

```
import numpy as np

# 1D Array
a=np.array([1,2,3])
a

array([1, 2, 3])

a.shape

(3,)

len(a)

3

a.ndim

1

a.size

3

a.dtype

dtype('int64')

a1=np.zeros(5)
a1

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

# create an array of one
a2=np.ones(5)
a2

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

a3=np.arange(10,30,5)
a3

array([10, 15, 20, 25])

a4=np.linspace(0,10,8)
a4

array([ 0., 1.42857143, 2.85714286, 4.28571429, 5.71428571,
       7.14285714, 8.57142857, 10.])

#2-ARITHMETIC OPERATION:
#ADDITION

a=np.array([1,2,3])
b=np.array([4,5,6])
a+b

array([5, 7, 9])

#SUBTRACTION

a=np.array([1,2,3])
b=np.array([4,5,6])
a-b

array([-3, -3, -3])

# MULTIPLICATION

a=np.array([1,2,3])
b=np.array([4,5,6])
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a*b

array([ 4, 10, 18])

#DIVISION

a=np.array([1,2,3])
b=np.array([4,5,6])
a/b

array([0.25, 0.4 , 0.5 ])

np.exp(b)

array([ 54.59815003, 148.4131591 , 403.42879349])

np.sqrt(b)

array([2.          , 2.23606798, 2.44948974])

#COMPARSION

a==b

array([False, False, False])

a>2

array([False, False,  True])

#AGGREGATE FUNCTION

a.sum()

6

a.min()

1

a.max()

3

a.cumsum()

array([1, 3, 6])

a.mean()

2.0

# CORRELATION COEFFICIENT

np.corrcoef(a,b)

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

np.std(a)

0.816496580927726
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