Getting Started with Python and Jupyter Notebook

(For Windows users)

This document includes how to:

1. Launch Jupyter Notebook
2. Open a Notebook file
3. Start writing a Jupyter Notebook
4. Install other libraries to Anaconda

→ **Plus I list some Python and Jupyter learning resources!**

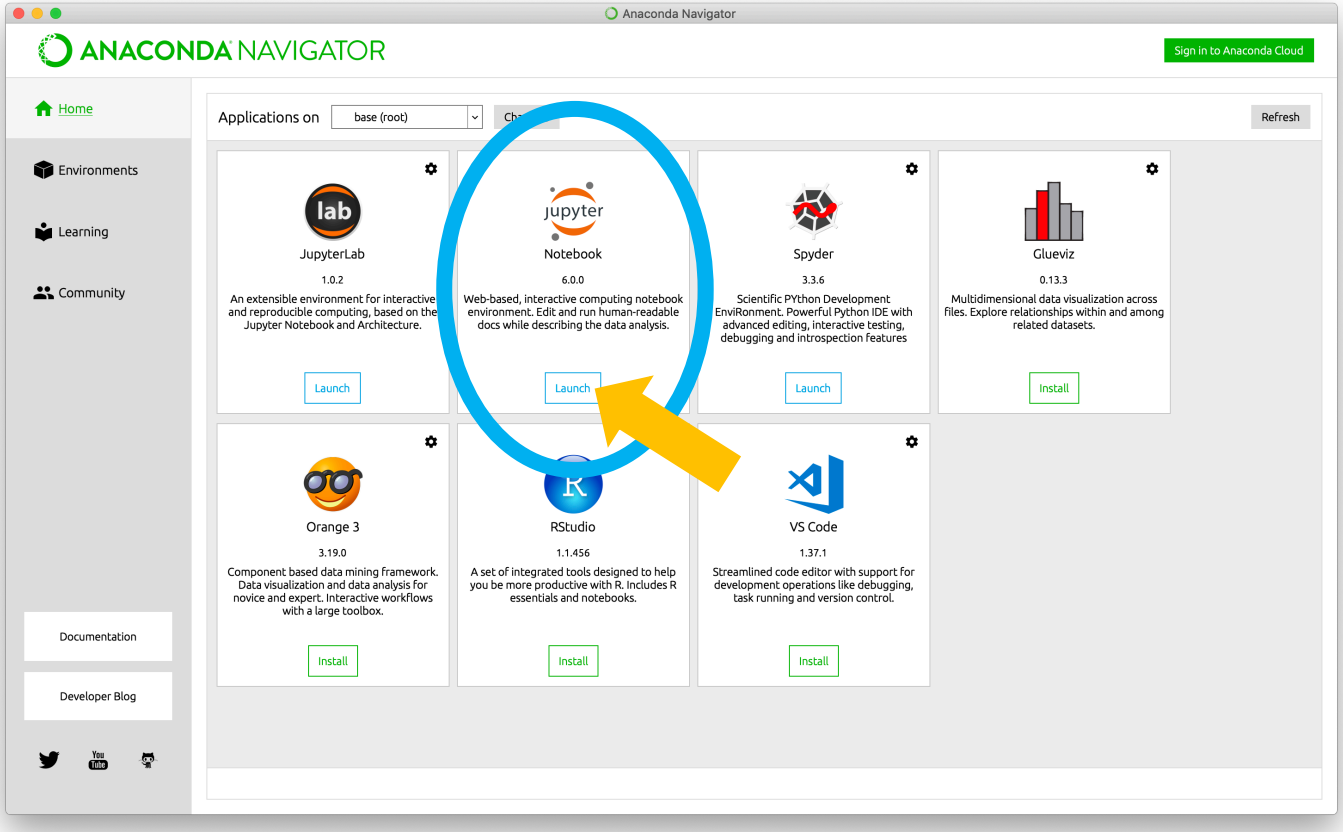
1. How to launch Jupyter Notebook

There are 3 ways to launch Jupyter Notebook:

