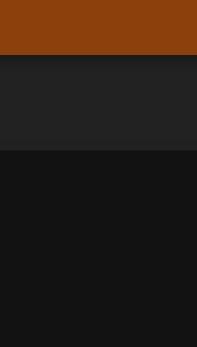


↑ 5.12 Default parameter values



Students:

Section 5.13 is a part of 2 assignments: CSC108 CH05.8-5.16 C5B ▾

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Includes: CA

Due: 04/15/2025, 11:59 PM EDT

5.13 Function name overloading

Sometimes a program has two functions with the same name but differing in the number or types of parameters, known as **function name overloading** or just **function overloading**. The following two functions print a date given the day, month, and year. The first function has parameters of type int, int, and int, while the second has parameters of type int, string, and int.

Figure 5.13.1: Overloaded function name.

```
#include <iostream>
#include <string>
using namespace std;

void PrintDate(int currDay, int currMonth, int currYear) {
    cout << currMonth << "/" << currDay << "/" << currYear;
}

void PrintDate(int currDay, string currMonth, int currYear) {
    cout << currMonth << " " << currDay << ", " << currYear;
}

int main() {
    PrintDate(30, 7, 2012);
    cout << endl;

    PrintDate(30, "July", 2012);
    cout << endl;

    return 0;
}
```

7/30/2012

July 30, 2012

[Feedback?](#)

The compiler determines which function to call based on the argument types. PrintDate(30, 7, 2012) has argument types int, int, int, so calls the first function. PrintDate(30, "July", 2012) has argument types int, string, int, so calls the second function.

More than two same-named functions is allowed as long as each has distinct parameter types. Thus, in the above program:

- PrintDate(int month, int day, int year, int style) can be added because the types int, int, int, int differ from int, int, int, and from int, string, int.
- PrintDate(int month, int day, int year) yields a compiler error, because two functions have types int, int, int (the parameter names are irrelevant).

A function's return type does not influence overloading. Thus, having two same-named function definitions with the same parameter types but different return types still yield a compiler error.

The use of overloading and of default parameter values may be combined as long as no ambiguity is introduced. Adding the function void PrintDate(int month, int day, int year, int style = 0) above would generate a compiler error because the compiler cannot determine if the function call PrintDate(7, 30, 2012) should go to the "int, int, int" function or to that new "int, int, int, int" function with a default value for the last parameter.

PARTICIPATION ACTIVITY | 5.13.1: Function name overloading.

Given the following function definitions, select the number that each function call would print. If the function call would not compile, choose Error.

```
void PrintDate(int day, int month, int year) {
    cout << "1" << endl;
}

void PrintDate(int day, string month, int year) {
    cout << "2" << endl;
}

void PrintDate(int month, int day) {
    cout << "3" << endl;
}
```

1) PrintDate(30, 7, 2012);

- 1
- 2
- 3
- Error

2) PrintDate(30, "July", 2012);

- 1
- 2
- 3
- Error

3) PrintDate(7, 2012);

- 1
- 2
- 3
- Error

4) PrintDate(30, 7);

- 1
- 2
- 3
- Error

5) PrintDate("July", 2012);

- 1
- 2
- 3
- Error

[Feedback?](#)

Exploring further:

- [Overloaded functions](#) from cplusplus.com.

CHALLENGE ACTIVITY | 5.13.1: Overload salutation printing.

Complete the second PrintSalutation function to print the following given personName "Holly" and customSalutation "Welcome":

Welcome, Holly

End with a newline.

[Learn how our autograder works](#)

```
1 #include <iostream>
2 #include <string>
3 using namespace std;
4
5 void PrintSalutation(string personName) {
6     cout << "Hello, " << personName << endl;
7 }
8
9 // Define void PrintSalutation(string personName, string customSalutation)...  
10
11 /* Your solution goes here */
12
13 int main() {
14     PrintSalutation("Holly", "Welcome");
15     PrintSalutation("Sanjiv");
16
17     return 0;
18 }
```

[Run](#)

1 test passed

All tests passed

[Feedback?](#)

CHALLENGE ACTIVITY | 5.13.2: Convert a height into inches.

[Full screen](#)

Double numFeet is read from input. Organize the lines of code to define a second ConvertToInches() with two double parameters, numFeet and numInches, that returns the total number of inches.

Ex: If the input is 4.0, then the output is:

4.0 feet is 48.0 inches

4.0 feet plus 6 inches is 54.0 inches

Note: Not all lines of code on the left will be used in the final solution.

How to use this tool

Unused

```
double ConvertToInches(double numFeet, double numInches) {  
    double ConvertToInches(double numFeet, numInches) {  
        totalInches = (numFeet * 12.0) + numInches;  
    }  
}
```

```
double totalInches;  
int totalInches;  
return totalInches;
```

[main.cpp](#)[Load default template...](#)

```
1 #include <iostream>
2 using namespace std;
3
4 void PrintPartySize(int partySize) {  
    cout << "Number of people attending: " << partySize << endl;
5 }
6
7
8 /* Your code goes here */
```

```
9 int main() {  
10     int sizeOfParty;  
11     string sizeInWord;  
12
13     cin >> sizeOfParty;  
14     cin >> sizeInWord;  
15
16     PrintPartySize(sizeOfParty);  
17     PrintPartySize(sizeInWord);
```

[Check](#)[Next level](#)[Feedback?](#)

CHALLENGE ACTIVITY | 5.13.3: Function name overloading.

620890.5010016.qx3zqy?

[Start](#)

The function PrintPartySize() has an integer parameter. Define a second PrintPartySize() function that has a string parameter. The second function outputs the following in order, all on one line:

- The party needs a room for "
- the value of the string parameter
- "

End with a newline.

Ex: If the input is 7 seven, then the output is:

Number of people attending: 7

The party needs a room for seven.

```
1 #include <iostream>
2 using namespace std;
3
4 void PrintPartySize(int partySize) {  
    cout << "Number of people attending: " << partySize << endl;
5 }
6
7
8 /* Your code goes here */
```

```
9 int main() {  
10     int sizeOfParty;  
11     string sizeInWord;  
12
13     cin >> sizeOfParty;  
14     cin >> sizeInWord;  
15
16     PrintPartySize(sizeOfParty);  
17     PrintPartySize(sizeInWord);
```

1

2

3

[Check](#)[Next level](#)[Feedback?](#)

How was this section?

[Provide section feedback](#)

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