Numpy Array

In [14]:

```
import numpy as np
```

In [15]:

```
# 0-D array or scalar
arr = np.array(42)
print(arr)
```

```
42
```

In [16]:

```
# 1-D array or vector
arr2 = np.array([1, 2, 3, 4, 5])
print(arr2)
```

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

In [17]:

```
# 2-D array or tensors
arr3 = np.array([[1, 2, 3], [4, 5, 6]])
print(arr3)
```

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

In [26]:

```
# 3-D array
arr4 = np.array([[[1,2],[3,4]],[[5,6],[7,8]]])
print(arr4)
```

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

 [[5 6]
  [7 8]]]
```

In [27]:

```
print(arr.ndim)
print(arr2.ndim)
print(arr3.ndim)
print(arr4.ndim) # 3 or more than 3 are 3-D arrays
```

```
0
1
2
3
```

In [32]:

```
arr5 = np.array([1, 2, 3, 4],ndmin=5)
print(arr5)
print('number of dimensions : ',arr5.ndim)
```

```
[[[1 2 3 4]]]
number of dimensions :  3
```

Array Indexing

In [33]:

```
arr6 = np.array([1, 2, 3, 4, 5])
print(arr6[0])
```

```
1
```

In [34]:

```
arr6 = np.array([1, 2, 3, 4, 5])
print(arr6[1])
```

```
2
```

In [36]:

```
arr6 = np.array([1, 2, 3, 4, 5])
print(arr6[2]+arr6[3])
```

```
7
```

In [40]:

```
# accessing array element
arr7 = np.array([[1, 2, 3, 4, 5], [6, 7, 8, 9, 10]])
print(arr7)
print("2nd element on first row : ", arr7[0,1])
```

```
[[ 1  2  3  4  5]
 [ 6  7  8  9 10]]
2nd element on first row :  2
```

In [51]:

```
# accessing the third element of the second array of the first array :
arr8 = np.array([[[1, 2, 3], [4, 5, 6]], [[7, 8, 9], [10, 11, 12]]])
print(arr8)
print(arr8[0, 1, 2])
```

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

 [[ 7  8  9]
  [10 11 12]]]
6
```

In [ ]:

```
1
```