BHCSI Intro Programming
Homework Assignment: Changy Money?

Problem Statement

As a frequent world traveler, Arup Guha has to exchange money to get various different currencies. However, he needs some help to determine exactly how much money he will have left after one of his trips. You will write a program to help him with his estimate. In particular, you will prompt the user for the following information:

1) How much US currency he/she has.
2) The exchange rate from US currency to the foreign currency.
3) How much of the foreign currency he/she spent.

The user exchanges all of his/her money for their trip. Usually, however, the user will have some money leftover when his/her trip is done. At this point, the user exchanges the rest of this currency for US dollars. Your goal will be to determine how much money the user has left in US dollars after his/her trip.

The charge for an exchange of currency is $2 US. Thus, if you are exchanging 1002 US dollars for Canadian dollars and the Canadian exchange rate is 1.5, then you will receive exactly 1500 Canadian dollars. If you spend 597 Canadian dollars, then you have 903 Canadian dollars left to exchange back to US dollars. This evaluates to $602 US. However, since the exchange fee is $2 US, the user would actually have exactly $600 US.

You may assume that all the values the user enters are valid values. Specifically, you may assume that the user enters positive values for all three entries, and that the user will always have more than $2 US left after their trip is over. (This is necessary to pay for the transaction fee.)

Note: For actual exchange rates, go to http://www.xe.com/ucc/.

Coding & Debugging

Rather than trying to get the whole thing to run at once, attempt to code up portions of the program one at a time. After finishing a portion, test that portion. After you are confident that this works properly, move on by adding more functionality to your program. This is called incremental development. You develop your program piece by piece, testing & debugging each piece as you go along. When you are finally done developing your program, you must test the entire application. Three sample runs of how your program should work are listed below. On your own, create several more sample inputs to try to test the validity of your program.

Notes for Submission

Store your program in the file **money.py**. Your file should have ample comments, including a header comment with your name, the date, a brief description of the program, as well as a list of any known bugs.

Sample Program Runs

(Note: Computer output is in plain text while the user's input is in bold for these examples.)

Sample Run #1
How many US dollars are you exchanging?
1002
What is the exchange rate from US dollars to the foreign currency?
1.5
How much foreign currency did you spend?
597

You will be left with $600.00 US currency.

Sample Run #2
How many US dollars are you exchanging?
500
What is the exchange rate from US dollars to the foreign currency?
35
How much foreign currency did you spend?
10000

You will be left with $210.29 US currency.

Note: There is no need for you to correctly format the dollar value. You may simply print out the double variable that stores the correct value without specifically formatting it to print only 2 decimal places. (It will print many decimal places by default.)