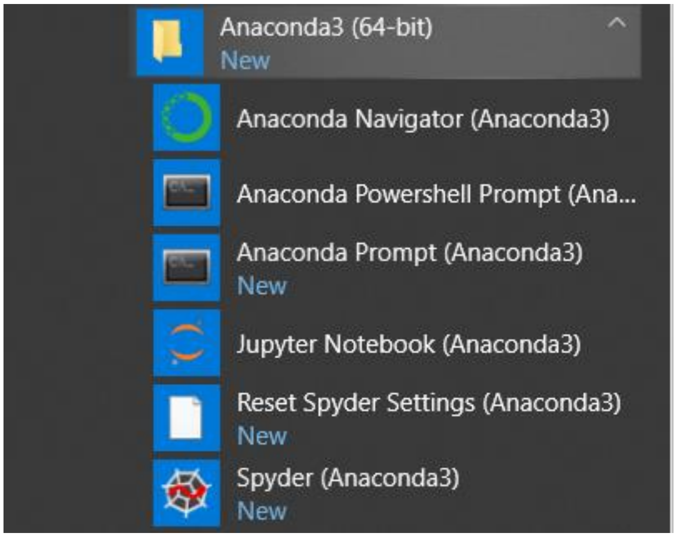
1. How to install the development environment?

Install Anaconda:

Begin by visiting https://www.anaconda.com/products/individual and downloading the 64-bit or 32-bit Python3-based version of Anaconda specific to your platform (Windows, Mac OS, Linux). In most cases, this software is provided in a standard installer executable for your platform. If given the option to install for all users or a single user, most people will select single user.

NOTE: if you use Windows, it may ask you to choose whether to add Anaconda to your PATH environment variable during the installation. Please choose to add (check the box).

After installing Anaconda, you should have Anaconda Navigator, Jupyter Notebook, and Spyder applications in the folder of Anaconda3 in the start menu (Windows). For example:


Anaconda3 (64-bit)
New
Anaconda Navigator (Anaconda3)
Anaconda Powershell Prompt (Ana...
Anaconda Prompt (Anaconda3)
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Jupyter Notebook (Anaconda3)
Reset Spyder Settings (Anaconda3)
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Spyder (Anaconda3)
New

- Python package is automatically installed. It is for Python code compiling and running;
- Anaconda Navigator is a GUI that allows you to launch applications and easily manage Python packages and environments;
- Jupyter Notebook is an open-source web application that allows you write and test (pieces of) Python code in a web browser (e.g. Chrome);
- Spyder is an editor, where you may write code and save source code as a file (with ".py" as file extension name);

2. How to write and run Python code?

Method 1: write and run pieces of code in Jupyter Notebook

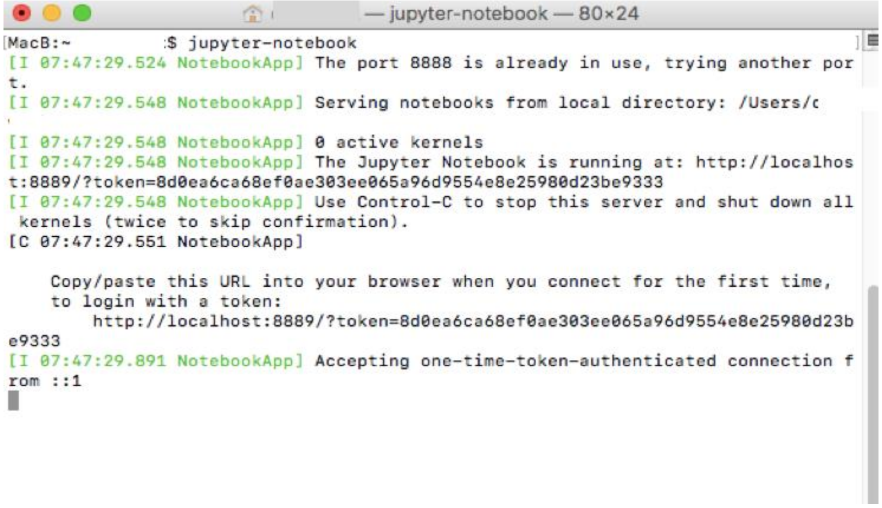
- Start Jupyter notebook server (see 2.A below)
- You may open an existing notebook file (e.g. the “hello_world.ipynb” file)
- or you may create a new notebook file (new --> notebook: Python 3). Then you can write Python code in the cells and run it (click run or use “shift+enter”)

