

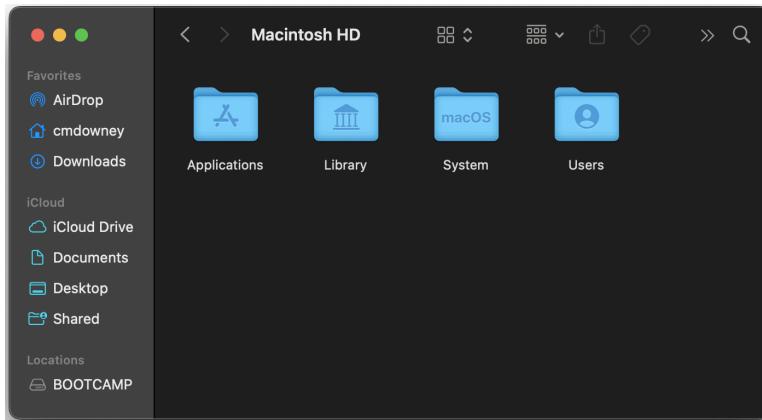
Ling 250: Initial computer setup guide for Mac

This guide is meant to help you set up your computer for the exercises and homeworks we will do in class, since the tools we will be using throughout the class can be finicky if they're not set up in the correct way.

Install Visual Studio Code

When writing and working with code, it will be most convenient to work within a program called an Integrated Development Environment (IDE). This sounds complicated, but it is essentially just a text editor with some fancy add-ons, such as being able to use the computer's command line side by side with code or other files that you want to edit. The IDE we will use is called Visual Studio Code (Microsoft's main IDE). **Note:** if you are already familiar with IDEs, and have another one that you would strongly prefer to use over Visual Studio Code, you may do so. However **you are responsible for resolving any confusion that results from not using the recommended software.**

- Step 1: Go to <https://code.visualstudio.com> and select “Download for MacOS”.
- Step 2: A file named `VSCode-darwin-universal.zip` (or something similar) will appear in your Downloads folder. Double click on it to unzip the file.
- Step 3: In Finder, search for and find your Applications folder. Drag and drop the unzipped Visual Studio Code app into the Applications folder.

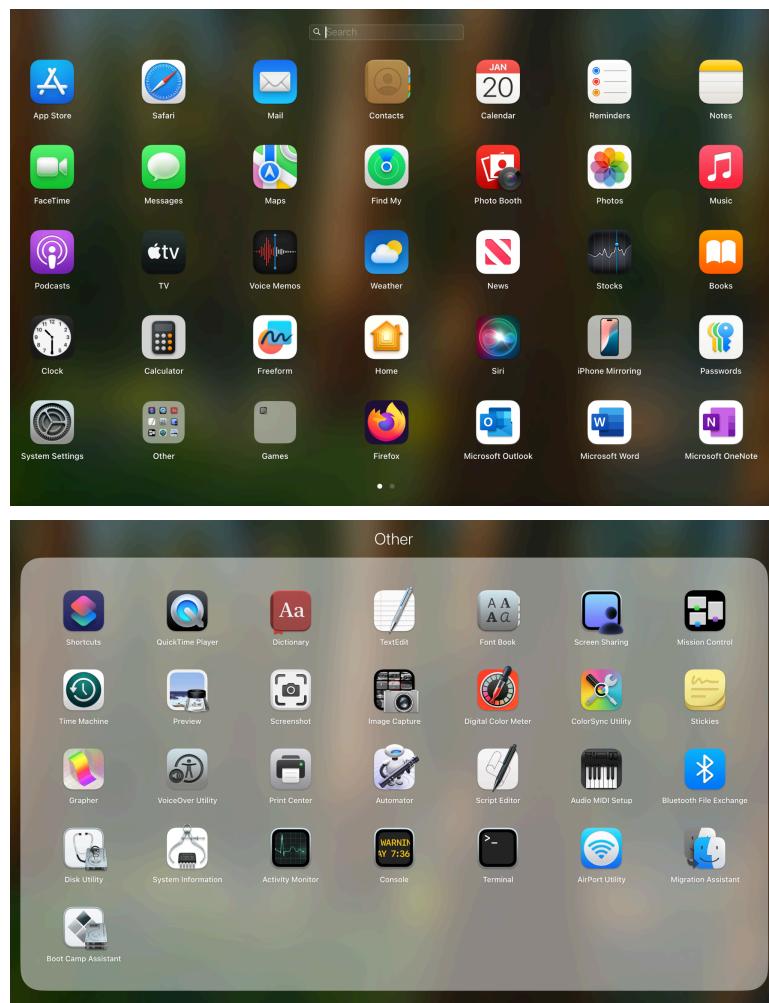


Visual Studio Code should now be installed on your computer. Feel free to open the program and explore some of its functionality (particularly opening .txt files and folders). We will have a brief demonstration of this program on the second day of class. Until then, I would avoid tweaking more advanced settings, unless you already know what you're doing.

