Calling a Function

Learn how to call your function in a program.

We'll cover the following

Introduction#

The functions created in a program are not executed until we call them. When we call the function, control is given to the very first statement inside the called function. The basic syntax for calling a function is given below:

```
int  main  (  )
{
function_name ( values of parameters ) ;

return 0;

}
```

To call a function in a program, we have to write a function name, followed by values of arguments in the round brackets and the semicolon

by values of arguments in the round brackets and the semicolon.

> 📝 We can call a function from any other function in a program.

Example program#

Consider the blender example given in this lesson (https://www.educative.io/collection/page/10370001/6619096843026432/6348964841390080). Let's declare, define, and call a function `make_juice`.

Run the code below and see the output!

```
int make_juice(int water, int fruit);

int main() {
  // Initialize variables apple and water
  int apples = 5;
  int water_glass = 3;
  // Declares a variable juice_glass
  int juice_glass;
  // Calls function make_juice and save its output in juice_glass
  juice_glass = make_juice(water_glass, apples);
  // Prints value of juice_glass
  cout << "Number of juice glass = " << juice_glass;

  return 0;
}

// Function definition
int make_juice(int water, int fruit) {
  // Define new  variable juice of int type
  int juice;
  // Adds water in apple and save output in juice
  juice = water + fruit;
  // Prints text on the screen
  cout << "Your juice is ready" << endl;
  // Returns juice value in output
  return juice;

}
```

```
Output                                                    1.08s

 Your juice is ready
 Number of juice glass = 8
```

Explanation#

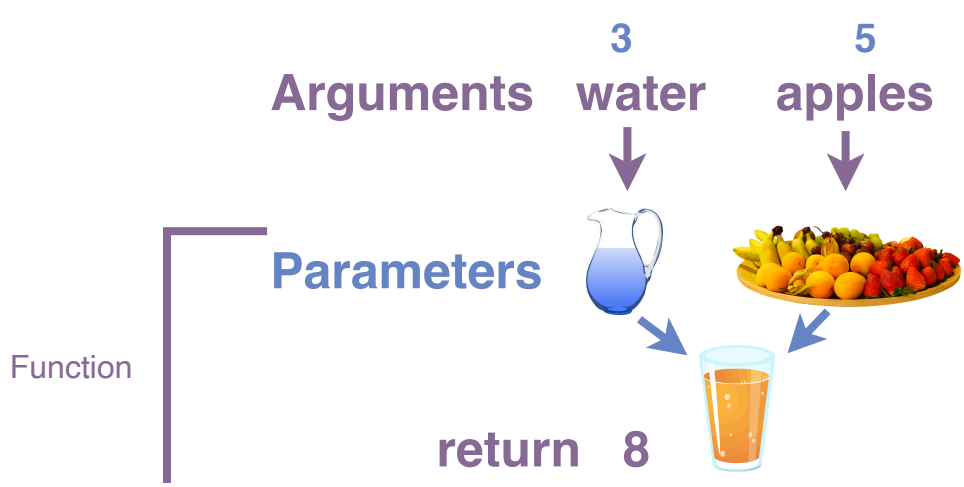
Line No. 9: Initialize `apples` to `5`.

Line No. 10: Initialize `water_glass` to `3`.

Line No. 12: Declares a variable `juice_glass`.

Line No. 14: Calls the function `make_juice` We call a function by writing its name and follow it by round brackets. It returns an integer value in the output, which is stored in `juice_glass`. When we call a function `make_juice` in the `main()`, the program control is given to the first statement in the function's body.

Line No. 16: Prints value of `juice_glass`.



Is it necessary to declare a function?#

In the above code, we declare a function before the `main` function. Then, we define it after the main function. In C++, statements are executed from top to bottom. If we don't declare the function before `main()`, our program will be unaware of it and we will get a compilation error.

> 📝 We cannot declare the function after the `main` function or we will get an error.

You are probably wondering if it's possible to define a function before `main()` and then call it later in a program.

Yes, it is possible. If you are defining your function before the `main` function, then function declaration is not necessary.

Run the program below and see the output!

```
using namespace std;

// Function definition
int make_juice ( int water , int fruit){
// Define new  variable juice of int type
  int juice ;
// Adds water in apple and saves the output in juice
  juice = water + fruit;
// Prints text on the screen
  cout << "Your juice is ready" << endl ;
 // Returns juice value in output
  return juice;

}


int main() {
```

```
  // Initialize variables apple and water
  int apples = 5;
  int water_glass = 3;
  // Declares a variable juice_glass
  int juice_glass;
  // Calls function make_juice and save its output in juice_glass
  juice_glass = make_juice ( water_glass , apples);
  // Prints value of juice_glass
  cout << "Number of juice glass = " << juice_glass;

  return 0;
}
```

Output 0.92s

```
Your juice is ready
Number of juice glass = 8
```

In the above code, we have removed the function declaration and defined our function before the `main` function. This gives us the same output.

Calling a function multiple times#

We can call the function as many times as we want with different inputs.

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

```
int make_juice ( int water , int fruit){
// Define new  variable juice of int type
  int juice ;
// Adds water in apple and saves the output in juice
  juice = water + fruit;
// Prints text on the screen
  cout << "Your juice is ready" << endl ;
 // Returns juice value in output
  return juice;
```

```
14
15  }
16
17
18  int main() {
19    // Declares a variable juice_glass
20    int juice_glass;
21
22    // Calls function make_juice and save its output in juice_glass
23    juice_glass = make_juice ( 2 , 5);
24    // Prints value of juice_glass
25    cout << "Number of juice glass = " << juice_glass << endl;
26    juice_glass = make_juice ( 6 , 11);
27    // Prints value of juice_glass
28    cout << "Number of juice glass = " << juice_glass << endl;
29
30    return 0;
31  }
32
```

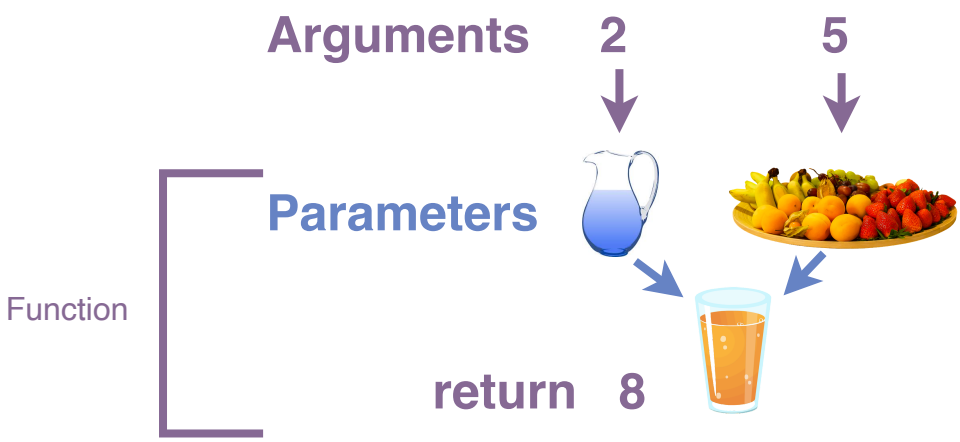
```
Output                                                    0.89s

 Your juice is ready
 Number of juice glass = 7
 Your juice is ready
 Number of juice glass = 17
```

In the above code, we call the `make_juice` function twice in a program.

Line No. 23: Calls the `make_juice` function and then stores the returned value in `juice_glass`. You can notice that we are passing values directly as arguments to the function.

`make_juice (2 , 5)`

📝 We can initialize a variable and then pass the identifier to the function parameter, or we can pass the value directly to the function parameters.



Line No. 26: Calls the `make_juice` function and then stores the returned value in `juice_glass`. Now, we are calling the function with different values.

```
make_juice (6 , 11)
```

Quiz

(learn) What is the output of the following code?

```
int number_sum (int num1 , int num2){
return num1 + num2;
}

int main() {
  float value1 = 10.1;
  float value2 = 20.9;
  int sum = number_sum ( value1 , value2 ) ;
  cout << sum ;
  return 0;
}
```

A) 30.9

B) 31

Your Answer

C) 30

Explanation

`num1` and `num2` accept `int` values. Therfore, they will ignore the number after decimal point.

D) 29

Submit Answer

Reset Quiz

Reset Quiz

Let's get into the details of the types of function parameters in C++.

Back
Defining a Function

Next
C++ Function Parameters

Mark as Completed

Report an Issue