

Low level design of Library Management System

=====

User Management:

User Registration: User provides basic details like name, email, and password. A new record is created in the user table with a unique ID, and the details are stored in the user profile.

User Login: User provides username and password, which is verified against the database. If the details are correct, a session ID is generated and stored in the session table.

Book Management:

Add/Update/Delete Books: Admin can add, update, or delete books. When adding a new book, admin provides details like title, author, ID. A new record is created in the book table with a unique ID, and the details are stored in the book details table.

Search Books: Users can search books by title, author, or Id. The search query is executed against the book details table.

View Books: Users can view book details like title, author, ID. The details are fetched from the book details table.

overdue-Books: A report is generated that displays all books that are overdue for return.

Check-In/Check-Out Books: When a user checks out a book, a new record is created in the checkout table with the book ID, user ID, and checkout date. When a user returns a book, the record is updated with the return date.

Member Management:

Add/Update/Delete users: Admin can add, update, or delete users. When adding a new user, admin provides details like name, email, and address. A new record is created in the user table with a unique ID, and the details are stored in the user details table.

Search user: user can be searched using Id by querying from database.

Database Management: Admin can create, update or delete tables, views or stored procedures as per requirement.

Security:

User Authentication: Passwords are hashed and stored in the database. When a user logs in, the entered password is hashed and compared against the hashed password stored in the database.

User Authorization: Different user roles can be defined like admin or member, with different levels of access.