Project Report

Project Title: Library Management System – Database Design

Introduction:

This project implements a Library Management System using SQL. It tracks books, members, authors, and loan records. The goal is to manage borrowing activities efficiently using structured queries and views.

Abstract:

The system is normalized and includes many-to-many relationships (books ↔ authors) and one-to-many (members → loans). It supports reporting overdue books, borrowing history, and current availability. Triggers simulate due-date notifications.

Tools Used:

- MySQL Workbench
- dbdiagram.io for ERD

Steps Involved:

1. Designed ERD with core entities and relations.
2. Created schema and populated test data.
3. Added views to show borrowed and overdue books.
4. Wrote queries using JOIN, GROUP BY, and HAVING.
5. Created a trigger to simulate due date reminders.

Conclusion:

This project demonstrates strong SQL fundamentals including schema design, normalization, views, triggers, and analytics. It replicates real-world library operations and is suitable for academic or institutional use.