PROJECT REPORT

ON

HOSPITAL MANAGEMENT SYSTEM

SUBMITTED TO

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ABSTRACT:-

The **Hospital Management System** is a terminal-based software application developed using **Core Java, JDBC, and MySQL**. The purpose of this project is to automate the process of maintaining patient records in hospital / clinics. Manual record keeping is time consuming, error-prone, and inefficient.

This system provides a computerized solution to store, update, delete, and retrieve patients-related data efficiently.

INTRODUCTION:-

The Hospital Management System (HMS) is a comprehensive software application designed to manage and automate the administrative, financial, and clinical operations of a hospital. In traditional hospital environments, most processes are handled manually, which leads to inefficiency, data redundancy, and a high possibility of errors.

This project aims to develop a computerized system that simplifies hospital operations by maintaining patient records, doctor details, appointments, billing, medicines, staff information, and user access in a centralized and secure manner.

OBJECTIVES:-

The primary objectives of this project are:

- To provide an efficient and user-friendly hospital management solution
- To maintain accurate patient and doctor records
- To automate appointment scheduling and billing processes
- To manage medicine inventory effectively
- To ensure secure and role-based system access
- To minimize human errors and improve operational efficiency

Problem Statement :

Manual hospital management systems face several challenges such as:

- Time-consuming paperwork
- Difficulty in maintaining large volumes of records
- Inaccurate data entry
- Poor data security
- Inefficient appointment and billing management

To overcome these limitations, an automated Hospital Management System is required.

PROJECT CATEGORY:-

This project belongs to the **Database Management System (DBMS)** category.

It is a terminal-based software application developed using **Core Java**.

JDBC is used to connect Java with **MySQL** database.

The project demonstrates **Create, Read, Update, and Delete (CRUD)** operations.

SYSTEM ANALYSIS:-

System analysis involves understanding the requirements and designing a system that fulfills those needs.

The **Hospital Management System** is designed to manage patients records, appointment, and bills efficiently.

The system is divided into multiple modules to simplify functionality and improve maintainability.

The Hospital Management System is divided into multiple modules, each handling a specific hospital function.

All modules are integrated with a centralized database, ensuring data consistency and security.

MODULES DESCRIPTION:-

Patient Management Module

- Add new patient details
- View patient records
- Search patient by ID
- Delete patient records

Doctor Management Module

- View doctor details
- Search doctor by ID
- Check doctor availability

Appointment Management Module

- Schedule appointments
- Verify patient existence
- Check doctor availability
- View appointment details

Medicine Management Module

- Add new medicines
- Update medicine stock
- View medicine list

Billing Module

- Generate patient bills
- Calculate total charges
- Maintain payment status

Staff Management Module

- Add staff details
- View staff information
- Search staff records

User / Admin Module

- Secure login system
- Role-based access control
- User management by administrator

DATABASE DESIGN:-

The system uses a relational database to store hospital data. Major tables include:

- Patients
- Doctors
- Appointments
- Medicines
- Bills
- Staff
- Users/Admin

Each table is designed with appropriate primary and foreign keys to maintain data integrity.

ENTITY RELATIONSHIP DIAGRAM:-

The ER Diagram represents the relationship among various entities of the Hospital Management System.A patient can have multiple appointments.

- A doctor can attend multiple appointments.

- Each appointment is associated with a bill.

- The admin manages users and staff.

This structure ensures efficient data management and avoids redundancy.

DATA FLOW DIAGRAM:-

The Data Flow Diagram (DFD) illustrates how data flows through the system. It includes:

- Zero Level DFD
- First Level DFD
- Second Level DFD

Advantages of the System :-

- Improved efficiency and productivity
- Accurate and secure data storage
- Reduced paperwork
- Faster data retrieval
- Better patient management
- User-friendly interface

PROCESS LOGIC:-

The system follows a simple process process logic:

1. User selects an operation
2. Input is taken through terminal
3. Data is validated
4. Database operation is performed
5. Output is displayed

PLATFORM USED:-

Hardware Requirements:

- Intel i3 / higher
- 4GB RAM &
  500MB storage

Software Requirements:

- JDK 8 or above
- MySQL server
- Eclipse JDBC
  Driver

IMPLEMENTATION DETAILS:-

The project is implemented using layered architecture**. DAO (Data Access Object)** pattern is used to separate logic.

Prepared Statement is used to prevent SQL injection.

Exception handling ensures system stability.

TESTING:-

Testing ensures that the system works as expected. Unit testing is done for each module. Test cases include adding, updating, deleting, and viewing records.

RESULTS:-

The system successfully manages hospital data. It provides fast data retrieval and secure storage. The terminal interface is user-friendly and efficient.

LIMITATIONS:-

- Terminal-based interface
- Limited user roles
- Requires basic technical knowledge

FUTURE SCOPE:-

- Web-based version
- Mobile application
- Role-based access
- Cloud integration
- Advanced analytics
- Online fee management

CONCLUSION:-

The **Hospital Management System** successfully automates hospital record management. It demonstrates the practical use of **Java, JDBC**, and **MySQL**. The project meets all objectives and provides a strong foundation for future upgrades.

The Hospital Management System provides an effective solution for managing hospital operations digitally. It improves accuracy, efficiency, and data security while reducing manual workload. With future enhancements, the system can be expanded into a complete smart healthcare management solution.

THANK YOU