new Class Date: 10- Jun - 2020

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

```
In [10]:  # -----identity-----
          # it's method of numpy only accept one value for both row and column which is
           the first parametre
          # it also accept dtype to denote or change the datatype to display

          np.identity(5, dtype=int)
```

```
Out[10]:  array([[1, 0, 0, 0, 0],
                 [0, 1, 0, 0, 0],
                 [0, 0, 1, 0, 0],
                 [0, 0, 0, 1, 0],
                 [0, 0, 0, 0, 1]])
```

```
In [14]:  # ----- eye -----
          # it's advance method that
          np.eye(5,6, 2, dtype=int)
```

```
Out[14]:  array([[0, 0, 1, 0, 0, 0],
                 [0, 0, 0, 1, 0, 0],
                 [0, 0, 0, 0, 1, 0],
                 [0, 0, 0, 0, 0, 1],
                 [0, 0, 0, 0, 0, 0]])
```

```
In [17]:  np.random.rand(3,2)
```

```
Out[17]:  array([[0.63538248, 0.86852338],
                 [0.31475639, 0.58261518],
                 [0.66815851, 0.37080628]])
```

```
In [18]:  np.random.randint(1,21,5)
```

```
Out[18]:  array([10,  4,  5,  4, 15])
```

```
In [20]:  a = np.array([1,2,3])
          a
```

```
Out[20]:  array([1, 2, 3])
```

```
In [21]:  a.shape
```

```
Out[21]:  (3,)
```

In [23]:
```python
a = np.array([[1,2,3], [4,5,6],[7,8,9]])
a
```

Out[23]:
```
array([[1, 2, 3],
       [4, 5, 6],
       [7, 8, 9]])
```

In [24]:
```python
A = a[1:,2:]
A
```

Out[24]:
```
array([[6],
       [9]])
```

In [27]:
```
x = np.random.rand(4,5,6)
x
```

Out[27]: array([[[4.17072724e-01, 2.86337122e-03, 8.26024105e-01, 3.78022957e-01,
           3.02179400e-02, 9.85493306e-01],
          [7.48838961e-02, 1.55895499e-01, 6.89264552e-01, 1.21440403e-01,
           7.47474510e-01, 6.31117205e-01],
          [5.60849025e-01, 9.85819274e-01, 6.96705188e-01, 9.87746843e-01,
           2.50131139e-01, 3.08829527e-01],
          [7.28310554e-02, 3.65365316e-01, 1.75630444e-01, 6.28839654e-01,
           8.50082913e-01, 2.47904167e-01],
          [2.38324441e-01, 8.69793452e-02, 8.06914889e-01, 8.66955958e-01,
           1.58337393e-01, 4.64261241e-01]],

         [[3.04299956e-02, 6.58507174e-01, 5.41015741e-01, 4.66217731e-01,
           1.82825411e-01, 3.29732467e-01],
          [7.50486305e-01, 8.75482624e-01, 5.52504135e-02, 5.16904008e-02,
           6.54546499e-01, 2.02254038e-01],
          [1.87914614e-02, 8.04215366e-01, 9.33804278e-01, 7.94577849e-01,
           7.76834125e-01, 6.51127585e-01],
          [6.73634330e-01, 1.73688539e-01, 3.77516193e-01, 6.29089593e-02,
           4.25050925e-02, 7.55900322e-01],
          [1.51799377e-01, 4.99624872e-01, 8.35826245e-01, 2.41617366e-01,
           5.88805615e-01, 6.33044935e-01]],

         [[5.73474076e-01, 8.54887976e-01, 1.48600783e-02, 6.23521219e-02,
           2.96809582e-01, 6.15819274e-01],
          [4.16933350e-01, 4.86032948e-01, 3.06227071e-01, 8.60134315e-01,
           2.19465966e-01, 6.51668828e-01],
          [6.37976158e-01, 3.85574523e-01, 1.53489258e-01, 5.93646541e-03,
           3.71946255e-01, 2.85240489e-01],
          [5.84927446e-01, 6.38308631e-01, 3.88206102e-01, 5.59506012e-01,
           1.21158686e-01, 4.33028708e-01],
          [7.18276345e-01, 7.35694604e-01, 2.49885287e-01, 6.96303142e-01,
           1.80863622e-01, 8.39461903e-01]],

         [[1.71611958e-02, 2.11630321e-01, 4.26243367e-01, 6.72143079e-01,
           2.58339986e-01, 7.50223731e-01],
          [6.19832181e-01, 9.56633226e-01, 2.54974196e-01, 4.41195129e-01,
           9.15773142e-01, 1.46419297e-01],
          [3.77117186e-01, 1.58798509e-01, 2.21226072e-01, 2.42853683e-01,
           2.08783708e-04, 9.56804788e-01],
          [6.21656355e-01, 5.97167193e-01, 6.72216706e-01, 5.72893033e-01,
           5.46305899e-01, 6.49868278e-01],
          [1.71580176e-01, 3.19906925e-01, 2.30972899e-01, 5.88378978e-01,
           9.33047874e-01, 8.01634884e-01]]])
```

In [28]: 
```
x.ndim
```

Out[28]: 3

