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Lab 2 Assignment: Builder Design Pattern for Car details

AIM: To write a Java Program to implement Builder Design Pattern Car details

WITHOUT BUILDER PATTERN - CODE:

MyCar.java

```
1. package Builder_Car;
2.
3. public class MyCar {
4.     private String carBrand;
5.     private String carModel;
6.     private int carModelYear;
7.     private int carID;
8.     private String carColor;
9.     private Double carMass;
10.    private String carEngine;
11.    private Double carMileage;
12.
13.    public MyCar(String carBrand, String carModel, int carModelYear, int
        carID, String carColor, double carMass, String carEngine, double
        carMileage)
14.    {
15.        super();
16.        this.carBrand = carBrand;
17.        this.carModel = carModel;
18.        this.carModelYear = carModelYear;
19.        this.carID = carID;
20.        this.carColor = carColor;
21.        this.carMass = carMass;
22.        this.carEngine = carEngine;
23.        this.carMileage = carMileage;
24.    }
25.
26.    @Override
27.    public String toString()
28.    {
29.        return "Car[Brand: " + carBrand + ", Model: " + carModel +
        ", Model Year: " + carModelYear
30.            + ", ID: " + carID + ", Color: " + carColor
        + ", Mass: " + carMass
31.            + " kg, Engine: " + carEngine + ", Mileage:
        " + carMileage + " kmph]";
32.    }
33. }
```

