# SOFTWARE REQUIREMENTS SPECIFICATION

# for

# HOSPITAL MANAGEMENT WEBSITE

**Version 1.0**

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# 1 Introduction

## 1.1 Purpose

The purpose of this document is to build an online system to manage appointments and store data in hospitals to ease the patient's management.

## 1.2 Document conventions

This document uses the following conventions.

- DB - Database
- ER - Entity Relationship

## 1.3 Intended Audience and Reading Suggestions

This project is a prototype for the hospital management system and hence is restricted for the receptionists and the patients. This has been implemented under the guidance of college professors. This project is useful for the hospitals and as well patients.

## 1.4 Project Scope

The purpose of the online hospital management system is to ease data and appointments management at hospitals and to create a convenient and easy-to-use application for patients to get appointments. The system is based on a relational database appointment booking function. We will have a database server has the data about patients, the doctors and medicine stock available. Above all, we hope to provide a fair way of getting an appointment for vaccines or tests, with doctors.

# 2 Overall Description

## 2.1 Product Perspective

A hospital follows manual procedures to keep track of patient, doctor and medicine stock information. When scenarios such as patient information handling, availability of doctor, medicine stock handling, bill calculation and report generation is taken into consideration there exists many issues with regard to efficiency, security, accuracy and reliability. Due to improperly managed details medical center faces quite a lot of difficulties in accessing past data as well as managing present data. The manual file systems which are being used at present require storage facilities which is also another overhead.

The online hospital management system which will be developed through this project will eliminate the disadvantages caused by the manual system by improving the reliability, efficiency and performance. The usage of a database to store patient, doctor,medicine stock details etc. will accommodate easy access, retrieval, search and manipulation of data.A patient can also easily book an appointment for a doctor, vaccine or test, view his test results and prescriptions and also medicines available in hospital pharmacy through this website with out going to the hospital manually. The access limitations provided through access privilege levels will enhance the security of the system. The system will facilitate concurrent access and convenient management of activities of the hospital.

## 2.2 Product Features

The major features of hospital management system as shown in below entity-relationship model(ER model).

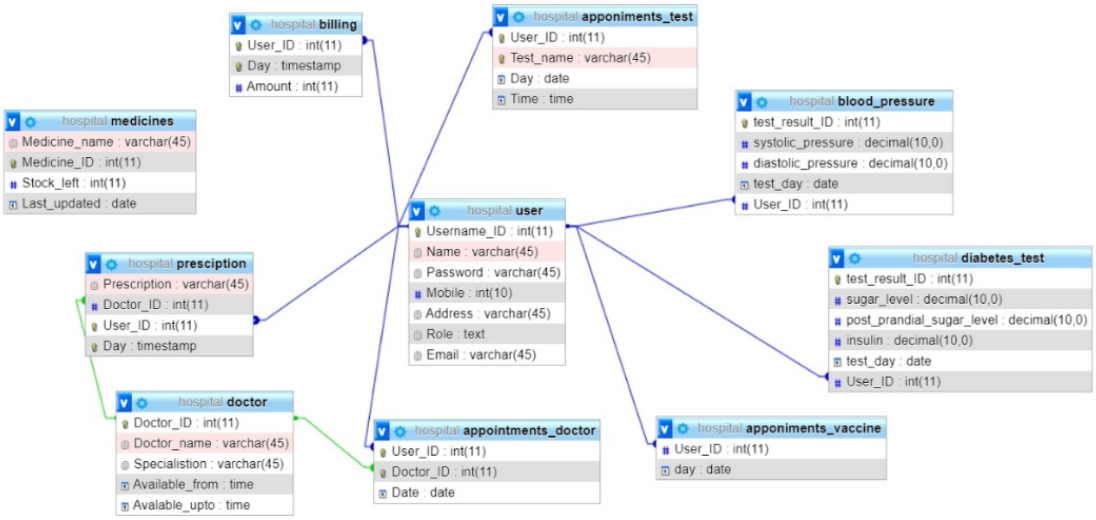


Figure 2.1: ER diagram

## 2.3 User Classes and Characteristics

Users of the system can view their past prescriptions and their past results and also their doctor's profile. They can also make an appointment for their diagnosis with their suitable date. They can also make an appointment for a vaccine amidst the present COVID-19 situation. Users can also visit their respective doctor by making an appointment online. They can request the staff to change their profile like mobile number, address. By this , they need not go to the hospital to change their profile.

Users will be able to do the following functions:-

1. Request for their profile change
2. Make an appointment with their flexible date –
   - for their diagnosis
   - with doctor
   - Vaccine for COVID-19
3. View –
   - their profile
   - Doctor's profile

- Past prescriptions
- Results of their tests (Diabetes,BP)
- Billing information

The data entry operator can do the following functions:- 1. Edit –

- Doctor's Profile
- Pharmacy data like stock left, availability of medicines
- Patient's Profile

2. Add-

- Doctor's Prescription
- Test results (Diabetes, BP)
- Billing Information

Each day has a limited number of patients for a doctor. If the limitation crosses then on that particular date the appointments will not be done.

## 2.4 Operating Environment

Operating environment for the hospital management system is as :-

1. Operating System - Windows for 32-bit or 64-bit
2. Database - SQL + database
3. Program based on GUI (graphical user interface) based
4. Platform - Python/Django

## 2.5 Design and Implementation Constraints

Due to the large nature of the project, keeping track of the source code between the team members will be difficult. We plan to implement a system, most likely Github, where we will pull/push code commits to/from the Github server. The code will be able to be uploaded and fetched from our Github account. The implementation is done by SQL commands/queries for the mentioned applications.

## 2.6 User Documentation

We will have an implementation manual on how to use this application in detail. The manual will be updated accordingly if there are any modifications.

## 2.7 Assumptions and Dependencies

- Users must log in to the system to access any record.
- Only the data entry operator can update and delete records
- Server must be running for the system to function
- Each user must have a valid user id and password

# 3 System Features

## 3.1 Description and Priority:

In our online Hospital Management System, patients can book an appointment online through a website, requesting for an appointment to meet with the doctor. The patients can also book an appointment and fix a date for taking the vaccine. He/She can also view all the available medicines in the pharmacy. This project has a high priority, as going to the hospital physically especially during this pandemic time is not feasible. So, by our online Hospital Management System ,one can easily get in contact with the hospital.

## 3.2 STIMULUS/RESPONSE Sequences:

- First the patient/user has to login into the system.
- Then, he/she can book an appointment with the doctor at his/her preferred date
- He/She can also book a preferred date to take the vaccine.
- He/She can also check the availability of all the medicines in pharmacy

## 3.3 Functional Requirements:

1.Distributed Database:
Distributed database implies that a single data operator should be able to operate transparently on data that is spread across a variety of different databases and connected by a communication network.

2.Client/Server System:
The term client/server refers primarily to an architecture or logical division of responsibilities, the client is the application (also known as the front-end), and the server is the DBMS (also known as the back-end).

A client/server system is a distributed system in which,

- Some sites are client sites and others are server sites.
- All the data resides at the server sites.
- All applications execute at the client sites.

# 4 External Interface Requirements

## 4.1 User Interfaces

Front-end: MS edge
Back-end: MySQL command line,workbench

## 4.2 Hardware Interfaces

Windows
Browser supporting HTML,CSS,Javascript

## 4.3 Software Interfaces

| Software used | Description |
|---|---|
| Operating system | We have used windows OS for its best support and user friendly interaction |
| Database | We opted for MySQL database for backend support and storing data |
| Django | We included django framework for building this application |

## 4.4 Communications Interfaces

We use simple forms to collect and store the data in the database, for instance diagnosis test results,patient details etc...

# 5 Non Functional Requirements

## 5.1 Performance Requirements

The system must be able to help users in booking appointments for users either with doctors or for vaccines or for tests.This should be updated in the database concurrently.This should also enable the option of entering the data by the data entry operator.For example,the patients' test results,prescriptions etc...

## 5.2 Security requirements

Security systems need database storage just like many other applications. However, the special requirements of the security is that the user can access the website only if his/her login credentials are correct.If they are new,they can sign up and then login to access the website.

## 5.3 Software Quality Attributes

Availability: The doctor must be available on the day which user wishes to book an appointment.
Correctness: The appointments must be done on correct dates and based on the availability.The data entered by the operator must be correct.
Maintainability: The operator must maintain the records correctly.
Usability: The schedules must be of use to as many users as possible.

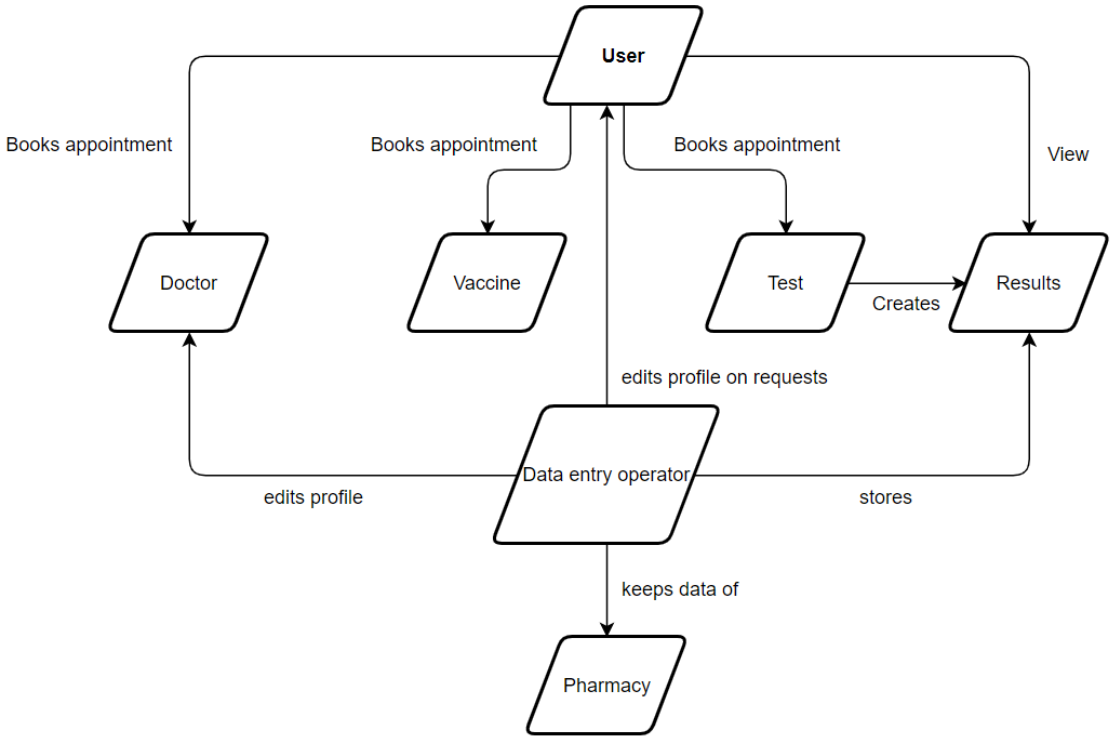


Figure 5.1: workflow diagram