JDBC Afternoon Project – Build a Console App with Your Own Database

Project Goal

You will create a Java console application that connects to your own MySQL database using JDBC. You'll design your own entities and tables, write SQL to create them, and implement a console interface with basic CRUD operations.

This is your chance to bring your own idea to life while practicing the JDBC skills you've learned!

Step 1: Choose a Scenario

Pick one of the following themes — or come up with your own (with instructor approval):

Option	Scenario	Tables You'll Need
1	Library System	Authors, Books
2	Movie Rental Service	Customers, Movies
3	Pet Clinic	Pets, Appointments
4	Task Manager	Projects, Tasks
5	Your Idea (Approved)	Minimum two related tables

Each project must have at least two tables with a foreign key relationship.

Step 2: Set Up Your Database

1. Open MySQL Workbench.
2. Create a new schema (i.e., database) for your project.
3. Write the CREATE TABLE statements for your two tables.
4. Add a few test rows using INSERT INTO.

Example (for Library system):

```
CREATE DATABASE library;
USE library;

CREATE TABLE authors (
  author_id INT PRIMARY KEY AUTO_INCREMENT,
  name VARCHAR(100),
  country VARCHAR(50)
);

CREATE TABLE books (
  book_id INT PRIMARY KEY AUTO_INCREMENT,
  title VARCHAR(200),
```

```
    genre VARCHAR(50),
    author_id INT,
    FOREIGN KEY (author_id) REFERENCES authors(author_id)
);
```

Step 3: Build Your Java Console App

Your app should have a menu and allow the user to:

For Table A (e.g., Authors, Customers, Pets, Projects):

- View all records

- Add a new record

- Delete a record by ID

For Table B (e.g., Books, Movies, Appointments, Tasks):

- View all records

- Add a new record (must link to Table A)

- Delete a record by ID

- (Optional) View records filtered by Table A (e.g., all books by a certain author)

Example Console Menu

Welcome to the [Your App Name]!

What would you like to do?
1) View all [Table A]
2) Add a new [Table A]
3) Delete a [Table A]
4) View all [Table B]
5) Add a new [Table B]
6) Delete a [Table B]
7) View [Table B] by [Table A]
0) Exit

Requirements Checklist

✓ Use JDBC to connect to your database

✓ Use PreparedStatement for all queries

✓ Use try-with-resources to manage connections

✓ Program runs in the console and has a clear menu

✓ Each menu option works as expected

✓ Handles user input gracefully (no crashing on bad input)

✓ You created your own tables with a clear relationship

✓ Code is organized into methods for readability

Advanced (Optional)

- Add edit/update functions for your records

- Support searching by keyword

- Allow sorting results