Darshan UNIVERSITY

योगः कर्मसु कौशलम्

Python for Data Science - 2305CS303

Lab - 8

Roll No. : 111

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1. import numpy library.

In [4]:
```
import numpy as np
```

2.Create an array of 10 zeros

In [5]:
```
print(np.zeros(23))
```

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

3. Create an array of 10 ones.

In [6]:
```
print(np.ones(11))
```

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

4. Create an array of 10 fives

In [7]:
```
print(np.full(13, 5))
```

```
[5 5 5 5 5 5 5 5 5 5 5 5 5]
```

5. Create an array of integers from 10 to 50.

In [8]:
```
print(np.arange(10, 23))
```

```
[10 11 12 13 14 15 16 17 18 19 20 21 22]
```

6. Create an array of all the even integers from 10 to 50.

In [9]:
```
print(np.arange(10, 55, 2))
```

```
[10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54]
```

7. Create a 3x3 matrix with values ranging from 0 to 8.

In [10]:
```
print(np.arange(9).reshape(3, 3))
```

```
[[0 1 2]
 [3 4 5]
 [6 7 8]]
```

8. Create a 3x3 identity matrix.

In [11]:
```
print(np.eye(3))
```

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

9. Use Numpy to generate a random number between 0 and 1

In [15]:
```
print(np.random.rand())
```

```
0.11766812204755916
```

10. Use Numpy to generate an array of 25 random numbers sampled from a standard normal distribution.

In [14]:
```
print(np.random.randn(25))
```

```
[-1.10840421 -0.06375777 -0.46302868 -0.49108738  0.36706514 -0.51756296
  1.25504419 -1.07910007  0.05772834  0.67069364  0.61936607  0.91932904
 -1.95447176 -0.91607915 -0.37220489  0.14957974 -0.69474259  0.24842451
 -0.35724434  0.31731245 -1.78985669 -0.58691595 -0.24769999  0.37420415
 -0.03996285]
```

11. Create linspace array

In [17]:
```
print(np.linspace(0, 9, 5))
```

```
[0.   2.25 4.5  6.75 9.  ]
```

12. Create an array of 20 linearly spaced points between 0 and 1.

In [19]:
```
print(np.linspace(0, 1, 29))
```

```
[0.         0.03571429 0.07142857 0.10714286 0.14285714 0.17857143
 0.21428571 0.25       0.28571429 0.32142857 0.35714286 0.39285714
 0.42857143 0.46428571 0.5        0.53571429 0.57142857 0.60714286
 0.64285714 0.67857143 0.71428571 0.75       0.78571429 0.82142857
 0.85714286 0.89285714 0.92857143 0.96428571 1.        ]
```

13. Create Random Integer Array

In [20]:
```
print(np.random.randint(1, 100, 10))
```

```
[55 60 88 81 86  5 82 26 46  9]
```

14. Create Random Integer Array and Reshape that Array

In [21]:
```
arr = np.random.randint(1, 100, 12).reshape(3, 4)
print(arr)
```

```
[[17 48 88 96]
 [67 86 15 93]
 [95 43  3 85]]
```