1) Using Anaconda Navigator

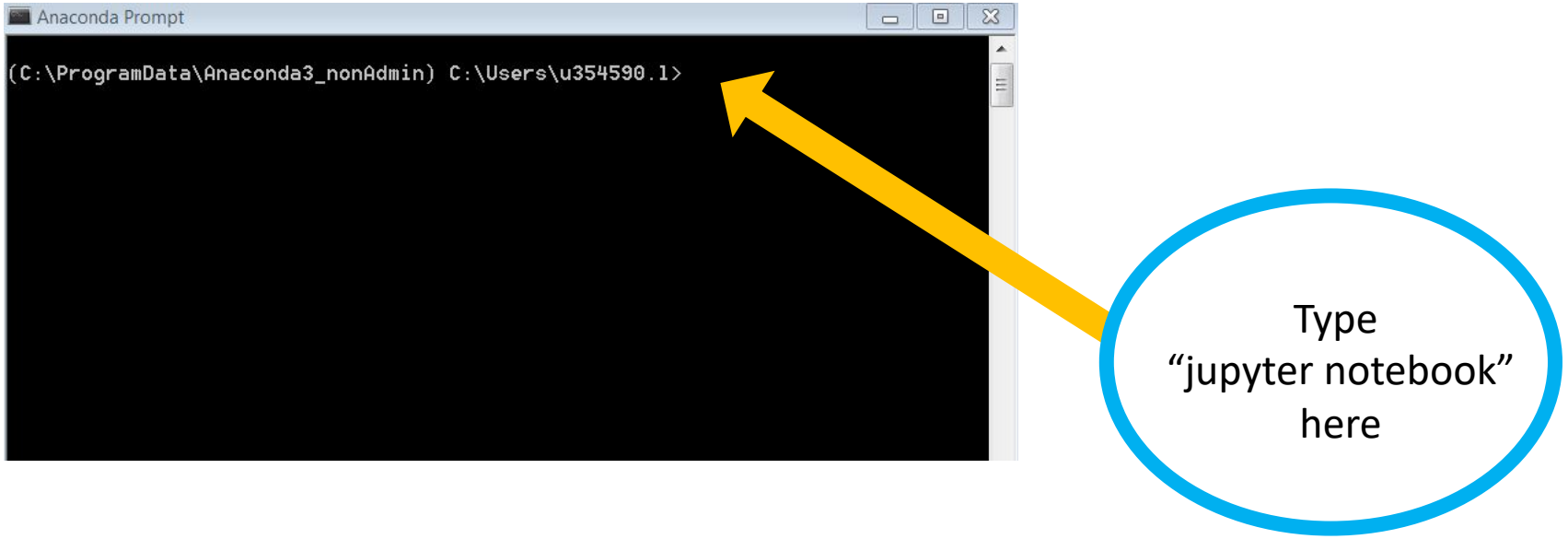
   a) Open the application called Anaconda Navigator (this may take a couple of minutes)

   b) Click on “Launch” in the Jupyter Notebook box



1. How to launch Jupyter Notebook

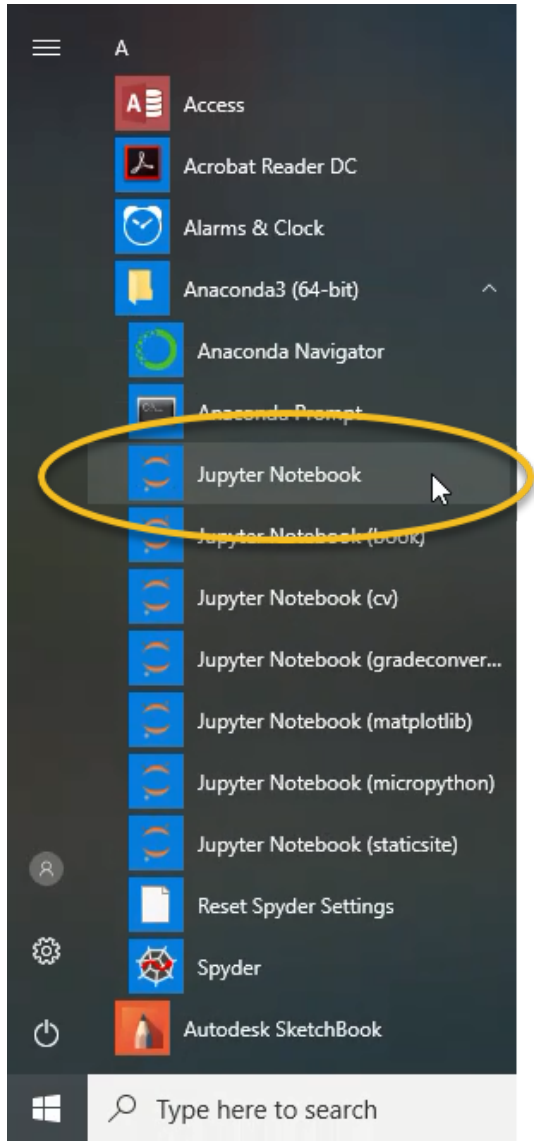
2) Using Anaconda Prompt
   a) Open the application called Anaconda Prompt
   b) Type “jupyter notebook” (without quotes) and hit the return key



Note: your Anaconda Prompt window will show a different pathname than in this image, but it will look similar!

