**C++ Datatypes**

While writing program in any language, you need to use various variables to store various information. Variables are nothing but reserved memory locations to store values. This means that when you create a variable you reserve some space in memory.

You may like to store information of various data types like character, wide character, integer, floating point, double floating point, boolean etc. Based on the data type of a variable, the operating system allocates memory and decides what can be stored in the reserved memory.

Primitive Built-in Types

C++ offers the programmer a rich assortment of built-in as well as user defined data types. Following table lists down seven basic C++ data types −

|  |  |
| --- | --- |
| **Type** | **Keyword** |
| Boolean | bool |
| Character | char |
| Integer | int |
| Floating point | float |
| Double floating point | double |
| Valueless | void |
| Wide character | wchar\_t |

Several of the basic types can be modified using one or more of these type modifiers −

* signed
* unsigned
* short
* long

Following is the example, which will produce correct size of various data types on your computer.

#include <iostream>

using namespace std;

int main() {

cout << "Size of char : " << sizeof(char) << endl;

cout << "Size of int : " << sizeof(int) << endl;

cout << "Size of short int : " << sizeof(short int) << endl;

cout << "Size of long int : " << sizeof(long int) << endl;

cout << "Size of float : " << sizeof(float) << endl;

cout << "Size of double : " << sizeof(double) << endl;

cout << "Size of wchar\_t : " << sizeof(wchar\_t) << endl;

return 0;

}

This example uses **endl**, which inserts a new-line character after every line and << operator is being used to pass multiple values out to the screen. We are also using **sizeof()** operator to get size of various data types.

When the above code is compiled and executed, it produces the following result which can vary from machine to machine −

Size of char : 1

Size of int : 4

Size of short int : 2

Size of long int : 4

Size of float : 4

Size of double : 8

Size of wchar\_t : 4