



NumPy subtract()

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

Introduction to the Numpy subtract() function

The `-` or `subtract()` function returns the difference between two equal-sized [arrays](https://www.pythontutorial.net/python-numpy/create-numpy-array/) by performing element-wise subtractions.

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

Using NumPy subtract() function and – operator to find the difference between two 1D arrays

The following example uses the `-` operator to find the difference between two 1-D arrays:

```
import numpy as np

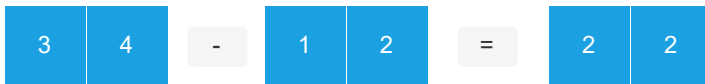
a = np.array([1, 2])
b = np.array([3, 4])
```

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

Output:

```
[2 2]
```

How it works.



First, [create two 1D arrays](https://www.pythontutorial.net/python-numpy/create-numpy-array/) (<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, find the difference between the array b and array a by using the `-` operator:

```
c = a - b
```

The `-` operator returns the difference between each element of array b with the corresponding element of array a:

```
[2-1, 3-2] = [1,1]
```

Similarly, you can use the `subtract()` function to find the difference between two 1D arrays like this:

```
import numpy as np

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

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

```
print(c)
```

Output:

```
[2 2]
```

Using NumPy subtract function and – operator to find the difference between two 2D arrays example

The following example uses the – operator to find the difference between two 2D arrays:

```
import numpy as np

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

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

5	6	-	1	2	=	4	4
7	8		3	4		4	4

Output:

```
[[4 4]
 [4 4]]
```

In this example, the – operator performs element-wise subtraction:

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

Likewise, you can use the `subtract()` function to find the difference between two 2D arrays:

```
import numpy as np

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

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

Output:

```
[[4 4]
 [4 4]]
```

Summary

- Use the subtract operator (`-`) or `subtract()` function to find the difference between two equal-sized arrays.