

# Library Management

Database Name: library\_management

## Project Idea

The **Library Management System** is a web-based application designed to help librarians efficiently manage and organize library resources. This platform enables librarians to create, update, and manage information related to books, members, and borrowing activities, all within a structured relational database. The goal is to provide a streamlined interface to manage library inventory, track borrow/return transactions, and maintain member records using CRUD functionality, ensuring a smooth experience for library operations and resource management.

## Relational Database

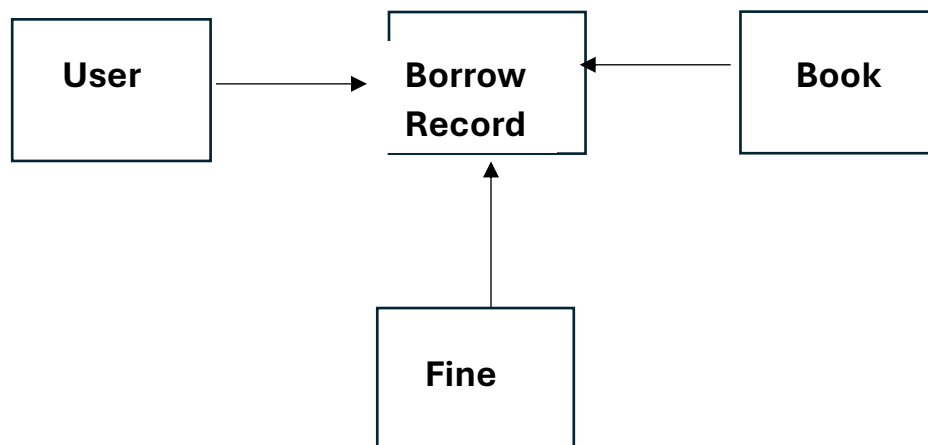


Fig 1: An entity relationship diagram for User, Book, Borrow record, and Fine

	<b>User Entity</b>	<b>Book Entity</b>	<b>Borrow Record Entity</b>	<b>Fine Entity</b>
<b>User Entity</b>	X	A user can borrow many books.	A user can have multiple borrow records.	A user can be linked to multiple fines.
<b>Book Entity</b>	A book can be borrowed by many users.	X	A book can appear in multiple borrow records.	A book's overdue can result in a fine.
<b>Borrow Record Entity</b>	A borrow record tracks a user's activity.	A book can be reserved or on loan.	X	A borrow record can result in a fine.
<b>Fine Entity</b>	A fine is linked to one user.	A fine may result from overdue books.	A fine is generated based on a borrow record.	X

**Fig 2: A table which verbalizes relationships between user, books, borrow record and fine.**

## ERD Diagram:

### Books:

Column	Type	Constraints
book_id	INT	PRIMARY KEY,
title	VARCHAR (100)	NOT NULL
copies_available	INT	N

