Numpy

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

In [2]:
```python
a=['sachine','sagar']
print(a)
```

```
['sachine', 'sagar']
```

In [3]:
```python
a=np.array([20,30,40,50])
print(a)
```

```
[20 30 40 50]
```

In [4]:
```python
print(type(a))
```

```
<class 'numpy.ndarray'>
```

In [5]:
```python
print(a.dtype)
```

```
int32
```

In [7]:
```python
a1=np.array(['2',5,3,2,1])
print(a1)
print(a1.dtype)
```

```
['2' '5' '3' '2' '1']
<U11
```

In [9]:
```python
a2=np.array([2.8,3,4,5])
print(a2)
print(a2.dtype)
```

```
[2.8 3.  4.  5. ]
float64
```

Working with array dim

In [11]:
```python
a=np.array([2,5,8,20])
print(a.ndim)
```

```
1
```

In [12]:
```python
# 0 dim
a2=np.array(20)
print(a2.ndim)
```

0

In [13]:
```python
a3=np.array([[20,15,11]])
print(a3.ndim)
```

2

In [14]:
```python
a4=np.array([[20,15,13],[15,10,25]])
print(a4.ndim)
```

2

3D data

In [15]:
```python
a5=np.array([[[2,3,4,5]],[[2,3,4,5]]])
print(a5.ndim)
print(a5.shape)
```

3
(2, 1, 4)

In [16]:
```python
print(a5)
```

```
[[[2 3 4 5]]

 [[2 3 4 5]]]
```

In [17]:
```python
a6=np.array([[[2,3,4,5],[2,3,4,5],[21,31,41,51],[12,13,14,15]]])
print(a6)
```

```
[[[ 2  3  4  5]
  [ 2  3  4  5]
  [21 31 41 51]
  [12 13 14 15]]]
```

In [18]:
```python
print(a6.ndim)
```

3

In [19]:
```python
print(a6.shape)
```

(1, 4, 4)

```
In [20]: a7=np.array([[2,4,5,6],[9,5,6,4],[9,9,9,9],[5,7,8,3],[0,1,0,1]])
         print(a7)
```

```
[[2 4 5 6]
 [9 5 6 4]
 [9 9 9 9]
 [5 7 8 3]
 [0 1 0 1]]
```

```
In [21]: print(a7.ndim)
```

```
2
```

```
In [22]: print(a7.shape)
```

```
(5, 4)
```

Working with slicing

```
In [23]: a7[2:4,:]
```

```
Out[23]: array([[9, 9, 9, 9],
                [5, 7, 8, 3]])
```

```
In [24]: a7[2:4,:2]
```

```
Out[24]: array([[9, 9],
                [5, 7]])
```

```
In [25]: a8=np.array([[[[2,5,5,8],[8,7,10,12],[0,0,0,0],[5,1,7,55],[0,0,0,0],[1,1,1,1],[2,
```

```
In [26]: a8
```

```
Out[26]: array([[[[ 2,  5,  5,  8],
                 [ 8,  7, 10, 12],
                 [ 0,  0,  0,  0],
                 [ 5,  1,  7, 55],
                 [ 0,  0,  0,  0],
                 [ 1,  1,  1,  1],
                 [ 2,  2,  2,  2],
                 [ 3,  3,  3,  3]]]])
```

```
In [27]: print(a8.shape)
```

```
(1, 1, 8, 4)
```

In [30]: `a8[0,0,3,3]`

Out[30]: 55

In [ ]: