

Arthimetic Operations

```
In [1]: import numpy as np
a = np.array([1,2,3,4,5])
b = np.array([1,2,3,4,5])
print('The Arthematic operations are')
c= a+b
print('Addition of a & b is :',c)
d = a-b
print('Subtraction of a & b is :',d)
e = a*b
print('Multiplication of a & b is :',e)
f = a/b
print('Division of a & b is :',f)
g = a//b
print('Floor Division of a & b is :',g)
h = a%b
print('Moduli of a & b is :',h)
i = a**b
print('Exponent of a & b is :',i)

The Arthematic operations are
Addition of a & b is : [ 2  4  6  8 10]
Subtraction of a & b is : [0 0 0 0 0]
Multiplication of a & b is : [ 1  4  9 16 25]
Division of a & b is : [1.  1.  1.  1.  1.]
Floor Division of a & b is : [1 1 1 1 1]
Moduli of a & b is : [0 0 0 0 0]
Exponent of a & b is : [  1    4   27  256 3125]
```

Sorting and ranking

Sorting

```
In [16]: import pandas as pd
a = pd.Series([1,8,6,4],index = ['blue','violet','red','green'])
print(a)

Out[16]: blue      1
green    4
red      6
violet   8
dtype: int64

In [17]: a.sort_index()

Out[17]: blue      1
green    4
red      6
violet   8
dtype: int64

In [18]: a.sort_index(ascending=False)

Out[18]: violet    8
red      6
green    4
blue     1
dtype: int64

In [19]: a.sort_values()

Out[19]: blue      1
green    4
red      6
violet   8
dtype: int64

In [20]: a.sort_values(ascending=False)

Out[20]: violet    8
red      6
green    4
blue     1
dtype: int64

In [26]: import pandas as pd
a = pd.DataFrame([[1,2,3],[4,5,6],[7,8,9]],index=['k','l','j'])
a.sort_index()

Out[26]:    0  1  2
j    7  8  9
k    1  2  3
l    4  5  6
```

Ranking

```
In [21]: import pandas as pd
a = pd.Series([1,8,6,4],index = ['blue','violet','red','green'])
print(a)

blue      1
violet    8
red       6
green     4
dtype: int64

In [22]: a.rank()

Out[22]: blue      1.0
violet    4.0
red       3.0
green     2.0
dtype: float64

In [23]: a.rank(ascending=False)

Out[23]: blue      4.0
violet    1.0
red       2.0
green     3.0
dtype: float64

In [ ]:
In [ ]:
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CORRELATION AND COVARIANCE

```
In [29]: import pandas as pd
a = pd.DataFrame([[4,7,3],[5,8,6],[6,1,7]],
                  index = ['a','b','c'],
                  columns = ['d','e','f'])

print(a)

   d  e  f
a  4  7  3
b  5  8  6
c  6  1  7

In [30]: a.corr()

Out[30]:    d      e      f
d  1.000000 -0.792406  0.960769
e -0.792406  1.000000 -0.592137
f  0.960769 -0.592137  1.000000

In [31]: a.cov()

Out[31]:    d      e      f
d  1.0 -3.000000  2.000000
e -3.0 14.333333 -4.666667
f  2.0 -4.666667  4.333333

In [ ]:
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