```
In [49]: y, z = np.split(x,2)
         y
```

```
Out[49]: array([[[0.41707272, 0.00286337, 0.8260241 , 0.37802296, 0.03021794,
                  0.98549331],
                 [0.0748839 , 0.1558955 , 0.68926455, 0.1214404 , 0.74747451,
                  0.63111721],
                 [0.56084902, 0.98581927, 0.69670519, 0.98774684, 0.25013114,
                  0.30882953],
                 [0.07283106, 0.36536532, 0.17563044, 0.62883965, 0.85008291,
                  0.24790417],
                 [0.23832444, 0.08697935, 0.80691489, 0.86695596, 0.15833739,
                  0.46426124]],

                [[0.03043   , 0.65850717, 0.54101574, 0.46621773, 0.18282541,
                  0.32973247],
                 [0.75048631, 0.87548262, 0.05525041, 0.0516904 , 0.6545465 ,
                  0.20225404],
                 [0.01879146, 0.80421537, 0.93380428, 0.79457785, 0.77683413,
                  0.65112759],
                 [0.67363433, 0.17368854, 0.37751619, 0.06290896, 0.04250509,
                  0.75590032],
                 [0.15179938, 0.49962487, 0.83582625, 0.24161737, 0.58880562,
                  0.63304494]]])
```

```
In [31]: z
```

```
Out[31]: array([[[5.73474076e-01, 8.54887976e-01, 1.48600783e-02, 6.23521219e-02,
                  2.96809582e-01, 6.15819274e-01],
                 [4.16933350e-01, 4.86032948e-01, 3.06227071e-01, 8.60134315e-01,
                  2.19465966e-01, 6.51668828e-01],
                 [6.37976158e-01, 3.85574523e-01, 1.53489258e-01, 5.93646541e-03,
                  3.71946255e-01, 2.85240489e-01],
                 [5.84927446e-01, 6.38308631e-01, 3.88206102e-01, 5.59506012e-01,
                  1.21158686e-01, 4.33028708e-01],
                 [7.18276345e-01, 7.35694604e-01, 2.49885287e-01, 6.96303142e-01,
                  1.80863622e-01, 8.39461903e-01]],

                [[1.71611958e-02, 2.11630321e-01, 4.26243367e-01, 6.72143079e-01,
                  2.58339986e-01, 7.50223731e-01],
                 [6.19832181e-01, 9.56633226e-01, 2.54974196e-01, 4.41195129e-01,
                  9.15773142e-01, 1.46419297e-01],
                 [3.77117186e-01, 1.58798509e-01, 2.21226072e-01, 2.42853683e-01,
                  2.08783708e-04, 9.56804788e-01],
                 [6.21656355e-01, 5.97167193e-01, 6.72216706e-01, 5.72893033e-01,
                  5.46305899e-01, 6.49868278e-01],
                 [1.71580176e-01, 3.19906925e-01, 2.30972899e-01, 5.88378978e-01,
                  9.33047874e-01, 8.01634884e-01]]])
```

```
In [50]: m = np.dsplit(y,2)
         m
```

```
Out[50]: [array([[[0.41707272, 0.00286337, 0.8260241 ],
                  [0.0748839 , 0.1558955 , 0.68926455],
                  [0.56084902, 0.98581927, 0.69670519],
                  [0.07283106, 0.36536532, 0.17563044],
                  [0.23832444, 0.08697935, 0.80691489]],

                 [[0.03043   , 0.65850717, 0.54101574],
                  [0.75048631, 0.87548262, 0.05525041],
                  [0.01879146, 0.80421537, 0.93380428],
                  [0.67363433, 0.17368854, 0.37751619],
                  [0.15179938, 0.49962487, 0.83582625]]]),
          array([[[0.37802296, 0.03021794, 0.98549331],
                  [0.1214404 , 0.74747451, 0.63111721],
                  [0.98774684, 0.25013114, 0.30882953],
                  [0.62883965, 0.85008291, 0.24790417],
                  [0.86695596, 0.15833739, 0.46426124]],

                 [[0.46621773, 0.18282541, 0.32973247],
                  [0.0516904 , 0.6545465 , 0.20225404],
                  [0.79457785, 0.77683413, 0.65112759],
                  [0.06290896, 0.04250509, 0.75590032],
                  [0.24161737, 0.58880562, 0.63304494]]])]
```

```
In [ ]:
```

```
In [ ]:
```

```
In [ ]:
```

```
In [ ]:
```

```
In [51]: np.random.exponential(3)
```

```
Out[51]: 1.0852269406892296
```

```
In [52]: x = np.array([2,4,6,7])
         y = np.array([1,5,7,4])
         x
```

```
Out[52]: array([2, 4, 6, 7])
```

```
In [53]: y
```

```
Out[53]: array([1, 5, 7, 4])
```

```
In [55]: m = np.stack((x,y))
         m
```

```
Out[55]: array([[2, 4, 6, 7],
                [1, 5, 7, 4]])
```

Bitwise method

```
In [56]:   d = np.array([1,0,1,0])
           t = np.array([1,1,0,0])
```

```
In [59]:   g = np.bitwise_x(d,t)
           g
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
<ipython-input-59-882ee4d4e89a> in <module>
----> 1 g = np.bitwise_x(d,t)
      2 g

~\anaconda3\lib\site-packages\numpy\__init__.py in __getattr__(attr)
    218             else:
    219                 raise AttributeError("module {!r} has no attribute "
--> 220                                      "{!r}".format(__name__, attr))
    221
    222         def __dir__():

AttributeError: module 'numpy' has no attribute 'bitwise_x'
```

```
In [ ]:
```