Database diagrams

Entity-relationship diagram
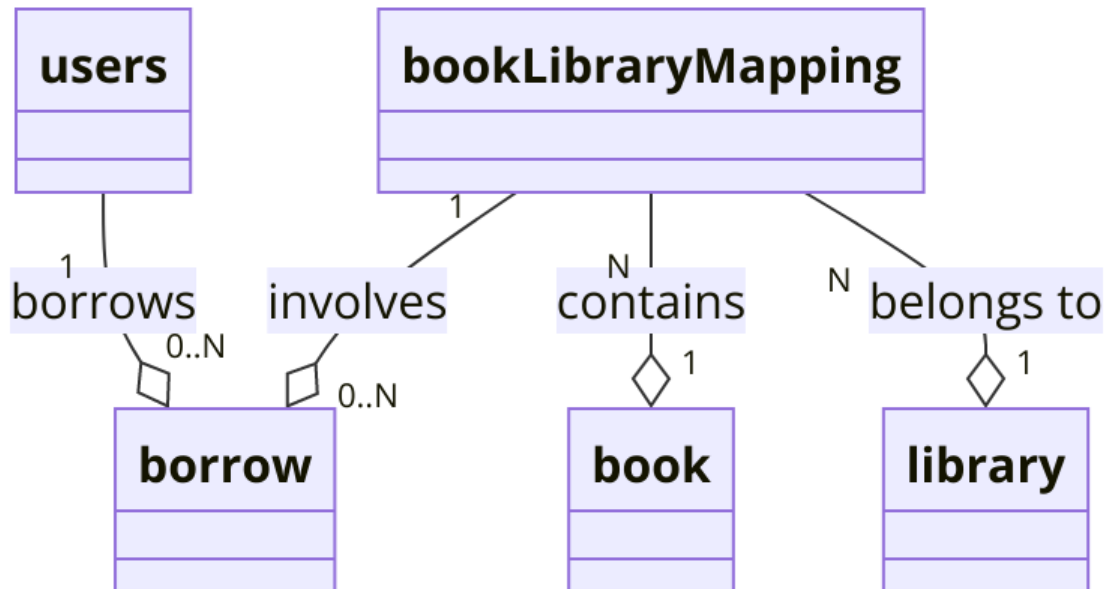