# **Assignment**: Implementing Inheritance in Java

Objective:

To understand and implement inheritance in Java by creating a simple program to manage vehicles.

## Step 1: Define the Vehicle Class

1. Create a Java class named Vehicle.
2. Add two private instance variables: brand (String) and model (String).
3. Create a constructor that takes two parameters (brand and model) to initialize the instance variables.
4. Implement getter methods for brand and model.
5. Add a method named drive() which simply prints "This vehicle is moving."

## Step 2: Create the Car Class (Subclass of Vehicle)

1. Create a Java class named Car.
2. Make it a subclass of Vehicle.
3. Add a private instance variable numberOfSeats (int).
4. Create a constructor that takes three parameters (brand, model, and numberOfSeats) and initializes all the instance variables.
5. Implement a getter method for numberOfSeats.
6. Override the drive() method to print "This car is driving."

## Step 3: Create the Bicycle Class (Subclass of Vehicle)

1. Create a Java class named Bicycle.
2. Make it a subclass of Vehicle.
3. Add a private instance variable numberOfGears (int).
4. Create a constructor that takes three parameters (brand, model, and numberOfGears) and initializes all the instance variables.
5. Implement a getter method for numberOfGears.
6. Override the drive() method to print "This bicycle is pedaling."

## Step 4: Create a Main Class to Test the Inheritance

1. Create a Java class named Main.
2. Write a main method within this class.
3. Inside the main method:
4. Create an instance of Car with any brand, model, and number of seats.
5. Create an instance of Bicycle with any brand, model, and number of gears.
6. Call the getter methods of each object to display their details (brand, model, number of seats/gears).
7. Call the drive() method of each object to observe the polymorphic behavior.