```python
In [6]:  import numpy as np
```

```python
In [7]:  l1=[4,1,3,5]
         ar1=np.array(l1)
         print(ar1)
         print(type(ar1))
```

```
[4 1 3 5]
<class 'numpy.ndarray'>
```

```python
In [8]:  print(ar1.shape)
```

```
(4,)
```

```python
In [9]:  print(ar1.reshape(1,4))
         print(ar1.reshape(4,1))
```

```
[[4 1 3 5]]
[[4]
 [1]
 [3]
 [5]]
```

```python
In [10]:  ar2=ar1.reshape(1,4)
          ar3=ar1.reshape(4,1)
          print(ar2.shape)
          print(ar3.shape)
```

```
(1, 4)
(4, 1)
```

```python
In [11]:  l2=[7,5,6]
          l3=[2,3,4]
          l4=[8.9,1]
          ar4=np.array([12,13,14])
          print(type(ar4))
          print(ar4)
          print(ar4.shape)
```

```
<class 'numpy.ndarray'>
[12 13 14]
(3,)
```

```python
In [12]:  print(ar4.reshape(1,3))
          print(ar4.reshape(3,1))
```

```
[[12 13 14]]
[[12]
 [13]
 [14]]
```

```python
In [13]:  e=[1,2,3,4,5]
          f=[6,7,8,9,0]
          g=[4,8,7,6,2]
          h=np.array([e,f,g])
          print(h)
          print(type(h))
          print(h.shape)
```

```
[[1 2 3 4 5]
 [6 7 8 9 0]
 [4 8 7 6 2]]
<class 'numpy.ndarray'>
(3, 5)
```

In [14]:
```python
print(ar4)
```

```
[12 13 14]
```

In [15]:
```python
l5=[1,2,3,4,5]
l6=[7,8,9,0,1]
l7=[1,3,4,5,6]
l8=[7,7,2,3,4]
ar5=np.array([l5,l6,l7,l8])
print(ar5)
```

```
[[1 2 3 4 5]
 [7 8 9 0 1]
 [1 3 4 5 6]
 [7 7 2 3 4]]
```

In [16]:
```python
print(ar5[:,:])
```

```
[[1 2 3 4 5]
 [7 8 9 0 1]
 [1 3 4 5 6]
 [7 7 2 3 4]]
```

In [17]:
```python
print(ar5[2:,1:4])
```

```
[[3 4 5]
 [7 2 3]]
```

In [18]:
```python
print(ar5[1:,1:])
```

```
[[8 9 0 1]
 [3 4 5 6]
 [7 2 3 4]]
```

In [20]:
```python
print(ar5[1:5,:3])
```

```
[[7 8 9]
 [1 3 4]
 [7 7 2]]
```

In [22]:
```python
ar6=np.arange(1,10,2)
print(ar6)
```

```
[1 3 5 7 9]
```

In [23]:
```python
ar7=np.linspace(1,20,10)
print(ar7)
```

```
[ 1.          3.11111111  5.22222222  7.33333333  9.44444444 11.55555556
 13.66666667 15.77777778 17.88888889 20.        ]
```

In [24]:
```python
ar6*2
```

Out[24]:
```
array([ 2,  6, 10, 14, 18])
```

In [25]:
```python
ar6%2==0
```

Out[25]:
```
array([False, False, False, False, False])
```

In [26]:
```python
ar7[4:]=10
print(ar7)
```

```
[ 1.          3.11111111  5.22222222  7.33333333 10.         10.
 10.         10.         10.         10.        ]
```

In [27]:
```python
ar7[4:8:3]=11
print(ar7)
```

```
[ 1.          3.11111111  5.22222222  7.33333333 11.          10.
 10.          11.          10.          10.         ]
```

In [28]:
```python
ar8=[40,60,33,44,85,92]
print(ar8)
```

```
[40, 60, 33, 44, 85, 92]
```

In [29]:
```python
print(np.random.rand(3,3))
```

```
[[0.32234709 0.55824025 0.18329623]
 [0.44302163 0.66705748 0.33399015]
 [0.42935673 0.77930935 0.13278343]]
```

In [30]:
```python
print(np.random.rand(3,4))
```

```
[[0.31425868 0.77735604 0.87971805 0.5709367 ]
 [0.49508352 0.24956624 0.84031313 0.37814125]
 [0.3519839  0.24658593 0.4864597  0.80720438]]
```

In [ ]: