

Exersice-3 Linear algebra with numpy

In [2]:

```
import numpy as np
```

In [3]:

```
#1)Create 3X2 and 2X3 array.  
arr1=np.array([[1,2],[3,4],[5,6]])  
arr2=np.array([[1,2,3],[4,5,6]])
```

In [8]:

```
#2)Initialize the array with random values  
arr1 = np.random.randint(6, size=(3,2))  
arr2=np.random.randint(6, size=(2,3))
```

In [10]:

```
#3)matrix multiplication of above 2 array  
print(arr1)  
print(arr2)  
ans=arr1.dot(arr2)  
ans
```

```
[[0 1]  
 [0 3]  
 [5 2]]  
[[1 2 3]  
 [3 3 3]]
```

Out[10]:

```
array([[ 3,  3,  3],  
       [ 9,  9,  9],  
       [11, 16, 21]])
```

In [11]:

```
#4)elementwise multiplication  
arr3=np.array([[7,8],[9,10],[11,12]])  
np.multiply(arr1,arr3)
```

Out[11]:

```
array([[ 0,  8],  
       [ 0, 30],  
       [55, 24]])
```

In [12]:

```
#5) Find mean of a matrix  
arr1.mean()
```

Out[12]:

```
1.8333333333333333
```

In [19]:

```
#6) Convert Numeric entries(columns) of mtcars.csv to Mean Centered Version  
from numpy import genfromtxt  
data = genfromtxt('mtcars.csv', delimiter=',')
```

In [20]:

```
data = np.delete(data,0, axis=0)  
data = np.delete(data,0, axis=1)  
data_mean_centric = data - np.mean(data, axis=0)  
np.around(data_mean_centric, decimals=2)
```

Out[20]:

```
array([[ 0.5],  
       [-0.5]])
```

In [21]:

```
np.around(np.mean(data_mean_centric,axis=0),decimals=2)
```

Out[21]:

```
array([0.])
```

In []: