

```
In [1]: import numpy as np
```

1.Create an array with zeros and ones and print the output

```
In [2]: a=np.zeros(3)
print(a)
a=np.ones(4)
print(a)
```

```
[0. 0. 0.]
[1. 1. 1. 1.]
```

2.Create an array and print the output

```
In [4]: a=np.array([10,20,30])
print(a)
```

```
[10 20 30]
```

3.Create an array whose initial content is random and print the output

```
In [11]: b=np.array([2,4,6,8,10])
print(np.empty(4))
```

```
[1. 1. 1. 1.]
```

4.Create an array with the range of values with even intervals

```
In [13]: c=np.arange(2,10,2)
print(c)
```

```
[2 4 6 8]
```

5.Create an array with values that are spaced linearly in a specified interval

```
In [14]: c=np.linspace(1,10,num=5)
print(c)
```

```
[ 1.    3.25  5.5   7.75 10.   ]
```

6.Access and manipulate elements in the array

```
In [23]: a=np.array([1,2,3,4,5])
print(a[a>3])
```

```
[4 5]
```

7.Create a 2 dimensional array and check the shape of the array

```
In [31]: a=np.array([[1,2,3,4],[2,4,5,6]])  
print(np.shape(a))
```

(2, 4)

8.Using arange() and linspace() func to evenly space values in a specified interval

```
In [34]: a=np.arange(1,10,4)  
b=(np.linspace(1,9,num=3,dtype=np.int64))  
print(a)  
print(b)
```

[1 5 9]

[1 5 9]

9.CReate an array of random values between 0 and 1 in a gn shape

```
In [10]: a=np.empty(2)  
print(a)
```

[6.62368173e-312 0.00000000e+000]

10.Repeat each element of an array by a specified num of times using repeat() and tile() fun

```
In [35]: print(np.repeat(a,3))  
print(np.tile(a,3))
```

[1 1 1 5 5 5 9 9 9]

[1 5 9 1 5 9 1 5 9]

11.How do you know the shape and size of an array?

with the help of np.shape() and np.size(),we can able to know the shape and size of an array.

12. Create an array that indicates the total num of elements in an array

```
In [36]: a=np.array([1,2,3,4,5])  
print(np.size(a))
```

5

13.To find the num of dimensions of array

```
In [39]: a=np.array([[1,2,3],[2,4,6]])  
print(np.ndim(a))
```

2

14.Create an array and reshape into a new array

```
In [43]: a=np.array([1,2,3,4])
print(a.reshape(2,2))
```

```
[[1 2]
 [3 4]]
```

16.Create any array with values ranging from 10 to 49 which is divisible by 7 and print num

```
In [47]: a=np.arange(10,49)
print(a[a%7==0])
```

```
[14 21 28 35 42]
```

17.Create an array and check any two condn and print output

```
In [45]: a=np.array([2,50,60,10,25])
print(a[a>45])
print(a[a<25])
```

```
[50 60]
[ 2 10]
```

18.Use arithmetic operator and print the ouput using array

```
In [6]: import numpy as np
```

```
In [8]: a1=np.array([2,3,4,5])
b1=np.array([5,6,7,8])
print(a1+b1)
print(a1-b1)
print(a1*b1)
```

```
[ 7  9 11 13]
[-3 -3 -3 -3]
[10 18 28 40]
```

19.Use relational operator

```
In [12]: a=b1[0]>a1[0]
print(a)
```

```
True
```

```
In [ ]: 20.Diff btwn python and ipython
```

Python is a general purpose programming language which has list of commands that executes line by line. Beside python, lpython is an interactive command line terminal , that executes the code instantly if we write one line command

