Mates-Rates Rent-a-Car (MRRC) User Manual -
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This program has many functionalities, and will allow the operator to do a number of processes to manage a vehicle rental management system. It is important to follow the instructions detailed in the manual carefully so that the program behaves as expected.

Building

To build the code for this program, navigate to the MRRC.sln file in the root folder of the project and open it with Visual Studio. In the Solution Explorer toolbar, expand the MRRC solution, right click the MRRC project and select Build

Running

To run the program, press the f5 key on the keyboard after building the project. This will open a new console window from which the program will run.

Custom Files and Command Line Arguments

By default, the program data is stored within appropriately labelled comma-separated value (CSV) files located in Data folder (inside the root folder). Specifically:
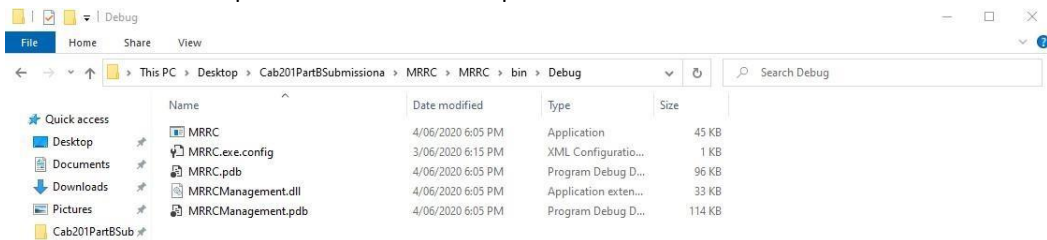
- fleet.csv - Vehicle fleet data

- customers.csv - Customer information data

- rentals.csv - Vehicle and customer rental data

In order for the program to accept the fleet, customers and rentals csv files, they have to be passed from the command line as arguments. There are two options which can be done to execute the program with the command line arguments:

- Executing the program from windows PowerShell
- Executing the program via Microsoft visual studio

Using the first option by the PowerShell

the user must cd – navigate into the path directory of where to MRRC executable program is located. In this example case from the desktop:

Looking at the folder bar, we can see nests, which is equivalent to: C:\Users\n10132767\Desktop\Cab201PartBSubmissiona\MRRC\MRRC\bin\Debug From the

PowerShell command prompt, we can navigate to the target directory by writing: cd

C:\Users\n10132767\Desktop\Cab201PartBSubmissiona\MRRC\MRRC\bin\Debug

To execute the MRRC program, we need pass in the 3 files as command line arguments. The executable command is:
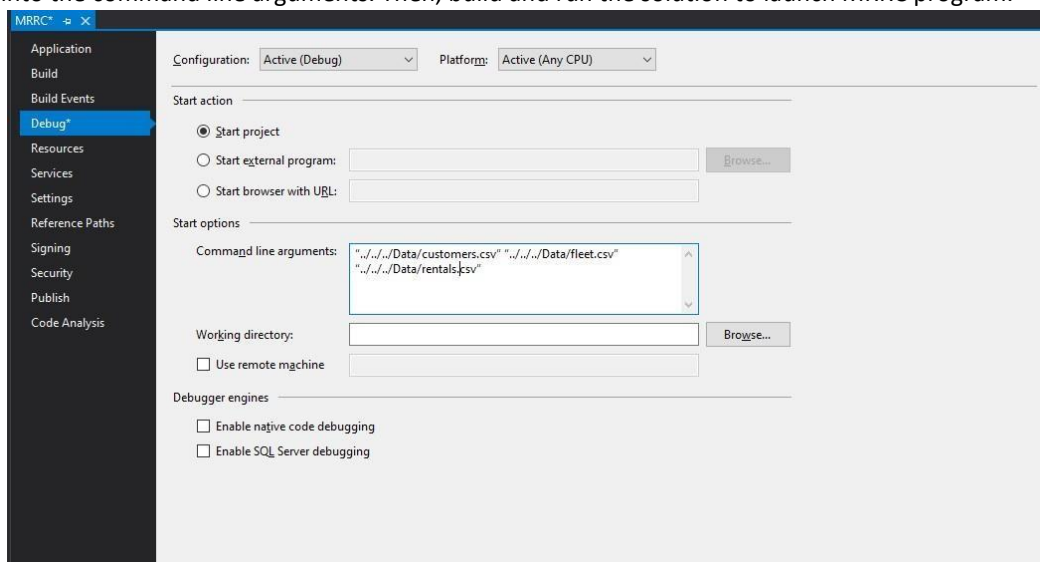
./MRRC "../../../Data/customers.csv" "../../../Data/fleet.csv" "../../../Data/rentals.csv"

Note that the files are located in the data folder, which is relative to three directory nests from the directory which contains MRRC program.

Using the second option by Microsoft Visual Studio

We first open the MRRC sln solution file by heading into the MRRC folder.

Then right clicking the MRRC project in the solution explorer, click properties, then navigate to debug on the side menu. Then, enter the file directory paths relative to the executable program into the command line arguments. Then, build and run the solution to launch MRRC program.

Program Usage

This program encompasses a hierarchal set of menus. The program starts at the Main menu and depending on the listed character option pressed, you will be sent to different sub-menus that handle a specific aspect of the system.

Within the greeting message of the program, it states you can press Esc to quit at any menu or backspace to go to the previous menu. Press the Q key to return to the parent menu. Press the H key to return home to the main menu.

Main Menu

When you enter the program the main menu and the greeting message will be displayed.

After you press a character key (a, b or c) the program will enter the corresponding sub-menu (there is no need to press enter on any of the menus, the program is expecting only a single character).

Customer Management Menu

When you're in the Customer Management menu, there are four options provided which you can navigate to:

- a) Display customer

- b) New Customer

- c) Modify Customer

- d) Delete Customer

Pressing A will lead to another menu which will ask for a border and table style, which once provided – will display the customers list from the csv file stored in the Data folder.

Pressing B will prompt the operator to add a new customer. This will require writing down the customer fields to add that will undergo validation checking, so as to ensure that the fields are entered correctly.

Pressing C will be similar to B, although it will first require the ID of the customer to modify. After providing the customer ID, the interface will prompt fields of the customer to change.

Pressing D will require the ID of the customer to delete. If the customer ID is currently renting a vehicle, the interface will reject the deletion.

Fleet Management Menu

When you're in the Fleet Management menu, there are four options provided which you can navigate to:

- a) Display Fleet

- b) New Vehicle

- c) Modify Vehicle

- d) Delete Vehicle

Pressing A will lead to another menu which will ask for a border and table style, which once provided – will display the vehicle list from the csv file stored in the Data folder.

Pressing B lead to a new menu, asking for the vehicle type add: standard, commercial, luxury, family, or economy. After that, the interface will ask the user to choose add the default or full vehicle. Default vehicle will only require 4 fields, whereas full will require all. Thereafter, the interface will require the operator to write down the vehicle fields which will undergo validation checking, so as to ensure that the fields are entered correctly.

Pressing C will be similar to B, although it will first require the registration of the vehicle to modify. If the registration is currently renting a vehicle, modification on this registration will be rejected. After providing the registration, the interface will prompt fields of the vehicle to change, either full or default fields.

Pressing D will require the registration of the vehicle to delete. If the registration is currently renting a vehicle, the interface will reject the deletion.

Rental Management Menu

When you're in the Rental Management menu, there are four options provided which you can navigate to:

- a) Display Rental

- b) New Rental

- c) Modify Rental

- d) Delete Rental

Pressing A will lead to another menu which will ask for a border and table style, which once provided – can view a reported of the rented vehicles. This will show the vehicle, customer, and the daily cost of the rental.

Pressing B will lead back to another menu which will be the fleet search, which will accept queries based on available vehicles from the fleet list (which are not rented).

To query a search for available vehicles with a feature, simply write an attribute which exists in the fleet list. This should display all unrented vehicles which contains that specific feature. Operators such as AND / OR can be used as means of Conjunction and Disjunction of sets, respectively. For example, querying blue or red should display and output of available vehicles with red or blue attributes.

To quit, simply press enter. Optionally, the screen can be cleared by querying "Clear" or "clear"

Pressing C will lead to another menu which will rent a vehicle. This should show the total cost of the rental upon a positive case. It also comes with validation – which will test 3 negative cases:

- Check if the vehicle and customer exist
- Check if the vehicle is not already being rented
- Check if the customer is not already renting

Pressing D will lead to another menu which will return a vehicle. The menu will test one validation check – if the vehicle registration provided is currently being rented by the customer.

If the vehicle provided is being rented by a customer, it should return the vehicle and remove the customer and vehicle from the rental list.

End Of MRRC Menu

Once the user has pressed a key on the last MRRC screen, the end of menu screen will prompt which will provide a message:
Press H go to the main menu home, Q to parent menu, Esc to escape, Backspace to go back

Keying any of these characters will redirect the user to the location described in the snippet.