**8.Create aTeacher class and derive**

**professor/Associate\_Professor/Assistant\_Professor class from**

**Teacher class. Define appropriate constructor for all the classes.**

**Also define a method to display information of Teacher. Make**

**necessary assumptions as required**

class Teacher {

private String name; private String designation;

public Teacher(String name, String designation) { this.name = name;

this.designation = designation;

}

public void displayInfo() { System.out.println("Name: " + name); System.out.println("Designation: " + designation);

}

}

class Professor extends Teacher { private String researchArea;

public Professor(String name, String researchArea) { super(name, "Professor");

this.researchArea = researchArea;

}

@Override

public void displayInfo() { super.displayInfo();

System.out.println("Research Area: " + researchArea);

}

}

class AssociateProfessor extends Teacher { private int yearsOfExperience;

public AssociateProfessor(String name, int yearsOfExperience) { super(name, "Associate Professor");

this.yearsOfExperience = yearsOfExperience;

}

@Override

public void displayInfo() { super.displayInfo();

System.out.println("Years of Experience: " + yearsOfExperience);

}

}

class AssistantProfessor extends Teacher { private String specialization;

public AssistantProfessor(String name, String specialization) { super(name, "Assistant Professor");

this.specialization = specialization;

}

@Override

public void displayInfo() { super.displayInfo();

System.out.println("Specialization: " + specialization);

}

}

public class TeacherHierarchy {

public static void main(String[] args) {

Professor professor = new Professor("Dr. Smith", "Computer Science");

AssociateProfessor associateProfessor = new AssociateProfessor("Dr. Johnson", 8);

AssistantProfessor assistantProfessor = new AssistantProfessor("Dr.

Brown", "Artificial Intelligence");

System.out.println("Professor Information:"); professor.displayInfo();

System.out.println("\nAssociate Professor Information:"); associateProfessor.displayInfo();

System.out.println("\nAssistant Professor Information:"); assistantProfessor.displayInfo();

}

}