

## Code Assessor

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# Debug C

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## Lab C

### Problem

If statements and loops are great for error checking user (keyboard) input. For example, for a miles per gallon calculating program, the user must enter a valid number of gallons, otherwise you might run into a divide-by-zero error if the user enters 0. It is incumbent upon the programmer (you) to make sure that your program correctly handles erroneous input.

This lab will reuse lab A, but now you will error check the values given by the user and give the cashier better information on what they should do.

All of this will be done with if statements, loops, and conditionals.

### Inputs

Ask the user two questions for inputs *cost* and *money*

"Enter cost \$"

"Enter money \$"

\*\*\*Notice that there is NO SPACE after the dollar sign (\$).

Ensure that **cost** meets the following requirements:

- Use a do/while loop to ensure that the **cost** is less than or equal to *\$100,000.00*
- If the user inputs something bigger than *\$100,000.00*, simply re-prompt "Enter cost \$"
- Continue this process until the user gives you a value less than or equal to *\$100,000.00*

Ensure that **money** meets the following requirements:

- Use another do/while loop to ensure that the money is bigger than 0.
  - A user must not be able to pay \$0 or a negative value
- If the user inputs something less than or equal to *\$0.00*, re-prompt "Enter money \$"
- Continue this process until the user gives you a money value bigger than *\$0.00*

\*\*\*After all inputs are verified to be correct, output a new line by using `cout << endl;`

### Process

As in lab A, you will need to calculate the amount of change by subtracting the **cost** from the amount of **money** that the customer gave the cashier.

For example, if **cost** is \$100 and **money** is \$150, then change will be \$50.

## Outputs

Your output will be based on the calculated change:

If the change is negative:

Output to the user **"Customer did not give you enough money."**

Otherwise, if the change is exactly \$0.00:

Output to the user **"Customer paid exact change."**

Otherwise, if the change is neither negative nor \$0.00:

Output to the user **"Give the customer \$X.YY."**

\*\*\*Do NOT output \$X.YY

\*\*\*Instead, output the actual amount of change in fixed notation with two (2) decimal points of precision.

## Additional Requirements

1. You must use mutual exclusion when writing your if statements to determine the output.
2. You must do/while or while loops when determining the correctness of the user's input (keyboard input)

## C++ Topics Covered

Conditionals  
If statements  
While loops  
Do/while loops

## Textbook Chapters Covered

Chapter 2.4  
Chapter 3.1  
Chapter 3.2  
Chapter 3.3  
Chapter 3.4

## Relevant Reading

If conditionals  
While loop  
Do while loop