

# LIBRARY MANAGEMENT SYSTEM



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# The System Description And Scope

In today's world, where information access and organization are critical, a good Library Management System (LMS) assists libraries in running smoothly by effectively managing their books and resources and making it easier for people to use the library. The library management system is a computerized project for handling library operations. It includes user and admin logins, online updates, and book requests. Users can see lists of issued books and their return dates, and the admin can generate reports. The system allows for concurrent issue resolution and reduces waiting times for book borrowing.

## **Project Scope:**

- Creating and developing a user-friendly website.
- Adding necessary features for library management.
- Giving users access to cataloguing, circulation, user management, and reporting tools.
- Ensure compatibility with different web browsers and devices.

# OBJECTIVES

- Providing convenient access to library resources and services.
- Allowing users to search and browse the library catalog more efficiently.
- Patrons can reserve, renew, and request materials online.
- Creating personalized user accounts to manage borrowing history and preferences.
- Administrative features for library staff include inventory management.
- Integrating into existing library systems and databases.
- Enhancing user engagement with interactive features and notifications.

# SYSTEM REQUIREMENTS

## Software Requirements:

- Database: MySQL
- Programming Language: Java for backend development.
- Front End Development Tools: HTML, CSS, and Bootstrap for designing a user-friendly interface.
- Front End Frameworks: jQuery.
- Backend Frameworks: Spring Boot.
- Project Management Tool: Maven.
- Development Environment: Visual Studio Code.
- Version Control: GitHub.

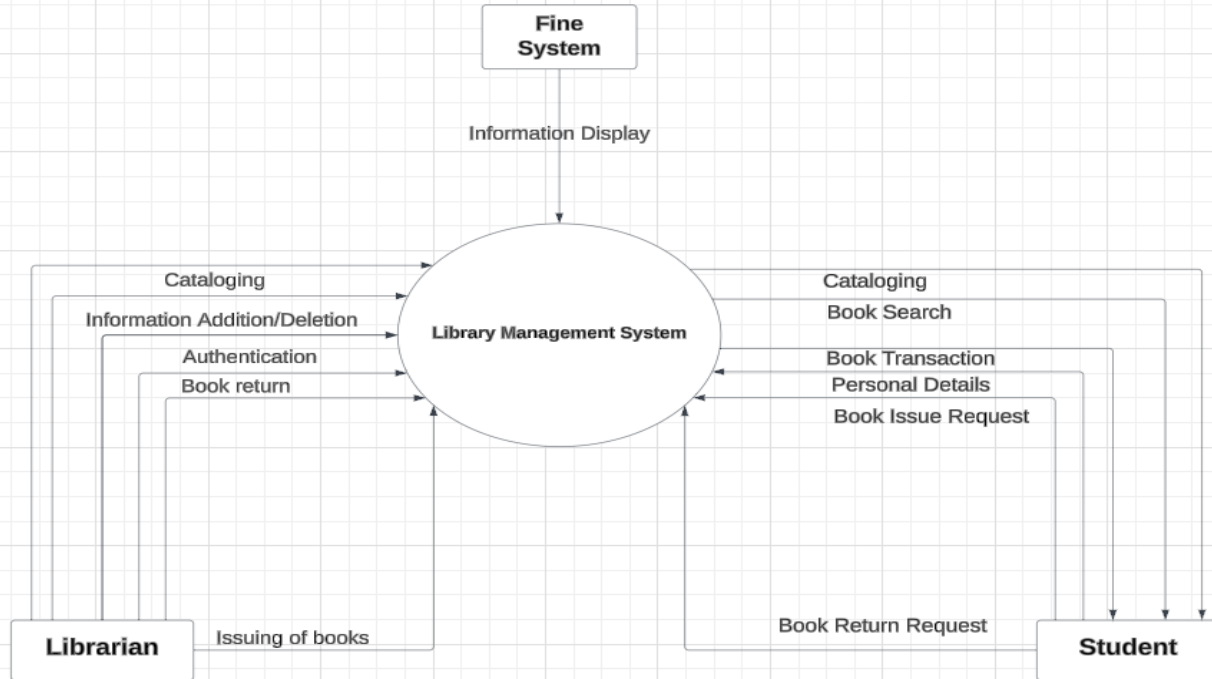
## Hardware Requirements:

- RAM: Requires 256 MB or more.
- Hard Disk: Minimum of 1 GB space.

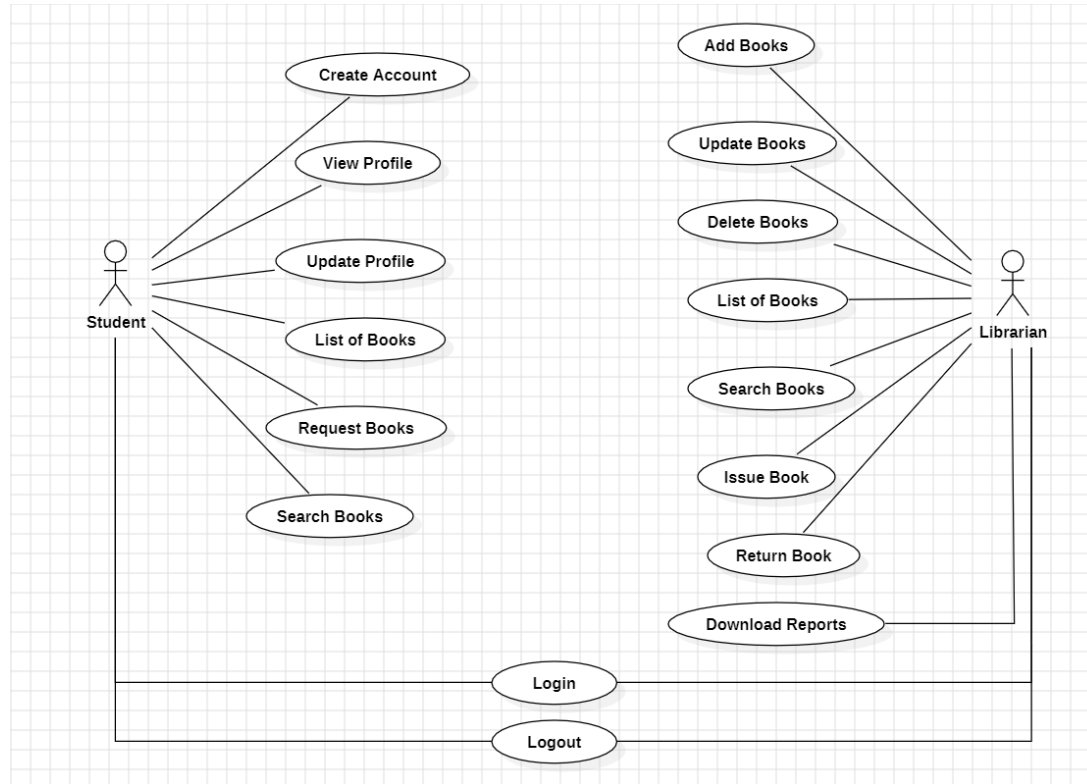
# USER STORIES

1. As a librarian, I would like to add new books to the library catalog, so that Users can easily find and borrow them.
2. As a librarian, I would like to update existing book information (e.g., title, author, genre, quantity, description) in the library catalog, to ensure accuracy and relevance.
3. As a librarian, I would like to remove damaged books from the library catalog, to maintain a clean and organized collection.
4. As a librarian, I would like to search for books by title, author, or genre, to help users find the materials they need.
5. As a librarian, I would like to check in returned books, update their availability status, and remove them from users accounts.
6. As a user, I would like to search for books by title, author, or genre, so that I can find materials for my research or leisure reading.
7. As a user, I would like to view detailed information about a specific book (e.g., availability status), to help me decide whether to borrow it.
8. As a user, I would like to receive notifications (e.g., email) about upcoming due dates and overdue fines, to stay informed about my library account status.
9. As a user, I would like to request a book that is currently available, so that I can borrow it.

