



ព្រះរាជាណាចក្រកម្ពុជា

បាតិ នាសនា ព្រះមហាក្សត្រ

SOFTWARE ENGINEERING

Group I4-GIC-B

Report progress

Name of Student	ID	Score
1. THOUNG SOKET	e20220586	
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Lecturer: Mr. ROEUN Pacharoth (TP)

Academic Year: 2025-2026

Week 1 progress

Draw table database

We have 5 tables for this project:

1. Users Table

This table stores all users of the system. It includes basic information such as username, password, full name, and email. Users can be either members or librarians. It is used for login and identifying who borrows books.

2. Roles Table

This table defines the different roles in the system. Examples are MEMBER and LIBRARIAN. It is used to control what each user is allowed to do in the system.

3. User_Roles Table

This table connects users to their roles. Each user can have one or more roles. It supports the security and permission system.

4. Books Table

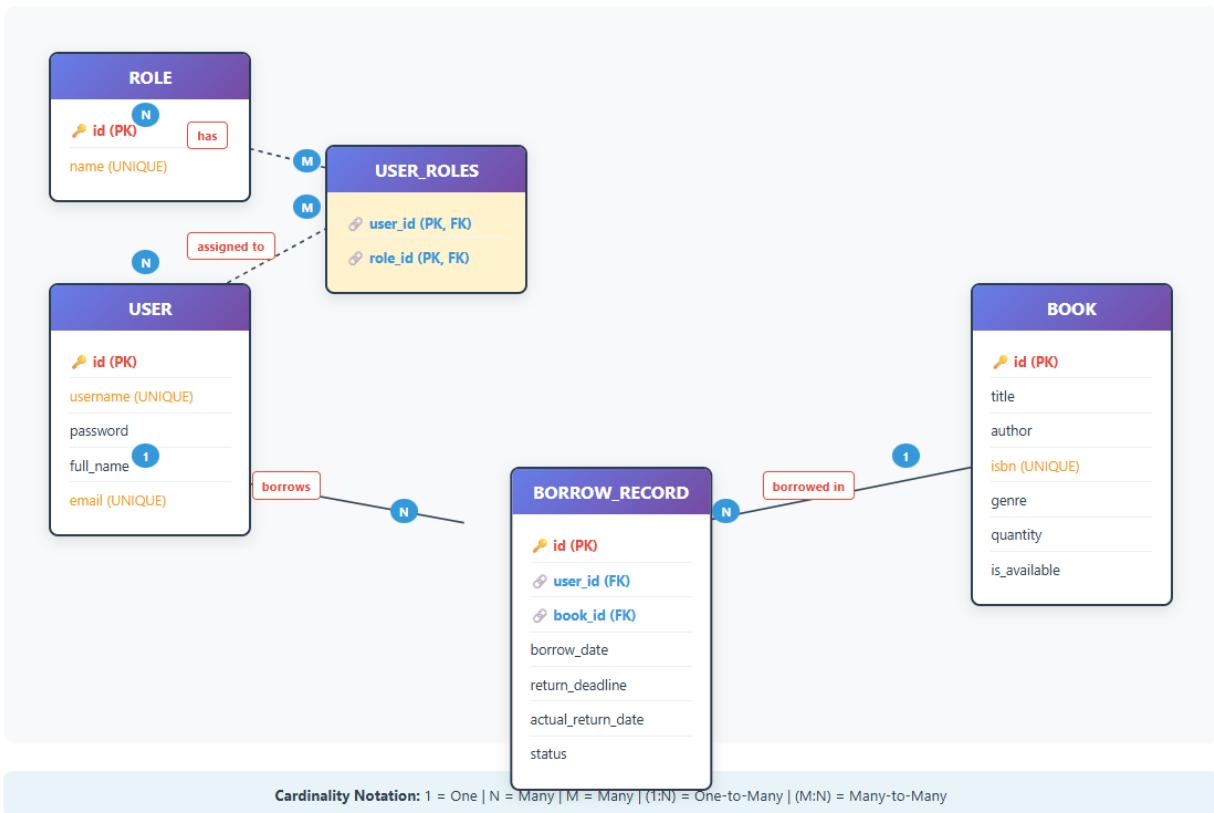
This table stores all information about the books in the library, such as title, author, genre, ISBN, quantity, and availability. It is used to manage books and check if a book can be borrowed.

5. Borrow_Records Table

This table records all borrowing activities. It stores the borrow date, return deadline, actual return date, status, and links to both the user and the book. It helps track which user borrowed which book and whether the book is overdue.

Library Management System

Entity-Relationship Diagram with Cardinality Notation



Week2 progress

Roles for each member

❖ Member 1 – Security and Authentication (IM Cheangngim)

Responsibilities:

- Implement user login and logout
- Configure role-based access control
- Work Completed
- Configured Spring Security for authentication
- Implemented login form using Thymeleaf
- Applied BCrypt password encryption
- Created role restrictions:
- LIBRARIAN access to admin pages
- MEMBER access to borrowing pages
- Tested login with different user roles

❖ Member 2 – Main Entity Management (Book & User) (Chanchhinghoir)

Responsibilities:

- Manage core system entities
- Work Completed
- Designed User and Book entities
- Implemented CRUD operations for books
- Created service and repository layers
- Implemented book search functionality

- Managed book availability status

❖ **Member 3 – Borrowing and Returning Module (THOU Thearo)**

Responsibilities:

- Handle borrowing logic and workflows
- Work Completed
- Designed BorrowRecord entity
- Implemented borrow book workflow
- Set automatic 14-day return deadline
- Implemented return book functionality
- Added overdue status detection
- Ensured book availability updates correctly

❖ **Member 4 – Frontend and Thymeleaf Templates (Thoung Soket)**

Responsibilities:

- Design user interface and templates
- Work Completed
- Created Thymeleaf templates for:
 - Login and registration
 - Book list and borrow pages
 - Borrow history page
- Integrated Bootstrap 5 for UI styling
- Applied role-based visibility in UI
- Tested UI for both Member and Librarian roles

❖ **Member 5 – Database Design and Management (Sophal Mengchhiv)**

Responsibilities:

- Design and manage database
- Work Completed

- Designed MySQL database schema
- Created tables:
 - users
 - roles
 - books
 - borrow_records
- Defined primary and foreign key relationships
- Configured database connection
- Inserted sample data for testing
- Verified data integrity during borrow/return