Project - Phase 2 Car Rental System

# Introduction

This assessment examines the problem of managing records for a fleet of motor vehicles for rent. Modify the application from phase 1 of the project to add the following features:

Your application should have at least the following classes:

* Vehicle class;
* PerKmRental class;
* PerDayRental class; and
* Service class.

# Requirements

Extend the **Vehicle** class and add the following features:

* In addition to the features that are displayed in the given code (the manufacturer, model, year of manufacture, total kilometres travelled, total fuel costs, total number of services, and fuel economy (litres per 100 kilometres)), your *print()* method should also print the total revenue and the number of kilometres when the vehicle was last serviced.

**PerKmRental** and **PerDayRental** classes should have following features:

* Tracks two types of rentals:

• Rentals per kilometres (*PerKmRental* class, assume default cost of $1 per day)

• Rentals per day (*PerDayRental* class, assume default cost of $100 per day);

* A constructor that accepts the number of kilometres travelled for the PerKmRental class, and a constructor that accepts both the number of kilometres travelled and the number of days a car was rented for the PerDayRental class;
* The ability to store the charging rate for all rentals of the same type; and
* Any necessary attributes and methods required to support the program functionality.

A **Service** class should have following feature:

* Record a service in the Vehicle class.

Your program should generate errors when an attempt is made to rent a vehicle when it is due for a service.

Output program for your application is as follows:

Original statistics:

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Vehicle: Audi A6 (2003 model)

No travel has been recorded yet.

The vehicle has not yet been serviced.

Vehicle: Jaguar X200 (2003 model)

No travel has been recorded yet.

The vehicle has not yet been serviced.

Vehicle: Mercedes-Benz CL600 C220 (2003 model)

No travel has been recorded yet.

The vehicle has not yet been serviced.

Progressive statistics:

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Vehicle: Audi A6 (2003 model)

170km travelled raising $365

The vehicle has not yet been serviced.

Error: Vehicle must be serviced first

Vehicle: Jaguar X200 (2003 model)

110km travelled raising $500

The vehicle has not yet been serviced.

Vehicle: Jaguar X200 (2003 model)

120km travelled raising $750

The vehicle was last serviced at 110km.

Error: Vehicle must be serviced first

Vehicle: Mercedes-Benz CL600 C220 (2003 model)

110km travelled raising $300

The vehicle has not yet been serviced.

Vehicle: Mercedes-Benz CL600 C220 (2003 model)

120km travelled raising $550

The vehicle has not yet been serviced.