

# OOPM Mini Project

## Topic:

Vehicle Management System

## Team Members:

- 1) Ishan Saksena (1902148)
- 2) Shashwat Satao (1902151)
- 3) Rhutam Thakur (1902174)

## Problem Statement:

A vehicle management system that takes preferences from the user about the type of car they want to make and then stores that data in a database.

## Theory:

- In our project, we have the base class **Factory**, which has attributes like the name of the person, email id, budget, address, number plate, phone number, etc. It also has methods for taking these entries from the user and displaying them. It also has a **search** method which is used to search for a particular vehicle using its plate number.
- The base class **Factory** has three children classes which are **Sedan**, **Hatchback** and **Suv**. These three classes inherit all the attributes and methods of the base class Factory, they also have some attributes and methods which are specific to them. The attributes of these derived classes include car name, color, maximum speed, mileage, base price, etc. They also have methods to take these attributes from the user, to change them and to display them.
- These three derived classes have an important method called the **carTotalCost** which calculates the total cost of the car by taking into account the different specifications given by the user like the maximum speed, mileage, horsepower, etc.

- Then we have the main class **carfactory**. It has an array of objects of the class **SUV**, **Sedan** and **Hatchback**. The data entered by the user about their respective cars are stored as objects in these arrays of objects. Conditional statements like switch case and if-else are used in this class to perform the desired actions after taking the inputs from the user. While loop is used to make the main menu recur until the user selects the option of stopping the program.

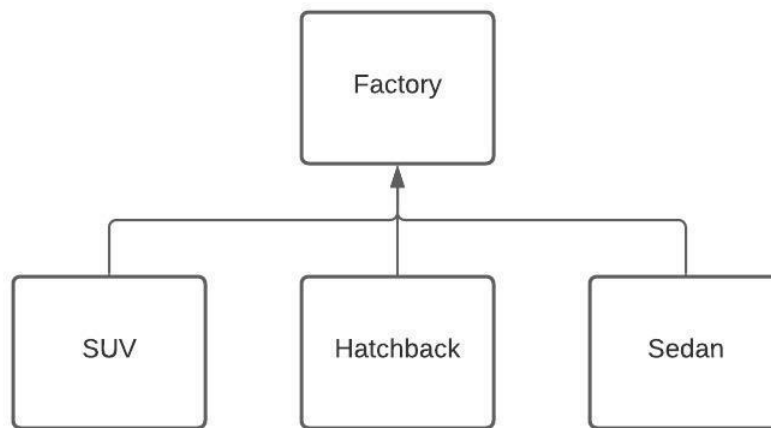
### **Working of the project:**

- After executing the project on command prompt, it gives the user the following options:
    1. Create New Car
    2. Access Created Car Data
    3. Delete Car Data
    4. Edit Car Data
    5. Display Entire Database
    6. Exit Program
1. When the user chooses the option of creating a new car, the user has to enter his name ,budget ,email address, phone number, and some other personal details.
- Then the user will have to enter the type of car which he wants, which can be a Sedan, SUV or a Hatchback.
- Then the user will have to enter the specifications of the car like maximum speed, mileage, horsepower, etc, and then taking into account all these specifications, the total price of the car will be calculated. The program will also tell the user whether his desired car lies within his budget or not.
- All this data is then stored in the database.

2. When the user chooses the option of accessing the data of a created car, the user has to enter the plate number of that car. After that, if the car with that given plate number is present in the database, all the information associated with it will be displayed.
3. When the user chooses the option of deleting the data of a car, the user has to enter the plate number of that car. After that, if the car with that given plate number is present in the database, all the information associated with it will be deleted.
4. When the user chooses the option of editing the data of a car, the user has to enter the plate number of that car. After that, if the car with that given plate number is present in the database, the user will have the option of changing the values of certain attributes like the name, colour, mileage, horsepower, maximum speed, etc, of that car.
5. When the user chooses the option of displaying the entire database, all the information associated with all the cars(SUVs, sedans and hatchbacks) present in the database will be displayed.

