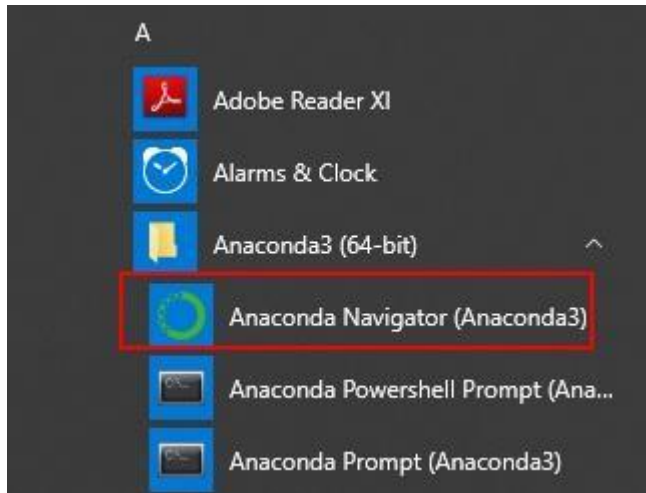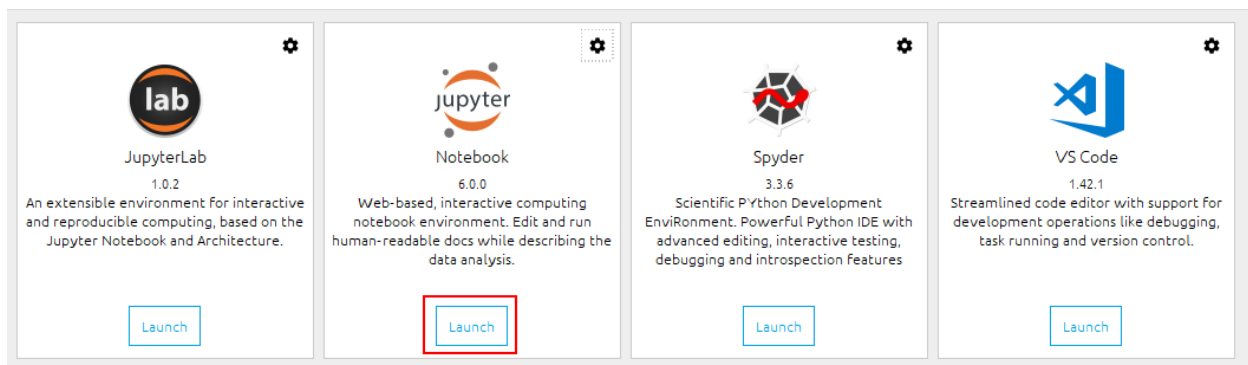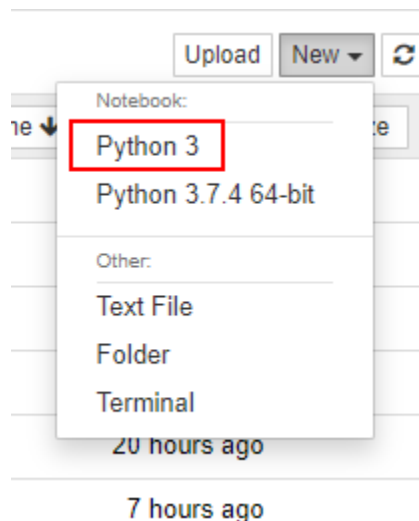# Module 7: Hands-On: 1

Data Processing.

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 the required packages and create a list.

```
In [26]:  import numpy as np
          import pandas as pd

In [27]:  num_list = [1, 2, 3, 4 , 5]
```

Step 5: Print the type of the variable.

```
In [29]:  type(num_list)
Out[29]:  list
```

Step 6: Create and reshape a numpy array.

```
In [34]: arr = np.array([1, 2, 3, 4, 5, 6])

In [35]: arr
Out[35]: array([1, 2, 3, 4, 5, 6])

In [38]: arr = arr.reshape((2, 3))

In [39]: arr
Out[39]: array([[1, 2, 3],
                [4, 5, 6]])
```

Step 7: Create a numpy array filled with zeroes and a numpy array with values from 1 to 9 and reshape it.

```
In [41]: np.zeros((1, 3))
Out[41]: array([[0., 0., 0.]])

In [44]: np.arange(1, 10).reshape(3, 3)
Out[44]: array([[1, 2, 3],
                [4, 5, 6],
                [7, 8, 9]])
```

Step 8: Create a Data Frame using a 1d list and a 2d list.

```
In [10]: pd.DataFrame([1, 2, 3, 4])
Out[10]:
              0
         0    1
         1    2
         2    3
         3    4
```

```
In [12]: pd.DataFrame([[1, 2, 3], ['a', 'b', 'c']])
Out[12]:
              0  1  2
         0    1  2  3
         1    a  b  c
```

Step 9: Create a Data Frame using a dictionary.

```
In [11]: pd.DataFrame({
             'id': [1, 2, 3],
             'name': ['a', 'b', 'c']
         }).set_index('id')
Out[11]:
              name
         id
         1    a
         2    b
         3    c
```