

# HOSPITAL MANAGEMENT SYSTEM A MINI-PROJECT REPORT

Submitted By:

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of

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**7TH SEMESTER** 

(Course Code: 16CS471)

WEB PROGRAMMING LAB

## DAYANANDA SAGAR UNIVERSITY



#### **CERTIFICATE**

This is to certify that the Web Programming Mini-Project report entitled "Hospital Management System" being submitted by CV Vishwas, Chandan Lal PN, Deepak Purohit, Devansh Awasthi to Department of Computer Science and Engineering, School of Engineering, Dayananda Sagar University, Bangalore, for the 7<sup>th</sup> semester B.Tech C.S.E of this university during the academic year

2020-2021.

Date:	
	Signature of the Faculty in Charge
Signati	ure of the Chairman

#### **Abstract**

The purpose of the project entitled as "HOSPITAL MANAGEMENT SYSTEM" is to computerize the Front Office Management of Hospital to develop software which is user friendly simple, fast, and cost effective. It deals with the collection of patient's information, diagnosis details, etc. Traditionally, it was done manually. The main function of the system is register and store patient details and doctor details and retrieve these details as and when required, and also to manipulate these details meaningfully System input contains patient details, diagnosis details, while system output is to get these details on to the screen. The Hospital Management System can be entered using a username and password. It is accessible either by an administrator or receptionist. Only they can add data into the database. The data can be retrieved easily. The data are well protected for personal use and makes the data processing very fast.

## Acknowledgement

The satisfaction that accompanies the successful completion of task would be incomplete without the mention of the people who made it possible and whose constant guidance and encouragement crown all the efforts with success.

We are especially thankful to our **Chairman**, **Dr. Sanjay Chitnis**, for providing necessary departmental facilities, moral support and encouragement.

We are very much thankful to our **Guide**, **Prof. Gousia Thahniyath**, for providing help and suggestions in completion of this mini project successfully.

We have received a great deal of guidance and co-operation from our friends and we wish to thank all that have directly or indirectly helped us in the successful completion of this project work.

CV Vishwas - ENG17CS0054 Chandan Lal PN - ENG17CS0054 Deepak Purohit - ENG17CS0062 Devansh Awasthi - ENG17CS0065

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#### 1.Introduction

## 1.1 Objectives and Goals

This project Online Hospital Management System aims at to develop the software that covers all the aspects of management and operations of hospital. It enables healthcare providers to improve operational effectiveness, reduce costs, reduce medical errors, reduce time consumption and enhance delivery of quality of care. This project will implement all the activities of the hospital in a computerized automated way to fasten the performance.

The main purpose of our system is to make hospital task easy and is to develop software that replaces the manual hospital system into automated healthcare management system. This document serves as the unambiguous guide for the developers of this software system. This project is to maintain the patient details, appointment reports and to calculate the bill of the patient. You can also manually edit any patient details and issue bill receipt to patient within few seconds.

## 1.2 Existing Problems

- Lack of immediate retrievals:- The information is very difficult to retrieve and to find particular information like- E.g. To find out about the patient's history, the user has to go through various registers. This results ininconvenience and wastage of time.
- Lack of immediate information storage:- The information generated by various transactions takes time and efforts to be stored at right place.
- Lack of prompt updating:- Various changes to information like patient details or immunization details of child are difficult to make as paper work is involved.
- Error prone manual calculation:- Manual calculations are error prone and take a lot of time this may result in incorrect information. For example calculation of patient's bill based on various treatments.
- **Preparation of accurate and prompt reports:**-This becomes a difficult task as information is difficult to collect from various register.

#### 1.3 Problem Statement

It is very important to maintain efficient software to handle information of a Hospital. This application provides away to record this information and to access these in a simple way. A system to manage the activities in a hospital: Patients request for appointment for any doctor. The details of the existing patients are retrieved by the system. New patients update their details in the system before they request for appointment with the help of assistant. The assistant confirms the appointment based on the availability of free slots for the respective doctors and the patient is informed. Assistant may cancel the appointment at any time.

