Software Requirements Specification
for
Hospital Management System

Prepared by

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Contents

Chapter 1

Introduction

Now a days most people with diseases are facing various problems selecting apparent doctor/Specialist. To find cure or to consult doctors patient faces dilemma. As we are entering into modern days of internet we think a responsive and informative hospital management system should be introduced to provide proper medical services online.

1.1   Purpose

Our purpose for the "Hospital Management System" is to provide patient with proper guideline in selecting doctor/specialist in regards of their symptoms. To make the process of taking appointments from doctors more easier and hassle free. Patient will be provided with the flexibility of scheduling and doctors to choose for. This web application will provide various medical services i.e guideline to select doctors, list of doctors department wise, online appointment , re scheduling of appointments etc. The web application will also store patients consultations records and provide information to the future consultants.

1.2   Intended Audience

- Software Developer
- Quality Assurance/Testers
- Project Managers

1.3   Intended Use

- **Software Developers**:
  The development team responsible for building the web application relies on the SRS to gain insights into the system's requirements, functionalities, and constraints. It guides them throughout the development lifecycle, ensuring that the final product aligns with initial expectations. It also gives them idea about which part of the project is more important, which part is more complex etc.

- Quality Assurance/Testers:

QA analysts and testers use the SRS to test the software as per requirements. By referring to the documented requirements, they can verify that the system functions as intended and meets the specified criteria for performance, reliability, and usability.

- Project Managers:

  Project managers use the SRS to establish project timelines, allocate resources, and monitor progress throughout the development process. It helps them ensure that the project remains on track and that deliverables meet the specified requirements and quality standards.

1.4 Product Scope

Welcome to our hospital appointment platform, where you can effortlessly schedule appointments while empowering administrators with streamlined management tools—all in service of prioritizing health through easy doctor selection accompanied by confirmations. Together, let us revolutionize healthcare experiences for patients and providers through convenient and coordinated care.

Benefits of this website:

For Patients:

1. Instant Messaging: Patients can send messages to the hospital without creating an account, ensuring quick communication without barriers.
2. Full Login/Signup integration: Users can create accounts with complete login/signup features, enabling personalized
   access and secure interactions.
3. Appointment Scheduling: Patients can set appointments by selecting the healthcare department and available doctors, facilitating tailored healthcare experiences.
4. Flexible Dates: Patients can select convenient dates for their appointments, accommodating their schedules and preferences seamlessly.

For Admins:

1. Pending Appointment Management: Admins can efficiently handle pending appointment requests, approve or decline them as needed, ensuring smooth patient flow.
2. Doctor Directory: View comprehensive lists of all doctors associated with the hospital, including their specialties, qualifications, and availability.
3. Add New Doctors: Admins have the capability to easily add new doctors to the system, including their profile information and scheduling preferences.
4. Admin Management: Grant access and privileges to new admins, manage existing admin accounts, and ensure secure and authorized access to administrative features.
5. Instant Message Monitoring: Admins can view instant messages sent by patients, facilitating prompt communication and addressing inquiries or concerns.

Objectives of this website:

1. Allow patients to see hospital services and create appointments from their home at ease.
2. Allow admins a user-friendly environment to allow them to manage their duties.

1.5 Risk Definition

1. Data Breach: Unauthorized access to sensitive patient information, risking privacy breaches and legal liabilities.
2. Service Interruption: Disruptions in website functionality, affecting appointment scheduling and hospital operations.
3. Miscommunication: Potential misunderstandings in patient-admin messaging, impacting appointment accuracy and satisfaction.
4. Unauthorized Access: Risk of unauthorized individuals gaining entry to administrative controls or patient data, compromising security.

5. Regulatory Compliance: Failure to comply with healthcare regulations, leading to legal consequences and penalties.

Chapter 2

Overall Description

Our goal is to provide an intuitive web application that will enable users to manage all routine hospital tasks, including scheduling, rescheduling, and canceling appointments as well as maintaining both doctor and patient data. This is a straightforward but useful idea that can make doctors' and patients' life easier.

2.1 User Classes and Characteristics

The application aims to help patients, doctors and admins to keep a clear record of their medical history, appointments, personal records. This application is meant to be used by

- 1.The user can be anyone who is sick and needs medical care. (Fixed this line)
- 2.User can be any existing patient
- 3.User can be an Administrator

2.2 User Needs

This website will be used by users to arrange appointments and communicate with doctors. Additionally, users who wish to monitor their medical records can register as patients. Through the website, users may also send messages without first having an account. Additionally, the Administrator can add or examine doctors' information in the database, as well as reschedule or cancel any appointment.

2.3 Operating Environment

Operating environment for the Hospital management system is as given below.

• Operating system: Any Android/iOS/Windows device equipped with a browser

• Database: MongoDB.

• Platform: Java Script, MERN Stack Framework (MongoDB, Express, React, NodeJS).

2.4   Constraints

- Website needs to be built with Java Script.
- The website must be dynamic and reactive depending on devices.
- Project must be completed within 3 months

2.5   Assumptions

- Users is literate in English.
- Users have devices that support browsing and internet connectivity.
- Users have a stable internet connection.
- Users can operate browsers.

Chapter 3

Requirements

3.1 Functional Requirements

1. **As a** user

    I want to compare my illness symptoms with some common illness symptoms online to get an idea about my symptoms so that, I can decide What to do afterwards.

Confirmation

- User has to answer some questions in dropdown options mostly as "YES/NO" format regarding common syntoms.

- If the symptoms matches any of the common illness given by user the system will alert the user and will suggest to order primary treatment, useful medicines online.

- If the symptoms doesn't match, the system will notify the user that his/her symptoms doesn't match with any of the common illness.

2. **As a** user

    I want to appoint a doctor depending on my illness.

- User has to put patients First name, Last name, Age, Email, Mobile Number, NID number/Passport number/Birth Certificate number, Gender, Apoointment date, Selecter Doctor and house address to Process.

- User have to choose an operation from a dropdown menu.

- User have to select preference of departments of his appointment(ex:Orthopedics)

- User will get the confirmation as email/mobile text.

3. **As a** user

    I want to ask questions without facing authentication process in case of an emergency.

- User has to fill a general form that consist only his name, email, contact number and the desired message he/she wants to ask.

- User don't have to follow any of the authentication process.

- User will get a separated form in the homepage where he can directly ask any questions or query he have.

4. As a user

    I want to have secured website where authentication is the first priority

Confirmation

- User have to login/ follow authentication process to access to other functionalities.

- New users have to do Sign-Up/ Registration for the first time of authentication.

- User have to follow a form where he has to fill his name , email, gender, DOB, and a strong password.

5. **As a** user

   I want to have a Rescheduling/Cancellation:

- Users should be able to reschedule or cancel their appointments within a certain timeframe before the scheduled appointment.
- The system should handle rescheduling and cancellation requests, updating the appointment details accordingly.
- Notifications should be sent to both the user and the doctor in case of rescheduling or cancellation.

6. **As a** user

   I want to have Doctor Availability:

- It should be possible for doctors to customize the system with their availability schedule.
- Appointments should only be made by users during the doctor's open hours.

7. **As a** user

   I want to have Patient Record Management:

- Appointment histories and medical records for patients should be kept on file by the system.
- Only authorized individuals should have access to patient records, which should be securely safeguarded.

8. **As a** user

   I want to have Payment Processing (if applicable):

- If there are fees associated with appointments, the system should support payment processing.
- Users should be able to make payments securely through the system using various payment methods.

9. **As a** user

   I want to have Language and Accessibility:

- The system should support multiple languages to accommodate users from diverse backgrounds.
- It should also be accessible to users with disabilities, adhering to accessibility standards.

10. **As a** user

    I want to have Security:

- Robust security measures should be implemented by the system to safeguard private user data, including medical records and personal information.
- To guarantee that only authorized users have access to the system's functionalities, user authentication and authorization should be implemented.

3.2   Non-Functional Requirements

Response time:

The system should respond to the users commands within a specific time .

Availability:

The system should be online 24/7 to ensure proper service to user

Access control:

The Role based access control must ensure that users have access to their specific role assigned.

Data Protection:

Database should be secured and protected from unauthorized access.