Library Management System - SQL Project Report

1. Introduction

This project is a SQL-based Library Management System aimed at organizing and managing library operations such as tracking books, authors, members, and loan records.

2. Abstract

The system includes four main entities: Authors, Books, Members, and Loans. It demonstrates the use of SQL for relational schema design, normalization, and query operations including views and triggers. The database enables overdue book tracking and borrowing analytics.

3. Tools Used

- MySQL Workbench
- dbdiagram.io
- FPDF for report generation

4. Steps Involved in Building the Project

1. Designed an ER diagram involving four tables: Authors, Books, Members, and Loans.
2. Created the normalized schema in MySQL.
3. Inserted sample data for authors, books, members, and loan transactions.
4. Wrote SQL queries for overdue books, borrowed books, and genre-based statistics.
5. Created a view for active loans.
6. Implemented a trigger to limit book copies.

5. Conclusion

The Library Management System project provides a comprehensive demonstration of SQL capabilities in handling real-world data relationships and constraints. It also introduces automation through triggers and simplifies reporting via SQL views.