

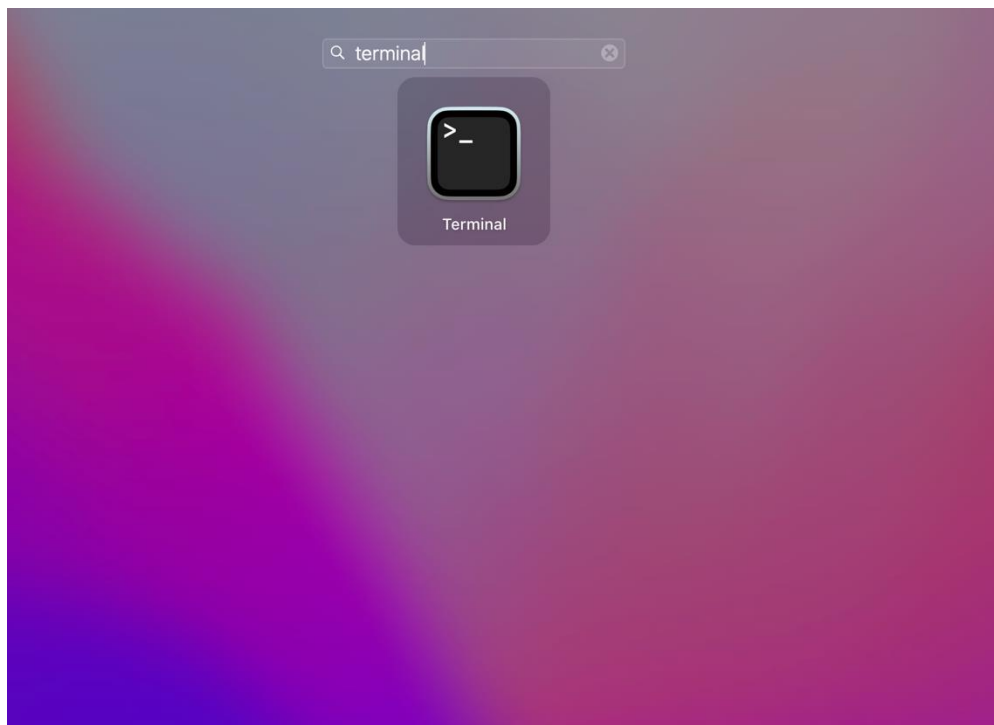
# APS106: Getting Started with Jupyter Notebook on macOS

Prerequisite: Python is installed on your computer

Follow the instructions included in the Wing101 installation guide to install Python.

## Step 1: Install Jupyter Notebook

1. Open your launchpad or your applications folder
2. Search for the “terminal” application and click on the terminal icon



3. To install Jupyter notebook type “pip3 install notebook” into the terminal and press enter. Note: pip is the standard package manager for Python and with a minimum Python version of 3.4, pip is installed by default.

```
(base) benkinsella@Bens-MacBook-Pro ~ % pip3 install notebook
```

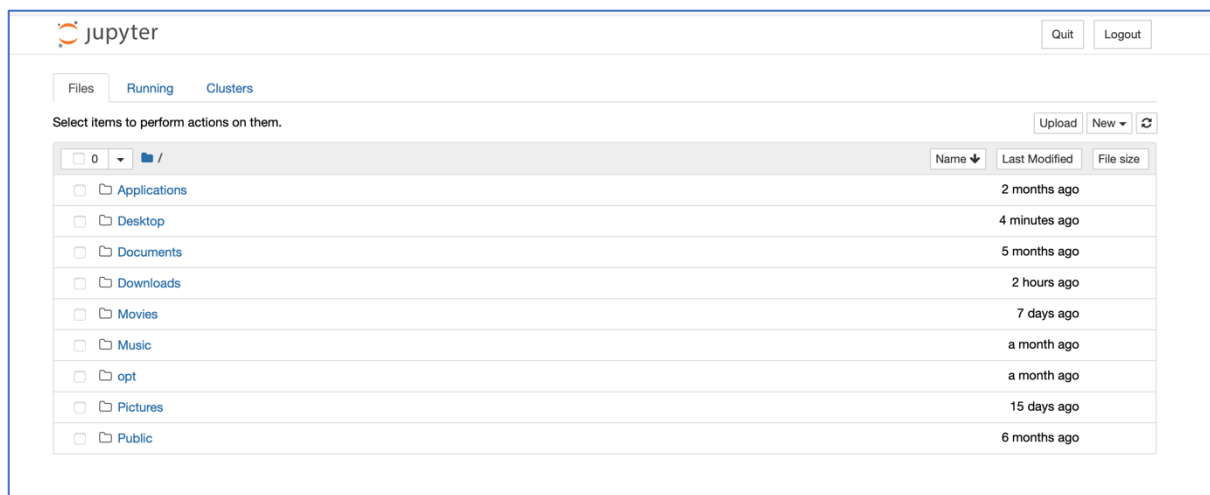
4. Jupyter notebook will begin to install
5. Wait a few minutes while Notebook installs, once the terminal stops executing you have installed Notebook! Hooray!

## Step 2: Launch Jupyter Notebook

1. From the terminal enter “jupyter notebook” and press enter

```
(base) benkinsella@Bens-MacBook-Pro ~ % jupyter notebook
```

2. Notebook Dashboard will open in your default browser.
  - In Notebook Dashboard, you will see a list of the notebooks, files, and subdirectories in the directory where the notebook server was started.
  - Notebook was opened from my user directory (which contains all my Documents, Downloads, Movies, etc. subfolders), so that’s why you see existing folders. You can navigate to wherever you want to create a new file (perhaps your APS106 folder) from here.



