Numpy

Numpy is a package for scientific computing which has support for a powerful N-dimensional array object

In [10]:
```
# importing numpy for matrix operations
import numpy

# initializing matrices
x = numpy.array([[1, 2], [3, 4]])
y = numpy.array([[5, 6], [7, 8]])
```

In [11]:
```
# add() - to add matrices
print ("The addition of matrix is : ")
print (numpy.add(x,y))
```

```
The addition of matrix is :
[[ 6  8]
 [10 12]]
```

In [12]:
```
# subtract() - to subtract matrices
print ("The subtraction of matrix is : ")
print (numpy.subtract(x,y))
```

```
The subtraction of matrix is :
[[-4 -4]
 [-4 -4]]
```

In [13]:
```
#  divide() - to divide matrices
print ("The division of matrix is : ")
print (numpy.divide(x,y))
```

```
The division of matrix is :
[[0.2        0.33333333]
 [0.42857143 0.5       ]]
```

In [18]:
```
# multiply() and dot() importing numpy for matrix operations
import numpy
x = numpy.array([[1, 2], [3, 4]])
y = numpy.array([[5, 6], [7, 8]])
```

In [ ]:
```
```

In [19]:
```
# dot() product-  to multiply matrices
print (" product matrices is : ")
print (numpy.dot(x,y))
```

```
 product matrices is :
[[19 22]
 [43 50]]
```

In [23]:
```
import numpy
x = numpy.array([[1, 2], [5, 5]])
y = numpy.array([[3, 4], [6, 6]])
```

In [24]:
```
#  sqrt() - print the square root of matrix
print (" square root is : ")
print (numpy.sqrt(x))
```

```
 square root is :
[[1.         1.41421356]
 [2.23606798 2.23606798]]
```

In [25]:
```
# sum() -  to print summation of all elements of matrix
print ("The summation of all matrix element is : ")
print (numpy.sum(y))
```

```
The summation of all matrix element is :
19
```

In [26]:
```
# sum(axis=0) - to print summation of all columns of matrix
print ("The column wise summation of all matrix  is : ")
print (numpy.sum(y,axis=0))
```

```
The column wise summation of all matrix  is :
[ 9 10]
```

In [27]:
```
# sum(axis=1) to print summation of all columns of matrix
print ("The row wise summation of all matrix  is : ")
print (numpy.sum(y,axis=1))
```

```
The row wise summation of all matrix  is :
[ 7 12]
```

In [28]:
```
#  "T" is a transpose the matrix
print ("The transpose of given matrix is : ")
print (x.T)
```

```
The transpose of given matrix is :
[[1 5]
 [2 5]]
```

In [ ]:
```

```