In [12]:
```
import numpy as np
```

In [14]:
```
a=["bmv","bonda"]
print(np.array(a))
print(len(a))
print(type(a))
b=a[0]
print(b)
```

```
['bmv' 'bonda']
2
<class 'list'>
bmv
```

In [15]:
```
b=np.array(a)
print(b)
print(type(b))
```

```
['bmv' 'bonda']
<class 'numpy.ndarray'>
```

In [16]:
```
print(b.shape)
```

```
(2,)
```

In [22]:
```
print(b.reshape(1,2))
print(b.reshape(2,1))
```

```
[['bmv' 'bonda']]
[['bmv']
 ['bonda']]
```

In [24]:
```
c=b.reshape(1,2)
print(c.shape)
print(c)
```

```
(1, 2)
[['bmv' 'bonda']]
```

In [31]:
```
arr=["hek","hgdfh","hgsdfjhg",
    "hgdfsj"]
ca=ny.array(arr)
print(ca)
print(type(ca))
print(ca.shape)
ba=ca[0]
print(ba)
```

```
['hek' 'hgdfh' 'hgsdfjhg' 'hgdfsj']
<class 'numpy.ndarray'>
(4,)
hek
```

In [38]:
```
a=['gfsdhg','afds','hgdjh']
b=['jhgfs','jf','jhf']
c=ny.array([a,b])
print(type(c))
print(c.shape)
print(c)
```

```
<class 'numpy.ndarray'>
(2, 3)
[['gfsdhg' 'afds' 'hgdjh']
 ['jhgfs' 'jf' 'jhf']]
```

In [40]:
```
print(c.reshape(1,6))
```

```
[['gfsdhg' 'afds' 'hgdjh' 'jhgfs' 'jf' 'jhf']]
```

In [45]:
```
print(c.reshape(2,3))
```

```
[['gfsdhg' 'afds' 'hgdjh']
 ['jhgfs' 'jf' 'jhf']]
```

In [17]:
```
a=[1,2,3]
b=[5,6,7]
c=[8,9,0]
d=np.array([a,b,c])
print(d)
print(type(d))
```

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

In [69]:
```
print(d[2:3])
```

```
[[8 9 0]]
```

In [70]:
```
print(d[2:3,1:3])
```

```
[[9 0]]
```

In [71]:
```
print(d[2:3,1:2])
```

```
[[9]]
```

In [76]:
```
print(d[1:3,1:3])
```

```
[[6 7]
 [9 0]]
```

In [74]:
```
print(d[1:3])
```

```
[[5 6 7]
 [8 9 0]]
```

In [77]:
```
print(d[1:,1:])
```

```
[[6 7]
 [9 0]]
```

In [19]:
```
ae=np.arange(1,10,2)
print(ae)
```

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

In [20]:
```
ae=np.arange(50,10,-2)
print(ae)
```

```
[50 48 46 44 42 40 38 36 34 32 30 28 26 24 22 20 18 16 14 12]
```

In [23]:
```
be=np.linspace(1,30,2)
print(be)
```

```
[ 1. 30.]
```

In [24]:
```
be=np.linspace(1,30,20)
print(be)
```

```
[ 1.          2.52631579  4.05263158  5.57894737  7.10526316  8.63157895
 10.15789474 11.68421053 13.21052632 14.73684211 16.26315789 17.78947368
 19.31578947 20.84210526 22.36842105 23.89473684 25.42105263 26.94736842
 28.47368421 30.        ]
```

In [26]:
```
ae*4
```

Out[26]:
```
array([200, 192, 184, 176, 168, 160, 152, 144, 136, 128, 120, 112, 104,
        96,  88,  80,  72,  64,  56,  48])
```

In [27]:
```
ae%2==0
```

Out[27]:
```
array([ True,  True,  True,  True,  True,  True,  True,  True,  True,
        True,  True,  True,  True,  True,  True,  True,  True,  True,
        True,  True])
```

In [28]:
```
ae%4==0
```

Out[28]:
```
array([False,  True, False,  True, False,  True, False,  True, False,
        True, False,  True, False,  True, False,  True, False,  True,
       False,  True])
```

In [29]:
```
ae[3:]=12
print(ae)
```

```
[50 48 46 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12]
```

In [34]:
```
ae[2:4]=12
print(ae)
```

```
[50 48 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12]
```

In [38]:
```
ae[4:5:6]=12
print(ae)
```

```
[50 48 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12]
```

In [40]:
```
print(np.random.rand(4,5))
```

```
[[0.02792737 0.50117428 0.64981402 0.08556355 0.02555695]
 [0.27465758 0.49499645 0.84906557 0.00836729 0.05128871]
 [0.0349983  0.12078406 0.58204431 0.17679724 0.05682762]
 [0.17801191 0.65024261 0.76503647 0.19306735 0.7353746 ]]
```

In [41]:
```
print(np.random.randn(4,5))
```

```
[[-0.82808314  1.66300252 -0.68443916 -1.269732   -0.55689761]
 [ 1.1420329   0.70180437 -1.7663201   0.43397421 -0.6020295 ]
 [-1.63152613 -1.41825928 -1.01094718 -1.56999028  1.80114605]
 [-0.90627203  0.55702702  1.12652301  0.81933513 -0.18259524]]
```

In [ ]: