Python
What is Python? What is Jupyter Notebook? What is Anaconda? While you install several programs for this class, you may be wondering why there are so many components for this one programming language which we call Python. They are all connected, and hopefully this guide will help you get started with installing some of these programs and distinguish the purpose of each of them.

Python is the main programming language we will be using in this class for multiple reasons. Firstly, it is free, and all of its packages are open-source. This means writing your own code and using other people's code is easy and cheap. Speaking of using other's people's code (i.e. packages/modules), Python has many packages that are easy to install and implement, making data analysis super easy. Now that you know why we Python is useful from research to tech jobs, here are a few words you will see pop up throughout your coding journey:

Python	A computer *programming language*. A way to describe algorithms to a computer
IPython	A Python *interpreter*: A computer application that provides a convenient, interactive mode for executing Python commands and programs
Anaconda	A *distribution*: A single download that includes all of the above and provides access to many additional libraries for special purposes. It also includes a package manager that helps you to keep everything up to date. It comes with IPython, Jupyter Notebook, R, and more.
Jupyter Notebook	An *integrated development environment* (IDE) that is open-sourced web-based application. It allows you to implement codes and visualization while inspecting variables. It is essentially a text editor for writing and debugging programs
NumPy	A standard library that provides numerical arrays and mathematical functions
Matplotlib	A standard library that provides visualization tools
SciPy	A standard library that provides scientific computing tools

("A Student's Guide to Python for Physical Modeling" – Jesse Kinder, Philip Nelson)

Installing Anaconda
The easiest way to install Python along with various other components is to download Anaconda.
1) Install Anaconda:
   - Window - https://docs.anaconda.com/anaconda/install/windows/
   - Mac - https://docs.anaconda.com/anaconda/install/mac-os/
   - Linux - https://docs.anaconda.com/anaconda/install/linux/
2) Open Anaconda. You should see various IDE (e.g. Jupyter Notebook, Spyder). Jupyter Notebook should already be installed. Click "Lauch"
3) On launch, a web app will open with a display of your home directory. You can traverse the directory by clicking the folder or clicking the back button
4) Go into Desktop and create a folder named NeuroEthology
5) Go into the NeuroEthology folder

6) On the top right, you should see a button called "New". Click on that dropdown button and click Python 3. This will create your first notebook inside this directory.
7) A separate website will open, displaying your very first notebook (Untitled.ipynb)

Most of your projects and homework will be through Jupyter Notebook. Python has a set of syntax (rules for expressions and statements for Python to interpret) that you will have to learn before you can freely start coding. We will go through some examples in Project0.ipynb.