3. If Notebook does not open in your browser, you can copy and paste one of the URLs listed in the terminal:

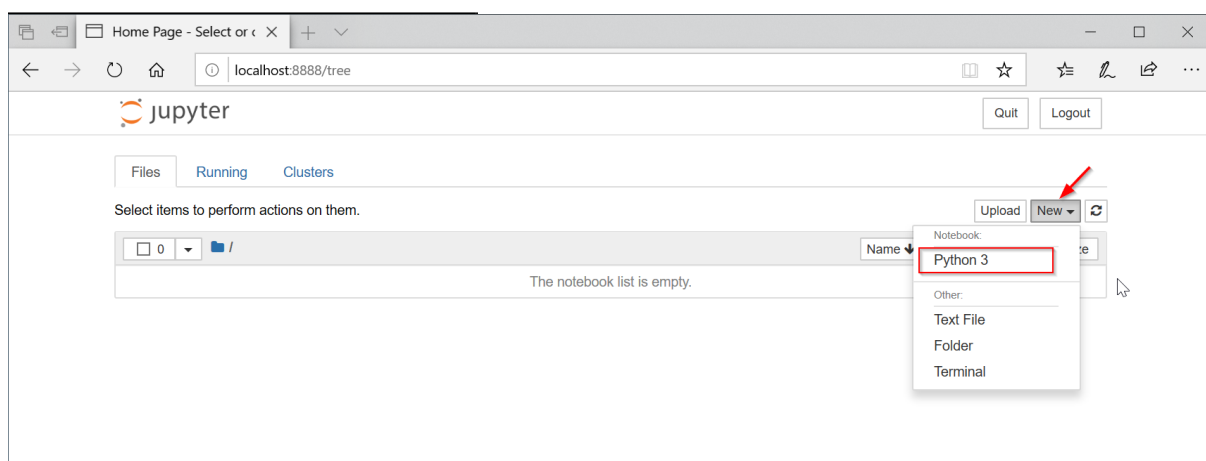
```
[(base) benkinsella@Bens-MacBook-Pro ~ % jupyter notebook
[I 2021-12-31 12:54:48.694 LabApp] JupyterLab extension loaded from /Users/benkinsella/
opt/anaconda3/lib/python3.9/site-packages/jupyterlab
[I 2021-12-31 12:54:48.694 LabApp] JupyterLab application directory is /Users/benkinsella/opt/anaconda3/share/jupyter/lab
[I 12:54:48.697 NotebookApp] Serving notebooks from local directory: /Users/benkinsella
[I 12:54:48.697 NotebookApp] Jupyter Notebook 6.4.5 is running at:
[I 12:54:48.697 NotebookApp] http://localhost:8888/?token=90ecfe9bc78b3fb4733ca3a7bef18713cbb38d9cdd72163c
or http://127.0.0.1:8888/?token=90ecfe9bc78b3fb4733ca3a7bef18713cbb38d9cdd72163c
[I 12:54:48.697 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 12:54:48.701 NotebookApp]

To access the notebook, open this file in a browser:
file:///Users/benkinsella/Library/Jupyter/runtime/nbserver-83328-open.html
Or copy and paste one of these URLs:
http://localhost:8888/?token=90ecfe9bc78b3fb4733ca3a7bef18713cbb38d9cdd72163c
or http://127.0.0.1:8888/?token=90ecfe9bc78b3fb4733ca3a7bef18713cbb38d9cdd72163c
```

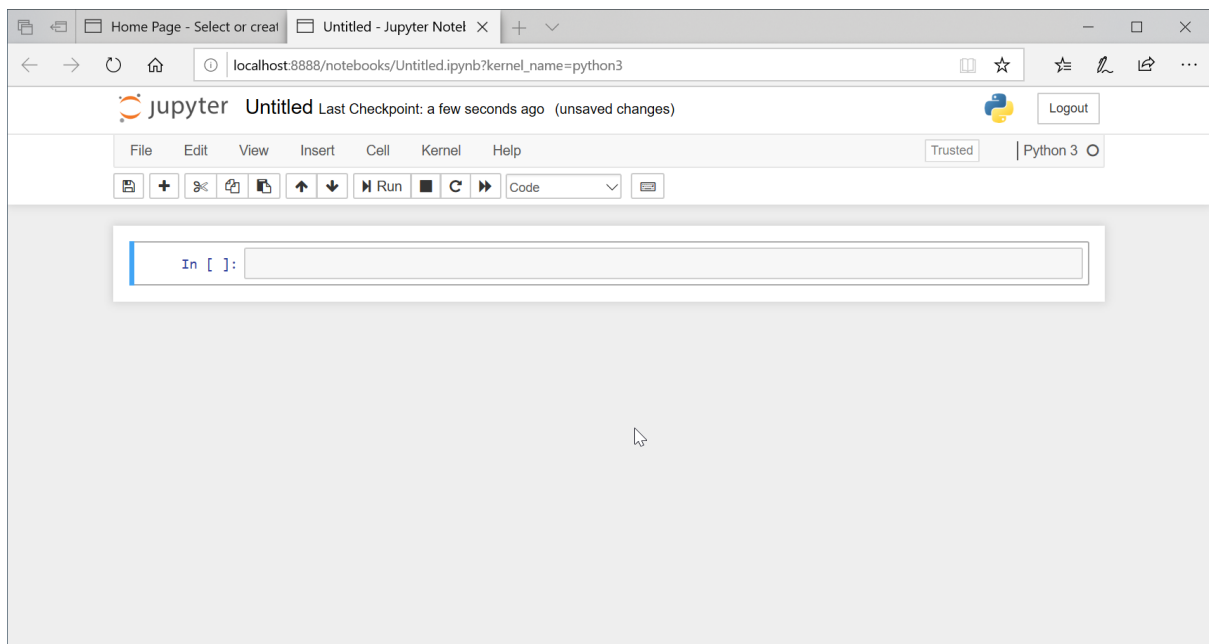
4. Make sure to leave the terminal open while using Notebook, as it used to run the Notebook Server.

## Step 3: Create a new Notebook

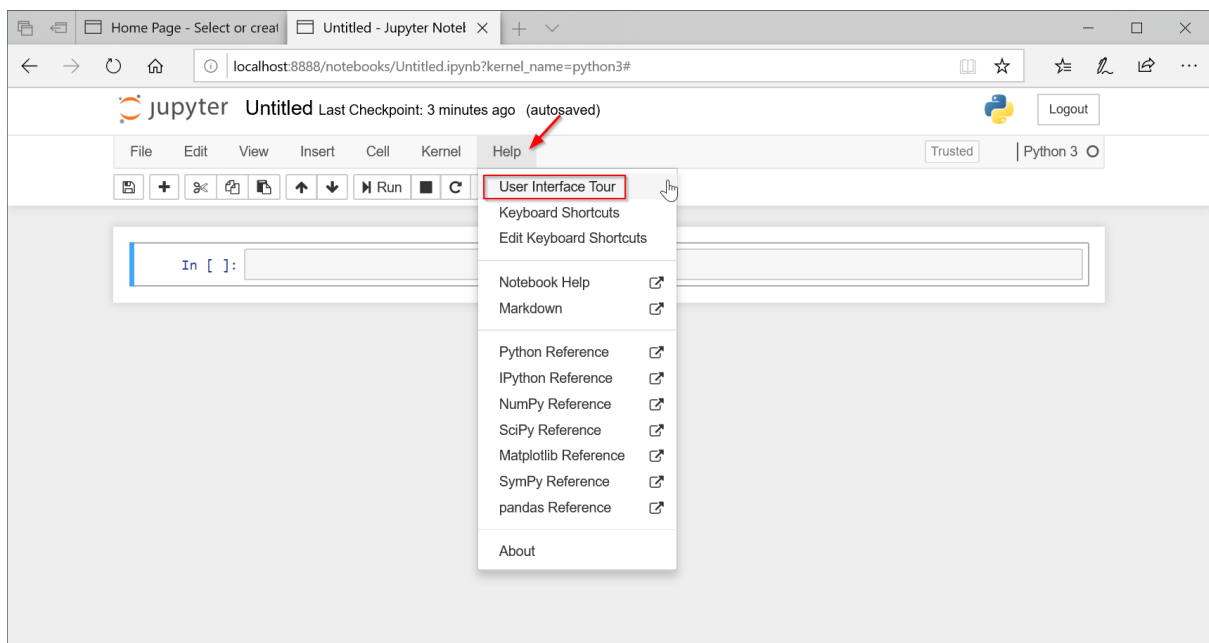
1. From the Notebook Dashboard click New → Python3



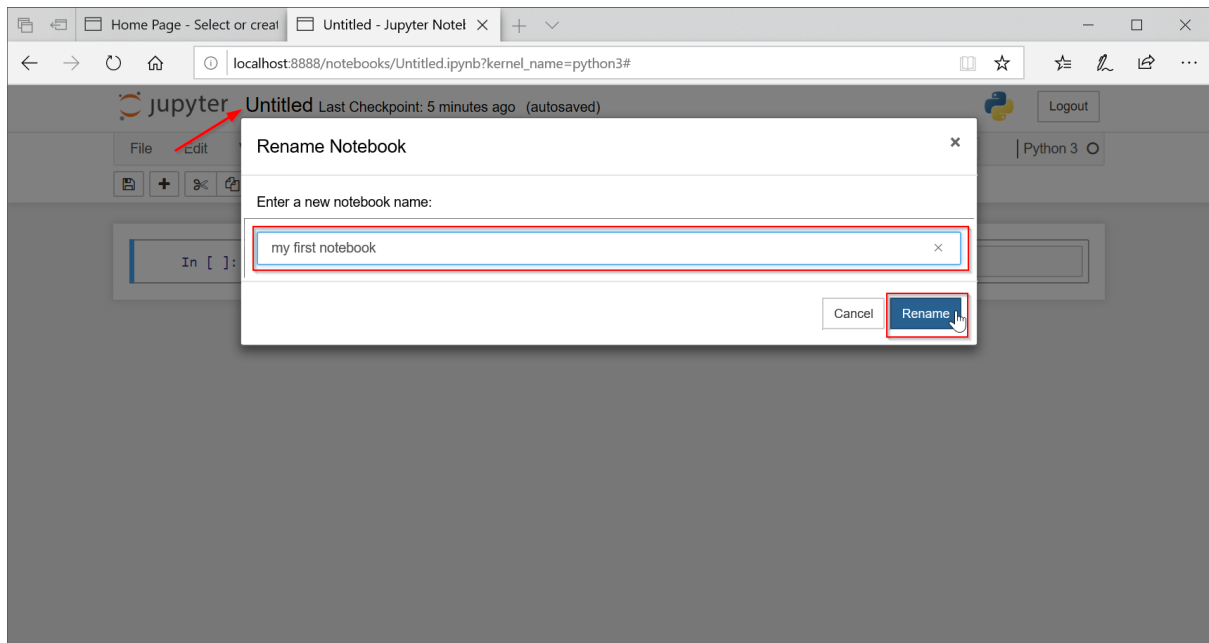
## 2. See a blank Notebook open:



## 3. For a quick tour of Notebook, click "Help" → "User Interface Tour"

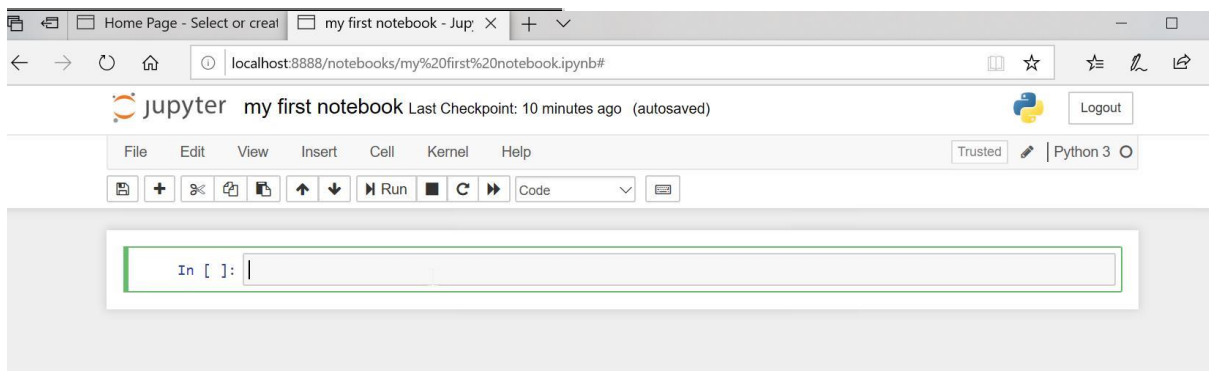


4. To rename your Notebook, click on “Untitled” at the top of the page and rename your Notebook

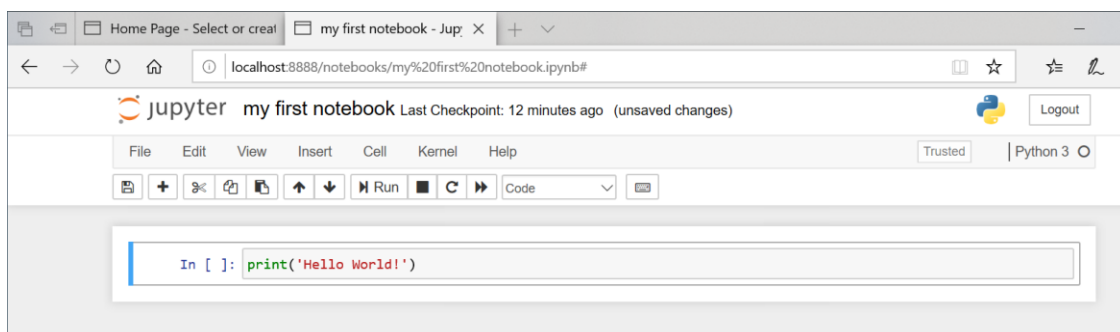


## Step 4: Add Code to your Notebook

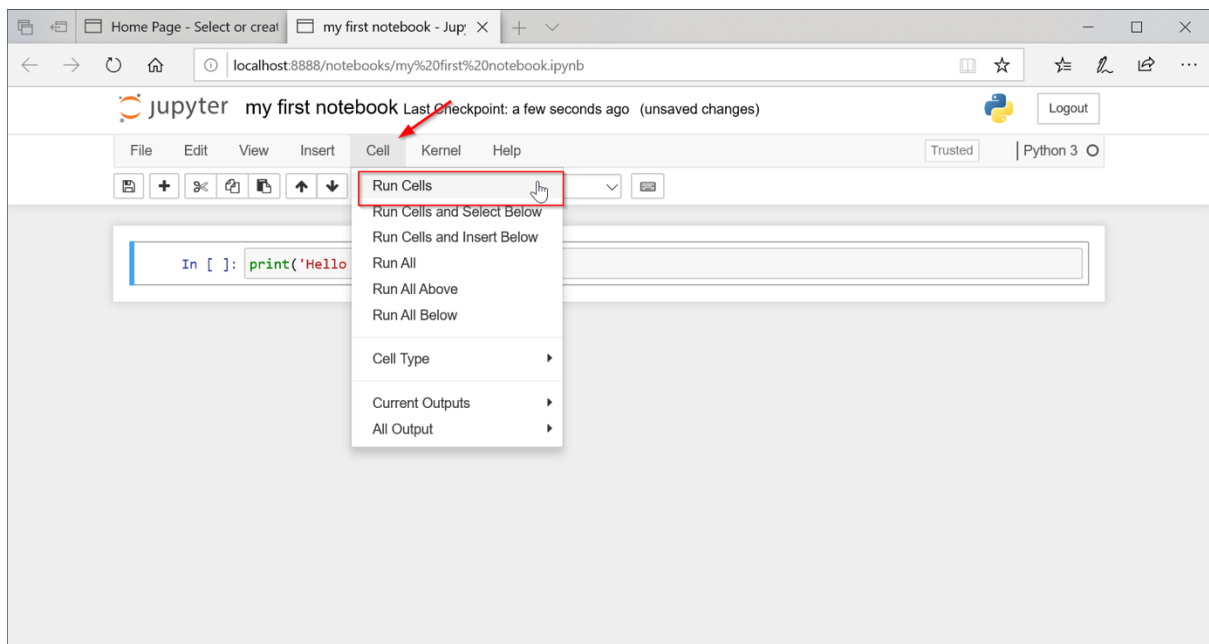
1. Press Enter or click on the first cell to enter Edit Mode and begin editing your Notebook



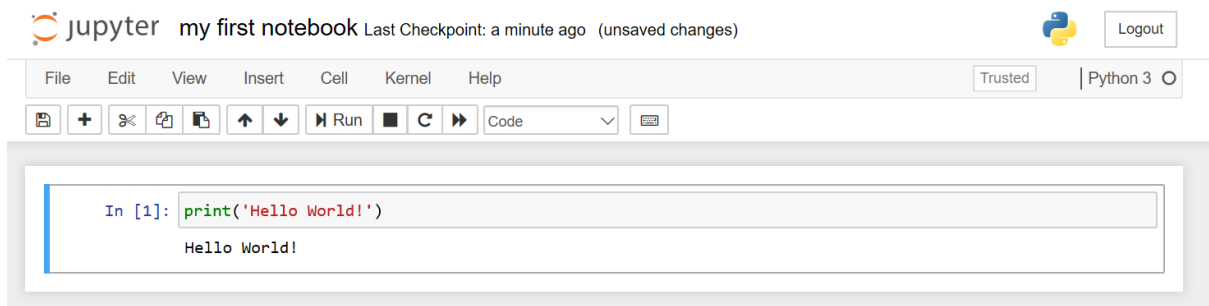
2. Add in code: `print('Hello World!')`



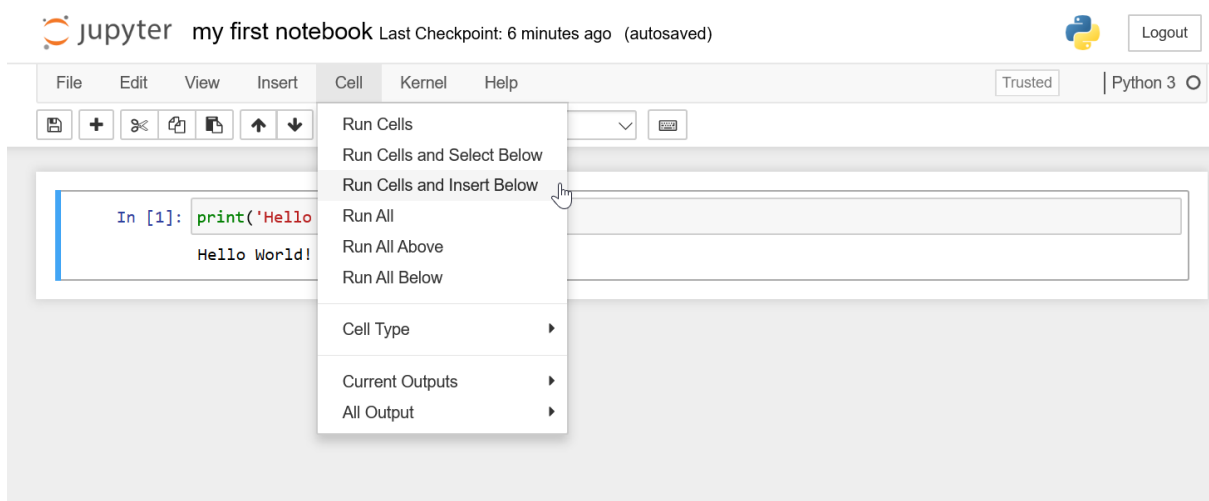
3. To run this code, click “Cell” → “Run Cells”



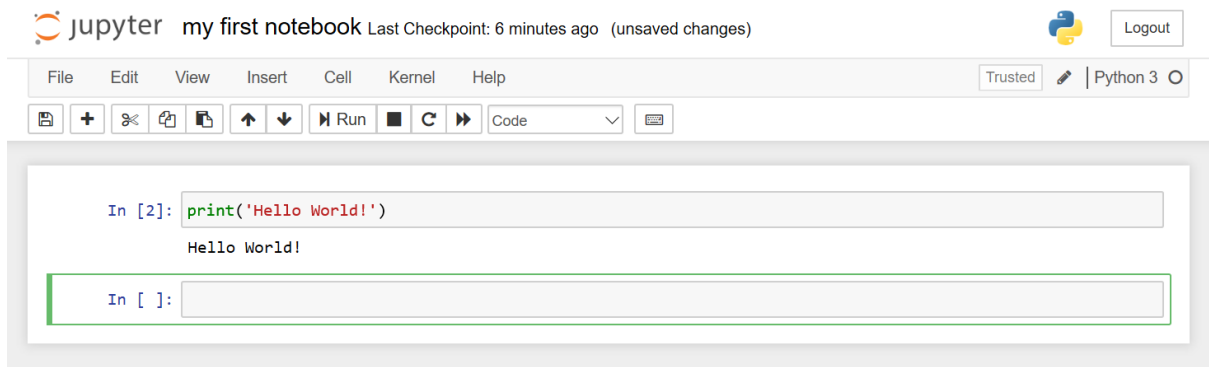
Output:



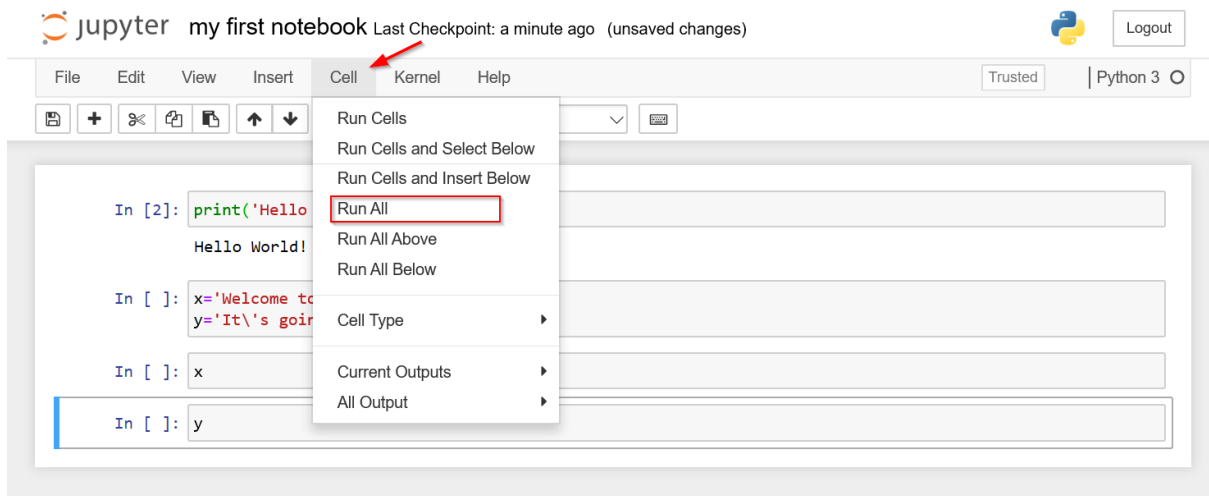
4. To run the code and an insert a new cell below, click “Cells” → “Run Cells and Insert Below”



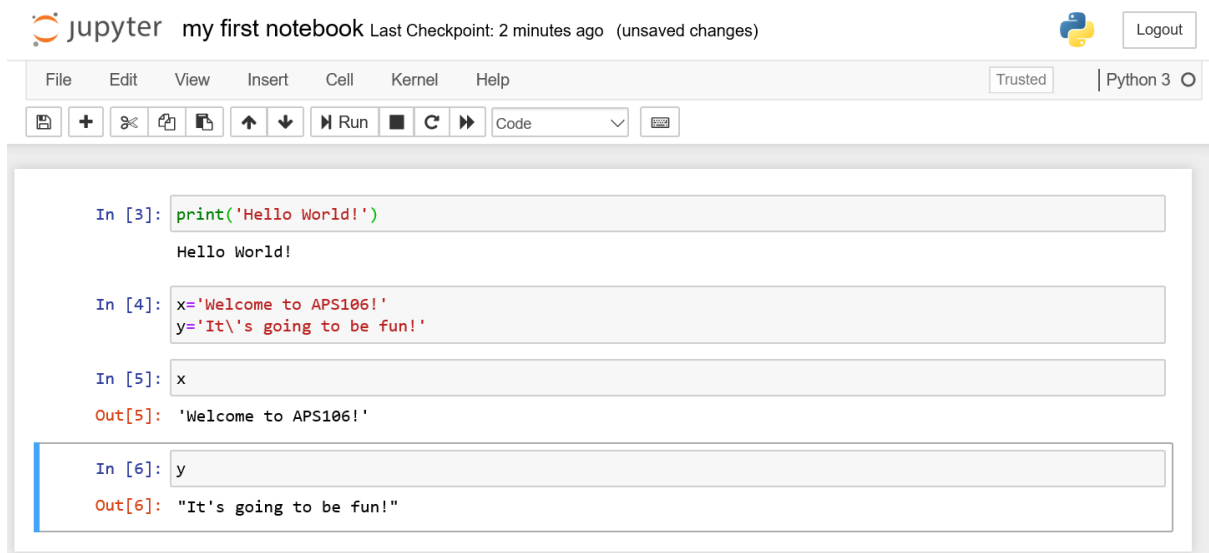
See how a new cell was inserted below:



5. To run all the cells in your Notebook, click “Cell” → “Run All”



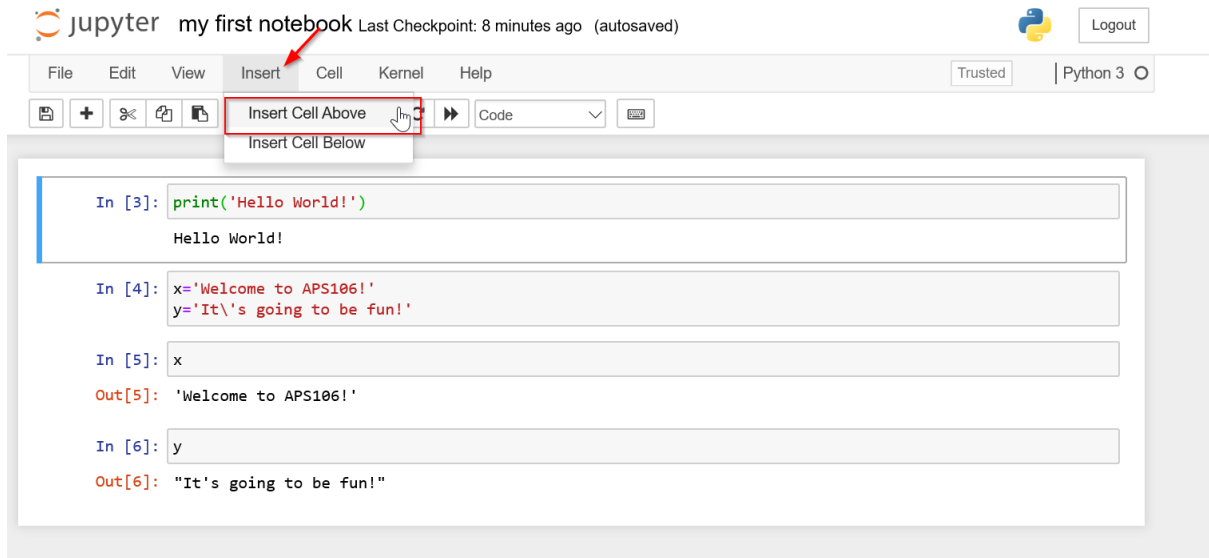
Output:



