



ADEV-2008 (234111) Programming 2



JY

# Module 7 Assignment Requirements



# Module 7 Assignment

This assignment will reinforce your knowledge of the following areas:

- Working with ADO.net provider objects
- Working with a DataSet
- Working with the DataGridView control

## Introduction


The last phase of the project will require you to add functionality to the Vehicle Data Form to manipulate data from a database.


It is highly recommended that you back up your solution prior to making major modifications to an existing code set.


## Defect Management

Part of the evaluation of this assignment will include your ability to repair defects from previous versions of your code. Ensure that you are applying the feedback provided to you in the assignment evaluations. You should expect to receive deductions on this assignment for any outstanding defects.

## Resources

 Reflect in ePortfolio

 Download

 Print

<

>

To complete this phase of the project, you will need to download the assignment file(s) from [here \(downloads/adev-2008 module7 assignment resources.zip\)](#)

Activity Details

Contents

You have viewed this topic

- AMIDatabase.mdb - The Microsoft Access database used in this application.

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# Main Form

Opening an instance of the Vehicle Data Form was completed in the previous version of the project. You will not update anything in the Main Form for this phase of the project.

# Vehicle Data Form

## Form Design

The vehicle data form displays vehicle data from the database.

Vehicle Data									
	StockNumber	ManufacturedYear	Make	Model	Mileage	Automatic	Colour	BasePrice	OptionsPrice
▶	8645519	2002	Saturn	SC2	204000	<input type="checkbox"/>	Silver	3495	0
	6869180	1981	Cadillac	Eldorado Coupe	150000	<input checked="" type="checkbox"/>	Black	1500	0
	2780288	2002	Pontiac	Sunfire	191000	<input checked="" type="checkbox"/>	White	2495	0
	7393778	2010	Mazda	3 GX	37000	<input type="checkbox"/>	Grey	9987	0
	4456101	2010	Nissan	Versa	67000	<input checked="" type="checkbox"/>	Blue	9987	0
	9146072	2004	Mini	Cooper	175000	<input type="checkbox"/>	Red	7950	0
	8645520	1998	Saturn	SC2	178000	<input type="checkbox"/>	Green	2300	0
	1269180	1991	Cadillac	Eldorado Coupe	150000	<input type="checkbox"/>	Yellow	999	0
	2744288	2007	Pontiac	Sunfire	45000	<input type="checkbox"/>	Gold	3745	0

ID	Year	Make	Model	Price	Color	Stock
7393378	2013	Mazda	3 GX	12000	Bronze	10987
4457645	1969	Nissan	Pickup	467000	Gun Metal	500
9133331	2005	Mini	Cooper	21000	Orange	9950

## Initial State

- Save menu item disabled
- Delete menu item disabled
- Title of the form is Vehicle Data.
- The Form is maximized within the MDI container.
- DataGridView
  - Disable the ability for users to delete rows.
  - Disable the ability for users to resize rows.
  - Auto size columns using Fill mode.
  - Disable the ability for users to select multiple rows.
  - Populated with all the vehicle data from the database.

## Car Wash Form Functionality

When an instance of the Vehicle Data Form is initialized, all vehicle data from the `VehicleStock` table is retrieved from the provided database and data bound to the DataGridView control on the form.

When vehicle data is successfully retrieved from the database:

- Display the vehicle data in the Data Grid View control.
- Hide the “ID” and “SoldBy” columns in the Data Grid View.

## Sample Output

	StockNumber	ManufactureYr	Make	Model	Mileage	Automatic	Colour	BasePrice	OptionsPrice
▶	8645519	2002	Saturn	SC2	204000	<input type="checkbox"/>	Silver	3495	0
	6869180	1981	Cadillac	Eldorado Coupe	150000	<input checked="" type="checkbox"/>	Black	1500	0
	2780288	2002	Pontiac	Sunfire	191000	<input checked="" type="checkbox"/>	White	2495	0
	7393778	2010	Mazda	3 GX	37000	<input type="checkbox"/>	Grey	9987	0
	4456101	2010	Nissan	Versa	67000	<input checked="" type="checkbox"/>	Blue	9987	0
	9146072	2004	Mini	Cooper	175000	<input type="checkbox"/>	Red	7950	0
	8645520	1998	Saturn	SC2	178000	<input type="checkbox"/>	Green	2300	0
	1269180	1991	Cadillac	Eldorado Coupe	150000	<input type="checkbox"/>	Yellow	999	0
	2744288	2007	Pontiac	Sunfire	45000	<input type="checkbox"/>	Gold	3745	0
	7393378	2013	Mazda	3 GX	12000	<input checked="" type="checkbox"/>	Bronze	10987	0
	4457645	1969	Nissan	Pickup	467000	<input type="checkbox"/>	Gun Metal	500	0
	9133331	2005	Mini	Cooper	21000	<input checked="" type="checkbox"/>	Orange	9950	0
*						<input type="checkbox"/>			

*Note: This sample demonstrates the Vehicle Data Form opened within the MDI container Form.*

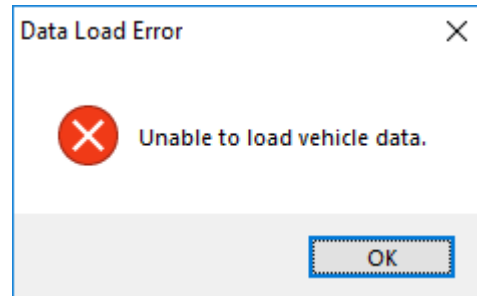
## Errors Before the Form is Shown

When an error occurs before the form is shown, a dialog message is shown and the form is closed.

When any exception occurs while retrieving the vehicle data, display the following MessageBox:

- Text: Unable to load vehicle data.
- Caption: Data Load Error
- Buttons: Ok

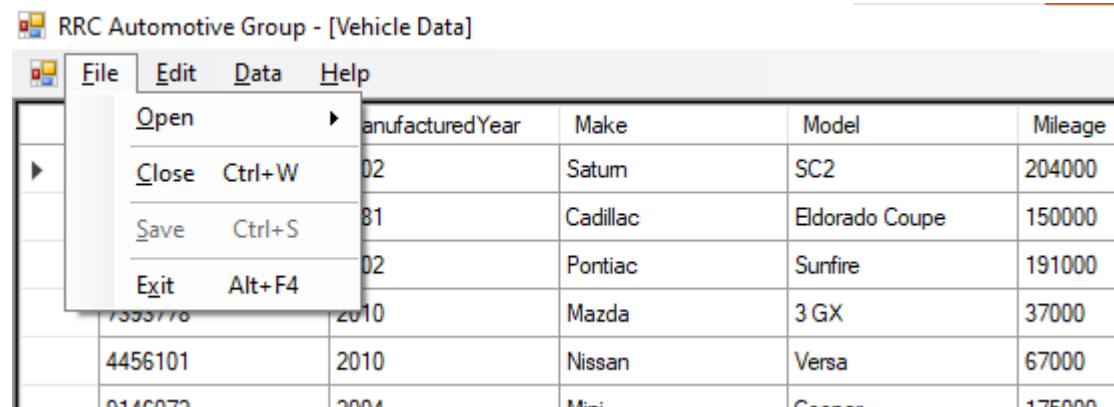
- Buttons: OK
- Icon: Error



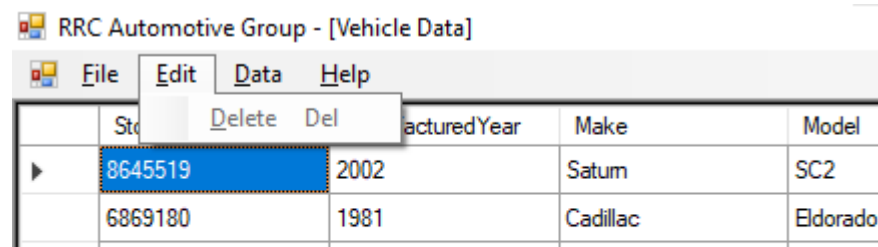
## Menu Strip

The base class Form contains a menu strip that is designed to merge with the menu strip of the MDI container when the Car Wash form is opened within Main Form.

### File Menu



### Edit Menu



2780288	2002	Pontiac	Sunfire
7393778	2010	Mazda	3 GX
4456101	2010	Nissan	Versa

## Save Menu Item

When the Save menu item is clicked, all data changes are saved to the database. After a successful save, the Save menu item is disabled.

## Close Menu Item

When the Close menu item is clicked, close the Form.

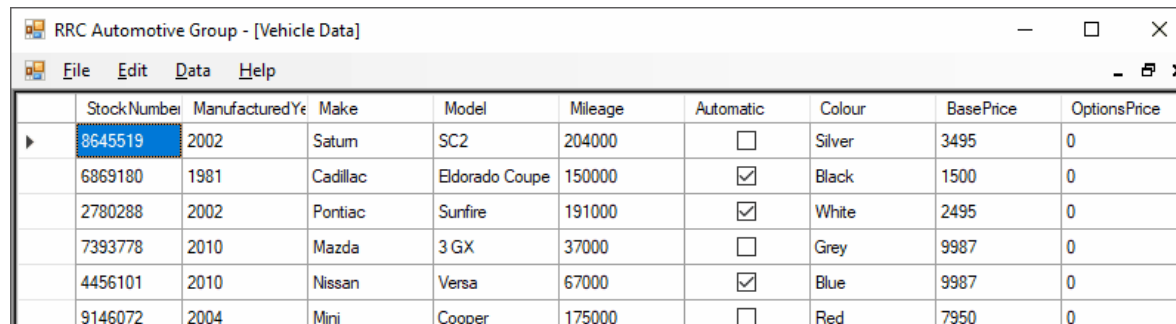
## Delete Menu Item

When the Delete menu item is clicked, the selected row is removed from the DataGridView and deleted from the database.

## Data Grid View Selection Changed

When a selection change is made to the data grid view and the current row is selected (which is not a new row), enable the Delete menu item. If the current row is not selected or is a new row, disable the Delete menu item.

To select a row in a data grid view, click the row header cell.



	StockNumber	ManufacturedYear	Make	Model	Mileage	Automatic	Colour	BasePrice	OptionsPrice
▶	8645519	2002	Saturn	SC2	204000	<input type="checkbox"/>	Silver	3495	0
	6869180	1981	Cadillac	Eldorado Coupe	150000	<input checked="" type="checkbox"/>	Black	1500	0
	2780288	2002	Pontiac	Sunfire	191000	<input checked="" type="checkbox"/>	White	2495	0
	7393778	2010	Mazda	3 GX	37000	<input type="checkbox"/>	Grey	9987	0
	4456101	2010	Nissan	Versa	67000	<input checked="" type="checkbox"/>	Blue	9987	0
	9146072	2004	Mini	Cooper	175000	<input type="checkbox"/>	Red	7950	0

	8645520	1998	Saturn	SC2	178000	<input type="checkbox"/>	Green	2300	0
	1269180	1991	Cadillac	Eldorado Coupe	150000	<input type="checkbox"/>	Yellow	999	0
	2744288	2007	Pontiac	Sunfire	45000	<input type="checkbox"/>	Gold	3745	0
	7393378	2013	Mazda	3 GX	12000	<input checked="" type="checkbox"/>	Bronze	10987	0
	4457645	1969	Nissan	Pickup	467000	<input type="checkbox"/>	Gun Metal	500	0
	9133331	2005	Mini	Cooper	21000	<input checked="" type="checkbox"/>	Orange	9950	0
*						<input type="checkbox"/>			

## Data Grid View Cell Value Changed

When a cell value has changed in the data grid view, apply the Data Grid View changes to the data source (DataTable). If the data was changed:

- Set the title of the form to “\* Vehicle Data”. The asterisk indicates to the user that a change was made to the data.
- Enable the save menu item.

RRC Automotive Group - [* Vehicle Data]									
File Edit Data Help									
	StockNumber	ManufacturedYr	Make	Model	Mileage	Automatic	Colour	BasePrice	
▶	8645519	2002	Saturn	SC2	204000	<input type="checkbox"/>	Silver	3495	0
	6869180	1981	Cadillac	Eldorado Coupe	150000	<input checked="" type="checkbox"/>	Black	1500	0
	2780288	2002	Pontiac	Sunfire	191000	<input checked="" type="checkbox"/>	White	2495	0

*Demonstrates the title of the form when data has been changed.*

## Delete Menu Item Clicked

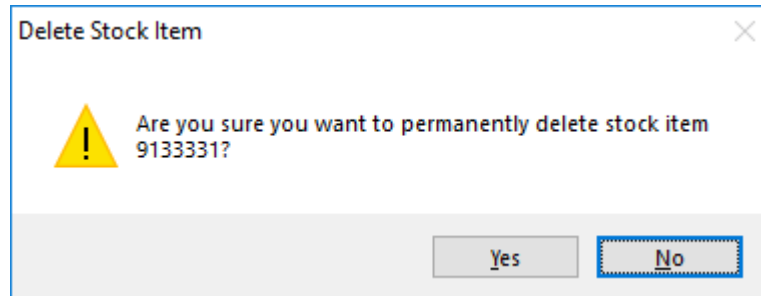
When the Delete menu item is clicked, show a dialog box with the following information:

- Text: Are you sure you want to permanently delete stock item {stock\_item}?
- Caution: Delete Stock Item



- Caption: Delete Stock Item

- Buttons: Yes and No
- Icon: Warning
- Default button: No

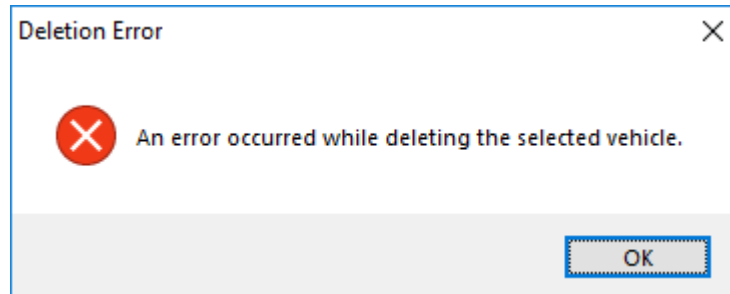


- If the user chooses “No”, no action will take place.
- If the user chooses “Yes”, remove the row from the DataGridView and update the database.

On a successful delete, set the title of the form back to “Vehicle Data” and disable the Delete menu item.

When any exception occurs while updating the database, show a dialog box with the following information:

- Text: An error occurred while deleting the selected vehicle.
- Caption: Deletion Error
- Buttons: Ok
- Icon: Error

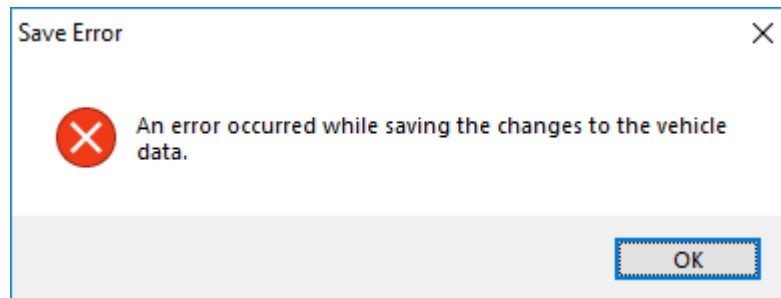


## Save Menu Item Clicked

When the save menu item is clicked, attempt to save the changes to the database.

When any exception occurs, show a dialog box with the following information:

- Text: An error occurred while saving the changes to the vehicle data.
- Caption: Save Error
- Buttons: Ok
- Icon: Error



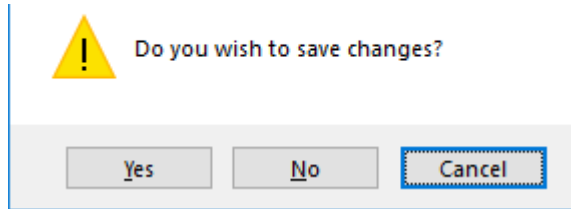
On a successful save, set the title of the form back to “Vehicle Data” and disable the Save menu item.

