EECS 211 XCode Notes

Xcode is a free integrated development environment (IDE) for C, C++, Java and other languages on MacOS X. It comes on the CD distributed with the Leopard edition of MacOS X.

Jump to Installing, Creating a project, Tips and traps.

Requirements

You need to have XCode installed. It's best to have the current version. If you have Leopard, install XCode from the CD distributed with your machine. If you have an older version of MacOS X, or don't have your installer disk, see these instructions for downloading Xcode from Apple. This chapter has useful tips on what you can leave out.

- For Tiger, get **Xcode Version 2.5**.
- For Leopard or later, get Version 3.0 or later.

You need CppUnit. See these instructions for using MacPorts to get it. MacPorts will install CppUnit in the `/opt/local` directory. The example Makefile used below checks this directory.

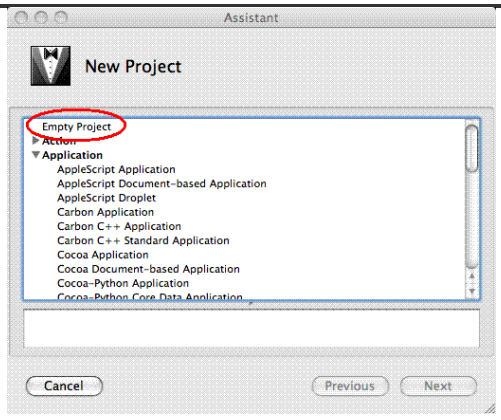
Download and test the example Makefile. You need the directory and files from that test to do these instructions.

How to Create a EECS 211 Console Project

The instructions below show how to build an EECS 211 console C++ project, using a Makefile. A console project is one that does all its input and output in a console window, e.g., a terminal window. Such programs are simple to set up, but a bit old-fashioned.

Start Xcode, click on the **File** menu, then on **New Project...**. The New Project dialog box will appear.

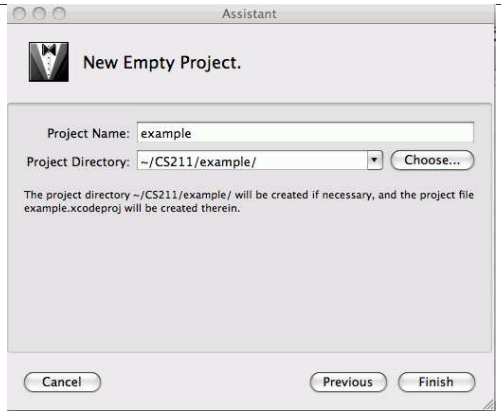
Select **Empty Project**, then click **Next**.



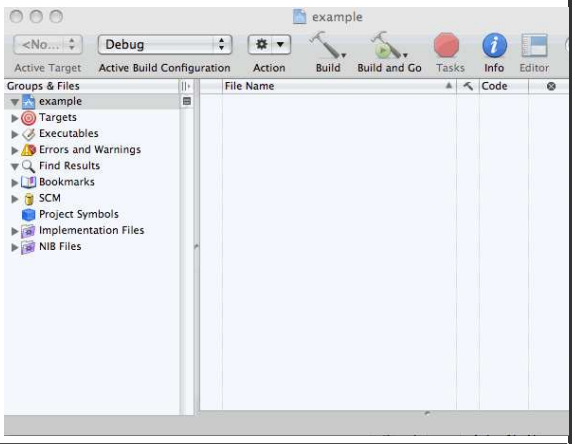
Xcode now asks for a project name and a directory. Click on Choose... to get a file dialog box. Use it to find and select your EECS 211 projects directory.

Then enter the name of the project, e.g, `example`. Xcode automatically uses the project name to make a subdirectory.

When done, click **Finish**.

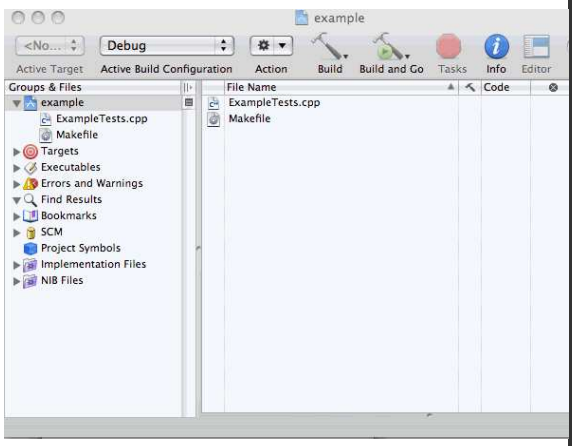


The New Project window will appear.



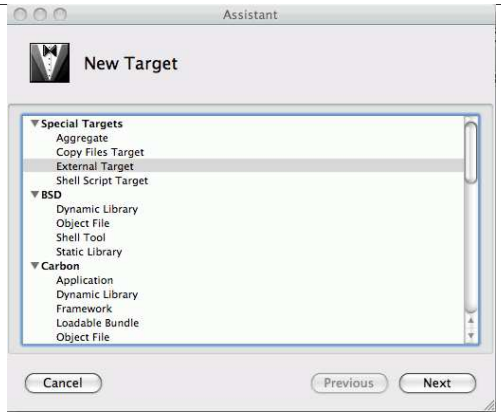
Select **Add to Project...** from the **Project** menu. Use the mini-Finder window to find and select the two source files in the `example` directory. Use command-click to select all four files at once. (You don't actually need to select `Makefile` or header files, if there were any, but it's handy to have them available in the editor.) Click Add to add the selected files.

Your project window should now look like this.

