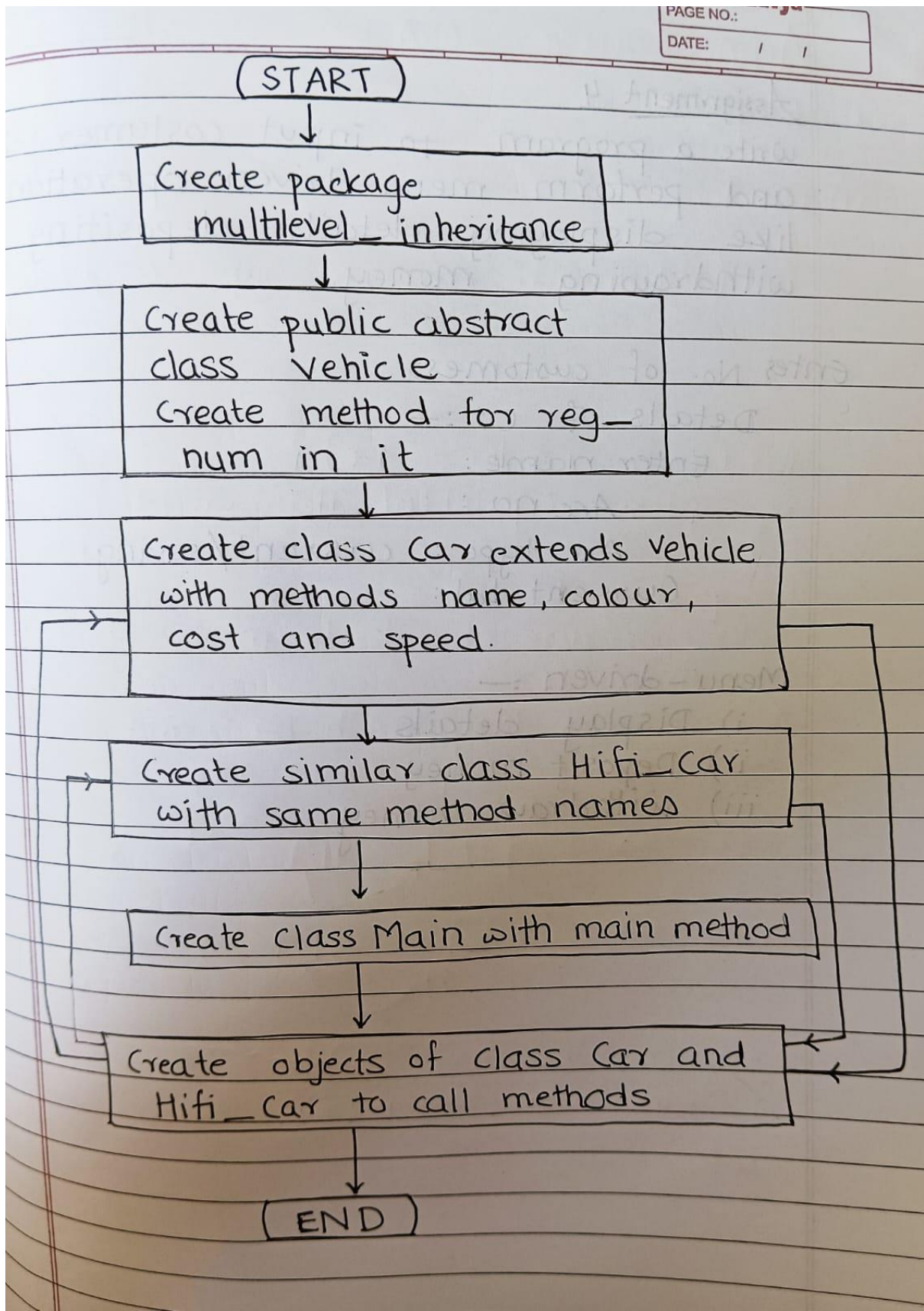# ASSIGNMENT 6

Java Program: Write a program to implement multilevel inheritance. Identify appropriate classes and methods. Create user defined package.

Algorithm:

1. Declare four classes Main, Vehicle, Car, Hifi_Car in the same package
2. Declare the Vehicle class to be abstract and in it declare a method for colour of the vehicle.
3. Extend the public class Hifi_Car to Car, declare methods of name, cost, registration in it.
4. Extend the public class Car to Vehicle, declare methods of name, cost, registration in it.
5. In the Main class, in the main method create objects of the class Car and Hifi_Car.
6. Call the methods in the class Car and Hifi_Car.

Flowchart:

```
        ( START )
            │
            ▼
┌──────────────────────────┐
│  Create package          │
│  multilevel_inheritance  │
└──────────────────────────┘
            │
            ▼
┌──────────────────────────┐
│  Create public abstract  │
│  class   Vehicle         │
│  Create method for reg_  │
│  num  in it              │
└──────────────────────────┘
            │
            ▼
┌──────────────────────────────────┐
│  Create class Car extends Vehicle│
│  with methods  name, colour,     │
│  cost  and speed.                │
└──────────────────────────────────┘
            │
            ▼
┌──────────────────────────────────┐
│  Create similar class Hifi_Car   │
│  with same method names          │
└──────────────────────────────────┘
            │
            ▼
┌──────────────────────────────────┐
│  Create class Main with main method│
└──────────────────────────────────┘
            │
            ▼
┌──────────────────────────────────┐
│  Create objects of class Car and │
│  Hifi_Car to call methods        │
└──────────────────────────────────┘
            │
            ▼
        ( END )
```

Code:

```java
package multilevel_inheritance;

public abstract class Vehicle {

    void registration(String reg_num) {
        System.out.println("Registration no. of the vehicle is " +
reg_num + ".");
    }
}




package multilevel_inheritance;

public class Car extends Vehicle {

    void name(String name) {
        System.out.println("Name of the car is " + name + ".");
    }
    void cost(){
        System.out.println("Cost of the car is 27,00,000.");
    }
    void colour(){
        System.out.println("Colour of the car is Grassland Green.");
    }
    void speed(int max_speed){
        System.out.println("Maximum speed of the car is "+ max_speed +
"kmph.");
    }

}




package multilevel_inheritance;

public class Hifi_Car extends Car {

    void name(String name) {
        System.out.println("Name of the car is " + name + ".");
    }
    void cost(){
        System.out.println("Cost of the car is 2,53,00,000.");
    }
    void colour(){
        System.out.println("Colour of the car is Chilly Red.");
    }
    void speed(int max_speed){
        System.out.println("Maximum speed of the car is "+ max_speed +"
kmph.");
    }

}
```

```java
package multilevel_inheritance;

public class Main {

    public static void main(String[] args) {
        Car c = new Car();
        Hifi_Car h = new Hifi_Car();

        c.name("Tata Safari Kaziranga");
        c.registration("MH 14");
        c.cost();
        c.colour();
        c.speed(220);

        System.out.println();

        h.name("Ferrari California");
        h.registration("MH 12");
        h.cost();
        h.colour();
        h.speed(310);
    }

}
```

Output:

```
Name of the car is Tata Safari Kaziranga.
Registration no. of the vehicle is MH 14.
Cost of the car is 27,00,000.
Colour of the car is Grassland Green.
Maximum speed of the car is 220 kmph.

Name of the car is Ferrari California
Registration no. of the vehicle is MH 12.
Cost of the car is 2,53,00,000.
Colour of the car is Chilly Red.
Maximum speed of the car is 310 kmph
```