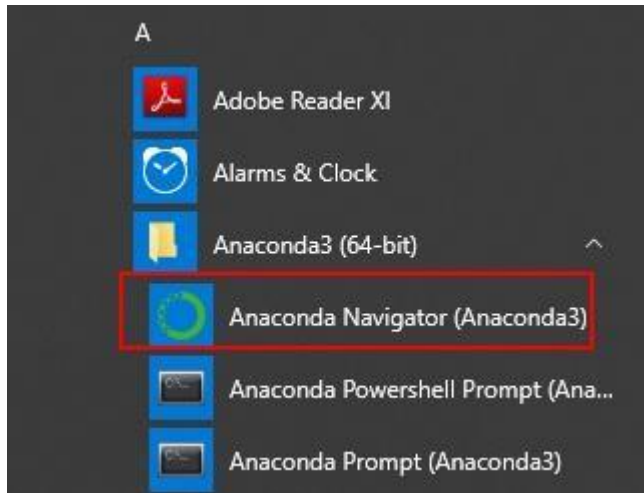


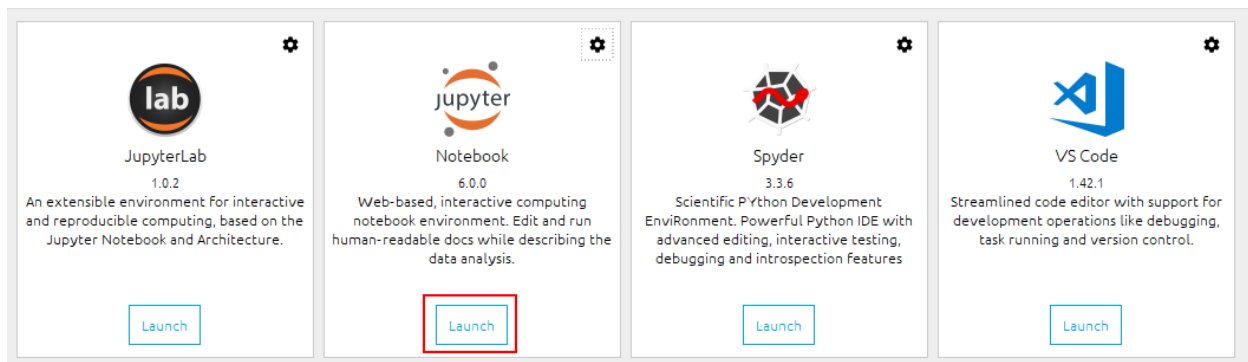
## Data Science with Python Module 5: Hands-On: 5

