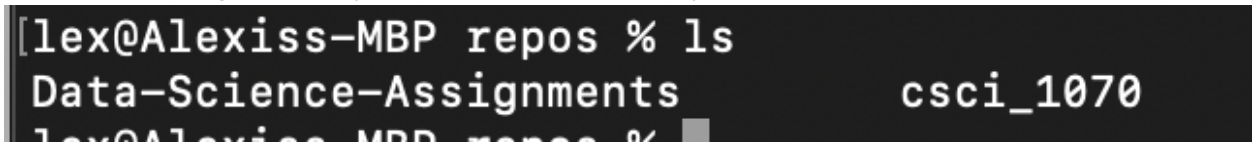
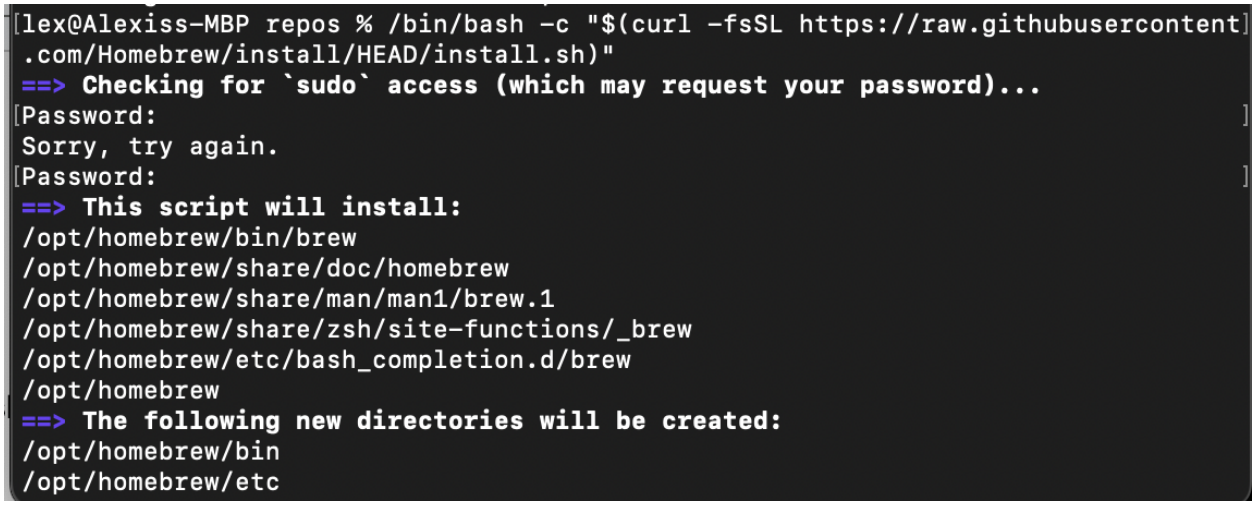
Please note: I suggest you use a tool called homebrew for installs, but you can also use pip. Pip is a package manager for python but brew is for anything on your Mac OS.

1. Create a directory for your course material for this class.
    a. I suggest doing this in terminal as follows:
    cd Documents
    mkdir csci_1070
    ls
    b. You should see the folder you just created under wherever you created it. cd stands for “change directory”, mkdir is “make directory”, and ls is short for “list”



2. Install homebrew using your “terminal” application https://brew.sh/
    a. Run the following command in terminal:
    /bin/bash -c "$(curl -fsSL
    https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
    b. It should look somewhat like the following:



    c. Note: this often takes a while as will installing other programs with brew because it is installing dependencies as well
3. Once you have followed all the prompts and brew has finished installing, run the following in terminal:
    brew install python@3.10
    a. Note: you could run “brew install python” instead, but that will install the most recent version, which is not necessarily going to be compatible with Python libraries/modules we use.
    b. Run the following command to see which Python version you have.
    python3 --version

Note the 3 at the end of Python. My version is likely higher than yours, but since you are new to this I would suggest installing Python 3.10 so you do not have to switch between Python versions.