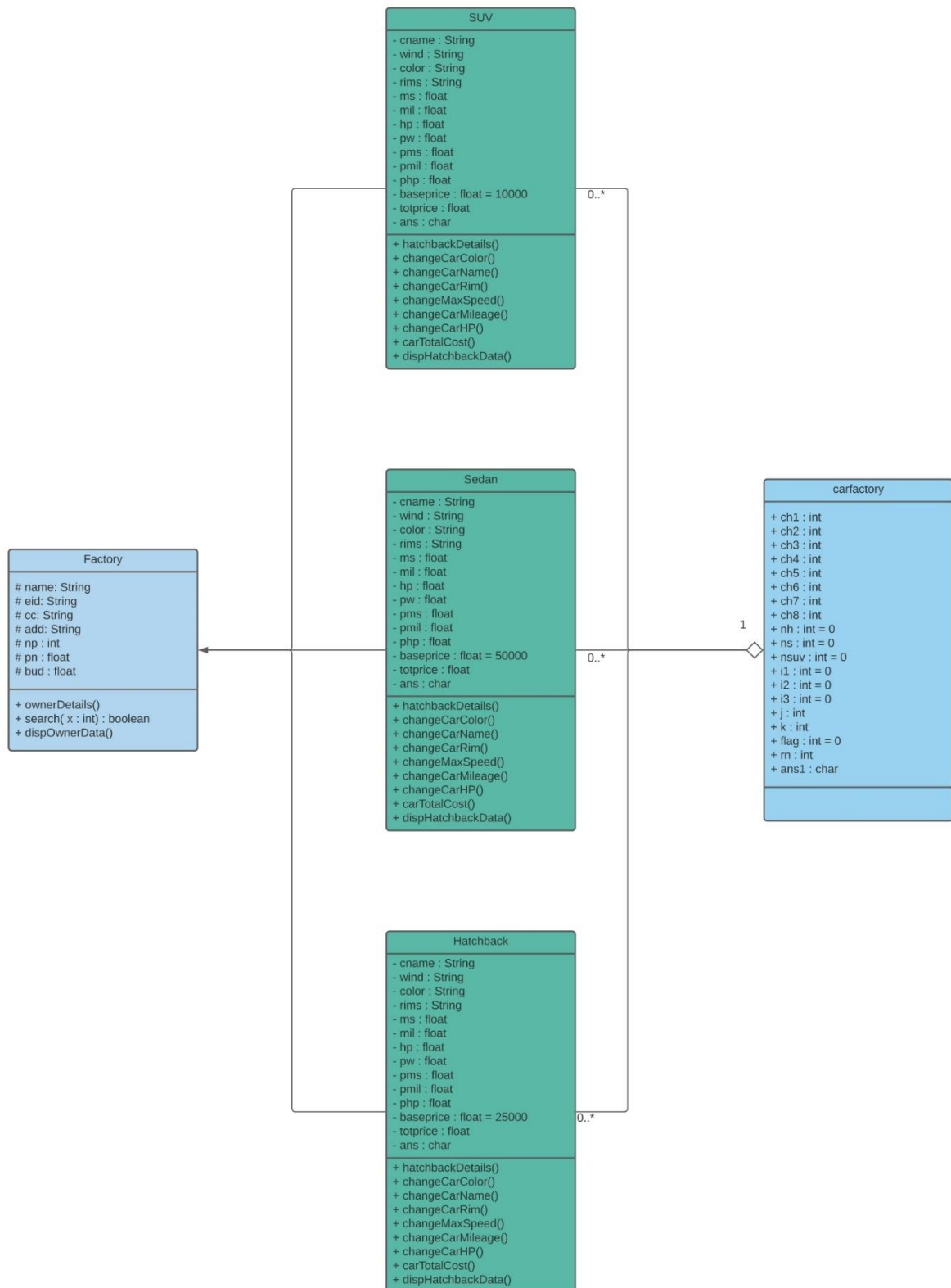
### **Features of Java used:**

1. **Hierarchical Inheritance:** In our project, we have used hierarchical inheritance. Hierarchical inheritance is the feature by which one or more derived classes can inherit the attributes and methods of the same base class. In our project, the three classes **SUV**, **sedan** and **hatchback** inherit all the attributes and methods of the base class **factory** as they are common for all of them.



2. **Array of objects:** In our project, we have used array of objects. Array of objects is a feature by which multiple objects of the same class can be stored in an array. They become very useful when we want to store and access multiple objects of a class in a systematic way. In our project, we have array of objects of the class **SUV**, **Sedan** and **Hatchback**. When the user enters the data for a particular type of car, that data is stored as an object in the array of objects of that respective class.
3. **Conditional statements:** In our project, we have used conditional statements. Conditional statements like switch case and if-else were extensively used in our project to perform various tasks. Conditional statements were used to perform the desired tasks after taking the inputs from the user, they were also used to check for specific conditions while calculating the total cost of the car. While loop was used to make the main menu recur until the user chooses the option of closing the program.

# UML Diagram:



## Code:

```
import java.util.*;

class Factory
{
    protected String name,eid,cc,add;
    protected int np;
    protected float pn,bud;
    Scanner sc= new Scanner(System.in);
    public void ownerDetails()
    {
        System.out.println("Enter Car Owner details:");
        System.out.print("Name: ");
        name=sc.nextLine();
        System.out.print("Email ID: ");
        eid=sc.nextLine();
        System.out.print("Address: ");
        add=sc.nextLine();
        System.out.print("Contact: ");
        pn=sc.nextFloat();
        System.out.print("Car Company: ");
        sc.nextLine();
        cc=sc.nextLine();
        System.out.print("Number Plate(Last 4 digits only): ");
        np=sc.nextInt();
        System.out.print("Budget: ");
        bud=sc.nextFloat();
    }
    public boolean search(int x)
    {
```

```

        if(np==x) return true;
        else return false;
    }
    public void dispOwnerData()
    {
        System.out.println("DETAILS:");
        System.out.println("Owner's Name : "+name);
        System.out.println("Email ID   : "+eid);
        System.out.println("Contact   : "+pn);
        System.out.println("Address   : "+add);
        System.out.println("Car Company : "+cc);
        System.out.println("Number Plate : "+np);
        System.out.println();
        System.out.println("*****\n\n");
    }
}

class Hatchback extends Factory
{
    private String cname,wind,color,rims;
    private float ms,mil,hp,pw,pms,pmil,php,baseprice=250000,totprice;
    private char ans;
    Scanner sc= new Scanner(System.in);
    public void hatchbackDetails()
    {
        System.out.println("Enter Car Details:");
        System.out.print("Name Of Your Car: ");
        cname=sc.nextLine();
        System.out.print("Do you want your windows to be tinted?(Y/N): ");
        ans=sc.next().charAt(0);
        if(ans=='y' | ans=='Y')
            wind="Tinted";
    }
}

```

```

        else
        wind="Plain";

        System.out.print("Color Of Your Car: ");
        sc.nextLine();
        color=sc.nextLine();
        System.out.print("Company Of Rims: ");
        rims=sc.nextLine();
        System.out.print("Maximum Speed Of Your Car: ");
        ms=sc.nextFloat();
        System.out.print("Mileage Of Car: ");
        mil=sc.nextFloat();
        System.out.print("Horsepower Of Your Car: ");
        hp=sc.nextFloat();
    }

    public void changeCarColor()
    {
        System.out.println("Enter the Color:");
        color=sc.nextLine();
    }

    public void changeCarName()
    {
        System.out.println("Enter the name of the car:");
        cname=sc.nextLine();
    }

    public void changeCarRim()
    {
        System.out.println("Enter the Company's name:");
        rims=sc.nextLine();
    }

    public void changeMaxSpeed()
    {

```



```

        System.out.println("Enter the max speed of the car:");
        ms=sc.nextFloat();
    }
    public void changeCarMileage()
    {
        System.out.println("Enter the mileage of the car:");
        mil=sc.nextFloat();
    }
    public void changeCarHP()
    {
        System.out.println("Enter the Horsepower of the car:");
        hp=sc.nextFloat();
    }
    public void carTotalCost()
    {
        if(wind=="Tinted")
            pw=25000;
        else
            pw=10000;
        if(ms>200)
            pms=100000;
        else if(ms>150)
            pms=75000;
        else
            pms=50000;
        if(mil>20)
            pmil=150000;
        else if(mil>15)
            pmil=125000;
        else
            pmil=100000;
    }

```

```

        if(hp>600)
            php=1000000;
        else if(hp>400)
            php=500000;
        else
            php=300000;
        totprice=(pw+pms+pmil+php+baseprice);
    }

    public void dispHatchbackData()
    {

        System.out.println("Car's Name      : "+cname);
        System.out.println("Color          : "+color);
        System.out.println("Windows       : "+wind);
        System.out.println("Rim Company    : "+rims);
        System.out.println("Mileage        : "+mil);
        System.out.println("Maximum Speed   : "+ms);
        System.out.println("Horsepower      : "+hp);
        System.out.println("Total Cost Of Construction: "+totprice);
        System.out.println("Budget         : "+bud);
        if(totprice>bud)
            System.out.println("The car you have designed is out of your budget!\n Try changing
the max speed, mileage and horsepower of your car OR increase your budget!");
        else
            System.out.println("Your car is in your budget! Perhaps you can improve some
features using the remaining money!\nAvailable Funds: "+(bud-totprice));
        System.out.println("\n\n");
    }
}

class Sedan extends Factory
{
    private String cname,wind,color,rims;

```

```

private float ms,mil,hp,pw,pms,pmil,php,baseprice=500000,totprice;

private char ans;

Scanner sc= new Scanner(System.in);

public void sedanDetails()
{
    System.out.println("Enter Car Details:");
    System.out.print("Name Of Your Car: ");
    cname=sc.nextLine();
    System.out.print("Do you want your windows to be tinted?(Y/N): ");
    ans=sc.next().charAt(0);
    if(ans=='y' | ans=='Y')
        wind="Tinted";
    else
        wind="Plain";
    System.out.print("Color Of Your Car: ");
    sc.nextLine();
    color=sc.nextLine();
    System.out.print("Company Of Rims: ");
    rims=sc.nextLine();
    System.out.print("Maximum Speed Of Your Car: ");
    ms=sc.nextFloat();
    System.out.print("Mileage Of Car: ");
    mil=sc.nextFloat();
    System.out.print("Horsepower Of Your Car: ");
    hp=sc.nextFloat();
}

public void changeCarColor()
{
    System.out.println("Enter the Color:");
    color=sc.nextLine();
}

```

```
public void changeCarName()
{
    System.out.println("Enter the name of the car:");
    cname=sc.nextLine();
}
public void changeCarRim()
{
    System.out.println("Enter the Company's name:");
    rims=sc.nextLine();
}
public void changeMaxSpeed()
{
    System.out.println("Enter the max speed of the car:");
    ms=sc.nextFloat();
}
public void changeCarMileage()
{
    System.out.println("Enter the mileage of the car:");
    mil=sc.nextFloat();
}
public void changeCarHP()
{
    System.out.println("Enter the Horsepower of the car:");
    hp=sc.nextFloat();
}
public void carTotalCost()
{
    if(wind=="Tinted")
        pw=25000;
    else
        pw=10000;
```

```

        if(ms>200)
            pms=100000;
        else if(ms>150)
            pms=75000;
        else
            pms=50000;
        if(mil>20)
            pmil=150000;
        else if(mil>15)
            pmil=125000;
        else
            pmil=100000;
        if(hp>600)
            php=1000000;
        else if(hp>400)
            php=500000;
        else
            php=300000;
        totprice=(pw+pms+pmil+php+baseprice);
    }

    public void dispSedanData()
    {

        System.out.println("Car's Name      : "+cname);
        System.out.println("Color          : "+color);
        System.out.println("Windows       : "+wind);
        System.out.println("Rim Company   : "+rims);
        System.out.println("Mileage       : "+mil);
        System.out.println("Maximum Speed : "+ms);
        System.out.println("Horsepower    : "+hp);
        System.out.println("Total Cost Of Construction: "+totprice);
    }
}

```

```

        System.out.println("\n\n");
    }
}

class SUV extends Factory
{
    private String cname,wind,color,rims;
    private float ms,mil,hp,pw,pms,pmil,php,baseprice=100000,totprice;
    private char ans;
    Scanner sc= new Scanner(System.in);
    public void SUVDetails()
    {
        System.out.println("Enter Car Details:");
        System.out.print("Name Of Your Car: ");
        cname=sc.nextLine();
        System.out.print("Do you want your windows to be tinted?(Y/N): ");
        ans=sc.next().charAt(0);
        if(ans=='y' | ans=='Y')
            wind="Tinted";
        else
            wind="Plain";
        System.out.print("Color Of Your Car: ");
        sc.nextLine();
        color=sc.nextLine();
        System.out.print("Company Of Rims: ");
        rims=sc.nextLine();
        System.out.print("Maximum Speed Of Your Car: ");
        ms=sc.nextFloat();
        System.out.print("Mileage Of Car: ");
        mil=sc.nextFloat();
        System.out.print("Horsepower Of Your Car: ");
        hp=sc.nextFloat();
    }
}

```

```
}  
  
public void changeCarColor()  
{  
    System.out.println("Enter the Color:");  
    color=sc.nextLine();  
}  
  
public void changeCarName()  
{  
    System.out.println("Enter the name of the car:");  
    cname=sc.nextLine();  
}  
  
public void changeCarRim()  
{  
    System.out.println("Enter the Company's name:");  
    rims=sc.nextLine();  
}  
  
public void changeMaxSpeed()  
{  
    System.out.println("Enter the max speed of the car:");  
    ms=sc.nextFloat();  
}  
  
public void changeCarMileage()  
{  
    System.out.println("Enter the mileage of the car:");  
    mil=sc.nextFloat();  
}  
  
public void changeCarHP()  
{  
    System.out.println("Enter the Horsepower of the car:");  
    hp=sc.nextFloat();  
}
```

```

public void carTotalCost()
{
    if(wind=="Tinted")
        pw=25000;
    else
        pw=10000;
    if(ms>200)
        pms=100000;
    else if(ms>150)
        pms=75000;
    else
        pms=50000;
    if(mil>20)
        pmil=150000;
    else if(mil>15)
        pmil=125000;
    else
        pmil=100000;
    if(hp>600)
        php=1000000;
    else if(hp>400)
        php=500000;
    else
        php=300000;
    totprice=(pw+pms+pmil+php+baseprice);
}

public void dispSUVData()
{

    System.out.println("Car's Name      : "+cname);
    System.out.println("Color      : "+color);
}

```



```

        System.out.println("Windows          : "+wind);
        System.out.println("Rim Company       : "+rims);
        System.out.println("Mileage         : "+mil);
        System.out.println("Maximum Speed    : "+ms);
        System.out.println("Horsepower       : "+hp);
        System.out.println("Total Cost Of Construction: "+totprice);
        System.out.println("\n\n");
    }
}

public class carfactory
{
    public static void main(String arg[])
    {
        Hatchback h[]= new Hatchback[100];
        SUV suv[]= new SUV[100];
        Sedan sed[]= new Sedan[100];
        Scanner sc= new Scanner(System.in);
        int ch1,ch2,ch3,ch4,ch5,ch6,ch7,ch8,nh=0,ns=0,nsuv=0,i1=0,i2=0,i3=0,j,k,flag=0,rn;
        char ans1;
        do
        {
            System.out.println("THAKUR CAR MANUFACTURING COMPANY");
            System.out.println("MAIN MENU");
            System.out.println("1. Create New Car\n2. Access Created Car Data\n3. Delete Car\n4. Edit Car Data\n5. Display Entire Database\n6. Exit Program\n");
            System.out.print("Enter your choice:");
            ch1=sc.nextInt();
            switch(ch1)
            {
                case 1: System.out.println("CAR CREATION MENU");
                        System.out.println("1. Create A Hatchback Vehicle\n2. Create A\nSedan Vehicle\n3. Create A SUV Vehicle\n4. Exit Program\n");

```

```

        System.out.print("Enter your choice=");
        ch2=sc.nextInt();
        switch(ch2)
        {
            case 1: nh++;
                    h[i1]= new Hatchback();
                    h[i1].ownerDetails();
                    h[i1].hatchbackDetails();
                    i1++;
                    break;
            case 2: ns++;
                    sed[i2]= new Sedan();
                    sed[i2].ownerDetails();
                    sed[i2].sedanDetails();
                    i2++;
                    break;
            case 3: nsuv++;
                    suv[i3]= new SUV();
                    suv[i3].ownerDetails();
                    suv[i3].SUVDetails();
                    i3++;
                    break;
            case 4: System.out.println("Thank You! Have A Good Day!");
                    break;
            default: System.out.println("Invalid Option! Try Again!");
                    break;
        }
        break;

    case 2: System.out.println("CAR ACCESSS MENU");

            System.out.println("1. Access A Hatchback Vehicle\n2. Access A
Sedan Vehicle\n3. Access A SUV Vehicle\n4. Exit Program\n");

```

```

System.out.print("Enter your choice=");
ch3=sc.nextInt();
switch(ch3)
{
    case 1: System.out.print("Enter registration number of
Hatchback=");

        rn=sc.nextInt();
        for(j=0;j<=nh-1;j++)
        {
            if (h[j].search(rn))
            {
                flag=1;
                h[j].dispOwnerData();
                h[j].carTotalCost();
                h[j].dispHatchbackData();
            }
        }
        if(flag==1)
        {
            System.out.println("Car Data Displayed!");
            flag=0;
        }
        else
            System.out.println("Car Data Does Not Exist. Try Again Using
Valid Registration Number.");

            break;
    case 2: System.out.print("Enter registration number of
Sedan=");

        rn=sc.nextInt();
        for(j=0;j<=ns-1;j++)
        {
            if (sed[j].search(rn))

```

```

        {
            flag=1;
            sed[j].dispOwnerData();
            sed[j].carTotalCost();
            sed[j].dispSedanData();
        }
    }
    if(flag==1)
    {
        System.out.println("Car Data Displayed!");
        flag=0;
    }
    else
        System.out.println("Car Data Does Not Exist. Try Again Using
Valid Registration Number.");

        break;
    case 3: System.out.print("Enter registration number of
SUV=");

        rn=sc.nextInt();
        for(j=0;j<=nsuv-1;j++)
        {
            if (suv[j].search(rn))
            {
                flag=1;
                suv[j].dispOwnerData();
                suv[j].carTotalCost();
                suv[j].dispSUVData();
            }
        }
        if(flag==1)
        {
            System.out.println("Car Data Displayed!");

