

CS4354 – Fall 2014 – Assignment 1

Due date: Wednesday, Sept. 10, 2014 at 12:00 noon.

Project Title: Car dealership repository

Goal: The goal of this assignment is to help students familiarize themselves with the following Java programming concepts:

1. Storing data in a file and reading data from a file.
2. Creating object-oriented classes and methods to handle data.
3. Using data structures to store data in main memory (e.g. ArrayList).
4. Working with character strings.
5. Using Javadoc comments and generating an html API of the program.

Description:

You should create a program that simulates a car dealership repository. The repository will maintain records of cars that are on sale. Your program should provide the user (dealer) with a console choice menu about possible actions that they can perform. The choices should be the following:

1. Show all existing car records in the database (in any order).
2. Add a new car record to the database.
3. Delete a car record from a database.
4. Search for a car (given its license plate).
5. Show a list of cars within a given price range.
6. Exit program.

To represent a car in your program, create a class named `Car` with the following fields:

- the license-plate number, which is a string
- the make, which is a string
- the model, which is a string
- the year, which is an integer
- the price, which is a floating point number

When the program first loads, it reads all the saved records (if any) from a file named `cars.txt` into an `ArrayList`. While the program is running, the user can choose any of the 6 available options, including adding or deleting car records. When the user selects the option 6 (exit program), the program stores the current contents of the `ArrayList` (replacing the old ones) and exits. If the user chooses to add or delete a car, only the `ArrayList` will be updated during the program execution. The file will be updated only when the program is about to exit.

The format of the contents of the `cars.txt` file should be in human readable plain text, one record per line. For example:

```
632-VRX Toyota Camry 2005 6000.00
H43-SMB Chevrolet Corvette 2001 14999.99
833-RS9 Honda Civic 1997 2200.00
BEAST Ford Mustang 2006 9500.00
G64-LCC Dodge Neon 1996 1899.95
```

Optional: When displaying car records, output headers and make the data line up in columns under the headers.

NOTES:

- You may use an IDE (Eclipse, netbeans, etc) or just an editor and command line operations (javac, java) in unix or windows/dos to develop your program.
- **This assignment is to be done with a partner (in groups of 2).** Send me your preferred partner by Monday, Sept. 1, 11:59pm. If I have not received an email from you by then, I will assign you to a group randomly.
- Use good design (don't put everything in one class).
- Use a package for your classes and put your files in the appropriate directory structure.
- Prices should be output in standard money format: (\$3099.95).
- Be sure to validate the user input.
- Do NOT create more than one Scanner object (do all the input in one class).
- You don't need to create any GUI for this assignment. Console (command line) operations are enough.
- Follow the style guidelines from the class website. **Use javadoc comments for all of your classes and methods.**

Logistics:

Please submit your files in a single zip file (assign1_XXXXXX_YYYYYY.zip). The XXXXXX and YYYYYY are your TX State NetIDs (mine is v_m137, you have two, one for each partner).

Submit: an electronic copy only, using the Assignments tool on the TRACS website for this class. Submit using the TRACS account of just ONE member of your partnership. Do NOT include executables or .class files in your submission.