

## Introduction

Variables hold information like numbers and words. We could use variables to collect information such as a persons name and then use it later in an application to say goodbye to them when they quit the program.

Variables can change information that is stored inside them, it kind of says that in its name - variable: information that varies. Lets say that we create a soccer game and in the soccer team there is a red team and a green team. When a player kicks a goal for the red team, we could use a variable that keeps the score for the red team and changes each time a goal is scored. We can use many different variables at the same time, there should be a variable that holds the score for the green team. A variable could also hold the time remaining in the game.

To use variables we need to first create them, name them and then give them a value, or information to hold. This is how we create a variable in Flash:

```
var myFirstName = "Sean"
```

There are a number of things to learn here, some easy and most easy to forget.

## Naming Variables

Firstly when creating a variable we use the keyword var. This keyword tells Flash that a variable is coming.

Secondly, naming a variable correctly is also important so that it works correctly, and we also want to make a variable that is easy for us to read and identify as well. Here are some things that you must remember when naming a variable, you cannot use these symbols in a variables name:

```
!@#%^&*()+=?><
```

You can use a number but not as the first character, this is a correct variable name `var userName1` this is an incorrect variable name `var 1UserName`.

Spaces are not allowed but you can use underscores instead: `var this is` is incorrect but `var this_is_fine`.

To make your variables easily readable you can follow this rule: if the variable has more than one word in its name make the first word lowercase and the first letter of all of the other words capital. Like this:

```
var thereOnceWasAFlashProgrammerCalledSean
```

Which is much easier for us to read than this:

```
var thereoncewasafashprogrammercalledean
```

Flash doesn't care whether you use this method or not but it makes it easier to read for us.

### Naming Variables continued...

There seems like a number of things that we need to remember when naming variables but just remember these things above all:

- be descriptive so you know what information variables hold
- don't use symbols
- put numbers at the end
- use underscores instead of spaces.

### What can I store inside variables

We can essentially store anything inside variables but mainly we will store numbers and words. Although in programming and scripting words are called strings, I am not sure why but I am sure that it was a good idea at the time. When we want to store numbers inside a variable we just type in the number after the variable name and the equals sign like so:

```
var theNumber = 12
```

Every time that Flash sees the variable theNumber from then on it doesn't see the variable itself it actually sees the number 12.

```
var theNumber = "Twelve"
```

This time the variable holds a string time that Flash sees the variable theNumber from then on it doesn't see the variable itself it actually sees the word Twelve.

Something important to understand is that even if we use a number inside a string it will always be a string.

```
var theNumber = "12"
```

It is possible to create two variables `var number1 = 10` and `var number2 = 20` and add those two variables together like this:

```
number1 + number2
```

This would return the result of 30. Remember that Flash doesn't see the number1 variable it actually sees the value it holds and it doesn't see the number2 variable it sees the value that it holds. So essentially Flash is adding 10 to 20 and getting the answer 30.

### String Variables

If we add these two variables that contain strings `var firstName = "Sean"` and `var lastName = "Norrey"` together, we would get SeanNorrey as the result.

But what happens if we add a string and a number together? Here are two examples:

```
var aString = "Fred"  
var aNumber = 37
```

This returns a string that says Fred37

```
var aString = "12"  
var aNumber = 37
```

This returns a string also that says 1237

So that's a whole bunch of information about creating variables, naming variables and what sort of information can be stored in them. In the following workshops we will start using them to get information from the user and using them to create some dynamic interactivity.