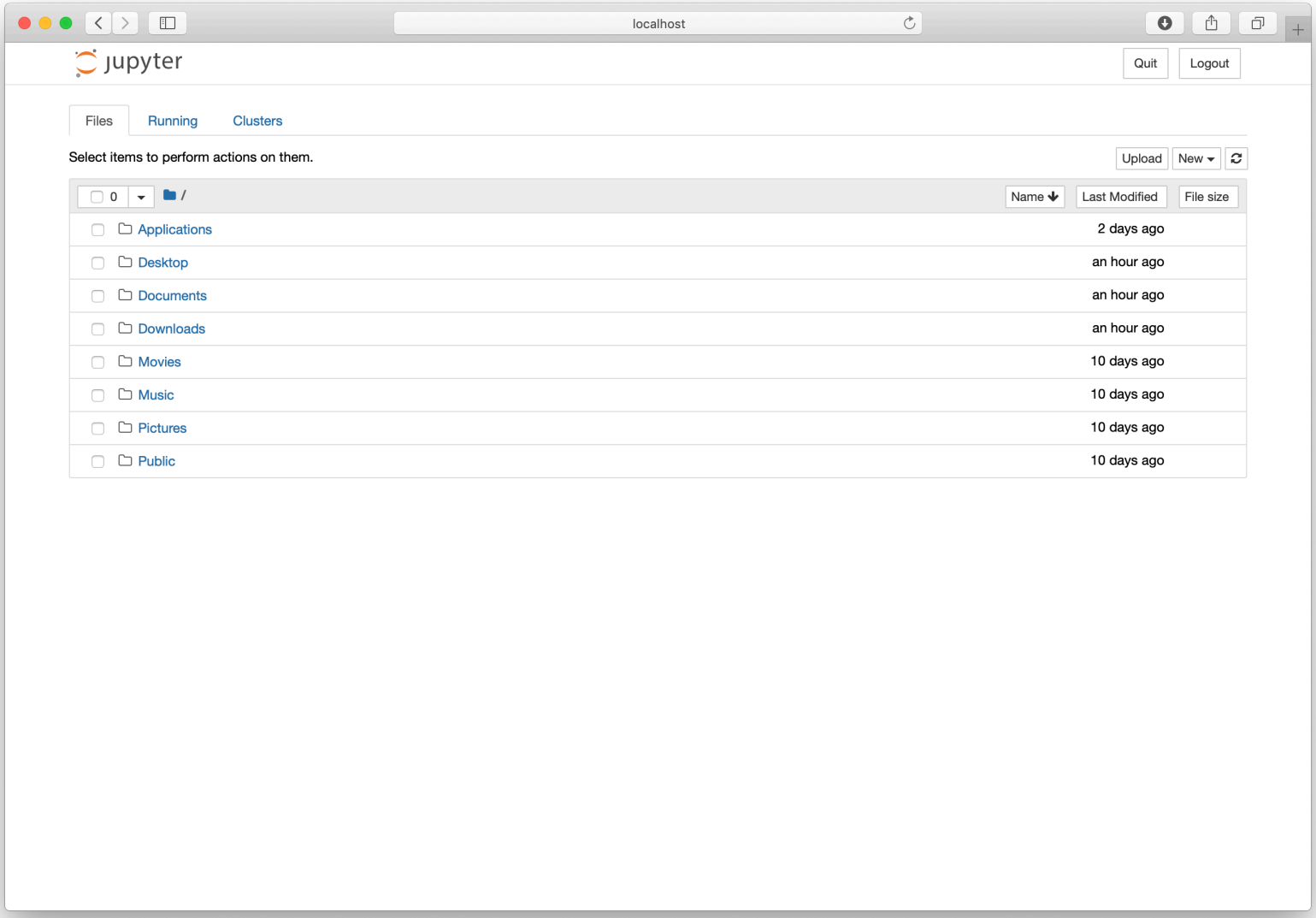
1. How to launch Jupyter Notebook

3) Clicking on the Jupyter Notebook App in the Start Menu (I just learned about this method, and it will probably be the fastest!)