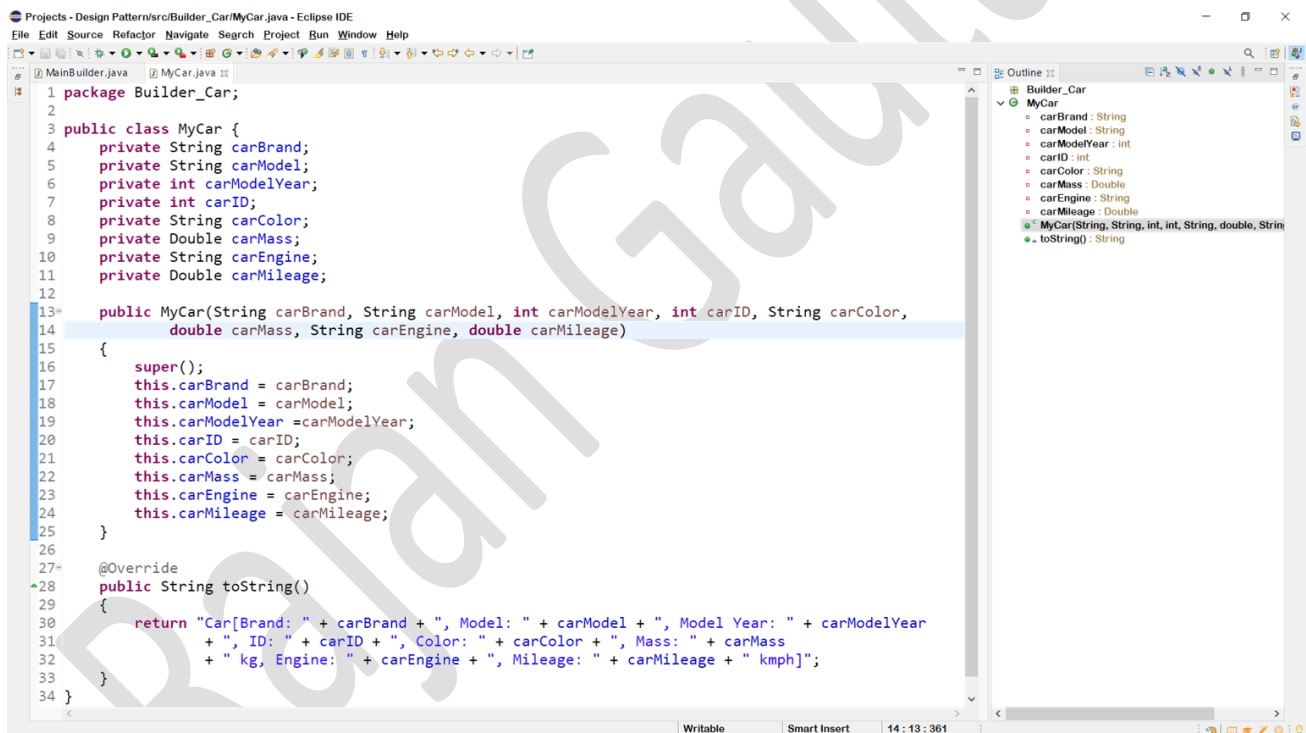
MainBuilder.java

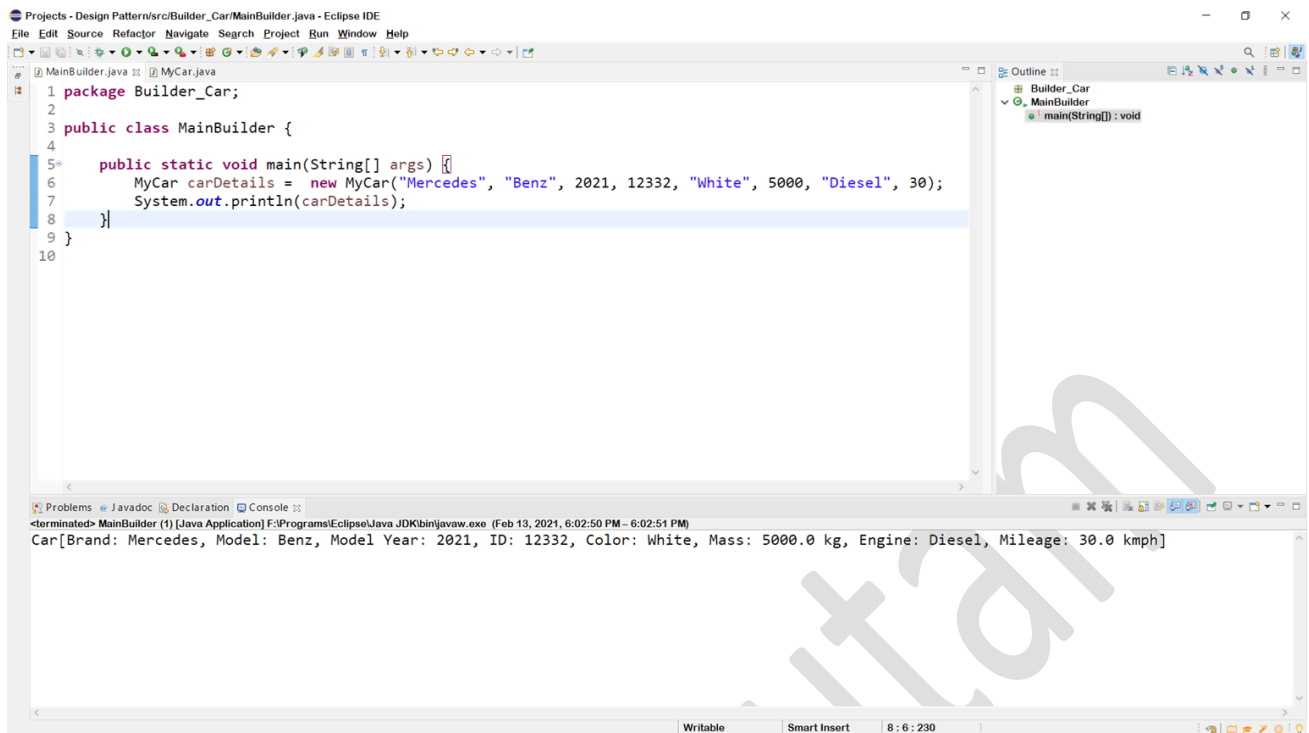
```

1. package Builder_Car;
2.
3. public class MainBuilder {
4.
5.     public static void main(String[] args)
6.     {
