In [17]:
```
import numpy as ny
a=["bmw","honda","yamaha"]
b =ny.array(a)
print(ny.array(a))
print(type(b))
print(b.shape)
```

```
['bmw' 'honda' 'yamaha']
<class 'numpy.ndarray'>
(3,)
```

In [11]:
```
print(len(a))
```

```
3
```

In [16]:
```
newarr = b.reshape(1,3)
print(newarr)
newarr2=b.reshape(3,1)
print(newarr2)
```

```
[['bmw' 'honda' 'yamaha']]
[['bmw']
 ['honda']
 ['yamaha']]
```

In [22]:
```
a=[1,2,3,4]
b=[6,7,8,9]
c=[2,4,6,8]
h=ny.array([b,c,a])
print(h)
print(type(h))
print(h.shape)
```

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

In [24]:
```
print(h[1,2])
```

```
6
```

In [26]:
```
print(h.reshape(1,12))
print(h.reshape(12,1))
```

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

In [29]:
```
a=[1,2,3,4,5]
b=[7,8,9,0,1]
c=[1,3,4,5,6]
d =[7,7,2,3,4]
arr5= ny.array([a,b,c,d])
print(arr5)
```

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

In [31]:
```
print(arr5[:,:])
```

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

In [33]:
```
print(arr5[2:,1:3])
```

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

In [34]:
```
print(arr5[1:,1:])
```

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

In [35]:
```
print(arr5[1:3,:2])
```

```
[[7 8]
 [1 3]]
```

In [44]:
```
arn = ny.arange(20,0,-1)
print(arn)
```

```
[20 19 18 17 16 15 14 13 12 11 10  9  8  7  6  5  4  3  2  1]
```

In [39]:
```
arn = ny.arange(2,20,2)
print(arn)
```

```
[ 2  4  6  8 10 12 14 16 18]
```

In [48]:
```
ln=ny.linspace(1.0,2.0,5,endpoint=False)
print(ln)
```

```
[1.  1.2 1.4 1.6 1.8]
```

In [50]:
```
print(arn*2)
```

```
[40 38 36 34 32 30 28 26 24 22 20 18 16 14 12 10  8  6  4  2]
```

In [51]:
```
print(arn%2==0)
```

```
[ True False  True False  True False  True False  True False  True False
  True False  True False  True False  True False]
```

In [55]:
```
ar7=ny.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 [56]:
```
ar7[4:]=10
print(ar7)
```

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

In [57]:
```
ar8=[40,60,33,44,85,92]
print(ar8)
```

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

In [59]:
```
print(ny.random.rand(3,3))
```

```
[[0.63054986 0.85732097 0.40475535]
 [0.77723695 0.55578695 0.99510437]
 [0.216468   0.22675974 0.30983931]]
```

In [60]:
```
print(ny.random.rand(3,3))
```

```
[[0.16414856 0.93969591 0.39655578]
 [0.11304145 0.97752723 0.3410229 ]
 [0.25241053 0.60135958 0.85737328]]
```

In [61]:
```
print(ny.random.rand(3,4))
```

```
[[0.95719302 0.67672053 0.39873052 0.22751868]
 [0.10022366 0.93849031 0.18253784 0.84736272]
 [0.68064617 0.75216215 0.64008861 0.78578533]]
```

In [ ]:
```

```