**Exercise - 6**

**Exercise - 6 (Inheritance)**

Define a class named Person that contains two instance variables of type String that stores the first name and last name of a person and appropriate accessor and mutator methods. Also create a method named displayDetails that outputs the details of a person. Next, define a class named Student that is derived from Person , the constructor for which should receive first name and last name from the class Student and also assigns values to student id, course, and teacher name. This class should redefine the displayDetails method to person details as well as details of a student. Include appropriate constructor(s). Define a class named Teacher that is derived from Person . This class should contain instance variables for the subject name and salary. Include appropriate constructor(s). Finally, redefine the displayDetails method to include all teacher information in the printout. Create a main method that creates at least two student objects and two teacher objects with different values and calls displayDetails for each.

**Program:**

class Person

{

private String firstName;

private String lastName;

public Person(String firstName, String lastName)

{

this.firstName = firstName;

this.lastName = lastName;

}

public String getFirstName()

{

return firstName;

}

public String getLastName()

{

return lastName;

}

public void setFirstName(String firstName)

{

this.firstName = firstName;

}

public void setLastName(String lastName)

{

this.lastName = lastName;

}

public void displayDetails()

{

System.out.println("Name: " + firstName + " " + lastName);

}

}

class Student extends Person

{

private int studentId;

private String course;

private String teacherName;

public Student(String firstName, String lastName, int studentId, String course, String teacherName)

{

super(firstName, lastName);

this.studentId = studentId;

this.course = course;

this.teacherName = teacherName;

}

public void displayDetails()

{

super.displayDetails();

System.out.println("Student ID: " + studentId);

System.out.println("Course: " + course);

System.out.println("Teacher: " + teacherName);

}

}

class Teacher extends Person

{

private String subjectName;

private double salary;

public Teacher(String firstName, String lastName, String subjectName, double salary)

{

super(firstName, lastName);

this.subjectName = subjectName;

this.salary = salary;

}

public void displayDetails()

{

super.displayDetails();

System.out.println("Subject: " + subjectName);

System.out.println("Salary: " + salary);

}

}

public class Main

{

public static void main(String[] args)

{

Student student1 = new Student("John", "Doe", 1234, "Computer Science", "Mr. Smith");

Student student2 = new Student("Jane", "Doe", 5678, "Mathematics", "Mrs. Johnson");

Teacher teacher1 = new Teacher("Mr.", "Smith", "Computer Science", 50000);

Teacher teacher2 = new Teacher("Mrs.", "Johnson", "Mathematics", 55000);

student1.displayDetails();

System.out.println();

student2.displayDetails();

System.out.println();

teacher1.displayDetails();

System.out.println();

teacher2.displayDetails();

}

}

Output: