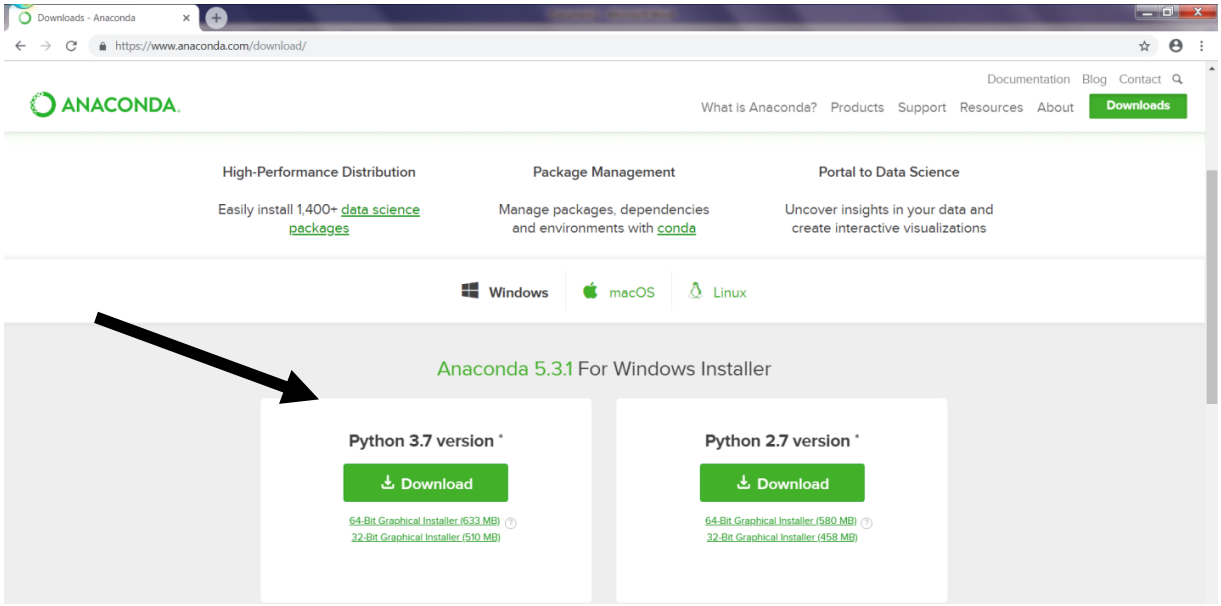
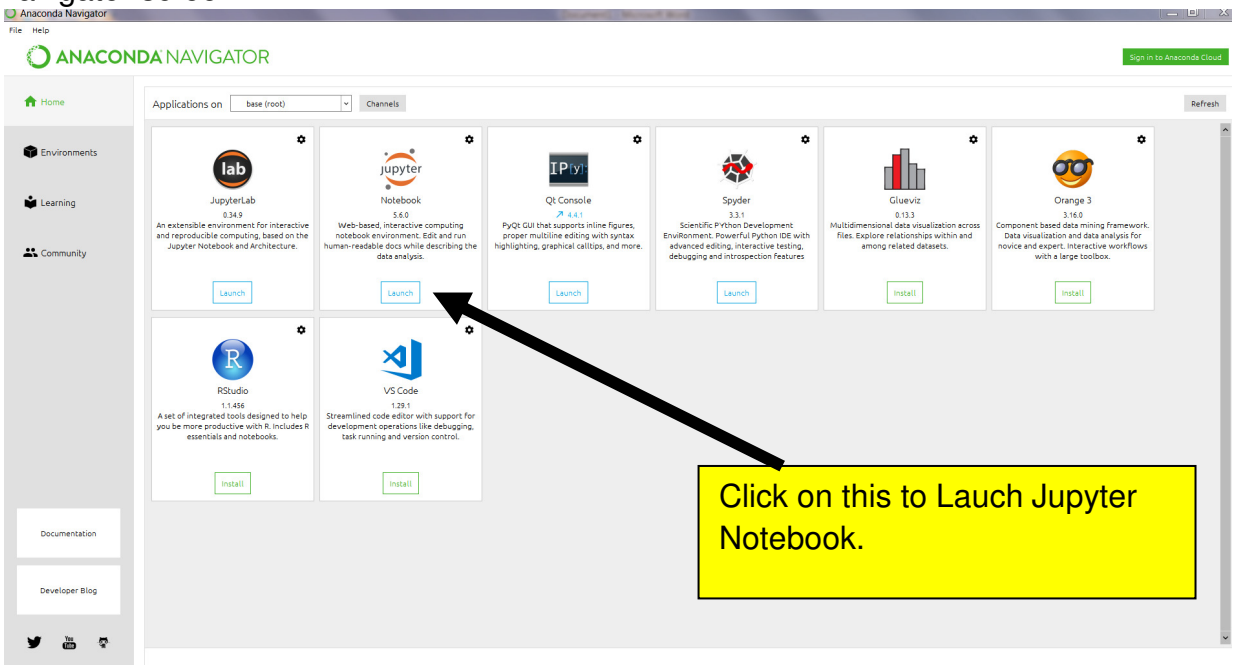
Math 195 Python Project – Some Useful Tips for Jupyter Notebooks

