

Using Xcode for Macintosh

In CS106B, you have the option of writing your programs on the Mac or PC. For the Macintosh environment, you will write your programs using a C++ compiler by Apple called Xcode. Our CS106 libraries were developed and tested on Xcode version 2.5 which is available for free download from Apple's developer site. Xcode 2.5 requires Mac OS X 1.4 (Tiger) or newer¹. The libraries also work on Xcode 3.0 for Mac OS X 1.5 (Leopard). You can also use Xcode on the Mac OS computers in the public clusters on campus. Please see the next section for instructions on how to do this.

Using Xcode at a cluster

Xcode is available for use in the Lair (the Tresidder Macintosh cluster), on the Macs in Meyer library, and in the residential computer clusters. The 106 libraries will already be loaded on them, so you should be able to just open Xcode and proceed from "Creating the add2 project" section.

Downloading your own copy of Xcode from the Web

First, note that most versions of Mac OS X come with Xcode preinstalled. However, you should check the version of Xcode you have. The easiest way to do this is to first open the application. Then, from the Xcode menu, select "About Xcode". The window that opens should say what version you have. If it is version 2.5 or later, you have the correct version. If not, use the following directions to download the most recent version.

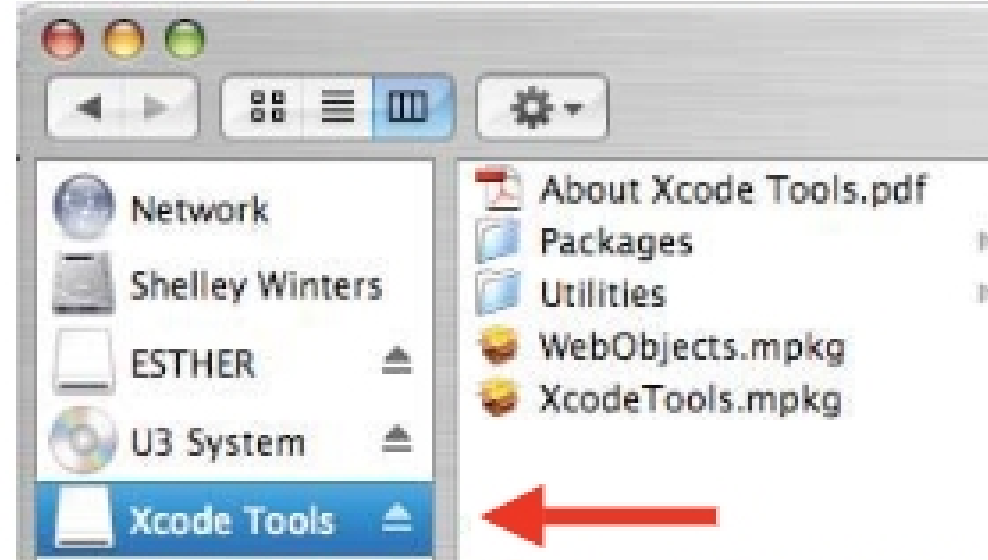
Use your web browser to connect to <http://developer.apple.com/tools/Xcode/>. Click on the Tools Download link.

The image shows a screenshot of the Xcode developer page. At the top, the word "Tools" is written in small text above the word "Xcode" in a large, bold font. Below "Xcode" is a paragraph of text describing it as Apple's premier development environment. To the right of the text is an icon of a hammer and a pencil. Further right is a "Tools Topics" sidebar with links for "Corecode", "Performance & Debugging", "WebObjects", and "Xcode". At the bottom of the page, a "Tools Downloads" link is circled in red. A red arrow points from the text "operating system" in the paragraph to the "Tools Downloads" link.

Then, if you have Mac OS X 10.4 (Tiger), click on the "Xcode 2.5 (DMG)" link. If you have Mac OS X 10.5 (Leopard), click on the "Xcode 3.0 (DMG)" link. At this point, if you do not have one, you will need to create an Apple account. However, creating an account is free, so go ahead and make one. Click on the Xcode 2.5 / Xcode 3.0 (Disk Image). This will begin the download.

¹ If you have an earlier version of Mac OS and would like to use Xcode, contact us and we can give you special instructions

Once the download is finished, there should be a drive called “Xcode Tools” loaded.



If not, double click on the downloaded file, “`xcode_2.5.1_8m1910_6936315.dmg`” (it may not be called exactly this; don’t worry if it isn’t). Inside the “Xcode Tools” drive, double click on “XcodeTools.mpkg”. This will open an installer for Xcode. Follow the instructions in the installer, and when you are finished Xcode will be installed.

