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

In [2]:
```
my_array = np.array([10,20,15,45,75])
```

In [3]:
```
print(my_array)
```

```
[10 20 15 45 75]
```

In [4]:
```
print(type(my_array))
```

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

There are different types of Dimensions:

1. 0-D array
2. 1-D array
3. 2-D array
4. 3-D array

1. 0-D Array

In [5]:
```
import numpy as np
my_array = np.array(45)
print(my_array)
```

```
45
```

In [6]:
```
print(type(my_array))
```

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

2. 1-D Array

In [7]:
```
import numpy as np
my_array = np.array([42,78,62,20,41])
print(my_array)
```

```
[42 78 62 20 41]
```

In [8]:
```
print(type(my_array))
```

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

3. 2-D Array:

```
Syntax: np.array([[it 1-d array elements],[]])
```

In [10]:
```
my_array = np.array([[12,15,47,56],[12,15,45,1]])
```

In [11]:
```
my_array
```

Out[11]:
```
array([[12, 15, 47, 56],
       [12, 15, 45,  1]])
```

In [12]:
```
print(type(my_array))
```

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

4. 3-D Array

In [16]:
```
my_array = np.array([[[10,20,30],[40,50,60]],[[70,80,90],[60,46,25]]])
```

In [17]:
```
my_array
```

Out[17]:
```
array([[[10, 20, 30],
        [40, 50, 60]],

       [[70, 80, 90],
        [60, 46, 25]]])
```

In [21]:
```
my_array = np.array(45)
my_array1 = np.array([42,78,62,20,41])
my_array2 = np.array([[12,15,47,56],[12,15,45,1]])
my_array3 = np.array([[[10,20,30],[40,50,60]],[[70,80,90],[60,46,25]]])
```

In [25]:
```
print(my_array.ndim)
print(my_array1.ndim)
print(my_array2.ndim)
print(my_array3.ndim)
```

```
0
1
2
3
```

Higher Dimensional Arrays

In [34]:
```
my_array1 = np.array([42,78,62,20,41,45,20,46,85],ndmin =4)
```

In [32]:
```
my_array1
```

Out[32]:
```
array([[[[42, 78, 62, 20, 41, 45, 20, 46, 85]]]])
```

Accessing Array Elements:

1. Array indexing is same as array element
2. specific indexing with specific value

1. 0-D array
2. 1-D array
3. 2-D array
4. 3-D array

1-D Array elements accessing

In [35]:
```
my_array1 = np.array([42,78,62,20,41,45,20,46,85])
```

In [36]:
```
my_array1[3]
```

Out[36]:
```
20
```

In [38]:
```
my_array1[-1]
```

Out[38]:
```
85
```

In [44]:
```
my_array5 = my_array1[1] + my_array1[-1]
my_array5
```

Out[44]:
```
163
```

In [40]:
```
78 + 85
```

Out[40]:
```
163
```

2-D Array elements Accessing

In [45]:
```
my_array2 = np.array([[12,15,47,56],[12,15,45,1]])
```

In [47]:
```
my_array2[1,3]
```

Out[47]:
```
1
```

In [48]:
```
my_array2[0,3]
```

Out[48]: 56

In [49]:
```
my_array2[1,1]
```

Out[49]: 15

In [50]:
```
my_array2[0,2]
```

Out[50]: 47

3. 3-D Arrays Elements Accessing

In [51]:
```
my_array3 = np.array([[[10,20,30],[40,50,60]],[[70,80,90],[60,46,25]]])
```

In [52]:
```
my_array3[1,1,2]
```

Out[52]: 25

In [53]:
```
my_array3[0,1,2]
```

Out[53]: 60

In [54]:
```
my_array3[1,0,1]
```

Out[54]: 80

In [55]:
```
my_array5 = np.array([[[10,20,30],[50,45,65]],[[12,15,1],[78,7,8]]])
```

In [ ]:
```

```