CSIS-1175 – Winter 2020 - Assignment# 2

Due: Sun, Apr 5, 11:59 PM - Total Points: 50

NOTE: Assignment 2 is worth 12.5% of the final course grade

Submission guidelines: Please perform the following tasks. **Add comments** to your code explaining the variables and logic used. Not adding comments to each program and file you are submitting explaining the logic will result in loss of points for each question.

Create the C# project with your FirstInitialLastInitial_Assign2 - **There should be NO SPACES in your PROJECT NAME.** You must use upper and lower cases for the project name. (e.g., If your name is **John Smith, then your project must be called JS_Assign2**).

At the beginning of your source code, you must again enter your section #, your name and student id as a comment.

Zip up your entire program from the top folder and submit it via Blackboard before the due date. **Do not rename the folder. You will be responsible for accurately compressing the entire project folder (along with solution files) and submitting it on blackboard.** Late submission will not be accepted. The name of your zip file must be the same as your project name. If you do not follow the above instructions, including the file name and subject line, you will get marks deducted.

Note: Sharing your code, and looking at another student's code will constitute to cheating. In case of cheating both the student that copies and the student that shared or allowed the copying would get Zero and will reported to administration.

Task: In this assignment, you are required to implement the local grocery application in C#. Grocery Data (see given csv file, localgrocery.csv) contains ItemName, ItemCode, UnitPrice, StartingQty (starting quantity count for each item), QtyMinRestck (minimum quantity needed for restocking the item), QtySold, QtyRStcked.

Class Definition: You must use a Grocery class to maintain a grocery item with Properties: ItemName, ItemCode, StartingQty, QtyMinForRestock, QtySold, QtyRestocked. You will use two additional computed read-only properties: i. QuantityOnHand, which is computed as the Starting Quantity – Quantity Sold + Restocked Quantity, and ii. Total Sales for each item based on QtySold multiplied by UnitPrice. These two additional properties of TotalSales and QtyHand will be read-only properties, and cannot be directly set at any point. They will be updated to reflect the correct amount whenever you try to get these properties.

You will use a list of Grocery Items class objects to maintain all grocery items in the list (input file). Feel free to create additional fields or class methods as needed.

Form Design: Design the App with the following design features (see figure for sample). Your form should contain:

- 1. A grocery listbox that will display ItemCode, ItemName, StartingQty, QtyMinRestck, QtySold, QtyRStcked, UnitPrice, QtyHand and Sales. Set the listbox font to Consolas (or any other monospaced font).
- 2. Below the list box, you will have a set of controls in three group boxes for loading data, updating data, saving data. On the left, you have the Load Grocery Button in the Load Data GroupBox. The Update Data group box contains one set (of label, TextBox and Button) for incrementing Qty Sold, and another set (of label, TextBox and Button) for incrementing Qty Restocked. Finally, there is a Delete Selected Item Button. The Save Data group box contains three buttons one each to Save Grocery Data, Save Sales Report and Save Restock Needs Report.
- 3. Below all these controls, add a status label that will display status information as various user events are handled. You can set the AutoSize property of the label to false (so that the label can be resized). You can set the BackColor property (background color) to any color at the Web tab. You can set the TextAlign Property to Center. You can also set the border style to Fixed 3D (to give it an embossed look).
- 4. Any other form layout or arrangement is fine as long as all this information is there in a clear format.

🖳 For	m1	– 🗆 X
	Local Grocery Application	
	Loading Data Update Data Quantity Restocked: Quantity Sold: Quantity Sold: Quantity Restocked Update Restocked Qty For Selected Item For Selected Item	Saving Data Save Grocery Data
	Delete Selected Grocery Item Operation Status Update Displayed Here	Save Sales Report
	Operation Status Update Displayed Here	

Event Handlers:

1. Load Grocery Data: When the Load Grocery button is clicked, grocery records will be read from a text file (localgrocery.csv) from the default folder, and the lines read from the file is tokenized into field values, parsed (as needed) and then loaded onto the listbox and the list of class objects. In addition to all the field values in the input file, the listbox should, also display columns for QtyHand and Sales. Do some background research to see how String.Format() or PadRight() method can be used to format the listbox contents such that all values in a column are aligned. Make sure your listbox has monospaced font. Finally, update the status label to indicate how many grocery items were loaded into the list.

