

In [1]:

```
import numpy as np
data = [0.9454, -0.325, -0.8854, 0.5464, 0.2354, 0.9194]
arr1 = np.array(data)
arr1.
```

File "<ipython-input-1-448688f0cfc0>", line 4

```
arr1.
^
```

SyntaxError: invalid syntax

i see invalid syntax

In [2]:

```
arr1 * 10
```

```
-----
NameError                                Traceback (most recent call last)
<ipython-input-2-bcf40626dc5d> in <module>()
----> 1 arr1 * 10
```

NameError: name 'arr1' is not defined

name error

In [3]:

```
arr1 + arr1
```

```
-----
NameError                                Traceback (most recent call last)
<ipython-input-3-8b159b77ba1f> in <module>()
----> 1 arr1 + arr1
```

NameError: name 'arr1' is not defined

In [4]:

```
arr1 = np.array(data)
arr1
```

```
-----
NameError                                Traceback (most recent call last)
<ipython-input-4-c7218ef7a603> in <module>()
----> 1 arr1 = np.array(data)
      2 arr1
```

NameError: name 'np' is not defined

In [5]:

```
import numpy as np
data = [0.9454, -0.325, -0.8854, 0.5464, 0.2354, 0.9194]
arr1 = np.array(data)
arr1 * 10
```

Out[5]:

```
array([ 9.454, -3.25 , -8.854,  5.464,  2.354,  9.194])
```

In [6]:

```
arr1 + arr1
```

Out[6]:

```
array([ 1.8908, -0.65 , -1.7708,  1.0928,  0.4708,  1.8388])
```

In [7]:

```
arr1.shape
```

Out[7]:

```
(6,)
```

In [8]:

```
arr1.dtype
```

Out[8]:

```
dtype('float64')
```

In [9]:

```
data2 = [[1, 2, 3, 4], [5, 6, 7, 8]]
```

In [10]:

```
arr2 = np.array(data2)
```

In [11]:

```
arr2
```

Out[11]:

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

In [12]:

```
arr2.ndim
```

Out[12]:

```
2
```

the dimensions of the array. arr 2 is a 2-dimension array

In [13]:

```
arr2.shape
```

Out[13]:

```
(2, 4)
```

columns first before rows

In [14]:

```
arr2.dtype
```

Out[14]:

```
dtype('int64')
```

arr1 is float. arr2 is int

In [15]:

```
np.zeroses(10)
```

```
-----  
AttributeError                                Traceback (most recent call last)  
<ipython-input-15-8da259f890dd> in <module>()  
----> 1 np.zeroses(10)
```

AttributeError: 'module' object has no attribute 'zeroses'

In [16]:

```
np.zeros(10)
```

Out[16]:

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

In [17]:

```
np.zeros_like(arr2)
```

Out[17]:

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

it is different because np.zeros give only oned. the latter gives 2d array

In [18]:

```
np.zeros((3,6))
```

Out[18]:

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

In [19]:

```
np.empty((2, 3, 2))
```

Out[19]:

```
array([[[ 6.92165962e-310,  6.92165962e-310],
        [ 1.58101007e-322,  3.16202013e-322],
        [ 0.00000000e+000,  1.74140551e-316]],

       [[ 4.72754421e-317,  6.92165223e-310],
        [ 0.00000000e+000,  0.00000000e+000],
        [ 0.00000000e+000,  1.63041663e-322]])
```

In [20]:

```
np.arange(15)
```

Out[20]:

```
array([ 0,  1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14])
```

In [21]:

```
np.ones(10)
```

Out[21]:

```
array([ 1.,  1.,  1.,  1.,  1.,  1.,  1.,  1.,  1.,  1.]
```

In [22]:

```
np.ones_like(arr1)
```

Out[22]:

```
array([ 1.,  1.,  1.,  1.,  1.,  1.]
```

In [23]:

```
np.eye(10)
```

Out[23]:

```
array([[ 1.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.],
       [ 0.,  1.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.],
       [ 0.,  0.,  1.,  0.,  0.,  0.,  0.,  0.,  0.,  0.],
       [ 0.,  0.,  0.,  1.,  0.,  0.,  0.,  0.,  0.,  0.],
       [ 0.,  0.,  0.,  0.,  1.,  0.,  0.,  0.,  0.,  0.],
       [ 0.,  0.,  0.,  0.,  0.,  1.,  0.,  0.,  0.,  0.],
       [ 0.,  0.,  0.,  0.,  0.,  0.,  1.,  0.,  0.,  0.],
       [ 0.,  0.,  0.,  0.,  0.,  0.,  0.,  1.,  0.,  0.],
       [ 0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  1.,  0.],
       [ 0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  1.]])
```

In [24]:

```
np.identity(10)
```

Out[24]:

```
array([[ 1.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.],
       [ 0.,  1.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.],
       [ 0.,  0.,  1.,  0.,  0.,  0.,  0.,  0.,  0.,  0.],
       [ 0.,  0.,  0.,  1.,  0.,  0.,  0.,  0.,  0.,  0.],
       [ 0.,  0.,  0.,  0.,  1.,  0.,  0.,  0.,  0.,  0.],
       [ 0.,  0.,  0.,  0.,  0.,  1.,  0.,  0.,  0.,  0.],
       [ 0.,  0.,  0.,  0.,  0.,  0.,  1.,  0.,  0.,  0.],
       [ 0.,  0.,  0.,  0.,  0.,  0.,  0.,  1.,  0.,  0.],
       [ 0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  1.,  0.],
       [ 0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  1.]])
```

In []: