Learning Python with Jupyter

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Context

We will be using Jupyter to help show people who are learning python by having it run in a web browser

Prerequisites

- Python 3.7 or
- Anaconda Distribution (Recommended)
- A python file with edit permissions

Jupyter uses the Anaconda Distribution but because it is created with python it will work with the python command line interface.

Installation

- Python 3.7
  Run the Following Commands:

```
python3 -m pip install --upgrade pip
python3 -m pip install jupyter
```

Python 2 is supported but not recommended. Python 2 commands are as follow:

```
python -m pip install --upgrade pip
python -m pip install jupyter
```

- Anaconda
  Run the Installer that was downloaded.
  All defaults are fine, feel free to change the path if needed.

Start Up

Starting Jupyter.
In order to start Jupyter, you will need to launch it from the Terminal or Command Prompt by running the following command:

```
jupyter notebook
```

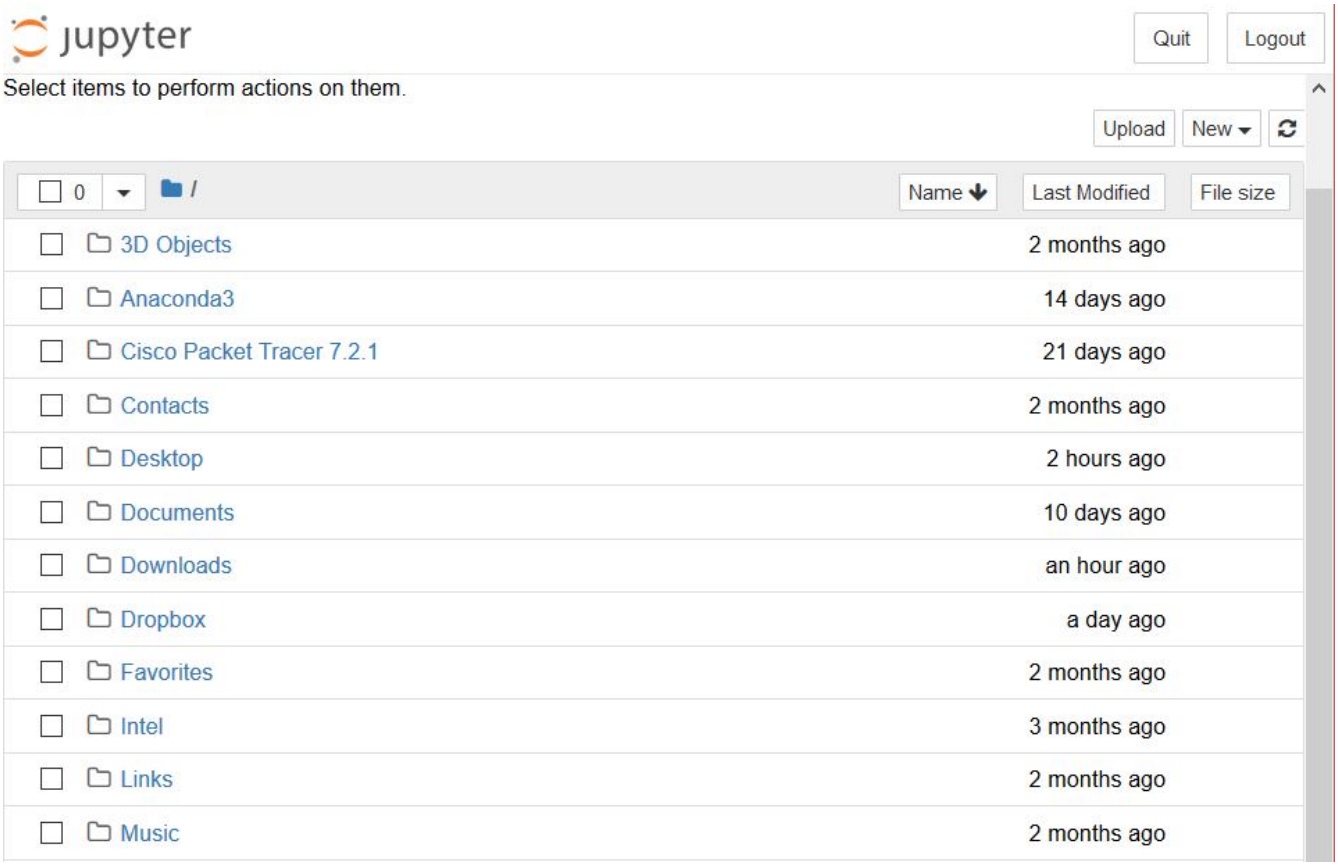
Once launched, you will need to open a web browser and go to one of the links specified in your

cmd/terminal.

```
[C 11:50:03.770 NotebookApp]

    To access the notebook, open this file in a browser:
        file:///C:/Users/rjparks/AppData/Roaming/jupyter/runtime/nbserver-764-open.html
    Or copy and paste one of these URLs:
        http://localhost:8888/?token=4512496c412309f2f79dd2e47fa6fefe1531fb92cdc6d3b3
```

here is an example of what you should see when it is launched.



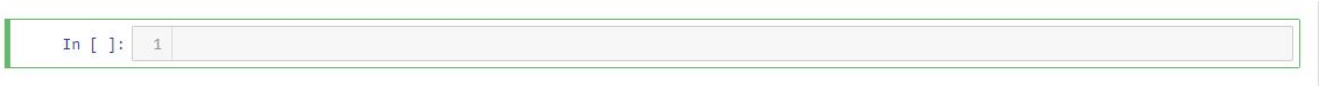
Using the Notebook.

Once Launched, you can navigate your C:\ folder to locate a python file and open it, Or create a new Notebook
NOTE: if you did not launch jupyter notebook from c:\ folder in your cmd/terminal you can only go up to the folder of it was launched. Nothing above it.

Editing existing files with Jupyter.
Once opened, you can edit your source code right in the interface. You can save by using Control + S or going to the File Menu and clicking save. However to be able to run code in Jupyter, you must

make a notebook. Make sure to save often!

Understanding the Notebook.
Each notebook has cells. A cell in Jupyter can be viewed as a container. Each container can have as few as one variable or as much as the entire program.



Each cell can be in one of two modes:

- Cell Edit Mode
- Notebook Edit Mode

Cell Edit mode is denoted by the green bar, where Notebook Edit mode is denoted by a blue bar. You are unable to edit any cell in Notebook Edit Mode. To enable cell edit mode, just click in the cell you wish to edit. A good rule of thumb is to use each container for each def statement as seen in my Rock Paper Scissors 25 program.

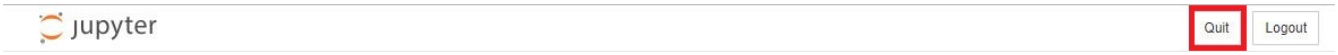
In [3]:
```
def process_computer_choice():
    choice1 = random.randint(1, 25)
    return choice1
```

In [4]:
```
def process_player_choice():
    print('What is your choice?')
    print('Enter 1 for Gun')
    print('Enter 2 for Dynamite')
    print('Enter 3 for Nuke')
    print('Enter 4 for Lightning')
    print('Enter 5 for Devil')
    print('Enter 6 for Dragon')
    print('Enter 7 for Alien')
    print('Enter 8 for Water')
    print('Enter 9 for Bowl')
    print('Enter 10 for Air')
    print('Enter 11 for Moon')
    print('Enter 12 for Paper')
    print('Enter 13 for Sponge')
    print('Enter 14 for Wolf')
    print('Enter 15 for Cockroach')
    print('Enter 16 for Tree')
    print('Enter 17 for Man')
    print('Enter 18 for Woman')
    print('Enter 19 for Monkey')
    print('Enter 20 for Snake')
    print('Enter 21 for Axe')
    print('Enter 22 for Scissors')
    print('Enter 23 for Fire')
    print('Enter 24 for Sun')
    print('Enter 25 for Rock')

    choice2 = input()
    while choice2 != '1' and choice2 != '2' and choice2 != '3' and choice2 != '4' and choice2 != '5' and choice2 != '6' and
        print('ERROR: the choice can only be between 1 and 25.')
        choice2 = input("Please enter a correct choice: ")
    return int(choice2)
```

In [5]:
```
def determine_winner(player_choice, computer_choice):
    if computer_choice == 1: #Gun
        if player_choice ==25:
            print('Gun targets Rock. The Computer Wins!')
```

To run the program inside one cell, enter cell edit mode for that cell, and click run in the tool bar above. To run the entire notebook, click Cell in the toolbar and then Run All.
Once done you can save and then go to the file menu and click close and halt. That will close the Notebook Server and the tab. To close the Jupyter server either open your cmd/terminal and use Ctrl + C twice or in the Home tab of Jupyter click quit in the right hand corner.



Reflection

What other uses could be used besides separation of the "def" statements?
Would being able to edit collaboratively be helpful or harmful?
Would you use Jupyter Notebooks for a Project in the future?