Software Requirements Specification

for

HEALTH MANAGEMENT SYSTEM

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Table of Contents

1 Introduction

Welcome to the Software Requirements Specification (SRS) document for the Health Management System, a web-based application that enables users to manage their medical history and prescription details conveniently. The system provides a user-friendly interface for patients to register, log in, and view their medical information securely.

1.1 Purpose

The purpose of the Health Management System is to provide a convenient and secure platform for users to manage their medical information, including their medical history and prescription details. The system aims to simplify the process of accessing and tracking medical information, enabling users to make informed decisions about their health. The system's primary goal is to enhance patient care and improve the quality of healthcare by providing timely and accurate information to patients and healthcare professionals.

1.2 Product Scope

The scope for health management system is huge as it would help benefit various doctors, hospitals, pharmacies, etc. It can do so in the following ways.

- Patient management: A health management system can help hospitals manage their different patients. It can help them keep track of their health and related issues.
- Disease management: It can help patients see what diseases they have had in the past and what are they suffering with currently. It can also help them take precautionary measures by telling them which diseases they are at risk of.
- Medicine management: The software can provide the patients with which medicines they have been prescribed to along with how much and when to take the medicine.

The product scope of the Health Management System aims to provide users with a comprehensive platform to manage their medical information conveniently and securely. The system's functionalities aim to improve patient care and enhance the overall quality of healthcare.

2 Overall Description

The Health Management System is a web-based application designed to simplify the process of accessing and tracking medical information, providing users with a convenient and secure platform to manage their medical history and prescription details. The system allows users to register and log in to the system, manage their medical history by adding information about past illnesses, surgeries, and allergies, and manage their prescribed medications by providing a platform to view the details of their prescription, including the name of the medication, dosage, and duration. Users can set reminders for their medication schedule, manage their profile information, and ensure the security and privacy of their data. The system aims to enhance patient care and improve the quality of healthcare by providing timely and accurate information to patients and healthcare professionals.

2.1 Product Perspective

The product perspective of health management system software engineering focuses on the system’s structure, behavior, and interfaces

with external entities. The perspective considers the system's overall architecture, components, and interactions with users and other systems.

From a product perspective, the health management system software engineering includes the following elements:

- User Interfaces: The system should provide intuitive and user-friendly interfaces for patients and doctors to access and manage their records. This can include web interfaces, mobile applications, and desktop applications.
- Application Architecture: The system should be designed with a well-defined architecture that allows for scalability, extensibility, and maintainability. This can include the use of serviceoriented architecture (SOA) or microservices architecture.
- Database Management: The system should include a robust database management system to store and manage customer data.
- Security: The system should be designed with robust security features, including encryption, secure authentication, access control, and compliance with regulatory requirements.

Overall, the product perspective of health management system software engineering focuses on ensuring that the system is well-designed,

scalable, and secure, with intuitive user interfaces.

2.2 Product Functions

System will support following operations on all it's interfaces

- Sign Up
- Login
- View Medical History
- Medicines prescribed

2.3 User Characteristics

When designing an online bank management system, it is important to consider the characteristics of the system's users. Some of the key user characteristics that should be considered during the software engineering process include:

- Technical expertise: Users of an health management system can include doctors as well as patients with varying levels of technical expertise. The system should be designed to accommodate users with different levels of technical skill and ensure that the user interface is intuitive and easy to use. • Demographics: The demographics of the user base can also influence the design of the system. For example, the system should be designed with accessibilityfeatures for users with disabilities and with consideration of different languages and cultures.
- Security awareness: Users of an health management system should be aware of the risks of cyber threats and the importance of keeping their accounts and personal information secure. The system should be designed to educate users on security best practices and

encourage them to use strong passwords, multi-factor authentication, and other security measures.

Overall, the design of an health management system should considerthe characteristics of its users to ensure that the system is intuitive, secure,and meets their needs. By considering these characteristics during the software engineering process, the system can be optimized for the user experience, leading to higher adoption rates and customer satisfaction.

2.4 Constraints

When developing a website for a health management system, there are several constraints that should be considered during the software engineering process. Some of the key constraints include:

System should support all major browsers like Chrome, Opera, Microsoft Edge. Website interface should adapt to handheld device screens.

Health management systems deal with sensitive medical information and require robust security measures to protect against cyberthreats. The website should be designed to be highly secure, including the use of encryption, secure authentication, and access control.

The website should be designed to comply with various regulatory requirements, such as data protection regulations and privacy laws. The website should also comply with industry standards.

By considering these constraints during the software engineering process, the website can be optimized for user experience, security, and compliance, leading to higher customer satisfaction and adoption rates.

2.5 Assumptions and Dependencies

The system may assume that third-party integrations, such as payment gateways or fraud detection software, are available and compatible with the system.

The system may assume that all necessary data sources are available and accessible, such as customer account data.

It is important to note that these assumptions may change over time, and the Health management system should be designed to adapt to changing dependencies and requirements. Regular testing and updates should be conducted to ensure that the system remains secure, compliant, and optimized for user experience.

3 External Interface Requirements

These external interfaces allow the system to interact with other systems and services, including:

- Customer support systems: The Health management system should provide an interface for customers to contact support and get help with any issues they may encounter.
- Mobile devices: Many customers access health management systems through mobile devices. The system should be designed to be compatible with mobile devices, providing a mobile optimized user interface and mobile-specific features.

By integrating with other systems and services, the system can provide a seamless and comprehensive experience for customers, leading tohigher adoption rates and customer satisfaction.

3.1 Other interfaces and operations

System will provide another interface internally which can only be accessed by doctors to support operations like updating account details.

4 Use Cases

4.1 Use Case Diagram

A use case diagram is a type of diagram in software engineering that describes the interactions between actors (users or external systems) and the system under consideration. It is a high-level diagram that illustrates the system's functionality from a user's perspective.

4.1.1 Register/Signup

Actors:

- Patients

- Doctor

Preconditions:

- The patient does not have a user account.
- The Health management System is operational.

Postconditions:

- The patient has a user account and can log intothe system.

Flow:

- The patient opens the health management system.
- The system displays the sign up page. • The patient enters theirpersonal information, including their name, address, contact information.
- The patient creates a user ID and password.
- The system verifies the information provided by the patient and creates a user account for them.
- The system displays a confirmation message and prompts the patient to log into their account.

Special Requirements:

- The sign up process should be secure and use encryption to protect the patient's sensitive information.
- The system should verify the patient's identity and prevent fraudulent account creation.

4.1.2 Login

Actors:

- Patient
- Doctor

Preconditions:

- The patient has a valid user account.
- The health management system is operational.

Postconditions:

- The patient is logged into the system and can access theiraccount information.

Flow:

- The patient opens the health management system.
- The system displays the login page.
- The patient enters their user ID and password.
- The system verifies the user ID and password.
- If the user ID and password are valid, the system logs the patient into their account and displays their account information.
- If the user ID and password are not valid, the system displays an error message and prompts the patient to enter their user ID and password again.

Special Requirements:

The login page should be secure and use encryption to protect the patient's sensitive information.

- The system should have mechanisms in place to prevent brute force attacks and protect against unauthorized access.

4.1.3 View

medical

history

Actors:

- Patient

Preconditions:

- The Patient is logged into the health management system.

- The patient has a valid account.
- The Health management system is operational.

Postconditions:

- The patient's medical information and history can be seen.

Flow:

- The patient selects the "View medical history" option on the health management system.
- The system prompts the patient to select between body details and disease history.
- Upon selecting the body details option the patients can see his details like height, weight, blood group, BMI, etc.
- Disease history shows the current and past diseases along with the diseases the patient is at risk of.

4.1.4 Medicines prescribed

Actors:

- Patient
- Pharmacist(optional)

Preconditions:

- The patient is logged into the health management system.
- The patient has a valid account.
- The Bank Customer has some medicines prescribed.
- The health management system is operational.

Postconditions:

- The medicines prescribed to the patient along with how much and when to take them can be viewed.

Flow:

- The patient selects the " Medicines prescribed" option on the health management system.
- The system shows the medicines prescribed to the patient along with how much and when to take them.

4.2 Use Case Relationships:

The view medical history use case is related to the Login use case, as the patientmust be logged into the system to access their account information. The view medical history use case is also related to the medicines prescribed use case, as the medicines prescribed would be based on the diseases the patient is currently suffering.

5 Non-Functional Requirements

Non-functional requirements for a health management system can include:

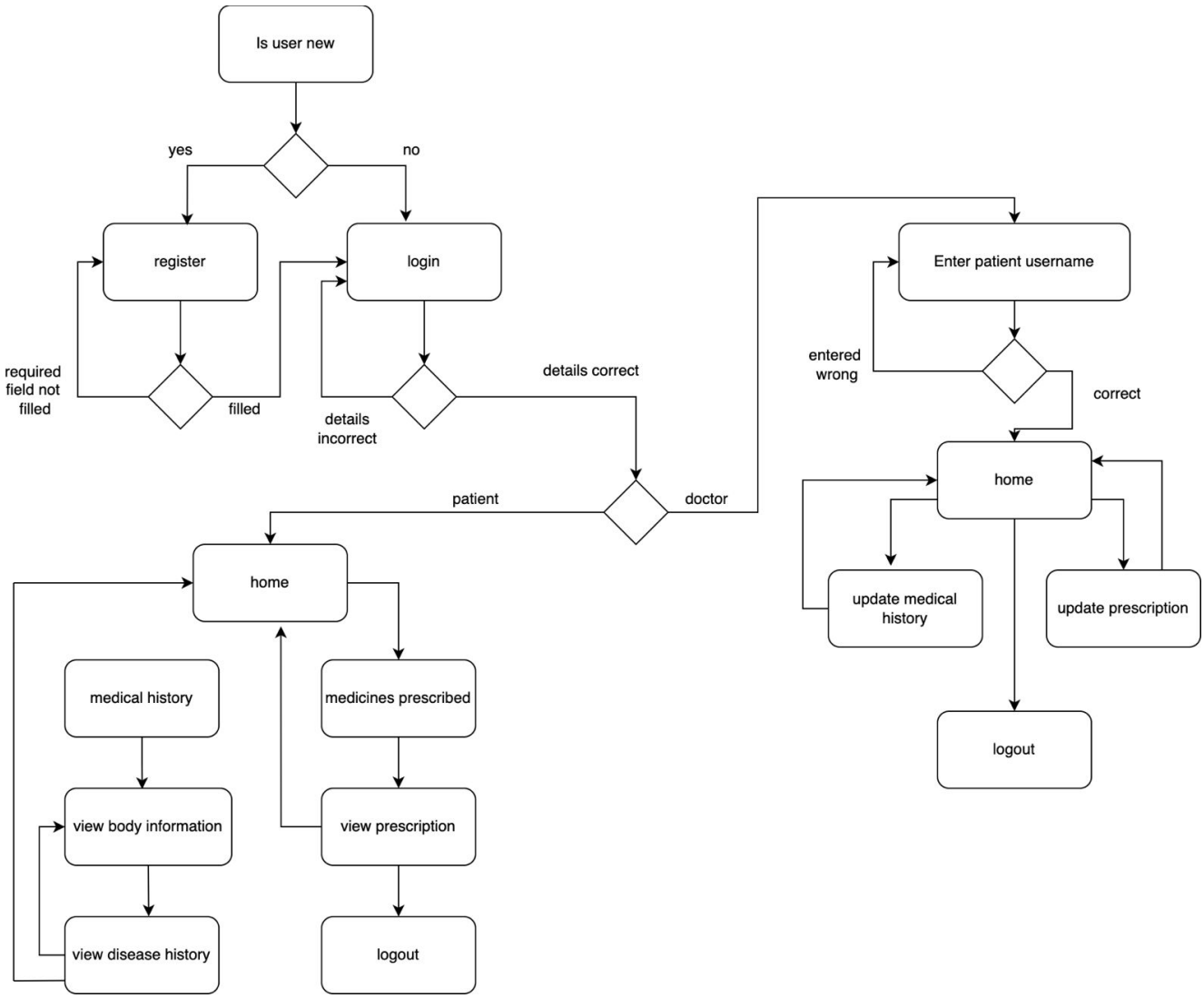
- Security: The system must provide high-level security measures to protect sensitive data and prevent unauthorized access to accounts and transactions. This includes implementing encryption, secure authentication, access controls, and auditing capabilities. • Performance: The system must perform efficiently and provide fast response times for users. This includes ensuring that the system can handle high volumes of transactions and traffic, and that it is reliable and available at all times.
- Usability: The system must be user-friendly and easy to navigate for all types of users. This includes providing clear and concise instructions, user-friendly interfaces, and easy-to-understand error messages.
- Scalability: The system must be able to scale and adapt to changing business requirements, new technologies, and future growth.
- Maintainability: The system must be easy to maintain and update over time. This includes providing clear documentation, modular design, and flexible architecture. • Accessibility: The system must be accessible to all types of users, including those with disabilities. This includes implementing accessibility standards and providing assistive technologies such as screen readers.

- Compliance: The system must comply with regulatory and legal requirements such as data protection laws. • Interoperability: The system must be able to integrate with other systems and services.

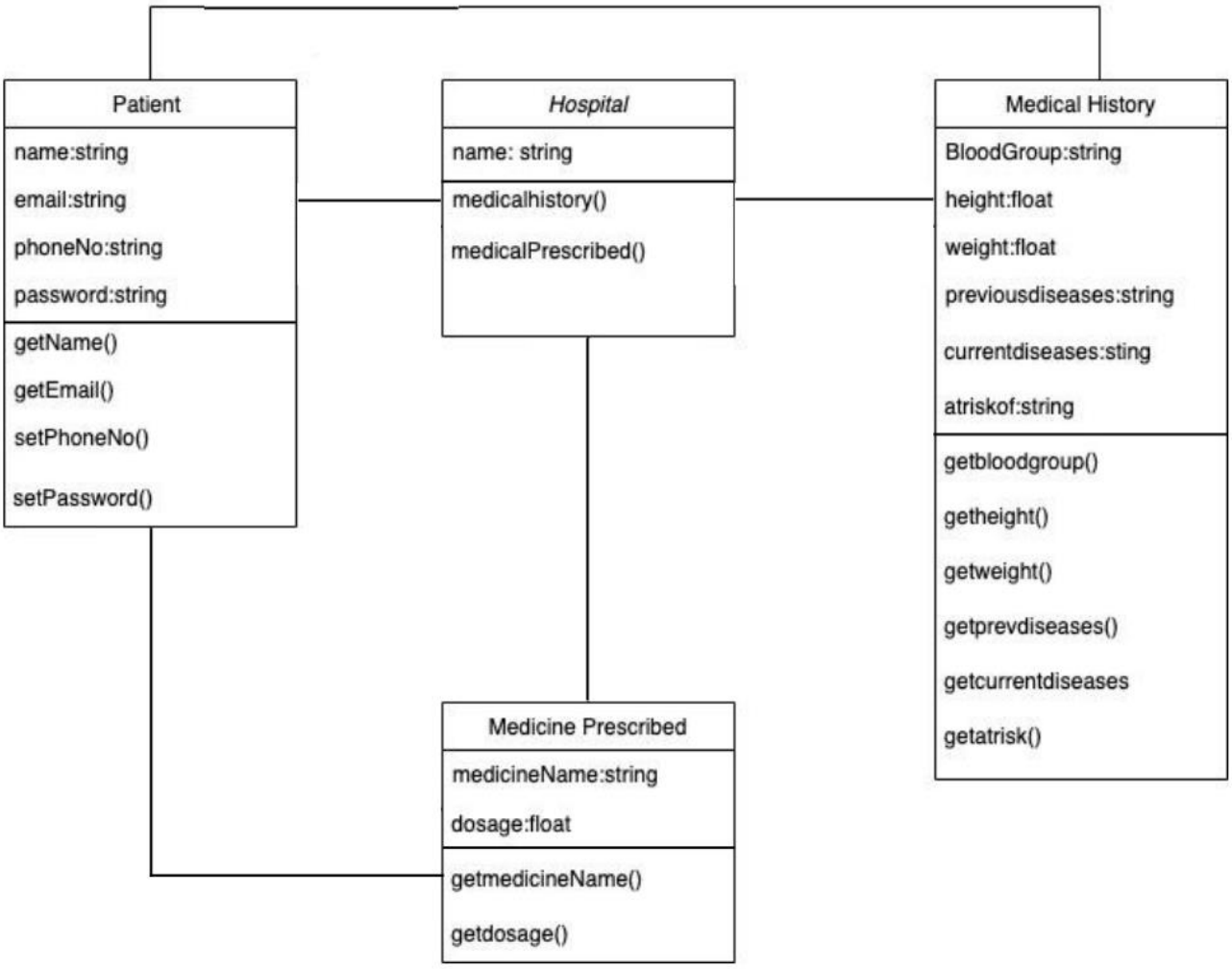
Overall, non-functional requirements are critical to the success of a health management system as they ensure that the system meets the necessary standards for performance, security, and usability

6 Data Flow Diagram

6.1 Activity Diagram



6.2 Class Diagram



7 Sequence Diagram