

**Mini Project-I (ID-202B)**  
**Even Semester**  
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**Hospital Management System**

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# Introduction

- **Hospital Management System (HMS)** is a digital solution designed to manage and automate hospital operations, such as patient records, appointment scheduling, billing, and inventory. Traditionally, hospitals rely on paper-based systems or outdated software, leading to inefficiencies and errors. This system aims to provide an integrated platform that ensures seamless communication between doctors, patients, and administrative staff, ultimately improving the quality of healthcare services.

# Literature Review

- **Hospital Management Systems (HMS)** have evolved from **manual record-keeping** to **digital solutions** that improve efficiency, reduce errors, and enhance patient care. Traditional paper-based systems were inefficient and prone to data loss, leading to the adoption of **Electronic Medical Records (EMR)** and **Electronic Health Records (EHR)**. However, many existing HMS still face challenges in **integration, real-time data sharing, and automation**.

# Literature Review (Contd.)

- Traditional hospital management relied on **manual record-keeping**, where patient data, doctor schedules, and billing details were stored in physical files. However, this method often led to inefficiencies such as **delayed patient processing, misplaced records, and difficulty in retrieving historical medical data**. To address these issues, hospitals started implementing **basic digital solutions**, but many of these systems lacked integration and automation.

# Objective of the Project

- The primary objectives is to **automate hospital processes**, including **patient registration, appointment scheduling, doctor management, billing, pharmacy stock tracking, and report generation**. By replacing manual processes with a **digital platform**, hospitals can **reduce paperwork, minimize human errors, and improve operational efficiency**.

# Technology (Hardware Requirements)

## **. For End Users:**

- Device: PC, Laptop, or Mobile
- Browser: Modern browsers (e.g., Chrome, Firefox, Edge)
- The application is designed to run on any standard device capable of running modern web browsers.

# Technology (Software Requirements)

- **Frontend:** HTML, CSS, JavaScript
- **Backend:** JAVA, MySQL for data storage
- The application is built with web technologies, allowing it to run seamlessly on multiple platforms.
- **Platform used :** VS Code.



# Modules

- **1. Patient Registration Module** – Allows easy registration of patients and maintains their medical history.
- **2. Appointment Scheduling Module** – Enables patients to book and manage appointments.
- **3. Doctor Management Module** – Stores doctor details and schedules patient appointments.
- **4. Billing & Payments Module** – Generates invoices and manages payments.
- **5. Reports & Analytics Module** – Provides detailed hospital performance and financial reports.

# Workflow

1. **User Authentication** :The system allows **patients, doctors, and hospital staff** to log in based on their roles.
2. **Patient Registration** : New patients register through an online form.
3. **Doctor consultation** : Doctors access patient details, add prescriptions, and update medical records.
4. **Prescribed medicines are dispensed** from the pharmacy.
5. **Billing & payments** : After consultation, the system generates a bill automatically.
6. **Reports & analytics** :Hospital administrators generate reports on **patient visits, financial transactions, and doctor schedules**.
7. **Logout** : Users securely log out, and **session management** is handled by **Java servlets and Spring Security** to prevent unauthorized access.

# Reports

- The system provides various reports to help hospital administrators make informed decisions:
- **Daily Reports:** Number of patients treated, doctor schedules, available hospital beds.
- **Financial Reports:** Revenue, expenses, pending payments.
- **Inventory Reports:** Stock levels of medicines, expiry details, restocking alerts.
- **Custom Reports:** Trends in patient demographics, disease patterns, and hospital performance.
- These reports enable **better planning, resource allocation, and decision-making.**

# References

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