Compound Statements in Python

*This page is a review or reference of the kinds of **compound statements** you've seen so far in Python. There have been three: **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 `:` 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"]:
goes here
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):
ill 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":
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.