**Create a Class Engine with attributes**

**engineID (int),**

**engineType (String),**

**horsepower (int),**

**engineWeight (float). Add constructors, getter, setters and toString () for Engine class.**

**Create a class Car with attributes as**

**carRegistrationNumber (String),**

**carMake (String)**

**which is name of the car company,**

**carModel (String), yearOfPurchase (int), and color (String), and carEngine of Engine type.**

**Add constructors, getter, setters and toString () for Car class. Access the methods of Car class from main () of Demo class. Create a class ShowRoom with attributes cars as array of references which is car type, a static variable noOfCars(int), and methods addCar (), updateCar (), displayAllCar (), displayCarBasedOnModel ().**

**Develop a menu driven program in class Demo with following menu.**

**1. Add a car**

**2. Update details of the car**

**3. Display details of all cars**

**4. Display car based on model**

**//Engine class**

**public** **class** Engine {

**private** **int** EngineID;

**private** String EngineType;

**private** **int** horshpower;

**private** **float** EngineWeight;

Engine(**int** EngineID,String EngineType,**int** horshpower,**float** EngineWeight )

{

**this**.EngineID=EngineID;

**this**.EngineType=EngineType;

**this**.horshpower=horshpower;

**this**.EngineWeight=EngineWeight;

}

**public** **int** getEID()

{

**return** EngineID;

}

**public** String getEngineT()

{

**return** EngineType;

}

**public** **int** getHorsh()

{

**return** horshpower;

}

**public** **float** getWeight()

{

**return** EngineWeight;

}

**public** String toString()

{

String s=String.*format*("Engine Id:%d%n Horsh Power:%d%n Engine Weight:%f%n",getEID(),getEngineT(),getHorsh(),getWeight());

**return** s;

}

}

//Car class

import java.util.ArrayList;

import java.util.Scanner;

public class Showroom {

private static Scanner s;

private static ArrayList<Car> eng;

private static void initialize() {

s=new Scanner(System.in);

eng=new ArrayList<Car>();

}

private static int menuoption()

{

System.out.println(">>>>>>>>>>>>>>>>>>>>>>Main Menu>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>");

System.out.println("1.Add Car Detail");

System.out.println("2.Display all car detail");

System.out.println("3.Display based on model");

System.out.println("4.Update Car detail");

System.out.println("5.Exit");

System.out.println(">>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>");

System.out.println("Enter the choice:");

return s.nextInt();

}

public static void main(String[] args) {

int ch;

initialize();

while(true)

{

ch=menuoption();

switch(ch)

{

case 1:

eng.add(getCarDetail());

break;

case 2:

System.out.println(">>>>>>>All Car Detail>>>>>>>");

for(Car e: eng)

System.out.println(e);

break;

case 3:

DisplayBasedOnModel();

break;

case 4:

UpdateCarDetail();

break;

case 5:

System.exit(0);

}

}

}

private static void UpdateCarDetail() {

// TODO Auto-generated method stub

}

private static void DisplayBasedOnModel() {

System.out.println("Enter Model of car:");

String mod=s.next();

for(Car ma:eng)

{

if(ma.getModel()==mod)

{

System.out.println("Car Found");

System.out.println(ma);

return;

}

System.out.println("Car not found");

}

}

private static Car getCarDetail() {

System.out.println("Enter the following: (Car Registration number,Car Make,Car model,color,Year of purchase");

return new Car(s.nextLine(),s.nextLine(),s.nextLine(),s.nextLine(),s.nextInt());

}

}

//Showroom class

**public** **class** Car {

**private** String carMake;

**private** String carRegistrationNumber;

**private** String carModel;

**private** **int** yearOfPurchase ;

**private** String color;

**private** Engine engi;

Car(String carRegistrationNumber,String carMake,String carModel,String color,**int** yearOfPurchase)

{

**this**.carRegistrationNumber=carRegistrationNumber;

**this**.carMake=carMake;

**this**.carModel=carModel;

**this**.color=color;

**this**.yearOfPurchase=yearOfPurchase;

}

**public** Car(){

**this**.engi=**new** Engine(yearOfPurchase, carMake, yearOfPurchase, yearOfPurchase);

engi.getEngineT();

}

**public** String getRNumber()

{

**return** carRegistrationNumber;

}

**public** String getMake()

{

**return** carMake;

}

**public** String getModel()

{

**return** carModel;

}

**public** **float** getYOP()

{

**return** yearOfPurchase;

}

**public** String getColor()

{

**return** color;

}

**public** String toString()

{

String s=String.*format*("Registration number :%s%n Car make:%s%n Car model=%s%n Color:%s%n year of purchase:%d%n",getRNumber(),getMake(),getModel(),getColor(),getYOP());

**return** s;

}

**public** String toString1()

{

String st=String.*format*("Engine Type:%s%n",engi.getEngineT());

**return** st;

}

}