7.         MyCar carDetails = new MyCar("Mercedes", "Benz", 2021, 12332,
            "White", 5000, "Diesel", 30);
8.         System.out.println(carDetails);
9.     }
10. }

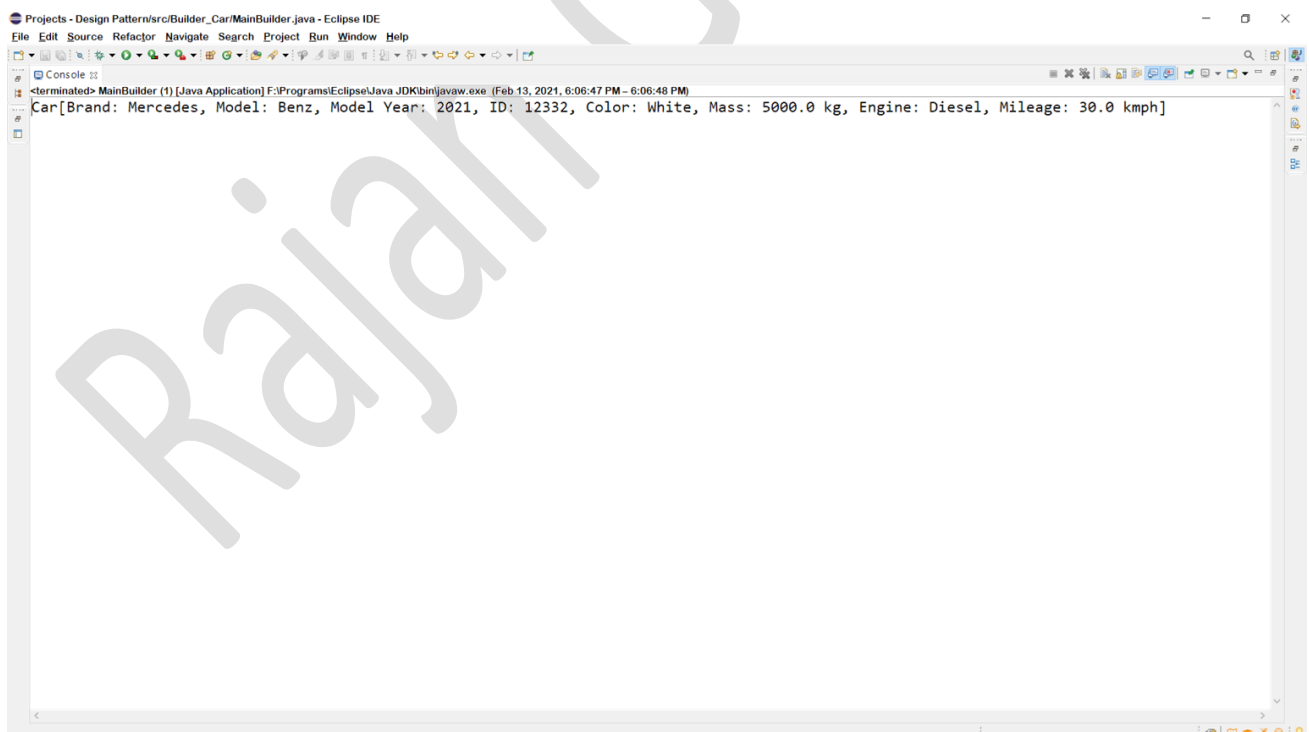
```