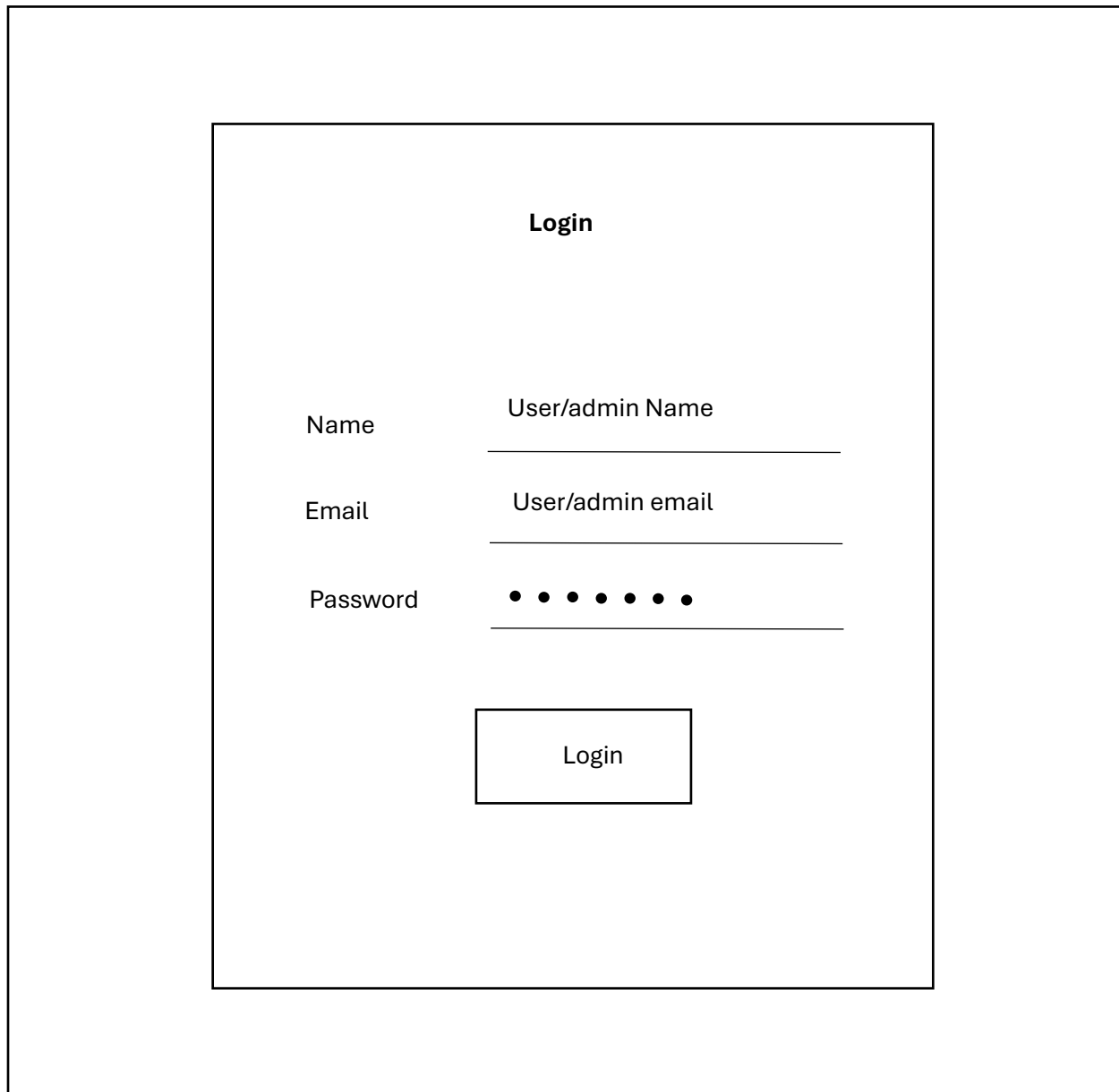
### Member/User

Column	Data Type	Constraints
member_id	INT	PRIMARY KEY
name	VARCHAR (100)	NOT NULL
email	VARCHAR (100)	UNIQUE

### borrow\_record

Column	Type	Constraints
book_id	INT	FOREIGN KEY,
borrow_id	INT	PRIMARY KEY
member_id	INT	FOREIGN KEY

## Wireframes



The wireframe shows a login portal layout. It features a central box containing the title "Login" at the top. Below the title are three input fields, each with a label on the left and a placeholder on the right. The first field is for "Name" with the placeholder "User/admin Name". The second field is for "Email" with the placeholder "User/admin email". The third field is for "Password" with a placeholder consisting of seven dots. Below these fields is a "Login" button.

**Login**


Name User/admin Name

Email User/admin email

Password • • • • • • •

Login

**Fig 4:** This is the wireframe of login portal where user/admin can login on the website.

<b>Username</b>				
User detail	View Books	View Borrow record	View Fines	

**Fig 5: This is the wireframe of user dashboard. Here, user can view a books, view all borrow books by them, view all the overdue book fines by them.**

<b>Username</b>	
<b>User detail</b>	<a href="#">View Books</a> <a href="#">View Borrow record</a> <a href="#">View Fines</a>
Name	<input type="text" value="Suman rani"/>
Email	<input type="text" value="XXXXXXXXXX@gmail.com"/>
membership Id	<input type="text" value="*****"/>
<input type="button" value="View detail"/>	

**Fig 6: This is the wireframe where user can view a account detail by entering the information in fields like name, email and library membership id**

# Username

User detail

**View Books**

View Borrow record

View Fines

Title

Physics

Author  
Name

Name of the author related to the book.

ISBN Number

012345678

Copies available

\*\*\*

Category

Select Subject Name



view book

**Fig 7: This is the wireframe where user can view books by entering the information in fields like Title, author name, ISBN number of book, copies available , category of book in which detail of subject by selecting an option in a dropdown.**

<b>username</b>			
User detail	View books	<b>View Borrow record</b>	View Fines
<div><div>Biology</div><div>chemistry</div></div> <div><div>Edit</div><div>Edit</div></div> <div><div>Delete</div><div>Delete</div></div> <div><div>Return date</div><div>Return date</div></div>			

**Fig 8: This is the wireframe where user can view all the books borrow by them. user can edit, delete and return date for each book.**



# **Username**

## **Update book -Mathematics**

Topic

Geometry

Author Name

XYZ.

ISBN

123456789

Update book

Go Back to Dashboard

**Fig 9: This is the wireframe where user can update a book by filling the details as required and then click update book.**

## **Username**

Are you sure you want to delete this book?

Yes

Cancel

**Fig 10. This is the wireframe where user can confirm to delete a book.**

**Username**

**View Borrow record**

chemistry

Issue date

Return date

Physics

Issue date

Return date

View Record

Go Back to Dashboard

# Username

## Update Borrow record

Title

#####

Author Name

\*\*\*\*\*


Issue date

00/00/2025

Returning date

00/00/2025

Category

Select subject Name 

Update Borrow record

**Fig 12.** This is the wireframe where user can update a borrow record by filling in the details.

**username**

User detail

View books

View borrow record

**View Fines**

Biology

Edit

Delete

Overdue date

Physics

Edit

Delete

overdue date

chemistry

Edit

Delete

overdue date

View Fines

**Fig 13. This is the wireframe where user can view all the information of book like edit, delete and overdue date and all fines.**

## **Username**

Are you sure you want to delete this book?

Yes

Cancel

**Fig 14. This is the wireframe where user can confirm to delete a book.**