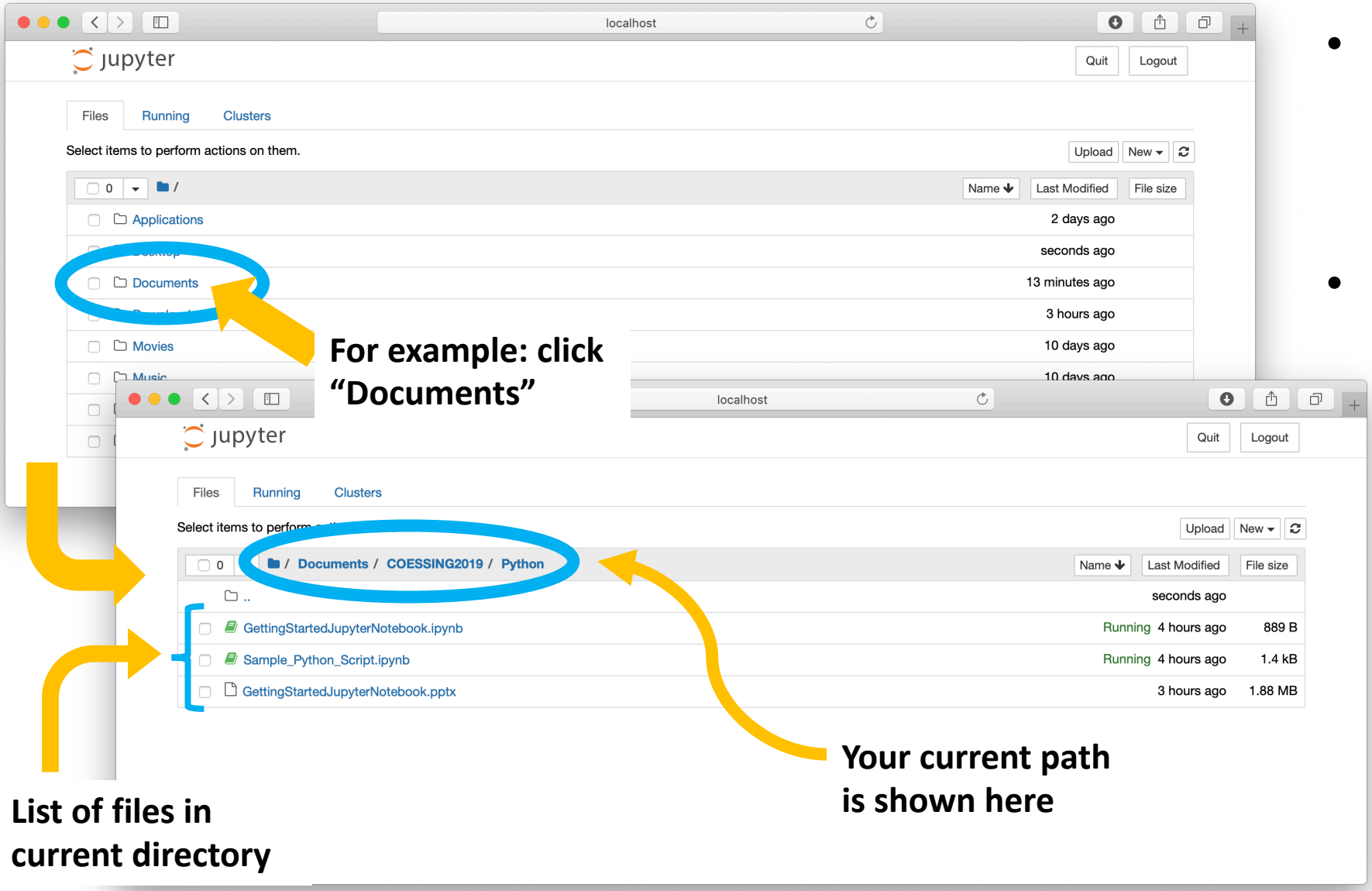


1. How to launch Jupyter Notebook

You will know that Jupyter Notebook opened correctly if you see a page similar to this one open in your browser!



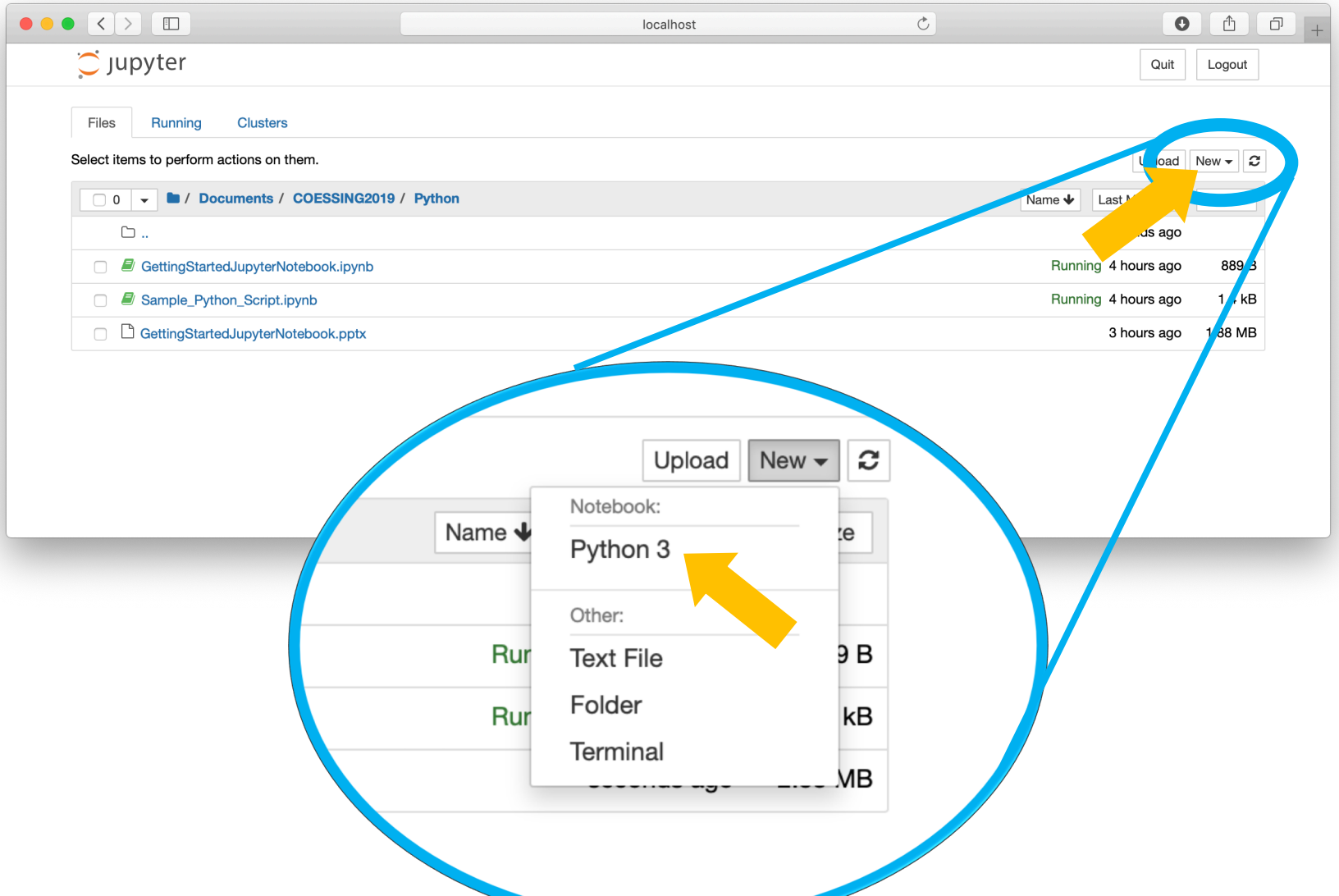
2. How to open a Notebook file



- Navigate through your folders until you get to the directory you want to save your scripts in.
- You can navigate through by clicking on the name of the Folder.

