Donna Graves COMP 1100 Assignment #2 Fall 2017

Due date: Fri Nov 17 (hand in before test)

Garbage In
Garbage Out
2-28
So, according to this program, you owe $400,000.00 for your gas purchase???
GIGO!

A gas station would like a program written to keep track of its gasoline sales during the day. Write a program to input each customer's name, the number of litres purchased and the type of gas. The program then produces the report shown below. At the end of the report, print the total sales and the number of customers for the day.

Your report should look similar to the following:

Customer Name	**Type of Gasoline**	**Price/Litre**	**# of Litres**	**Sales Amount**
Pat Clark	**Regular**	**1.28**	**80.0**	**102.40**
Sue Smith	**Diesel**	**1.08**	**100.0**	**108.00**
Jay Doe	**Propane**	**2.50**	**10.0**	**25.00**
Total sales				**235.40**
Average sales				**78.47**

Input:

Ask for user input for the customer name, number of litres and type of gasoline.
Validate the number of litres to ensure it is 0-100.
Validate the type of gasoline to ensure it is R, D or P only. Use toupper() to convert user input

Sample Input/Output Dialogue:

```
Enter customer's name (or ctrl Z to end)  Pat Clark
Enter number of litres 80
Enter type of gasoline (R)egular ,(D)iesel or P(ropane):  R
Enter customer's name (or ctrl Z to end) Sue Smith
Enter number of litres 100
Enter type of gasoline (R)egular ,(D)iesel or P(ropane):  D
Enter customer's name (or ctrl Z to end) Jay Doe
Enter number of litres 10
Enter type of gasoline (R)egular ,(D)iesel or P(ropane):  P
Enter customer's name (or ctrl Z to end)  ^Z
```

Processing:

Customers are charged $1.28 per litre for regular gas, $1.08 per litre for diesel and $2.50 per litre for propane.
Compute the sales amount by multiplying the number of litres by the cost per litre of gas.
Compute the average sales amount by dividing the total sales amount by the number of customers.

Programming Guidelines:

- **Review the programming standards for the course. Click on the hyperlink or find a copy on Blackboard in the assignments folder or on my network shares for this course.** *Not following standards usually results in the most points lost on assignments!*
- Include your name, section and a short narrative as a comment at the beginning of your program stating what the program does, not how it does it. No title page is required. No handwriting is permitted on submitted programs
- Ensure variable names are meaningful. Local? Lowercase or camel-caps? Do not use made up short forms for any part of a variable name. Do not prefix variables with its data type.
- Ensure your program is user friendly.
- Are brace brackets aligned? The opening brace bracket should be in the same column as the closing bracket. Did you indent inside the brace bracket? **Use Ctrl A + Ctrl K + Ctrl F to ensure alignment is correct.**
- Does the output look similar to the above? Use setw() to print both columns and control the number of decimal places. Ensure you left or right justify data in columns as shown. Include the blank lines to separate the data as well.
- Use an if statement to ensure the **gas.rpt** file is opened successfully. Crash the program, if it is not opened along with a user friendly message.
- Use a prime read algorithm to handle an unknown number of customers until control Z is entered.
- Your input/output dialogue should appear similar to the one shown.
- Use a while loop to validate the type of gas. Allow the user to correct any errors.
- Use a while loop to validate the number of litres. Allow the user to correct any errors. Handle an input failure.
- Ensure you do not divide by zero when computing the average sales.
- Write the title, detail lines and totals to the output file.
- Your output is to appear as shown above. Use setw(), left/right to ensure proper alignment.
- Use C++ shorthand notation when counting (++) and accumulating (+=).
- Test your code with different data values than the sample shown. Try typing control Z for the first input value.
- If the user enters control Z for the first input value, do not print the report, simply display a message onto the screen indicating the program was ended by the user.
- Add **`system("type gas.rpt");`** before your `system("pause");` statement to see your output file.
- If you are having problems with the assignment, please see me or email me for help prior to the due date.

It is very important that you work independently on your assignments. To help you with this assignment, I have posted a series of tips that appear in Blackboard each week. Beginning in week 7, you will be given hints on how to incorporate the concepts just taught into the program.

Note: If your assignment is not working by the due date, hand in what you have completed to earn part marks. Late assignments must be handed in, but are worth zero points.

Hand in: The program statements, input/output dialogue and output file (See lab ex#3 how to do copy I/O) **placed into your named folder for the course and copied into my 'dropbox for COMP 1100' folder found under DropboxW7 on the college's network shares.**
Do not submit the entire project!

***** No printout is required****

All code is to be free of syntax errors and must be your own work.
Grading is based on well designed, easy to read solutions.
Check out the marking rubric posted in the Assignment folder in Blackboard

"Just because it works does not mean that it is a good solution"