For this project, we will be using Anaconda **as our Python program editor**. Click on the link https://www.anaconda.com/download/ and choose Python 3.7 version to download. (If you are not using Windows, click on the links given and download the version for the operating system that you are using.) Instructions that I give in this document are in Windows environment. If you are using Mac or Linux, you may need to modify these. In addition, these instructions are prepared assuming that you have no coding experience. So, if you already know it, you may skip the parts that you know.

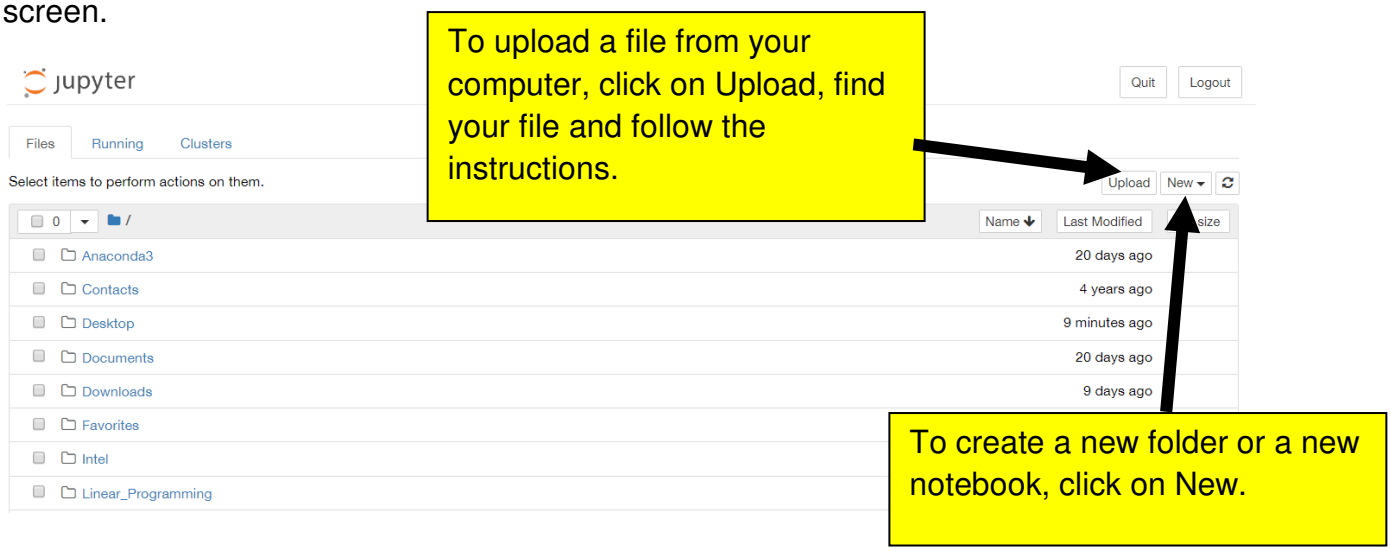


1. After you download Anaconda, click on it and follow the instructions for the installation.

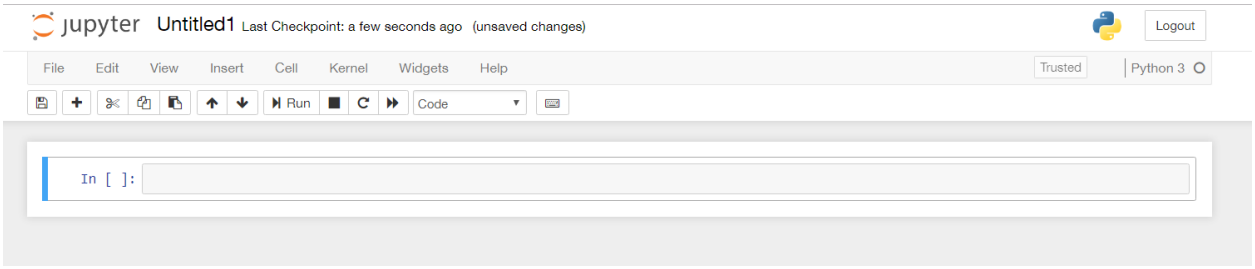
2. Once you installed Anaconda, open the program and you should see Anaconda navigator screen:



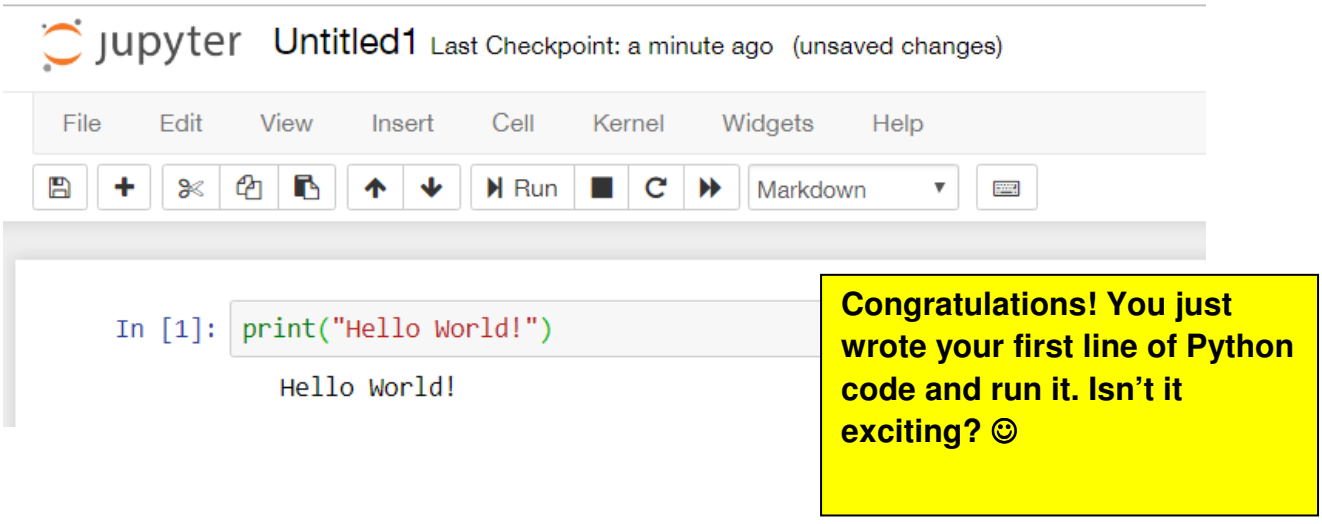
3. You should see the home screen for the Jupyter Notebook: Get familiar with this screen.



4. If you want to create a new file, click on New and choose Python 3 from the drop down menu. A new notebook should pop-up as a new tab and you should see something like this.

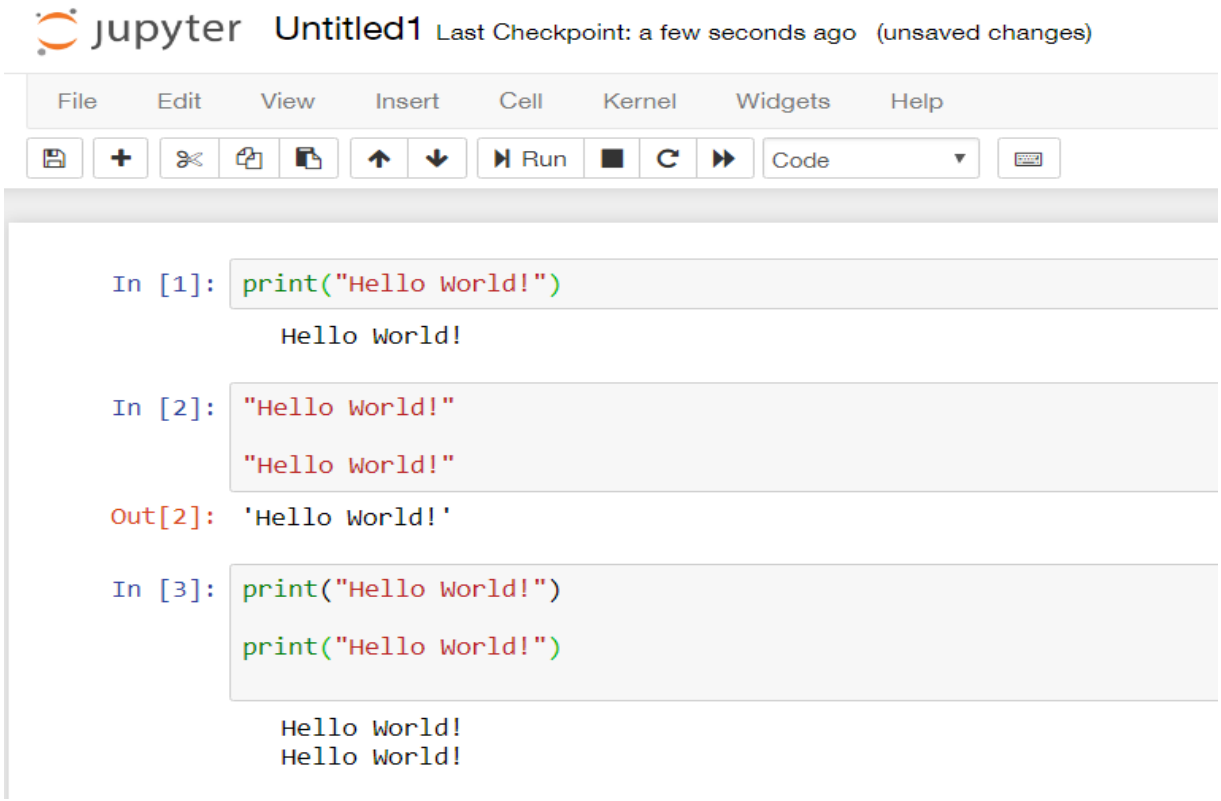


5. Each cell is a code block. Once you write your code, press Shift+Enter and it will run. For example, Write print(“Hello World!”) into the first code cell. To write string like this, it is important to use quotation marks “ ”, we will see more of that in detail later.

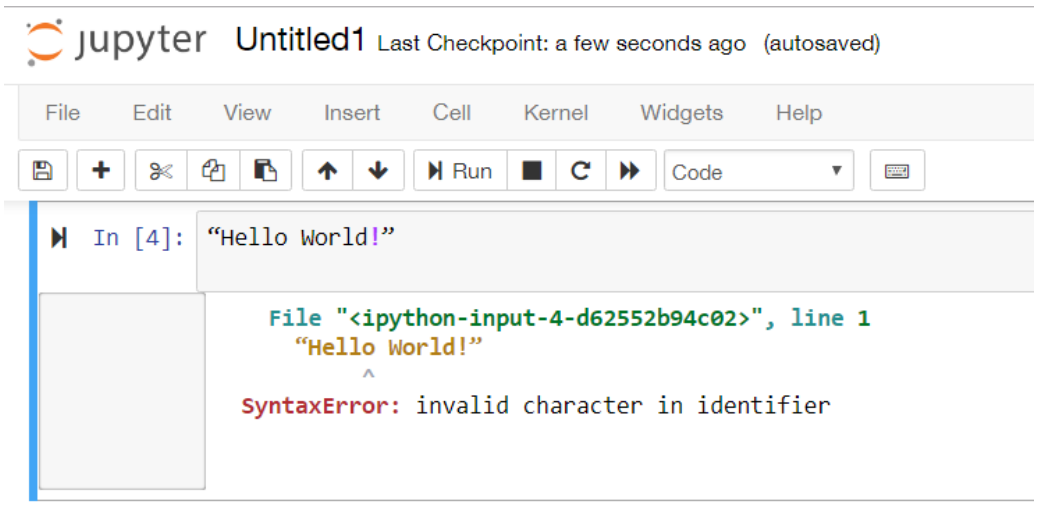


Remarks:

1. Unlike other editors, in Jupyter notebooks, you don't have to write print() to see the output. That is, if you write "Hello World" and run the cell, you will still see the output. But it will be the last one that the computer runs. If you want to see more than one output, you could use multiple print statements. An example is given below.

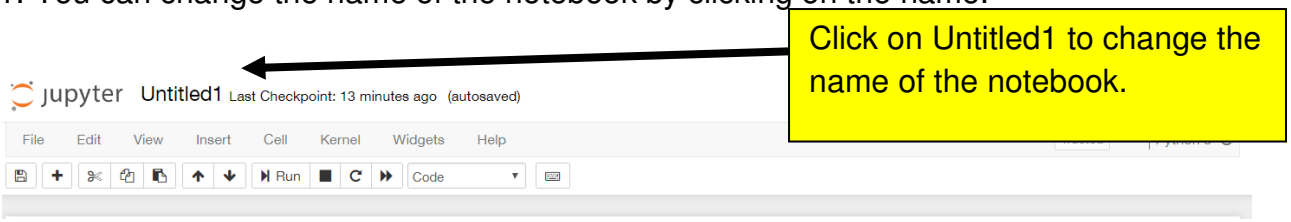


2. Please don't copy and paste "Hello World!" from this document. Write it from scratch. Otherwise, it will give you a SyntaxError as given on the right.

