Course Software Engineering - HomeWork: C# Windows Forms Programming

Instructions to Students

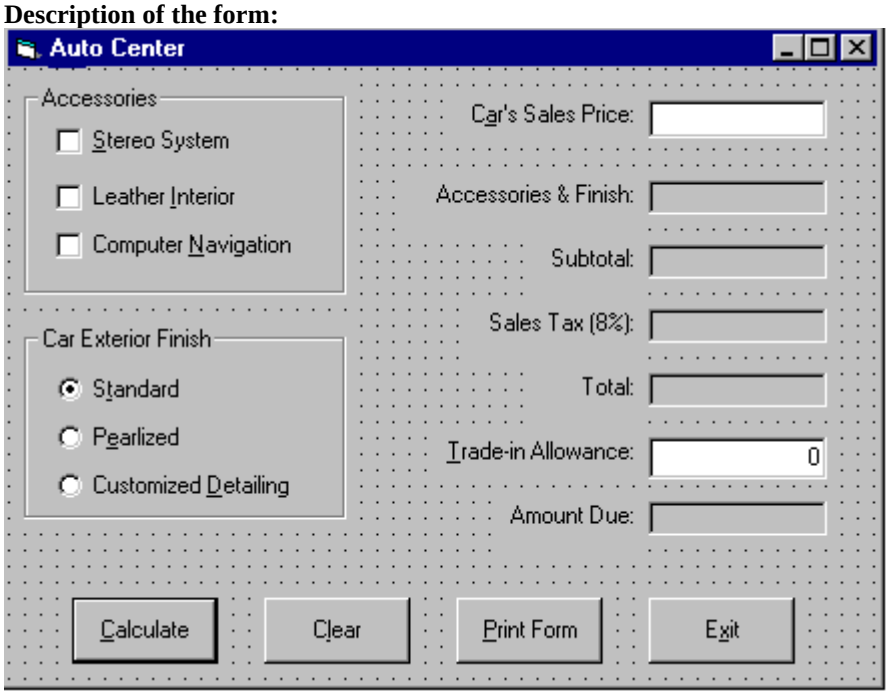
- This assignment contains 6 stages which match the major learning outcomes in the course.
- You must complete ALL stages of the assignment.
- Students must follow conventional naming and programming syntax as well as providing clear, concise comments where appropriate. Students will be assessed on interface design, organisation, methodology, error checking and logic.

Stage 1

Submission Requirements.

1. A hardcopy of the C# Code
2. A hardcopy of the algorithms used for determining the car exterior finish and checking the validity of input fields.
3. A disk folder (zip/rar file) containing all files necessary to run the application using C#.Net.

Description of the form:



Create a project that will determine the total amount due for the purchase of a vehicle using the screen design shown above and the values listed in the table below.

Item	Price
Stereo System	425.76
Leather Interior	987.41
Computer Navigation	1,741.43
Standard	No additional charge
Pearlized	345.72
Customised Detailing	599.99
Tax Rate	8%

You will need text boxes for the base price and trade-in allowance. Check boxes will indicate if the buyer wants additional accessories: stereo system, leather interior, and/or computer navigation. A frame for the exterior finish will contain option buttons for Standard, Pearlized or Customised detailing.

Have the trade-in allowance default to zero; that is, if the user does not enter a trade in value, use zero in your calculation.

Validate the values from the text boxes, displaying a message box if necessary.

To calculate, add the price of selected accessories and finish to the base price and display the result in a label called *lblSubtotal.* Calculate the sales tax on the subtotal and display the result in a *Total* label. Then subtract any trade-in value from the total and display the result in a *lblAmountDue* label.

Include command buttons for *Calculate, Clear, Exit,* and *Print Form*. The calculate button must display the total amount due after trade in.

Stage 2

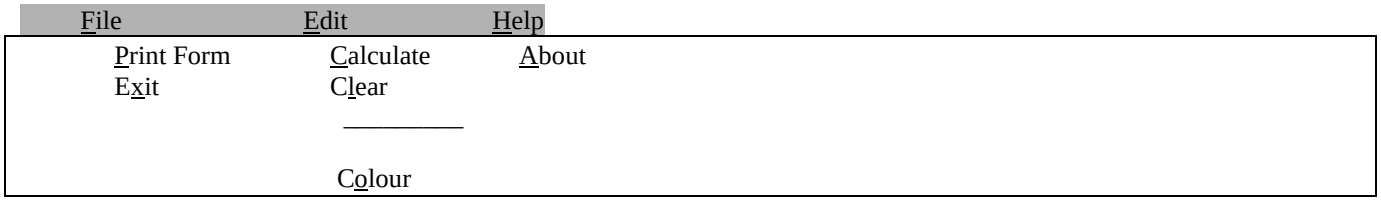
Submission Requirements.

1. A hardcopy of the C# Code
2. A disk folder (.rar archiv) containing all files necessary to run the application.

Description

Modify the program produced for stage 1 of this assignment to include menu items to perform the required actions. Where the menu item performs the same action as a command button (eg ‘clear’ or ‘exit’) it should call the event attached to this button.

Menu:



Stage 3

Submission Requirements.

3. A hardcopy of C# Code
4. A disk folder (.rar archiv) containing all files necessary to run the application.

Description

Add the following forms to the C# Auto Centre project

A 'Main' form which displays a large 'banner' label with the text 'Valley Boulevard Auto Centre - meeting all your vehicles need's'. It should have the following menus.

The colour and font commands should allow the user to change the large label on the form. The 'Input Sale' command should display the form from stages 1 and 2. You will need to modify this form to hide itself rather than terminate execution.

- A Splash screen of your own design, but including at least
  - An appropriate graphic
  - A command button to close and unload the splash screen and display the Main form

  You will also need to modify the project to make this the first form loaded.
- An 'About' form which displays information describing the application and an appropriate graphic.

Stage 4

Submission Requirements.

5. A hardcopy of the C# Code
6. A disk folder (.rar archiv) containing all files necessary to run the application.

Description

Add a form to the C# Auto Centre project for helping to manage car-wash information. The form will contain three list box or combo box controls that do not permit the user to add items at run time. The first list will contain the names of the packages available for detailing a vehicle: Standard, Deluxe, Executive or Luxury.

The contents of the other two lists will vary depending upon the package selected. Display one list for the interior work and one list for the exterior work. Store the descriptions of the items in string constants. The list for the interior and exterior must be cleared and new items added each time a selection is made from the package list. The following table has the details for each option.

	Item Description	S	D	E	L
Exterior	Hand Wash	√	√	√	√
	Hand Wax		√	√	√
	Check Engine Fluids			√	√
	Detail Engine Compartment				√
	Detail Under Carriage				√
Interior	Fragrance	√	√	√	√
	Shampoo Carpets		√	√	√
	Shampoo Upholstery				√
	Interior Protection Coat (dashboard and console)			√	
	Scotchguard				√
Note	*S - Standard D - Deluxe E - Executive L - Luxury*				

Use a dropdown list to allow the user to select the fragrance. The choices are Hawaiian Mist, Baby Powder, Pine, Country Floral, Pina Colada, and Vanilla.
Include menu commands for *Print, Clear,* and *Exit.* The printout will contain the package name, the interior and exterior items chosen and the fragrance chosen. Use a For/Next loop when printing the interior and exterior lists.
You will need to add a menu item to the Main form so that so that the carwash form can be accessed.

Stage 5

Submission Requirements.

1. A hardcopy of the C# Code
2. A disk folder containing all files necessary to run the application.

Description

C# Auto sells its own brand of spark plugs. To cross-reference to major brands, it keeps a table of equivalent part numbers. C# Auto wants to computerise the process of looking up part numbers in order to improve its customer service, and wants a new form added to its system for this purpose.
The user should be able to enter the part number and brand and look up the corresponding C# part number. You may allow the user to select the brand (Brand A, Brand B, or Brand X) from a list or from option buttons.

Auto	*Brand A*	*Brand B*	*Brand X*
PR214	**MR43T**	**RBL8**	**14K22**
PR223	**R43**	**RJ6**	**14K24**
PR224	**R43N**	**RN4**	**14K30**
PR246	**R46N**	**RN8**	**14K32**
PR247	**R46TS**	**RBL17Y**	**14K33**
PR248	**R46TX**	**RBL12-6**	**14K35**
PR324	**S46**	**J11**	**14K38**
PR326	**SR46E**	**XEJ8**	**14K40**
PR444	**47L**	**H12**	**14K44**

Use an array of user defined types for the look-up table.
Stage 6

Submission Requirements.

1. A hardcopy of the C# Code
2. A disk folder containing all files necessary to run the application.

Description

Add menu items to the 'Sale' form created for step 1 of the assignment to:

- Append the details of the current sale to a file
- Display a history of sales information from the file on a new form of your own design.