

Python Boolean

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Summary: in this tutorial, you'll learn about the Python boolean data type, falsy and truthy values.

Introduction to Python Boolean data type

In programming, you often want to check if a condition is true or not and perform some actions based on the result.

To represent true and false, Python provides you with the boolean data type. The boolean value has a technical name as `bool` (<https://www.pythontutorial.net/advanced-python/python-bool/>) .

The boolean data type has two values: `True` and `False` .

Note that the boolean values `True` and `False` start with the capital letters (`T`) and (`F`).

The following example defines two boolean [variables](https://www.pythontutorial.net/python-basics/python-variables/) (<https://www.pythontutorial.net/python-basics/python-variables/>) :

```
is_active = True
is_admin = False
```

When you compare two [numbers](https://www.pythontutorial.net/python-basics/python-numbers/) , Python returns the result as a boolean value. For example:

```
>>> 20 > 10
True
>>> 20 < 10
False
```

Also, comparing two [strings](https://www.pythontutorial.net/python-basics/python-string/) results in a boolean value:

```
>>> 'a' < 'b'
True
>>> 'a' > 'b'
False
```

The bool() function

To find out if a value is `True` or `False` , you use the `bool()` function. For example:

```
>>> bool('Hi')
True
>>> bool('')
False
>>> bool(100)
True
>>> bool(0)
False
```

As you can see clearly from the output, some values evaluate to `True` and the others evaluate to `False` .

Falsy and Truthy values

When a value evaluates to `True` , it's truthy. And if a value evaluates to `False` , it's falsy.

The following are falsy values in Python:

- The number zero (`0`)
- An empty string `''`
- `False`
- `None`
- An empty list `[]`
- An empty tuple `()`
- An empty dictionary `{}`

The truthy values are the other values that aren't falsy.

Note that you'll learn more about the `None` , `list` (<https://www.pythontutorial.net/python-basics/python-list/>) , `tuple` (<https://www.pythontutorial.net/python-basics/python-tuples/>) , and `dictionary` (<https://www.pythontutorial.net/python-basics/python-dictionary/>) in the upcoming tutorials.

Summary

- Python boolean data type has two values: `True` and `False` .
- Use the `bool()` function to test if a value is `True` or `False` .
- The falsy values evaluate to `False` while the truthy values evaluate to `True` .
- Falsy values are the number zero, an empty string, `False`, `None`, an empty list, an empty tuple, and an empty dictionary. Truthy values are the values that are not falsy.