```



```

        i1--;
    }
}

if(flag==1)
{
    System.out.println("Car Data deleted!");
    flag=0;
}
else
System.out.println("Car Data Does Not Exist.\n");
    break;
case 2: System.out.print("Enter registration number of
Sedan=");

    rn=sc.nextInt();
    for(j=0;j<=ns-1;j++)
    {
        if (sed[j].search(rn))
        {
            flag=1;
            for(k=j;k<=ns-2;k++)
            {
                sed[k]=sed[k+1];
            }
            ns--;
            i2--;
        }
    }

    if(flag==1)
    {
        System.out.println("Car Data deleted!");
        flag=0;
    }
}

```

```

    }
    else
        System.out.println("Car Data Does Not Exist.\n");
        break;
    case 3: System.out.print("Enter registration number of
Sedan=");

        rn=sc.nextInt();
        for(j=0;j<=nsuv-1;j++)
        {
            if (suv[j].search(rn))
            {
                flag=1;
                for(k=j;k<=nsuv-2;k++)
                {
                    suv[k]=suv[k+1];
                }
                nsuv--;
                i3--;
            }
        }

        if(flag==1)
        {
            System.out.println("Car Data deleted!");
            flag=0;
        }
    else
        System.out.println("Car Data Does Not Exist.");
        break;
    case 4: System.out.println("Thank You! Have A Good Day!");
        break;
    default: System.out.println("Invalid Option! Try Again!");

```

```

        break;
    }
    break;
case 4: System.out.println("CAR EDITING MENU\n\n");
        System.out.println("1. Edit A Hatchback Vehicle\n2. Edit A Sedan
Vehicle\n3. Edit A SUV Vehicle\n4. Exit Program\n\n");
        System.out.print("Enter your choice=");
        ch5=sc.nextInt();
        switch(ch5)
        {
            case 1: if(nh==0)
                    {
                        System.out.println("No data Exists!");
                    }
                    else
                    {
                        System.out.print("Enter registration
number of Hatchback=");
                        rn=sc.nextInt();
                        for(j=0;j<=nh-1;j++)
                        {
                            if(h[j].search(rn))
                            {
                                flag=1;
                                do{
                                    System.out.println("*****EDITING MENU*****");

                                    System.out.print("\n1. Rename Car\n2. Rename Rim Company\n3. Change Color\n4. Revise
Max Speed\n5. Revise Mileage\n6. Revise Horspepower\n7. Exit program\n");

                                    ch6=sc.nextInt();
                                    if(ch6==1)
                                    {

```





```

    }
    else if(ch6==7)
    {
        System.out.println("Invalid option. Please Try Again!");
    }
    }while(ch6!=7);
}
else
    System.out.println("car Data Does Not Exist.
Try Again Using Registration Number.");
    flag=0;
}
}
break;
case 2: if(ns==0)
{
    System.out.println("No data Exists!");
}
else
{
    System.out.print("Enter registration
number of Hatchback=");

    rn=sc.nextInt();
    System.out.println();
    for(j=0;j<=ns-1;j++)
    {
        if(sed[j].search(rn))
        {
            flag=1;
            do{

```

```
System.out.println("*****EDITING MENU*****:");
```

```
System.out.print("\n1. Rename Car\n2. Rename Rim Company\n3. Change Color\n4. Revise  
Max Speed\n5. Revise Mileage\n6. Revise Horspepower\n7. Exit program\n");
```

```
ch7=sc.nextInt();
```

```
System.out.println();
```

```
if(ch7==1)
```

```
{
```

```
    flag=1;
```

```
sed[j].changeCarName();
```

```
}
```

```
    else if(ch7==2)
```

```
{
```

```
    flag=1;
```

```
sed[j].changeCarRim();
```

```
}
```

```
    else if(ch7==3)
```

```
{
```

```
    flag=1;
```

```
sed[j].changeCarColor();
```

```
}
```

```
    else if(ch7==4)
```

```
{
```

```
    flag=1;
```

```
sed[j].changeMaxSpeed();
```

```
}
```

```
    else if(ch7==5)
```

```
{
```

```

        flag=1;

        sed[j].changeCarMileage();

    }

    else if(ch7==6)

    {

        flag=1;

        sed[j].changeCarHP();

    }

    else if(ch7==7)

    {

        System.out.println("Invalid option. Please Try Again!");

    }

    }while(ch7!=7);

    }

    else

        System.out.println("car Data Does Not Exist. Try Again Using Registration Number.");

    flag=0;

    }

    }

    break;

    case 3: if(nsuv==0)

    {

        System.out.println("No data Exists!");

    }

    else

    {

        System.out.print("Enter registration number of Hatchback=");

        rn=sc.nextInt();
    }
}

