Day1 20 July 2020

IDLE, VS Code, Spyder, Atom, Py Charm, Jupyter Notebooks.....

Numpy, Pandas, Matpotlib

Python List

Non Homogenous group of data type of elements

In [1]:

```
[1, 4, 5, 'asaD', 'SDFSD', 12.2]
```

Out[1]:

```
[1, 4, 5, 'asaD', 'SDFSD', 12.2]
```

In [ ]:

```
numbers --> int, float, complex

1000000 --> int, float, complex
```

In [2]:

```
import numpy
```

In [3]:

```
arr = numpy.array()
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-3-378ce9b3bb1a> in <module>
----> 1 arr = numpy.array()
      2
      3 print(arr, type(arr))

TypeError: array() missing required argument 'object' (pos 1)
```

In [4]:

```
arr = numpy.array([])
arr1 = numpy.array(())

print(arr, type(arr))
```

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

In [5]:

```
import numpy as np
```

In [7]:

```
print(np.array([1, 2, 3]))
```

```
[1 2 3]
```

In [8]:

```
arr = np.array([1, 2, 3])

arr
```

Out[8]:

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

In [9]:

```
arr.dtype
```

Out[9]:

```
dtype('int32')
```

In [13]:

```
arr = np.array([])
print(arr)

arr = np.append(arr, [12, 14])

print(arr)
```

```
[]
[12. 14.]
```

In [14]:

```
print(arr)
```

```
[12. 14.]
```

range(start, stop, inc/dec)

start = 0 stop = req argument exclusive inc/dec = 1

In [17]:

```
print(np.arange(10))
print(np.arange(1, 10))
print(np.arange(1,50,10))
```

```
[0 1 2 3 4 5 6 7 8 9]
[1 2 3 4 5 6 7 8 9]
[ 1 11 21 31 41]
```

In [18]:

```
arr = np.arange(1, 10)
```

In [20]:

```
arr.size, len(arr)
```

Out[20]:

```
(9, 9)
```

In [21]:

```
arr.itemsize
```

Out[21]:

```
4
```

In [22]:

```
arr.dtype
```

Out[22]:

```
dtype('int32')
```

In [23]:

```
arr.nbytes
```

Out[23]:

```
36
```

In [28]:

```
zeros = np.zeros(10, dtype = "int8")
print(zeros, zeros.dtype)
```

```
[0 0 0 0 0 0 0 0 0 0] int8
```

In [29]:

```
zeros.nbytes
```

Out[29]:

```
10
```

In [31]:

```
np.ones(10, dtype = int)
```

Out[31]:

```
array([1, 1, 1, 1, 1, 1, 1, 1, 1, 1])
```

In [34]:

```
np.full(10, "APSSDC")
```

Out[34]:

```
array(['APSSDC', 'APSSDC', 'APSSDC', 'APSSDC', 'APSSDC', 'APSSDC',
       'APSSDC', 'APSSDC', 'APSSDC', 'APSSDC'], dtype='<U6')
```

In [35]:

```
np.linspace(1, 10, 50)
```

Out[35]:

```
array([ 1.        ,  1.18367347,  1.36734694,  1.55102041,  1.73469388,
        1.91836735,  2.10204082,  2.28571429,  2.46938776,  2.65306122,
        2.83673469,  3.02040816,  3.20408163,  3.3877551 ,  3.57142857,
        3.75510204,  3.93877551,  4.12244898,  4.30612245,  4.48979592,
        4.67346939,  4.85714286,  5.04081633,  5.2244898 ,  5.40816327,
        5.59183673,  5.7755102 ,  5.95918367,  6.14285714,  6.32653061,
        6.51020408,  6.69387755,  6.87755102,  7.06122449,  7.24489796,
        7.42857143,  7.6122449 ,  7.79591837,  7.97959184,  8.16326531,
        8.34693878,  8.53061224,  8.71428571,  8.89795918,  9.08163265,
        9.26530612,  9.44897959,  9.63265306,  9.81632653, 10.        ])
```

In [40]:

```
np.arange(1.0, 11.0, 0.18367347)
```

Out[40]:

```
array([ 1.        ,  1.18367347,  1.36734694,  1.55102041,  1.73469388,
        1.91836735,  2.10204082,  2.28571429,  2.46938776,  2.65306123,
        2.8367347 ,  3.02040817,  3.20408164,  3.38775511,  3.57142858,
        3.75510205,  3.93877552,  4.12244899,  4.30612246,  4.48979593,
        4.6734694 ,  4.85714287,  5.04081634,  5.22448981,  5.40816328,
        5.59183675,  5.77551022,  5.95918369,  6.14285716,  6.32653063,
        6.5102041 ,  6.69387757,  6.87755104,  7.06122451,  7.24489798,
        7.42857145,  7.61224492,  7.79591839,  7.97959186,  8.16326533,
        8.3469388 ,  8.53061227,  8.71428574,  8.89795921,  9.08163268,
        9.26530615,  9.44897962,  9.63265309,  9.81632656, 10.00000003,
       10.1836735 , 10.36734697, 10.55102044, 10.73469391, 10.91836738])
```