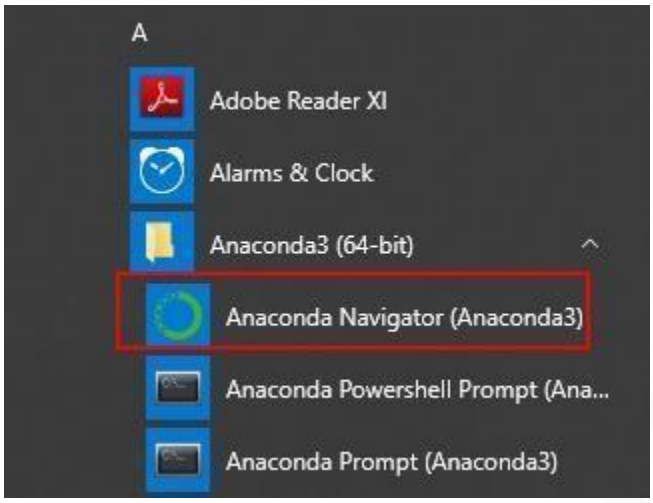
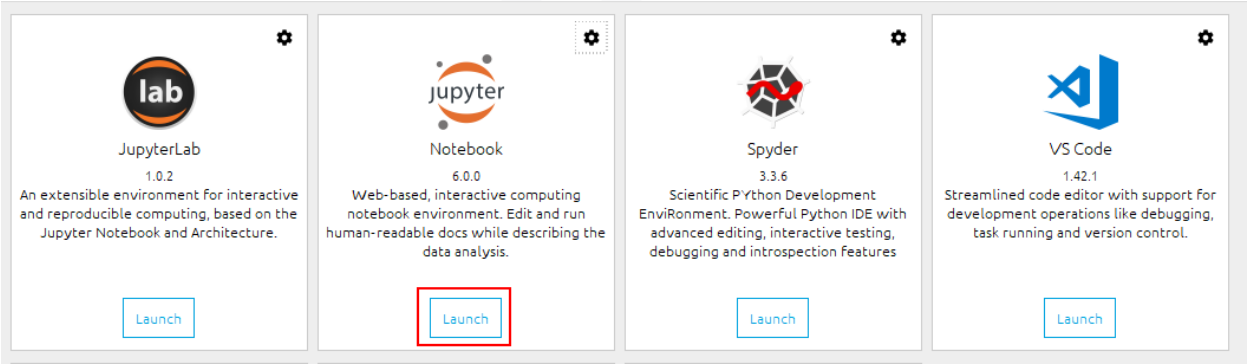
Module 7: Hands-On: 4

Data Analysis:

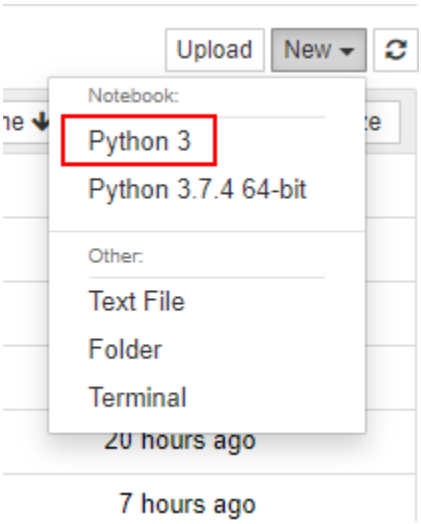
Step 1: Open Anaconda Navigator



Step 2: Click on Launch button under Jupyter Notebook



Step 3: After the notebook opens click on New and Python 3



Step 4: Import the required packages and read data from housing.csv in a DataFrame

```
In [10]: import pandas as pd

In [11]: data = pd.read_csv('housing.csv')

In [14]: data.head()
```

Out[14]:

	RM	LSTAT	PTRATIO	MEDV
0	6.575	4.98	15.3	504000.0
1	6.421	9.14	17.8	453600.0
2	7.185	4.03	17.8	728700.0
3	6.998	2.94	18.7	701400.0
4	7.147	5.33	18.7	760200.0

Step 5: Take a look at the shape of data

```
In [15]: data.shape
Out[15]: (489, 4)
```

Step 6: Take a look at the number of cells that are null in each column

```
In [16]: data.isnull().sum()
Out[16]: RM         0
         LSTAT      0
         PTRATIO    0
         MEDV       0
         dtype: int64
```

Step 7: Take a look at the mean, standard deviation, minimum and maximum values in each column

```
In [17]: data.mean()

Out[17]: RM              6.240288
         LSTAT          12.939632
         PTRATIO        18.516564
         MEDV       454342.944785
         dtype: float64

In [18]: data.std()

Out[18]: RM              0.643650
         LSTAT           7.081990
         PTRATIO         2.111268
         MEDV       165340.277653
         dtype: float64

In [19]: data.min()

Out[19]: RM              3.561
         LSTAT           1.980
         PTRATIO        12.600
         MEDV       105000.000
         dtype: float64

In [20]: data.max()

Out[20]: RM              8.398
         LSTAT          37.970
         PTRATIO        22.000
         MEDV       1024800.000
         dtype: float64
```

Step 8: Use the describe method to check all statistically significant information about data

```
In [21]: data.describe()
```

Out[21]:

	RM	LSTAT	PTRATIO	MEDV
count	489.000000	489.000000	489.000000	4.890000e+02
mean	6.240288	12.939632	18.516564	4.543429e+05
std	0.643650	7.081990	2.111268	1.653403e+05
min	3.561000	1.980000	12.600000	1.050000e+05
25%	5.880000	7.370000	17.400000	3.507000e+05
50%	6.185000	11.690000	19.100000	4.389000e+05
75%	6.575000	17.120000	20.200000	5.187000e+05
max	8.398000	37.970000	22.000000	1.024800e+06