In [3]:

```
# Numpy
import numpy as np
```

In [6]:

```
# list
l1 = [1,2,3,4,5]
```

In [7]:

```
l1
```

Out[7]:

```
[1, 2, 3, 4, 5]
```

In [8]:

```
type(l1)
```

Out[8]:

```
list
```

In [4]:

```
# one dimension
a = np.array([1,2,3,4])
```

In [5]:

```
a
```

Out[5]:

```
array([1, 2, 3, 4])
```

In [9]:

```
type(a)
```

Out[9]:

```
numpy.ndarray
```

In [10]:

```
# two dimension
b = np.array([[1,2],[3,4]])
```

In [22]:

```
b
```

Out[22]:

```
array([[1, 2],
       [3, 4]])
```

In [16]:

```
# # three dimension
c = np.array([[[1,2,3],[4,5,6],[7,8,9]],[[9,8,7],[6,5,4],[3,2,1]]])
```

In [23]:

```
c
```

Out[23]:

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

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

In [27]:

```
d1 = np.array([1,2,3,4,5,6], ndmin=1)
d1
```

Out[27]:

```
array([1, 2, 3, 4, 5, 6])
```

In [28]:

```
d2 = np.array([1,2,3,4,5,6], ndmin=2)
d2
```

Out[28]:

```
array([[1, 2, 3, 4, 5, 6]])
```

In [45]:

```
d3 = np.array([1,2,3,4,5,6,7], ndmin=3)
d3
```

Out[45]:

```
array([[[1, 2, 3, 4, 5, 6, 7]]])
```

In [30]:

```
# 3 x 3
e1 = np.array([
               [[1,2,3],[4,5,6],[7,8,9]],
               [[9,8,7],[6,5,4],[3,2,1]],
               [[1,2,3],[4,5,6],[7,8,9]],
               ])
```

In [34]:

```
e1
```

Out[34]:

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

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

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

In [42]:

```
f1 = np.array([1,2,3,4,5,6],ndmin=2, dtype=int)
f1
```

Out[42]:

```
array([[1, 2, 3, 4, 5, 6]])
```

In [43]:

```
f1 = np.array([1,2,3,4,5,6],ndmin=2, dtype=float)
f1
```

Out[43]:

```
array([[1., 2., 3., 4., 5., 6.]])
```

In [44]:

```
f1 = np.array([1,2,3,4,5,6],ndmin=2, dtype=complex)
f1
```

Out[44]:

```
array([[1.+0.j, 2.+0.j, 3.+0.j, 4.+0.j, 5.+0.j, 6.+0.j]])
```

In [ ]: