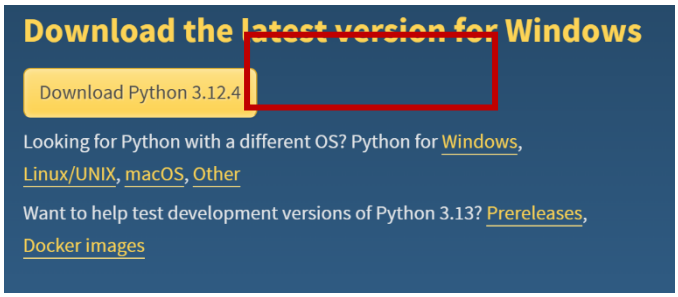
Step-by-Step Guide to Coding

1. Python

Check if python is installed on your device. You want version 3.x.y.

- To check, open your command prompt or terminal and type "**py**" (no quotation marks), and push 'enter'. You have at least one "command line interface" application already installed on your computer by default. To open this window, Windows users can search for "Command Prompt" and Mac users can search for "Terminal".
- If using a Mac, you may need to instead type "**python3**" (no quotation marks), and push 'enter'.
- If the correct version is installed, you should see something similar to: **Python 3.9.10 (tags/v3.9.10:f2f3f53, Jan 17 2022, 15:14:21)**.
- If the prompt reports an earlier version (e.g., "2.x.y") or returns blank, you will need to manually install python from the official website: https://www.python.org/downloads/ and select the **Download Button**. For MacOS, select the Download for Mac button.



2. Anaconda

At some point we will have to download extra, publicly available, pre-made code to help us out. Collections of pre-made code like this are called "libraries" or "packages" and instead of manually seeking them out and downloading them, most people use a "package manager" which handles all the tedious downloading/ storing/ locating/ and updating. There are two popular options for Python package managers: Conda and pip. It is suggested to use Conda (also called Anaconda) because it includes many more packages than pip. To install the Anaconda Distribution use this link: https://www.anaconda.com/download. This installation may take a while.

- Alternatively, you can install pip by following instructions here: https://packaging.python.org/en/latest/tutorials/installing-packages/. **WARNING: CONDA AND PIP ARE INCOMPATIBLE AND THE INSTALLATION OF BOTH MAY REQUIRE YOU TO FULLY**

UNINSTALL PYTHON AND REINSTALL EVERYTHING FROM SCRATCH

- Pip does not come with as many packages as conda so some may need to be installed to run given scripts this semester.

3. Spyder

Now you need a place to type your code. Technically the command prompt, notepad, or Microsoft Word would work. However, there are many free applications made specially for developing code called Integrated Development Environments (IDEs). IDEs provide easy-to-use interfaces to help write, edit, and execute code. We will be using one made specifically for Python called Spyder as it can be installed from the Anaconda Navigator. To install Spyder:

- To open the Anaconda Navigator, type it into your search box.
- This will open the Anaconda interface which displays compatible applications. Scroll down to locate Spyder, then select Install.
- If you receive an error and cannot install/launch Spyder, choose the settings wheel next to Spyder, and download an older version. MasOS 14.6.1 works with Spyder 5.4.2.
- Once installed, you can open Spyder by selecting Launch.

4. Open your IDE and begin coding. Most code needed this semester will be provided but it is encouraged to play around with the given code or make your own! Test if everything is working by printing text:
   - Step 1: Type: `print("Hello, World!")`
   - Step 2: Press the Run File button ()
   - Step 3: In the console, if things are functioning correctly, you should see: Hello, World!