Hands-on Exercise: Many-to-Many Relationship in Hibernate

Question:

Create a Hibernate application that models a **many-to-many** relationship between Student and Course entities:

1. **Database Tables**:

   - **Student Table**:
     - **Fields: id (Primary Key), name**
   - **Course Table**:
     - **Fields**: **id (Primary Key), title**
   - **Student_Course Table** (Join Table):
     - **Fields: student_id, course_id (Composite Primary Key)**

2. **Tasks**:
   - Define two entities: **Student and Course** with a **bidirectional many-to-many relationship.**
   - Use **@ManyToMany and @JoinTable** annotations in Hibernate.
   - Implement **CRUD** operations to:
     - Add a new student and enroll them in multiple courses.
     - Add a new course and register multiple students for it.
     - Retrieve all courses for a given student and all students for a given course.
   - Write a main application class to demonstrate the following:
     - Create 3 students and 3 courses.
     - Enroll students in various courses (at least 2 students per course).
     - Display the list of courses each student is enrolled in.
     - Display the list of students registered for each course.

Implement **CascadeType.ALL** for automatic updates and use **orphanRemoval** to clean up records when relationships are removed.