## 1)What makes Numpy.shape() different from Numpy.size()?

Ans)Shape (in the numpy context) seems to me the better option for an argument name. The actual relation between the two is size = np. Prod(shape) so the distinction should indeed be a bit more obvious in the arguments names. Randint uses the size parameter name, but uses shape in the explanation.

## 2)In numpy,describe the idea of broad casting?

ANS)NumPy package contains an iterator object numpy.nditer. It is an efficient multidimensional iterator object using which it is possible to iterate over an array. Each element of an array is visited using Python's standard Iterator interface.

Let us create a 3X4 array using arange() function and iterate over it using nditer.

The term broadcasting refers to the ability of NumPy to treat arrays of different shapes during arithmetic operations. Arithmetic operations on arrays are usually done on corresponding elements. If two arrays are of exactly the same shape, then these operations are smoothly performed.

# 3)What makes python better than Other libraries for numerical computation?

- 1) scipy (scientific numeric library)
- 2)pandas(data analytics library)
- 3)Ipython (command shell)
- 4) numeric python (fundamental numeric package)
- 5) natural language toolkit.

These are the makes Python better than other libraries for numerical computation.

- **4)How does numpy deals with files?**

  - NumPy introduces a simple file format for ndarray objects. This .npy file stores data, shape, dtype and other information required to reconstruct the ndarray in a disk file such that the array is correctly retrieved even if the file is on another machine with different architecture.
  - Numpy.save()
  - The numpy.save() file stores the input array in a disk file with npy extension.
  - Example:
  - Import numpy as np
  - a = np.array([1,2,3,4,5])
  - np.save('outfile',a)

## 5)Numpy.empty() in python

Ans)The numpy module of python provides a function called numpy.empty().This function is used to create an array without intializing the entries of given shape and type .

Just like numpy.zeroes(),the numpy.empty() function doesn’t set the array values to zero,and it is quite faster than the numpy.zeroes().This function requires the user to set all the values in the array manually and should be used with caution.

SYNTAX:Numpy.empty(shape,dtype=float,order =‘C’)