In [14]:

```
student = {1:{'Name':'Ram','Marks':88},2:{'Name':"Sham",'Marks':92}}
print(student[1]['Name'])
print(student[1]['Marks'])
student[3] = {}
student[3]['Name'] = 'Radha'
student[3]['Cource'] = 'AI Using Python'
student[3]['Marks'] = 90
student[4]={'Name':'ABC','Marks':'87'}
print(student)
del student[3]['Cource']
print(student)
```

```
Ram
88
{1: {'Name': 'Ram', 'Marks': 88}, 2: {'Name': 'Sham', 'Marks': 92}, 3: {'Nam
e': 'Radha', 'Cource': 'AI Using Python', 'Marks': 90}, 4: {'Name': 'ABC',
'Marks': '87'}}
{1: {'Name': 'Ram', 'Marks': 88}, 2: {'Name': 'Sham', 'Marks': 92}, 3: {'Nam
e': 'Radha', 'Marks': 90}, 4: {'Name': 'ABC', 'Marks': '87'}}
```

In [37]:

```
import array as ar
a = ar.array('d',[1.6,7.8])
print(a)
print(a[-1])
print(a[-2])
print(a[1:2])
print(type(a[0]))

n = ar.array('i',[1,2,3,4])
print(n)
print(n[0])
n[1:3] = ar.array('i',[10,20,30,50])
print(n)
n.append(5)
print(n)
n.extend([1,2,3,9])
print(n)
a = ar.array('i',[1,2,3])
b = ar.array('i',[4,5,6])
c = a+b
print(c)
a = ar.array('i',[])
print(a)
a.extend([4,6,9,2])
print(a)
c.remove(4)
print(c)
print(c.pop())
del(c[2])
print(c)
```

```
array('d', [1.6, 7.8])
7.8
1.6
array('d', [7.8])
<class 'float'>
array('i', [1, 2, 3, 4])
1
array('i', [1, 10, 20, 30, 50, 4])
array('i', [1, 10, 20, 30, 50, 4, 5])
array('i', [1, 10, 20, 30, 50, 4, 5, 1, 2, 3, 9])
array('i', [1, 2, 3, 4, 5, 6])
array('i')
array('i', [4, 6, 9, 2])
array('i', [1, 2, 3, 5, 6])
6
array('i', [1, 2, 5])
```

In [87]:

```
import numpy as np
a = np.array([1,3,6,7])
print(a)
print(type(a))
b = np.array([1.6,3,6.5,7])
print(b)
print(type(a))
print(b.shape)
print(b.ndim)
print(b.dtype)
print(b.itemsize)
c = np.array([[1,2,3,4,5],[6,7,8,9,10]])
print(c)
d = np.arange(0,10)
print(d)
a = np.array([[1j,2,3],[4,5+6j,7]],dtype = complex)
print(a)
a = np.zeros((2,3))
print(a)
a = np.ones((2,3),dtype=int)
print(a)
a = np.ones((2,3))
print(a)
a = np.empty((2,2))
print(a)
a = np.arange(1,10,2)
print(a)
a = np.arange(10,15,.2)
print(a)
b = np.linspace(1,6,5)
print(b)
c = np.arange(0,10).reshape(2,5)
print(c)
a = np.arange(24).reshape(2,3,4)
print(a)
a = np.array([20,30,40,50])
b = np.array(4)
c = a+b
print(c)
c = a-b
print(c)
c = b**2
print(c)
c = a>35
print(c)
c = np.arange(0,10).reshape(2,5)
print(c)
print(a.transpose())
print(a*b)
print(a.dot(b))
a = np.array([[1,2],[3,4]])
print(a)
print(a[0][0])
print(a[0][1])
print(a[-1][-1])
print(a[-2][-2])
```

```
 [ 4  5  6  7]
 [ 8  9 10 11]]
```

```
 [[12 13 14 15]
  [16 17 18 19]
  [20 21 22 23]]]
[24 34 44 54]
[16 26 36 46]
16
[False False  True  True]
[[0 1 2 3 4]
 [5 6 7 8 9]]
[20 30 40 50]
[ 80 120 160 200]
[ 80 120 160 200]
[[1 2]
 [3 4]]
1
2
4
```

In [ ]: