach rely on? First of all let me give you link to the interesting article (sorry, it's in Russian but contains self-explainable pictures).
http://habrahabr.ru/post/179567/
This article concludes near 5 years of expirience under tablet devices, in this case, GUI for games. The main conclusion interesting to us is that picture:

Green is the most usable area, yellow is less usable while red could be used for rare actions. Yes, it is based on physiology of our hands and could be excellent starting point for what could become new age of interface.

That is all for my first post on this topic to start discussion. What do you guys think about that?

Subject: Re: New age of GUI
Posted by jerson on Tue, 14 May 2013 08:33:38 GMT
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Quote:Recently I've successfully compiled U++ under ARM and assured its lightness and speed regardless of CPU archicture.
This is interesting to me. I have seen an example of a firmware developed in Visual Studio for ARM hardware and wondered if U++ could be used similarly.

Would you be able to tell how much effort is needed to do the transition to ARM cross compilation using U++?

Subject: Re: New age of GUI
Posted by Didier on Tue, 14 May 2013 21:51:18 GMT
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Hi,

I uploaded a build method example file that works to make ARM cross compilation.
See :
http://www.ultimatepp.org/forum/index.php?t=msg&goto=379 55&#msg_37955

If you want to use MT on ARM you will have to make the modifications I stated here :
http://www.ultimatepp.org/forum/index.php?t=msg&goto=386 50&#msg_38650

Subject: Re: New age of GUI
Posted by ManfredHerr on Tue, 21 May 2013 19:12:07 GMT
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Hi,
my age is such that I don't believe in all slogans being spread on the net. Especially I don't believe that all users of Computers are gamers fairy tale tellers (social networkers) or mobile phoners from now on. Imho, too much attention is paid to the crowd of youngsters. They do not know the difference between quality and fakes, vision and reality, kitsch and art. Thus, they are preferential for making money.

My impression of Windows 8 is that of a try to develop a jack of all trades device. And I might be wrong, like Bill Gates with the Internet, but I see a clear border between fun devices and serious applications.

My wish is to not forget those who use a computer for support of human challenges rather than having a new and simple way of communication and grandiloquence.

Sincerely yours,
Manfred

Subject: Re: New age of GUI
Posted by mirek on Wed, 22 May 2013 06:00:58 GMT
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ManfredHerr wrote on Tue, 21 May 2013 15:12
My impression of Windows 8 is that of a try to develop a jack of all trades device. And I might be wrong, like Bill Gates with the Internet, but I see a clear border between fun devices and serious applications.

I think Win8 tablets are dead end.

OTOH, I expect Android to extend to desktop area this or next year.

Mirek

Subject: Re: New age of GUI
Posted by piotr5 on Thu, 23 May 2013 10:30:09 GMT
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Quote:I think Win8 tablets are dead end.
So what? every technology eventually goes into a dead end.
win8 is popular now, maybe soon it will be replaced by elementary os, maybe apple will take over. but truth is all the current GUIs are using similar concepts and ideas. even without win8 we still are left with touchscreens and hand-held computers. and don't forget the gesture-driven GUIs where a camera interprets our movements and some complicated software generates commands out of them. maybe sometime commandline will return (as in gnome-shell) because of people favouring spoken commands over mouse-clicks...

as for a border between fun-device and work-device, I just don't see it. work is fun, even more so if 3d-visualization would actually be used for serious applications, with a true and tested improvement of work-flow through a better visualization. similarily communication is something that could use some playful elements otherwise known only from gaming...

the only problem with these ideas is they aren't tested. the usual policy is to transform the users, the customers, into guinea-pigs, history has shown this wont work if you want to sell something to a serious company with experienced management. so I think what we really need is not yet another gui controversy bur we need actual research into gui and into visualization, with actual experimental set-ups investigating how useful some gui is! but for that programmers really need the flexibility to create even the most unusual GUI...

Subject: Re: New age of GUI
Posted by mirek on Thu, 23 May 2013 10:41:24 GMT
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piotr5 wrote on Thu, 23 May 2013 06:30Quote:I think Win8 tablets are dead end.
So what? every technology eventually goes into a dead end.
win8 is popular now

Ah, I might have sounded that I am against tablets in all forms. I just wanted to say that I do not consider Win8/RT tablets really competetive vs. Android... and that Android will IMO soon become desktop OS too, one more reason to try to support it...

Mirek

Subject: Re: New age of GUI
Posted by ManfredHerr on Thu, 23 May 2013 14:57:27 GMT
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To make it clear, I am also not against tablets or smart phones. I grant them to who thinks to need them, youngsters or managers on their business trip. (Why no video conference??)
But heaven forbid the day when the database of a nuclear power plant is within a "cloud" and human interaction (control) is via a smart phone - possibly in the pocket of a disco dancer.

Despite of the numerous people being happy with apps having a reduced feature set, e.g. Explorer and Media Player in WIN8, there will be fields of computer application with a strong demand of sophisticated features. If all and everyone runs after the mainstream it will be hard to find a base for sophisticated and accurate control.

Subject: Re: New age of GUI
Posted by piotr5 on Sat, 25 May 2013 21:33:23 GMT
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I agree. there are 2 kinds of applications: those that are supposed to perform a specific task, and those that allow for experimentation with various approaches. the former are about such things like wordprocessors that could become simplified into whatever blog-posting app. the latter are things like U++ theide (or any ide for that matter) or matlab or even the linux shell commandline. neither of the two types of programs will ever become obsolete. and if there are enough programmers available then the 1st type of programs, the actual applets can be created on demand or maybe applet-creating software could be available too. android-support is nice, simple apps should also be portable to phone-devices. however, when a phone has the power to perform complicated gesture-input and voice-recognition, why shouldn't it be capable to run an actual IDE? the answer is: because the phone has different input devices than a desktop! so I am against relying on the move of android towards desktop, theide must move to other kinds of gui!

Subject: Re: New age of GUI
Posted by mirek on Sun, 26 May 2013 05:48:39 GMT
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piotr5 wrote on Sat, 25 May 2013 17:33the answer is: because the phone has different input devices than a desktop!

You can easily complement tablet with keyboard, even mouse. I guess if you are about to do some serious work on tablet, attaching keyboard seems like the most likely course...

Subject: Re: New age of GUI
Posted by piotr5 on Mon, 27 May 2013 20:27:23 GMT
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don't get me wrong, I didn't mean the ide would need to move to a new gui before any other ide does. but you are wrong in assuming keyboard and mouse would be a possibility for tablets. when I sit in the park with a tablet, then mouse is quite impossible to use on the grass. also you must keep the tablet in your hand in order to avoid reflections. therefore imho new ideas for gui-styles should be available to programmers who are ready to use them. I mean, what's the sense in cameleon and such when some input-options (mouse-gestures with multitouch, relative position-changes through accelerometer and such, interface to external programs like voice-recognition or hand-gestures and such, geotagging of course, and so on) are not that easy to integrate into ultimate++ software? similarily also the layout designer should imho assist a bit in placement of gui-elements when target-platform is tablet or similar, maybe also warn about button-size when touch-screen is expected...

of course all these suggestions I'm giving informally, doesn't need to be implemented immediately. what we need now is a discussion and an actual list of things we will wish to make use of in future...

Subject: Re: New age of GUI
Posted by mirek on Tue, 28 May 2013 05:46:29 GMT
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piotr5 wrote on Mon, 27 May 2013 16:27don't get me wrong, I didn't mean the ide would need to move to a new gui before any other ide does. but you are wrong in assuming keyboard and mouse would be a possibility for tablets. when I sit in the park with a tablet, then mouse is quite impossible to use on the grass. also you must keep the tablet in your hand in order to avoid reflections. therefore imho new ideas for gui-styles should be available to programmers who are ready to use them. I mean, what's the sense in cameleon and such when some input-options (mouse-gestures with multitouch, relative position-changes through accelerometer and such, interface to external programs like voice-recognition or hand-gestures and such, geotagging of course, and so on) are not that easy to integrate into ultimate++ software? similarily also the layout designer should imho assist a bit in placement of gui-elements when target-platform is tablet or similar, maybe also warn about button-size when touch-screen is expected...

of course all these suggestions I'm giving informally, doesn't need to be implemented immediately. what we need now is a discussion and an actual list of things we will wish to make use of in future...

I guess we are discussing two different topics here. You are arguing that tablets need altered GUI. Well, there is no disagreement on my side.

What I was trying to say is that Android is likely to move to desktop and start replacing Windows there - which is one more reason to support it, is not it?

Subject: Re: New age of GUI
Posted by piotr5 on Wed, 29 May 2013 21:28:12 GMT
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no disagreement here. I just am a step ahead and already think of how to attract the programmers into using that android support. as far as I know eclipse is normally used for android development. what reason should developers have to switch to u++ on a platform that primarily is using java? my answer is that gui still needs to be programmed in c++...

btw, has anyone ever seen a possibility to write programs in c++ (with a lib specialized for this), and then compile that into a java-code binary? I really don't want to abandon all the advancements c++11 has over the old trusty java-language...

Subject: Re: New age of GUI
Posted by mirek on Thu, 30 May 2013 06:21:29 GMT
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piotr5 wrote on Wed, 29 May 2013 17:28
btw, has anyone ever seen a possibility to write programs in c++ (with a lib specialized for this), and then compile that into a java-code binary?

I doubt this is possible...

OTOH, interestingly, it seems possible to compile C++ to relatively efficient JavaScript, as long as it supports typed arrays...

Mirek

Subject: Re: New age of GUI
Posted by nlneilson on Tue, 11 Jun 2013 14:49:02 GMT
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piotr5 wrote on Mon, 27 May 2013 13:27don't get me wrong, I didn't mean the ide would need to move to a new gui before any other ide does. but you are wrong in assuming keyboard and mouse would be a possibility for tablets.

piotr5: You are a a bit off base on this.
Tablets can use a mouse and keyboard by usb or bluetooth. A trackball type of mouse does not need a surface to work on. Tablets also have on screen keyboards that can be pulled up to click with the mouse or touch screen.

piotr5 wrote on Wed, 29 May 2013 14:28btw, has anyone ever seen a possibility to write programs in c++ (with a lib specialized for this), and then compile that into a java-code binary?

What are you talking about?
Java is not 'compiled' into machine code, it is run time compiled the same as Python.
To use openGL for graphics in java jogl is necessary. A java app or jar file can interact with the C++ jogl code but it is not 'compiled' into the java code.

The jogl developers have been working with the NASA WWJ team and have recently released jogl 2.0.

Subject: Re: New age of GUI
Posted by piotr5 on Tue, 11 Jun 2013 20:34:14 GMT
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well, I did the mistake of speaking too abstractly. let's look at two examples:

suppose you want to create a slideshow-program. once upon a time these were programs where you press space or any key in order to move on to the next picture or animation. now with tablets however keyboard is no option. if a person has to put the screen-keyboard onto the display in order to press the key for showing next slide, s/he'll likely buy an ipad instead. similarily I have seen slideshow programs that used mouse-buttons for going forward and backward in the pictures. right mousebutton was go right and left button was for going back -- matching our western habit of reading from left to right. with tablets however users might prefer other input methods. a touchscreen doesn't have right button. some tablets have accelerometer though, so the user can knock on the device to move to the next pic. or maybe there's a remote control when the computer is attached to the tv set.

another program I have seen is a bit difficult to describe. its a sound-edit program. it is a modified version of a big sound-editing suite with many filters and such. of course a big sound-editing software is rather something for desktop. but this program is different, it's for improving sound-quality of some recorded speech. now port that to a tablet! having a menu in the usual way is not a good idea, better show some nice icons. icons however usually come with tooltips. however a touchscreen does not have the option to "hover" over it for some time, touching translates into a click on that icon. better would be if eye-movement would trigger the tooltips. or maybe use accelerometer to move around some additional cursor for that purpose. of course the user could plug in a trackball or something (although I have never seen any trackball specifically made for mobile devices). but using a mobile device means a friend gave you a recording he made, you receive it in the middle of the street and want to plug in the headphones and listen while you walk. if it's bad quality, maybe let this program run over it on autopilot. maybe some part of the recording was too silent, select it and turn up the volume of the selected section before you give the file to another person. now in that situation, the last thing you want to do is to pull out the mouse/trackball! if the program is not easy to control with the tablet without external devices, people will just try to concentrate a bit more deeply while listening, instead of using that program, maybe even turn up volume to a deafening level. maybe a user-interface alike to the one depicted in the first message of the thread would be better than reusing the gui of that desktop only program?

as for java and python, those offer the possibility to sort of compress the sources, remove comments and such, since text files take up too much space. this is what I call "compile into javacode". (a similar way of using the word "compile" are the various programming languages which get compiled into actual c-sources.) what I want is to use such things like metaprogramming with templates (boost) inside of java programs. one would assume translating from c++ to java should be quite easy, why are there no such programming-environments? of course you can write

libs in c++ and compile them for the native architecture. however, if you distribute a program, and this program is using a c++ lib that wasn't installed in the os, you have a problem with maintaining a huge set of binaries, one for each platform that will appear in future. especially the testing is a nightmare. so unless the lib needs hardware access, make it so that lib is actually distributed as java even though it's written in c++. it's related here because especially a java-port of u++ libs would be nice...

Subject: Re: New age of GUI
Posted by nlneilson on Tue, 11 Jun 2013 21:38:27 GMT
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piotr5 wrote on Tue, 11 June 2013 13:34speaking too abstractly

order to press the key

sound-edit program.

especially a java-port of u++ libs would be nice...

Maybe instead of 'abstractly' it is hypothetically.

I have an U++ app that has menus, buttons, etc.
It works fine in tablet mode with a mouse click or touch screen.

Maybe a sound-edit program would be better on a desktop.

C++ to java is not the way to go unless necessary.
Do a little research on jogl (java interface to OpenGL).

Subject: Re: New age of GUI
Posted by piotr5 on Thu, 13 Jun 2013 22:16:09 GMT
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you got me curious: if c++ is not the way to go for compile-time processing of sources, do you know a good macro-processor that can be applied to sources immediately before creating a java-archive? of course that preprocessor must know the context within which a macro is situated (just like templates in c++ do) since otherwise I could just use whatever text-manipulating language like perl anyway...

as for menus, the major problem is that the same command will fit into many different categories. so what do you do then? put it into many different categories? or put it into an "extras" menu? isn't it confusing for the user when the same action is available through many different methods?

Subject: Re: New age of GUI
Posted by nlneilson on Thu, 13 Jun 2013 23:29:38 GMT
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C++ is the best language to work with and I like Upp the most to work with.

I am having a hard time understanding what you are trying to say.
C++ is compiled. Java is run time compiled.
There is no way AFAIK to to mix the CODE or SOURCE directly.

Upp is great at letting the programmer have control of a GUI.