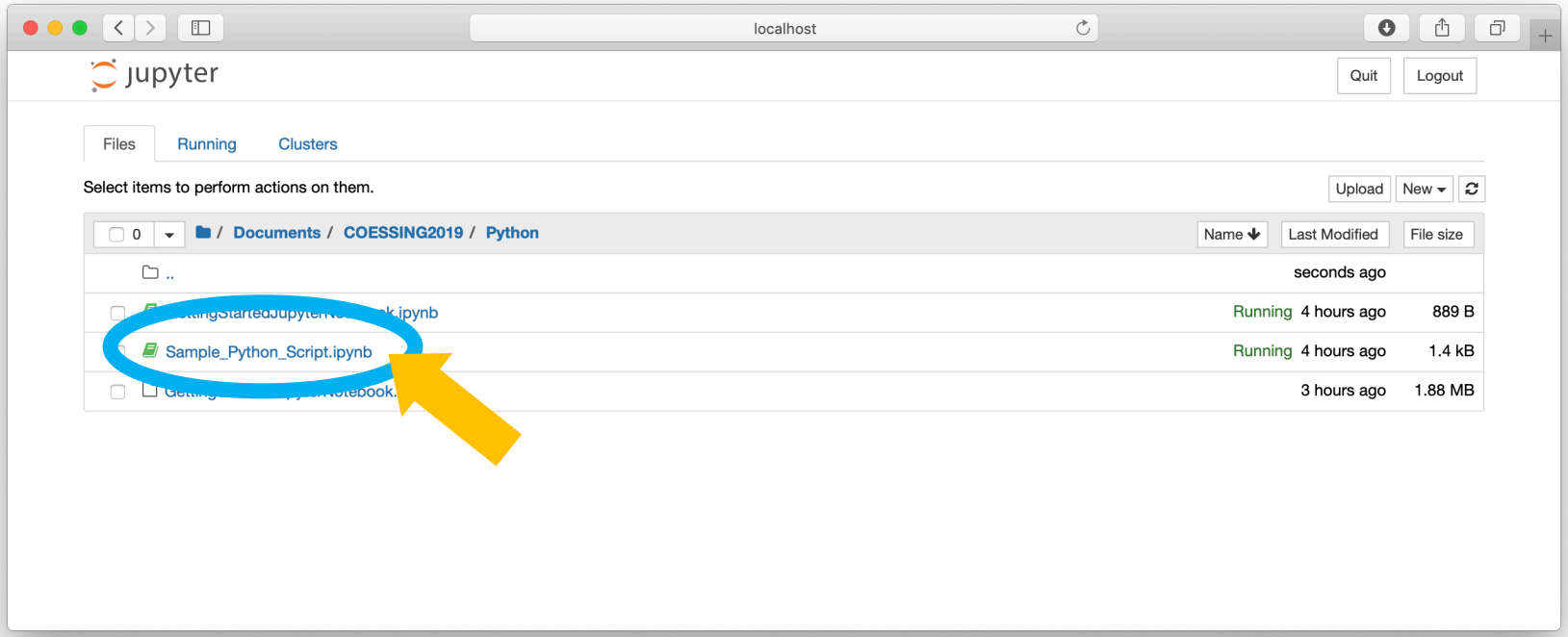
2. How to open a Notebook file

- **Open a new Notebook file** by clicking on the “New” menu on the upper right



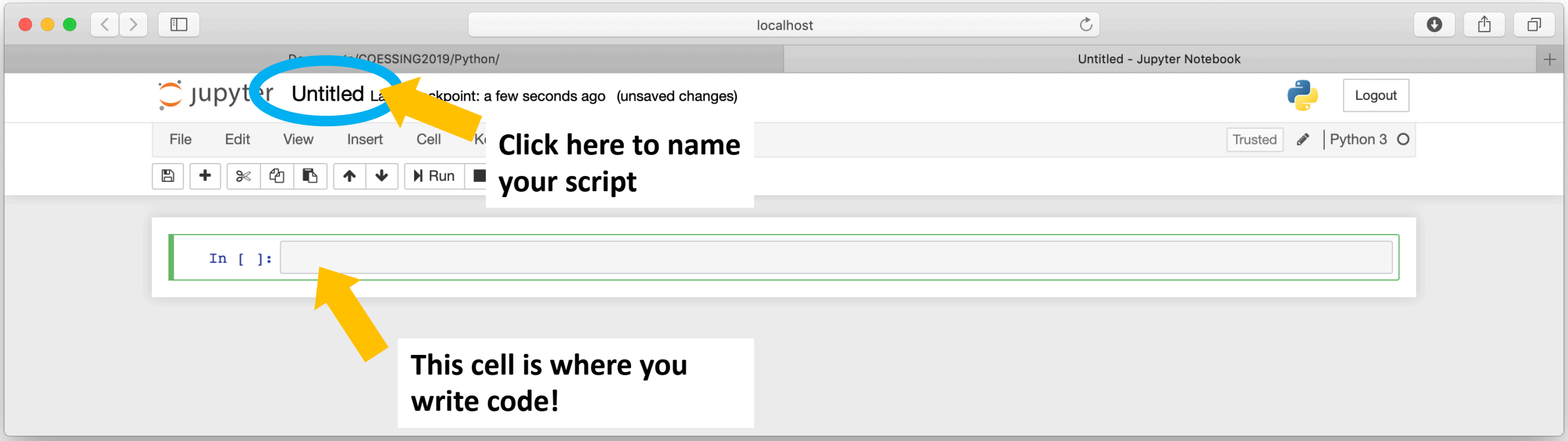
2. How to open a Notebook file

- **Open a previously saved Notebook file** by clicking on the name of the file
- The extension for a Jupyter Notebook file is ".ipynb", which is short for "interactive python notebook"



3. How to start writing a Jupyter Notebook

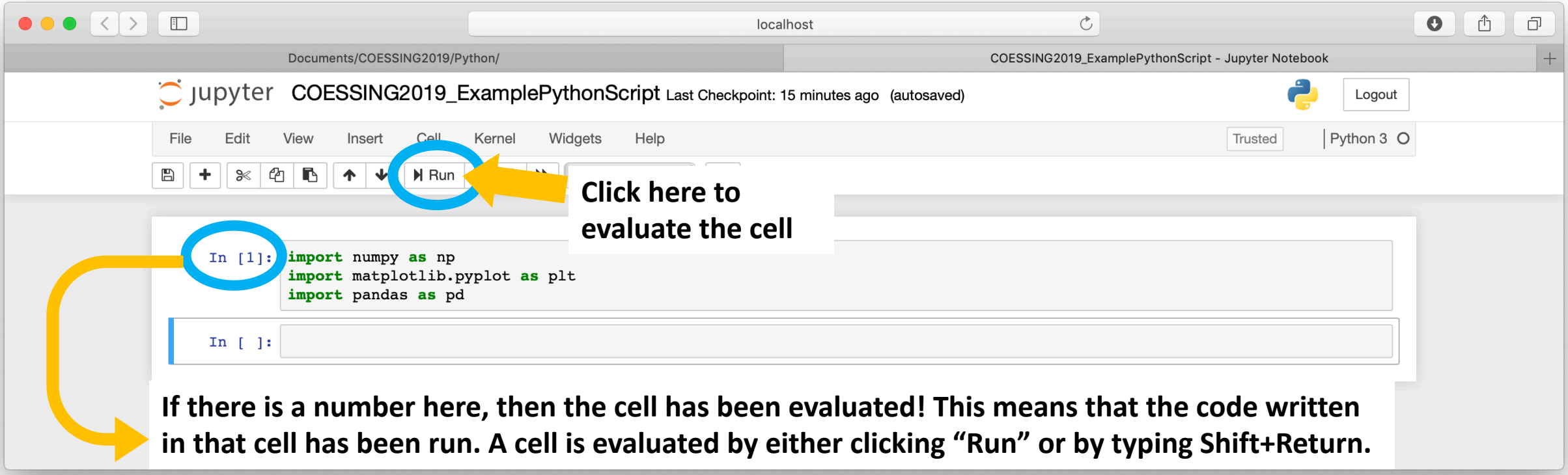
A new Notebook looks like this:



First, click on “Untitled” to name your script.

3. How to start writing a Jupyter Notebook

- It's good practice to start your script by importing libraries you will need.
- Below are three libraries I often use, but you may need different ones.
- For a brief description of these libraries, take a look at the lecture slides from Dr. Paige's Python lecture at the 2019 COESSING school (either under the Resources tab or the Monday section of the 2019 page on the website)

