In [1]:

```
import numpy as np
```

In [9]:

```
a=[4,1,3,5,6]
ar=np.array(a)
print(ar)
print(type(ar))
```

```
[4 1 3 5 6]
<class 'numpy.ndarray'>
```

In [11]:

```
print(ar.shape)
```

```
(5,)
```

In [10]:

```
print(ar[1])
print(ar[0])
```

```
1
4
```

In [13]:

```
print(ar.reshape(1,5))
print(ar.reshape(5,1))
```

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

In [15]:

```
ar1=ar.reshape(1,5)
ar2=ar.reshape(5,1)
print(ar1.shape)
print(ar2.shape)
```

```
(1, 5)
(5, 1)
```

In [19]:

```
b=[5,4,3]
c=[9,8,7]
d=[13,12,11]
ar3=np.array([b,c,d])
print(type(ar3))
print(ar3)
print(ar3.shape)
```

```
<class 'numpy.ndarray'>
[[ 5  4  3]
 [ 9  8  7]
 [13 12 11]]
(3, 3)
```

In [21]:

```
print(ar3.reshape(1,9))
```

```
print(ar3.reshape(9,1))
```

```
[[ 5  4  3  9  8  7 13 12 11]]
[[ 5]
 [ 4]
 [ 3]
 [ 9]
 [ 8]
 [ 7]
 [13]
 [12]
 [11]]
```

In [22]:

```
print(ar3)
```

```
[[ 5  4  3]
 [ 9  8  7]
 [13 12 11]]
```

In [24]:

```
e=[1,2,3,4,5]
f=[7,8,9,3,5]
g=[8,9,6,7,8]
h=[6,6,8,9,4]
ar4=np.array([e,f,g,h])
print(ar4)
```

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

In [25]:

```
print(ar4[2:,1:3])
```

```
[[9 6]
 [6 8]]
```

In [26]:

```
print(ar4[1:,1:])
```

```
[[8 9 3 5]
 [9 6 7 8]
 [6 8 9 4]]
```

In [27]:

```
print(ar4[1:3,:2])
```

```
[[7 8]
 [8 9]]
```

In [2]:

```
import numpy as np
ar5=np.arange(1,8,2)
print(ar5)
```

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

In [3]:

```
ar6=np.linspace(1,20,13)
print(ar6)
```

```
[ 1.          2.58333333  4.16666667  5.75        7.33333333  8.91666667
```

```
 10.5        12.08333333 13.66666667 15.25       16.83333333 18.41666667
 20.        ]
```

In [4]:

```
ar5*2
```

Out[4]:

```
array([ 2,  6, 10, 14])
```

In [5]:

```
ar5%2==0
```

Out[5]:

```
array([False, False, False, False])
```

In [6]:

```
ar6[4:]=10
print(ar6)
```

```
[ 1.          2.58333333  4.16666667  5.75       10.         10.
 10.         10.         10.         10.         10.         10.
 10.        ]
```

In [7]:

```
ar6[4:7:3]=11
print(ar6)
```

```
[ 1.          2.58333333  4.16666667  5.75       11.         10.
 10.         10.         10.         10.         10.         10.
 10.        ]
```

In [8]:

```
ar7=[10,30,50,67,88]
print(ar7)
```

```
[10, 30, 50, 67, 88]
```

In [9]:

```
print(np.random.rand(3,3))
```

```
[[0.36338467 0.74750756 0.94418814]
 [0.13691109 0.40539863 0.43303446]
 [0.66953926 0.34966575 0.86821507]]
```

In [10]:

```
print(np.random.randn(3,4))
```

```
[[ 0.28033905  0.15016285 -0.61706521  0.09309575]
 [-0.67603214  0.51372116 -0.0790171  -0.53398428]
 [ 1.42454877 -0.01242854  0.51288049  2.22468367]]
```

In [ ]:

```

```