



## **Array of Structures**

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

We'll cover the following

- ^
- Introduction
  - Example program
  - Explanation

## Introduction#

We have 100 students in a class, and we have to store the <code>name</code>, <code>age</code>, and <code>roll\_number</code> 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 quite difficult.

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!

```
2
                                                                 €€}
 3 using namespace std;
 4 // structure Student
 5 struct Student {
 6
       string name;
 7
       int roll_number;
 8
       int marks;
 9 };
10 // main function
    int main() {
11
12
       struct Student s[100];
13
14
       s[0] = {"John", 1, 50};
15
       cout << "s1 Information:" << endl;</pre>
16
17
       cout << "Name = " << s[0].name << endl;</pre>
       cout << "Roll Number = " << s[0].roll_number << endl;</pre>
18
       cout << "Marks = " << s[0].marks << endl;</pre>
19
20
21
       s[1] = {"Alice", 2, 43};
22
23
       cout << "s2 Information:" << endl;</pre>
       cout << "Name = " << s[1].name << endl;</pre>
24
25
       cout << "Roll Number = " << s[1].roll_number << endl;</pre>
26
       cout << "Marks = " << s[1].marks << endl;</pre>
27
28
       return 0;
on l
                                                                \leftarrow
 \triangleright
                                                                               X
Output
                                                                           1.27s
 sl Information:
 Name = John
 Roll Number = 1
 Marks = 50
 s2 Information:
 Name = Alice
 Roll Number = 2
 Marks = 43
```

## Explanation#

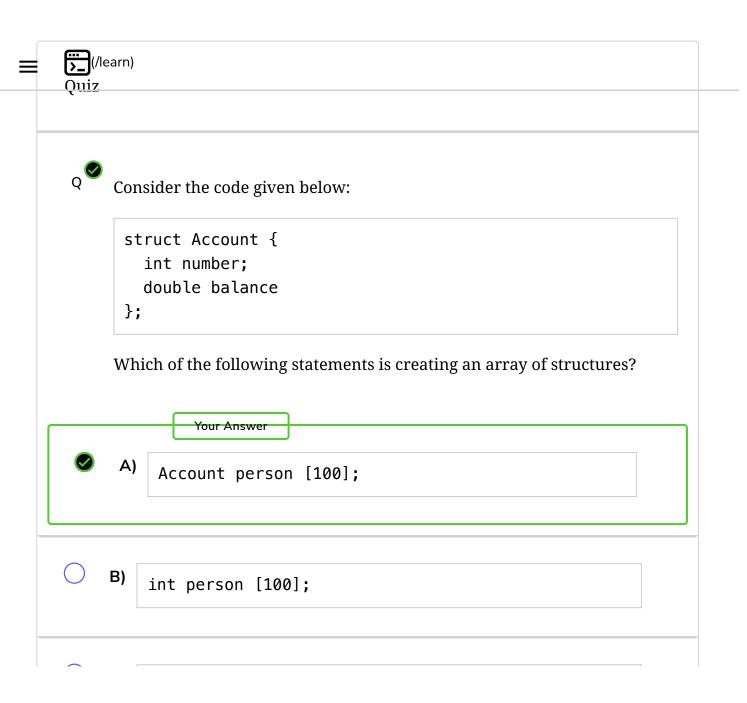


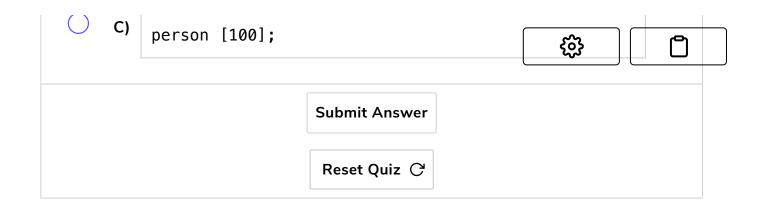


We declare an array named  $\, s \,$  with a capacity to store  ${\bf 100}$  structure variables of Student .

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

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





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

