PROGRAMMING ASSIGNMENT #2

Write a C program that determines the **miles per gallon** for 3 tanks of gasoline that a user fills in his/her car.

We will explain to the user very clearly what the program will be doing and how they should enter data.

The program should prompt the user to enter the **number of gallons used** and the **number of miles driven** for each of the 3 tanks of gas. The program should then calculate and display the **miles per gallon** obtained for each tank. Once processing is complete for the 3 tanks, the program will calculate the overall mileage(total miles / total gallons) and display a friendly "Goodbye" message as shown below.

Once you create, compile, link and run your program, your program should present the following dialog to the user:

Welcome to the mileage calculator.

This program will calculate the miles per gallon for you for three tanks of gas after you have entered the gallons used and miles driven.

Enter the number of gallons used for tank #1: 12.8
Enter the number of miles driven: 287.1
*** The miles per gallon for this tank is 22.4

Enter the number of gallons used for tank #2: 10.3
Enter the number of miles driven: 200.2
*** The miles per gallon for this tank is 19.4

Enter the number of gallons used for tank #3: 5.2
Enter the number of miles driven: 120.9
*** The miles per gallon for this tank is 23.3

Your overall average miles per gallon for three tanks is 21.5

Thank you for using the program. Goodbye.

Note: The blue text represents the "output" from your program and is shown for clarity only here. It is not required that your output be in this color. (Do not even attempt to try!). Also note that what the user types in is indicated by the black text above. The first two lines may be any suitable message to the user. After that the program should run as above. The output spacing is important.

I have included several **hints** below. You are not required to use these hints for your solution. They are only here if you need some help. It is okay to completely ignore them, if you so choose. Some students have told me that the hints actually *confused* them! :-)

Hints:

- In this program you may use 1 variable of type **int**, and 5 or 6 of type **float**.

- This program requires an introductory statement to the user.

- This program requires a loop structure (a **for loop is best**, or **while** or **do** -- your choice).

  Note that the loop in the input flushing code (to clear input buffer) does not count.

- The loop requires 3 **printf** statements as described here:
  - a printf statement to prompt the user for the "number of miles driven"
  - a printf statement to prompt the user for the "number of gallons used"
  - a printf statement to display the calculated "miles per gallon for this tank".

- The loop also requires 2 **scanf** statements as described here:
  - a scanf statement to "read in" the number of gallons used which is input by the user.
  - a scanf statement to "read in" the number of miles driven, which is also input by the user.

- This program requires 3 calculations within the loop as described here:
  - one calculation to determine for the "total miles per gallon "
  - one accumulator to keep track of (add up) the *total miles driven* (used for the final calculation).
  - one accumulator to keep track of (add up) the *total gallons used* (used for the final calculation).

- This program requires another **printf** statement (*outside* the **for** loop) to display the average miles per gallon for all tanks.

- The loop index can be used to display the current tank calculation.

Good luck! ☺