WITHOUT BUILDER PATTERN - SCREENSHOT OF IDE:





WITHOUT BUILDER PATTERN - SCREENSHOT OF OUTPUT:



WITH BUILDER PATTERN - CODE:

MyCar.java

```

1. package Builder_Car;
2.
3. public class MyCar {
4.     private String carBrand;
5.     private String carModel;
6.     private int carModelYear;
7.     private int carID;
8.     private String carColor;
9.     private Double carMass;
10.    private String carEngine;
11.    private Double carMileage;
12.
13.    public MyCar(String carBrand, String carModel, int carModelYear, int
        carID, String carColor, double carMass, String carEngine, double
        carMileage)
14.    {
15.        super();
16.        this.carBrand = carBrand;
17.        this.carModel = carModel;
18.        this.carModelYear = carModelYear;
19.        this.carID = carID;
20.        this.carColor = carColor;
21.        this.carMass = carMass;
22.        this.carEngine = carEngine;
23.        this.carMileage = carMileage;
24.    }
25.
26.    @Override
27.    public String toString()
28.    {
29.        return "Car[Brand: " + carBrand + ", Model: " + carModel + ",
        Model Year: " + carModelYear
30.                + ", ID: " + carID + ", Color: " + carColor
        + ", Mass: " + carMass
31.                + " kg, Engine: " + carEngine + ", Mileage:
        " + carMileage + " km]";
32.    }
33. }

```

CarBuilder.java

```

1. package Builder_Car;
2.
3. public class CarBuilder {
4.     private String carBrand;
5.     private String carModel;
6.     private int carModelYear;

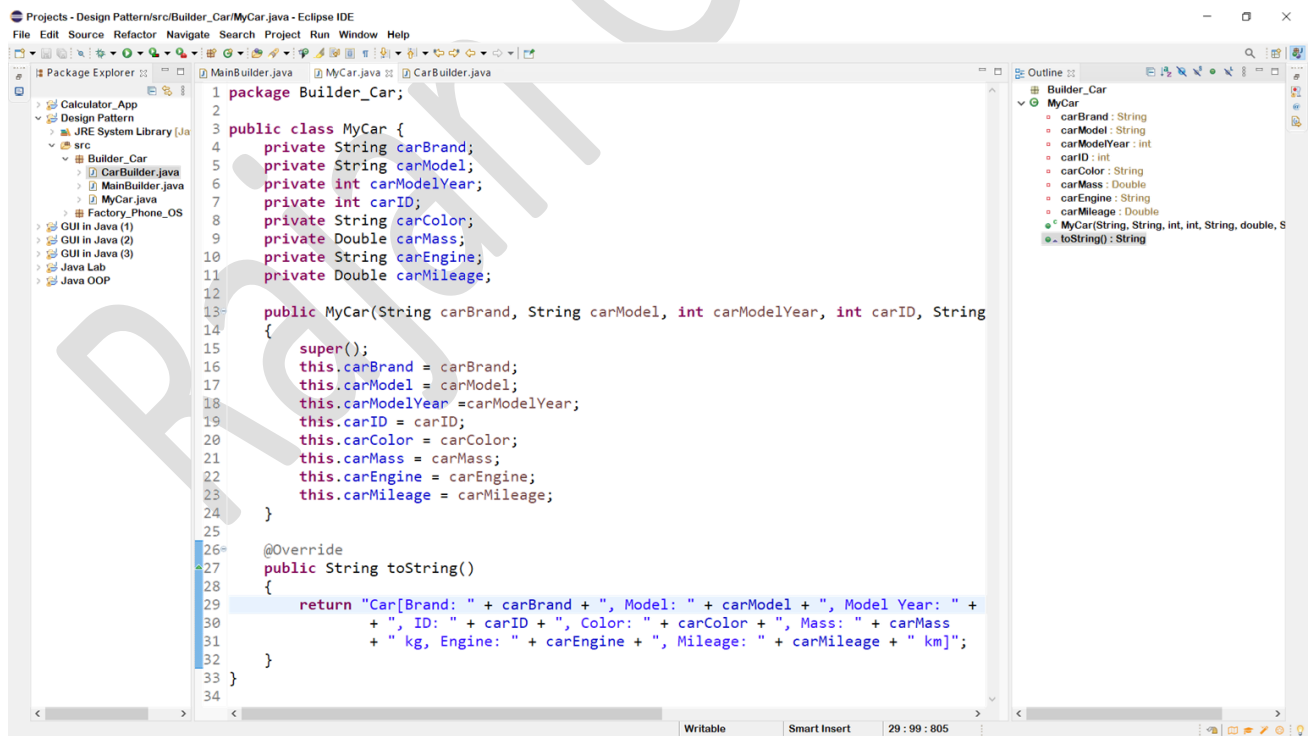
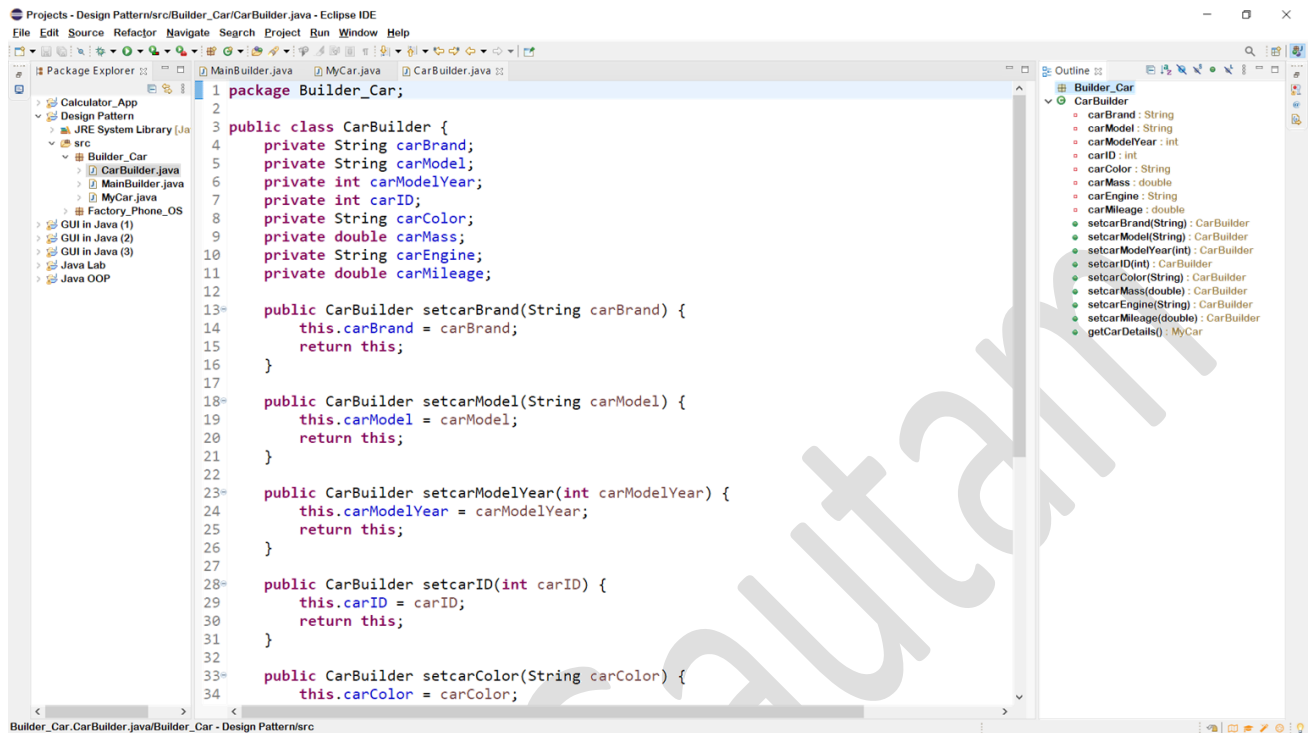
```

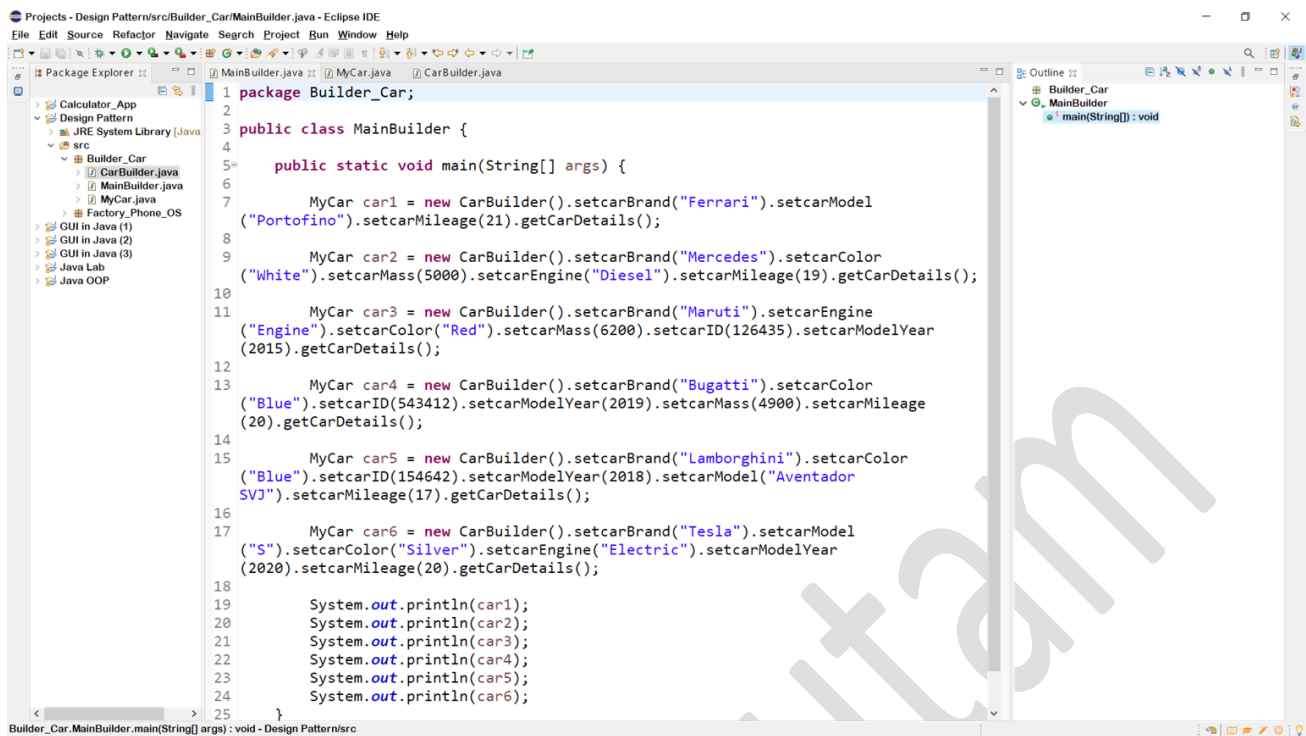
```
7.  private int carID;
8.  private String carColor;
9.  private double carMass;
10. private String carEngine;
11. private double carMileage;
12.
13. public CarBuilder setcarBrand(String carBrand) {
14.     this.carBrand = carBrand;
15.     return this;
16. }
17.
18. public CarBuilder setcarModel(String carModel) {
19.     this.carModel = carModel;
20.     return this;
21. }
22.
23. public CarBuilder setcarModelYear(int carModelYear) {
24.     this.carModelYear = carModelYear;
25.     return this;
26. }
27.
28. public CarBuilder setcarID(int carID) {
29.     this.carID = carID;
30.     return this;
31. }
32.
33. public CarBuilder setcarColor(String carColor) {
34.     this.carColor = carColor;
35.     return this;
36. }
37.
38. public CarBuilder setcarMass(double carMass) {
39.     this.carMass = carMass;
40.     return this;
41. }
42.
43. public CarBuilder setcarEngine(String carEngine) {
44.     this.carEngine = carEngine;
45.     return this;
46. }
47.
48. public CarBuilder setcarMileage(double carMileage) {
49.     this.carMileage = carMileage;
50.     return this;
51. }
52.
53. public MyCar getCarDetails() {
54.     return new MyCar(carBrand, carModel, carModelYear, carID,
55.         carColor, carMass, carEngine, carMileage);
56. }
```

