Matrix Multiplication

In [2]:
```
import numpy as np
```

In [4]:
```
m1 = np.array([[1,2],[2,3]])  1= (0,0) (0,1) 1 * 4 + 2 * 6 =
m2 = np.array([[4,5],[6,7]])

m1 * m2 # arithematic operation +,-,*,/,%,//
```

Out[4]:
```
array([[ 4, 10],
       [12, 21]])
```

In [5]:
```
result = np.dot(m1,m2)
```

In [7]:
```
result
```

Out[7]:
```
array([[16, 19],
       [26, 31]])
```

In [ ]:
```
1    2        4   5
2    3        6   7

1 * 4 + 2 * 6   =  4+12=16    16    1 * 5 + 2* 7 =19
```

In [ ]:
```

```

Broadcasting

In [ ]:
```
##
```

In [15]:
```
a = np.array([1,2,4])
b = np.array([2,6,7])
a * b
```

Out[15]:
```
array([ 2, 12, 28])
```

In [12]:
```
a.shape
```

Out[12]:
```
(3,)
```

In [13]:
```
b.shape
```

Out[13]:
```
(4,)
```

In [ ]:
```
3 x 1 = 3/1  3/3

1
3
```

In [27]:
```
x1 = np.array([[1,2,3],[4,5,6]])
x2 = np.array([[1,1,1],[2,4,5]])
x1 + x2
```

Out[27]:
```
array([[ 2,  3,  4],
       [ 6,  9, 11]])
```

In [19]:
```
x2.shape
```

Out[19]:
```
(2, 3)
```

In [ ]:
```
 2 x 3   = 6  1 2 3
 1 x 1
 1 * 3
 2 x 3
 #3 x 2
```