Numpy Arrays

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

In [4]:
```
arr1=np.array([1,2,3,4,5])
arr1
```

Out[4]:
```
array([1, 2, 3, 4, 5])
```

In [5]:
```
type(arr1)
```

Out[5]:
```
numpy.ndarray
```

In [6]:
```
arr2=np.array([[1,2,3],[4,5,6]])
arr2
```

Out[6]:
```
array([[1, 2, 3],
       [4, 5, 6]])
```

In [7]:
```
arr3=np.zeros((2,3))
arr3
```

Out[7]:
```
array([[0., 0., 0.],
       [0., 0., 0.]])
```

In [8]:
```
arr4=np.ones((3,3))
arr4
```

Out[8]:
```
array([[1., 1., 1.],
       [1., 1., 1.],
       [1., 1., 1.]])
```

In [9]:
```
arr5=np.identity(5)
arr5
```

Out[9]:
```
array([[1., 0., 0., 0., 0.],
       [0., 1., 0., 0., 0.],
       [0., 0., 1., 0., 0.],
       [0., 0., 0., 1., 0.],
       [0., 0., 0., 0., 1.]])
```

In [10]:
```
arr6=np.arange(5,16,2)
arr6
```

Out[10]:
```
array([ 5,  7,  9, 11, 13, 15])
```

In [11]:
```
arr7=np.linspace(10,20,10)
arr7
```

Out[11]:
```
array([10.        , 11.11111111, 12.22222222, 13.33333333, 14.44444444,
       15.55555556, 16.66666667, 17.77777778, 18.88888889, 20.        ])
```

In [12]:
```
arr8=arr7.copy()
arr8
```

Out[12]:
```
array([10.        , 11.11111111, 12.22222222, 13.33333333, 14.44444444,
       15.55555556, 16.66666667, 17.77777778, 18.88888889, 20.        ])
```

In [13]:
```
arr1
```

Out[13]:
```
array([1, 2, 3, 4, 5])
```

Properties & Attributes

1. Shape
2. nDim
3. Size
4. ItemSize
5. Dtype
6. astype()

In [14]:
```
arr1.shape
```

Out[14]:
```
(5,)
```

In [15]:
```
arr2.shape
```

Out[15]:
```
(2, 3)
```

In [16]:
```
arr9=np.array([[[1,2],[3,4]],[[5,6],[7,8]]])
```

In [17]:
```
arr9
```

Out[17]:
```
array([[[1, 2],
        [3, 4]],

       [[5, 6],
        [7, 8]]])
```

In [18]:
```
arr9.shape
```

Out[18]:
```
(2, 2, 2)
```

In [19]:
```
arr9.ndim
```

Out[19]:
```
3
```

In [20]:
```
arr2
```

Out[20]:
```
array([[1, 2, 3],
       [4, 5, 6]])
```

In [21]:
```
arr2.ndim
```

Out[21]:
```
2
```

In [22]:
```
arr1.ndim
```

Out[22]:
```
1
```

In [23]:
```
arr1.size
```

Out[23]:
```
5
```

In [26]:
```
arr9
```

Out[26]:
```
array([[[1, 2],
        [3, 4]],

       [[5, 6],
        [7, 8]]])
```

In [24]:
```
arr9.size
```

Out[24]:
```
8
```

In [25]:
```
arr9.itemsize
```

Out[25]:
```
4
```

In [27]:
```
arr8.itemsize
```

Out[27]:
```
8
```

In [28]:
```
arr8.dtype
```

Out[28]:
```
dtype('float64')
```

In [29]:
```
arr9.dtype
```

Out[29]:
```
dtype('int32')
```

In [30]:
```
arr9.astype('float')
```

Out[30]:
```
array([[[1., 2.],
        [3., 4.]],

       [[5., 6.],
        [7., 8.]]])
```

In [ ]: