

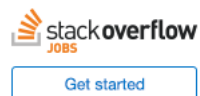
Join the Stack Overflow Community

Stack Overflow is a community of 6.8 million programmers, just like you, helping each other. Join them; it only takes a minute:

Sign up

GUI development: Qt vs GTK [closed]

Get personalized job matches now



I'm new to programming with graphic user interface. I code mostly in C++ and I need my code and GUI to be OS independent so after doing some research I just can't decide between Qt or GTK. I read that GTK is more memory efficient but some sites said it was before Qt 4. Also Qt has the Qt creator IDE which I think is a wonderful IDE for C++. ¿Anyone knows more about the pros and cons of each one? Thanks

qt gtk

asked Feb 25 '12 at 4:08



Topo

1,302 3 18 38

closed as not constructive by [Michael Petrotta](#), [Arnold Spence](#), [Mat](#), [Luke Woodward](#), [ptomato](#) Feb 25 '12 at 14:55

As it currently stands, this question is not a good fit for our Q&A format. We expect answers to be supported by facts, references, or expertise, but this question will likely solicit debate, arguments, polling, or extended discussion. If you feel that this question can be improved and possibly reopened, [visit the help center](#) for guidance.

If this question can be reworded to fit the rules in the [help center](#), please [edit the question](#).

2 Before asking, please search for similar questions: stackoverflow.com/questions/1887070/... – [borges](#) Feb 25 '12 at 4:15

2 Try them both. See which one is easier to learn and work with. – [Blender](#) Feb 25 '12 at 4:19

@borges Thanks for the link, I also found this one: asust.in/005M – [Topo](#) Feb 25 '12 at 4:25

@Blender Thanks for the advice, I have tried GTK and Qt for a while, and I like Qt a lot more, but I wanted to know if there is some advantages about using GTK over Qt. – [Topo](#) Feb 25 '12 at 4:27

2 @Blender, both are very large frameworks, so it doesn't seem like a good idea to spend hours or days learning both of them. There's good information on the net so he should definitely read that first. – [this.lau_](#) Feb 25 '12 at 7:02

1 Answer

Yay, another Lib_One vs Lib_Two kind of questions. I love answering these.

Requirements

Firstly, there is no perfect magical toolkit that fits everyone's needs. Your choice should be based on *what you are trying to do*.

- Do you just want a GUI Toolkit? Or do you want a complete application development framework with APIs for Graphics, Sound, Image IO etc. ?
- Are you targeting a specific platform?
- Do you need extra eye candy?
- What does your client want?
- Are you targeting embedded systems or the PC?

Gui Toolkit

Both GTK+ and Qt are considerably mature Object Oriented GUI Toolkits. They are both open-source, cross-platform and have large active communities. GTK+ is used as the standard toolkit

for the GNOME, LXDE and Xfce Desktop Environments while Qt is used for KDE. Both have been used for developing professional applications and are time-tested.

Cross-Platform Compatibility

Both toolkits support almost all mainstream PC Platforms.

Platforms Supported By Both:

- Windows XP
- Windows Vista
- Windows 7
- Mac OS X
- Linux / Unix

In addition Qt also supports:

- Symbian S60
- Windows CE
- WebOS
- Android
- Ubuntu Phone

Performance

This is seriously debatable. GTK+ evangelists point to the high memory consumption of Qt apps, while Qt fans jeer at the GTK runtime's start-up time. But overall, there isn't any great difference. Both run fast enough on modern PCs.

Proprietary Use & Language Bindings

GTK+ is LGPL licensed so it can be used for proprietary apps. Qt is triple licensed with LGPL, GPL and a proprietary license. If you use LGPL or buy the proprietary license, you can use Qt for proprietary apps.

Both Toolkits have bindings for all popular languages. Notable bindings include GTK#, the C# Binding for GTK+, which has been endorsed by the Mono Project. And Qt-Jambi, the Qt binding for Java, which is actively updated.

Resources

Both toolkits are extensively documented. With GTK+ having its own documentation (GTK-Doc), and Qt being documented by Nokia. However Qt may have a slight edge here because it has the huge resources and manpower of a huge corporation behind it (Nokia), while GTK+ is only documented by its contributors. There are tutorials on many places on the internet for both of them. I prefer [ZetCode](#).

Conclusion

As you can see both of them are more-or-less good enough. The choice really depends on the point I made earlier: what are your *requirements*?

edited Oct 28 '15 at 16:52



[jesterjunk](#)

1,506 10 14

answered Feb 25 '12 at 12:01



[ApprenticeHacker](#)

8,890 11 60 121

AFAIK, GTK+ consists of GLib, which does qualify as "framework" in the Qt sense. – [rubenvb](#) Feb 25 '12 at 12:04

@rubenvb not exactly, GLib is just library that adds file-handling and OOP features, it was just as a code-base for use with GTK+. the QT Framework consists of Graphics, Sound, Image IO, Sockets, Networking etc. the GLib doesn't have that kind of stuff. – [ApprenticeHacker](#) Feb 25 '12 at 12:10

1 you know, I could fill a book with this particular question. Having myself searched for a good C++ UI toolkit all over the internet, and tried both of them. :) – [ApprenticeHacker](#) Feb 25 '12 at 12:18

18 GTK+ has Glib for events, threads, IO, etc... Cairo+Pango for a lot more 2D graphics than Qt could ever decently provide. Perhaps the G camp is low on networking (although there is glib-networking). I can't compare their usefulness, but all the features are there, so your "Apples to Oranges" stuff is just not true. – [rubenvb](#) Feb 25 '12 at 12:34

2 @rubenvb you do have a point. I'll remove that section. – [ApprenticeHacker](#) Feb 25 '12 at 12:43