

In [2]:

```
import numpy as np
from time import time
```

In [26]:

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

Out[26]:

```
array([[0.],
       [0.],
       [0.],
       [0.],
       [0.]])
```

In [16]:

```
a = np.random.rand(100) # Create N length 1D array (here N=100)
print(a.shape)
print(len(a))
```

```
(100,)
100
```

In [17]:

```
a = np.random.rand(12,4)
print(a.shape)
```

```
(12, 4)
```

In [20]:

```
a = np.random.rand(1000000)
b = np.random.rand(1000000)

tic=time()
c = np.dot(a,b)
print("Vectorized Time(ms): {}".format((time()-tic)*1000))

c=0
tic=time()
for i in range(len(a)):
    c += a[i]*b[i]
print("Non-Vectorized Time(ms): {}".format((time()-tic)*1000))
```

```
Vectorized Time(ms): 0.9992122650146484
Non-Vectorized Time(ms): 435.17160415649414
```