Note that each item in listbox should always correspond to each item in the List of grocery items except for the extra header line at the top in the listbox but not in the List of Grocery Items. Every ith item in the listbox will thus correspond to (i-1)the item in the list of Grocery objects.

m1								—	
			Local G	arocery Ap	plication	on			
ItemName	ItemId	UnitPrice	StartQty	QtyMinForRestock	QtySold	QtyRestocked	QtyHand	Sales	
Shampoo	11-550-3026	\$8.83	31	13	0	0	31	\$0.00	
Conditioner	36-389-7424	\$8.72	60	10	0	0	60	\$0.00	
Dandruff Shampoo	64-090-4668	\$8.09	66	13	0	0	66	\$0.00	
Body Wash	29-054-1549	\$9.01	34	6	0	0	34	\$0.00	
Bar Soap	76-866-0130	\$8.76	78	14	0	0	78	\$0.00	
Hand Soap	12-575-1269	\$6.43	61	12	0	9	61	\$0.00	
Razor Blades	51-854-4250	\$3.96	97	14	0	0	97	\$0.00	
Shaving Cream	38-416-2990	\$4.04	41	10	0	0	41	\$0.00	
Feminine Products	00-499-9472	\$3.64	95	5	0	0	95	\$0.00	
Women's Deodorant	90-222-4482	\$3.56	19	20	0	0	19	\$0.00	
Men's Deodorant	71-280-8443	\$6.32	12	14	0	0	12	\$0.00	
Toothpaste	36-559-4086	\$3.04	52	7	0	0	52	\$0.00	
Toothbrushes	23-363-4831	\$2.37	85	6	0	0	85	\$0.00	
Floss	14-459-7070	\$3.67	50	11	0	0	50	\$0.00	
Lotion	88-225-9449	\$2.64	85	19	0	0	85	\$0.00	
Load Data		Update Q	Data uantity Sold:	Quantity F	lestocked:		Save [ata Save Grocery Data	
Loi	ad Grocery Data		For Selected Item		For Select	ed Item			
		_		Delete Selected Grocery Iter	n			Save Sales Report	
								ave Restock Needs Re	port
			l	oaded 49 items from	the input file				

Feel free to use methods as you see fit.

2. Update Sold Qty For Selected Item: When this button is clicked, and if no item or if the headerline is selected from the listbox, you should display an error message in the status label indicating that "*Please selected a grocery item to increment sold qty*". If a grocery item is selected from the listbox, then TryParse the sold Qty from the QtySold TextBox. If the TryParse fails or if the Qty Sold from TextBox input is less than or equal to 0 or if QtySold from TextBox is greater than Qty on Hand, then output relevant error messages in the status label. If the parse succeeds, and if the Qty Sold from the TextBox is greater than Qty on Hand for that item, then increment the QtySold field by that amount given for the corresponding grocery item from the list. Qty on Hand should also reflect this change. Display a message in the status label saying "Sold Qty has been increased for the item with item code ABC". See sample below.



3. Update Restocked Qty For Selected Item Button: When this button is clicked, and if no item or if the headerline is selected from the listbox, you should display an error message in the status label indicating that "Please selected a grocery item to increment restocked qty". If a grocery item is selected from the listbox, then TryParse the Qty Restocked from the TextBox. If the TryParse fails or if the Qty Restocked from TextBox input is less than or equal to 0, then output relevant error messages in the status label. If the parse succeeds, and if the Qty Restocked from the TextBox is greater than 0, then increment the QtyRestocked field by that amount given for the corresponding grocery item from the list. Qty on Hand needs to reflect this change. Display a message in the status label saying "Incremented Restocked Qty for item with item code ABC". See sample below.

🖳 For	m1								- 0	×
				Local G	rocery A	pplicati	ion			
	ItemName Shampoo Conditioner Dandruff Shampoo Body Wash Bar Soap Razor Blades Shaving Cream Feminine Products Women's Deodorant Toothpaste Floss Lotion	ItemId 11-558-3026 36-389-7424 64-090-4668 29-054-1549 12-575-1269 38-416-2990 00-499-9472 990-222-4482 71-280-8443 36-559-4086 23-563-4081 14-459-7070 88-225-9449	UnitPrice \$8.83 \$8.72 \$8.09 \$9.01 \$6.43 \$3.96 \$4.04 \$3.64 \$3.56 \$6.32 \$3.04 \$3.77 \$3.67 \$3.67 \$2.64	StartQty 31 60 66 34 78 61 97 41 95 19 12 52 55 59 85	QtyMinForRestoc 13 10 13 6 14 12 14 12 14 16 5 20 14 7 6 11 19	k QtySold 8 9 20 8 9 8 9 8 9 8 9 8 9 9 9 9 9 9 9 9 9 9	QtyRestocked 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	QtyHand 31 60 66 34 58 61 97 41 97 41 95 19 12 25 50 85	Sales \$0.000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.00000 \$0.0000 \$0.00000 \$0.0000 \$0.0000 \$0.00000 \$0.00000 \$0.00000 \$0.00000 \$0.00000 \$0.00000 \$0.000000 \$0.00000000	
	Load Data	ad Grocery Data	Q	Data uantity Sold: Update Sold City For Selected Item	Quantit Delete Selected Grocery Qty Sold for item w	y Restocked: 10 Update Re For Sele Item	estocked Oty ccted item 76-866-0130	Save	Data Save Grocery Data Save Sales Report Save Restock Needs Report	
Eor										×
				Local G	rocery A	pplicati	ion		_	
	ItemName Shampoo Conditioner Dandruff Shampoo Body Wash Bar Soap Hand Soap Razor Blades Shaving Cream Feminine Products Women's Deodorant Toothpustes Floss Lotion	ItemId 11-550-3026 36-389-7424 64-090-4668 29-054-1549 76-866-0130 12-575-1269 51-854-4250 90-222-4482 90-222-4482 90-439-9472 90-222-4482 11-280-8443 36-559-4080 83-225-9449	UnitPrice \$8.83 \$8.72 \$8.09 \$9.01 \$8.76 \$6.43 \$3.96 \$3.64 \$3.64 \$3.56 \$5.32 \$3.04 \$2.37 \$3.67 \$2.64	StartQty 31 60 66 34 78 61 97 41 95 19 12 12 52 85 50 85 50 85	QtyMinForRestoc 13 10 13 6 14 12 14 12 14 16 5 20 14 7 6 11 11 19	k QtySold e e e e e e e e e e e e e e e e e e e	QtyRestocked 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	QtyHand 31 60 66 34 58 61 97 41 95 19 12 25 95 95 85 85	Sales S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00	~
	- Load Data Loa	nd Grocery Data	- Update Q	Data uantity Sold: Update Sold Qty For Selected Item	Quantit Delete Selected Grocery	y Restocked: Update Re For Sele	estocked Qty coded item	Save	Data Save Grocery Data Save Sales Report Save Restock Needs Report	
		(Incremented Res	tocked Qty for iten	n with Item Co	de 23-363-4831	>		

4. **Delete Selected Item Button:** When this button is clicked, and if no item or if the headerline is selected from the listbox, you should display an error message in the status label indicating that "*Please selected a grocery item to delete*". If a grocery item is selected from the listbox, then delete this grocery item from the listbox (and from the list of grocery item objects). Also, clear the output label if necessary. Display a message in the status label indicating "Deleted *Item with item code ABC*". See sample with Deleted item *Shampoo* (1st item in the original list).



Lotion Excema Cream	88-225-9449 24-443-3243	\$2.64 \$3.14	85 104	19 6	0 0	0	85 104	\$0.00 \$0.00	
- Load [Data	-0	pdate Data Quantity Sold:		Quantity Restocked:		Save	Data	
	Load Grocery Data		Update Sold Qty For Selected Item		Update Re For Sele	stocked Qty cted Item		Save Grocery Data	
				Delete Selected G	arocery Item			Save Sales Report	
								Save Restock Needs Repo	rt
	<		Deleted re	cord for item	with item code 11-5	50-3026			

5. Save Grocery Data (updatedgrocery.csv): When the user clicks on this button, for those items that are still in the list box (and the list of grocery objects), write the ItemCode, ItemName, StartingQty, QtyMinForRestock, QtySold, QtyRestocked, UnitPrice onto a comma-separated text file in the default folder location using file name updatedgrocery.csv. The comma separated text file will have each column separated by a comma. The file should have a header row at the top that gives the name of each field. Finally, the status label should display log messages indicating how many grocery items were written to the file (see sample).

💀 Form1					- 🗆 ×
	Local G	rocery Applicatio	on		
ItemName ItemId Conditioner 36-389-7424 Dandruff Shampoo 64-890-4668 Body Wash 29-854-1549 Bar Soap 78-866-8130 Hand Soap 12-575-1269 Razor Blades 51-854-4250 Shaving Cream 38-416-2590 Vomen's Deodorant 90-422-4425 Won's Deodorant 92-22-4482 Toothpaste 35-559-4861 Toothpaste 32-359-4881 Floss 14-459-7870 Lotson 88-225-9449 Excema 24-443-3243	UnitPrice StartQty \$8.72 60 \$8.09 66 \$9.01 34 \$5.76 78 \$6.43 61 \$3.96 97 \$4.04 41 \$3.56 19 \$6.32 12 \$3.04 52 \$2.37 85 \$3.67 50 \$2.64 85 \$3.14 104	QtyMinForRestock QtySold 10 0 13 0 6 0 14 20 12 0 16 0 17 0 20 0 10 0 7 0 6 0 11 0 19 0 6 0	QtyRestocked 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	QtyHand 60 63 34 58 61 97 41 95 19 19 12 52 59 59 59 50 85 104	Sales ▲ \$9.00 \$ \$0.20 \$ \$175.20 \$ \$0.00 \$ \$0.00 \$ \$0.00 \$ \$0.00 \$ \$0.00 \$ \$0.00 \$ \$0.00 \$ \$0.00 \$ \$0.00 \$ \$0.00 \$ \$0.00 \$ \$0.00 \$ \$0.00 \$ \$0.00 \$ \$0.00 \$
Load Data	Update Data Quantity Sold: Update Sold Qty For Selected Item	Quantity Restocked: Update Resto For Selecte Delete Selected Grocery Item	cked Qty d Item	Save Data Save 1 Save Save Rest	Grocery Data Sales Report lock Needs Report
	Saved 4	48 records into the output inventory	file		
updatedgrocery - Notepad				_	
ItemName,ItemCode,Unit Conditioner, 36-389-742 Dandruff Shampoo,64-09 Body Wash,29-054-1549, Bar Soap,76-866-0130,8 Hand Soap,12-575-1269, Razor Blades,51-854-42 Shaving Cream,38-416-2 Feminine Products,00-4 Women's Deodorant,90-2 Men's Deodorant,90-2 Men's Deodorant,71-280 Toothpaste,36-559-4086 Toothpushes,23-363-48 Floss,14-459-7070,3.67 Lotion,88-225-9449,2.6 Excema Cream,24-443-32 Hydrocortizone Cream,55 Diapers,16-801-1792,4. Wipes,38-094-2745,5.72 Baby Wash,80-606-2379, Lightbulbs,79-593-0652 Dish Soap,10-553-0064, Laundry Detergent,57-1 Dishwasher Detergent,2	Price, StartingQty, 4,8.72,60,10,0,0 10-4668,8.09,66,13, 9.01,34,6,0,0 5.76,78,14,20,0 6.43,61,12,0,0 150,3.96,97,14,0,0 1990,4.04,41,10,0,0 199-9472,3.64,95,5, 122-4482,3.56,19,20 1-8443,6.32,12,14,0 5.3.04,52,7,0,0 31,2.37,85,6,0,10 7,50,11,0,0 243,3.14,104,6,0,0 57-097-8098,7.04,54 10,112,9,0,0 2,11,31,6,0,0 2,6.16,104,8,0,0 9.98,105,5,0,0 181-7386,5.71,45,17 20-698-7128,3.19,20	QtyMinRestck,QtySo 0,0 9,0,0 9,0,0 9,0 9,0 9,0 9,0,0	ld,QtyRStcked	d	

6. Save Sales Report (grocerysales.csv): When the user clicks on this button, for those items that are still in the list box (and the list of grocery objects) and have QtySold greater than 0, write the ItemCode, ItemName QtySold, UnitPrice and Sales onto a comma-separated text file in the default folder location using the name grocerysales.csv. The comma separated text file will have each column separated by a comma. The file should have a header row at the top that gives the name of each field. Finally, the status label should display log messages indicating how many sale items were written to the sales report file (see sample).

