Software Development Methodgies

Project Proposal

Smart Hospital Management System

Group Members

Muhammad Adeel Shahid   **VLI6CQ**

Muhammad Tayyab   **OAE01Q**

Aqeel Ahmad   **KYMPS0**

Faculty of Informatics

University of Debrecen, Hungary

Smart Hospital Management System (SHMS)

1. Description

Healthcare institutions often face challenges in managing patient information, doctor schedules, billing records, and overall operations. Manual management leads to inefficiency, duplication, and errors.
The **Smart Hospital Management System (SHMS)** is a software solution designed to streamline hospital workflows by offering features such as:

- Patient registration and medical history tracking

- Appointment scheduling with doctors

- Doctor management (specialization, availability, assigned patients)

- Billing & invoice management

- Role-based access for different users

- Basic reporting & analytics

This project will demonstrate modern software development practices, from requirement gathering and design to testing and deployment.

2. Objectives

- To develop an easy-to-use system for hospital staff and patients.

- To improve the efficiency of hospital management.

- To maintain patient records securely and digitally.

- To reduce paperwork and manual errors.

- To provide real-time access to hospital data.

3. Scope

The proposed system will include:

Core Features (MVP – Minimum Viable Product)

1. **Authentication & Authorization**

   - Admin, Doctor, Receptionist, and Patient roles

2. **Patient Management**

- Registration, update, medical history tracking

3. **Doctor Management**

   - Profile, specialization, schedules, assigned patients

4. **Appointment Scheduling**

   - Book, reschedule, cancel appointments

5. **Billing System**

   - Generate invoices, track payments

6. **Basic Reporting**

   - Daily patient visits, appointment summaries

Future Enhancements

- Pharmacy & inventory management

- Online consultation (video call integration)

- AI-based health predictions (basic decision support)

- Mobile app version

Tools & Technologies

- **Programming Language:** Java

- **Frameworks :** Spring Boot

- **Database:** MySQL

- **Version Control:** GitHub

- **Methodology:** Agile (Scrum)

- **IDE:** IntelliJ IDEA