```

```

        System.out.println();
        for(j=0;j<=nsuv-1;j++)
        {
            if(h[j].search(rn))
            {
                flag=1;
                do{

System.out.println("*****EDITING MENU*****:");

System.out.println();

                System.out.print("\n--->1. Rename Car\n--->2. Rename Rim Company\n--->3. Change
Color\n--->4. Revise Max Speed\n--->5. Revise Mileage\n--->6. Revise Horspepower\n--->7. Exit
program\n");

                ch8=sc.nextInt();

System.out.println();

                if(ch8==1)
                {
                    flag=1;

suv[j].changeCarName();

                }

                else if(ch8==2)
                {
                    flag=1;

suv[j].changeCarRim();

                }

                else if(ch8==3)
                {
                    flag=1;

```

```

suv[j].changeCarColor();

}
else if(ch8==4)
{
    flag=1;

suv[j].changeMaxSpeed();

}
else if(ch8==5)
{
    flag=1;

suv[j].changeCarMileage();

}
else if(ch8==6)
{
    flag=1;

suv[j].changeCarHP();

}
else if(ch8==7)
{

System.out.println("Invalid option. Please Try Again!");

}
}while(ch8!=7);
}
else
System.out.println("Car Data Does Not Exist.
Try Again Using Registration Number.");

flag=0;

}

```

```

        }
        break;
case 4: System.out.println("Thank You! Have A Good Day!");
        break;
default: System.out.println("Invalid Option! Try Again!");
        break;
    }
    break;
case 5: if(nh==0)
    {
        System.out.println("No data Exists!");
    }
    else
    {
        System.out.println("Complete Hatchback Details:");
        System.out.println();
        for(j=0;j<=nh-1;j++)
        {
            h[j].dispOwnerData();
            h[j].carTotalCost();
            h[j].dispHatchbackData();
        }
        System.out.println("\n");
    }
    if(ns==0)
    {
        System.out.println("No data Exists!");
    }
    else
    {

```

```

        System.out.println("Complete Sedan Details:");
        System.out.println();
        for(j=0;j<=ns-1;j++)
        {
            sed[j].dispOwnerData();
            sed[j].carTotalCost();
            sed[j].dispSedanData();
        }
        System.out.println("\n");
    }
    if(nsuv==0)
    {

        System.out.println("No data Exists!");
    }
    else
    {
        System.out.println("Complete SUV Details:");
        System.out.println();
        for(j=0;j<=nsuv-1;j++)
        {
            suv[j].dispOwnerData();
            suv[j].carTotalCost();
            suv[j].dispSUVDData();
        }
    }
    break;
case 6: System.out.println("Thank You For Using The System! Have A Great
Day!");

    break;
default: System.out.println("Invalid Option! Please Try Again!");

```



```
break;
```

```
}
```

```
System.out.println("Do you wish to perform another operation?(Y/N)");
```

```
ans1=sc.next().charAt(0);
```

```
if(ans1=='N' || ans1=='n')
```

```
System.out.println("Thank You For Using The System! Have A Great Day!");
```

```
}while(ans1=='y' || ans1=='Y');
```

```
}
```

## Output:

1. Creating a hatchback car (Similar steps can be repeated for creating a sedan or SUV).

```
C:\Users\satao\Desktop\project>java carfactory
THAKUR CAR MANUFACTURING COMPANY
MAIN MENU
1. Create New Car
2. Access Created Car Data
3. Delete Car Data
4. Edit Car Data
5. Display Entire Database
6. Exit Program

Enter your choice:1
CAR CREATION MENU
1. Create A Hatchback Vehicle
2. Create A Sedan Vehicle
3. Create A SUV Vehicle
4. Exit Program

Enter your choice=1
Enter Car Owner details:
Name: Shashwat
Email ID: abc@gmail.com
Address: Thane
Contact: 123456789
Car Company: Good cars
Number Plate(Last 4 digits only): 6666
Budget: 500000
Enter Car Details:
Name Of Your Car: Car
Do you want your windows to be tinted?(Y/N): Y
Color Of Your Car: Red
Company Of Rims: Good rims
Maximum Speed Of Your Car: 250
Mileage Of Car: 25
Horsepower Of Your Car: 650
Do you wish to perform another operation?(Y/N)
```