File Attachments

1) UppGUI.jpg, downloaded 1819 times



Subject: Re: New age of GUI
Posted by nlneilson on Thu, 13 Jun 2013 23:37:03 GMT
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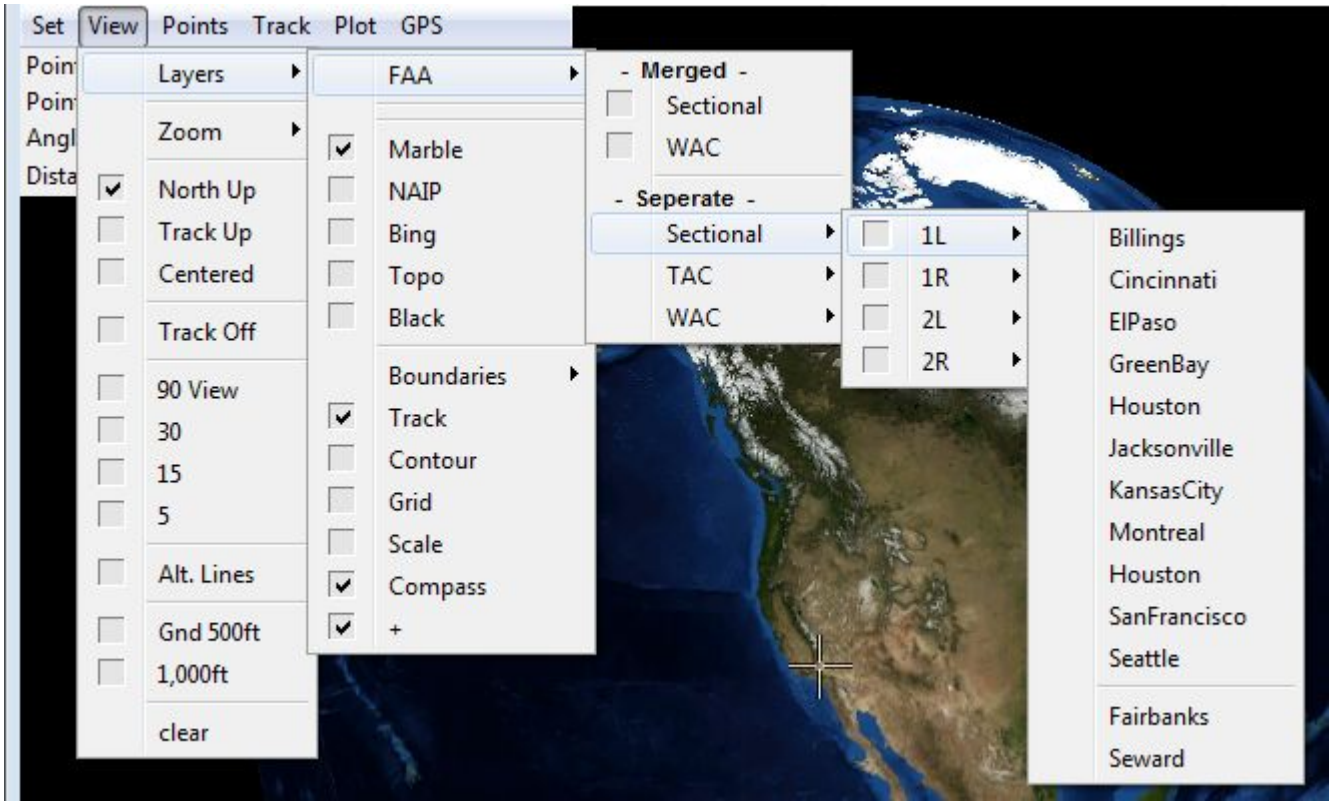
As far as confusing the options are self explanatory so have had no complaints, there are probably more than a hundred but have not counted lately.

The main display is in java. That is controlled by the C++ Upp app through a socket.

C++ and java code/source CANNOT be mixed directly.

File Attachments

1) UppMenuExpanded.jpg, downloaded 1841 times


Set
View
Points
Track
Plot
GPS
Layers
Zoom
North Up
Track Up
Centered
Track Off
90 View
30
15
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Alt. Lines
Gnd 500ft
1,000ft
clear
FAA
Marble
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Bing
Topo
Black
Boundaries
Track
Contour
Grid
Scale
Compass
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