Scalable Data Infrastructures - Project 01

Overview

This project is all about bringing together what you've learned over the first week of the class. You'll create a project that collects data from the user, converts it to the proper data type, performs calculations, and outputs the results to the console.

Instructions

For this lab, create a new C# project called **LastNameFirstName_PR01**. You will lose points if the project does not follow this naming convention. Within this project, you will implement a shopping cart calculator that will have the following requirements:

1. Ask the user what they are buying. This should be stored in a string variable.
2. Ask the user how much the items costs. This should be stored in a string variable but then converted to the appropriate number data type.
3. Ask the user for their current sales tax rate. The user should be allowed to enter a whole number from which you will convert the string data to the appropriate number data type and calculate the actual tax rate. So, if the user enters 7 as the sales tax, you will need to convert that number to .07 by dividing 7 by 100 (or multiplying 7 by .01).
4. Calculate the amount of sales tax for the item cost the user entered.
5. Finally, give the user feedback showing the name of their item, the cost of the item before tax, the total tax charged on the item, and the final cost, including tax. This will require multiple variables to hold all the values.

A few things to keep in mind:

- Break the problem down into your problem analysis first to make sure you're covering all the requirements. Also, take a look at the rubric below as this will indicate how the project will be graded.
- You'll need a number of different variables and data types. As you find a need, add them to the variables at the top of your code.
- A ReadLine() always returns a string value. But, in order to perform mathematical calculations, you'll need to convert some user input to a number data type.
- You need to be able to show the name of the item, the original cost entered by the user, the total tax due, and the total cost of the item.

Deliverables

Compress your project folder and rename your archive using the **LastNameFirstName_PR01** naming convention before uploading. You will lose points if the file is named incorrectly. **Do not upload an unzipped file or you will get a zero for the assignment.**

Rubric: Lab 3

Minimum Project Requirements

These requirements must be satisfied before any points are awarded. Failing to meet these requirements will result in a zero (0) grade.

1. Project must run when instructor compiles it.
2. The submission must contain all required files and folder. Submitting only the Program.cs file or the .sln file will result in a zero (0) grade.
3. You will lose 5 points if the project does not follow the naming convention described in the activity's documentation.

Topic	%	Excellent (100%)	Acceptable (80%)	Good (50%)	Fair (25%)	Poor (0%)
Foundational Technical Requirements						
Variables	**10**	All required variables are present, correctly declared and defined, with descriptive names using camelCase. There are no variables that are not used.	Variable names are not descriptive or not in camelCase.	Missing a required variable or unused variables within the code.	Missing two required variables.	Missing more than two required variables or serious defects in declaration or definition.
Data Types	**15**	All required data types are present and used correctly.	Using the wrong data type for money transactions.	Missing one required data type.	Missing two required data types.	Missing more than two required data types, or there is a clear misunderstanding of data types.
Input	**15**	All required inputs are present, used correctly, and include WriteLines to indicate the data requested.	WriteLines are not descriptive or missing.	Missing one required input.	Missing two required inputs.	Missing more than two required inputs, or there is a clear misunderstanding of ReadLine and input.
Conversion	**15**	All necessary data casting/converting is done.	Data is converted to an incorrect data type.	Missing one conversion of a string input to a correct data type.		No conversion of the string data collected by the ReadLine() statements.
Output	**15**	All required outputs are present and meaningful.	All outputs are present but do not include meaningful text.	Missing one required output.	Missing two required output.	Missing more than two required outputs or outputs are not meaningful to the user.
Operators	**15**	Confidence is demonstrated in manipulating strings and numbers.	One misused operator.	Two misused operators.		Fundamental lack of understanding of strings, numbers, or how operators work or no calculations present in the code.
Syntax	**15**	There are no syntax errors, including correct line and **formatting according to the style taught**.	There are no syntax errors, but the code does not follow the style taught.	Project code contains minor syntax errors but is easily fixed.	Project code contains more major syntax errors but are easily fixed.	Project code does not run.