Array of Structures

Let's explore how to define an array of structures in C++.

We'll cover the following

Introduction

We have 100 students in a class, and we have to store the `name`, `age`, and `roll_number` of each student, which means we need **300** variables. We have found a way to store all these variables under a single name.

However, to store data for each student in the class, we still have to declare **100** structure variables. Declaring **100** structure variables and then keeping track of them is not a piece of cake.

Here, an array of structures comes in handy!

In C++, each element of a structure array represents a structure variable.

Example program

Press the **RUN** button and see the output!

```
#include <iostream>

using namespace std;
// structure Student
struct Student {
  string name;
  int roll_number;
  int marks;
};
// main function
int main() {
  struct Student s[100];

  s[0] = {"John", 1, 50};
```

```
  cout << "s1 Information:" << endl;
  cout << "Name = " << s[0].name << endl;

  cout << "Roll Number = " << s[0].roll_number << endl;
  cout << "Marks = " << s[0].marks << endl;

  s[1] = {"Alice", 2, 43};

  cout << "s2 Information:" << endl;
  cout << "Name = " << s[1].name << endl;
  cout << "Roll Number = " << s[1].roll_number << endl;
  cout << "Marks = " << s[1].marks << endl;

  return 0;
}
```

Explanation

We declare an array named `s` with a capacity to store **100** structure variables of `Student`.

`s[0]` stores the information for the first student, `s[1]` for the second, `s[2]` for the third, and so on. Here, we pass the initializer list to the first structure variable in an array.

We repeat the same process for setting the values for the rest of the structure variables.

Quiz

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Consider the code given below:

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

Which of the following statements is creating an array of structures?

Retake Quiz

In the next lesson, you will see how to pass a structure to the function.