**DOCUMENTATION**

#### By

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##### **ACKNOWLEDGMENT**

##### We are really grateful because we managed to complete our project within the time given by our teacher [Abid Ali and Usama Khalid]. This assignment cannot be completed without the effort and co-operation from our group members, Group

members [Kumail Ameen ,and Abdul Wasay Tabba].

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### 1. Introduction

This ****Library Management System (LMS)**** is designed exclusively for administrative users, providing a robust interface for managing core library operations. Key features include:

****Admin Access Control****

****Book Management**** (CRUD operations)

****Category & Author Management****

****Member Management****

****Fine Tracking****

Built on modern web technologies, the system ensures data integrity and offers actionable insights through visualizations.

### 2. Objectives of the Project

| **Objective** | **Description** |
| --- | --- |
| **Centralized Administration** | Single platform for managing books, members, and fines |
| **CRUD Operations** | Full Create/Read/Update/Delete functionality for all entities |
| **Inventory Management** | Track book status (Available/Issued) and metadata |
| **Member Supervision** | Admin-controlled member access and activity tracking |
| **Fine Management** | Overdue book tracking with fine calculations |
| **Data Visualization** | Charts for book categories, availability, and fines |
| **Security** | Restricted admin access for sensitive operations |

### Project Topic

### A secure web application for librarians to manage:

Book catalog (titles, categories, authors)

Member registrations

Fine collections

Admin registrations  
Issued Books  
Return Books

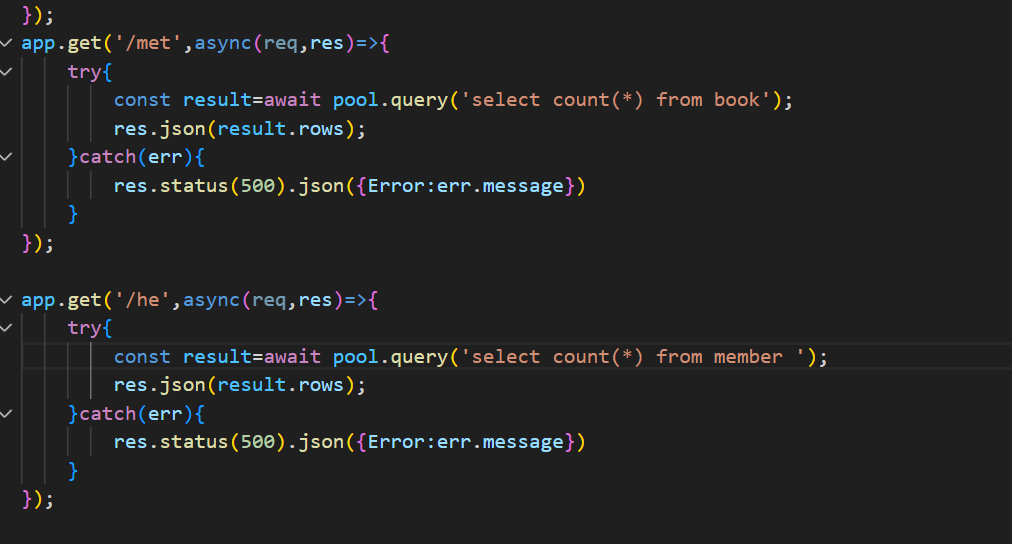
### 4. Software Requirements

| **Component** | **Technology** |
| --- | --- |
| **Frontend** | HTML5, CSS3, JavaScript |
| **Backend** | Node.js, Express.js |
| **Database** | PostgreSQL |
| **Libraries** | Chart.js, CORS, dotenv |
| **IDE** | VS Code |

