

Hospital Management System (HMS)

Project Proposal

Prepared by: Mehdi Talebikatir, 558948

Benyamin Baharizadeh, 560587

1. Introduction

The Hospital Management System (HMS) is a web-based application designed to streamline and automate the administrative and clinical operations of a hospital. It aims to replace manual, paper-based systems with a digital solution that manages patient information, doctor schedules, appointments, and medical records efficiently. The system provides a centralized platform for Admins, Doctors, and Patients (Users) to interact and perform their respective detailed tasks.

Live Project URL: <https://project1.webtlb.it>

2. Objectives

- **Efficiency:** Reduce time spent on manual record-keeping and appointment scheduling.
- **Accessibility:** Allow patients to book appointments and view their medical history online from anywhere.
- **Data Integrity:** Centralize data storage to minimize errors and ensure consistency.
- **Management Control:** Provide administrators with tools to manage doctors, users, and hospital settings effectively.

3. System Architecture & Technology Stack

The project is built using a standard **LAMP** (Linux, Apache, MySQL, PHP) or **WAMP** (Windows, Apache, MySQL, PHP) stack architecture.

- **Frontend:** HTML5, CSS3, JavaScript/jQuery (Bootstrap framework used for responsive design).
- **Backend:** PHP (Core PHP).
- **Database:** MySQL (Relational Database Management System).
- **Server:** Apache (via XAMPP/WAMP or similar environment).

4. Key Features & Modules

The system is divided into three primary modules based on user roles:

4.1. Admin Module

The Administrator has full control over the system.

- **Dashboard:** Overview of system statistics (Total Doctors, Users, Appointments).
- **Doctor Management:** Add, edit, and delete doctor profiles. Manage specializations.
- **User Management:** View and manage registered patients/users.
- **Appointment Management:** View all appointments and their status.
- **Session Logs:** Monitor user and doctor login logs for security auditing.
- **Inquiries:** Manage "Contact Us" queries.

4.2. Doctor Module

Doctors can manage their schedules and patient interactions.

- **Dashboard:** Personal overview of appointments.
- **Appointment Management:** View log of scheduled appointments.
- **Patient Management:** Add and manage patient details.
- **Medical History:** Add and view medical history records for patients.
- **Profile Management:** Update personal details and consultancy fees.

4.3. User (Patient) Module

Patients can access services without visiting the hospital physically.

- **Registration/Login:** Secure account creation and authentication.

- **Book Appointment:** Schedule appointments with doctors based on specialization and availability.
- **Appointment History:** View past and upcoming appointments.
- **Medical History:** Access personal medical records added by doctors.
- **Profile Management:** Update personal information and password.

5. Database Schema Design (ERD Overview)

The database ('hms') consists of several normalized tables to handle data efficiently:

- `admin`: Stores admin credentials.
- `users`: Stores patient registration details (Name, Address, Email, Password).
- `doctors`: Stores doctor profiles including Specialization, Fees, and Contact Info.
- `doctorspecialization`: Lookup table for doctor specializations (e.g., ENT, Cardiologist).
- `appointment`: Links Users and Doctors. Tracks appointment Date, Time, Role statuses, and Fees.
- `tblpatient`: Detailed patient records linked to doctors.
- `tblmedicalhistory`: Medical records (BP, Sugar, Weight, Prescription) associated with patients.
- `userlog` / `doctorslog`: Audit tables tracking login/logout times and IPs.
- `tblcontactus`: Stores messages submitted via the contact form.

6. Future Scope

- **Payment Gateway Integration:** Online payment for consultancy fees.
- **Pharmacy Module:** Integration with hospital pharmacy for medicine inventory and billing.
- **Lab Management:** Managing lab tests and reports.
- **Mobile Application:** Developing a dedicated mobile app for easier access.
- **Telemedicine Integration:** Video consultation features.

7. Conclusion

This Hospital Management System proposes a robust, user-friendly solution to modern hospital administration challenges. By digitizing core processes, it enhances operational efficiency and improves the overall patient experience.