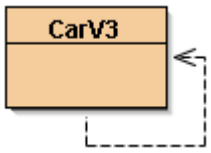
08.03 Assignment Instructions

Instructions: Calculate the fuel economy of your family or personal car for one fill-up.

1. If the 08.03 Assignments project has not yet been created in the Mod08 Assignments folder, please do so now.
2. Be sure a copy of these instructions is saved to the Mod08 Documents folder.
3. Print a copy for your notebook.
4. Carefully read the instructions before you attempt the assignment.
5. Before you begin coding, use a word processor to create a class diagram.
6. Create a class called CarV3 in the newly created project folder. (For ease of reference, the numbering scheme matches up with the series of Shapes demo programs.)



7. At the beginning of the module you were asked to start recording data about the miles driven and fuel purchased for at least three fill-ups of your car (or the family car). If you have not already done so, please download the Gas Mileage Record Sheet now. Continue collecting fill-up data because it will be needed in a future lesson. You will need data for at least three fill-ups, but more would be better.
8. At this time, your program should calculate the miles per gallon (MPG) for one fill-up based on the miles driven and the gallons used logged on your Gas Mileage Record Sheet.
9. The program should be written in OOP format by explicitly creating an object called **`car1.`**
10. All variable names in the main method should end with the number 1 (e.g., startMiles1, gallons1, etc.).
11. Write two methods, one to calculate the distance driven and one to calculate the miles per gallon. Use the following headers for these two methods:

```
public int calcDistance(int sMiles, int eMiles)
public double calcMPG(int dist, double gals)
```

12. The output should include columns for Type of Car, Start Miles, End Miles, Distance, Gallons, and Miles/Gal (see Expected Output).
13. Print the results in a user-friendly format.

Expected Output: When the program runs correctly, the output will resemble the following screen shot, but the data should be for the first fill-up logged on your Gas Mileage Record Sheet.

```
                        Gas Mileage Calculations
  Type of Car      Start Miles    End Miles    Distance    Gallons    Miles/Gal
=============================================================================
06 Saturn View          14373        14731         358       16.2         22.1
```

Grading: Your assignment will be graded according to the following rubric.

Components	**Points Possible**
Comments include name, date, and purpose of program.	1
Constructor correctly written including documentation.	2
Statement to invoke constructor included.	2
Method headers correctly written.	2
Individual methods invoked on an object from **main()** method.	2
All calculations correct.	1
Class diagram included.	2
Output formatted with **printf()**.	1
No compiler or runtime errors.	1
Thoughtful PMR included.	1
Total	**15**

Submission: Submit the CarV3.java file and your class diagram as Assignment 08.03 for a grade.