Software Requirements Specification (SRS) for Health Hub

Introduction

Purpose

The purpose of this document is to outline the software requirements for the Hospital Management System (HMS). This SRS provides a detailed description of the system's functionality, design constraints, and interfaces to ensure a common understanding among stakeholders. The HMS will facilitate the management of patient information, appointment scheduling and reporting for healthcare providers.

### Scope

The HMS is a comprehensive web-based application intended to streamline hospital operations, including patient management, appointment scheduling. The system will serve various users, including hospital administrators, doctors, nurses, and clerks, by providing them with the tools necessary to perform their tasks efficiently and accurately. This SRS covers the functional, non-functional, interface, and data requirements necessary for the successful development and deployment of the HMS

### Acronyms

* **HH**: Health Hub
* **EHR**: Electronic Health Record
* **UI**: User Interface
* **API**: Application Programming Interface

## **Overall Description**

### Product Perspective

The HMS is designed as a modular web application that integrates various aspects of hospital management into a single platform. It will be developed to replace or complement existing hospital management tools, offering enhanced functionality and a more user-friendly interface. The system will operate as a standalone application or as part of an integrated healthcare IT ecosystem.

Product Functions

The HMS will provide the following core functions:

* **Patient Management**: Register and manage patient details, including medical history, treatment plans, and discharge summaries.
* **Appointment Scheduling**: Schedule, modify, and cancel patient appointments, and manage doctor availability.
* **Reporting and Analytics**: Generate and analyze reports on various aspects of hospital operations, including patient care, financials, and inventory.

User Characteristics

The system will be used by various user groups, each with specific needs and levels of technical expertise:

* **Administrators**: Manage the overall system, including user access, system settings, and high-level reporting.
* **Doctors**: Access patient records, manage treatment plans, and schedule appointments.

Constraints

* **Regulatory Compliance**: The system must comply with healthcare regulations such as HIPAA.
* **Security**: Sensitive patient information must be protected through encryption and secure access controls.

### Assumptions and Dependencies

* **Internet Connectivity**: The system assumes reliable internet connectivity for optimal performance.
* **User Training**: Users are assumed to have basic computer skills; additional training will be provided for system-specific operations.

## Specific Requirements

### Functional Requirements

This section details the specific functionalities the HMS must support, along with the use cases for how users will interact with the system.

#### User Management

* **FR-1**: The system shall allow administrators to create, update, and delete user accounts.
* **FR-2**: The system shall enforce role-based access control, limiting access to specific functions based on the user’s role.

#### Patient Management

* **FR-3**: The system shall allow users to register new patients and update existing patient information.
* **FR-4**: The system shall store and retrieve patient medical records, including treatment history, lab results, and discharge summaries.

#### Appointment Scheduling

* **FR-5**: The system shall allow patients to book, reschedule, or cancel appointments.
* **FR-6**: The system shall provide a calendar view for doctors and staff to manage appointments.

#### Reporting and Analytics

* **FR-11**: The system shall generate customizable reports on patient data, financials, and inventory.
* **FR-12**: The system shall provide data analytics tools to identify trends and insights from hospital operations.

### Non-Functional Requirements

* **Performance**: The system should respond to user actions within 2 seconds under normal operating conditions.
* **Scalability**: The system must support up to 500 concurrent users without performance degradation.
* **Security**: Data must be encrypted during transmission and at rest, and access should be controlled through strong authentication mechanisms.
* **Usability**: The system should provide an intuitive, user-friendly interface that requires minimal training for new users.
* **Reliability**: The system must have an uptime of 99.9%, with failover mechanisms in place to handle unexpected outages.

### Interface Requirements

#### User Interface

* **UI-1**: The system shall provide a web-based interface accessible from modern browsers (Chrome, Firefox, Safari).
* **UI-2**: The interface should be responsive, supporting access from desktops, tablets, and smartphones.

#### Software Interfaces

* **SI-1**: The system shall integrate with existing EHR systems via API for seamless data exchange.
* **SI-2**: The system shall support integration with third-party billing and payment gateways.

#### Communication Interfaces

* **CI-1**: The system shall support sending email for appointment reminders.

### Data Requirements

* **DR-1**: The system shall store all patient, appointment, billing, and inventory data in a relational database.
* **DR-2**: Data backups shall be performed daily to prevent data loss.
* **DR-3**: The system shall comply with data retention policies as mandated by healthcare regulations, ensuring that patient data is stored securely for the required duration.

## **Patient Sign-Up**

Top of Form

NameEmail

Phone Number

Username

Password

Date of Birth

Gender

Medical History (Optional)

Emergency Contact (Optional)

Address

Bottom of Form