Introduction to openCV-Python

SHAPES AND DIMENTIONALITY

Dimention : depth of the aaray or how many arrays are there

0D

1D

2D

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

a_3=np.array(45)

print(a_3)

print(a_3.ndim)  #used to check the dimension of array
```

```
45
0
```

In [2]:
```
import numpy as np

a=np.array([[1,2,6],[7,8,9]])

b= np.array([[1,2,3],[4,5,6]])

print(b)
print(b.ndim)
```

```
[[1 2 3]
 [4 5 6]]
2
```

In [3]:
```
import numpy as np

a=np.array([[[1, 2, 3], [4, 5, 6]], [[1, 2, 3], [4, 5, 6]]])

print(a)
print(a.ndim)
```

```
[[[1 2 3]
  [4 5 6]]
```

```
 [[1 2 3]
  [4 5 6]]]
3
```

index :

- Accessing particular number / item
- Negative indexing starts from 1 whereas positive indexing starts from 0

SLICING : RANGE

range(start, end-1)

range(start, end, step)

In [5]:
```
import numpy as np

a=np.array([1,2,6,45,8,3,4])

print(a[5])          #indexing
```

```
3
```

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

a=np.array([1,2,6,45,8,3,4])

print(a[-5])          #indexing
```

```
6
```

In [7]:
```
import numpy as np
b= np.array([[1,2,3],[4,5,6]])
print(b[0:2,0:2])
```

```
[[1 2]
 [4 5]]
```

SLICING : RANGE

range(start, end-1)

range(start, end, step)

In [8]:
```
import numpy as np

a = np.array([11,2,34,56,67,89])

print(a[1:5])# range (start, end-1)
```

```
[ 2 34 56 67]
```

In [9]:
```
import numpy as np

a = np.array([11,2,34,56,67,89])
```

```
print(a[-5:-1])# range (start, end-1)
```

```
[ 2 34 56 67]
```

In [10]:

```
import numpy as np

a = np.array([11,2,34,56,67,89])

print(a[1:5:2])# range (start, end-1)
```

```
[ 2 56]
```

In [11]:

```
import numpy as np

a = np.array([11,2,34,56,67,89])

print(a[-5:-1:2])# range (start, end-1)
```

```
[ 2 56]
```

In [12]:

```
import numpy as np

a = np.array([11,2,34,56,67,89])

print(a[::-1])# range (start, end-1)
```

```
[89 67 56 34  2 11]
```

In [13]:

```
import numpy as np

a=np.array([[1,2,6,1,0,23,41],[7,8,9,4,8,9,10]])

print(a[0:1,0:2])
```

```
[[1 2]]
```

In [14]:

```
import numpy as np

a=np.array([[1,2,6],[7,8,9]])

print(a[0:2,1:2])
```

```
[[2]
 [8]]
```

In [15]:

```
import numpy as np

a=np.array([[1,2,6],[7,8,9]])

print(a[0:2,1]) # indexing
```

```
[2 8]
```

In [ ]: