

# Software Requirements Specification for Hospital Management system

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# Contents

<b>1</b>	<b>Introduction</b>	<b>2</b>
1.1	Purpose . . . . .	2
1.2	Intended Audience . . . . .	2
1.3	Intended Use . . . . .	3
1.4	Product Scope . . . . .	3
<b>2</b>	<b>Overall Description</b>	<b>4</b>
2.1	User Classes and Characteristics . . . . .	4
2.2	User Needs . . . . .	5
2.3	Operating Environment . . . . .	6
2.4	Constraints . . . . .	6
2.5	Assumptions . . . . .	6
<b>3</b>	<b>Requirements</b>	<b>7</b>
3.1	Functional Requirement . . . . .	7
3.2	Non Functional Requirements . . . . .	8

# 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 their 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:

- Patient and Doctors management: Both patient and Doctor will have separate and individual account. If one patient want to make an appointment of any doctor he/she must have to log in to their account before make an appointment. And also a patients all information and data will be saved on that account.
- Appointment: one must have to take an appointment from the respective Admins to visit the hospital. So on the system there will be an form. By fulfilling that one can easily make an appointment.
- Patient Checkout: Both In and out have separate sections both on system and in Hospital.
- Accounts: All patients all accounts will be directly related to this. Like one can easily pay their bills on an installment process, using credit/Visa card and all other aspects which matches with the hospital policies.
- Hospital pharmacy: This is an organization or department of the hospital to manage the procurement, storage, preservation, packaging, sterilization, compounding, preparation, dispensing or distribution of medicine in the hospital. and these all will be stored in an online process here.
- Blood banks: Blood banks allow donors to donate blood and platelets while also storing and sorting blood into components that can be used most effectively by patients. And when all the data may store in the system one patient can easily order amount of bags the patient may need.
- Diabetes care centers: Diabetes is the most common disease in our country. With all the process and all the instructions will be stored on the system and rest of the treatment can one patient have by consulting with the Doctor.
- Orthopedic and other rehabilitation centers: Orthopedic medicine deals with muscles and bones. Physical therapists are typically the practitioner patients see for problems in these areas of the body. If you are experiencing chronic lower back pain, just visit the system all possible solution specialised doctors will being assigned on this system.
- Emergency and ICU: In case of emergency and any critical situation patient may have taken to ICU if all possible aspects given in the system in ICU.
- Specialized Team: There will be some specialized team which will be assigned to deal special cases if arrived any.



- Bills: There will be a Billing form which will collect data and expenses of patients and provide them for completing all billing issues.
- 24/7 and Ambulance services: There will be a special team assign to support patients every moment. All the patient have to do is just to connecting through the system.
- Corona Virus: This is an emergency sector where patient can test there health as well as available Team of Doctors ready to serve 24/7. Patient can admit, can check health, and collect reports within possible time.
- Live corona updates: There will an live update system where anyone can view the latest live corona update in our country ass well as across the globe.

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\*\*\*