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

NumPy amax()

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Summary: in this tutorial, you will learn how to use the numpy `amax()` function to find the maximum element in an array.

Introduction to the NumPy amax() function

The `amax()` function returns the maximum element of an array or maximum element along an axis. The following shows the syntax of the `amax()` function:

```
numpy.amax(a, axis=None, out=None, keepdims=<no value>, initial=<no value>, where=<no value>)
```

The `amax()` function is equivalent to the `max()` method of the `ndarray` object:

```
ndarray.max(axis=None, out=None, keepdims=False, initial=<no value>, where=True)
```

NumPy amax() function examples

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

1) Using numpy amax() function on 1-D array example

The following example uses the numpy `amax()` function to find the maximum value in a 1-D array:

```
import numpy as np


a = np.array([1, 2, 3])
min = np.amax(a)
print(max)
```

Output:

```
1
```

How it works.

First, create a new array (https://www.pythontutorial.net/python-numpy/create-numpy-array/) that has three numbers 1, 2, and 3:

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

Second, find the maximum number using the `amax()` function:

```
max = np.amax(a)
```

Third, display the result:

```
print(max)
```

2) Using numpy amax() function on multidimensional array examples

The following example uses the `amax()` funciton to find the maximum number in a 2-D array:

```
import numpy as np

a = np.array([
```
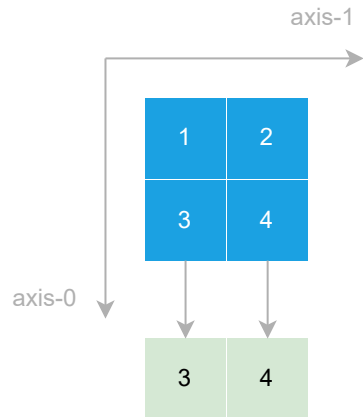
```
    [1, 2],
    [3, 4]]
)
max = np.amax(a)
print(max)
```

Output:

```
1
```

If you want to find the maximum value on each axis, you can use the axis argument. For example, the following uses the `amax()` function to find the maximum value on axis 0:

```
import numpy as np


a = np.array([
    [1, 2],
    [3, 4]]
)
max = np.amax(a, axis=0)
print(max)
```
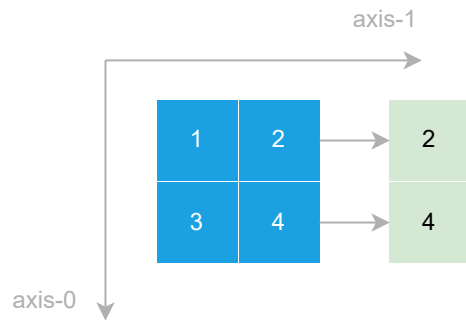
Output:

```
[3 4]
```

Similarly, you can use the `amax()` function to find the maximum value on axis 1:

```python
import numpy as np

a = np.array([
    [1, 2],
    [3, 4]]
)
max = np.amax(a, axis=1)
print(max)
```

Output:

```
[2 4]
```

Summary

- Use the numpy `amax()` function to find the maximum element in an array or maximum element along an axis.