



# High Dimensional Array & Creating NumPy Array

`Arr2d.shape`

`Arr2d.size`

# 3 dimension array

```
Arr3d = np.array([  
    [  
        [1, 2, 3],  
        [4, 5, 6]  
    ],  
    [  
        [7, 8, 9],  
        [10, 11, 12]  
    ]  
])
```



# High Dimensional Array & Creating NumPy Array

**Arr3d.shape**

**Arr3d.ndim**

**Arr3d.size**

**# Other arrays that can be created**

**np.ones((3, 4))**

**Np.zeros((2, 3, 4))**

**2010 \* np.ones((2,3,2))**



# High Dimensional Array & Creating NumPy Array

# Random Array's

```
np.random.randn(2, 3)
```

```
Np.random.rand(2, 3)
```

```
np.random.randint(0, 100 (2, 3)
```

```
np.arange(7, 71, 7)
```

```
np.linspace (7, 70, 10)
```



# High Dimensional Array & Creating NumPy Array

# Array's of other kind

```
np.array([True, False, True, False])
```

```
np.array(['1.4', '1.6', '1.8'])
```

Type casting

```
Str_arr = np.array(['1.4', '1.6', '1.8'])
```

```
Arr1 = np.array(str_arr, dtype = 'float')
```

Arr1



# Indexing array

# Indexing of Array's

Arr3d = np.array([

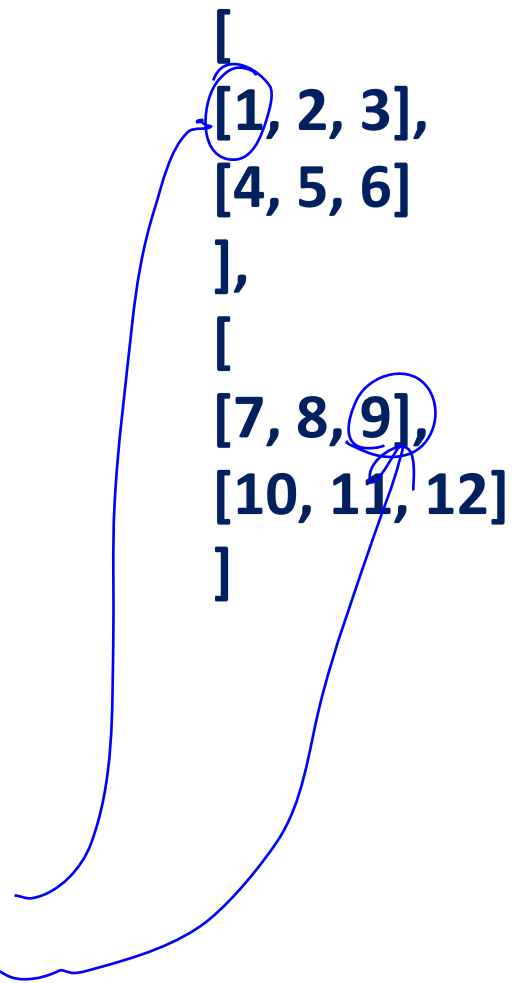
```
[  
  [1, 2, 3],  
  [4, 5, 6]  
],  
 [  
  [7, 8, 9],  
  [10, 11, 12]  
]
```

1)

Print(Arr3d)

Arr3d[0, 0, 0]

Arr3d[1, 0, 2]





# Indexing array

# Indexing of Array's

Arr3d = np.array([

```
[  
  [1, 2, 3],  
  [4, 5, 6]  
],  
 [  
  [7, 8, 9],  
  [10, 11, 12]  
]
```

])  
Print(Arr3d)

Arr3d[0, 0, 0]

Arr3d[1, 0, 2]



# Indexing array

## # Indexing of Array's

I = 1

J = 2

K = 0

Arr3d[I, j, k]



Arr3d[0, :, :]

Arr3d[1, :, :]

Arr3d[:, 1, :]

Arr3d[:, :, 0:2]



# Indexing array

# Fancy indexing

`Arr3d % 2 == 0`

`Arr3d[Arr3d % 2 == 0]` *even no. in a*

`Arr3d[Arr3d % 2 == 1]`

`Arr3d[(Arr3d % 2 == 1) & (Arr3d > 3)]`

`Arr_Slice = Arr3d[:, :, 0:2]`

`Print(type(Arr_Slice))`