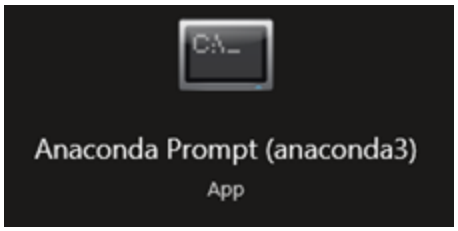
In this guide, we will set up Python 3 along with Jupyter graphical script editing environment on your local computer (assumed to be Windows OS)

Step 1: Install Anaconda with Python 3

- Go to https://www.anaconda.com/ and download the installer for Windows (current version should come with Python 3.9)
- This will set up a **virtual environment** with its own Python so that you won't accidentally change Python that came with the Windows OS or other software

Step 2: Launch Anaconda Prompt on your computer

- Search for Anaconda in your search bar or look in your program list (the bottom left button with Windows logo).



- Once you launched Anaconda Prompt, you should see a command line with **(base)** at the front. This signifies that you are in a new virtual environment.

- To check that you are using Anaconda's Python, and not the OS's, type **where python**. If your computer has multiple Python installed, all will be shown. But the top one should be located in your Anaconda3 folder.

```
(base) C:\Users\Sira>where python
C:\Users\Sira\anaconda3\python.exe
C:\Python38\python.exe
C:\Users\Sira\AppData\Local\Microsoft\WindowsApps\python.exe
C:\Python27\python.exe
```

Step 3: Managing Python library

- To install/uninstall/upgrade Python library, we use the **pip** command.
- **pip list** will show the list of installed libraries

```
(base) C:\Users\Sira>pip list
Package                       Version
----------------------------- -------------------
aiohttp                       3.8.1
aiosignal                     1.2.0
alabaster                     0.7.12
```

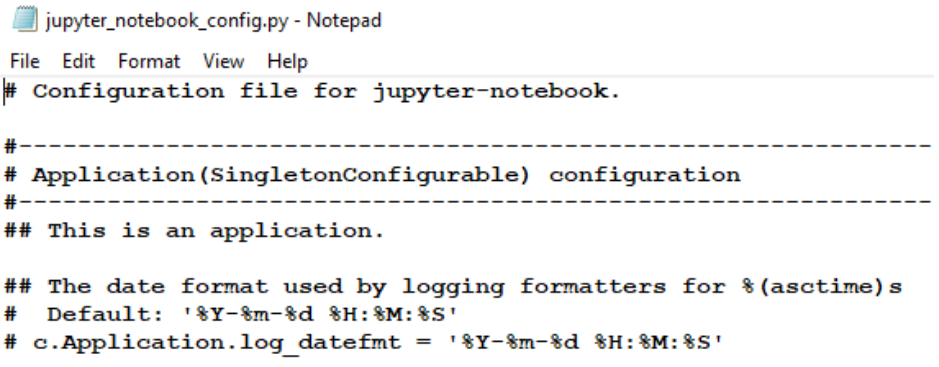
- **pip install** followed by library name will install that library, if it is not already installed
    - **pip install --upgrade** followed by library name will update the library, as well as other dependencies, to the latest version
    - To install the Jupyter library for editing Python code, run **pip install jupyter**
    - Let's pre-install other libraries that we will be using in this course

pip install numpy scipy pandas scikit-learn umap-learn matplotlib seaborn statsmodels

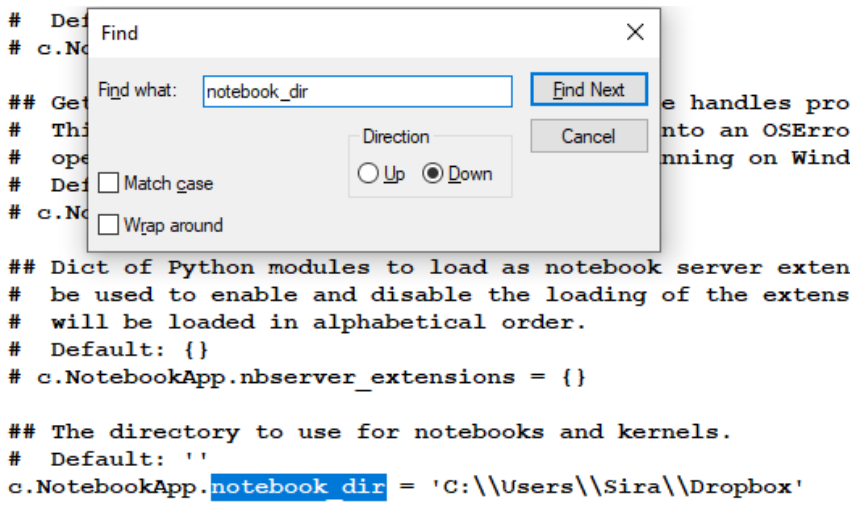
    - Specific library version can be specified with == (if you ran into compatibility issue) as follows: **pip install jupyter==1.0**
- **pip uninstall** followed by library name will uninstall the library

Step 4: Setting up Jupyter environment

- From Anaconda prompt, you can launch Jupyter graphical editor with **jupyter notebook**.
- However, you may want to set up the folder where Jupyter will keep the script files (this process will allow you to set up a remote server with Jupyter in the future).
    - First, run **jupyter notebook generate-config**
    - This will create a file name **jupyter_notebook_config.py** in your user home directory (usually **C:\Users*user name*\.jupyter\jupyter_notebook_config.py**)
    - Open this file in text editor, like Notepad



    - Search for the pattern **notebook_dir**. Edit the path to where you want to keep your Python scripts.



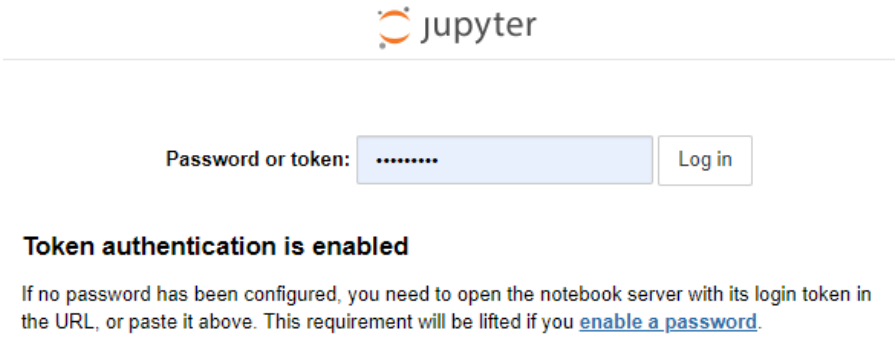
Step 5: Launching your first Python notebook

- Run **jupyter notebook**. You should see something like this on Anaconda Prompt

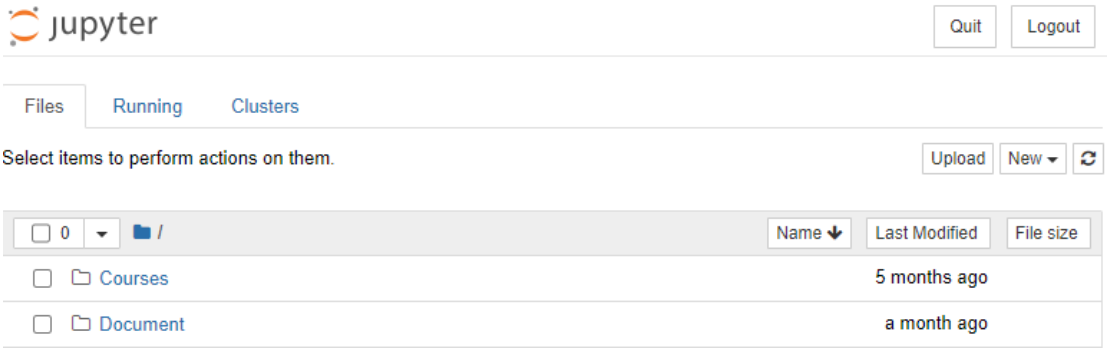
```
[I 10:17:58.828 NotebookApp] Serving notebooks from local directory: C:\Users\Sira\Dropbox
[I 10:17:58.828 NotebookApp] Jupyter Notebook 6.4.8 is running at:
[I 10:17:58.829 NotebookApp] http://localhost:8888/?token=f7716b28a7d0d54d114109a27ccb32f24195eb04cf5949ba
[I 10:17:58.829 NotebookApp]  or http://127.0.0.1:8888/?token=f7716b28a7d0d54d114109a27ccb32f24195eb04cf5949ba
[I 10:17:58.830 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 10:17:58.918 NotebookApp]

    To access the notebook, open this file in a browser:
        file:///C:/Users/Sira/AppData/Roaming/jupyter/runtime/nbserver-7752-open.html
    Or copy and paste one of these URLs:
        http://localhost:8888/?token=f7716b28a7d0d54d114109a27ccb32f24195eb04cf5949ba
     or http://127.0.0.1:8888/?token=f7716b28a7d0d54d114109a27ccb32f24195eb04cf5949ba
```

