In [1]:
```
#importing libary
import numpy as np
```

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

In [3]:
```
#finding the shape
a.shape
```

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

In [4]:
```
a[0]
```

Out[4]:
```
1
```

In [5]:
```
a[1]
```

Out[5]:
```
2
```

In [17]:
```
a=np.array([[1,2],[4,5],[5,6]])
```

In [18]:
```
a
```

Out[18]:
```
array([[1, 2],
       [4, 5],
       [5, 6]])
```

In [19]:
```
#finding no of dimensions
a.ndim
```

Out[19]:
```
2
```

In [20]:
```
#finding the shape
a.itemsize
```

Out[20]:
```
4
```

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

Out[21]:
```
(3, 2)
```

In [24]:
```
#converting datatype
a=np.array([[1,2],[4,5],[5,6]],dtype=np.float64)
```

In [25]:
```
a
```

Out[25]:
```
array([[1., 2.],
       [4., 5.],
       [5., 6.]])
```

In [29]:
```
#converting datatype
a=np.array([[1,2],[4,5],[5,6]],dtype=np.complex)
```

```
C:\Users\user\AppData\Local\Temp\ipykernel_5456\1127024316.py:1: DeprecationWar
ning: `np.complex` is a deprecated alias for the builtin `complex`. To silence
this warning, use `complex` by itself. Doing this will not modify any behavior
and is safe. If you specifically wanted the numpy scalar type, use `np.complex1
28` here.
Deprecated in NumPy 1.20; for more details and guidance: https://numpy.org/devd
ocs/release/1.20.0-notes.html#deprecations (https://numpy.org/devdocs/release/
1.20.0-notes.html#deprecations)
  a=np.array([[1,2],[4,5],[5,6]],dtype=np.complex)
```

In [57]:
```
a
```

Out[57]:
```
array([[1.+0.j, 2.+0.j],
       [4.+0.j, 5.+0.j],
       [5.+0.j, 6.+0.j]])
```

In [58]:
```
#creating zeros
np.zeros((3,4))
```

Out[58]:
```
array([[0., 0., 0., 0.],
       [0., 0., 0., 0.],
       [0., 0., 0., 0.]])
```

In [34]:
```
#creating ones
np.ones((4,5))
```

Out[34]:
```
array([[1., 1., 1., 1., 1.],
       [1., 1., 1., 1., 1.],
       [1., 1., 1., 1., 1.],
       [1., 1., 1., 1., 1.]])
```

In [36]:
```
#concatination
np.char.add(["hello ","i hope "],["vaishnavi ","you are doing good :p"])
```

Out[36]:
```
array(['hello vaishnavi ', 'i hope you are doing good :p'], dtype='<U28')
```

In [39]:
```
#multiply
np.char.multiply(["hello ","vaishnavi "],3)
```

Out[39]:
```
array(['hello hello hello ', 'vaishnavi vaishnavi vaishnavi '],
      dtype='<U30')
```

In [44]:
```
#center
np.char.center("hello ",20,fillchar="-")
```

Out[44]:
```
array('-------hello -------', dtype='<U20')
```

In [46]:
```
#captilization
np.char.capitalize("hello, how are you doing")
```

Out[46]:
```
array('Hello, how are you doing', dtype='<U24')
```

In [47]:
```
#title
np.char.title("hello, how are you doing")
```

Out[47]:
```
array('Hello, How Are You Doing', dtype='<U24')
```

In [50]:
```
#lower
np.char.lower("THIS IS NUMPY BASICS")
```

Out[50]:
```
array('this is numpy basics', dtype='<U20')
```

In [51]:
```
#upper
np.char.upper("this is numpy basics")
```

Out[51]:
```
array('THIS IS NUMPY BASICS', dtype='<U20')
```

In [52]:
```
#split
np.char.split("pythoin is a top programming language")
```

Out[52]:
```
array(list(['pythoin', 'is', 'a', 'top', 'programming', 'language']),
      dtype=object)
```

In [53]:
```
#join
np.char.join([":","-"],["day","date"])
```

Out[53]:
```
array(['d:a:y', 'd-a-t-e'], dtype='<U7')
```

In [56]:
```
#replace
np.char.replace("python is a programming language","python","java")
```

Out[56]:
```
array('java is a programming language', dtype='<U30')
```