**Introduction to NUMPY library**

import numpy as np #this the way of importing numpy module

'''lets create an numpy array'''

li=np.array([[1,2,3],[4,5,6]])

print(li)

#shape is numpy attribute which allows programmer to know the shape of the array

print(li.shape)

'''lets work with multi dimensional arrays'''

a=np.array([1,2,3,7])

b=np.array([4,5,6,4])

c=np.array([8,5,6,4])

#the above three arrays are numpy arrays

abc=np.array([a,b,c])

#in the above line we are making a multi dimensional array using 3 one dimmensional array

print(abc)

print(abc.shape)

# size is the function which allows a programer to know the size of the array

print(abc.size)

#lets work with array reshaping and indexing

#reshape is the function which changes the shape of the array

n=abc.reshape(2,6)

print(n)

print(n.shape)

'''now lets work with indexing'''

print(abc[0,0])# this line prints the value of pirticular indexing

# lets create the array of zeros

zeroarray=np.zeros((3,3))#np.zeros is the function which creates the array of zeros

print(zeroarray)

#simillarly we do for array of ones

'''slicing'''

print(abc[:,1:3:1])

''' :is kept to print every 2 and 3rd row

1:3 is for starting and ending value it prints 2 and 3 rows exluding 1

1 is for step size'''

''' boolean functions in numpy library'''

nithin=abc<3

print(nithin)#prints true r false for every value greater then 5 in abc array

#where method

sat=np.where(abc>5,abc,5)

print(sat)

''' lets do sum math operations on numpy array'''

print(a.sum())#sum() is the function which retuns the sum of the array elements

print(a.cumsum())# cumsum is the function which returns cummulative sum of the elements

print(a.prod())#prod() is the function which returns product of the arrat elements

print(a.cumprod())#cumprod is the function which returs cumulative

''' two array math operations'''

print(a+b)

print(a-b)

print(a\*b)

print(a/b)