Backend Assignment III

Assignment Date: Due Monday, September 15, 2025

Instructions

This assignment focuses on creating SQL tables for **book** and **user**, and writing SQL queries to handle various library borrowing functionalities.

Tasks

1. Database Schema

Create SQL tables for **book** and **user** with appropriate relationships.

2. Core Borrowing Logic

Write SQL queries that implement the following business rules:

- A user can borrow multiple books
- A borrowed book cannot be assigned to another user until it has been returned
- ### 3. User Borrowing Statistics

Show how many times each user has borrowed books (count only).

4. Book Assignment Statistics

Show how many times each book has been borrowed by users (count only).

5. User Ranking

Order users based on the total number of books they have borrowed.

6. User-Book Borrowing Analysis

Group the data to show how many times each user has borrowed each specific book.

7. Ordered User-Book Analysis

Group and order the results to show how many times each user has borrowed each book, sorted appropriately.

8. Book Popularity Analysis

Show the minimum and maximum number of times any single book has been borrowed across the entire library.

9. User Activity Analysis

Show the minimum and maximum total number of books borrowed by any single user across all their borrowing history.

10. Top Library User

Find which user has borrowed the most books in the entire library (overall champion borrower).

11. Top User for Specific Book

Find which user has borrowed a specific book the most number of times (book-specific champion).

Deliverables

- SQL DDL statements for table creation
- SQL queries for each task above
- Sample data and expected results for testing