## Form Closing

Before the Form is closed and there has been changes to the data, display a dialog box with the following information:

- Text: Do you wish to save the changes?
- Caption: Save
- Buttons: Yes, No, and Cancel
- Icon: Warning
- Default button: Cancel



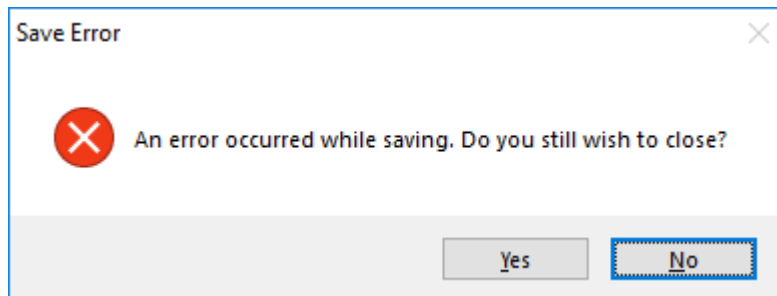


- If the user chooses “Cancel”, prevent the Form from closing.
- If the user chooses “No”, allow the Form to close.
- If the user chooses “Yes”, attempt to save the changes to the database.

The save changes dialog window should only be shown when the Form is close and there outstanding changes to the data. If there are no changes to data, the Form will close without the dialog window appearing.

If any exception occurs, show a dialog box with the following information:

- Text: An error occurred while saving the changes. Do you still wish to close?
- Caption: Save Error
- Buttons: Yes and No
- Icon: Error
- Default button: No



If the user chooses “Yes”, close the Form. If the user chooses “No”, prevent the form from closing.

## Other Considerations

### Closing the Main Form

Closing the Main Form will cause the Vehicle Data Form to close. Preventing the Vehicle Data Form from closing will prevent the Main Form from closing.

### Inserting a New Vehicle

When a new row is added to the DataGridView, you will need to programmatically set a value of the “SoldBy” column to zero because it is hidden.

Validation is not required for data entry. When inserting rows into the table, fill out all columns and enter valid data.

### Database Data Types

Floating point type fields in the database will be a `double` type in the DataTable. If you are getting an `InvalidCastException`, it is legal syntax to do this:

```
// where "value" is declared as object type  
decimal a = (decimal)(double)value;
```

## Programming Requirements

- Your program must use data binding to populate controls with Vehicle data. In some special cases, data binding may not make sense, and thus output will be generated another way.
- Your program must use the provided database (AMDatabase.mdb). Do not alter the design of the database in any way.

• All event subscriptions and handling must be coded by you in the form class (not

- All event subscriptions and handling must be coded by you in the form class (not the Designer file).
- Set the CommandBuilder's **ConflictOption** property to **OverwriteChanges** before generating commands for the DataAdapter. This will prevent concurrency exceptions.

## Testing

Ensure the application is fully tested before user acceptance testing (UAT).

Developing a list of test cases prior to testing will help eliminate missing tests.

## What to Submit

Your assignment will be submitted as a .zip file and will contain one or more Visual Studio solution directories. Name the .zip file using the following naming format:

```
adev-2008_firstname_lastname_assignment_7.zip
```

The “firstname” and “lastname” parts of the file name will be substituted with your first and last names.

Each Visual Studio solution is saved to its own directory (referred to as the Solution Directory). Your submission must follow the directory structure as seen below.

## Directory Structure

```
adev-2008_firstname_lastname_assignment_7.zip
├── RRCAGLibraryFirstNameLastName
└── RRCAGAppFirstNameLastName
```

# Due Date

The due date for the assignment can be found in the Dropbox folder for this assignment.

If you are unsure of the due date, ask the instructor to avoid not submitting your assignment by the due date.

# Evaluation

A rubric is used to grade your assignment. Review the rubric before and after completing the assignment. You can find the rubric in the Dropbox for this assignment.

# Grading

The weight of this assignment can be found in the Course Outline and the Grade tool in Learn.