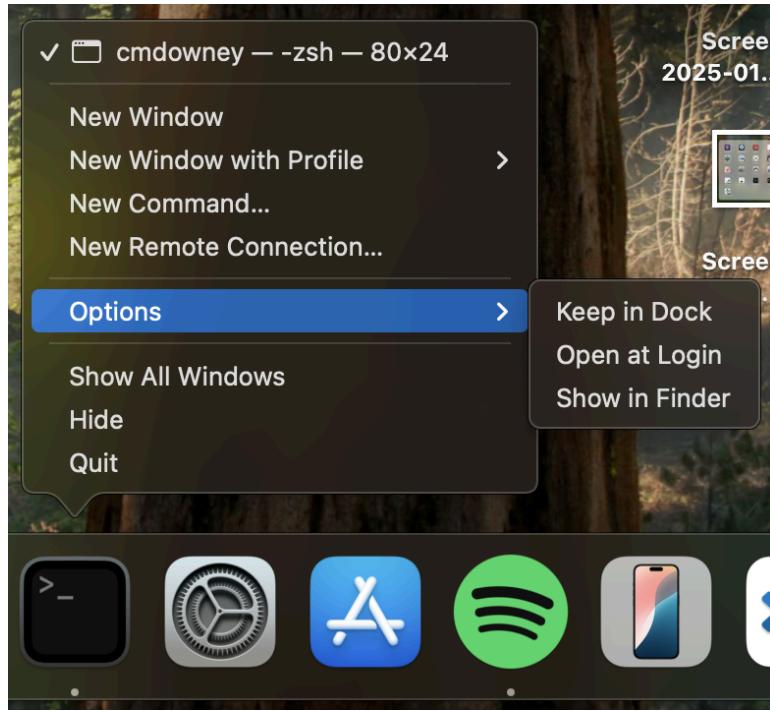
Find the Terminal, Install Xcode

Mac is one of several operating systems based on an older OS called Unix. These share a common set of commands for interacting with the computer by typing (this interaction is called the “command line” or “terminal”). Most people are familiar with this from Hollywood depictions of hackers. The most common variant of these commands is called bash, though zsh is now standard on Mac, and you might occasionally see plain sh. Bash, zsh, and sh are only minimally different, and you can think of them as dialects of the same language. Windows, on the other hand, has long used its own language(s) for the command line. On Mac, it is easy to get started using the terminal.

- Step 1: Go to your applications. Look in the folder called “Other” or “Utilities”, and select the app called “Terminal”.



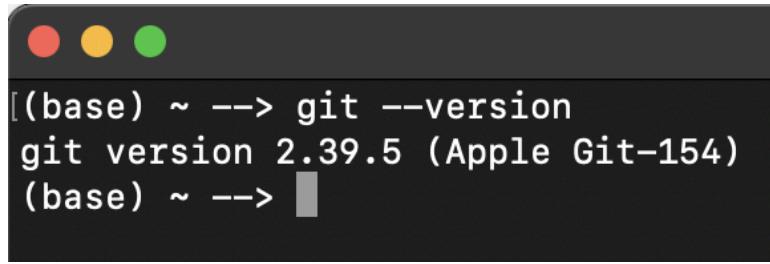
- Step 2: For easy access, while you have the Terminal app open, right-click on the app icon, go to “Options”, and select “Keep in Dock”.



- Step 3: The Terminal allows you to interface with your computer using typed commands. Try typing `ls` (and then enter/return). This command should show the contents of your home folder. On Mac, this includes your Downloads, Documents, Desktop, and Pictures folders, among others.

```
(base) ~ --> echo "I'm in"
I'm in
(base) ~ --> ls
575n-private
Anpao
CourseCode
Desktop
Documents
Downloads
EmbeddingStructure
Library
Miniconda3-latest-MacOSX-x86_64.sh
Movies
Music
(base) ~ -->
```

- Step 4: While the Terminal is easy to use on Mac, it does not come with all the functionality and tools we will need for this course. To install this extra functionality, type `xcode-select --install` (and then press enter/return). If you get a message about not having the correct permissions, type instead `sudo xcode select --install` and be prepared to enter your password. **This installation will probably take a while. Connect your computer to power.**
- Step 5: Once the installation is complete, you can verify it was successful by checking for one of the tools that was supposed to be installed (Git). To do this, type `git -version` and a version number for the software should appear in the Terminal.



```
(base) ~ --> git --version
git version 2.39.5 (Apple Git-154)
(base) ~ -->
```

