**C++ Variables**

Variables are containers for storing data values.

In C++, there are different types of variables.

Some of them are as follows:

* an integer variable defined with the keyword int stores integers (whole numbers), without decimals, such as 63 or -1.
* a floating point variable defined with keyword float stores floating point numbers, with decimals, such as 79.97 or -13.26.
* a character variable defined with the keyword char stores single characters, such as 'A' or 'z'. Char values are bound to be surrounded by single quotes.
* a boolean variable defined with the keyword bool stores a single value 0 or 1 for false and true respectively.

**Declaration**

We cannot declare a variable without specifying its data type. The data type of a variable depends on what we want to store in the variable and how much space we want it to hold. The syntax for declaring a variable is simple:

data\_type variable\_name;

OR

data\_type variable\_name = value;

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The tutorial will go over data types later on. They will be dealt with in great detail.

**Naming a Variable**

There is no limit to what we can call a variable. Yet there are specific rules we must follow while naming a variable:

* A variable name in C++ can have a length of range 1 to 255 characters
* A variable name can only contain alphabets, digits, and underscores(\_).
* A variable cannot start with a digit.
* A variable cannot include any white space in its name.
* Variable names are case sensitive
* The name should not be a reserved keyword or any special character.

**Variable Scope**

The scope of a variable is the region in a program where the existence of that variable is valid. Based on its scope, variables can be classified into two types:

**Local variables:**

Local variables are declared inside the braces of any function and can be assessed only from that particular function.

**Global variables:**

Global variables are declared outside of any function and can be accessed from anywhere.

An example that demonstrates the difference in applications of a local and a global variable is given below.

#include <iostream>

using namespace std;

int a = 5; //global variable

void func()

{

cout << a << endl;

}

int main()

{

int a = 10; //local variable

cout << a << endl;

func();

return 0;