Method 2: run python program in command line

- Write a program in an editor (Spyder, or any other), save as a .py file (e.g. the “HelloWorld.py” file)
- Open a terminal – on a Mac, this is the Terminal application, if you are using Windows, this is Powershell, and on Linux, you can use any console application
- Go to the folder where you save the .py file
- In command line, input “python filename.py” to compile and run the code

2.A How to start Jupyter notebook server?

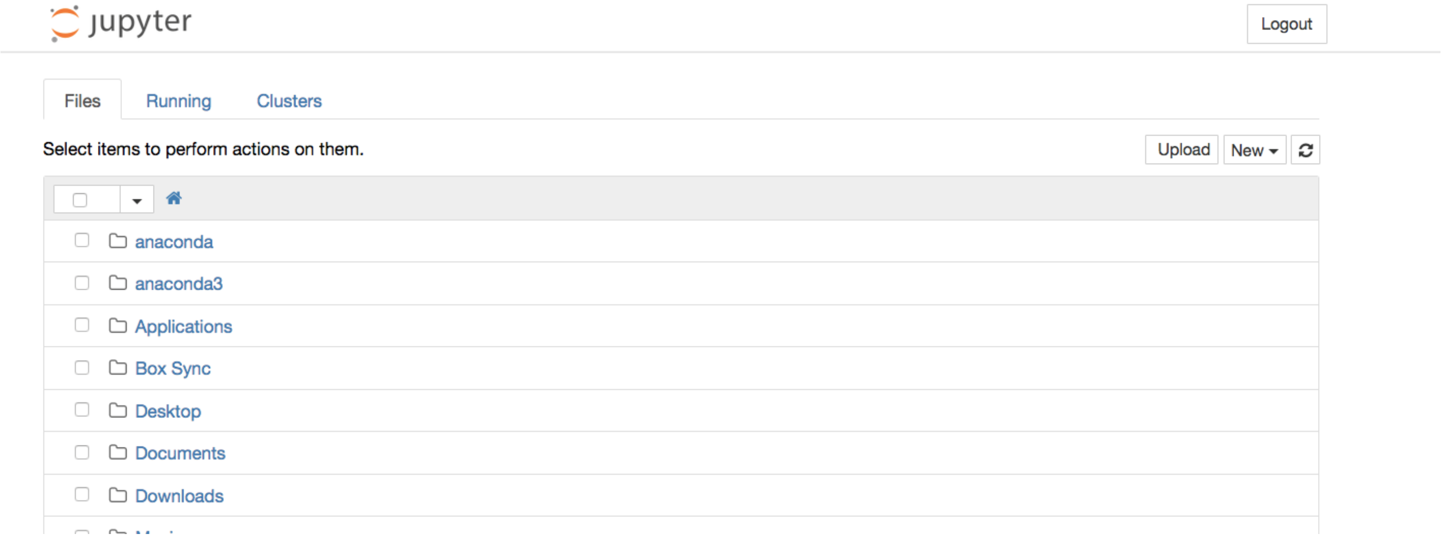
Launch the Jupyter notebook on your computer. As the server starts, status information will appear in the console (this screenshot is from a Mac):



```
MacB:~          :$ jupyter-notebook
[I 07:47:29.524 NotebookApp] The port 8888 is already in use, trying another por
t.
[I 07:47:29.548 NotebookApp] Serving notebooks from local directory: /Users/c
'
[I 07:47:29.548 NotebookApp] 0 active kernels
[I 07:47:29.548 NotebookApp] The Jupyter Notebook is running at: http://localhos
t:8889/?token=8d0ea6ca68ef0ae303ee065a96d9554e8e25980d23be9333
[I 07:47:29.548 NotebookApp] Use Control-C to stop this server and shut down all
 kernels (twice to skip confirmation).
[C 07:47:29.551 NotebookApp]

    Copy/paste this URL into your browser when you connect for the first time,
    to login with a token:
        http://localhost:8889/?token=8d0ea6ca68ef0ae303ee065a96d9554e8e25980d23b
e9333
[I 07:47:29.891 NotebookApp] Accepting one-time-token-authenticated connection f
rom ::1
```