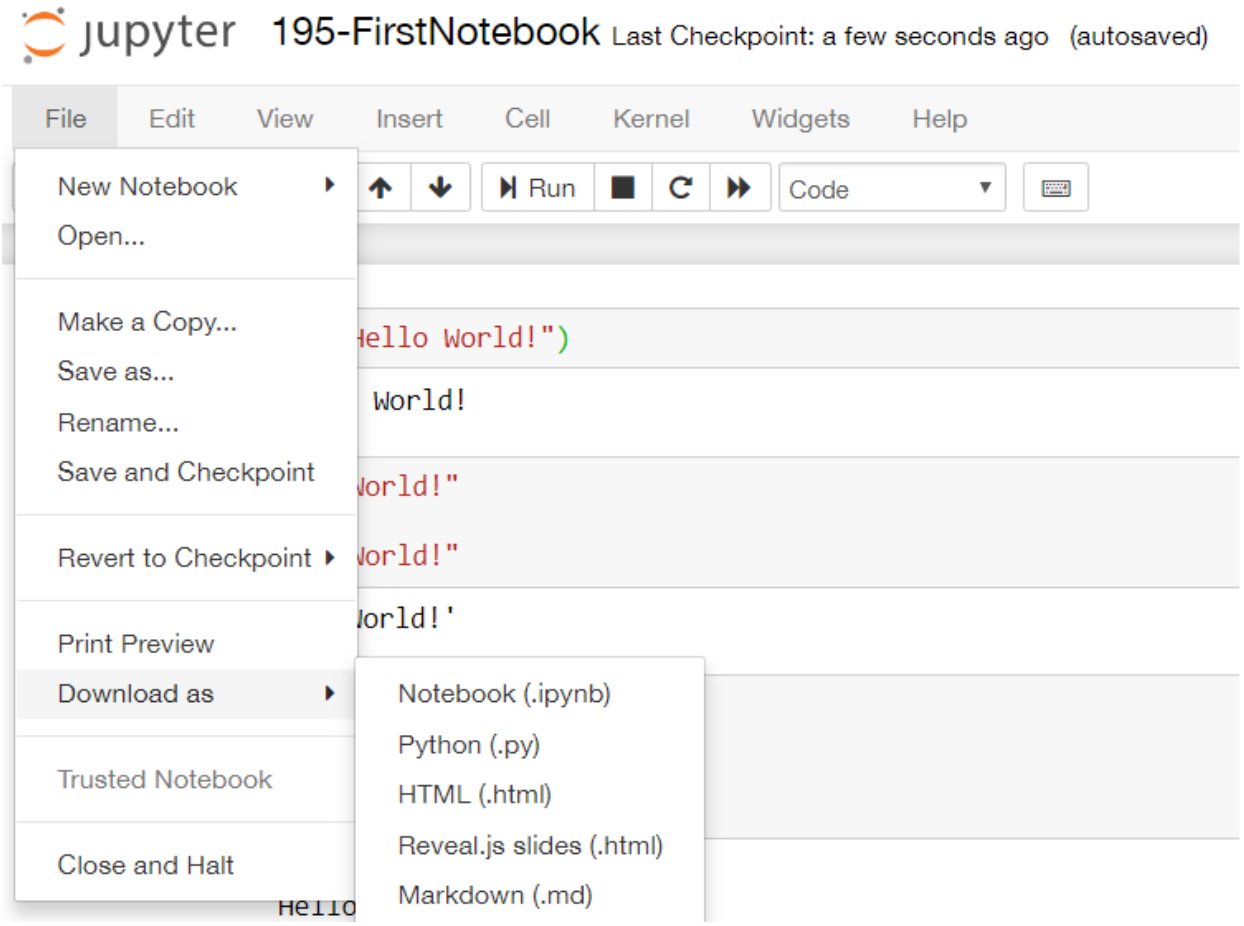


Some Useful Notebook Features

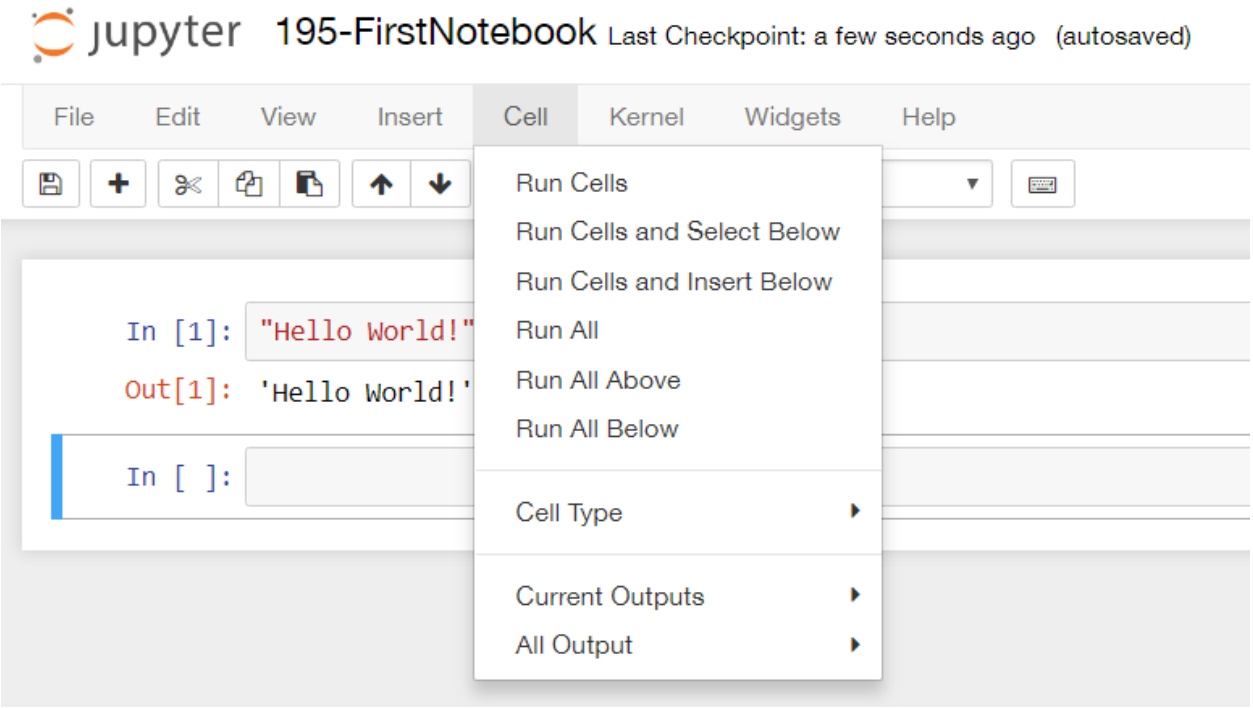
1. You can change the name of the notebook by clicking on the name.



