PROG 110

Project 2
75 points

Due: See Calendar
Use Assignment Drop Box

Objective: Create a project to calculate and display an invoice for Tribbles Habitat for Happiness.

Solution Name: yourLastName Project2Sol (e.g. Unwin Project2Sol)
Project Name: yourLastNameProject2
Source File Name: Invoice.cs, Class Name: Invoice

Follow the Software Development Standards for implementing the required naming conventions, whitespace, documentation and other details.

An example of what the output screen may look like is attached. This is just an example, and you may add more, (not less) to the introduction and end of program messages, change the prompts and summary text – be creative, have fun and make this program yours.

Application Specification:

As everyone knows, a tribble is a small, fluffy, and gentle animal that purrs soothingly and provides comfort and eases tension to whomever owns one. This company wants an application that the clerks can use to calculate the total amount due on an order. The clerk will need to enter the client's shipping information along with the number of tribbles ordered. The application should calculate the total amount due by multiplying the number of tribbles ordered by the price, tax, and total cost. The price per tribble depends on how many are ordered, as follows:

Number of Tribbles	Price
1 – 5	$129.99
6 – 12	$ 89.45
13 and over	$ 65.00

This program will only run once per order. In other words, if another order is made, the program will have to start over again. In your design of the interface, include your name at the end of the program, as part of the closing message.

Requirements:

Plan the application. Sketch a user interface with all the appropriate and required objects. Make sure to use identifying labels; in other words, data shouldn't be "hanging around".

1. Introduction – correct spelling, grammar, application purpose is clear to the user (remember "user-experience" is essential). Use of variables defined with appropriate data types is required. For this project, all floating point values will be a 'float' data type.
2. The application must display **individual** prompts to the client for their shipping information. The cursor will remain on the same line as the prompt.
    a. Name
    b. Address

   c. City
   d. State (2 letter abbreviation) – the client may input in lower case, upper case or mixed case
   e. Zip (characters)
   f. Number of tribbles (the client cannot order half a tribble)
3. Clear the screen
4. Display in a neatly, formatted summary (e.g. an invoice), with the decimal places aligned (test with large numbers):
   a. The client's shipping information – display the state abbreviation in upper case
   b. The number of tribbles ordered and the price for each
   c. The calculated subtotal
   d. State tax which is 8.9% of the subtotal
   e. Total cost
   f. All monetary values will be shown with a dollar symbol, 2 decimal places, and commas (when appropriate).
   g. Use format strings with placeholders to display the output (starting on page 55), and align the decimal places.
5. Validate the data entry. If the client has entered invalid or no data, display an informative and precise error message, and end the program gracefully.
6. Display the summary (invoice) only if the data is valid.
7. Let the client know when the application has ended.

Hints for Success

- Review your application and check that the calculated numbers make sense.
- Are there "magic numbers" in your code?
- Have a friend run your application; they may suggest changes to the interface for smoother interaction.
- Create a Test Plan
- If you have questions, please post on the discussion board under the appropriate topic, but do not post your code. In answering another student's question, do not post "answers" (code), but you may provide guidelines/hints on how to obtain the desired result.
- Start early and plan your time for questions in class and on the discussion board. Do not wait until the last minute to ask questions.

Follow the Program Development Life Cycle to plan, design, code, and test your application.

Memo Requirement

1. Create a Word document that will have your time sheet for this project. Include estimate, actual and total hours. Review the format as shown on page 7 of the Software Development Standards. For this project, include problems you encountered, and how you solved them, what value-added feature should be added in the "next" version of this project, and if you added an "extras", detail them in the memo.
2. Save as *yourLastName*MemoP2 (e.g. UnwinMemoP2)

Turn in:

1. The complete Visual Studio solution you developed.
2. Place the memo outside the VS solution folder and submit all files in one Zip file named *yourLastName*P2 (e.g. UnwinP2.zip).

It is your responsibility to ensure that all files are submitted and that I don't receive a "shortcut", or missing a file. If I don't have the correct files, I cannot grade your project and therefore, you will receive a zero for the assignment.




Sample – Requesting Input

```
        This program will create an invoice for
        *****  Tribbles Habitat for Happiness  *****

Enter your full name (first and last): Sylvia Unwin
Enter your shipping address: 1234 My Street
Enter your city: Any City
Enter your state (2 letter abbreviation): wa
Enter your zip code: 98007
Enter the number of tribbles you would like to receive: 2


Press any key to continue.
```


Sample - Summary Information

```
Tribbles Habitat for Happiness Invoice
You ordered 2 colorful tribbles at $75.00 cost per each.


The tribbles will be shipped to:
        Sylvia Unwin
        1234 My Street
        My City, WA   98007



Subtotal:              $150.00
Tax Amount:             $13.50
---------------------------------
Total:                 $163.50

Thank you for using Tribbles Habitat for Happiness invoice program.


Press any key to end this program.
```


Make sure to follow the project specifications and requirements.

Note to company --- why are there so many of these little critters? They seem to be everywhere!