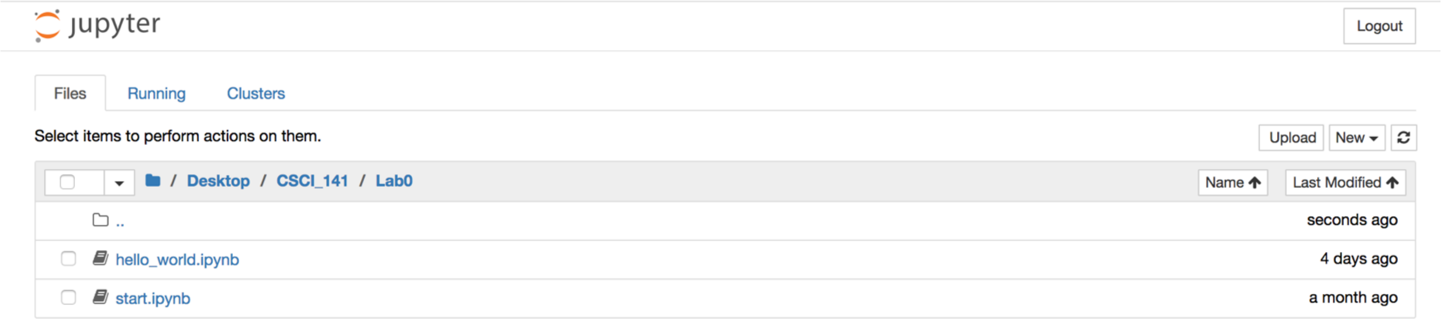
You MUST leave this terminal window open the entire time you are using a notebook. Soon, a new tab will pop up in your web browser that shows all of the files and folders on your computer:



Select items to perform actions on them.

- anaconda
- anaconda3
- Applications
- Box Sync
- Desktop
- Documents
- Downloads

Once the window displaying your file system is up in the browser, you will need to navigate to where you saved the notebook file. Then, click on the name of the notebook file to launch it, for example:

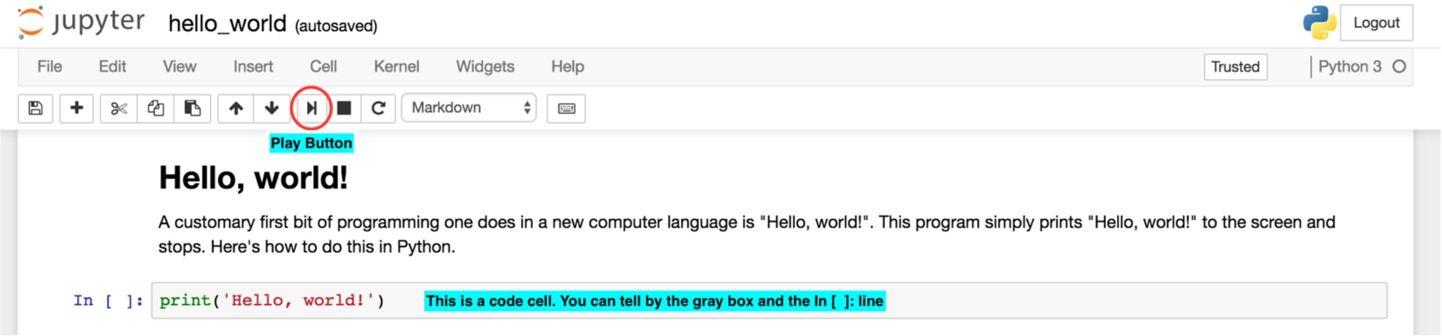


Select items to perform actions on them.

/ Desktop / CSCI_141 / Lab0

..	seconds ago
hello_world.ipynb	4 days ago
start.ipynb	a month ago

To execute a cell with code in it, click inside the cell, and then press Shift-Enter or the play button



Play Button

Hello, world!

A customary first bit of programming one does in a new computer language is "Hello, world!". This program simply prints "Hello, world!" to the screen and stops. Here's how to do this in Python.

```
In [ ]: print('Hello, world!')
```

This is a code cell. You can tell by the gray box and the In [ ]: line