In [1]:
```
import numpy as np
arr=np.array([[-1,2,0,4],[-4,0.5,6,0],[2.6,0,7,8],[3,-7,4,2.0]])
print("Original array:\n",arr)
```

```
Original array:
 [[-1.   2.   0.   4. ]
 [-4.   0.5  6.   0. ]
 [ 2.6  0.   7.   8. ]
 [ 3.  -7.   4.   2. ]]
```

In [2]:
```
print("\n Every other rows:\n",arr[0:3:2])
```

```
 Every other rows:
 [[-1.   2.   0.   4. ]
 [ 2.6  0.   7.   8. ]]
```

In [3]:
```
arr=np.array([1,2,3,4,5,6,7])
print("\nOriginal array: ",arr)
print("\n returs every other element in the array: arr[::2]: ",arr[::2])
```

```
Original array:  [1 2 3 4 5 6 7]

 returs every other element in the array: arr[::2]:  [1 3 5 7]
```

In [5]:
```
arr=np.array([[-1,2,0,4],[-4,0.5,6,0],[2.6,0,7,8],[3,-7,4.2,0]])
temp=arr[:2,:3]
print("\nArray with fist 2 rows and 3 columns:\n",temp)
```

```
Array with fist 2 rows and 3 columns:
 [[-1.   2.   0. ]
 [-4.   0.5  6. ]]
```

In [9]:
```
arr=np.array([[10,20,30,40],
              [50,60,70,80],
              [90,100,110,120],
              [130,140,150,160]])
temp=arr[[0,1,2,3],[3,2,1,0]]
print("\nElements at indices (0,3),(1,1),(2,1)","(3,0):\n",temp)
```

```
Elements at indices (0,3),(1,1),(2,1) (3,0):
 [ 40  70 100 130]
```

In [10]:
```
arr=np.array([[1,2.4,3.4,90],
              [-50,-20,70,80],
              [90,0,1.6,120],
              [130,-40,10,16]
             ])
cond=arr>2
temp=arr[cond]
print("\nElements greater than 2:\n",temp)
```

```
Elements greater than 2:
 [  2.4   3.4  90.   70.   80.   90.  120.  130.   10.   16. ]
```

In [12]:
```
arr1=np.array([1,2,3])
arr2=np.array([4,5,6])
arr=np.concatenate((arr1,arr2))
```

```
print("\nOriginal arrays:\n",arr1,arr2)
print("\nJoined array:\n",arr)
```

```
Original arrays:
 [1 2 3] [4 5 6]

Joined array:
 [1 2 3 4 5 6]
```

In [15]:
```
arr=np.hstack((arr1,arr2))
print("\n Horizontal joining:\n",arr)
```

```
 Horizontal joining:
 [1 2 3 4 5 6]
```

In [16]:
```
arr=np.vstack((arr1,arr2))
print("\nvertical joining \n",arr)
```

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

In [17]:
```
arr=np.dstack((arr1,arr2))
print("\nDepth joining: \n",arr)
```

```
Depth joining:
 [[[1 4]
  [2 5]
  [3 6]]]
```

In [19]:
```
arr=np.array([1,2,3,4,5,6])
newarr=np.array_split(arr,3)
print("\nOriginal array:\n",arr)
print("\nSplitted array: \n",newarr)
print("\n Splitted array in another form\n")
print(newarr[0])
print(newarr[1])
print(newarr[2])
```

```
Original array:
 [1 2 3 4 5 6]

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

 Splitted array in another form

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

In [ ]:
```
```