Software Requirements Specification

For

Hospital Management

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Contents

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CHAPTER 1

Introduction

At present, every people are using the hospital for different types of treatment. We cannot think about our health treatment without a hospital. Because it gives solutions and safety from different kinds of diseases. In addition, it ensures a safe environment for the people who are not safe in their houses because of various types of infectious diseases. Sometimes going to the hospital for a patient is not possible. In that case, if some medical services are provided online, it will be helpful for simple patients as well as emergency patients.

1.1 Purpose

To create a "Hospital management system" Web Application for increasing hospital facilities for a patient. For example, searching hospitals, reserving hospital beds, taking doctor's appointments, sharing personal experiences in a forum, creating online doctor's consultancy for the emergency patient in various cases. In brief, it is an online-based platform where different kinds of services have been provided, such as doctors, hospitals, ambulances, and oxygen to get help according to their needs.

1.2 Intended Audience

• Developers

• Project Testers

• Marketing Department

1.3 Intended Use

• **Developers:**

Developers can use this SRS to quickly grasp what the project is about, where they should focus their efforts, and improve. They can also see if there is room to add new features or functions for any upgrade.

• **Project Testers:**

Testers can use this SRS to do requirements-based testing on software. The SRS will help organize testing because testers will know where to look and what problem or bug to seek based on SRS.

• **Marketing Department:**

The marketing department can use this SRS to understand what they want to advertise and what characteristics of the project will benefit clients or users.

1.4 Product Scope:

This web-based application is for any patient. We will develop this web-based application from scratch. This application will also have some features that will help the patients who want to get a hospital service.

Benefits of this web application:

- Users can admit themselves from anywhere.
- Users can set an appointment with the doctor according to the doctor's schedule.
- Users can order medicine online by verifying their prescriptions.
- Users can get advice from the doctor online.
- Service providers can also use this application to update their information and services.

The objective of our web application is to:

- Give online health service to any patient.
- Give online health advice to any patient.

Goals:

- Our goal is to ensure that, no-one would die in need of a health service.
- We are providing an online service so that users can take instant health care.
- Users can take health tips from online doctors that would save both parties time.

1.5 Risk Definition:

- An unstable network may disrupt appointments of doctors, booking hospital beds, and ordering of medicine.
- Too many server requests are not controllable for the server.
- Too many users at the same time can cause server traffic.

CHAPTER 2

Overall Description

The purpose of the project entitled "HOSPITAL MANAGEMENT SYSTEM" is to computerize the Front Office Management of Hospital to develop user-friendly, simple, fast, and cost-effective software. It deals with the collection of patient information, diagnosis details. It will be a web-based application that will provide convenient medical services to the users, who are patients. It will be a common platform for service takers (patient or candidate) and service providers (doctors, hospitals, ambulances, and oxygen providers). We are building a new product from scratch.

2.1 User Classes and Characteristics

The supposed users of a hospital management system may be generally divided into three categories:

- 1. Hospital administration
- 2. Doctors and other authorized employees (oxygen and ambulance providers)
- 3. Patients (Any sick people)

Each category should have a separate set of rules for clearance and restrictions within the system. This set depends on a user's role and varies from unrestricted access granted to the highest administration members to limited access to a specific portion of information for patients. For example, a doctor should have access to his patient's medical data but cannot get information on other doctor's patients without permission. Every user should have a unique identifier, which associates the person with that person's rank in the system. Users with higher ranks and more permissions within the system may need additional means of authorization. The Hospital administration will have control and knowledge over the entire system. They can directly monitor and have access to each user's personal information and update it.

2.2 User Needs

Manually, to find about the patient's history, the user has to go through various registers. As a result, inconvenience and wastage of time occur. The information generated by multiple transactions takes time and effort to be stored in the right place. Various changes to details like patient details or immunization

details of the child are difficult to make as paperwork is involved. Manual calculations are error-prone and take a lot of time; this may result in incorrect information. For example, calculating patients' bills based on various treatments becomes problematic as information is difficult to collect from multiple registers. How can we overcome the limitations of the manual system? In our system, the data will be appropriately stored in data stores, which will help in the retrieval of information and its storage. The level of accuracy in the proposed system will be higher. All operations would be done correctly, and it ensures that whatever information is coming from the center is accurate. The reliability of the proposed system will be high due to the above-stated reasons. In the proposed method, utmost care would be that no information is repeated anywhere, in storage or otherwise. It would assure economic use of storage space and consistency in the data stored. The system should be easy to operate and should be such that it can be developed within a short period and fit in the limited budget of the user. If any patient needs online consultancy with a doctor, emergency oxygen service, emergency ambulance service, emergency plasma service, they will find these services using this software. Doctors, hospital staff, and emergency service providers will communicate with the users using this application.

2.3 Operating Environment

- Operating System: Windows/ Linux/ Mac
- Distributed Database: MySQL
- Front-End: HTML, CSS.
- Back-End: Python
- Framework: Django

2.4 Constraints

This web application will require the learning of Python programming language primarily.

The project completion time should be eight weeks.

2.5 Assumptions

- It will be assumed that the users will possess good internet connectivity.
- Users will have to register using their email addresses.
- Users are familiar with web browsing and can interact with the website.
- The user interface will be in Basic English.

Chapter 3

Requirements

3.1 Functional Requirements

In our project, our main target is assuring patients of all health care facilities without any hassle. For example, taking appointments, searching nearest hospital, booking ambulance, online doctor's consultancy, doctor's review in different healthcare sectors, and finding the doctor which is best for their particular disease. After considering all things, a user can choose which hospital is best for them.

User Information

In this sector, the user will provide personal information such as patient name, age, NID number/Passport number/Birth Certificate number, contact number, email id, and house address. After doing it, user can fix their date for taking appointments. Here, the appointment confirmation message will be provided via email or SMS.

Donation or searching of an organ

In this case, a patient as a user can give or accept organs according to their needs. For thinking about safety and security hospital will arrange some procedures which are given below-

- The user has to choose between donating or requesting options.
- The user has put their name, age, blood group, NID number/Passport number/Birth Certificate number, contact number, email id, and location to request or donate plasma.
- Users can view the organ request list if they want to donate.
- Users can search for organs by blood group to check it's available or not.

Hospital bed/ICU reservation:

Since an emergency patient has always needed to reserve a hospital bed or ICU. That is why a user will get all access for admitting an emergency patient. Here, the user has to follow some procedures, which are-

- The user has put their name, age, blood group, NID number/Passport number/Birth Certificate number, contact number, email id to book ICU or hospital bed.
- User can view the list of hospitals which has an available bed for their particular disease.

Online doctor's consultancy-

The user must be able to consult a doctor in case of an emergency to get proper guidance. Here, a user has to follow some steps

- The user has to put their name, age, email ID, and emergency type to request an appointment.
- Users will get an online meeting link if their request is accepted.
- User can share their medical history in a message.
- Users have to wait if all doctors are busy.

Emergency service

In some emergency cases, patient services are needed, such as ambulance services or oxygen delivery at home to get immediate transportation service to a hospital or get oxygen service at home. Here, users have to fill-up some details which are-

- The user has to put their name, age, blood group, NID number/Passport number/Birth Certificate number, contact number, and house address to request an ambulance or oxygen service.
- Users have to select which service they need (ambulance/oxygen).
- Users will be able to see if an ambulance or oxygen service is available or not.
- Users can view ambulance or oxygen service details.
- Users can call to reserve an ambulance service or oxygen service.

Medicine

After finishing all required tests, if the doctor prescribes some medicine, the user can easily buy different types of medication. By using online processes, a user can view many things, which are given below-

- Users have to put the generic medicine name to search for similar medicine brands.
- Users can also search by medicine name.
- Users can view the medical indication.
- Users can view the medicine price.
- Doctors can send prescriptions via email or SMS.

Hospital Authority

The hospital staff must provide ICU, hospital bed, plasma so that patients can get admitted to the hospital and get plasma for treatment. Here, the features will-

- Hospital authority will update their available bed and ICU list.
- Hospital authority will update their available plasma donor list.

Service Provider

If I talk about emergency transportation as a service provider, I want to provide ambulance and oxygen service to patients to help people according to their needs. Here, a patient can quickly get all facilities by following online procedures-

- The service provider can view the request list with the client's ambulance or oxygen service needs.
- The service provider can accept their ambulance or oxygen service request.
- The service provider can contact their client.

People Reaction

In this segment, a user can comment or react to our hospital facilities. The main goal is to improve and better the hospital facilities. Since it is an online process, so users have to follow some steps, which are explained below-

- Users have two options: they can share the story about hospital treatment or read others' stories.
- Users have to put their comments in the blank box.
- Anyone can comment on their story.

3.2 Non-Functional Requirements:

Performance Requirements:

- The system must accumulate high numbers of users without any fault.
- Response time of any interaction must not take longer than 3 seconds to appear on display.

Security Requirements:

- The system will use a secure database.
- Users can only read or write information. Only an admin who has unique authority can edit or modify existing data.

Error Handling:

- OS must handle expected or non-expected errors in ways that prevent loss in information and long downtime period.

Safety Requirements:

- System use must not cause any harm to human users.

Appendix A

Glossary

SRS: A software requirements specification (SRS) describes a software system to be developed. The software requirements specification lays out functional and non-functional requirements. It may include a set of use cases that describe user interactions that the software must provide for the user for perfect interaction.