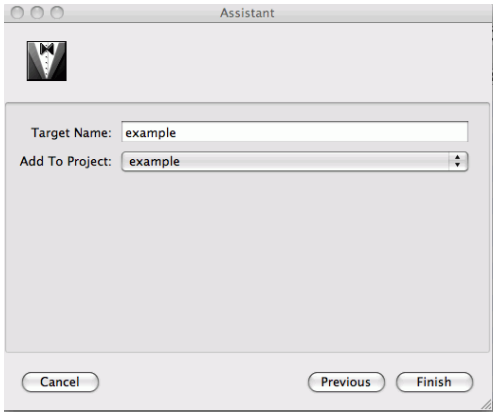


Now tell XCode to use the Makefile.

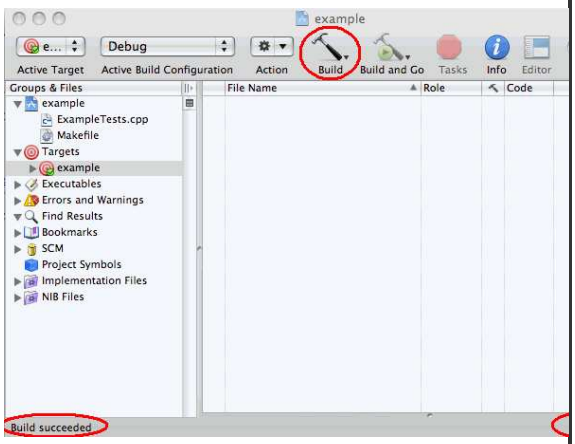
Select **New Target...** from the **Project** menu. Select **External Target** under **Special Targets**. Then click **Next**.



Xcode will ask you to name your target. Just call it `example` and click **Finish**.



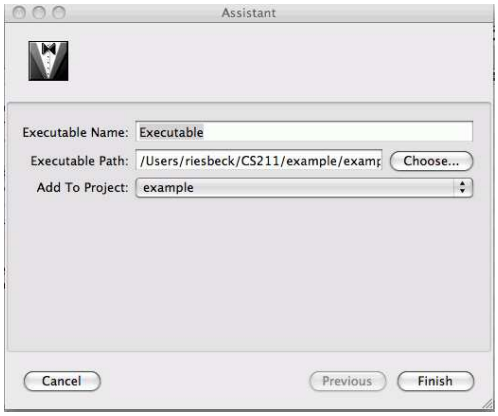
Now you're back to the project window. Click the **Build** button. You should see "Build succeeded" and "Succeded" in the status lines at the bottom of the window. If not, click the small error icon to the left of "Failed" in the lower-right corner to see the error messages. Try to fix them. Post the first one or two to the newsgroup if you can't figure out what to do.



When you have an executable file, you can tell XCode to run it when you click the **Build and Go** icon.

Select **New Custom Executable...** under the **Project** menu.

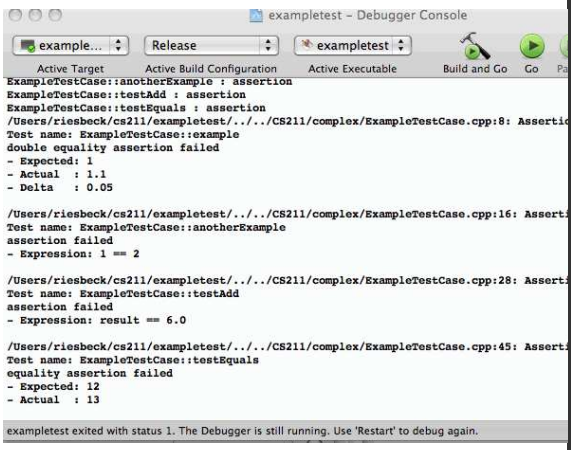
Click Choose... and use the mini-Finder to find and select the `example.exe` file that the Makefile created, then click Finish.



A dialog appears to let you specify options for running this executable. Just close this box.

From now on, clicking the **Build and Go** icon will compile and run your project. Try it now. Assuming you've made no errors in your code, it should compile and run, and the output should appear in the console window. To see the output, select **Console** under the **Run** menu.

The console output should look like the output you saw when you ran the executable directly in a Terminal window.



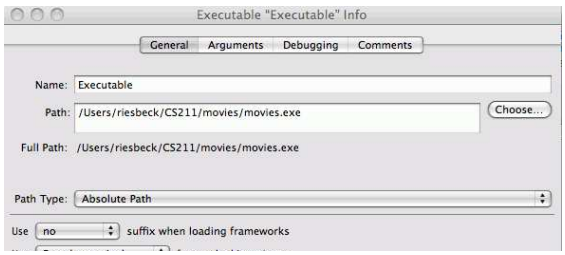
Tips and Traps

Learn the shorcuts. This is a general tip for any development tool. After you've used your IDE a bit, learn to use the keyboard shortcuts for compiling and running and so on. This will speed up coding and testing a lot.

Don't rename code files in the Finder. This is a general tip for any development tool. Don't rename or delete files behind its back. The IDE can get very confused. Most IDEs provide their own commands for renaming and removing files, that rename or remove the file and also update the IDE's internal records.

Watch your head(er)! When you tell XCode to create a new C++ file, it automatically creates a header file too. That's fine because header files are good. But XCode opens the header file not the .cpp file. Many students accidentally put their C++ code into the header file, thinking they're putting it in the .cpp file.

Why can't it find my file? If your program needs to read a data file, you have to tell XCode where to look. Select **Project | Edit Active Executable** to get the **Executable Info** dialog box, and set the working directory as shown to the directory that contains your data file(s).



Comments? Contact the Prof!