

Project Report: Hospital Management System

Project Title:

Hospital Management System Database and Website Integration

Objective:

Develop a hospital management system to streamline data management and ensure real-time updates between the database and website.

Problem Statement:

Hospitals handle a large amount of data daily, including patient records, appointments, billing, and more. Managing this data manually or through unintegrated systems leads to inefficiencies, errors, and delayed services.

Solution:

The system uses a database with 10 entities connected to a website. This ensures seamless data entry and retrieval, with real-time updates between the web interface and the database.

Key Features:

1. Entities in the Database:

- Appointments: Schedule and track appointments.
- Billing: Manage patient payments and bills.
- Departments: Organize departments and their roles.
- Doctors: Store doctor details, specializations, and schedules.
- Laboratory Tests: Track test results and lab operations.
- Medications: Manage medication inventories.

- Nurses: Store nurse details and shift schedules.
- Patients: Maintain patient records and histories.
- Rooms: Manage room availability and assignments.
- Treatments: Record treatment plans and progress.

2. Integration with Website:

- Developed using PHP for dynamic interaction.
- Real-time updates via PHP MyAdmin.
- Data can be added through the website or directly to the database, and both are synchronized automatically.

Tools and Technologies:

- Database Management: SQL queries via PHP MyAdmin.
- Backend Development: PHP.

Implementation Steps:

1. Database Design:

- Define and create 10 entities in SQL.
- Establish relationships between entities (e.g., Patients linked to Appointments and Treatments).

2. Website Development:

- Design a simple and user-friendly web interface.
- Implement PHP scripts to connect the website with the database.

3. Real-Time Integration:

- Use SQL queries to insert, update, and delete data.
- Ensure the website reflects changes made directly in the database.

4. Testing:

- Test all functionalities, including data synchronization, addition, and retrieval.
- Resolve bugs related to data flow and display.

Results:

- The system simplifies data management for hospitals.
- Real-time updates between the database and website ensure data accuracy and reliability.
- The integration improves efficiency and reduces manual errors.

Challenges:

- Ensuring data synchronization between the website and database without delays.
- Managing relational database complexities for interconnected entities.
- Testing and debugging PHP scripts for smooth integration.

Future Enhancements:

- Add advanced features like reporting and analytics for hospital operations.
- Implement user roles and permissions for enhanced security.
- Include APIs for mobile application integration.