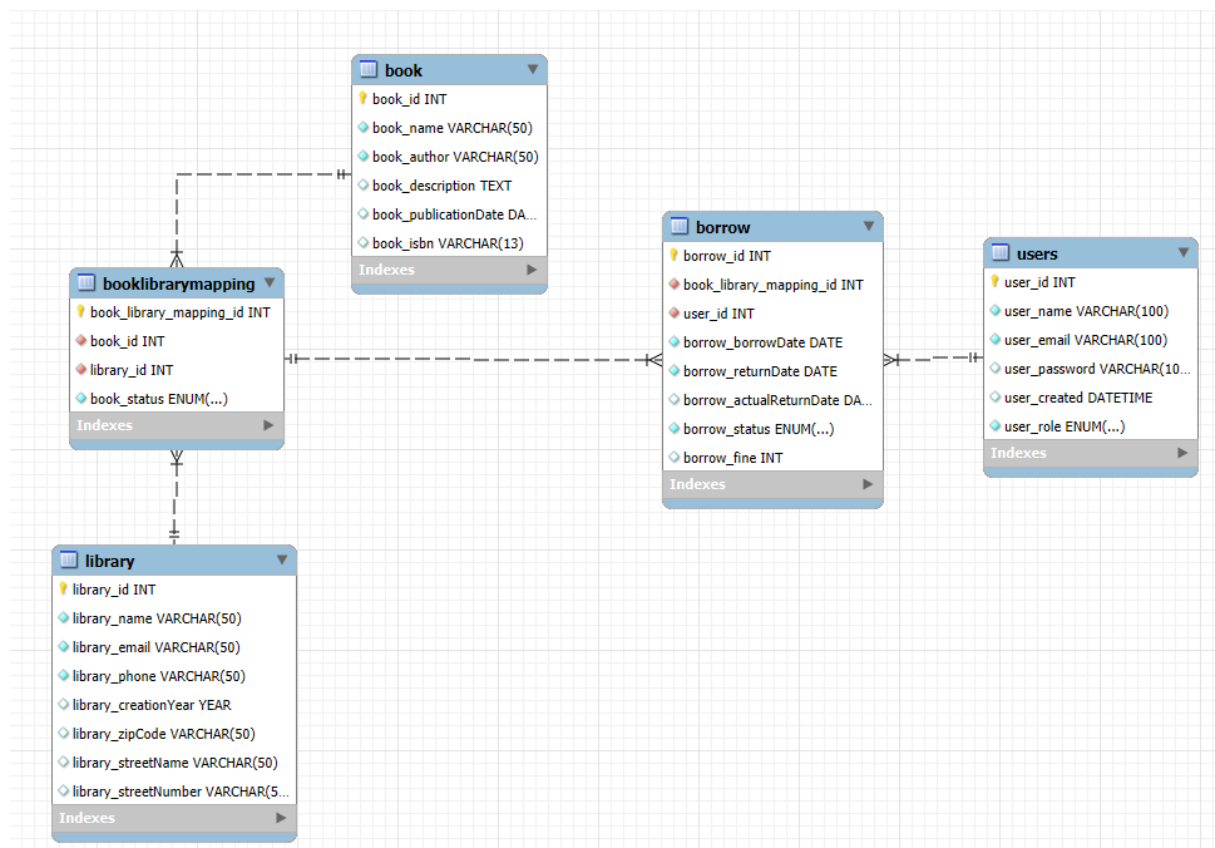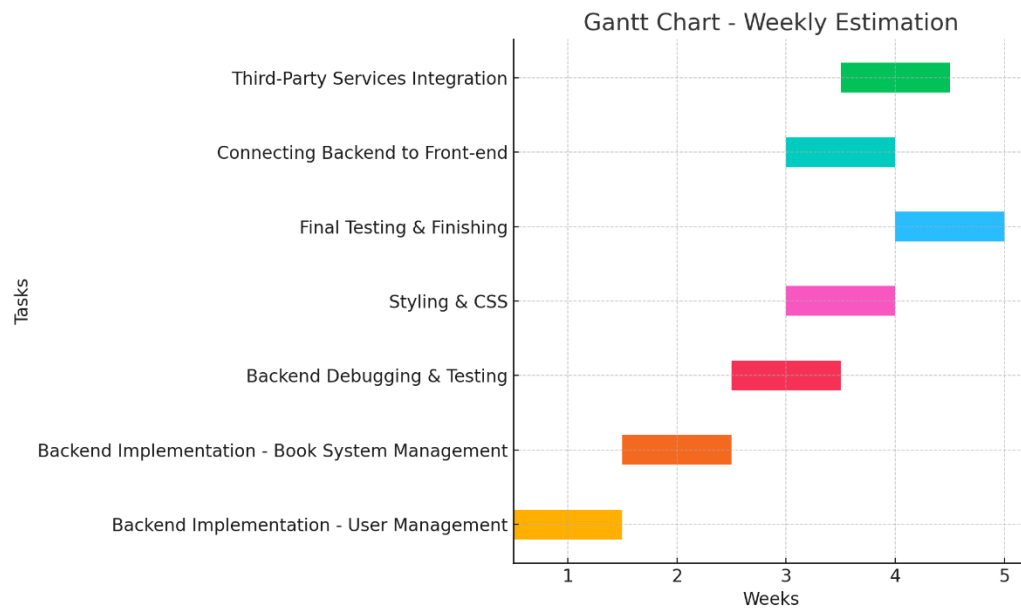
users