## 2. Requirement Specification

## 2.1 Hardware Requirement

• i3 processor-based computing or higher

• Memory: 4 GB RAM

Hard drive: 50 GB

## 2.2 Software Requirement

Code editor: Visual studio code

Operating System : Windows or Linux

Backend: sqlite, python

• Frontend: Django, HTML, CSS, Java script

## 2.3 Functional Requirements

There are a lot of software requirements specifications included in the functional requirements of the Hospital Management System, which contains various process, namely Registration, Check out, Report Generation, and Database.

#### **Registration Process:**

- Adding Patients: The Hospital Management enables the staff in the front desk to include new patients to the system.
- Assigning an ID to the patients: The HMS enables the staff in the front desk to
  provide a unique ID for each patient and then add them to the record sheet of the
  patient. The patients can utilize the ID throughout their hospital stay.

#### **Check Out:**

- Deleting Patient ID: The staff in the administration section of the ward can delete the patient ID from the system when the patient's checkout from the hospital.
- Adding to beds available list: The Staff in the administration section of the ward can put the bed empty in the list of beds-available.

#### **Report Generation:**

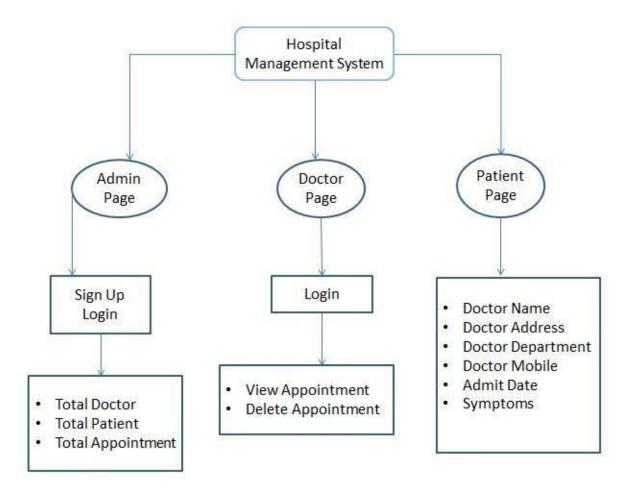
- Information of the Patient: The Hospital Management System generates a report on every patient regarding various information like patients name, Phone number, bed number, the doctor's name whom its assigns, ward name, and more.
- Availability of the Bed: The Hospital Management system also helps in generating reports on the availability of the bed regarding the information like bed number unoccupied or occupied, ward name, and more.

#### **Database:**

- Mandatory Patient Information: Every patient has some necessary data like phone number, their first and last name, personal health number, postal code, country, address, city, 'patient's ID number, etc.
- Updating information of the Patient: The hospital management system enables users to update the information of the patient as described in the mandatory information included.

# 3. System Design

## 3.1 Data Flow Diagram



#### 3.2 Modules Used

- sentry-sdk
- djangorestframework
- easy-thumbnails
- django-simple-history
- django-adminactions
- django-storages

## 4. Implementation

## 4.1 Module Description

#### 1. sentry-sdk

- This is a must-have tool for any Django project as it's key that we stay informed about all the code-based issues in the application.
- Firstly: the package immediately alerts us about all the previously-uncaught exceptions that occurred in production.
- Secondly: we can catch the issue ourselves and send the error information to sentry, adding even more relevant data.
- Building an alert system on our own is definitely non-trivial and debugging without this kind of logs is next to impossible.

#### 2. djangorestframework

If you want to write a REST Architectural Constraints API, this package will do that for you – together with proper, auto-generated documentation that supports implementing the package in projects.

#### 3. easy-thumbnails

Any web service that allows uploading and viewing photos needs the thumbnails feature. This package provides it. All servers hosting images need thumbnails, and this package is the solution.

