Software Requirements Specification
for
Hospital Management system

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Chapter 1

Introduction

The health system is a critical socio-economic activity; therefore, good and efficient management is needed. For this, a tool is needed to ensure proper control of data generated by health institutions. Hospitals, as the leading players in the health system, produce a critical amount of knowledge. Still, in most cases, it is not accessible or not available in the necessary time and manner.

Hospital management systems allow us to automate and digitize all clinical processes to enhance customer satisfaction, reduce process expenses, simplify medical record searches, bills, patients, doctors, etc.; thus, having a database of each module implemented.

In today's life, an online healthcare service is an important thing. In the present scenarios, people cannot go outside due to COVID 19 Situation as we all noticed how people suffered due to proper medical guidelines and services. We saw a long queue of patients standing outside of many reputed hospitals.

Health software has become very popular among clinics and healthcare organizations in recent days. For the healthcare industry, medical software is essential. It helps healthcare providers to guide and handle the healthcare organization, and patient data.

1.1 Purpose

The primary purpose of this "Hospital Management System" is to automate or render online the everyday work cycle, such as room operations, admission of new patients, patient discharge, doctor appointment, the measurement of the bill, etc. Our main project goal is to supply up to 90 percent of a paperless hospital. This also aims to provide the current systems with low-cost, effective automation. The program offers excellent data protection on all user interaction levels and provides storage and backup facilities that are accurate and reliable.

1.2 Intended Audience

This Software Requirements document is intended for:

• Developers

• End users

1.3 Intended Use

Developers: Developers who can review project's capabilities and more easily understand where their efforts should be targeted to improve or add more features to it (design and code the application – it sets the guidelines for future development).

End users: End users of this application who wish to read about what this project can do.

1.4 Product Scope

"Hospital Management System " is the Proposed Software Application we are going to build. This application can be used in hospitals, clinics, pharmacies, and pathological laboratories. Most hospitals in our country are still using paper-based data of the patients, staff, and all other necessary things of the hospital, which is both time-consuming and sluggish. They collected information in a paper-based system and preserved it for future use. However, in maximum time these files or information can not be found within an appropriate time frame, which is then proved for no good. We focused on reducing this. The program seeks to reduce overtime pay and increase the number of patients who can be appropriately handled and be treated accurately.

This will be very helpful for all of the health institutions, including Hospital, Clinic, Diagnostic Centre, Pathological Laboratories, and Pharmacies.

Chapter 2

Overall Description

The "Hospital Management System" 's main purpose is to make a secure connection between the doctors and the patients. Here we keep so many beneficial options that will help the patients in many ways. We are also trying to build up an easy/user-friendly interface for the people who have a little idea about website and web materials.

This project will make life comfortable. We combine here some useful options like patient management, facility management, better customer experience, medicine and pharmacy corner, and so on. We all know that life taking pandemic disease "Coronavirus" is one of the world's major problems nowadays. Bangladesh has already affected too. Every day thousands of people are being affected by this virus in our country. On the other hand, most of them can not go outsides because our respective Govt has declared "locked down" in some region. So, this is a problematic issue for both countries and peoples. To keep in mind, we include here the "COVID 19" option too. We believe that would help a lot to our users and customer. Though we are new at this but we are confident. We believe this application will bring a revolution in the "Medical It sector" in Bangladesh.

2.1 User Classes and Characteristics

There will be three types of identity who can control the system:

- Owner of the Project
- Admin Panel
- Developers
- Communication Manager

Owner of the project: The owner has full access to all the stuff included with the project. The owner can able to make any update in the project via developers if he wants. Also, he has the right to sell the project to others. In a word, He has the power to make any decision regarding the project.

Admin Panel: There can be one or multiple admins in the project. It depends on the owner. The admin has access to the central system and has the power to manage the project's activity.If the admin wishes, then he can do make changes in the central database of the system. He can make the update of the project if the owner wants it. He has the power to monitor all the issues regarding the project and make changes if anything needs to be upgraded.

Developers: Developers are basically working to develop the project like he has the power to change the theme of the project and make changes in the design in a particular part of the whole system. Include new features in it and so on. However, developers have limitations like he can not get full access to the system like admin or owner. The only things he can develop the system as the owner and admin want.