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				Local G	rocery A	pplication	on				
	Itenkame Conditioner Dandruff Shampoo Body Wash Bar Soap Hand Soap Razor Blades Shaving Cream Feminine Products Women's Deodorant Toothprushes Floss Lotion Excema Cream	ItemId 36.389.7424 64.090.4668 29.054.1549 76.866.0130 12.575.1269 88.416.2990 00.499.9472 99.222.4482 71.2208.8443 36.559.4086 23.363.4831 14.459.7070 88.225.9449 24.443.3243	UnitPrice \$8.72 \$8.09 \$9.01 \$8.76 \$5.43 \$3.96 \$3.64 \$3.56 \$6.32 \$3.94 \$2.37 \$3.67 \$2.64 \$3.67 \$3.64 \$3.66 \$3.64 \$3.66 \$3.67 \$3.67 \$3.67 \$3.67 \$3.67 \$3.66 \$3.66 \$3.66 \$3.66 \$3.66 \$3.66 \$3.66 \$3.66 \$3.66 \$3.66 \$3.66 \$3.66 \$3.66 \$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66 \$3.66 \$3.66 \$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66 \$3.66\$3.66 \$3.66\$3	StartQty 60 66 34 78 61 97 41 95 19 12 52 85 50 85 50 85 104	QtyMinForRestoc 10 13 6 14 12 14 10 5 20 14 7 6 11 19 6	k Qtysold 0 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	QtyRestocked 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	QtyHand 60 34 58 61 97 41 95 19 12 52 59 50 85 50 85 104	Sales S0.00 S0.00 S0.00 S175.20 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00 S0.00		~
	- Load Data	d Grocery Data	Update	e Data Quantity Sold: Update Sold Qty For Selected Item	Quantit Delete Selected Grocery ed 1 records into th	y Restocked: Update Rest For Select Item	ocked Qty led item	Save I	Data Save Grocery Data Save Sales Report Save Restock Needs R	eport	

grocerysales - Notepad	_	\times
File Edit Format View Help		
ItemName,ItemCode,UnitPrice,QtySold,Sales Bar Soap,76-866-0130,\$8.76,20,\$175.20		^
		\sim

7. Save Restock Needs Report (groceryrestocks.csv): When the user clicks on this button, for those items that are still in the list box (and the list of grocery objects) and have QtyHand lesser than QtyMinForRestock, write the ItemCode, ItemName, QtyMinForRestock, QtyHand onto a comma-separated text file in the default folder location using the file name groceryrestocks.csv. The comma separated text file will have each column separated by a comma. The file should have a header row at the top that gives the name of each field. Finally, the status label should display log messages

💀 Form1 _ \times Local Grocery Application ItemId 36-389-7424 64-090-4668 92-054-1549 76-866-0130 12-575-1269 08-493-9472 90-222-482 71-280-8443 36-559-4886 23-363-4831 44-459-7870 88-225-9449 24-443-3243 QtyMinForRestock 10 13 Qtysold StartQty 60 66 34 78 61 97 41 95 19 12 52 85 50 85 50 85 104 ItemName UnitPrice \$8.72 \$8.09 \$9.01 \$6.43 \$3.96 \$4.04 \$3.56 \$6.43 \$3.56 \$5.62 \$3.04 \$2.37 \$3.67 \$2.64 \$3.14 QtyRestocked QtyHand 60 66 34 58 61 97 41 95 19 19 12 52 95 50 85 104 Sales \$0.00 \$0.00 \$175.20 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 ItemName Conditioner Dandruff Shampoo Body Wash Bar Soap Hand Soap Razor Blades Shaving Cream Feminine Products Women's Deodorant Toothoaste 6 14 12 14 10 5 20 0 0 0 0000 20 14 7 0 0 Toothpaste Toothbrushes Floss 0 10 6 11 19 6 0 Lotion Excema Cream v Load Data Update Data Save Data Quantity Restocked: Quantity Sold: Save Grocery Data Update Sold Qty For Selected Item Update Restocked Qty For Selected Item Load Grocery Data Save Sales Report Delete Selected Grocery Item Save Restock Needs Report Saved 4 records into the restocks needed output file groceryrestocks - Notepad \times File Edit Format View Help ItemName, ItemCode, QtyHand, QtyMinRestck ~ Women's Deodorant, 90-222-4482, 19, 20 Men's Deodorant, 71-280-8443, 12, 14 Chapsticks, 32-998-9786, 3, 19 Radish,60-641-7970,11,16

indicating how many restock needed items were written to the restock needs report file (see sample).

Note: Use additional methods as you see fit to complete the task.