Downloading and Installing the CS106 Libraries

Here you will download the special libraries, such as genlib, that we use in this course. To start, use a web browser to access the following

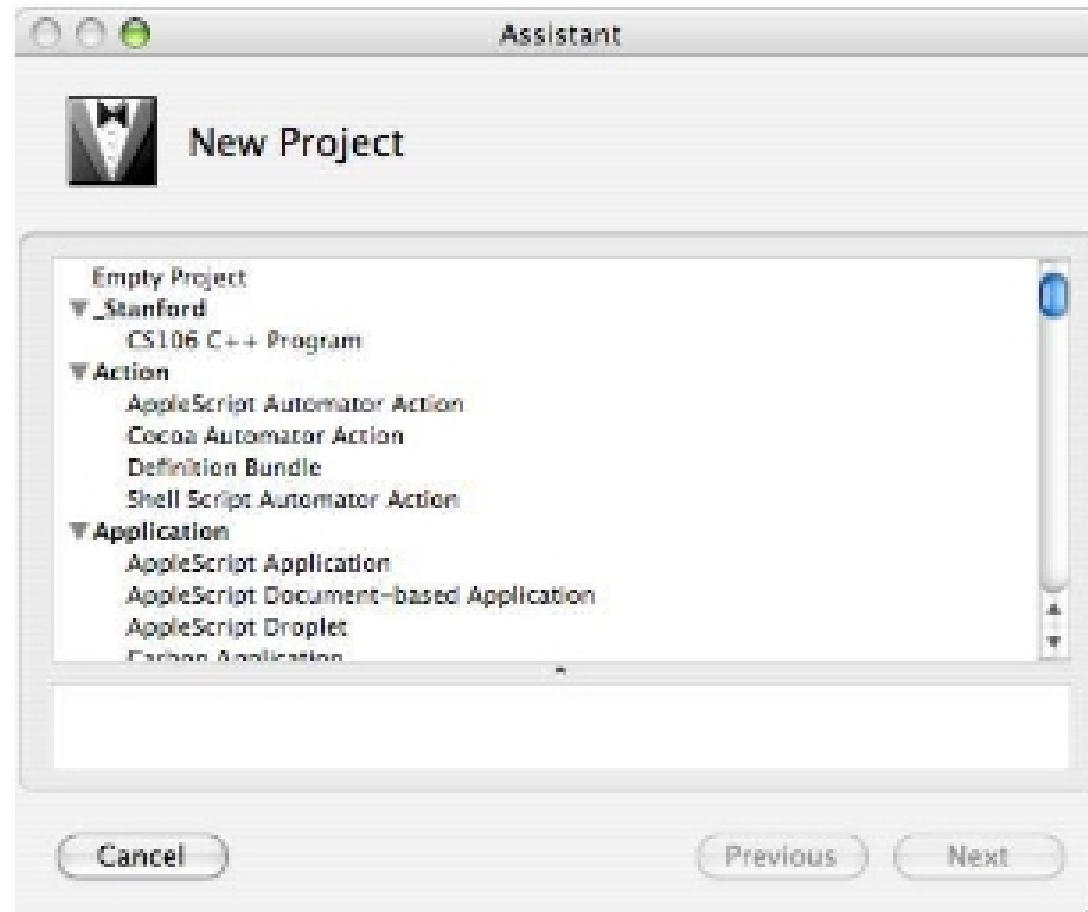
http://see.stanford.edu/materials/icspacs106b/CS106Libs_for_Xcode.zip

Follow the instructions in the installer to install the CS106 Libraries.

Creating the add2 project

Every program written using Xcode has a project that indicates what different program files need to be compiled together in order for the complete program to work. **Note that currently projects with spaces in their names will not create properly for Stanford Projects in Xcode.** Instead of naming a project something like “My Project”, you should use “MyProject” or “My_Project” or something else similar. We are going to create a project that uses a simple pre-written program, named `add2.cpp`. You can download the code for `add2.cpp` by using a web browser to go to the link <http://see.stanford.edu/materials/icspcs106b/add2.cpp> select the “Save As” option from the File menu to saving the file to your own computer. Once you have the `.cpp` file, you will need to create an Xcode project and add the `.cpp` file we provide. You will go through the basic process described below for each programming assignment that you do in this course, using your own code files.

Start the Xcode application. It’s a good idea to create an alias for this program and place it on your desktop or in another convenient place. You can also put it in your program dock. Select `New Project...` from the `File` menu. The following dialog will appear:



Now you need to tell Xcode what type of project you are creating, what to call it, and where to put it. First, highlight "Stanford CS106 C++" in the list on the left, then click "Next". Type "Example_Project" as the name of the project.

Now you have to show where the project should be located. Xcode has a default location, which you can use if you'd like. Otherwise, click "Choose..." and use the resulting dialog to select where you'd like the project to be. Note that the end of the location will be the same name as your project (e.g., "~/Example_Project/"). This is a folder Xcode will automatically create to store the project files.

Click OK. The project is now created.

How to Use the Xcode Project Window

The Xcode project window has a number of folders and buttons. You will only need to use a few of them; this section will walk you through them.