■ Hospital Management Database Project Report

Prepared By:

Neha Mishra

MSc IT

Introduction

The healthcare sector requires accurate and efficient management of patient records, doctor details, visits, and billing. Manual handling of this data often leads to errors and delays. This project aims to design and implement a Hospital Management Database that ensures secure, fast, and reliable handling of hospital operations such as patient registration, appointment scheduling, billing, and visit tracking.

Abstract

This project demonstrates the design and implementation of a relational database for hospital management using PostgreSQL and pgAdmin. The schema consists of four main entities: - Patients – storing patient details. - Doctors – storing doctor details and specializations. - Visits – recording appointments, reasons, and visit status. - Bills – handling billing, payments, and revenue tracking. The system includes stored procedures for automated billing, triggers for discharge/status updates, and SQL queries for generating appointment, payment, and visit summary reports.

Tools Used

- PostgreSQL – for database design and implementation. - pgAdmin – for database management, query execution, and report generation. - SQL – for schema creation, stored procedures, triggers, and reporting queries.

Steps Involved in Building the Project

1. Schema Design – Created tables for Patients, Doctors, Visits, and Bills with primary and foreign keys. 2. Data Insertion – Inserted sample records for doctors, patients, and visits. 3. Queries – Developed queries to fetch appointment lists, payment reports, and patient billing details. 4. Stored Procedures – Built procedures to automate billing calculations. 5. Triggers – Implemented triggers for discharge events and automatic status updates. 6. Reports – Generated visit-wise and summary reports including total visits, revenue, and pending bills.

Conclusion

The Hospital Management Database successfully demonstrates how healthcare data can be efficiently managed using PostgreSQL. With automated billing, discharge triggers, and reporting features, the system reduces manual workload and minimizes errors. This project highlights the role of database systems in improving hospital operations and ensuring better patient care.