Hospital Management Database

Project Report

Introduction

The Hospital Management Database project was developed to manage essential healthcare records such as patients, doctors, visits, and billing. Hospitals handle large volumes of data, and manual systems often lead to errors and inefficiencies. This database project demonstrates how SQL can be applied to streamline hospital operations, improve accuracy, and enable automated reporting.

Abstract

This project provides a comprehensive hospital management solution using SQL. It includes schema design, stored procedures, functions, triggers, and reporting mechanisms. The system supports patient registration, appointment scheduling, billing, and discharge processes. By integrating automation through stored procedures and triggers, the project enhances both efficiency and data consistency. Reports generated from the database allow better decision- making and tracking of hospital activities.

Tools Used

MySQL – for database creation, queries, stored procedures, and triggers.

MySQL Workbench – GUI client for managing and testing the database.

Steps Involved in Building the Project

1. Designed the schema including Patients, Doctors, Visits, and Bills tables.

2. Inserted realistic sample data to simulate hospital operations.

3. Wrote SQL queries to manage appointments, billing, and status updates.

4. Created a stored procedure (GetTotalBillByName) for patient billing.

5. Implemented a stored function (GetOutstandingBalanceByName) to calculate outstanding balances.

6. Added triggers to automatically update discharge status and bill payment updates.

7. Generated visit and billing reports in Excel and PDF formats for analysis.

Conclusion

The Hospital Management Database project demonstrates the practical use of SQL in healthcare data management. By combining schema design, procedures, functions, and triggers, the project creates a reusable and robust solution for handling hospital operations. Automation improves efficiency, while reporting features support better tracking of patient visits and billing. This project highlights how structured database systems can be applied to real-world healthcare problems effectively.