4. Once Python is installed, run the following command to install virtualenv, which is a tool to create isolated Python environments. Virtualenv creates a folder that contains all the necessary executables to use the packages that a Python project would need. You do not have to use this, but you should have it installed so you can play around with it.
    a. brew install virtualenv

```
lex@Alexiss-MBP ~ % brew install virtualenv
==> Downloading https://formulae.brew.sh/api/formula.jws.json

==> Downloading https://formulae.brew.sh/api/cask.jws.json
```

    b. Create a virtualenv with the following command:
    virtualenv csci_1070_test

```
lex@Alexiss-MBP ~ % virtualenv csci_1070_test

created virtual environment CPython3.11.4.final.0-64 in 317ms
  creator CPython3Posix(dest=/Users/lex/csci_1070_test, clear=False, no_vcs_ignore=False, global=False)
  seeder FromAppData(download=False, pip=bundle, setuptools=bundle, wheel=bundle, via=copy, app_data_dir=/Users/lex/Library/Application Support/virtualenv)
    added seed packages: pip==23.2.1, setuptools==68.0.0, wheel==0.41.1
  activators BashActivator,CShellActivator,FishActivator,NushellActivator,PowerShellActivator,PythonActivator
```

    c. Activate your environment with the following command
    source csci_1070_test/bin/activate

```
lex@Alexiss-MBP ~ % source csci_1070_test/bin/activate
(csci_1070_test) lex@Alexiss-MBP ~ %
```

    d. Deactivate your firtual environment by running the following command:
    deactivate

```
(csci_1070_test) lex@Alexiss-MBP ~ % deactivate
lex@Alexiss-MBP ~ %
```

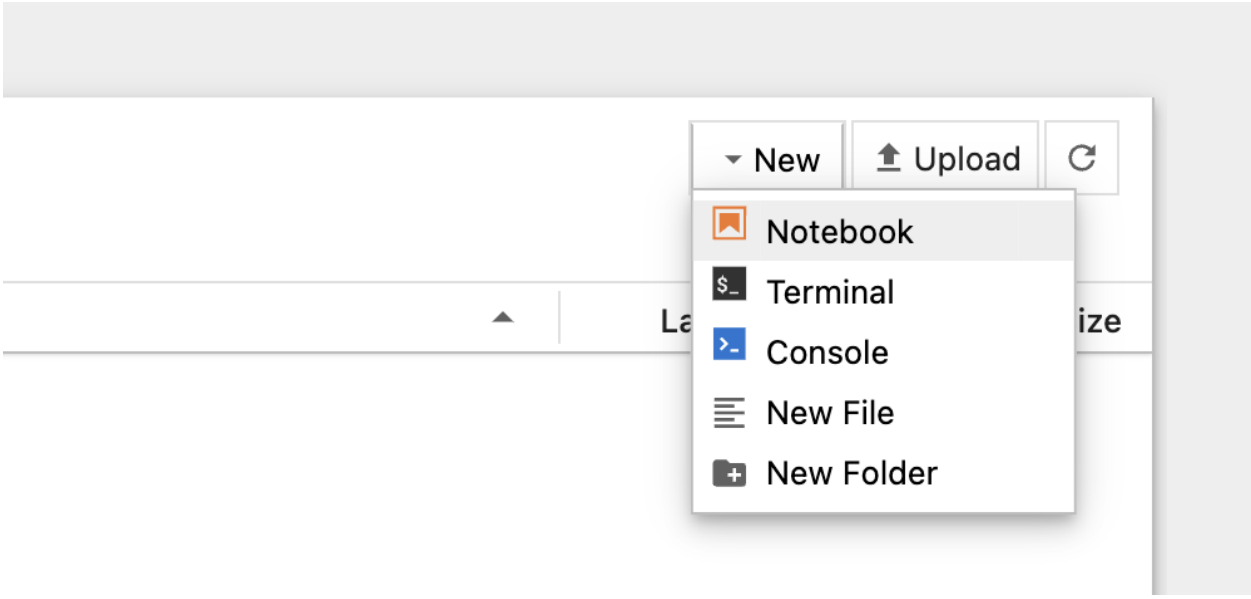
5. Once Python installs correctly, run the following command in terminal:
    brew install jupyter

NOTE: it is possible you will need to brew uninstall jupyter and reinstall it if it gets stuck somewhere or the following command results in 404s or other errors