### Create different kinds of Graphs and Plots

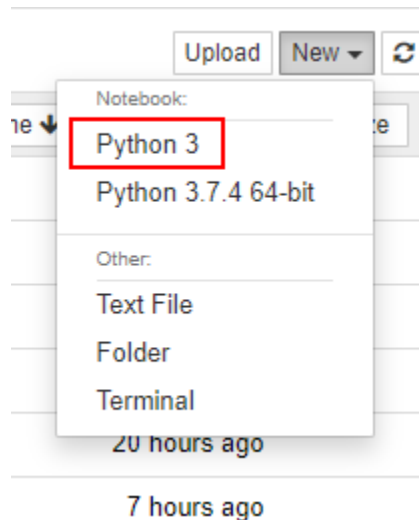
**Step 1:** Open Anaconda Navigator



**Step 2:** Click on Launch button under Jupyter notebooks.



**Step 3:** After the notebook opens click on new and Python 3.

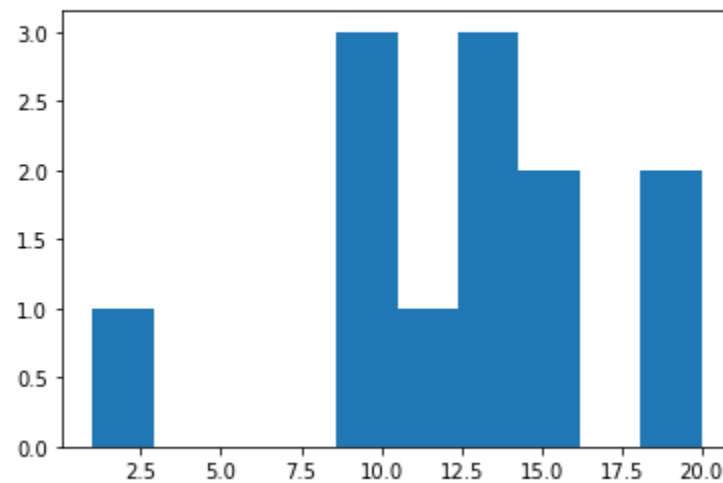


**Step 4:** Import matplotlib.pyplot and numpy by typing the following code in the notebook and run it by pressing shift + enter

```
In [1]: import matplotlib.pyplot as plt
import numpy as np
```

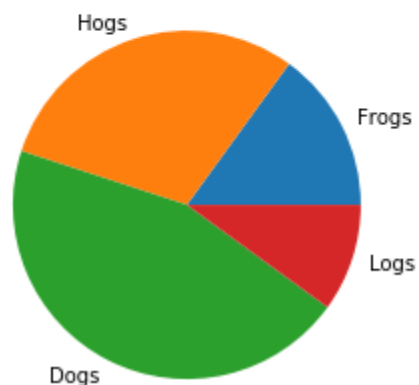
**Step 5:** Run the following code to create a histogram by passing in data.

```
In [7]: plt.hist([10, 15, 15, 10, 20, 20, 1, 14, 10, 14, 12, 14])  
plt.show()
```



**Step 6:** Run the following code to create a pie chart by passing in sizes of slices of pies with their labels.

```
In [8]: labels = ['Frogs', 'Hogs', 'Dogs', 'Logs']  
sizes = [15, 30, 45, 10]  
  
plt.pie(sizes, labels=labels)  
plt.show()
```



**Step 7:** Run the following code to create a bar graph.

```
In [22]: labels = ['Jane', 'John', 'James', 'Johnny']
x_pos = np.arange(len(labels))
data = [55, 25, 28, 45]

plt.bar(x_pos, data)

plt.xticks(x_pos, labels)

plt.xlabel('Name')
plt.ylabel('Age')
plt.title('Name vs Age')

plt.show()
```

**Step 7.1:** Create labels, data and position for x\_axis to be plotted.

```
In [22]: labels = ['Jane', 'John', 'James', 'Johnny']
x_pos = np.arange(len(labels))
data = [55, 25, 28, 45]

plt.bar(x_pos, data)

plt.xticks(x_pos, labels)

plt.xlabel('Name')
plt.ylabel('Age')
plt.title('Name vs Age')

plt.show()
```

**Step 7.2:** Plot bar graph using x\_pos and data.

```
In [22]: labels = ['Jane', 'John', 'James', 'Johnny']
x_pos = np.arange(len(labels))
data = [55, 25, 28, 45]

plt.bar(x_pos, data)

plt.xticks(x_pos, labels)

plt.xlabel('Name')
plt.ylabel('Age')
plt.title('Name vs Age')

plt.show()
```

**Step 7.3:** set xticks on the x axis positions using the labels.

```
In [22]: labels = ['Jane', 'John', 'James', 'Johnny']
x_pos = np.arange(len(labels))
data = [55, 25, 28, 45]

plt.bar(x_pos, data)

plt.xticks(x_pos, labels)

plt.xlabel('Name')
plt.ylabel('Age')
plt.title('Name vs Age')

plt.show()
```

**Step 7.4:** Set xlabel, ylabel and title.

```
In [22]: labels = ['Jane', 'John', 'James', 'Johnny']
x_pos = np.arange(len(labels))
data = [55, 25, 28, 45]

plt.bar(x_pos, data)

plt.xticks(x_pos, labels)

plt.xlabel('Name')
plt.ylabel('Age')
plt.title('Name vs Age')

plt.show()
```

**Step 7.5:** Show the plot.

```
In [22]: labels = ['Jane', 'John', 'James', 'Johnny']
x_pos = np.arange(len(labels))
data = [55, 25, 28, 45]

plt.bar(x_pos, data)

plt.xticks(x_pos, labels)

plt.xlabel('Name')
plt.ylabel('Age')
plt.title('Name vs Age')

plt.show()
```

**Step 7.6:** Run the code using Shift + Enter and observe the output.

