

Compound Statements in Python



This page is a reference for the kinds of **compound statements** you've seen so far in Python.

So far, you've seen three types of *compound statements*: **for** loops, function **def**initions, and **if** statements.

All of these statements have several things in common:

- The first line of a compound statement always begins with that statement's keyword: **for**, **def**, or **if**.
- The first line always ends with a colon **:**.
- The rest of the lines in the compound statement are a *block* of code, all *indented* by the same number of spaces.

For Loops

A **for** loop repeats its block of code once for each item in a list or range. The number of times that code repeats is the number of items in that list or range. The loop has a **loop variable** which is set equal to each item, in order.

```
for item in [1, 17, -34, "bears"]:  
    # code goes here  
    # this code runs four times
```

Ranges are useful in **for** loops so you don't have to write out a long list of numbers.]

```
martin = turtle.Turtle()  
for num in range(17):  
    # martin will go 0 pixels, turn, go 1 pixel, turn, etc.  
    martin.forward(num)  
    martin.right(90)
```

Function Definitions

A function definition starts with the keyword `def`, the **name** of the function, and a parenthesized list of its **arguments**.

```
def spin(tur, howfast):  
    tur.speed(howfast)  
    tur.right(360)
```

When Python sees the function definition, it does not immediately run the code inside it. When you want it to run the function, you **call** the function, and pass it values for its arguments:

```
balthazar = turtle.Turtle()  
spin(balthazar, 5)
```

Conditionals with `if` and `else`

The `if` keyword introduces a **conditional** statement. It has a **condition**, a true-or-false question. The block of code inside an `if` statement will either run, or not run, depending on whether the condition is true.

```
if color == "pink":  
    # Betty will spin only if the color is pink.  
    spin(betty, 0)
```

Optionally, an `if` block can be followed immediately by an `else` block, which will run if the condition is false.

```
if weather == "rainy":  
    drawCloud()  
    drizzle()  
else:  
    drawSun()
```

Either the code under `if` will run, or the code under `else` will run; never both.