

Accessing the UNIX prompt and Mac OS X developer tools on Macintosh lab machines. Caulfield Campus, rooms B-3.42/3.43.

Accessing a UNIX prompt under Mac OS X.

1. Boot the machine into Mac OS X (You might need to restart it if somebody has already left it booted under Windows).
2. Login using your authcate details.



3.The Applications folder can be opened by clicking on its icon in the “Dock” at the bottom of the screen. It has an “A” icon on it made out of a pencil, ruler and paint brush. Or you can access it via the “Finder” – the visual file browser that Mac OS X uses. The Finder icon looks like a split blue face/two half-faces. It is at the left of the Dock.



4.Scroll through the icons and open the Utilities folder in the Applications folder. It has an “X” icon made from a spanner and screwdriver.

5.Access the “Terminal” application by clicking on it.



6. In this Terminal window, or new windows you open from within this application, you can type UNIX commands and complete the [Introduction to Unix tutorial](#). You can also build and run your assignments and other code you write from here, or access anything on the computer or Internet if you know what you are doing - we get to this later in the course!

To run the Xcode developer tools for programming under Mac OS X.

- 1) Locate Xcode. Mac OS X has an integrated development environment (IDE) called Xcode. It resides in the Applications folder and has a blue icon with a hammer on it.
- 2) To make a basic new application in Xcode, when Xcode asks you for a template for your project, select “OSX Application” in the left pane, and “Command Line Tool” in the right pane.
- 3) Xcode will create a project folder for you. In it is another folder for your source code that is named with your project name, and an Xcode project file with extension `.xcodproj`. You can double click this project file at any time from the Finder to load it up in the Xcode IDE. The default new program is a simple “Hello World”. You can run it by selecting “Product>Run” from the main window menu. It prints its output to an Xcode pane beneath the main one.
- 4) You can copy your assignment (or other source files) into the directory contained within the project directory just created by Xcode. You can then add them to the Xcode project and compile and execute them all using the IDE’s GUI. For example, let’s open, set up and run a lab exercise for FIT3094...



5) Go to the Safari web browser, a compass icon that appears in the Dock (and Applications folder). Access the following URLs with a control-click to get the context-sensitive popup menu:

Save these files to your Xcode project directory:

http://www.csse.monash.edu.au/~cema/courses/FIT3094/pracSheets/GL_routines.cpp

http://www.csse.monash.edu.au/~cema/courses/FIT3094/pracSheets/GL_routines.h

<http://www.csse.monash.edu.au/~cema/courses/FIT3094/pracSheets/main.cpp>

(You can overwrite the Xcode default main.cpp with the downloaded one).

6. Go back to Xcode. In the left pane you will see an icon (Blue document with an “A” on it) with the name of your newly made application. This is the “build target” for your project. Under it are some folders and file names, including main.cpp. You can view main.cpp in the editor by clicking on the file icon once.
7. Control-click on the folder icon in the left pane and select from the context-sensitive popup menu, “Add Files to <YourApplicationName>”. Then add the new file you just downloaded, `GL_routines.cpp`, to this project. You don’t need to add `GL_routines.h` as this file is `#include-d` from `GL_routines.cpp`.
8. You will need to link your project target to two libraries for it to compile properly so click once on the “build target” icon for your project in the left pane. The text editor window now changes to allow you to edit “Build Settings” for the compiler. Select, “Build Phases” instead by clicking on it once.
9. In the main pane, now click once on “Link Binary With Libraries”. Add two libraries by clicking on “+”: `OpenGL.framework` and `GLUT.framework`. You need these as they contain the computer graphics API. They should now appear along with your source code in the left hand IDE pane. They have little yellow suitcase icons.
10. Now select Product > Run from the main screen window. Xcode builds your project and runs it. Some circles on a black background should appear. Well done! You have just compiled and run your first application.
11. Back in Xcode any text printed to the output streams appears in a pane below the main text editing (or Build Settings) pane. Return to viewing project source code files in the IDE text editor by selecting the folder-like icon in the horizontal mini-menu bar at the top of the left pane above your “build target” icon. Try the other icons to see what they do. Note especially which are for “Search” and “Issues” (Warnings and Errors).