

AP Computer Science Homework 6

Due date: Thursday, November 12, 2015

Instructor: Mr. Alwin Tareen

Part A: Create an Automobile Class

- Write a class called `Automobile` that models a simple car that has a particular gas mileage(in miles per gallon). The class should have the following properties:
- Instance variables:
 - `private double mileage` This is the gas mileage of the car(in miles per gallon). In other words, this represents the distance the car can travel for every 1 gallon of gas.
 - `private double fuel` This is the quantity of gas that is available in the car's fuel tank.
- A constructor that accepts two parameters:
 - The first parameter should be a `double` variable that is used to establish the value of `mileage`.
 - The next parameter should be a `double` variable that is used to initialize the instance variable `fuel`.
- Accessor methods:
 - `public double displayFuel()` This returns the amount of fuel remaining in the tank.
 - `public double maxRange()` This returns the distance, in miles, that the car can travel with its current amount of fuel.
- Mutator methods:
 - `public void fillUp(double amount)` This adds gas to the car's fuel tank.
 - `public void takeTrip(double distance)` This removes gas from the tank as a result of driving a specified number of miles.
- Download the `Homework06.zip` file from the course website, and unzip this file, which produces the `Homework06` BlueJ project.
- Open this project in BlueJ by clicking on the **Project** menu, and then selecting **Open Project...**
- Write your solution in the place where it says `//YOUR CODE HERE`.
- Run your program by right-clicking on the `AutomobileTest` class, then selecting `void main(String[] args)`.
- If your code is correct, you should see the following output on the terminal window:

```
Remaining Fuel: 16.0
Maximum Range: 400.0
```
- On your BlueJ project window, you should see a button labelled **Run Tests**. Press this button to run the `JUnit` tests.
- You should see a **BlueJ: Test Results** window pop up. If everything is correct, you should see a green bar that indicates that your code has passed the `JUnit` tests. If your program is incorrect, you will see a red bar. You can click on the method name to get more information about the problem. Otherwise, just click on the **Close** button, and you can go ahead and upload this program to **Web-CAT**.

Part B: Submission

- Submit your Java program `Automobile.java` by uploading it to the Web-CAT automated grading platform.