



HTML

CSS

MORE ▾



Python If ... Else

[< Previous](#)[Next >](#)

Python Conditions and If statements

Python supports the usual logical conditions from mathematics:

- Equals: `a == b`
- Not Equals: `a != b`
- Less than: `a < b`
- Less than or equal to: `a <= b`
- Greater than: `a > b`
- Greater than or equal to: `a >= b`

These conditions can be used in several ways, most commonly in "if statements" and loops.

An "if statement" is written by using the `if` keyword.

Example

If statement:

```
a = 33
b = 200
if b > a:
    print("b is greater than a")
```

[Try it Yourself »](#)

In this example we use two variables, `a` and `b`, which are used as part of the if statement to test whether `b` is greater than `a`. As `a` is `33`, and `b` is `200`, we know that 200 is greater than 33, and so we print to screen that "b is greater than a".

Indentation

Python relies on indentation (whitespace at the beginning of a line) to define scope in the code. Other programming languages often use curly-brackets for this purpose.

Example

If statement, without indentation (will raise an error):

```
a = 33
b = 200
if b > a:
print("b is greater than a") # you will get an error
```

Try it Yourself »

Elif

The `elif` keyword is python's way of saying "if the previous conditions were not true, then try this condition".

Example

```
a = 33
b = 33
if b > a:
    print("b is greater than a")
elif a == b:
    print("a and b are equal")
```

Try it Yourself »

In this example `a` is equal to `b`, so the first condition is not true, but the `elif` condition is true, so we print to screen that "a and b are equal".

Else

The `else` keyword catches anything which isn't caught by the preceding conditions.

Example

```
a = 200
b = 33
if b > a:
    print("b is greater than a")
elif a == b:
    print("a and b are equal")
else:
    print("a is greater than b")
```

[Try it Yourself »](#)

In this example `a` is greater than `b`, so the first condition is not true, also the `elif` condition is not true, so we go to the `else` condition and print to screen that "a is greater than b".

You can also have an `else` without the `elif`:

Example

```
a = 200
b = 33
if b > a:
    print("b is greater than a")
else:
    print("b is not greater than a")
```

[Try it Yourself »](#)

Short Hand If

If you have only one statement to execute, you can put it on the same line as the if statement.

Example

One line if statement:

```
if a > b: print("a is greater than b")
```

Try it Yourself »

Short Hand If ... Else

If you have only one statement to execute, one for if, and one for else, you can put it all on the same line:

Example

One line if else statement:

```
a = 2  
b = 330  
print("A") if a > b else print("B")
```

Try it Yourself »

This technique is known as **Ternary Operators**, or **Conditional Expressions**.

You can also have multiple else statements on the same line:

Example

One line if else statement, with 3 conditions:

```
a = 330
b = 330
print("A") if a > b else print("=") if a == b else print("B")
```

Try it Yourself »

And

The **and** keyword is a logical operator, and is used to combine conditional statements:

Example

Test if **a** is greater than **b** , AND if **c** is greater than **a** :

```
a = 200
b = 33
c = 500
if a > b and c > a:
    print("Both conditions are True")
```

Try it Yourself »

Or

The **or** keyword is a logical operator, and is used to combine conditional statements:

Example

Test if **a** is greater than **b** , OR if **a** is greater than **c** :

```
a = 200
b = 33
c = 500
```

```
if a > b or a > c:  
    print("At least one of the conditions is True")
```

Try it Yourself »

Nested If

You can have `if` statements inside `if` statements, this is called *nested if* statements.

Example

```
x = 41  
  
if x > 10:  
    print("Above ten,")  
    if x > 20:  
        print("and also above 20!")  
    else:  
        print("but not above 20.")
```

Try it Yourself »

The pass Statement

`if` statements cannot be empty, but if you for some reason have an `if` statement with no content, put in the `pass` statement to avoid getting an error.

Example

```
a = 33  
b = 200  
  
if b > a:  
    pass
```

[Try it Yourself »](#)

Test Yourself With Exercises

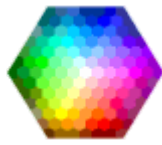
Exercise:

Print "Hello World if **a** is greater than **b** .

```
a = 50
b = 10
    a    b
print("Hello World")
```

[Submit Answer »](#)[Start the Exercise](#)[◀ Previous](#)[Next ▶](#)

COLOR PICKER



HOW TO

Tabs
Dropdowns
Accordions
Side Navigation
Top Navigation
Modal Boxes
Progress Bars
Parallax
Login Form
HTML Includes
Google Maps
Range Sliders
Tooltips
Slideshow
Filter List
Sort List

SHARE



CERTIFICATES

HTML
CSS
JavaScript
SQL
Python
PHP
jQuery
Bootstrap
XML

[Read More »](#)

[REPORT ERROR](#)

[PRINT PAGE](#)

[FORUM](#)

[ABOUT](#)

Top Tutorials

[HTML Tutorial](#)
[CSS Tutorial](#)
[JavaScript Tutorial](#)
[How To Tutorial](#)
[SQL Tutorial](#)
[Python Tutorial](#)
[W3.CSS Tutorial](#)
[Bootstrap Tutorial](#)
[PHP Tutorial](#)
[jQuery Tutorial](#)
[Java Tutorial](#)
[C++ Tutorial](#)

Top References

[HTML Reference](#)
[CSS Reference](#)
[JavaScript Reference](#)
[SQL Reference](#)
[Python Reference](#)
[W3.CSS Reference](#)
[Bootstrap Reference](#)
[PHP Reference](#)
[HTML Colors](#)
[jQuery Reference](#)
[Java Reference](#)
[Angular Reference](#)

Top Examples

[HTML Examples](#)
[CSS Examples](#)
[JavaScript Examples](#)
[How To Examples](#)
[SQL Examples](#)
[Python Examples](#)
[W3.CSS Examples](#)
[Bootstrap Examples](#)
[PHP Examples](#)
[jQuery Examples](#)

[Java Examples](#)[XML Examples](#)

Web Certificates

[HTML Certificate](#)[CSS Certificate](#)[JavaScript Certificate](#)[SQL Certificate](#)[Python Certificate](#)[jQuery Certificate](#)[PHP Certificate](#)[Bootstrap Certificate](#)[XML Certificate](#)[Get Certified »](#)

W3Schools is optimized for learning, testing, and training. Examples might be simplified to improve reading and basic understanding. Tutorials, references, and examples are constantly reviewed to avoid errors, but we cannot warrant full correctness of all content. While using this site, you agree to have read and accepted our terms of use, cookie and privacy policy. Copyright 1999-2020 by Refsnes Data. All Rights Reserved.

Powered by W3.CSS.