## 2. Accessing a created car in the database.

```
Do you wish to perform another operation?(Y/N)
Y
THAKUR CAR MANUFACTURING COMPANY
MAIN MENU
1. Create New Car
2. Access Created Car Data
3. Delete Car Data
4. Edit Car Data
5. Display Entire Database
6. Exit Program

Enter your choice:2
CAR ACCESSS MENU
1. Access A Hatchback Vehicle
2. Access A Sedan Vehicle
3. Access A SUV Vehicle
4. Exit Program

Enter your choice=1
Enter registration number of Hatchback=6666
DETAILS:
Owner's Name : Shashwat
Email ID      : abc@gmail.com
Contact       : 1.23456792E8
Address       : Thane
Car Company   : Good cars
Number Plate  : 6666

*****

Car's Name      : Car
Color           : Red
Windows         : Tinted
Rim Company     : Good rims
Mileage         : 25.0
Maximum Speed   : 250.0
Horsepower      : 650.0
Total Cost Of Construction: 1525000.0
Budget         : 500000.0
The car you have designed is out of your budget!
Try changing the max speed, mileage and horsepower of your car OR increase your budget!
```

### 3. Editing the car data

```
THAKUR CAR MANUFACTURING COMPANY
MAIN MENU
1. Create New Car
2. Access Created Car Data
3. Delete Car Data
4. Edit Car Data
5. Display Entire Database
6. Exit Program

Enter your choice:4
CAR EDITING MENU

1. Edit A Hatchback Vehicle
2. Edit A Sedan Vehicle
3. Edit A SUV Vehicle
4. Exit Program

Enter your choice=1
Enter registration number of Hatchback=6666
*****EDITING MENU*****:

1. Rename Car
2. Rename Rim Company
3. Change Color
4. Revise Max Speed
5. Revise Mileage
6. Revise Horspepower
7. Exit program
4
Enter the max speed of the car:
100
*****EDITING MENU*****:

1. Rename Car
2. Rename Rim Company
3. Change Color
4. Revise Max Speed
5. Revise Mileage
6. Revise Horspepower
7. Exit program
5
Enter the mileage of the car:
10
```

#### 4. Displaying the entire database

```
Enter your choice:5
Complete Hatchback Details:

DETAILS:
Owner's Name : Shashwat
Email ID      : abc@gmail.com
Contact       : 1.23456792E8
Address       : Thane
Car Company   : Good cars
Number Plate  : 6666

*****

Car's Name      : Car
Color           : Red
Windows         : Tinted
Rim Company     : Good rims
Mileage         : 10.0
Maximum Speed   : 100.0
Horsepower      : 200.0
Total Cost Of Construction: 725000.0
Budget         : 500000.0
The car you have designed is out of your budget!
Try changing the max speed, mileage and horsepower of your car OR increase your budget!

Complete Sedan Details:

DETAILS:
Owner's Name : Kafka
Email ID      : cde@gmail.com
Contact       : 2.34567888E8
Address       : Thane
Car Company   : Good cars
Number Plate  : 1234

*****

Car's Name      : Car
Color           : Blue
Windows         : Tinted
Rim Company     : Good rims
Mileage         : 10.0
Maximum Speed   : 400.0
Horsepower      : 400.0
Total Cost Of Construction: 1025000.0
```

## 5. Deleting a car from the database

```
Enter your choice:3
CAR DELETION MENU

1. Delete A Hatchback Vehicle
2. Delete A Sedan Vehicle
3. Delete A SUV Vehicle
4. Exit Program

Enter your choice=1
Enter registration number of Hatchback=6666
Car Data deleted!
Do you wish to perform another operation?(Y/N)
Y
THAKUR CAR MANUFACTURING COMPANY
MAIN MENU
1. Create New Car
2. Access Created Car Data
3. Delete Car Data
4. Edit Car Data
5. Display Entire Database
6. Exit Program

Enter your choice:5
No data Exists!
Complete Sedan Details:

DETAILS:
Owner's Name : Kafka
Email ID      : cde@gmail.com
Contact       : 2.34567888E8
Address       : Thane
Car Company   : Good cars
Number Plate  : 1234

*****

Car's Name      : Car
Color           : Blue
Windows         : Tinted
Rim Company     : Good rims
Mileage         : 10.0
Maximum Speed   : 400.0
Horsepower      : 400.0
Total Cost Of Construction: 1025000.0
```