Structure and Functions

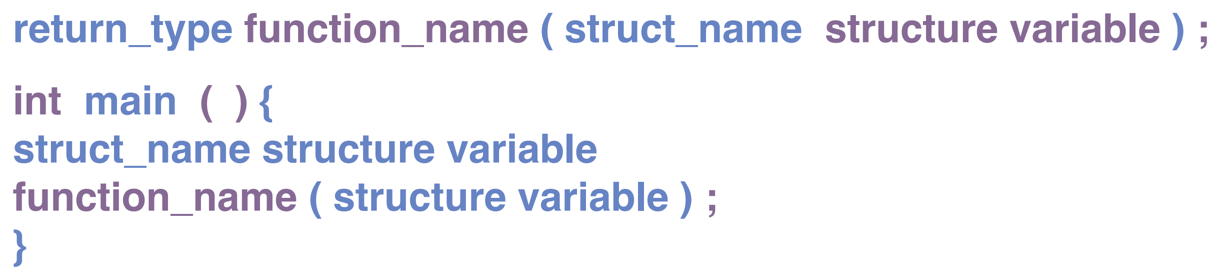
Learn how to pass a structure as an argument to the function.

We'll cover the following

- Pass a structure as a function argument
    - Example program
    - Explanation
    - Return a structure from a function
    - Example program
    - Explanation

Pass a structure as a function argument#

In the previous lesson, we saw that printing the members of each structure variable is a repetitive task. Can we define a function in which we just pass the structure variable, and it prints the values for us? Yes, we can.



```
return_type function_name ( struct_name  structure variable ) ;

int  main  (  ) {
struct_name structure variable
function_name ( structure variable ) ;
}
```

Example program

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

```cpp

using namespace std;

// Student structure
struct Student {
  string name;
  int roll_number;
  int marks;
};
// printStudent function
void printStudent(Student s) {
  cout << "Student information" << endl;
  cout << "Name = " << s.name << endl;
  cout << "Roll Number = " << s.roll_number << endl;
  cout << "Marks = " << s.marks << endl;
}
// main function
int main() {
  struct Student s[100];

  s[0] = { "John", 1 , 50 };
  printStudent(s[0]);

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

  return 0;
}
```

Output 1.08s

```
Student information
Name = John
Roll Number = 1
Marks = 50
Student information
```

```
Name = Alice
```

Explanation#

In the above program, we define a function `printStudent` on **Line No. 12** that takes a structure variable `s` in its arguments and performs an operation on it.

