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import java.util.*;

class Classroom {
    private String name;
    private List<Student> students = new ArrayList<>();
    private List<Assignment> assignments = new ArrayList<>();

    public Classroom(String name) {
        this.name = name;
    }

    public String getName() {
        return name;
    }

    public void addStudent(Student student) {
        students.add(student);
    }

    public List<Student> getStudents() {
        return students;
    }

    public void addAssignment(Assignment assignment) {
        assignments.add(assignment);
    }

    public List<Assignment> getAssignments() {
        return assignments;
    }

    @Override
    public String toString() {
        return "Classroom: " + name;
    }
}

class Student {
    private String id;
    private String name;

    public Student(String id, String name) {
        this.id = id;
        this.name = name;
    }
}
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    }

    public String getId() {
        return id;
    }

    public String getName() {
        return name;
    }

    @Override
    public String toString() {
        return "Student: " + name + " (ID: " + id + ")";
    }
}

class Assignment {
    private String title;
    private String dueDate;

    public Assignment(String title, String dueDate) {
        this.title = title;
        this.dueDate = dueDate;
    }

    public String getTitle() {
        return title;
    }

    public String getDueDate() {
        return dueDate;
    }

    @Override
    public String toString() {
        return "Assignment: " + title + " (Due Date: " + dueDate + ")";
    }
}

public class VirtualClassroomManager {
    private List<Classroom> classrooms = new ArrayList<>();
    private Map<String, Student> students = new HashMap<>();

    public void addClassroom(String name) {

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        classrooms.add(new Classroom(name));
        System.out.println("Classroom " + name + " has been created.");
    }

    public void listClassrooms() {
        System.out.println("List of Classrooms:");
        for (Classroom classroom : classrooms) {
            System.out.println(classroom);
        }
    }

    public void removeClassroom(String name) {
        Iterator<Classroom> iterator = classrooms.iterator();
        while (iterator.hasNext()) {
            Classroom classroom = iterator.next();
            if (classroom.getName().equals(name)) {
                iterator.remove();
                System.out.println("Classroom " + name + " has been removed.");
                return;
            }
        }
        System.out.println("Classroom " + name + " not found.");
    }

    public void addStudent(String id, String name, String className) {
        if (students.containsKey(id)) {
            System.out.println("Student with ID " + id + " already exists.");
            return;
        }

        Classroom classroom = findClassroom(className);
        if (classroom != null) {
            Student student = new Student(id, name);
            students.put(id, student);
            classroom.addStudent(student);
            System.out.println("Student " + name + " (ID: " + id + ") has been enrolled in " +
classroom + ".");
        } else {
            System.out.println("Classroom " + className + " not found.");
        }
    }

    public void listStudents(String className) {
        Classroom classroom = findClassroom(className);

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    if (classroom != null) {
        System.out.println("List of Students in " + className + ":");
        for (Student student : classroom.getStudents()) {
            System.out.println(student);
        }
    } else {
        System.out.println("Classroom " + className + " not found.");
    }
}

public void scheduleAssignment(String className, String title, String dueDate) {
    Classroom classroom = findClassroom(className);
    if (classroom != null) {
        Assignment assignment = new Assignment(title, dueDate);
        classroom.addAssignment(assignment);
        System.out.println("Assignment for " + className + " has been scheduled.");
    } else {
        System.out.println("Classroom " + className + " not found.");
    }
}

public void listAssignments(String className) {
    Classroom classroom = findClassroom(className);
    if (classroom != null) {
        System.out.println("List of Assignments for " + className + ":");
        for (Assignment assignment : classroom.getAssignments()) {
            System.out.println(assignment);
        }
    } else {
        System.out.println("Classroom " + className + " not found.");
    }
}

public void submitAssignment(String studentId, String className, String assignmentTitle) {
    Student student = students.get(studentId);
    Classroom classroom = findClassroom(className);
    if (student != null && classroom != null) {
        Assignment assignment = findAssignment(classroom, assignmentTitle);
        if (assignment != null) {
            System.out.println("Assignment submitted by Student " + studentId + " in " +
className + ".");
        } else {
            System.out.println("Assignment with title " + assignmentTitle + " not found.");
        }
    }
}

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    } else {
        System.out.println("Student or classroom not found.");
    }
}

private Classroom findClassroom(String className) {
    for (Classroom classroom : classrooms) {
        if (classroom.getName().equals(className)) {
            return classroom;
        }
    }
    return null;
}

private Assignment findAssignment(Classroom classroom, String assignmentTitle) {
    for (Assignment assignment : classroom.getAssignments()) {
        if (assignment.getTitle().equals(assignmentTitle)) {
            return assignment;
        }
    }
    return null;
}

public static void main(String[] args) {
    VirtualClassroomManager manager = new VirtualClassroomManager();
    Scanner scanner = new Scanner(System.in);

    while (true) {
        System.out.println("\nVirtual Classroom Manager Menu:");
        System.out.println("1. Add Classroom");
        System.out.println("2. List Classrooms");
        System.out.println("3. Remove Classroom");
        System.out.println("4. Add Student");
        System.out.println("5. List Students");
        System.out.println("6. Schedule Assignment");
        System.out.println("7. List Assignments");
        System.out.println("8. Submit Assignment");
        System.out.println("9. Exit");
        System.out.print("Enter your choice: ");

        int choice = scanner.nextInt();
        scanner.nextLine(); // Consume newline

        switch (choice) {

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case 1:
    System.out.print("Enter classroom name: ");
    String className = scanner.nextLine();
    manager.addClassroom(className);
    break;
case 2:
    manager.listClassrooms();
    break;
case 3:
    System.out.print("Enter classroom name to remove: ");
    className = scanner.nextLine();
    manager.removeClassroom(className);
    break;
case 4:
    System.out.print("Enter student ID: ");
    String studentId = scanner.nextLine();
    System.out.print("Enter student name: ");
    String studentName = scanner.nextLine();
    System.out.print("Enter classroom name to enroll in: ");
    className = scanner.nextLine();
    manager.addStudent(studentId, studentName, className);
    break;
case 5:
    System.out.print("Enter classroom name to list students: ");
    className = scanner.nextLine();
    manager.listStudents(className);
    break;
case 6:
    System.out.print("Enter classroom name to schedule assignment: ");
    className = scanner.nextLine();
    System.out.print("Enter assignment title: ");
    String assignmentTitle = scanner.nextLine();
    System.out.print("Enter assignment due date: ");
    String dueDate = scanner.nextLine();
    manager.scheduleAssignment(className, assignmentTitle, dueDate);
    break;
case 7:
    System.out.print("Enter classroom name to list assignments: ");
    className = scanner.nextLine();
    manager.listAssignments(className);
    break;
case 8:
    System.out.print("Enter student ID: ");
    studentId = scanner.nextLine();
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        System.out.print("Enter classroom name: ");
        className = scanner.nextLine();
        System.out.print("Enter assignment title: ");
        assignmentTitle = scanner.nextLine();
        manager.submitAssignment(studentId, className, assignmentTitle);
        break;
    case 9:
        System.out.println("Goodbye!");
        scanner.close();
        System.exit(0);
    default:
        System.out.println("Invalid choice. Please try again.");
    }
}
}
```