NumPy any()

Summary: in this tutorial, you'll learn how to use the numpy `any()` function that returns `True` if any element in an array evaluates `True`.

Introduction to the numpy any() function

The numpy `any()` function returns `True` if any element in an array (or along a given axis) evaluates to `True`.

Here's the syntax of the `any` function:

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

In this syntax, `a` is a numpy array (https://www.pythontutorial.net/python-numpy/create-numpy-array/) or any object that can be converted to an array e.g., a list (https://www.pythontutorial.net/python-basics/python-list/).

Typically, the input array contains numbers. In the boolean context, all non-zero numbers evaluate to `True` while zero evaluates to `False`. Therefore, the `any()` function returns `True` if any number in the array is nonzero or `False` if all numbers are zero.

NumPy any() function examples

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

1) Using numpy any() function on 1-D array examples

The following example uses the `any()` function to test whether any number in an array are non-zero:

```
import numpy as np

result = np.any([0, 1, 2, 3])
print(result)
```

Output:

```
True
```

The result is `True` because the array of three non-zero numbers.

```
import numpy as np


result = np.any(np.array([0, 0]))
print(result)
```

Output:

```
False
```

This example returns `False` because all numbers in the array are zero. In fact, you can pass any object that can be converted into a list to the `any()` function. For example:

```
import numpy as np



```

```
result = np.any([0, 0])
print(result)
```

Output:

```
False
```

2) Using numpy any() function with a multidimensional array example

The following example uses the `any()` function to test if any elements of a multidimensional array evaluate to `True`:

```
import numpy as np

a = np.array([[0, 1], [2, 3]])
result = np.any(a)
print(result)
```

Output:

```
True
```

Also, you can evaluate elements along an axis by passing the `axis` argument like this:

```
import numpy as np

a = np.array([
    [0, 0],
    [0, 1]
])
result = np.any(a, axis=0)
print(result)
```

Output:

```
[False  True]
```

And axis-1:

```
import numpy as np

a = np.array([
    [0, 0],
    [0, 1]
])
result = np.any(a, axis=1)
print(result)
```

Output:

```
[False  True]
```

Summary

- Use the numpy `any` function to test whether any element in an array or along an axis evaluates to `True`.