

Software Requirements Specification (SRS)

Project Name: HealHub

1. Introduction

HealHub is a smart healthcare management system designed to reduce patient waiting time, optimize hospital resource utilization, and improve coordination between patients, doctors, receptionists, and administrators. The system integrates appointment booking, real-time queue tracking, patient history management, doctor availability, and facility management into a unified digital platform.

2. Feasibility Study

- **Technical Feasibility:** HealHub can be developed using modern technologies such as React/Flutter for frontend, Node.js/FastAPI for backend, and MySQL/PostgreSQL for database management. Real-time queue updates can be implemented using WebSockets or Firebase.
- **Economic Feasibility:** The project requires moderate development investment. Revenue can be generated through hospital subscriptions, appointment commissions, and premium analytics features.
- **Operational Feasibility:** The system is user-friendly and reduces manual work for hospital staff while improving patient satisfaction.
- **Legal Feasibility:** Patient data will be encrypted and stored securely in compliance with healthcare data privacy regulations.

3. Functional Requirements

- Patients shall be able to register and securely log in.
- Patients shall book, reschedule, or cancel appointments.
- The system shall display real-time queue position and estimated waiting time.
- Doctors shall update availability schedules.
- Doctors shall view and update patient medical records.
- Receptionists shall manage bed availability and facility information.
- Admin shall manage doctors, generate reports, and monitor system analytics.

4. Non-Functional Requirements

- **Performance:** System response time shall be less than 3 seconds for normal operations.
- **Security:** All data transmission shall use HTTPS encryption with role-based access control.
- **Reliability:** System uptime shall be at least 99%. Regular automated backups shall be maintained.
- **Scalability:** The system shall support integration of multiple hospitals.
- **Usability:** The interface shall be simple, intuitive, and mobile-friendly.

5. Entity Relationship (ER) Diagram Description

The ER Diagram of HealHub consists of the following main entities and relationships:

Entity	Primary Key	Important Attributes
Patient	Patient_ID	Name, Age, Contact, Medical_History
Doctor	Doctor_ID	Name, Specialization, Availability
Appointment	Appointment_ID	Patient_ID (FK), Doctor_ID (FK), Date, Status
Hospital	Hospital_ID	Name, Facilities, Bed_Availability
Admin	Admin_ID	Name, Role
Receptionist	Receptionist_ID	Name, Shift

Relationships: • A Patient books an Appointment. • A Doctor attends an Appointment. • A Hospital employs Doctors and manages Facilities. • An Admin manages Doctors and generates Reports. • A Receptionist updates Facility and Bed availability.

6. System Context Diagram

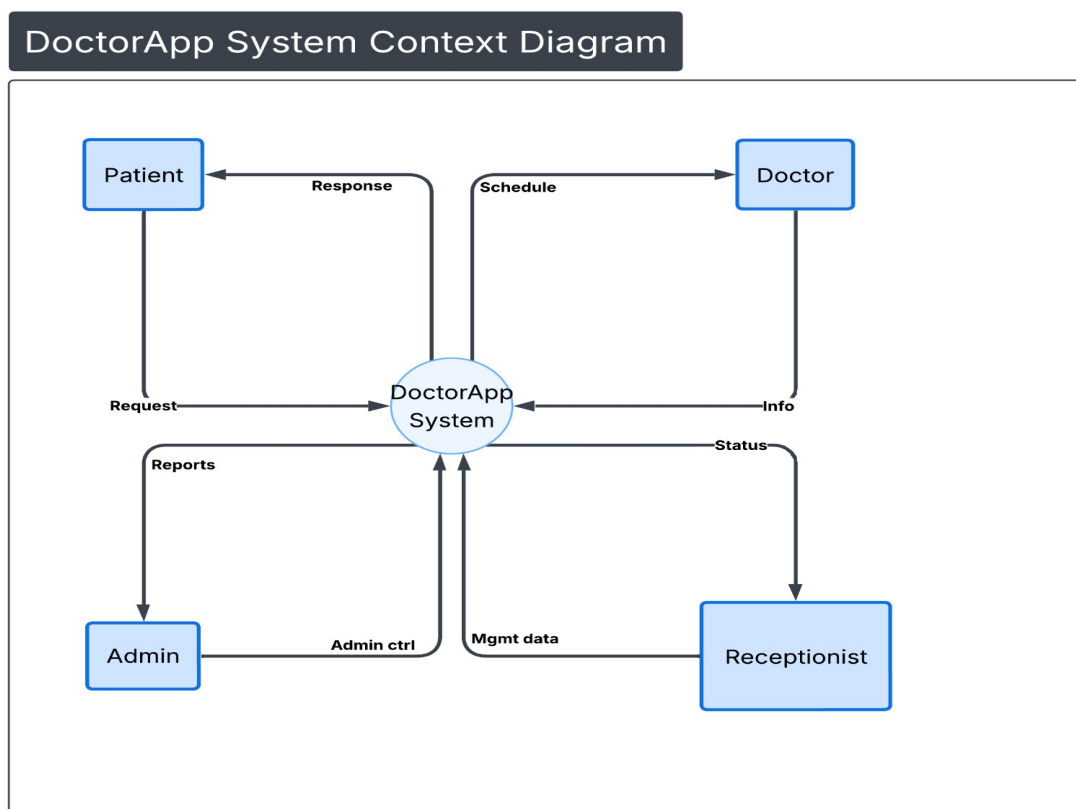
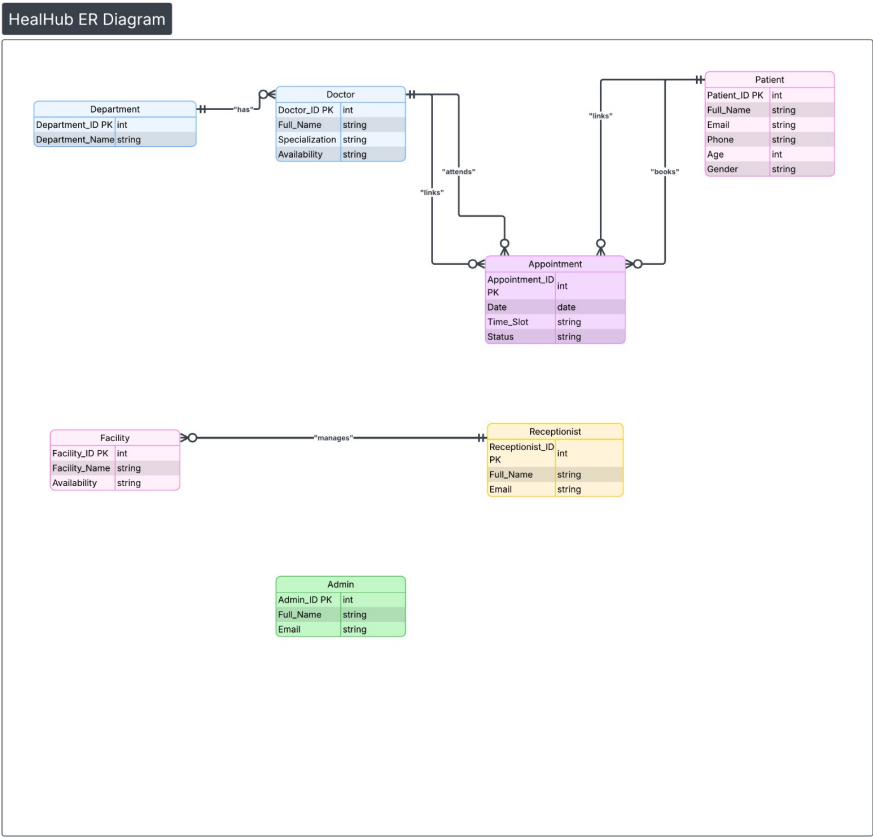


Figure 5.1: HealHub ER Diagram



7. Data Flow Diagram (Level-1)

