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, carMode l(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 (),displayAllCar (), displayCarBasedOnModel (). Develop a menu driven program in class Demo with following menu.

1. Add a car

3. Display details of all cars

4. Display car based on model

//Engine

**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

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

**private** String carMake;

**private** String carRegistrationNumber;

**private** String carModel;

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

**private** String color;

Engine engi;

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

{

**this**.carRegistrationNumber=carRegistrationNumber;

**this**.carMake=carMake;

**this**.carModel=carModel;

**this**.color=color;

**this**.yearOfPurchase=yearOfPurchase;

**this**.engi=engi;

}

**public** String getRNumber()

{

**return** carRegistrationNumber;

}

**public** String getMake()

{

**return** carMake;

}

**public** String getModel()

{

**return** carModel;

}

**public** **int** 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;

}

}

//Showroom 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("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:

System.*exit*(0);

}

}

}

**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*.next(),*s*.nextInt(), **null**);

}

}