



NumPy mean()

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Summary: in this tutorial, you'll learn how to use the numpy `mean()` function to calculate the average of elements of an array.

Introduction to the NumPy mean() function

The `mean()` function returns the average of elements in an array. Here's the syntax of the `mean()` function:

```
numpy.mean(a, axis=None, dtype=None, out=None, keepdims=<no value>, *, where=<no value>)
```

In this syntax:

- `a` is an array that you want to calculate the average of elements.
- `axis` is the axis if specified will return the average of elements on that axis.

To understand more about other parameters and their usages, check out the [numpy mean\(\) function documentation](https://numpy.org/doc/stable/reference/generated/numpy.mean.html) (<https://numpy.org/doc/stable/reference/generated/numpy.mean.html>) .

NumPy mean() function examples

Let's take some examples of using the `mean()` function.

1) Using NumPy mean() function on 1-D array example

The following example uses the `mean()` function to calculate the average of numbers in an array:

```
import numpy as np

a = np.array([1, 2, 3])
average = np.mean(a)
print(average)
```

Output:

```
2.0
```

How it works.

First, create an array that has three numbers:

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

Second, calculate the average of elements in the array `a` using the `mean()` function:

```
average = np.mean(a)
```

Third, display the average:

```
print(average)
```

The output is 2.0 because $(1 + 2 + 3) / 3 = 2.0$

2) Using NumPy mean() function on 2-D array example

The following example uses the `mean()` function to calculate the average of elements on axis-0:

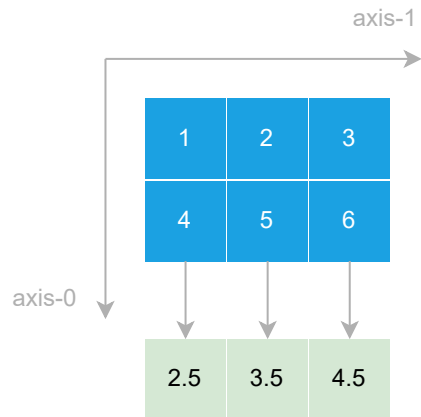
```
import numpy as np

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

```
[4, 5, 6]  
])  
average = np.mean(a, axis=0)  
print(average)
```

Output:

```
[2.5 3.5 4.5]
```



Summary

- Use the numpy `mean()` function to calculate the average of elements in an array.