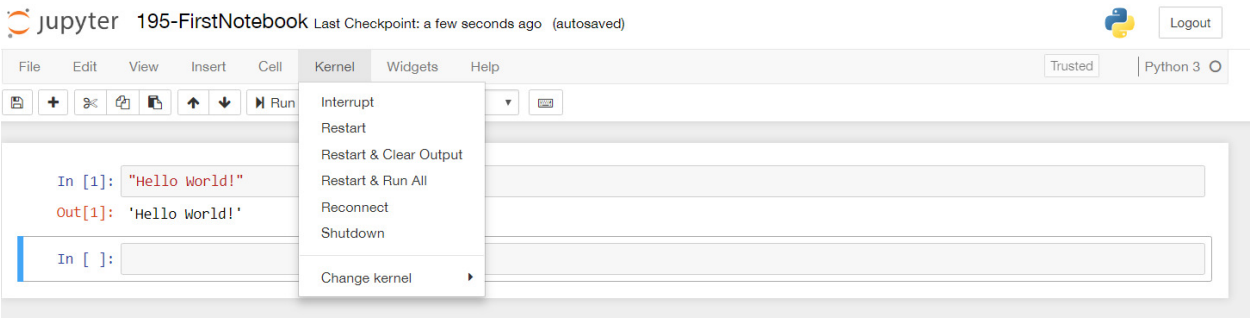
2. If you want to download your notebook on your computer, click on File, then choose the version you want from the Download As menu. Notebook(.ipynb) works with Jupyter notebook. If you want to work on your code by using other editors (e.g., atom.io etc.), please download it as Python (.py) file.



3. Sometimes, you may want to save your Jupyter notebook and continue working on it at a later time. Let's say you have already written code on 10 cell blocks and you will continue working on the 11th cell block. Let's say the code that you will be writing uses a code that you have written earlier. So, you have to run all cells so that the computer will know what you will be referring to in the 11th code block. To run all cells, go to Cell menu and click on Run All. Otherwise, you will receive a NameError saying that what you are using is not defined.