# CONTEXT DIAGRAM

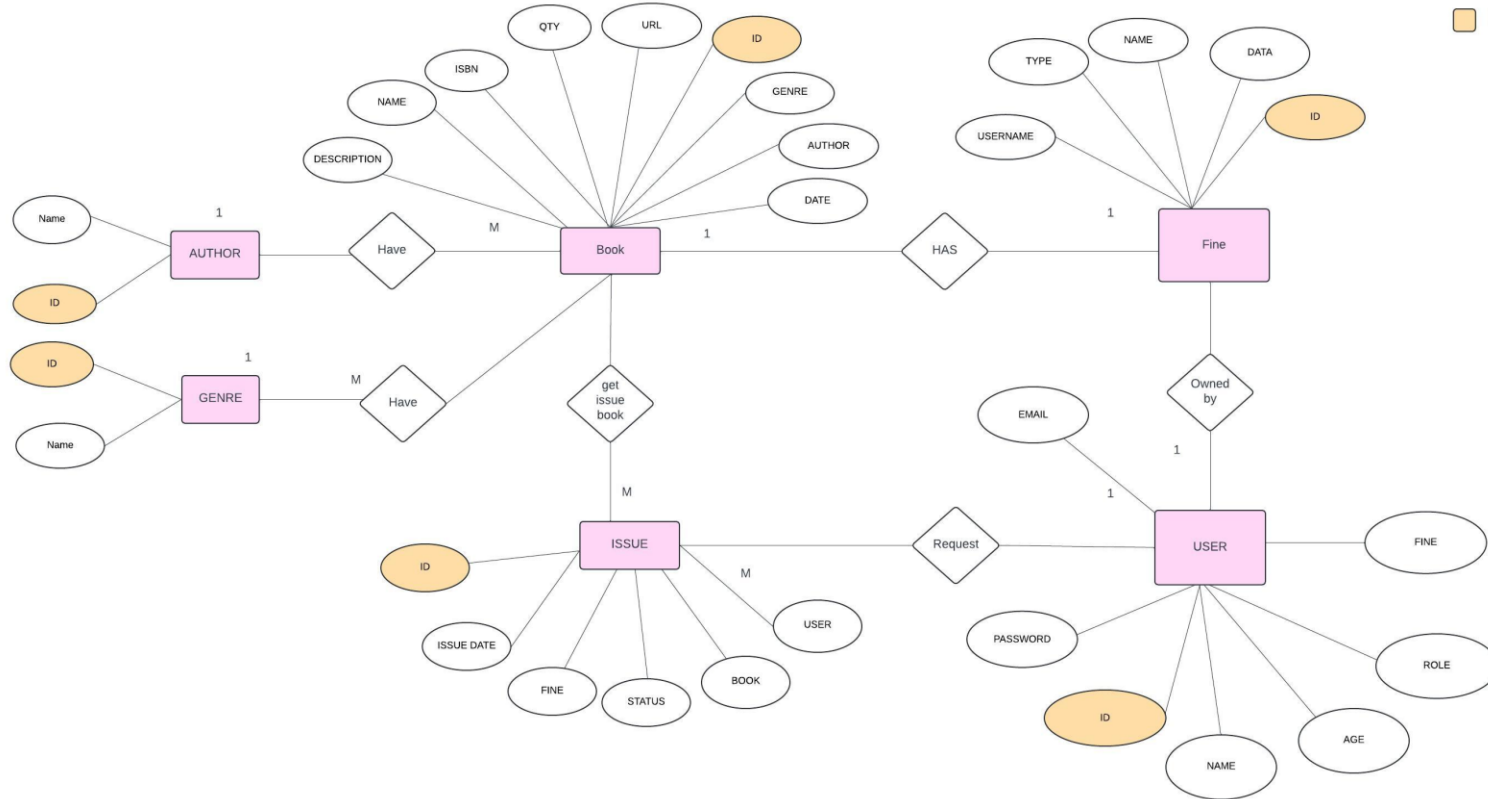


# USE CASE DIAGRAM



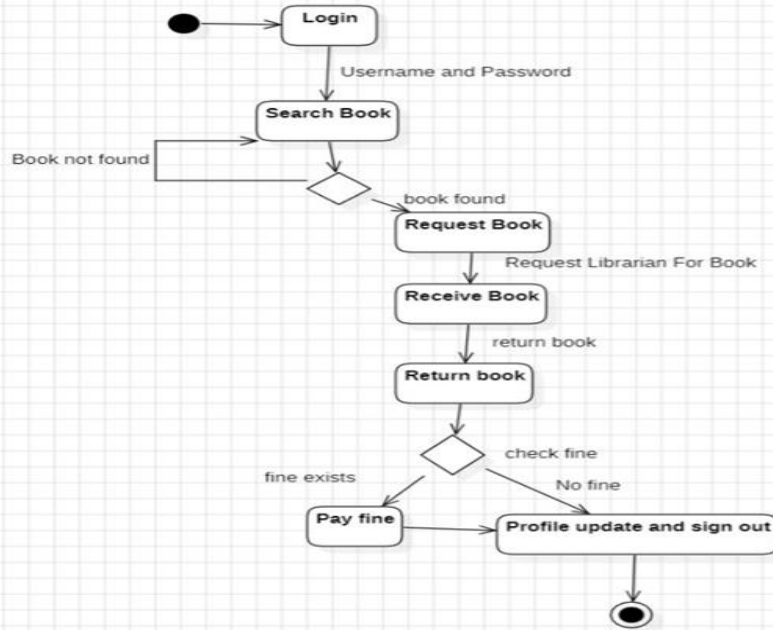
# ER DIAGRAM

Primary key

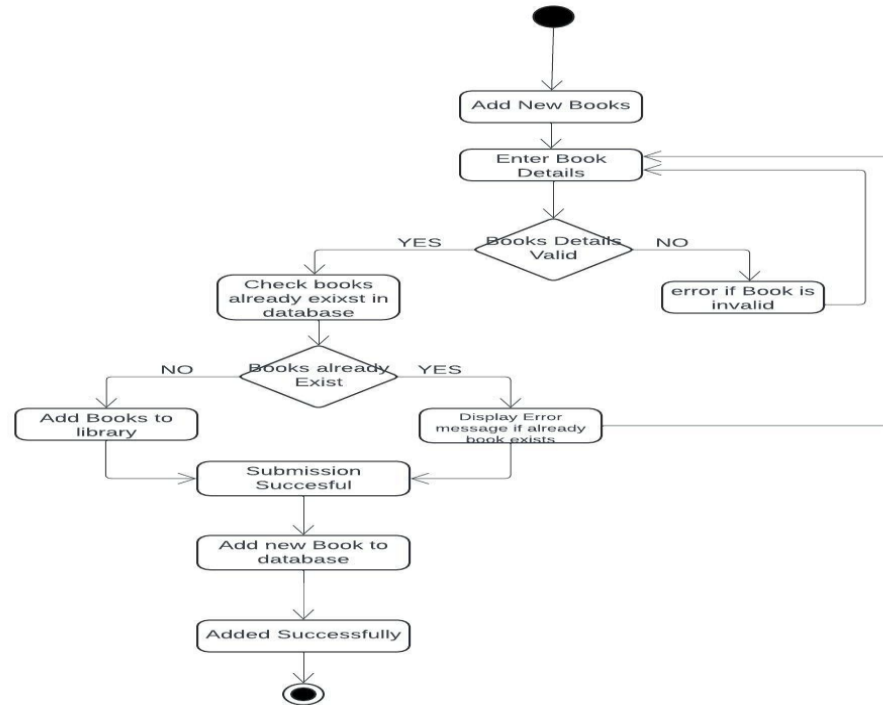




# STATE CHART DIAGRAM



# ACTIVITY DAIGRAM



# Lessons Learned

- Planning and Organizing effectively is crucial for developing a detailed project which helps the team stay focused on work
- Effective communication is essential for ensuring that all the team members involved with the project understands their roles, responsibilities, and expectations.
- Managing time effectively is critical for meeting deadlines and achieving results.
- Thorough testing and validation are essential to confirm that features operate as planned.

## Next Steps

- To evaluate usability and user experience, get user feedback.
- Determine what needs to be improved based on analytics and user input.

# SPRINT SCHEDULE

DATE	SCHEDULE	DELIVERABLE
2/6 - 2/8	Sprint 0	Modelling and Estimation
2/13 - 2/15		Design Patterns
2/20 - 2/22	Sprint 1	SignUp, Database Setup, Search Books.
2/27 - 2/29		Basic features and a powerpoint explaining it
3/12 - 3/14	Sprint 2	Order Books, Issue Books, Dashboard.
3/19 - 3/21		10 slide powerpoint and demo of the actual application.
3/26 - 3/28	Sprint 3	Implementation
4/2 - 4/4	Prototype Demo	Updated Powerpoint and application to demo
4/9 - 4/11	Sprint 4	Strengthening authentication and Testing
4/16 - 4/18	Final Demo	Updated Powerpoint and final Application demo
4/23 - 4/25	Final Project Due	Final Project Demo and final Application based on comments during demo

THANK YOU