

Types of Variables

Numeric Variables

We have already seen that we can create variables for integers (whole numbers that are either positive or negative):

```
X = -5
```

And we can create variables for real numbers (numbers with a decimal place), and these are sometimes called *floats* (or *floating point numbers*):

```
Y = 15.45
```

So the number is a real if it has a decimal place, even if it is followed by a zero:

```
Z = 14.0
```

So we can see that if a computer program needs to remember your bank balance, the speed of your car, or the price of your shopping; a numeric variable is a good way to store those values. But there are other things that computer programs need to remember, like your name and address, your list of favourite websites, or the password for your email; that can't be stored as numbers.

Alphanumeric Variables

So how do we create variables that can store a single character, or a string of characters? Well the good news is that it's exactly the same way as numeric values, so for example, to assign "X" to the string "Hello, World!", we do it as follows:

```
X = "Hello, World!"
```

And we can see what value "X" has by doing the following:

```
print(X)
```

And we will get the following on the screen:

```
Hello, World!
```

Similarly, to assign "Y" to the character 'B', we do it as follows:

```
Y = 'B'
```

And we can see what value "Y" has by doing the following:

```
print(Y)
```

And we will get the following on the screen:

```
B
```

Note, as a convention, we use a single quote (') for single characters and double quotes (") for a string of characters. Also remember that we can have a string that is made up of numbers, for example:

```
X = "1991"
```

And this is not the same as if we do:

```
Y = 1991
```

In the first case we have a string that we can print out and add to other strings, and in the second we have a number that we can add, subtract, multiply and divide. So we can do something like the following in the first case, but not the second:

```
print(X + " is the year Python was created")
```