**DAY 10 ASSIGNMENT 4**

1)What is the difference between array module and numpy array?

Built-in array module defines an object type which can efficiently represent an array of basic values: characters, integers, floating point numbers. Arrays are sequence types and behave very much like lists, except that the type of objects stored in them is constrained.

This means objects stored in the array are of a homogeneous(same) type. Type of objects to be stored in an array (built-in) is determined by typecode. Type codes are single characters.

Numpy module in python is generally used for matrix and array computations. While using the numpy module, built-in function ‘array’ is used to create an array. The object is an array, any object exposing the array interface, an object whose \_\_array\_\_ method returns an array or any (nested) sequence. And dtype is desired data type for array.

2)Explain Addition of arrays(scalar and vector)

* **Scalar :-**

It refers to addition of a value to each and every element of the array.

E.g.:- [5,8,9,7,2]+2=[7,10,11,9,4]

* **Vector:-**

It refers to the addition of two arrays that is addition is performed on the corresponding indices of the arrays.

E.g.:- [1,2,3,4,5]+[1,2,3,4,5] = [2,4,6,8,10]

3)Comparison between copying between arrays

* **Aliasing :-** Here the copying is just done on the upper layer. The array works as a pointer to the memory location of the existing array.

Aliasing is done by jus equating the array.

Eg:- arr1=[1,2,3,4,5]

arr2=arr1

thus the id of both the arrays will be the same.

* **Shallow copy :-** Here the copying is done fully and the id of both arrays are different and any changes in the original array will be reflected upon the copied array.

**Eg:-** arr1=[1,2,3,4,5]

Arr2=arr1.view()

* **Deep copy:-** Here the copying is done fully and the id of both arrays are different and any changes in the original array will not be reflected upon the copied array.

**Eg:-** arr1=[1,2,3,4,5]

Arr2=arr1.copy()

