Declaring Structure Variables in C++

In this lesson, you will learn the basic syntax for declaring structure variables in C++.

We'll cover the following

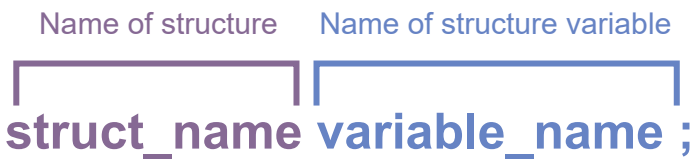
Introduction

Until now, we have seen how to create a structure in a program. As discussed earlier, the structure is like a blueprint of the building drawn on the page. Therefore, when a structure is created, the computer does not allocate any memory to it.

The **structure variable** is like the building construct from the blueprint. The building has an actual physical existence. Therefore, to allocate memory to the structure, we must declare the structure variable in a program.

Basic syntax

The basic syntax for declaring the structure variable is given below:



To declare a structure variable in a program, we write the name of the structure followed by the name of a structure variable, which is further followed by a semicolon `;`.

Example program

In the previous lesson, we created a structure `Student` whose members are `name`, `roll_number`, and `marks`. Let's declare a variable whose data type will be `Student` in a program!

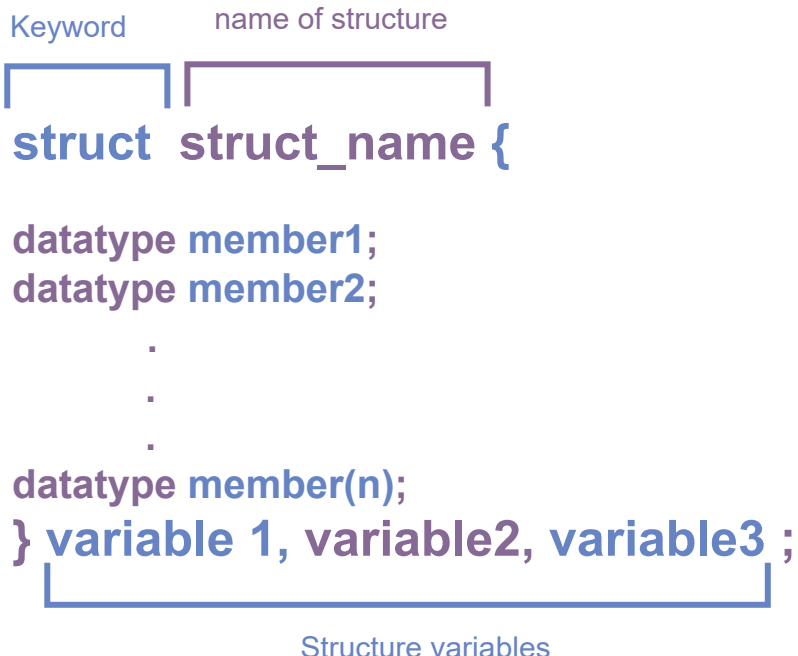
```
#include <iostream>

using namespace std;
// Student structure
struct Student {
  string name;
  int roll_number;
  int marks;
};
// main function
int main() {
  Student s1, s2, s3;
  return 0;
}
```

Explanation

Line No. 12 declares three structure variables `s1`, `s2`, and `s3` in a program. The data type of these variables is `Student`.

Declaring a structure variable in the structure definition

The structure variables can also be declared after the structure definition in a program.

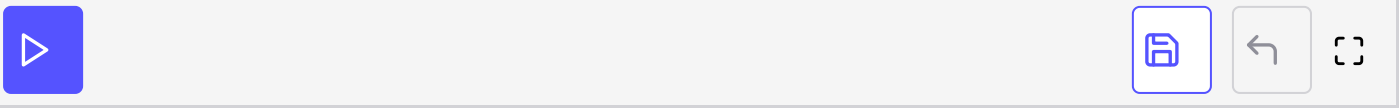


To declare a structure variable in a structure definition, we write the struct keyword followed by the name of the structure, which is further followed by structure variable names and a semicolon.

Example program

See the program given below!

```
#include <iostream>

using namespace std;
// Student structure
struct Student {
  string name;
  int roll_number;
  int marks;
} s1, s2, s3;
// main function
int main() {
  return 0;
}
```



In **Line No. 9**, we declare the structure variable `s1`, `s2`, and `s3` right after the curly braces in the structure definition.

Quiz

Q

Which of the following statements declares a structure variable `person1`?

```
struct Account{
  int number;
  double balance;
};
```

(You can select multiple correct answers)

Retake Quiz

Let’s learn how to access the members of the structure in C++.