### 5. Work Analysis

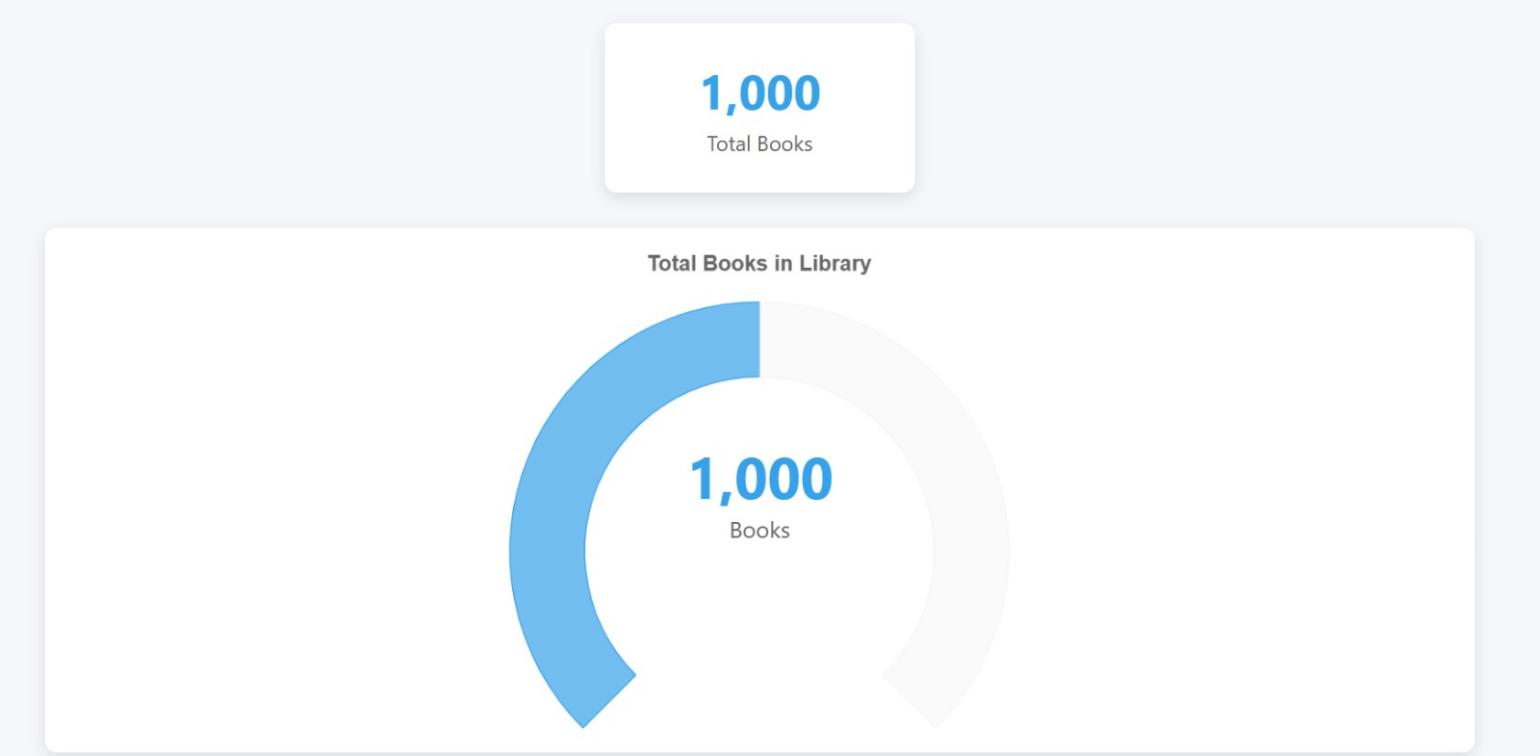
| **Task** | **Abdul Wasay** | **Kumail Ameen** |
| --- | --- | --- |
| **Analysis** | ✓ | ✓ |
| **Design** | ✓ | ✓ |
| **Coding** | ✓ | ✓ |
| **Testing** | ✓ | ✓ |
| **Documentation** | ✓ | ✓ |