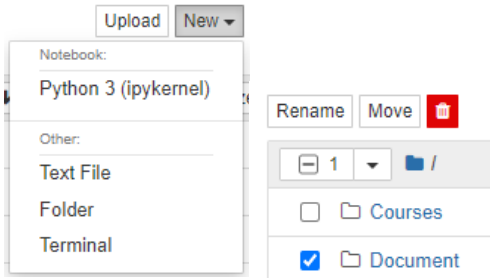
- A web browser should also be open with a page that looks like this



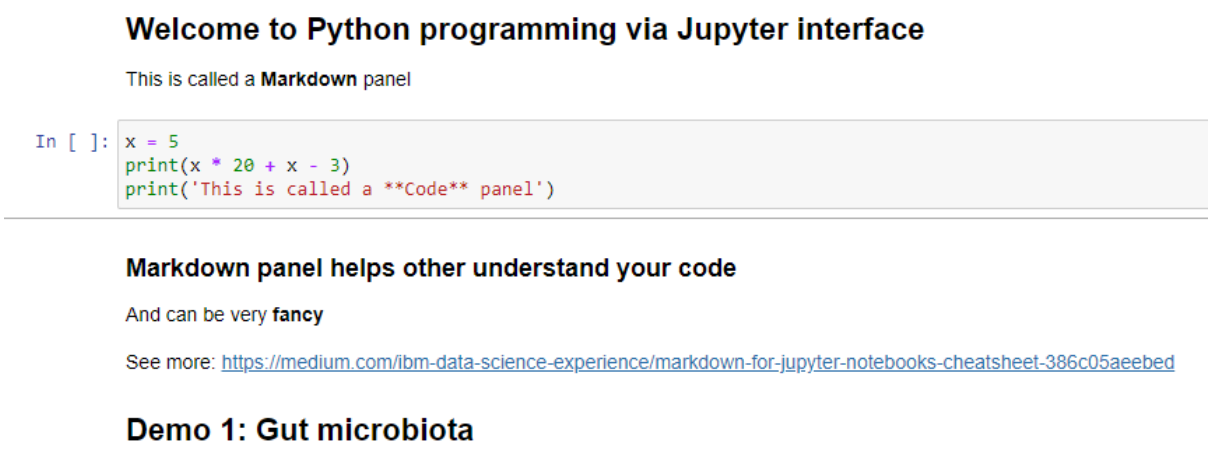
- If you follow the instruction to use token or password to log in correctly, you will be brought to a new page that looks like this. Note that the files and folders that show up will differ depending on the location you set in **notebook_dir**.



- You can use the **New** button to create new folder, text file, or Python notebook. You can rename or delete file and folder by checking the boxes as shown below.



- Copy **3000788_Fall2022_L21_python_102722.ipynb** and **3000788_Fall2022_L21_python-more_102722.ipynb** to the folder you set in **notebook_dir**. Then open them in Jupyter. You should see something like this at the top of the page.



Step 6: Let's learn the language

- Please watch the video in which I explain the codes and follow through!