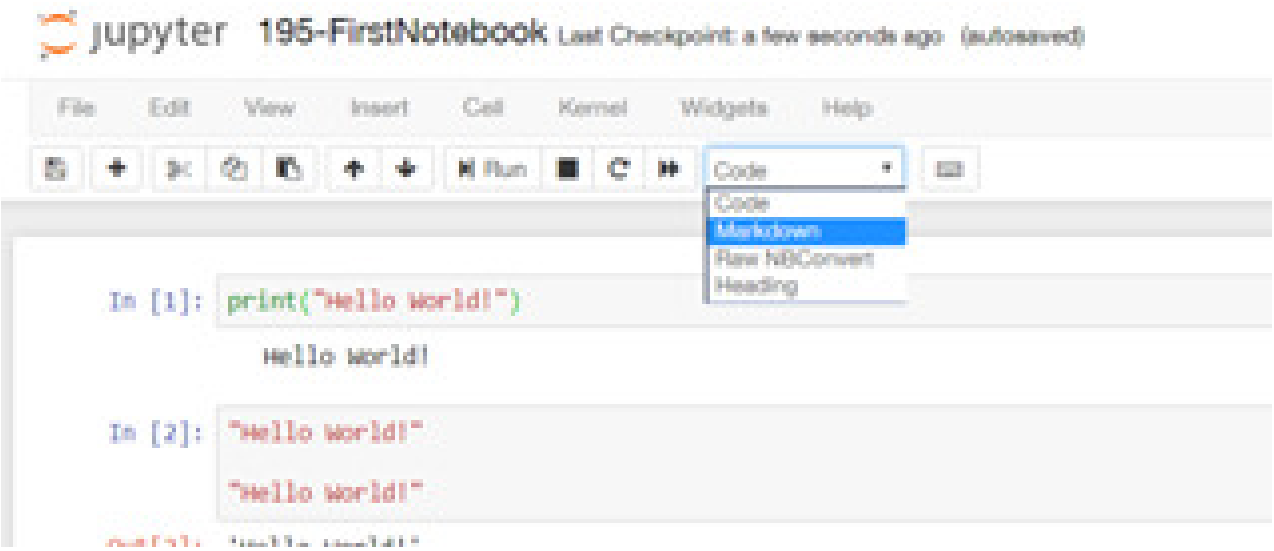
4. In some cases, the code that you write does not work efficiently and give some unexpected results. In those instances it might be a good idea to click on Restart & Clear output from the Kernel Menu. Sometimes, you may want to interrupt the code that is running. You can use Interrupt from Kernel menu to do that, too.



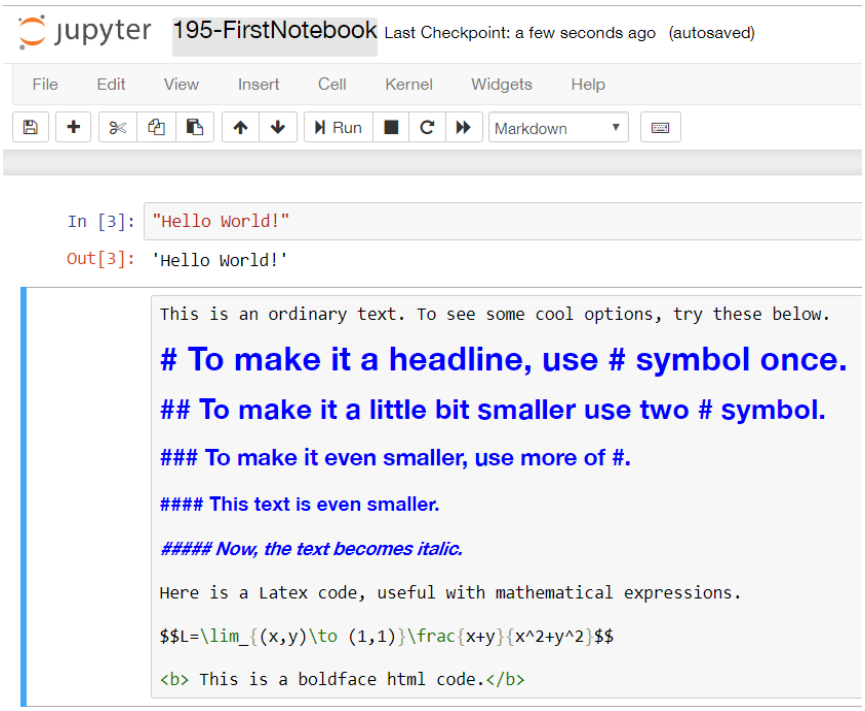
5. If you want to prepare a document involving descriptions or ordinary text along with your code, you may want to change the cell type to Markdown from the drop-down menu shown below. That will change the code cell type to Markdown. After you write your text and press Shift+Enter, you will get an ordinary text instead of a code.

If you know, HTML or Latex, they work well in the Markdown mode.

If you want to modify a markdown block at a later time, double click on it and it will show the cell so that you can update your text.



Here are some cool examples:



Once you run these, it will be like the following: