CSI-155 Object-Oriented Programming

Lab Assignment.

Create a windows application.

1. Add a class Car with following fields:

private string \_make;

private string \_model;

private int \_mileage;

private int \_year;

private decimal \_price;

private string \_engineSize; //like 2.4L V4, 3.8L V8

private int \_averageMpg;

private int \_customerID;

Add necessary constructor and properties

Add a method ‘LowerPriceBy(decimal percent), where percent is a number in the form of x%, like 2%, 3.5% and so on.

Formula is \_price -= percent\*price/100;

1. Add a class SportCar that inherits from Car. The SportCar should have an additional field: \_zeroToSixty (in seconds) (how fast it accelerate
2. Add a class Truck that inherits from Car as well. The Truck should have an additional field: maxTowing (like: 12000 lbs)
3. In Form1, create a List of cars to hold all the cars, sportcars and trucks

In Form1\_Load, add at least 10 cars, 10 sportcars, and 10 trucks

(try to add them randomly, by that I mean avoid adding 10 cars, followed by 10 sportcars and so on, instead interleave them. Also a customerID may be the same in 2 or more cars,sportscar, and/or trucks. That allows a customer to own more than one vehicle.

1. Add a method ‘DisplayCars’ that takes a list of cars and display the list in a listview,then add a button to display all the cars in the cars list.
2. Add a method GetMostExpensiveCar(…). This method should take a car list and return the most expensive car. Add a button that calls the method and display the most expensive car.
3. Add a method ‘GetCarsByMake(….)’. This method takes a car make and returns a list of cars of the given make. Add a button to call the method, pass to it a car make from user input and display the results
4. Add a method ‘GetCarsByCustomerID(….)’. This method takes a customerID and returns a list of cars owned by this customer. Add a button to call the method, pass to it a customerID from user input, then display the results.
5. Add a method ‘GetCarsByType(….)’. This method takes the type of car, example: Car, SportCar, Truck, and returns a list of cars of the given type

Provide a textbox , a listbox, or combobox for the user to enter a type. Add a button to call this method and display its results