**Data types and variables**

**What is a variable?**

A variable can be thought of as a box you can store pieces of data in. Variables can be set and changed according to your needs.

To declare a variable and assign a value to it, you simply write its name and the value to be stored inside it, separated with an equals sign. For example:

my\_variable = 10

Be sure to give your variables meaningful names. This is important when your scripts start getting longer and more complex since you want to make it as easy to decipher as possible.

In addition there are two conventions you can follow when naming variables. You can separate words in variables with underscores, as above, or you can use camel case where each new word starts with an upper case character, for example:

myVariable = 10

I will be using the former method throughout this course but you are free to use which method you prefer.

**What can be stored in variables?**

You can store all kinds of data in a variable:

* integers - 1, 24, 8327
* floating-point numbers - 0.4, 2.78, 19.3829
* strings - "Hello", "a string"
* booleans - True, False

Let's try assigning some values to variables. Type the following into the editor and run it once you are done.

**Variables.py**

my\_int = 10

my\_float = 0.4

my\_string = "Hello"

my\_boolean = True

print("my\_int:", my\_int)

print("my\_float:", my\_float)

print("my\_string:", my\_string)

print("my\_boolean:", my\_boolean)

You should see that each variable is outputted one by one. Once we've stored a value in a variable we can reference it as needed. We are also able to change their values at any time. Underneath the above code add the following:

my\_int = 208

print("my\_int:", my\_int)

You should see that the variable's value has changed when you run it again.

Another thing to mention is that unlike other languages like C++ or Java you do not have to explicitly declare the variable’s data type. Python will determine the appropriate type from the value itself.

That's really all there is to variables. We’ll be seeing them a lot in the coming lessons so don’t worry if this seems awfully short. Variables can also hold data structures such as lists, dictionaries and classes but we'll get to those in later lessons.