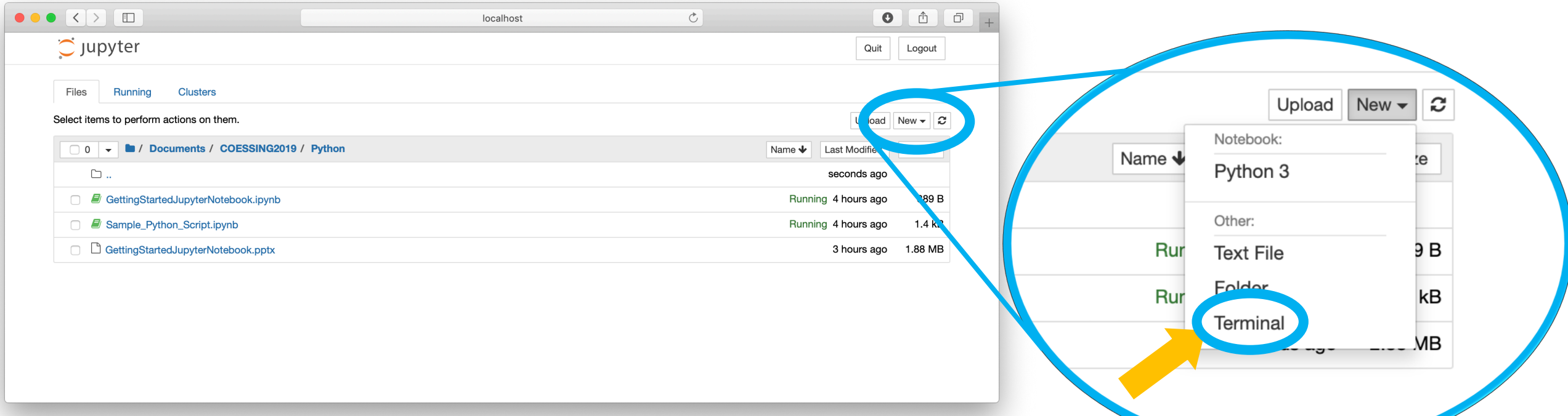


4. How to install other libraries to Anaconda

There are some libraries that my be useful (and some we used in the COESSING labs!) that do not come with Anaconda. But, we can install them directly to our conda library!

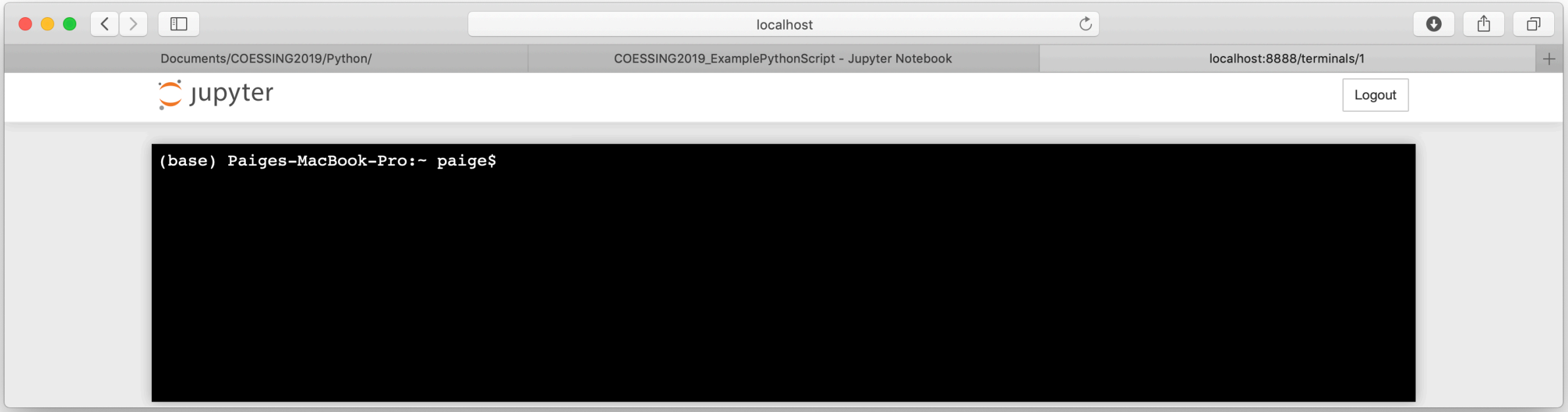
There are two methods to install these libraries:

1. Open Anaconda Prompt
2. Open a “Terminal” instance from Jupyter Notebook (see below image for instructions!)



4. How to install other libraries to Anaconda

With either method, you will see something like this:



To download the packages we used in the COESSING 2019 courses, type the following into your terminal or Anaconda Prompt window and hit Return (type 'y' when prompted):

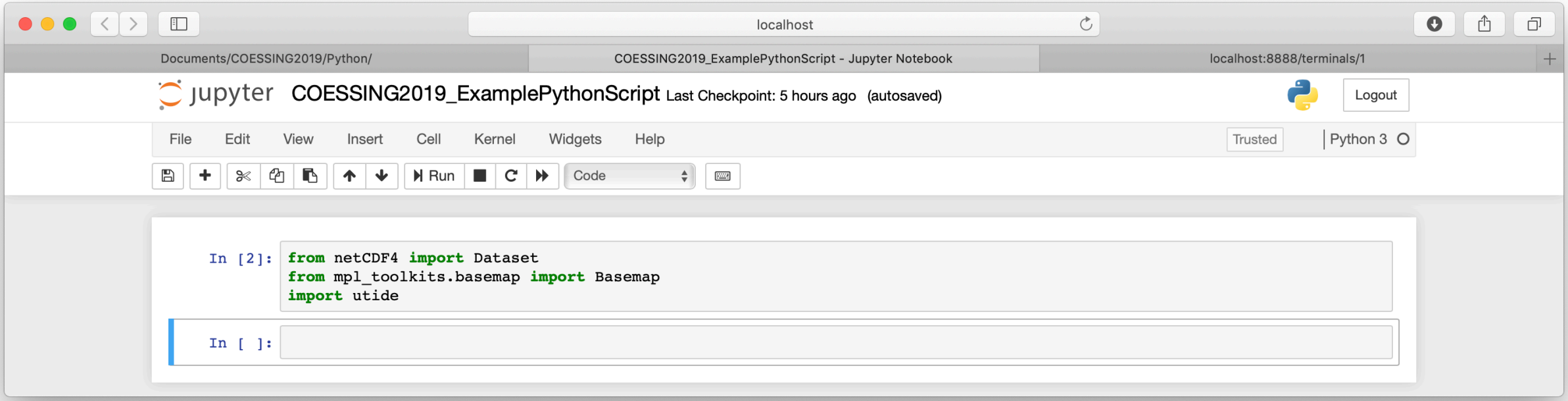
```
conda install netcdf4
```
→ This is to load netcdf data

```
conda install -c conda-forge basemap
```
→ This is to make pretty maps

```
conda install -c conda-forge utide
```
→ This is to do tidal analysis

