Problem Statement 1:

Implement a Java program that demonstrates single inheritance and method overriding. Create a base class "Vehicle" with attributes and methods, then derive a class "Car" from it and override certain methods.

Solution:

```
class Vehicle{

     String color;
     String brand;
     String model;
     public Vehicle(String color,String brand,String model){
         this.color=color;
         this.brand=brand;
         this.model=model;
    }
    public void honk(){
        System.out.println("Horn honked!");
    }
    public void applyBreak(){
        System.out.println("Applying Break on Vehicle...");
    }
    public void drive(){
        System.out.println("Driving Vehicle...");
    }
   public void displayInfo(){
        System.out.println("\nDisplaying Info About the Vehicle: \n");
        System.out.println("Color : "+color);
        System.out.println("Brand : "+brand);
        System.out.println("Model : "+model);

    }
}
```

```
class Car extends Vehicle{
     int mileage;
   public Car(int mileage,String color,String brand,String model){
     super(color,brand,model);
     this.mileage=mileage;
     this.color=color;
     this.brand=brand;
     this.model=model;
    }

    @Override
     public void honk(){
        System.out.println("Car Horn honked!");
    }
    @Override
    public void applyBreak(){
        System.out.println("Applying Break on the Car...");
    }
    @Override
    public void drive(){
        System.out.println("Driving Car...");
    }
    @Override
    public void displayInfo(){
        System.out.println("\nDisplaying Info About your Car: \n");
        System.out.println("Color : "+color);
        System.out.println("Brand : "+brand);
        System.out.println("Mileage : "+mileage);
        System.out.println("Model : "+model);
    }
}

class Main {
    public static void main(String[] args) {
       Car mycar = new Car(5000,"Black","Toyota","Fortuner");
       mycar.honk();
       mycar.applyBreak();
       mycar.drive();
       mycar.displayInfo();

    }
}
```