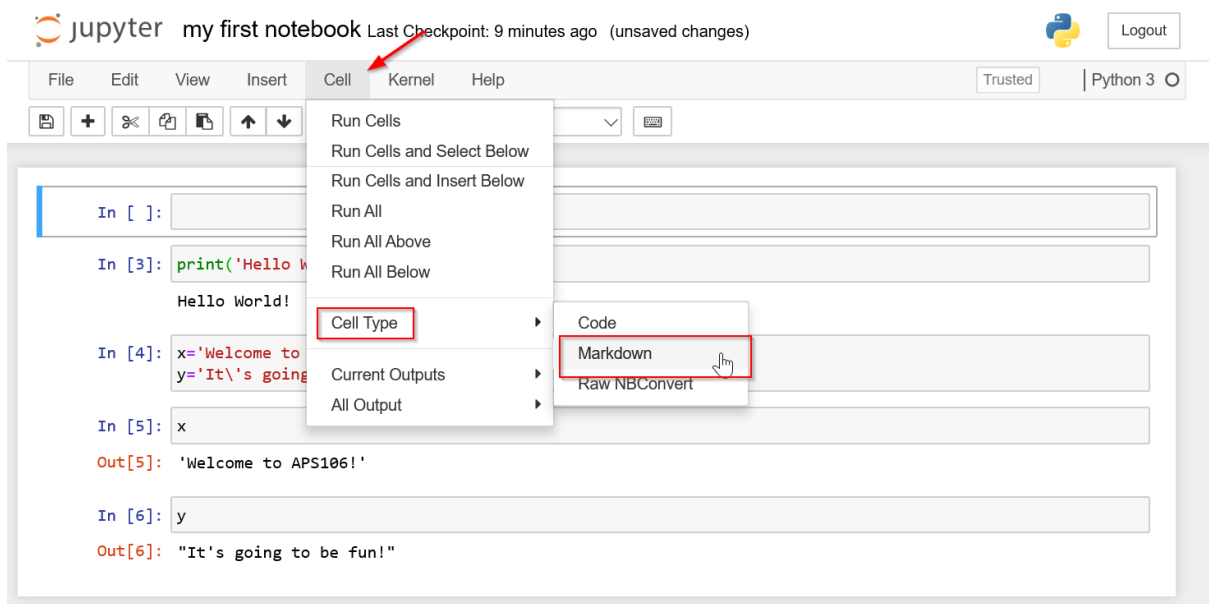
## Step 5: Add Markdown Cells to your Notebook

1. Text can be added into Jupyter using Markdown cells.

2. To add in a markdown cell, insert a new cell by clicking “Insert” → “Insert Cell Above” or “Insert Cell Below”

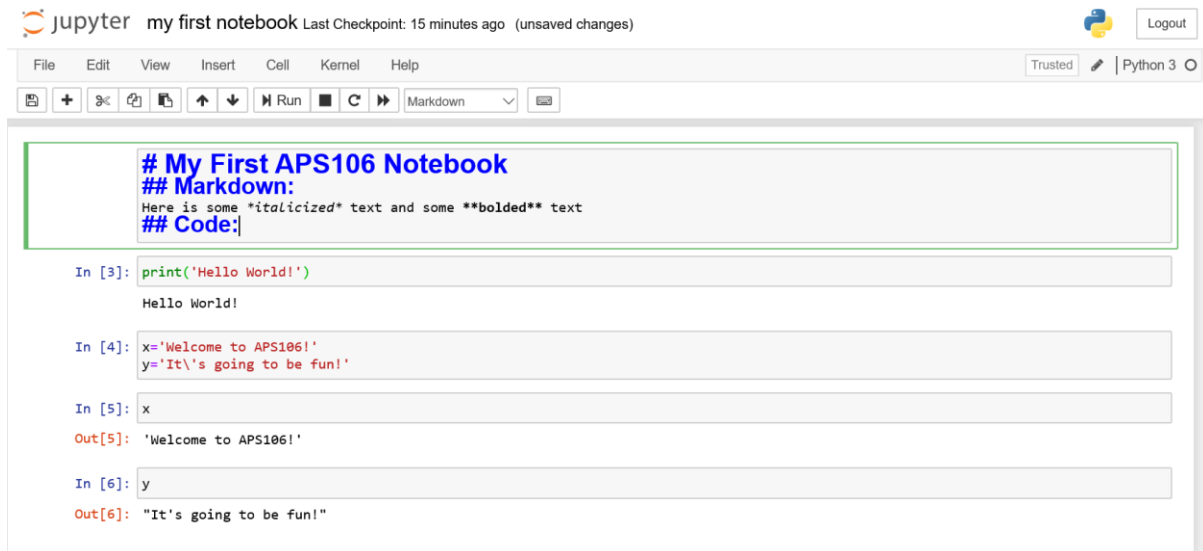


3. Once a cell has been inserted, click “Cells” → “Cell Type” → “Markdown” to change it to a Markdown Cell





- Now add in Markdown text. For details on markdown cells visit <https://jupyter-notebook.readthedocs.io/en/stable/examples/Notebook/Working%20With%20Markdown%20Cells.html>



The screenshot shows a Jupyter Notebook interface titled "my first notebook". The top bar includes the Jupyter logo, the notebook title, and a "Last Checkpoint: 15 minutes ago (unsaved changes)" status. On the right, there are "Logout" and "Python 3" buttons. The menu bar contains "File", "Edit", "View", "Insert", "Cell", "Kernel", and "Help". Below the menu is a toolbar with icons for file operations, running, and cell types. The notebook content area shows a Markdown cell with the following text:

```
# My First APS106 Notebook
## Markdown:
Here is some *italicized* text and some **bolded** text
## Code:
```

Below the Markdown cell are four code cells:

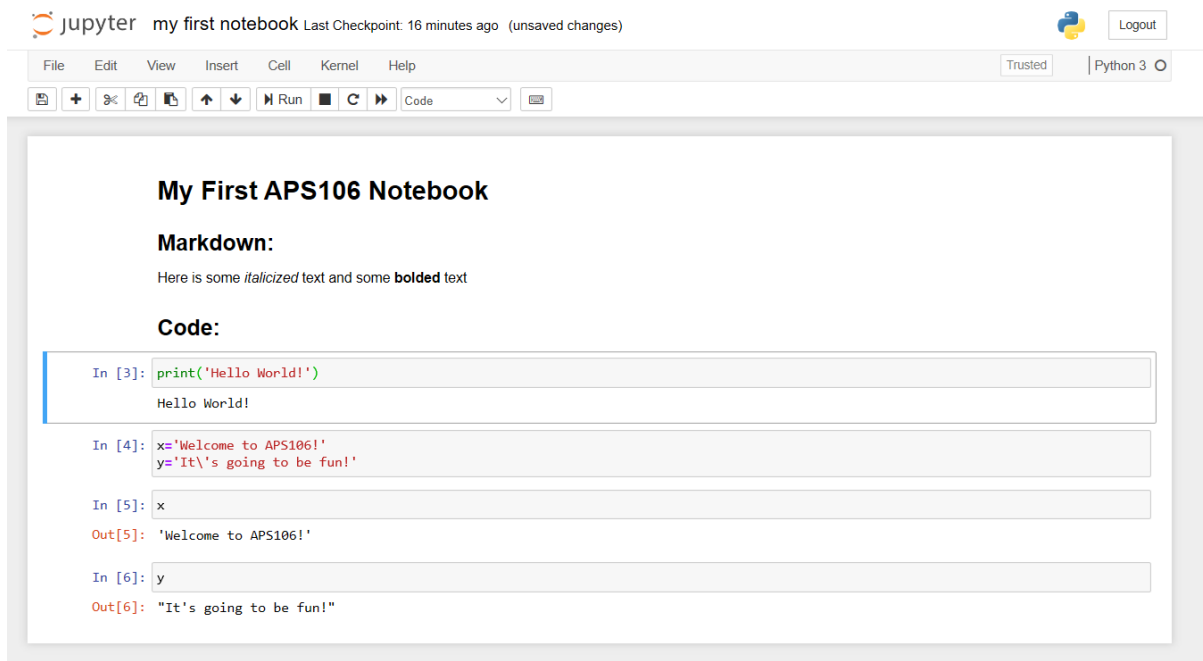
```
In [3]: print('Hello World!')
Hello World!

In [4]: x='Welcome to APS106!'
        y='It\'s going to be fun!'

In [5]: x
Out[5]: 'Welcome to APS106!'

In [6]: y
Out[6]: "It's going to be fun!"
```

- Run the Markdown cell



The screenshot shows the same Jupyter Notebook interface, but now the Markdown cell has been rendered. The title "My First APS106 Notebook" is displayed in a large font. Below it, the text "Markdown:" is followed by "Here is some *italicized* text and some **bolded** text". Below that, the text "Code:" is displayed. The code cells below are the same as in the previous screenshot:

```
In [3]: print('Hello World!')
Hello World!

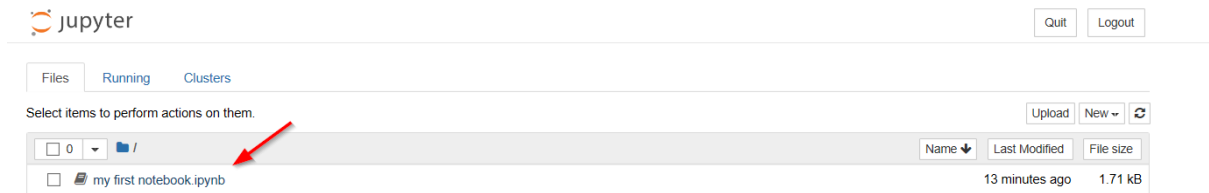
In [4]: x='Welcome to APS106!'
        y='It\'s going to be fun!'

In [5]: x
Out[5]: 'Welcome to APS106!'

In [6]: y
Out[6]: "It's going to be fun!"
```

## Step 6: Edit an Existing Notebook

1. An existing notebook can be edited, by visiting the Notebook Dashboard and clicking the Notebook file to edit:



Congratulations! You have Jupyter Notebook installed and now know how to build your own! You've earned another picture of a programming cat.

