**COMP 1409 – Assignment #3 (15 points)**
Due: 11:59 p.m. the night before session 11

**Vehicle Purchase Project**

This project is meant to give you practice working with ArrayLists, Itereators and loops.

**Inventory class (new class)**

This class will be used to manage the vehicles currently in inventory.

One field:
**`private static ArrayList<Vehicle> vehicles;`** `//`More later on why this is static.

The constructor:
Default constructor will initialize the ArrayList. Nothing else.

The class provides both accessor and mutator methods for the ArrayList, both of which will also have to be static.

Other methods:
**`public void addVehicle(Vehicle vehicle)`** Adds a Vehicle to the inventory making sure the Vehicle is not null.

**`public void searchByModel(String model)`** Searches the inventory for the Vehicle model specified. Creates an ArrayList of results and forwards them to a method for display.

**`public void searchByYear(int year)`** Searches the inventory for Vehicles of the specified year. Creates an ArrayList of results and forwards them to a method for display.

**`public void searchByPrice(double minPrice, double maxPrice)`**
Searches the inventory for Vehicles that are priced from the minPrice to the maxPrice. Creates an ArrayList of results and forwards them to a method for display.

**`public void displaySearchResults(ArrayList<Vehicle> results)`**
Displays the Vehicles compiled by the above searches. Uses the appropriate loop to do this. REMEBER we are only reading data here.

**`public static void removeVehicle(String stockCode)`** Removes a Vehicle from the inventory. You must use Itereator here. The method is static because you will need to call it later without an Inventory Object being available. Because this method is static the vehicles ArrayList field above must also be static.

**`public String inventoryCount()`** Returns a message String that includes the number of Vehicles currently in inventory.

**`public String inventoryValue()`** Returns the formatted String that is the current total dollar value of all the Vehicles in inventory.

**`public void displayInventory()`** Displays all the details for each Vehicle in inventory. Must use the appropriate loop.

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**VehiclePurchase class**

An addition to the **`VehiclePurchase.displayPurchaseInformation()`**method is required. When this method is called we are going to assume the Vehicle sale has become final. Therefore, this method must also remove the **`purchasedVehicle`** from inventory. This is why we have made the **`Inventory. removeVehicle(String stockCode)`**static, so it can be called without the availability of an Inventory reference.

**Sample output:**

Output from Assignment 2 should remained unchanged here. Displaying a Vehicle purchase agreement should look like this:

```
Customer: Darby Dog
Purchase Date: 2014-05-20
Vehicle Description: Vehicle: 1977 Chevrolet Corvette
Stock Code:1977CevCor
Dealer Cost: $8000.00
Selling Price: $11500.00
Profit Margin: 30%
Dollar Profit: $3500.00
SERVICE PACKAGE INCLUDED
```

**Output for Assignment 3**
**Listing the current inventory should look similar to the following:**

```
There are currently 10 vehicles on the lot.

Jalopies Are Us Vehicle Summary:

Vehicle: 1977 Chevrolet Corvette
Stock Code:1977CevCor
Dealer Cost: $8000.00
Selling Price: $11000.00
Profit Margin: 0%
Dollar Profit: $3000.00


Vehicle: 1970 Chevrolet Impala
Stock Code:1970CevImp
Dealer Cost: $150.00
Selling Price: $400.00
Profit Margin: 0%
Dollar Profit: $250.00


Vehicle: 1980 American Motors Jeep
Stock Code:1980AmcJp
Dealer Cost: $900.00
Selling Price: $2000.00
Profit Margin: 0%
Dollar Profit: $1100.00
```

**Vehicle: 1984 American Motors Eagle**
**Stock Code:1984AmcEgl**
**Dealer Cost: $1200.00**
**Selling Price: $2000.00**
**Profit Margin: 0%**
**Dollar Profit: $800.00**

**Listing the results for searching by Vehicle model:**

**Searching for: Corvette**
**Vehicle: 1977 Chevrolet Corvette**
**Stock Code:1977CevCor**
**Dealer Cost: $8000.00**
**Selling Price: $11000.00**
**Profit Margin: 0%**
**Dollar Profit: $3000.00**

**Vehicle: 1979 Chevrolet Corvette**
**Stock Code:1979CevCor**
**Dealer Cost: $10000.00**
**Selling Price: $15000.00**
**Profit Margin: 0%**
**Dollar Profit: $5000.00**

**Listing the results for searching by Vehicle year:**

**Searching for: 2011**
**Vehicle: 2011 Chevrolet Malibu**
**Stock Code:2011CevMal**
**Dealer Cost: $15000.00**
**Selling Price: $19000.00**
**Profit Margin: 0%**
**Dollar Profit: $4000.00**

**Vehicle: 2011 Chevrolet Acadia**
**Stock Code:2011CevAca**
**Dealer Cost: $17000.00**
**Selling Price: $22000.00**
**Profit Margin: 0%**
**Dollar Profit: $5000.00:**

**Listing the results for searching by Vehicle price range:**

**Searching for vehicles from $2000.00 to $6000.00**
**Vehicle: 1980 American Motors Jeep**
**Stock Code:1980AmcJp**
**Dealer Cost: $900.00**
**Selling Price: $2000.00**
**Profit Margin: 0%**
**Dollar Profit: $1100.00**

```
Vehicle: 1984 American Motors Eagle
Stock Code:1984AmcEgl
Dealer Cost: $1200.00
Selling Price: $2000.00
Profit Margin: 0%
Dollar Profit: $800.00


Vehicle: 1993 Chevrolet Blazer
Stock Code:1993CevBla
Dealer Cost: $3000.00
Selling Price: $4500.00
Profit Margin: 0%
Dollar Profit: $1500.00


Vehicle: 2005 Chevrolet Malibu
Stock Code:2005CevMal
Dealer Cost: $3750.00
Selling Price: $6000.00
Profit Margin: 0%
Dollar Profit: $2250.00
```

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**Special note:**

You MUST use the solution code for Assignment 2. You will need to be familiar with the code so be sure to go over it early and be certain you understand it before starting Assignment 3.

**Marks will be given for:**

- Functionality – Your project meets the functional requirements listed above.
- Correctness – Your code is well designed and organized.
- Programming style – This includes comments, indentation, correct use of naming conventions etc.

**Create a .zip file containing your entire BlueJ project. Name the .zip file with your name and the assignment number, e.g. "A00123456_Jalopies_3.zip". Upload the file to the D2L dropbox before the cutoff time.**