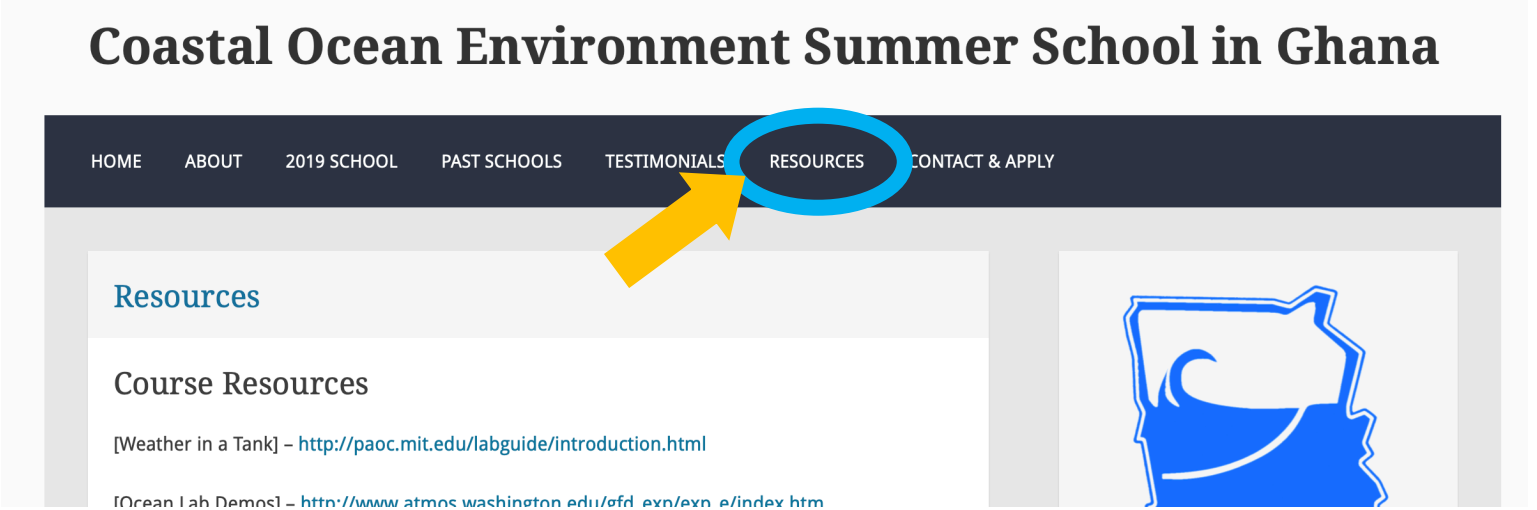
4. How to install other libraries to Anaconda

Once the libraries are installed once, you never have to install again and you can just import them at the top of your script!



Hopefully this gives you a good start to Python coding in Jupyter Notebook!

There a LOTS of good Python and/or Jupyter resources online. On the next slide I list a few resources that I really like, but you can also search for yourself! Especially if you are using a specific library, you can Google search for that specifically! (For example, if you want to use Basemap, search for "Basemap tutorial".) **These are also listed on the Resources tab of the coessing.org website.** These are all free resources except where stated.



Python and Jupyter Resources!!

Good websites with a lot of resources!

GREAT Python learning resource - https://realpython.com/start-here/

- You can read tutorials, watch instructional videos, and take quizzes to assess your knowledge.

Another good resource – you can do first chapter of all courses free. Has really nice cheatsheets! - https://www.datacamp.com

- I've included some of the cheat sheets that I think will be most useful on the website!

Nice interactive introduction to python – you can run short python scripts in your browser as you go through the lesson! – https://www.learnpython.org/en/Welcome

Text tutorials: Intro to Jupyter Notebook and Python

Jupyter Notebook for Beginners: A Tutorial - https://www.dataquest.io/blog/jupyter-notebook-tutorial/

Jupyter Notebook: An Introduction - https://realpython.com/jupyter-notebook-introduction/

First Steps With Python - https://realpython.com/python-first-steps/

Videos: How to open/use Jupyter Notebook (and Python)

Jupyter Notebook Tutorial: Introduction, Setup, and Walkthrough - https://www.youtube.com/watch?v=HW29067qVWk

Python Jupyter Notebook | Simplilearn - https://www.youtube.com/watch?v=3C9E2yPBw7s

Getting Started With Jupyter Notebook for Python - https://www.youtube.com/watch?v=CwFq3YDU6_Y

Video: Python plotting in Jupyter Notebook – https://www.youtube.com/watch?v=Hr4yh1_4GlQ

Online courses: you can take Python courses (or any other course they offer!) for free, but you must pay to get a verified certificate and to have your exercises graded

Coursera - https://www.coursera.org

EdX - https://www.edx.org