bookLibraryMapping

1
borrows
involves
N
contains
N
belongs to

1
0..N
0..N
1
1

borrow

book

library

Table structure diagram

book
- book_id INT
- book_name VARCHAR(50)
- book_author VARCHAR(50)
- book_description TEXT
- book_publicationDate DA...
- book_isbn VARCHAR(13)
- Indexes

booklibrarymapping
- book_library_mapping_id INT
- book_id INT
- library_id INT
- book_status ENUM(...)
- Indexes

borrow
- borrow_id INT
- book_library_mapping_id INT
- user_id INT
- borrow_borrowDate DATE
- borrow_returnDate DATE
- borrow_actualReturnDate DA...
- borrow_status ENUM(...)
- borrow_fine INT
- Indexes

users
- user_id INT
- user_name VARCHAR(100)
- user_email VARCHAR(100)
- user_password VARCHAR(10...
- user_created DATETIME
- user_role ENUM(...)
- Indexes

library
- library_id INT
- library_name VARCHAR(50)
- library_email VARCHAR(50)
- library_phone VARCHAR(50)
- library_creationYear YEAR
- library_zipCode VARCHAR(50)
- library_streetName VARCHAR(50)
- library_streetNumber VARCHAR(5...
- Indexes

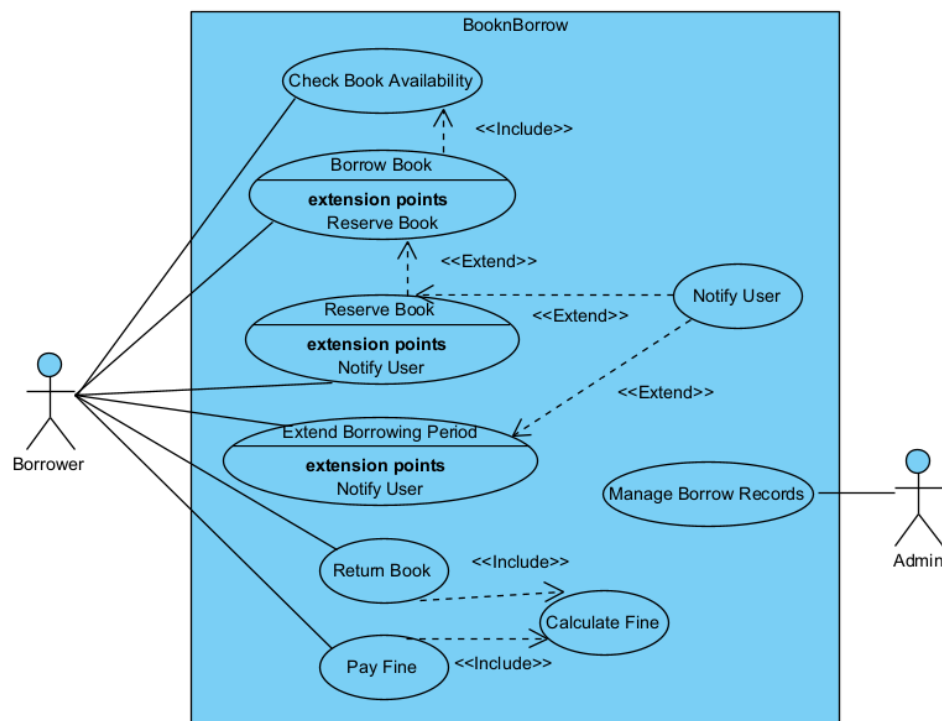# Planned gantt diagram

Use case diagrams

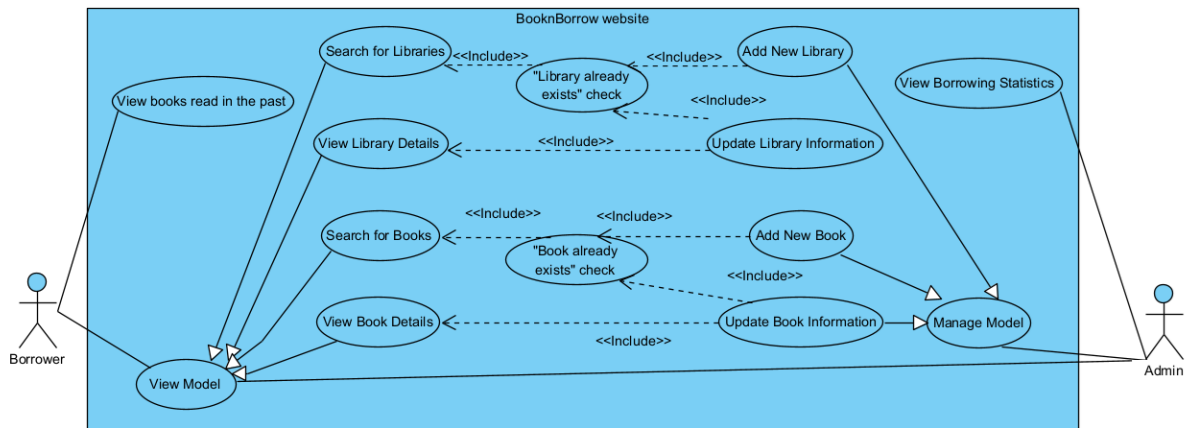## Borrowing Process Use Case Diagram

- Actors: User, Admin

- Use Cases: Borrow Book, Reserve Book, Return Book, Check Book Availability, Extend Borrowing Period, Pay Fine (User), Manage Borrow Records (Admin).
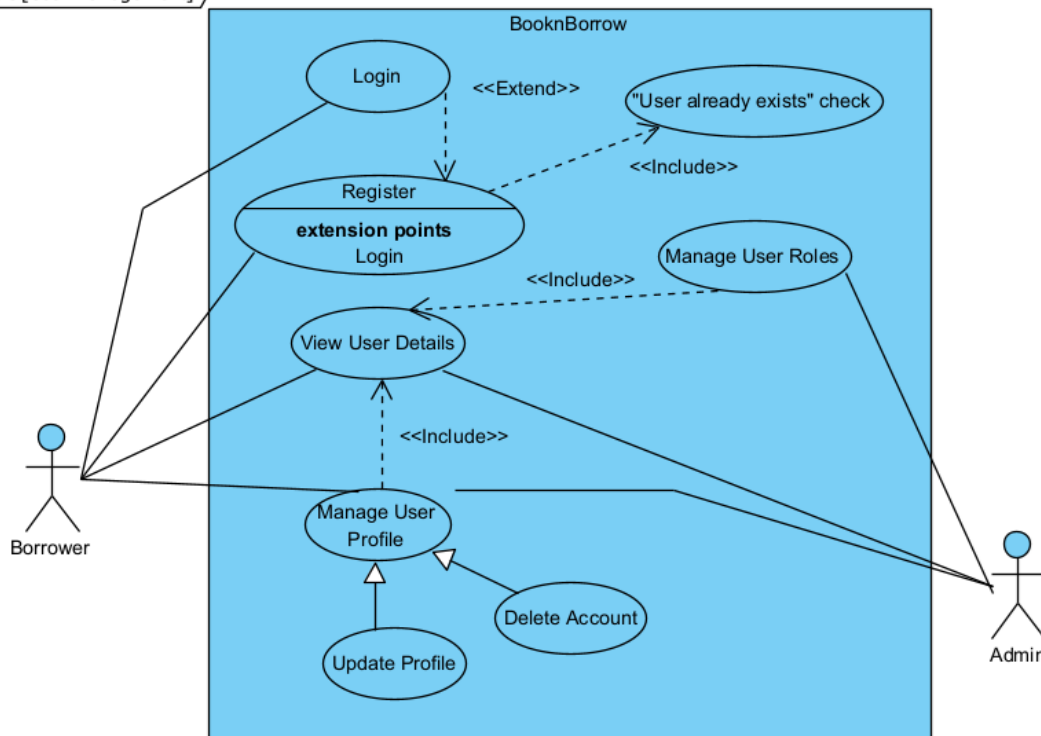
Library and Book Management Use Case Diagram

- Actors: Admin, User

- Use Cases: Add New Library (Admin), View Library Details, Add New Book (Admin), View Book Details, View books read in the past, Update Book Information (Admin), Search for Books, View Borrowing Statistics (Admin).

User Management Use Case Diagram:

- Actors: Admin, User

- Use Cases: Register, Login, Update Profile, View User Details, Manage User Roles (Admin only), Delete Account, Manage Users (Admin only).