### Code Implementation

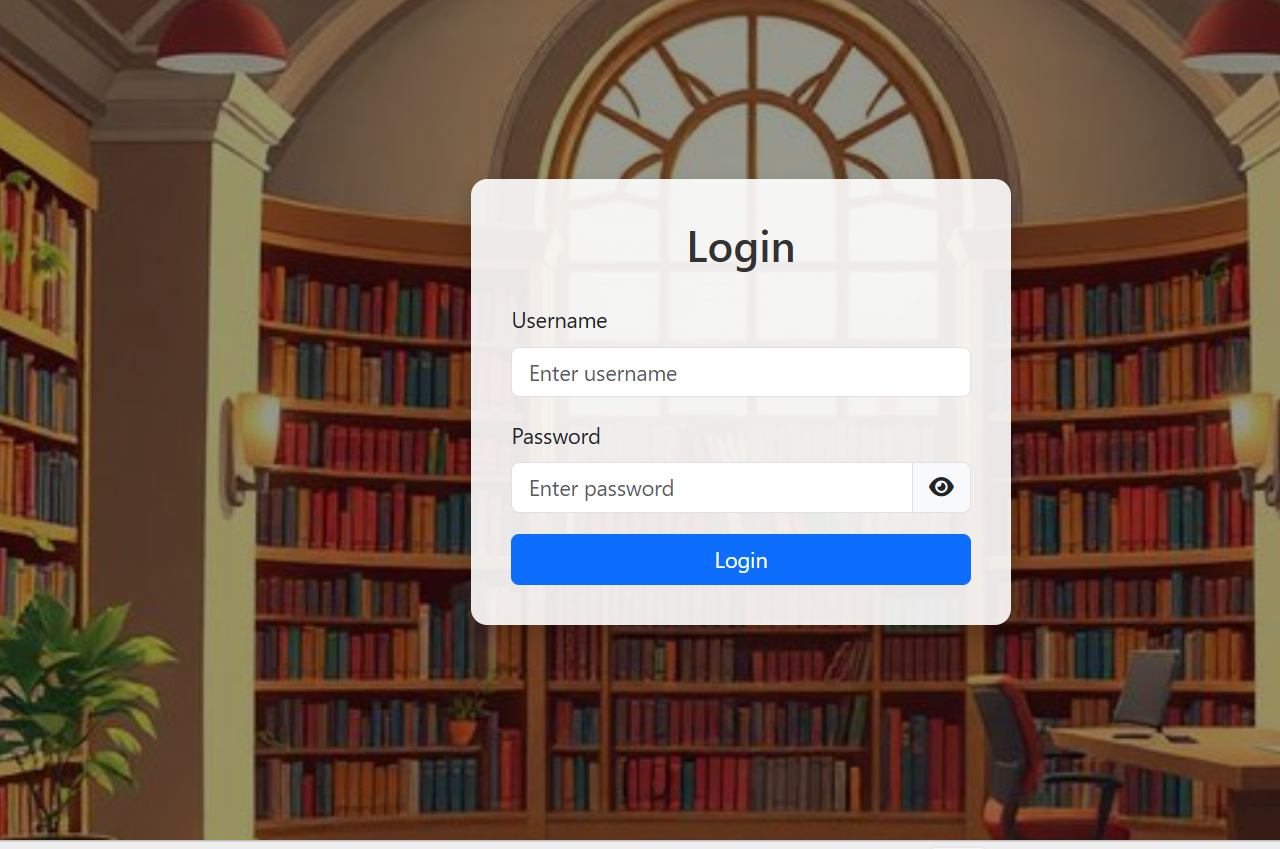




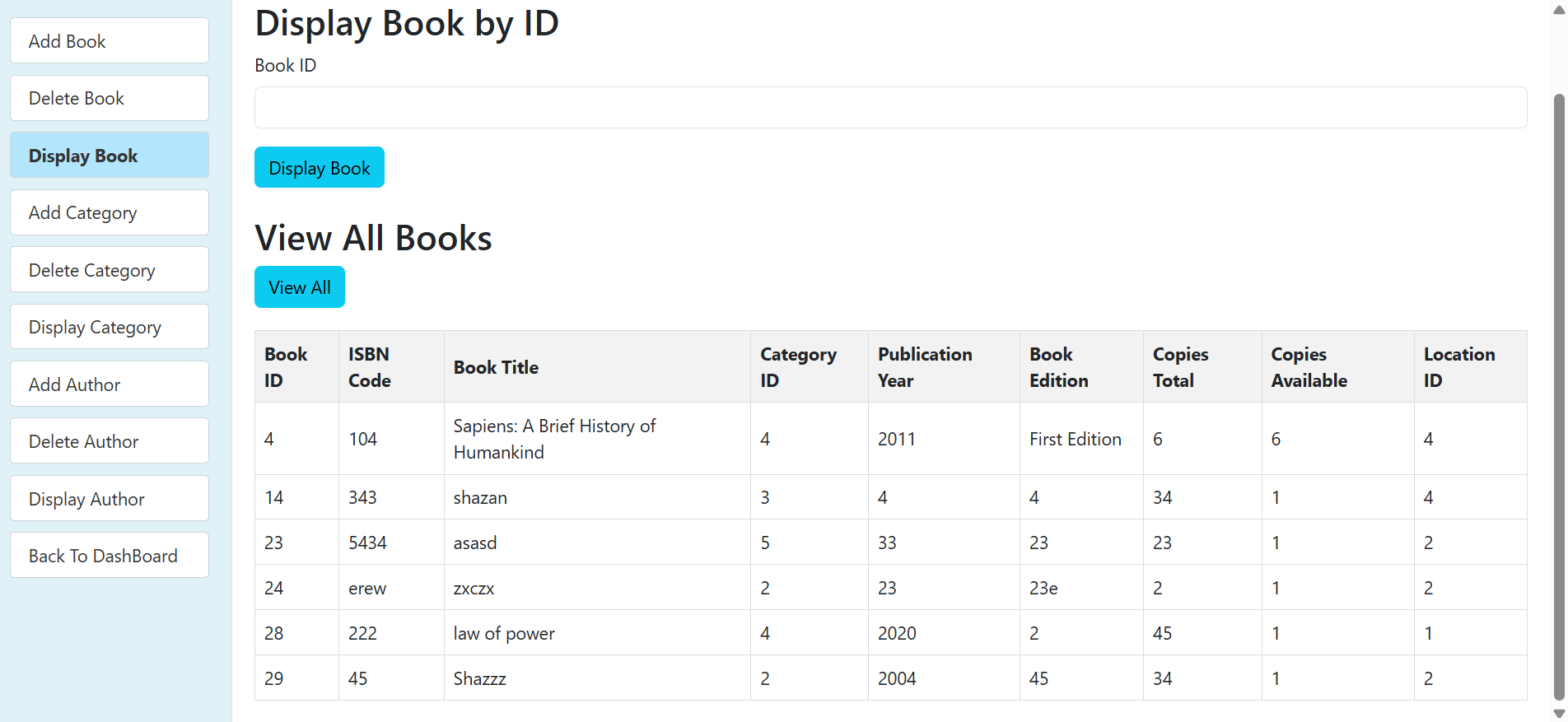
