Lab 04: Truman Tea Store

Calculations, Random, and Formatting

Truman Tea Store sells Twinings, Tetley, and Lipton. A customer placing an order needs to specify the amount of each product to order (even if the amount is zero). The amount of each product is specified in whole ounces.

A customer is prompted for the amount for each item. Given the price per ounce of each item, an invoice is then printed. The item price/oz for the Twinings, Tetley, and Lipton are 0.35, 0.85, and 1.10 dollars respectively. However, if we order Twinings in large quantity (more than 25oz) then the item price/oz would be 0.30 dollar. (use if condition).

As an added bonus, when an order is placed at Truman Tea Store, there is a bonus discount, a random amount between $1 and $5, in whole dollar increments (i.e., the discount can be either 1 or 2 or 3 or 4 or 5 dollars. The discount would NOT be a fractional value like 1.5 or 2.75).

A run of the program should be formatted exactly like the following, except it is different for different product amounts. Please use setw(), setprecision(), and fixed format manipulators to format the output accordingly. Also, in your program use a random number generator for the bonus value so that on each program run, the bonus value would be different.

```
Welcome to Truman Tea Store!
Enter your name: John Smith
How many ounces of Twinings, Tetley, and Lipton? 12 0 15

Invoice for John Smith

                    Twinings      Tetley      Lipton
                  ----------  ----------  ----------
Quantity (oz)             12           0          15
Unit Price              0.35        0.85        1.10
Amount                  4.20        0.00       16.50

Total                  20.70
Bonus Discount         -4.00
Grand Total            16.70

Thank you for ordering!
```

The formula for choosing a random number between two values is given in the following (in case it is needed, you can convert the value into any other type):

```
int value = (rand() % (MAX_VALUE - MIN_VALUE + 1) + MIN_VALUE);
```

For example, if we need to generate a random number between 5 and 10 then in the above equation we can use MAX_VALUE = 10 and MIN_VALUE = 5 in order to obtain such numbers.

Please use appropriate data types for the variables in your program as the selection would impact the total calculation. Please avoid magic numbers in your program, instead use named constant variables. Use only the concepts and techniques presented in chapters 1 – 3 for this program (no loops or advanced data structure would be necessary).

As always, make sure you have a file header comment that gives your name and the program's purpose. Read over the and make sure your program conforms to it.

When you are satisfied with your program, by the due date of 5:00 pm Saturday, 15 February, submit it on the Blackboard course website. Thank you.