Project Report

Library Management System

Submitted By:

Saifullah Mumtaz (2312397)

Ali Imtiaz (2312103)

Course: Database System (DBS)
Instructor: Sir Abid Ali
Submission Date: 11-06-2025

Project Report

Introduction

Library Management System that simplifies book tracking, member management, and loan processes for seamless library operations.

Project Objective

The main goal of this project is to efficiently manage library operations, including book cataloging, member registrations using a custom-built API for seamless data handling.
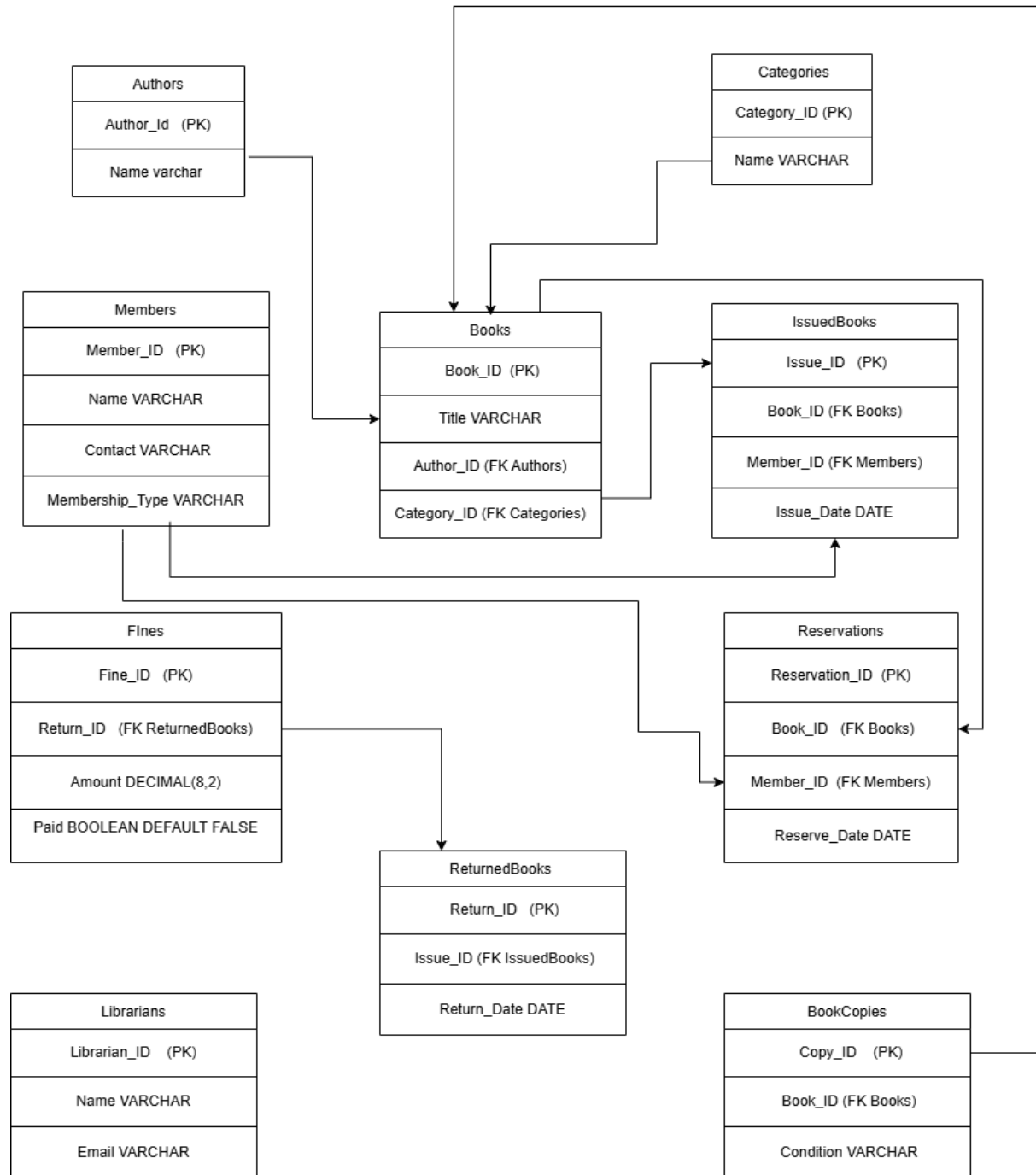
Tools and Technologies

HTML5 & CSS3
- Bootstrap 5.3.2
- JavaScript
- Node.js
- Express.js
- PostgreSQL (Neon.tech)
- Chart.js
- GitHub
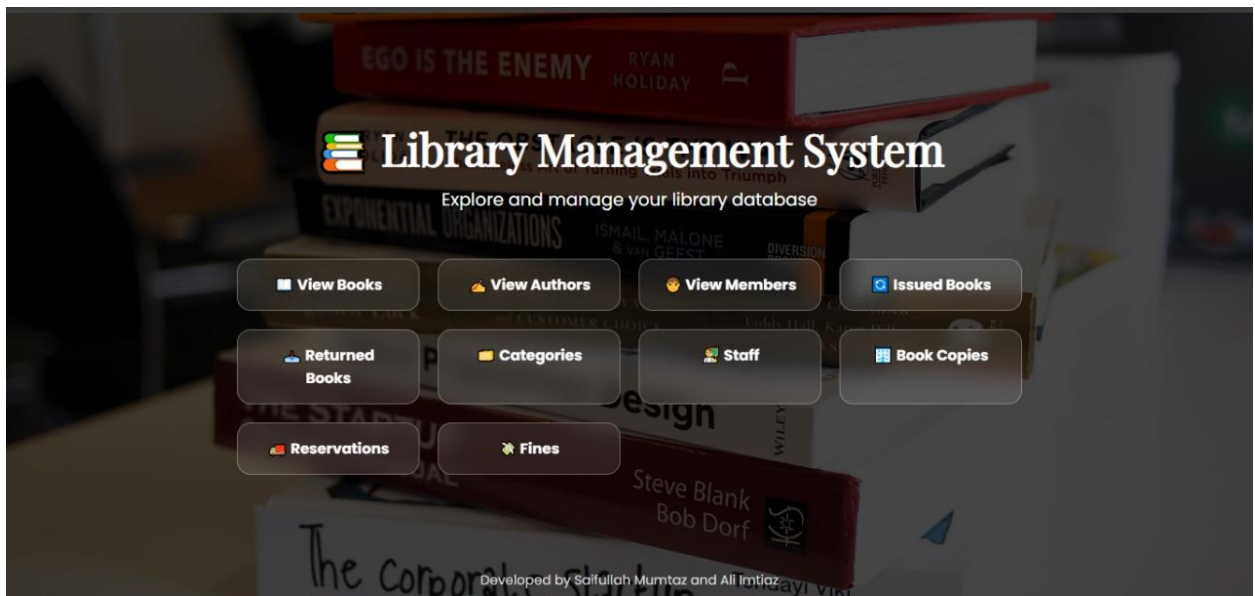- draw.io

Project Report

Database Design

Authors
- Author_Id (PK)
- Name varchar

Categories
- Category_ID (PK)
- Name VARCHAR

Members
- Member_ID (PK)
- Name VARCHAR
- Contact VARCHAR
- Membership_Type VARCHAR

Books
- Book_ID (PK)
- Title VARCHAR
- Author_ID (FK Authors)
- Category_ID (FK Categories)

IssuedBooks
- Issue_ID (PK)
- Book_ID (FK Books)
- Member_ID (FK Members)
- Issue_Date DATE

Fines
- Fine_ID (PK)
- Return_ID (FK ReturnedBooks)
- Amount DECIMAL(8,2)
- Paid BOOLEAN DEFAULT FALSE

Reservations
- Reservation_ID (PK)
- Book_ID (FK Books)
- Member_ID (FK Members)
- Reserve_Date DATE

ReturnedBooks
- Return_ID (PK)
- Issue_ID (FK IssuedBooks)
- Return_Date DATE

Librarians
- Librarian_ID (PK)
- Name VARCHAR
- Email VARCHAR

BookCopies
- Copy_ID (PK)
- Book_ID (FK Books)
- Condition VARCHAR

Project Report

Features Overview

-Responsive design
- API-based data handling
- Chart visualization
- Form insertion

Screenshots

HOME PAGE (index.html)

(user.html)

BOOKS TABLE

Project Report

USER FORM TO INSERT NEW DATA

USER CHART

USER FORM TO INSERT NEW DATA

Project Report

Conclusion

This project enhanced our understanding of database management, system integration, and user-friendly interface design for efficient library operations.

Future Scope

- User Login & Roles (Librarian/Student)

- Admin Control Panel

- Book Management (Add/Edit/Remove)

References
- Bootstrap Docs
- Chart.js Docs
- W3Schools
- Draw.io