

## ▼ 1D ARRAY

```
import numpy as np
a=np.array([1,2,3,4,5,6])
a

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

a.shape

(6,)

len(a)

6

a.ndim

1

a.size

6

a.dtype

dtype('int64')
```

## ▼ array of 0

```
b=np.zeros(4)
b

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

## ▼ array of 1

```
c=np.ones(4)
c

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

d=np.arange(10,20,2)
d

array([10, 12, 14, 16, 18])

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

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

## ▼ arithmetic operation

### ▼ addition

```
a=np.array([0,1,2,3,4])
a1=np.array([5,6,7,8,9])
a+a1

array([ 5,  7,  9, 11, 13])
```

## ▼ subtraction

```
a-a1  
array([-5, -5, -5, -5, -5])
```

## ▼ multiplication

```
a*a1  
array([ 0,  6, 14, 24, 36])
```

## ▼ division

```
a/a1  
array([0.          , 0.16666667, 0.28571429, 0.375          , 0.44444444])
```

```
np.exp(a1)  
array([ 148.4131591 ,  403.42879349, 1096.63315843, 2980.95798704,  
       8103.08392758])
```

```
np.sqrt(a)  
array([0.          ,  1.          ,  1.41421356,  1.73205081,  2.          ])
```

## ▼ comparsion

```
a==a1  
array([False, False, False, False, False])
```

```
a>3  
array([False, False, False, False,  True])
```

## ▼ aggregate function

```
a.sum()  
10
```

```
a.min()  
0
```

```
a.max()  
4
```

```
a.cumsum()  
array([ 0,  1,  3,  6, 10])
```

```
a.mean()  
☞ 2.0
```

## ▼ correlation coefficient

```
np.corrcoef(a,a1)

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

np.std(a1)

1.4142135623730951
```

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