Numpy

1. **Perform addition of two numpy array**

   import numpy as np
   study_duration1=np.array([4,5,2,3,5,4,6])
   study_duration2=np.array([1,2,5,3,2,2,1])
   total_duration1=study_duration1+study_duration2
   print("total study duration using + operator", total_duration1)
   total_duration2=np.add(study_duration1,study_duration2)
   print("total study duration using add() function", total_duration2)

   In the similar manner execute: subtract(), multiply(), divide ()

2. **Finding exponential**

```python
print("total study duration using + operator", total_duration1)
total_duration2=np.add(study_duration1,study_duration2)
print("total study duration using add() function", total_duration2)
```

In the similar manner execute: subtract(), multiply(), divide ()

2. Finding exponential

```python
import numpy as np
number_array=np.array([4,5,6])
number_exponent1=number_array **2
print("exponent using ** operator", number_ex
number_exponent2=np.power(number_array,2)
print("exponent using power() function", number_exponent2)
```

3. Finding mean

2. Finding exponential

```
import numpy as np
number_array = np.array([4,5,6])
number_exponent1 = number_array **2
print("exponent using ** operator", number_exponent1)
number_exponent2 = np.power(number_array,2)
print("exponent using power() function", number_exponent2)
```

3. Finding mean

```
import numpy as np
score_english=[92,98,85,54,76,87,95,87,77,58]
mean_english=np.mean(score_english)
print(mean_english)
```

4. Finding median

Reshape a numpy array

```python
import numpy as np
number_array=np.array([4,5,2,3,5,6])
reshaped_number_array=np.reshape(number_array,(2,3))
print("\n actual array \n", number_array)
print("\n reshaped array \n", reshaped_number_array)
```

Save nympy array in different format and load it

```python
number_array=np.array([4,5,2,3,5,6])
reshaped_number_array=np.reshape(number_array,(2,3))
print("\n actual array \n", number_array)
print("\n reshaped array \n", reshaped_number_array)
```

5. **Save nympy array in different format and load it**

```python
import numpy as np
path="C:/Users/UEM/Desktop/ML_LAB/"
arr=np.array([1,2,3,4,5,6])
np.savetxt(path+"data.txt",arr)

arr1=np.loadtxt(path+"data.txt")
print(arr1)
```

```python
np.savetxt(path+"data.txt",arr)


arr1=np.loadtxt(path+"data.txt")
print(arr1)
```

Pandas

1. **Creating a panda Series**
   ```python
   import pandas as pd
   st_dataset={'key_1':1, 'key_2':2}
   dtf=pd.Series(st_dataset)
   print(dtf)
   ```

2. **Creating a panda DataFrame**
   ```python
   import pandas as pd
   ```

1. **Creating a panda Series**

```
import pandas as pd
st_dataset={'key_1':1, 'key_2':2}
dtf=pd.Series(st_dataset)
print(dtf)
```

2. **Creating a panda DataFrame**

```
import pandas as pd
st_dataset={'st_name':['Varun','Aftab','Dipika'],
'email':['varun@gmail.com','aftab@rediff.com','dipika@yahoo.com']}
dtf=pd.DataFrame(st_dataset)
print(dtf)
```

3. **Counting the number of rows (length of any key) of a dataframe**

```
import pandas as pd
```