Lesson 02- C++ Variables

Variables are containers for storing data values.

In C++, there are different **types** of variables (defined with different keywords), for example:

* int - stores integers (whole numbers), without decimals, such as 123 or -123
* double - stores floating point numbers, with decimals, such as 19.99 or -19.99
* char - stores single characters, such as 'a' or 'B'. Char values are surrounded by **single quotes**
* string - stores text, such as "Hello World". String values are surrounded by double quotes
* bool - stores values with two states: **true** or **false**

Declaring (Creating) Variables

To create a variable, you must specify the type and assign it a value:

Syntax

*type* ***variable*** = *value*;

Where *type* is one of C++ types (such as int), and *variable* is the name of the variable (such as **x** or **myName**). The **equal sign** is used to assign **values** to the ***variable***.

To create a variable that should store a number, look at the following example:

Example

Create a variable called **myNum** of type int and assign it the value **15**:

int myNum = 15;  
cout << myNum;

You can also declare a variable without assigning the value, and assign the value later:

Example

int myNum;  
myNum = 15;  
cout << myNum;

Note that if you assign a new value to an existing variable, it will overwrite the previous value:

Example

int myNum = 15;  // myNum is 15  
myNum = 10;  // Now myNum is 10  
cout << myNum;  // Outputs 10

Other Types

A demonstration of other data types:

Example

int myNum = 5;               // Integer (whole number without decimals)  
double myFloatNum = 5.99;    // Floating point number (with decimals)  
char myLetter = 'D';         // Character  
string myText = "Hello";     // String (text)  
bool myBoolean = true;       // Boolean (true or false)

You will learn more about the individual types in the [Data Types](https://www.w3schools.com/cpp/cpp_data_types.asp) chapter.

Display Variables

The cout object is used together with the << operator to display variables.

To combine both text and a variable, separate them with the << operator:

Example

int myAge = 35;  
cout << "I am " << myAge << " years old.";

Add Variables Together

To add a variable to another variable, you can use the + operator:

Example

int x = 5;  
int y = 6;  
int sum = x + y;  
cout << sum;