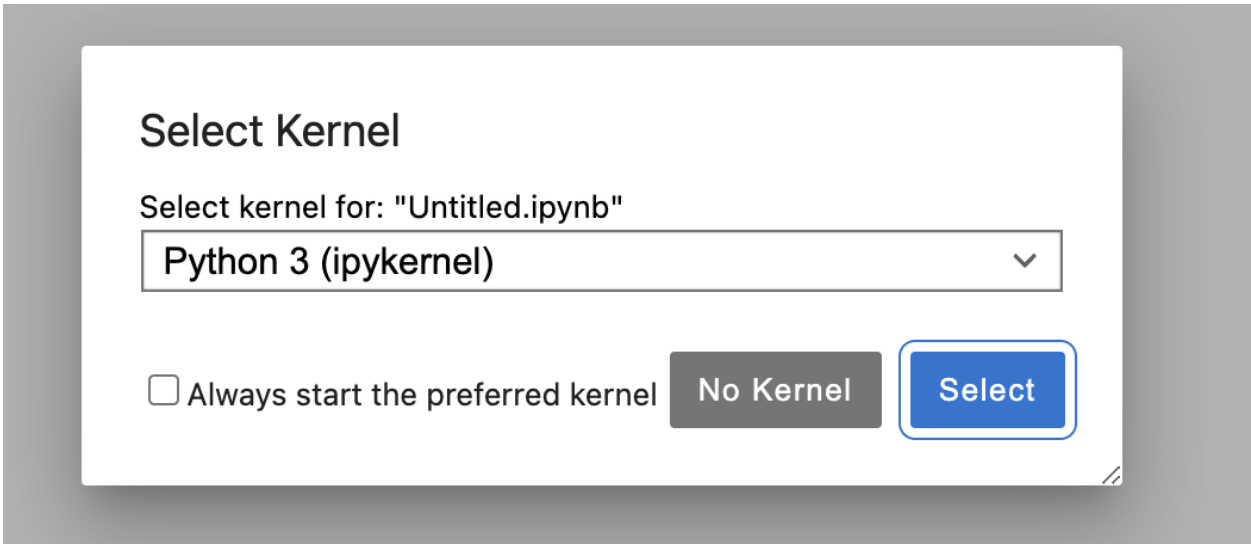
6. Now, to validate that jupyter is successfully installed, run the following command:
    jupyter notebook

a. This should open up a browser tab that looks as follows. You may be inside of the csci_1070 folder depending on how closely you followed these steps.

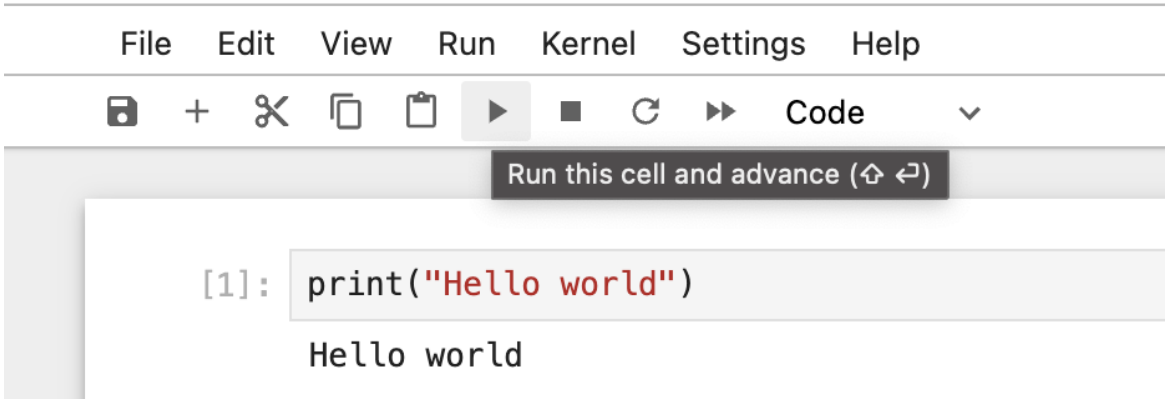
b. On the right-hand side select the “New” dropdown and select “Notebook”



c. Select the Python 3 ipykernel



d. You should now have a notebook that you can write code in! Try the below:



Optional (but helpful) installs:

- VS Code - I use VS code most of the time at work. It may be more difficult to set up jupyter notebooks to work correctly within VS Code in the beginning, but it is commonly what professional engineers/developers use. https://code.visualstudio.com/