

## Introduction to Variables

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In a typical scripted movie, we need to manipulate everything from frame numbers, to movie clips, to buttons. In order to retrieve all the information we need to store it into *variables*. The primary information storage area is in the Actionscript window. If you have taken algebra in math, then you have written variables before. Let's say  $y = x + 3$ . "Y" will hold the value of 5. In programming terms, it will work the same way `text = hi`. When you program a project and you don't want to write down hi 50 times, all you have to do is call in `text` and it will right "Hi" for you.

### Variable Declaration

Creating a variable is called *declaration*. Declaration is like giving the variable a name. It can also be bringing the variable into existence. When a variable is declared (i.e. `var`), it is empty. To close a variable you must declare a special value called *undefined* (indicating the absence of data).

- `var text`
- `var movieclip`
- `var animation`

The word `var` tells us that were declaring a variable. Text follows the variable i.e: `text`, `movieclip`, and `animation`.

### Variable Creation

Many languages require variables to be declared before data is deposited into them. Failure to do so will result in an error. If we assign a value to the variable that doesn't exist it will automatically create one for you. However, doing so in this manner will make your code confusing and hard to read.

### Legal Variable Rules

Variables must be written exclusively with letters, numbers or underscores.

- No spaces, hyphens, or punctuation
- Variables must start with a letter or an underscore
- They must not exceed 255 characters
- Variables are case-sensitive

### Legal Variables

- `Computer;`
- `_counter8`
- `middle_name`

### Illegal Variables

- `1stplace*`
- `my: name`
- `2-dimes`

### Dynamically Assigned Named Variables

Even though you should never use dynamically assigned variables. You are able to use them. To create a variable name from any expression use a `set` statement. To show you how to use the `set` statement we will assign the value of "The Great1" to `player1name`:

```
var i = 1
set ("player" + i + "name", "The Great1")
```

Arrays and objects discussed later should be used instead of dynamic variables.

### **Declare Variables at the Outset**

It is very good to practice to declare your variables at the beginning of your movie script, which is the first keyframe right after the preloader. Make sure you add a comment explaining each variables purpose so your code won't get confusing.

```
// ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^  
// Initialize variables  
// ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^  
  
var ballSpeed;// Velocity of ball, max 5  
var score; // Player's current score  
var hiScore; // High score (not saved between levels)  
var player1; // Name of player 1, supplied by user
```

We can give variables an initial value at the same time we create them.

```
var ball speed = 5 ; //Velocity of ball, max 5  
var score = 0 //Player's current score  
var hiScore = 0; //Hi Score(not saved between levels)
```