

Problem 1: Inheritance in Java.

The screenshot shows the Eclipse IDE with three tabs: 'Welcome', 'Carjava', and 'TERMINAL'. The 'Carjava' tab displays the following Java code:

```
1 class Vehicle {
2     String model = "Nissan";
3     int buildDate = 2015;
4
5     public void displayCarInfo() {
6         System.out.println("Model: " + model);
7         System.out.println("Year: " + buildDate);
8     }
9 }
10
11 class Toyota extends Vehicle {
12     public void changeData() {
13         model = "Prius";
14         buildDate = 2022;
15     }
16
17     public void displayCarInfo() {
18         System.out.println("Car Model: " + model);
19         System.out.println("Year: " + buildDate);
20     }
21 }
22
23 public class Car extends Toyota {
24     public static void main(String[] args) {
25         Toyota obj = new Toyota();
26
27         obj.displayCarInfo();
28         obj.changeData();
29         obj.displayCarInfo();
30     }
31 }
32
```

The 'TERMINAL' tab shows the output of the program:

```
C:\Program Files\Eclipse Adoptium\jdk-17.0.13-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\sobha\AppData\Roaming\Code\User\workspaceStorage\15f2f91a8b2e3b4a714ad047854cab98\redhat.java\jdt_ws\Lab Report_5_177e2dd2\bin' 'Car'
Car Model: Nissan
Year: 2015
Car Model: Prius
Year: 2022
PS E:\@CODES\Academic\Java\Lab\Lab Report 5>
```

Problem 2: Java Inner Classes

The screenshot displays an IDE with two main panels. The left panel shows a Java source file with the following code:

```
1 class OuterClass {
2     int x = 10;
3
4     class InnerClass {
5         int y = 5;
6     }
7 }
8
9 public class In {
10     Run | Debug
11     public static void main(String[] args) {
12         OuterClass obj1 = new OuterClass();
13         OuterClass.InnerClass ob2 = obj1.new InnerClass();
14
15         System.out.println("Output is: "+(ob2.y + obj1.x));
16     }
17 }
```

The right panel shows the terminal output of the program:

```
PS E:\CODES\Academic\Java\Lab\Lab Report 5> ^C
PS E:\CODES\Academic\Java\Lab\Lab Report 5>
PS E:\CODES\Academic\Java\Lab\Lab Report 5> e; cd 'e:\@CODES\Academic\Java\Lab\Lab Report 5'; & 'C:\Program Files\Eclipse Adoptium\jdk-17.0.13-hotspot\bin\java.exe' '-X X:ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\sobha\AppData\Roaming\Code\User\workspaceStorage\15f2f91a8b2e3b4a714ad047854cab98\redhat.java\jdt_ws\Lab Report 5_177e2dd2\bin' 'In'
Output is: 15
PS E:\CODES\Academic\Java\Lab\Lab Report 5> █
```