Return a structure from a function#

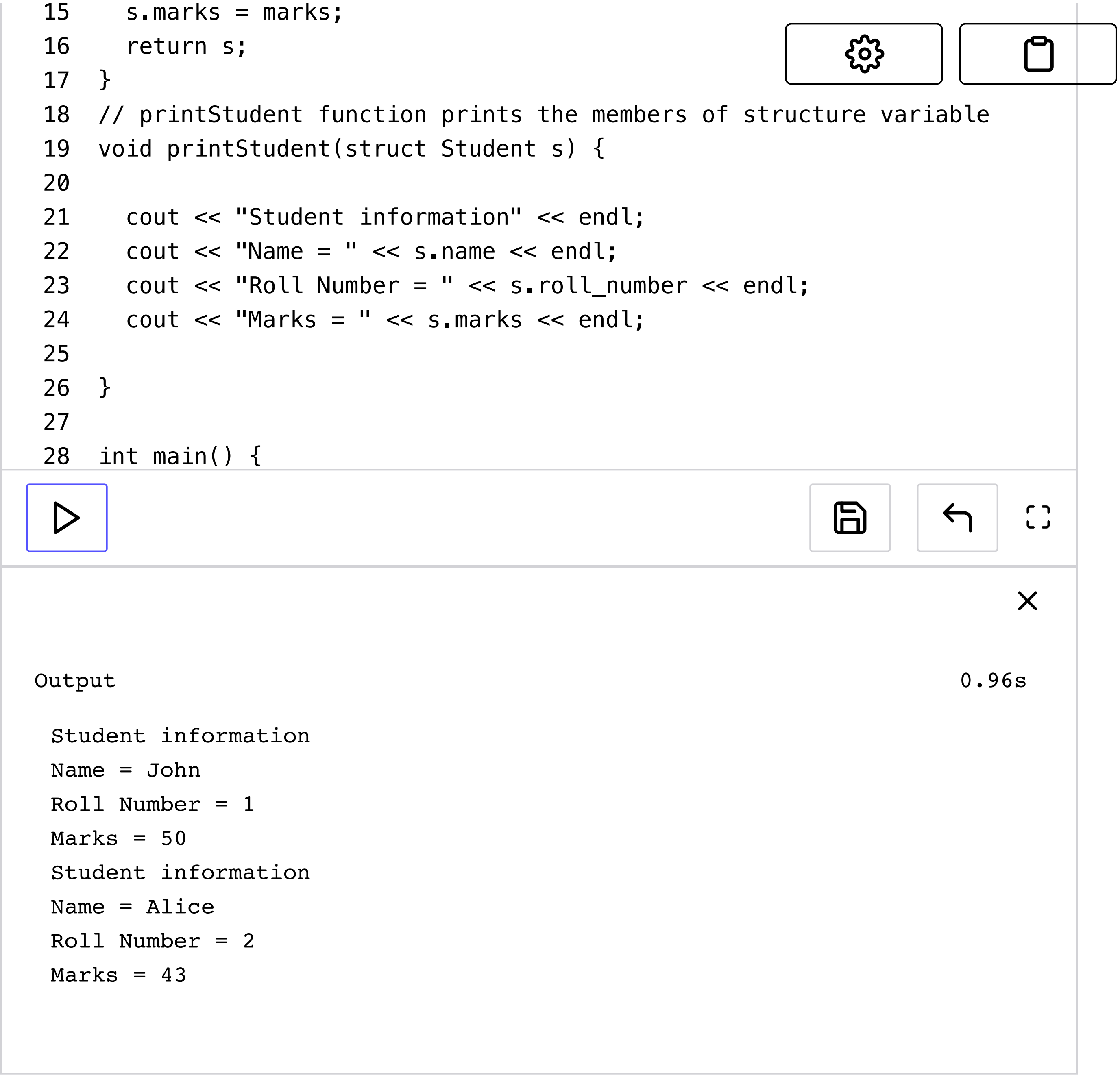
So far, we have not seen a way to return multiple variables of different data types from a function. By returning a structure from a function, we can return multiple variables of different data types.

Example program#

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

```cpp
#include <iostream>

using namespace std;
// Student structure
struct Student {
  string name;
  int roll_number;
  int marks;
};
// function fillStudent
Student fillStudent(string name, int roll_number, int marks) {
  Student s;
  s.name = name;
  s.roll_number = roll_number;
```



```
15    s.marks = marks;
16    return s;
17  }
18  // printStudent function prints the members of structure variable
19  void printStudent(struct Student s) {
20
21    cout << "Student information" << endl;
22    cout << "Name = " << s.name << endl;
23    cout << "Roll Number = " << s.roll_number << endl;
24    cout << "Marks = " << s.marks << endl;
25
26  }
27
28  int main() {
```

Output 0.96s

```
Student information
Name = John
Roll Number = 1
Marks = 50
Student information
Name = Alice
Roll Number = 2
Marks = 43
```

Explanation#

In the above program, we define a function `fillStudent` on **Line No. 11** that takes one `string` value and the two `int` values in the input, performs an operation on it, and then returns the structure in the output.

Q ✓ Consider the code given below:

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

int check_account(struct Account p) {
    if (p.balance < 500) {
      return 0;
    } else {
      return -1;
    }
}
```

If we call the function `check_account(person)` , where `person = {"John", 577823, 500}` , the function returns ________ in the output.

○ A) 0

Your Answer

✓ B) -1

○ C) 500

○ D) Error

Submit Answer

Reset Quiz

In the next lesson, you will learn how to declare a pointer to the structure.

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Array of Structures

Next →

Structure and Pointers

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