Install Anaconda

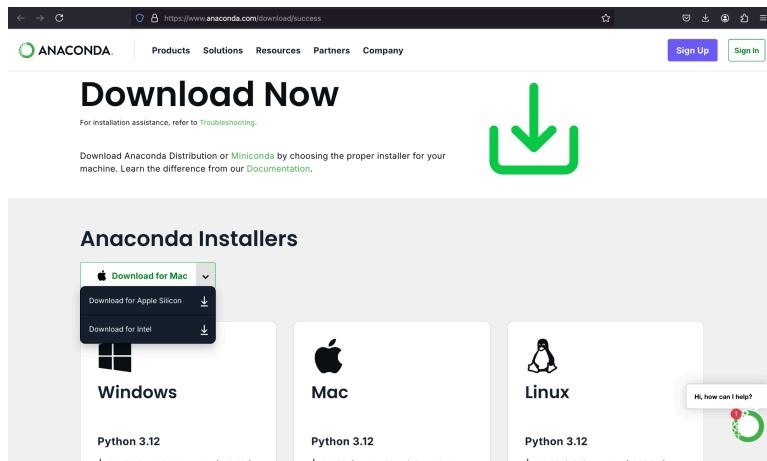
The main programming language we will be using in this course is Python, which is one of the most commonly used languages for science and data exploration. There are many different versions of Python, and we will often want to use packages that people have written to add on to Python, which have their own version numbers. To more easily manage all these versions, and to make sure everyone is working with the same versions, we will use a Python management tool called Anaconda.

- Step 1: Figure out whether your computer runs on an Intel or Apple processor. Mouse up to the top left-hand side of the screen and click on the Apple logo. In the drop-down menu, click on “About This Mac”. In the information window that appears, there will be a listing for “Processor”. If the processor says anything about “Intel” or has a name like i9, it is an Intel processor. If it says anything about “Apple Silicon” or has a name like M1, it is an Apple processor.



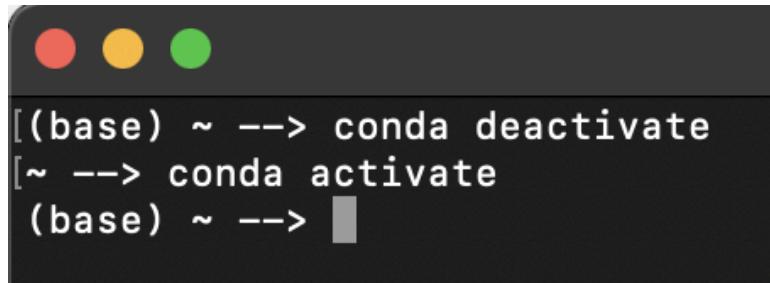


- Step 2: Go to <https://www.anaconda.com/download/success> to download Anaconda (use this link, or else it might try to pressure you to register with an email). Click on the icon to download for Mac. It will ask whether to download for Apple Silicon or Intel. Click the appropriate option based on Step 1.



- Step 3: An installation package called `Anaconda3-<some_version_number>.pkg` will appear in your Downloads folder. Double-click on this to start the installation. If you get a pop-up saying a script will be run to check if the software can be installed, click "Allow".
- Step 4: Click "Continue", "Agree", and "Install" where prompted. Be prepared to enter your password when prompted.
- Step 5: We'll do several steps to check that the installation was successful. First, completely close out of the Terminal if you have the app open, then re-open it. If

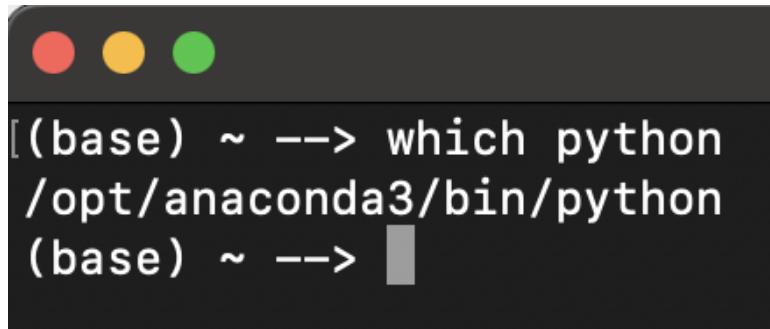
Anaconda is active, there should now be a little indicator next to the command prompt that says `(base)`. If there's not, try running the command `conda activate`. You should be able to turn Anaconda on and off using `conda activate` and `conda deactivate` respectively, as shown below. If these commands aren't working, try running `conda init` then completely closing the terminal app and restarting it.



```
[(base) ~ --> conda deactivate  
[~ --> conda activate  
(base) ~ --> ]
```

A screenshot of a macOS terminal window. The title bar features three colored dots (red, yellow, green). The main pane shows the command history:
[(base) ~ --> conda deactivate
[~ --> conda activate
(base) ~ -->]

- Step 6: To check that Anaconda is properly managing our version of Python, run the command `which python`. The path that is printed out should run through a folder called `anaconda3`.



```
[(base) ~ --> which python  
/opt/anaconda3/bin/python  
(base) ~ --> ]
```

A screenshot of a macOS terminal window. The title bar features three colored dots (red, yellow, green). The main pane shows the output of the `which python` command:
[(base) ~ --> which python
/opt/anaconda3/bin/python
(base) ~ -->]