P **Python**
T U T O R I A L

NumPy add()

Summary: in this tutorial, you'll learn how to use the numpy `add()` function or the + operator to add two equal-sized arrays.

Introduction to the Numpy add() function

The + or `add()` function of two equal-sized arrays (https://www.pythontutorial.net/python-numpy/create-numpy-array/) perform element-wise additions. It returns the sum of two arrays, element-wise.

Let's take some examples of using the + operator and `add()` function.

Using NumPy add() function and + operator to add two 1D arrays example

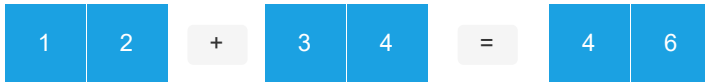The following example uses the + operator to add two 1-D arrays:

```
import numpy as np


a = np.array([1, 2])
b = np.array([2, 3])
```

```
c = a + b
print(c)
```

Output:

```
[3 5]
```

How it works.

| 1 | 2 | + | 3 | 4 | = | 4 | 6 |

First, create two 1D arrays (https://www.pythontutorial.net/python-numpy/create-numpy-array/) with two numbers in each:

```
a = np.array([1, 2])
b = np.array([2, 3])
```

Second, add the array a with b and assign the result to the variable c:

```
c = a + b
```

The + adds each element of array a with the corresponding element in the array b together:

```
[1+2, 2+4] = [3,5]
```

Similarly, you can use the `add()` function to add two 1D arrays like this:

```
import numpy as np

a = np.array([1, 2])
b = np.array([2, 3])

c = np.add(a, b)
```

```
  print(c)
```

Output:

```
  [3 5]
```

Using NumPy add() function and + operator to add two 2D arrays example

The following example uses the + operator to add two 2D arrays:

```python
import numpy as np

a = np.array([[1, 2], [3, 4]])
b = np.array([[5, 6], [7, 8]])

c = a + b
print(c)
```

Output:

```
  [[ 6  8]
   [10 12]]
```


In this example, the + operator performs element-wise addition like this:

```
  [[ 1+5  2+6]
   [3+7 4+8]]
```

Likewise, you can use the `add()` function to add two 2D arrays:

```
import numpy as np


a = np.array([[1, 2], [3, 4]])
b = np.array([[5, 6], [7, 8]])


c = np.add(a, b)
print(c)
```

Output:

```
[[ 6  8]
 [10 12]]
```

Summary

- Use the + operator or `add()` function to add two equal-sized array.