CS151 Spring 2020

HW 7,8

Array of Objects and Input File

Design class Car to describe a car object by using license plate, make, model of String type and price and year as integer.

public class Car

{ //member variables

private String plate;

private String make;

private String model;

private int year;

private int price;

// constructor

public Car(String plate, String make, String model, int year, int price){}

// return price

public int getPrice(){}

// return year

public int getYear(){}

public String toString(){}

}

Design class CarList that contains an array of Car objects with the following structure:

public class CarList

{ // member variables

private final int CAPACITY = 100;

private Car[] cars;

private int count;

// constructor: create cars array using CAPACITY, initialize count

public CarList(){}

// check if list id full

public boolean isFull(){}

// add car to the list, increment count

public boolean addCar(Car car){}

// print the list

public void printList(){}

// print the list reversed

public void printListReversed(){}

// return the most expensive car form the list

public Car mostExpensive(){}

// return number of cars from the list produced that year

public int countYear(int year){}

}

Design class TesterCarList will have main method and static method loadList that will read data from input file "CarData.txt" into array carslist. Assume that each line of input has license plate, make, model, price and year in this order and separated by one space.

import java.io.IOException;

import java.io.File;

import java.util.Scanner;

public class TestCarList

{

public static void main(String[] args) throws IOException

{

CarList carlist = new CarList();

loadList("CarData.txt", carlist);

System.out.println();

// call printList()

System.out.println();

// call printListReversed()

System.out.println();

// print result of mostExpensive()

System.out.println();

// print result of countYear(year) with year of your choice

}

public static void loadList(String file\_name, CarList carlist)

throws IOException

{

File file = new File(file\_name);

Scanner fileScan = new Scanner(file);

while(fileScan.hasNext())

{

// add missing lines

}

}

}

You should use any text editor of your choice to create an input file, and put data for 7 cars in it.

First three cars in the input file should be:

H10-ABA Honda Civic 15000 1999

234-H03 Subaru Forester 18000 2003

BVF\_H15 Cadillac Deville 21000 1995

and remaining four should be of your choice.

Input file should be in the same folder where all files from BlueJ for this program are located.

Follow instruction for the previous projects.

This is the output generated from input file containing only 3 cars.

Plate Make Model Year Price

H10-ABA Honda Civic 1999 $15,000.00

234-H03 Subaru Forester 2003 $18,000.00

BVF\_H15 Cadillac Deville 1995 $21,000.00

Plate Make Model Year Price

BVF\_H15 Cadillac Deville 1995 $21,000.00

234-H03 Subaru Forester 2003 $18,000.00

H10-ABA Honda Civic 1999 $15,000.00

Most expensive: BVF\_H15 Cadillac Deville 1995 $21,000.00

Number of cars produced in 1999 is 1