MainBuilder.java

```
1. package Builder_Car;
2.
3. public class MainBuilder {
4.
5.     public static void main(String[] args) {
6.
7.         MyCar car1 = new
            CarBuilder().setcarBrand("Ferrari").setcarModel("Portofino").setcarMileage(
                21).getCarDetails();
8.
9.         MyCar car2 = new
            CarBuilder().setcarBrand("Mercedes").setcarColor("White").setcarMass(5000).
            setcarEngine("Diesel").setcarMileage(19).getCarDetails();
10.
11.        MyCar car3 = new
            CarBuilder().setcarBrand("Maruti").setcarEngine("Engine").setcarColor("Red"
            ).setcarMass(6200).setcarID(126435).setcarModelYear(2015).getCarDetails();
12.
13.        MyCar car4 = new
            CarBuilder().setcarBrand("Bugatti").setcarColor("Blue").setcarID(543412).se
            tcarModelYear(2019).setcarMass(4900).setcarMileage(20).getCarDetails();
14.
15.        MyCar car5 = new
            CarBuilder().setcarBrand("Lamborghini").setcarColor("Blue").setcarID(154642
            ).setcarModelYear(2018).setcarModel("Aventador
            SVJ").setcarMileage(17).getCarDetails();
16.
17.        MyCar car6 = new
            CarBuilder().setcarBrand("Tesla").setcarModel("S").setcarColor("Silver").se
            tcarEngine("Electric").setcarModelYear(2020).setcarMileage(20).getCarDetail
            s();
18.
19.        System.out.println(car1);
20.        System.out.println(car2);
21.        System.out.println(car3);
22.        System.out.println(car4);
23.        System.out.println(car5);
24.        System.out.println(car6);
25.    }
26. }
```

WITH BUILDER PATTERN - SCREENSHOT OF IDE:



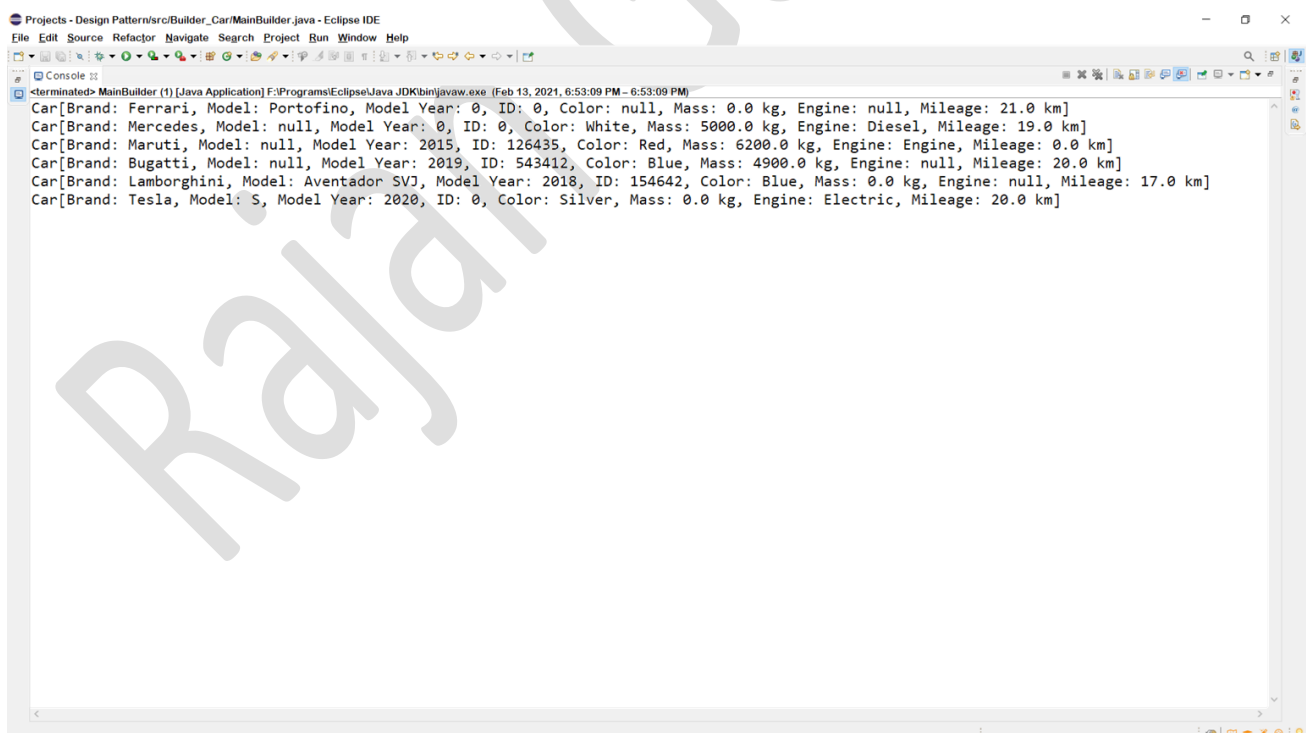


```

1 package Builder_Car;
2
3 public class MainBuilder {
4
5     public static void main(String[] args) {
6
7         MyCar car1 = new CarBuilder().setcarBrand("Ferrari").setcarModel
8         ("Portofino").setcarMileage(21).getCarDetails();
9
10        MyCar car2 = new CarBuilder().setcarBrand("Mercedes").setcarColor
11        ("White").setcarMass(5000).setcarEngine("Diesel").setcarMileage(19).getCarDetails();
12
13        MyCar car3 = new CarBuilder().setcarBrand("Maruti").setcarEngine
14        ("Engine").setcarColor("Red").setcarMass(6200).setcarID(126435).setcarModelYear
15        (2015).getCarDetails();
16
17        MyCar car4 = new CarBuilder().setcarBrand("Bugatti").setcarColor
18        ("Blue").setcarID(543412).setcarModelYear(2019).setcarMass(4900).setcarMileage
19        (20).getCarDetails();
20
21        MyCar car5 = new CarBuilder().setcarBrand("Lamborghini").setcarColor
22        ("Blue").setcarID(154642).setcarModelYear(2018).setcarModel("Aventador
23        SVJ").setcarMileage(17).getCarDetails();
24
25        MyCar car6 = new CarBuilder().setcarBrand("Tesla").setcarModel
26        ("S").setcarColor("Silver").setcarEngine("Electric").setcarModelYear
27        (2020).setcarMileage(20).getCarDetails();
28
29        System.out.println(car1);
30        System.out.println(car2);
31        System.out.println(car3);
32        System.out.println(car4);
33        System.out.println(car5);
34        System.out.println(car6);
35    }
36 }

```

WITH BUILDER PATTERN - SCREENSHOT OF OUTPUT:



```

<terminated> MainBuilder (1) [Java Application] F:\Programs\Eclipse\Java\JDK\bin\javaw.exe (Feb 13, 2021, 6:53:09 PM - 6:53:09 PM)
Car[Brand: Ferrari, Model: Portofino, Model Year: 0, ID: 0, Color: null, Mass: 0.0 kg, Engine: null, Mileage: 21.0 km]
Car[Brand: Mercedes, Model: null, Model Year: 0, ID: 0, Color: White, Mass: 5000.0 kg, Engine: Diesel, Mileage: 19.0 km]
Car[Brand: Maruti, Model: null, Model Year: 2015, ID: 126435, Color: Red, Mass: 6200.0 kg, Engine: Engine, Mileage: 0.0 km]
Car[Brand: Bugatti, Model: null, Model Year: 2019, ID: 543412, Color: Blue, Mass: 4900.0 kg, Engine: null, Mileage: 20.0 km]
Car[Brand: Lamborghini, Model: Aventador SVJ, Model Year: 2018, ID: 154642, Color: Blue, Mass: 0.0 kg, Engine: null, Mileage: 17.0 km]
Car[Brand: Tesla, Model: S, Model Year: 2020, ID: 0, Color: Silver, Mass: 0.0 kg, Engine: Electric, Mileage: 20.0 km]

```

GitHub Link: https://github.com/rgautam320/Design-Pattern-Lab/tree/main/Builder_Car