Developing Your CSCI 1230 Project Locally

A Brief Guide

Fall 2021

While we've taken some steps to make the project stencil as cross-platform compatible as possible, follow the following instructions to make everything run smoothly. If the following steps do not work for you, feel free to ask the TAs for additional help.

Remember to test all your projects on department machines after development, as we will grade only on those machines. Please also note that these steps may not be sufficient to run all lab code locally. Enjoy!

1 Mac OS X

1. Download Qt 5.7 at the following link (newer Mac versions of Qt don't work well with our stencil): https://download.qt.io/archive/qt/5.7/5.7.1/qt-opensource-mac-x64-clang-5.7.1.dmg (1.2 GB).

2. Follow the directions in the installer. At the Select Components step, make sure the box next to Tools is checked.

3. Copy your files from the department machine using the terminal command:
   ```
   scp -r <your username>@ssh.cs.brown.edu:<path/to/your/project/dir>
   <desired/destination/on/your/computer>
   ```

4. Open up your project in QtCreator. On the Configure Project page, click Okay. Now go to Projects (in the sidebar). Under the **Build & Run** tab, click **Manage Kit**s. On the right sidebar, click **Add**. Give your new kit a recognizable name. In the compiler dropdown, select **GCC** for 64 bit. Under Qt version, select **Qt clang 64bit**. Click okay, then click **Add Kit**, and select the kit you just made.

   (a) Note: In order to download gcc, first download XCode and manually enable gcc: https://www.cyberciti.biz/faq/howto-apple-mac-os-x-install-gcc-compiler/

5. Clean and Rebuild your project. Now you should be good to go!

2   Windows

1. Visit http://www.qt.io/download. Click the "Go to open source". On the page you are redirected to, click "Download"

   (a) You should now have the installer downloaded onto your machine. Open up the installer and run it.

   (b) You will get many different download options. Note that not all of them work correctly. The version you need is at least: **Qt 5.7.1 for Windows 32-bit (MinGW 5.3.0)**.

   (c) You can also try googling "Qt creator 5.7.1." One of the first few results will take you to a pagee where you can download **qt-opensource-windows-x86-mingw530-5.7.1.exe**. http://download.qt.io/archive/qt/

   (d) If you get the wrong compiler, then uninstall the Qt creator you downloaded and just install the right one.[1]

2. Follow the directions in the installer.

3. Copy your files from the department machine using WinSCP. More info here.

4. Clean and Rebuild your project. **Now you should be good to go!**

5. If it still doesn't work:

   (a) Check the .pro file. There should be a line saying *LIBS += -lopengl32*. If this is missing, add it in.

   (b) If your computer is over 4 years old: you may have issues with using OpenGL version 400 in your shaders. If you are getting compilation errors in your unchanged shaders, then try printing your OpenGL version (look here for help with this). If your version is < 4.0 and you have the latest graphics drivers installed on your computer, you may not be able to run the projects and labs for this course. As a last resort, you can try changing the line at the top of each shader file (the .frag and .vert files) from #version 400 to #version 330.

   (c) If the complier returns an error saying it does not recognize the "-no-pie" tag: Go to the .pro file in your project and comment out or delete: QMAKE_LFLAGS += -no-pie

6. Note/Disclaimer: Qt on Windows is quite finicky. If you do develop locally, make sure to start early in case you run into Qt problems. It is perfectly normal/doable to develop on department machines where Qt proveably works. While working locally is convenient, loosing time on assignments to Qt setup issues is not.

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[1] To Uninstall: Go the the Qt creator folder wherever you downloaded it to (the default is your C drive) and then the version you installed. You're looking for an application labeled the MaintenanceTool with the green Qt icon. Double click it and you will get a window with three options. Choose "Remove all components" and go through the rest of the prompts.