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

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

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

In [4]:
```
array_a[1]
```

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

In [5]:
```
array_a[0][1]
```

Out[5]:
```
2
```

In [6]:
```
array_a[0][0]
```

Out[6]:
```
1
```

In [7]:
```
array_a[1][2]
```

Out[7]:
```
6
```

In [8]:
```
array_a[1,0]
```

Out[8]:
```
4
```

In [9]:
```
array_a[:,0]
```

Out[9]:
```
array([1, 4])
```

In [10]:
```
array_a = np.array([1,2,3])
array_a[-1]
```

Out[10]:
```
3
```

In [11]:
```
array_a
```

Out[11]:
```
array([1, 2, 3])
```

In [12]:
```
array_a = np.array([[1,2,3], [4,5,6]])
array_a
```

Out[12]:
```
array([[1, 2, 3],
       [4, 5, 6]])
```

In [13]:
```
array_a[0,2] = 9
array_a
```

Out[13]:
```
array([[1, 2, 9],
       [4, 5, 6]])
```

In [14]:
```
array_a[0] = 9
array_a
```

Out[14]:
```
array([[9, 9, 9],
       [4, 5, 6]])
```

In [17]:
```
array_a[:,0] = 9
array_a
```

Out[17]:
```
array([[9, 9, 9],
       [9, 5, 6]])
```

In [18]:
```
list_a = [8,7,8]

array_a[0] = list_a
array_a
```

Out[18]:
```
array([[8, 7, 8],
       [9, 5, 6]])
```

In [19]:
```
array_a = np.array([7,8,9])
array_a
```

Out[19]:
```
array([7, 8, 9])
```

In [20]:
```
array_b = np.array([[1,2,3], [4,5,6]])
array_b
```

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

In [22]:
```
array_b + 2
```

Out[22]:
```
array([[3, 4, 5],
       [6, 7, 8]])
```

In [23]:
```
array_a + array_b[0]
```

Out[23]:
```
array([ 8, 10, 12])
```

In [24]:
```
array_a + array_b
```

Out[24]:
```
array([[ 8, 10, 12],
       [11, 13, 15]])
```

In [26]:
```
array_a * array_b
```

Out[26]:
```
array([[ 7, 16, 27],
       [28, 40, 54]])
```

In [27]:
```
array_a = np.array([[1,2,3], [4,5,6]])
array_a
```

Out[27]:
```
array([[1, 2, 3],
       [4, 5, 6]])
```

In [31]:
```
array_a = np.array([[1,2,3], [4,5,6]], dtype = np.float16)
array_a
```

Out[31]:
```
array([[1., 2., 3.],
       [4., 5., 6.]], dtype=float16)
```

In [33]:
```
array_a = np.array([[1,2,3], [4,5,6]], dtype = np.complex64)
array_a
```

Out[33]:
```
array([[1.+0.j, 2.+0.j, 3.+0.j],
       [4.+0.j, 5.+0.j, 6.+0.j]], dtype=complex64)
```

In [39]:
```
array_a = np.array([1,2,3])
array_a
```

Out[39]:
```
array([1, 2, 3])
```

In [40]:
```
array_b = np.array([[1],[2]])
array_b
```

Out[40]:
```
array([[1],
       [2]])
```

In [41]:
```
matrix_C = np.array([[1,2,3], [4,5,6]])
matrix_C
```

Out[41]:
```
array([[1, 2, 3],
       [4, 5, 6]])
```

In [42]:
```
np.add(array_b, matrix_C)
```

Out[42]:
```
array([[2, 3, 4],
       [6, 7, 8]])
```

In [43]:
```
np.add(array_b, matrix_C, dtype = np.float64)
```

Out[43]:
```
array([[2., 3., 4.],
       [6., 7., 8.]])
```

In [44]:
```
np.mean(matrix_C, axis = 0)
```

Out[44]:
```
array([2.5, 3.5, 4.5])
```

In [45]:
```
matrix_C
```

Out[45]:
```
array([[1, 2, 3],
       [4, 5, 6]])
```

In [ ]:
```

```