Communication Manager: He is doing what is going on in the system. Like, He monitors the activity, the

views of the project, how it works, and how the communication is going on with the users and the doctors. In a word. He is just monitoring the things of the project and inform the monitoring update to the owner/ admin.

Though it is an online-based system so, basically our primary users will be these characters:

• Doctors

• Patients

• Transporting Member

• Blood and Organ Donation Member

• Medicine Corner

Doctors: Doctors can store there information like their name, degree, meeting time, qualification, and the other stuff in the database system, and the main admin works will be to store it safely.

Patients: This section is for patients. There will be a medical record, name, id no, location, current medical status, and age, and so this type of stuff.The doctors can access these records via admin those they can see the record of the patients' current health condition.

Transporting Member: This is for transporting the patients. The ambulance and the hospital's car will be available, and those who are working under this section will be their phone number, name, and hospital serial number.

Blood and organ donation member: The people who donate the blood and organ this section is for them. The name, id, phone number, current health record, last date of donation the blood or organ these record will be store there.

Medicine corner: All types of medicine names will be store in the database. The people can easily able to find out the medicine they need from here.

2.2   User Needs

Based on our users, user needs are given below:

Doctors: To keep in mind the doctor's need, we developed this section. Here, the doctors can communicate with the patients via video call(for example, ZOOM/MEET Application) and can set a meeting date. The doctors can check the previous medical history of the patients via this section. Furthermore, that will help them to treat the patients. They can also access the patients' history, like name and location, and can contact them personally if they want.

Patients: In this section, the patients can communicate with the doctor very quickly. If the patients wish, they can see the details of his doctors like his name, meeting time, and qualification this stuff. The patients also have the right contact with the owner of the hospital if he wants to discuss his issue.

Transporting Member: The people working in this section can receive and withdraw their money via this. This section will store their available time, name, age, contact number. If anyone wants to contact the transporting member, then they can easily able to do it.

Blood Donation And Organ Donation Member: The people who want to donate blood and organ this section will store their name, id, location, the late date of donation, current medical status, Blood group name as a list in the database. Suppose anyone needs any help, then they no need to go to the outside. They can easily find their full details via this application.

Medicine Corner: All types of medicine name which are store in the hospital pharmacy are store here. The patients and our proposed clients can be easily able to access the system and order what medicine they need.No need to go out =side at all.

2.3 Operating Environment

"Hospital Management System" is a website, so as far as to think about the users' condition, we make it that any system can run this. The people who use a MAC Book or the people who are using XP/Windows 7/Windows 10 its fine to run this in their device smoothly. Any person can run the project with any operating system. Furthermore, hopefully, there will be no trouble in using this.

2.4 Constraints

Besides any project, some limitations and risks need to be considered to ensure the project's ultimate success. Here we include three significant constraints which are bellowed,

• Time constraint: The time constraint refers to the project's schedule for completion, including the deadlines for each phase.

• Scope constraint: The scope of a project defines its specific goals, features, and functions and the tasks required to complete the project.

• Cost constraint: The cost of the project, often entitled the project's budget. To complete the project on time, this comprises all of the financial resources needed, in its proposed scope.

2.5 Assumptions

• The users of the system must be 15+ years old.

• Users need to know English.Not much but at least to continue the conversations.

• Users need to know how to use internet.

• Users must have smart phone / laptop with a broadband internet service

Chapter 3

Requirements

There are mainly two types of requirements.

• Functional Requirement

• Non Functional Requirements

3.1 Functional Requirement

System Features:

As a patient,

I want to register my Identity and Name.

So that, I can get appointment and see all my related data to this hospital

Confirmation/Acceptance:

• User has to put input of his/her name,phone no, address, age and gender.

• User can view all available facilities the hospital provides.

• If the input identity is not accurate then an alert box will pop up.

• If all the possible categories match up then he or she can visit the hospital.

• User can also check all his and her data whenever they want.

As a Doctor,

I want to check my patients information and other updates.

So that, I can know how many patient I need to check a day and their information.

Confirmation/Acceptance:

• User has to put their specialization and all degrees.

• User can put their schedule and information about their visiting time.

• User can also able to view all his patients information.

• If any patient need to visit, he or she can decide it.

• User can also check his/her daily calories, body water, blood volume, body fat, blood pressure and can add these informations into his/her profile.

As a user,

I want to make an appointment.

So that, I can get idea when I can visit the hospital.

Confirmation/Acceptance:

- User can show the availability of doctors on scheduling time.
- He or she can also choose their chosen doctors.
- User can also check an update on schedule.
- If any reason doctor cancel the checkup, patients will be notified shortly.

As a user,

I want to pay my accounts and pay my bills.

So that, I can clear all my dues and make all it clear.

Confirmation/Acceptance:

- User has to view this sector and pay their all bills.
- User can pay bills by any debit/credit cards.
- If there is any problem,the system will not be able to receive the money.
- user can also pay bills by installment on special cases.

As a user,

I want to know the basic information about the availability of medicine in store by searching.

So that, I can get an idea of which medicine I need and its price.

Confirmation/Acceptance:

- User has to search by its name on search bar.
- Basic information will be showed such as medicine group, for which disease it will be used, side effect, element.
- Some similar medicine also will be suggested.
- If the medicine found, an alert message will be showed.
- User can add any medicine into his/her personal medicine list.

As a user

I want to get the service of blood donation.

So that, I can get a blood donor in case of emergency.

Confirmation/Acceptance:

- User has to put input of his/her name, location, time, amount of blood, contact no. and blood group.
- Notification will be sent to the users who have same blood group and get the information about the person who needs blood.

- If any user wants to donate blood he/she can accept the notification.

- User can also cancel the acceptance notification.

- System will count the number of donors dynamically on the basis of the number of accepted and canceled request. Users no need to worry about it.

As a Diabetes patient,

I want to calculate my Diabetes and take proper guidance.

So that, I can maintain my daily routines and stay healthy.

Confirmation/Acceptance:

- User has to put their data on system like contact no. and blood group.

- They will receive notification and a guidance on base of the reports.

- They will be provided all guideline how they can control the diabetes.

- System will updated all their weekly reports and sent it to the doctors.

As a user,

I want to admit the hospital on a serious basis on ICU/CCU.

So that, I can get special treatment from the hospital on a serious note.

Confirmation/Acceptance:

- user can add their information after admitting in the hospital.

- No procedure needs to follow like other patients.

- Can have all the regular update on system.

- user can inform any needs if they need on the message form.

As a user

I want to book an ambulance.

So that, I can admit the hospital and get treatment as soon as possible.

Confirmation/Acceptance:

- User has to put their address and phone number on system.

- They can view the available of ambulance on that area.

- They can book one for them and get the best out of it.

- Ambulance will also update their location on system.

As a user

I want to check myself whether I am affected by corona or not.

So that, I can admit the hospital and get treatment as soon as possible.

Confirmation/Acceptance:

- User has to put their symptoms and problems on system.

- An specialised team will monitor the whole situation and view the problems.

- If the patient make it clear and mark as a patient, he or she have to go for test.

- And further treatment will be on the hospital.

As a Guest,

I want to know the live update of corona situations in our country, and some guideline.

So that, I can view the number of affected people in our country and have proper guideline to keep safe from the virus.

Confirmation/Acceptance:

- User will find total date and recovery numbers in whole Bangladesh as well as in the whole world.

- They can also view the proper guidelines of how they can be protect themselves from this virus.

External Interface Requirements:

- User Interface:

* Software: Java, JavaScript. HTML, CSS, GUI, Python.

3.2   Non Functional Requirements

- Performance and stability: This will be an web based product where all the users can access it from anywhere in the world. And all will be monitored by a specialised team.so How many users may act at a time system can access all loads at a time. At it will not affect on system performances.

- Safety: there will be a backup log so that damage or crush data can be recovered.

- Security:Users all personal and external information all kept very secrets to our system. These all info will stored on there personal profile. And the system shall automatically log out all customers after of inactivity.

- Quality:

** maintainability: An integral part of this software is the maintenance one, which requires an accurate maintenance plan to be prepared during the software development. It should specify how users will request modifications or report problems. There will be certain key factors where our specialised team will work on.

1. Our Team will monitor 24/7 if any user face any uncertain problem. And if they find any they will certainly solve that.

2.They will be working on future updates and will keep maintaining up to date.

3.They will also maximize efficiency, reliability, and safety.

** Correctness: This Hospital management system will provide all proper information and reports to all its user and will keep record regularly.

** Usability: System can ensure as much user access as want. and system also have all access over accounts.

END