Numpy Basic Functions Part - 2

In [1]:
```
import numpy as np
```

Creating a 2d Array

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

Axis in Arrays

In [3]:
```
#Axis 0 or Columns
```

In [4]:
```
np_arr.sum(axis=0)
```

Out[4]:
```
array([ 6,  8, 10, 12])
```

In [5]:
```
#When Axis was 0 it has added it columnwise
```

In [6]:
```
# 5+1, 2+6, 3+7, 4+8
# 6,   8,   10,  12
```

In [7]:
```
#Axis 1 or rowwise
```

In [8]:
```
np_arr.sum(axis=1)
```

Out[8]:
```
array([10, 26])
```

In [9]:
```
#When axis was 1 it added it rowwise
```

In [10]:
```
# 1 + 2 + 3 + 4, 5 + 6 + 7 + 8 + 9
#        10    ,      26
```

Dot product in 1d Arrays

In [11]:
```
a_dot_arr = np.array([1,2,3])
```

In [12]:
```
b_dot_arr = np.array([4,5,6])
```

In [13]:
```
print(np.dot(a_dot_arr,b_dot_arr))
```

```
32
```

Dot product in 2d Arrays

In [14]:
```
a_dot_arr = np.array([[1,2,3],[4,5,6]])
```

In [15]:
```
b_dot_arr = np.array([[7,8,9],[10,11,12]])
```

In [16]:
```
print(np.dot(a_dot_arr, b_dot_arr.transpose()))
```

```
[[ 50  68]
 [122 167]]
```

Numpy Functions List

In [17]:
```
dir(np)
```

Out[17]:
```
['ALLOW_THREADS',
 'AxisError',
 'BUFSIZE',
 'CLIP',
 'ComplexWarning',
 'DataSource',
 'ERR_CALL',
 'ERR_DEFAULT',
 'ERR_IGNORE',
 'ERR_LOG',
 'ERR_PRINT',
 'ERR_RAISE',
 'ERR_WARN',
 'FLOATING_POINT_SUPPORT',
 'FPE_DIVIDEBYZERO',
 'FPE_INVALID',
 'FPE_OVERFLOW',
 'FPE_UNDERFLOW',
 'False_',
 'Inf',
 'Infinity',
 'MAXDIMS',
 'MAY_SHARE_BOUNDS',
 'MAY_SHARE_EXACT',
 'ModuleDeprecationWarning',
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 'NINF',
 'NZERO',
 'NaN',
 'PINF',
 'PZERO',
 'RAISE',
 'RankWarning',
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 'void',
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 'vsplit',
 'vstack',
 'warnings',
 'where',
 'who',
 'zeros',
 'zeros_like']
```

Cross Product in Arrays

In [18]:
```
print(np.cross(a_dot_arr,b_dot_arr))
```

```
[[-6 12 -6]
 [-6 12 -6]]
```

Sorting in 1d Arrays

In [19]:
```
a_dot_arr = np.array([1,3,2])
```

In [20]:
```
print(np.sort(a_dot_arr))
```

```
[1 2 3]
```

Sorting in 2d Arrays

In [21]:
```
a_dot_arr = np.array([[3,1,2], [6,4,5]])
```

In [22]:
```
#Sorting on Axis 0
```

In [23]:
```
print(np.sort(a_dot_arr, axis=0))
```

```
[[3 1 2]
 [6 4 5]]
```

In [24]:
```
#Sorting on Axis 1
```

In [25]:
```
print(np.sort(a_dot_arr, axis=1))
```

```
[[1 2 3]
 [4 5 6]]
```

End