



Python If ... Else

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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")
```

[Run example »](#)

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, using whitespace, 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
```

Run example »

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")
```

Run example »

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")
```

[Run example »](#)

In this example `a` is greater to `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")
```

[Run example »](#)

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")
```

Run example »

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:

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

Run example »

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

Example

One line if else statement, with 3 conditions:

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

Run example »

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` :

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

Run example »

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` :

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

Run example »

Test Yourself With Exercises

Exercise:

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

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

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