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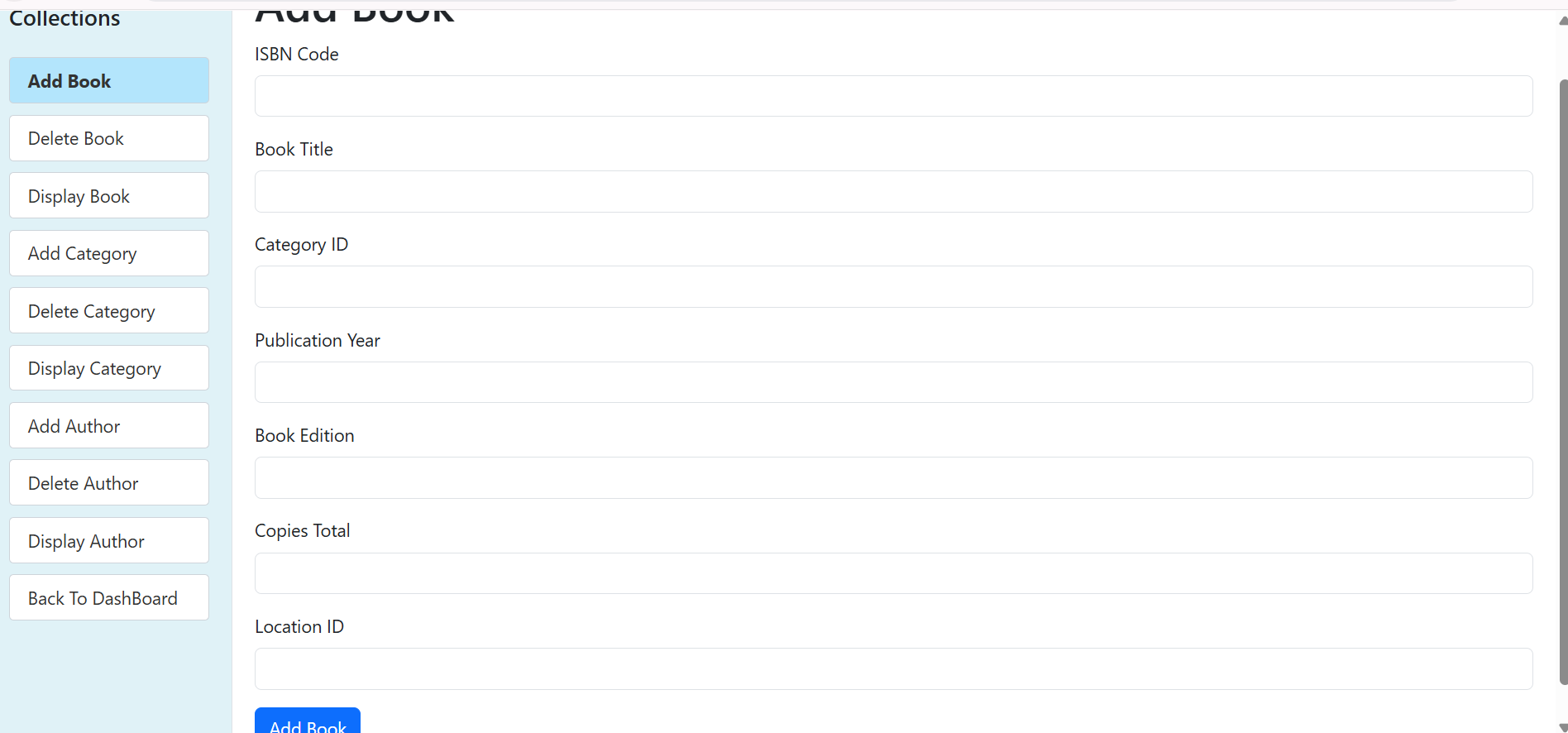


**7b.FRONTEND AND FUNCTIONS :**

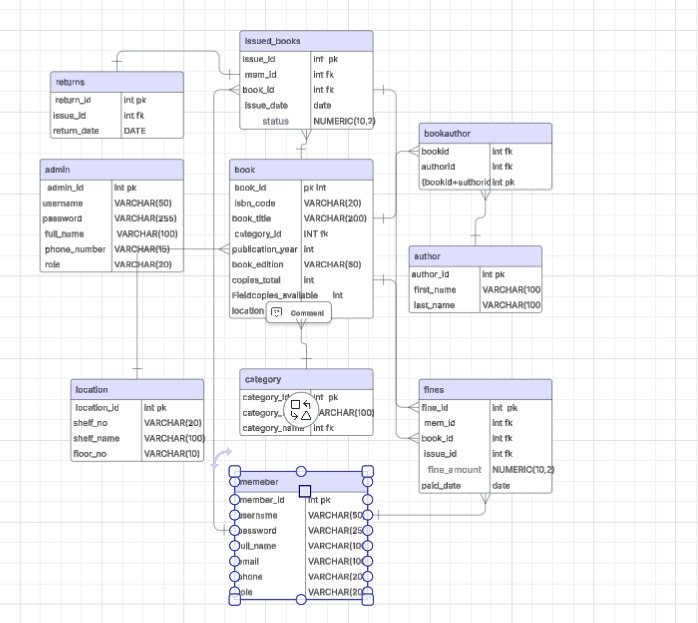








### 8. ERD Diagram

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## THANK YOU