## 4. django-simple-history

This package keeps a history of record changes. If a client has access to the database through the admin panel, they might change something by mistake or may want to return to the previous version of the text.

#### 5. django-adminactions

A simple data export to known file types like CSV or XLS. You can also export data as a fixture to the test server, and this fixture can contain Foreign Keys. The package allows generating graphs in the admin panel as well.

#### 6. django-storages

- Allows using any cloud storage services as the default file storage. That
  becomes important when you want to pass whatever users send us to another
  storage.
- For example, a user may send us a lot of substantial data like photos, movies, or even backups. To make this data available for them without slowing down the app, it's a good idea to use cloud storage solutions like Google Cloud.

#### 4.2 Pseudocode

### Admin Dashboard:

```
<!DOCTYPE html>
<html lang="en" dir="ltr">
 <meta charset="utf-8">
 <title>Hospital Management || Web Programming</title>
  <style media="screen">
   .market-update-block {
     padding: 2em 2em;
     background: ■#999;
   .market-update-block h3 {
    color: □#fff;
     font-family: 'Carrois Gothic', sans-serif;
   .market-update-block h4 [
    font-size: 1.2em;
     color: ■#fff;
     margin: 0.3em 0em;
     font-family: 'Carrois Gothic', sans-serif;
   .market-update-block p {
     color: ■#fff;
     font-size: 0.8em;
     line-height: 1.8em;
   .market-update-block.clr-block-1 {
     background: ■#ff0000;
     margin-right: 0.8em;
     box-shadow: 0 2px 5px 0 □rgba(0, 0, 0, 0.16), 0 2px 10px 0 □rgba(0, 0, 0, 0.12);
     transition: 0.5s all;
```

```
-webkit-transition: 0.5s all;
 -moz-transition: 0.5s all;
 -o-transition: 0.5s all;
.market-update-block.clr-block-2 {
 background: ■#FC8213;
 margin-right: 0.8em;
 box-shadow: 0 2px 5px 0 □rgba(0, 0, 0, 0.16), 0 2px 10px 0 □rgba(0, 0, 0, 0.12);
 transition: 0.5s all;
 -webkit-transition: 0.5s all;
 -moz-transition: 0.5s all;
 -o-transition: 0.5s all;
.market-update-block.clr-block-3 {
 background: ■#1355f9;
 box-shadow: 0 2px 5px 0 □rgba(0, 0, 0, 0.16), 0 2px 10px 0 □rgba(0, 0, 0, 0.12);
 transition: 0.5s all;
 -webkit-transition: 0.5s all;
 -moz-transition: 0.5s all;
 -o-transition: 0.5s all;
.market-update-block.clr-block-1:hover {
 background: □#3C3C3C;
 transition: 0.5s all;
 -webkit-transition: 0.5s all;
 -moz-transition: 0.5s all;
 -o-transition: 0.5s all;
.market-update-block.clr-block-2:hover {
 background: □#3C3C3C;
 transition: 0.5s all;
  -webkit-transition: 0.5s all;
  -moz-transition: 0.5s all;
```

```
-o-transition: 0.5s all;
.market-update-block.clr-block-3:hover {
 background: □ #3C3C3C;
 transition: 0.5s all;
 -webkit-transition: 0.5s all;
 -moz-transition: 0.5s all;
 -o-transition: 0.5s all;
.market-update-right i.fa.fa-user-o {
 font-size: 3em;
 color: ■#68AE00;
 width: 80px;
 height: 80px;
 background: ■#fff;
 text-align: center;
 border-radius: 49px;
 -webkit-border-radius: 49px;
 -moz-border-radius: 49px;
 -o-border-radius: 49px;
 line-height: 1.7em;
.market-update-right i.fa.fa-user-md {
 font-size: 3em;
 color: ■#FC8213;
 width: 80px;
 height: 80px;
 background: ■#fff;
 text-align: center;
 border-radius: 49px;
 -webkit-border-radius: 49px;
 -moz-border-radius: 49px;
 -o-border-radius: 49px;
 line-height: 1.7em;
```

```
.market-update-right i.fa.fa-user-md {
              color: ■#FC8213;
              height: 80px;
              background: ■#fff;
               text-align: center:
              border-radius: 49px;
               -webkit-border-radius: 49px;
                -moz-border-radius: 49px;
             line-height: 1.7em;
             font-size: 3em;
              color: ■#337AB7;
              width: 80px;
              height: 80px;
              background: □#fff;
               text-align: center;
                 -moz-border-radius: 49px;
                -o-border-radius: 49px;
             line-height: 1.7em;
       .market-update-left {
           padding: 0px;
cscript src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
cscript src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
clink rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/4.7.0/css/font-awesome.min.css">
                            <div class="market-update-block clr-block-1">
                                                \begin{tabular}{l} $$ \hbegin{tabular}{l} $$ \hbegin{tabular}{l} $\hbegin{tabular}{l} $\hbe
                                                <h4>Total Doctor</h4>
                                                Approval Required : {{pendingdoctorcount}}
                                     <div class="clearfix"> </div>
                    <div class="col-md-4 market-update-gd">
                           <div class="market-update-block clr-block-2">
    <div class="col-md-8 market-update-left">
                                               <h3>{{patientcount}}</h3>
                                                 Wants to Admit : {{pendingpatientcount}}
                                     <div class="col-md-4 market-update-right">
                                     <div class="clearfix"> </div>
                                                \hfill 
                                                  <h4>Total Appointment</h4>
                                                  Approve Appointments :{{pendingappointmentcount}}
```

#### **Doctor Dashboard:**

```
<!DOCTYPE html>
<html lang="en" dir="ltr">
 <meta charset="utf-8">
  <style media="screen">
   .market-update-block {
     padding: 2em 2em;
     background: ■#999;
    .market-update-block h3 {
     color: □#fff;
     font-size: 2.5em;
     font-family: 'Carrois Gothic', sans-serif;
    .market-update-block h4 {
     font-size: 1.2em;
     color: ■#fff;
     margin: 0.3em Øem;
     font-family: 'Carrois Gothic', sans-serif;
    .market-update-block p {
     color: □#fff;
     font-size: 0.8em;
     line-height: 1.8em;
    .market-update-block.clr-block-1 {
     background: ■#ff0000;
     margin-right: 0.8em;
     box-shadow: 0 2px 5px 0 \squarergba(0, 0, 0, 0.16), 0 2px 10px 0 \squarergba(0, 0, 0, 0.12);
     transition: 0.5s all;
     -webkit-transition: 0.5s all;
      -moz-transition: 0.5s all;
      -o-transition: 0.5s all;
```

```
.market-update-block.clr-block-2 {
 background: ■#FC8213;
 margin-right: 0.8em;
 box-shadow: 0 2px 5px 0 □rgba(0, 0, 0, 0.16), 0 2px 10px 0 □rgba(0, 0, 0, 0.12);
 transition: 0.5s all;
  -webkit-transition: 0.5s all;
 -moz-transition: 0.5s all;
 -o-transition: 0.5s all;
.market-update-block.clr-block-3 {
 background: ■#1355f9;
 box-shadow: 0 2px 5px 0 □rgba(0, 0, 0, 0.16), 0 2px 10px 0 □rgba(0, 0, 0, 0.12);
 transition: 0.5s all;
 -webkit-transition: 0.5s all;
  -moz-transition: 0.5s all;
 -o-transition: 0.5s all;
.market-update-block.clr-block-1:hover {
 background: □#3C3C3C;
 transition: 0.5s all;
 -webkit-transition: 0.5s all;
 -moz-transition: 0.5s all;
  -o-transition: 0.5s all;
.market-update-block.clr-block-2:hover {
 background: □#3C3C3C;
 transition: 0.5s all;
  -webkit-transition: 0.5s all;
 -moz-transition: 0.5s all;
  -o-transition: 0.5s all;
```

```
.market-update-block.clr-block-3:hover {
 background: □#3C3C3C;
 transition: 0.5s all;
 -webkit-transition: 0.5s all;
 -moz-transition: 0.5s all;
 -o-transition: 0.5s all;
.market-update-right i.fa.fa-user-o {
 font-size: 3em;
 color: ■#68AE00;
 width: 80px;
 height: 80px;
 background: ■#fff;
 text-align: center;
 border-radius: 49px;
 -webkit-border-radius: 49px;
 -moz-border-radius: 49px;
 -o-border-radius: 49px;
 line-height: 1.7em;
.market-update-right i.fa.fa-check-circle-o {
 font-size: 3em;
 color: ■#FC8213;
 width: 80px;
 height: 80px;
 background: ■#fff;
 text-align: center;
 border-radius: 49px;
 -webkit-border-radius: 49px;
 -moz-border-radius: 49px;
 -o-border-radius: 49px;
 line-height: 1.7em;
```

```
.market-update-right i.fa.fa-calendar {
                 font-size: 3em;
                 color: ■#337AB7;
                 width: 80px;
                 height: 80px;
                 background: ■#fff;
                 text-align: center;
                 border-radius: 49px;
                 -webkit-border-radius: 49px;
                  -moz-border-radius: 49px;
                  -o-border-radius: 49px;
                 line-height: 1.7em;
           .market-update-left {
              padding: 0px;
    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
    <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
    k rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/4.7.0/css/font-awesome.min.css">
(body>
          <div class="col-md-4 market-update-gd">
                             \hfill 
                              <h4>Appointments For You</h4>
                       <div class="col-md-4 market-update-right">
```

```
<div class="col-md-4 market-update-gd">
   <div class="market-update-block clr-block-2">
      <div class="col-md-8 market-update-left">
        <h3>{{patientcount}}</h3>
       <h4>Patient Under You</h4>
     </div>
     <div class="col-md-4 market-update-right">
       <i class="fa fa-user-o"></i></i>
     </div>
     <div class="clearfix"> </div>
   </div>
 </div>
 <div class="col-md-4 market-update-gd">
    <div class="market-update-block clr-block-3">
     <div class="col-md-8 market-update-left">
       <h3>{{patientdischarged}}</h3>
       <h4>Your Patient Discharged</h4>
     </div>
     <div class="col-md-4 market-update-right">
      <i class="fa fa-check-circle-o" aria-hidden="true"></i></i>
     <div class="clearfix"> </div>
   </div>
 <div class="clearfix"> </div>
</div>
```

## **Patient Dashboard:**

```
(!DOCTYPE html>
<html lang="en" dir="ltr">
 <meta charset="utf-8">
 <style media="screen">
   .market-update-block {
     padding: 2em 2em;
     background: ■#999;
   .market-update-block h3 {
    color: ■#fff;
     font-size: 1.5em;
     font-family: 'Carrois Gothic', sans-serif;
   .market-update-block h4 {
    font-size: 1.2em;
     color: ■#fff;
     margin: 0.3em 0em;
     font-family: 'Carrois Gothic', sans-serif;
   .market-update-block p {
    color: □#fff;
     font-size: 0.8em;
     line-height: 1.8em;
   .market-update-block.clr-block-1 {
     background: #ff0000;
     margin-right: 0.8em;
     box-shadow: 0 2px 5px 0 □rgba(0, 0, 0, 0.16), 0 2px 10px 0 □rgba(0, 0, 0, 0.12);
     transition: 0.5s all;
     -webkit-transition: 0.5s all;
     -moz-transition: 0.5s all;
```

```
.market-update-block.clr-block-2 {
 background: ■#4f5905;
 margin-right: 0.8em;
 box-shadow: 0 2px 5px 0 □rgba(0, 0, 0, 0.16), 0 2px 10px 0 □rgba(0, 0, 0, 0.12);
 transition: 0.5s all;
 -webkit-transition: 0.5s all;
 -moz-transition: 0.5s all;
 -o-transition: 0.5s all;
.market-update-block.clr-block-3 {
 background: ■#1355f9;
 box-shadow: 0 2px 5px 0 \squarergba(0, 0, 0, 0.16), 0 2px 10px 0 \squarergba(0, 0, 0, 0.12);
 transition: 0.5s all;
 -webkit-transition: 0.5s all;
 -moz-transition: 0.5s all;
 -o-transition: 0.5s all;
.market-update-block.clr-block-1:hover {
 background: □ #3C3C3C;
 transition: 0.5s all;
 -webkit-transition: 0.5s all;
 -moz-transition: 0.5s all;
 -o-transition: 0.5s all;
.market-update-block.clr-block-2:hover {
 background: □#3C3C3C;
 transition: 0.5s all;
 -webkit-transition: 0.5s all;
 -moz-transition: 0.5s all;
 -o-transition: 0.5s all;
```

```
.market-update-block.clr-block-3:hover {
 background: □#3C3C3C;
 transition: 0.5s all;
 -webkit-transition: 0.5s all;
 -moz-transition: 0.5s all;
 -o-transition: 0.5s all;
.market-update-right i.fa.fa-user-o,
i.fa.fa-map-marker {
 font-size: 3em;
 color: ■#68AE00;
 width: 80px;
 height: 80px;
 background: ■#fff;
 text-align: center;
 border-radius: 49px;
 -webkit-border-radius: 49px;
 -moz-border-radius: 49px;
 -o-border-radius: 49px;
 line-height: 1.7em;
.market-update-right i.fa.fa-info-circle,
 font-size: 3em;
 color: ■#FC8213;
 width: 80px;
 height: 80px;
 background: ■#fff;
 text-align: center;
 border-radius: 49px;
 -webkit-border-radius: 49px;
  -moz-border-radius: 49px;
 -o-border-radius: 49px;
 line-height: 1.7em;
.market-update-right i.fa.fa-mobile,
i.fa.fa-calendar-o {
```

```
color: ■#337AB7;
   width: 80px;
   height: 80px;
   background: ■#fff;
   text-align: center;
   border-radius: 49px;
   -webkit-border-radius: 49px;
   -moz-border-radius: 49px;
   -o-border-radius: 49px;
   line-height: 1.7em;
 .market-update-left {
  padding: 0px;
<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
<div class="market-updates">
   <h3>{{doctorName}}</h3>
      <h4>Doctor Name</h4>
 <div class="col-md-4 market-update-gd">
    <div class="market-update-block clr-block-2">
```

## **About Us Page:**

```
<!DOCTYPE html>
{% load static %}
<html lang="en" dir="ltr">
 <meta charset="utf-8">
 <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
 <style media="screen">
   .jumbotron {
     margin-top: 0px;
     margin-bottom: 0px;
   .jumbotron h1 {
    text-align: center;
    margin: 0px;
 <title>Hospital Management || Web Programming</title>
 {% include "hospital/navbar.html" %}
  <h3 class='alert alert-success' style="margin-bottom:0px;">About Us !</h3>
 <div class="jumbotron" style="margin-bottom: 0px;margin-top: 0px;">
   <h1 class="display-4">Hello</h1>
   A service dedicated to Hospital Admin, Doctor and Patient.
   <hr class="my-4">
   Explore our Website.
   <a class="btn btn-primary btn-lg" href="/" role="button">HOME</a>
{% include "hospital/footer.html" %}
```

## Feedback Page:

# 5. Output Screenshots

# **Home Page:**



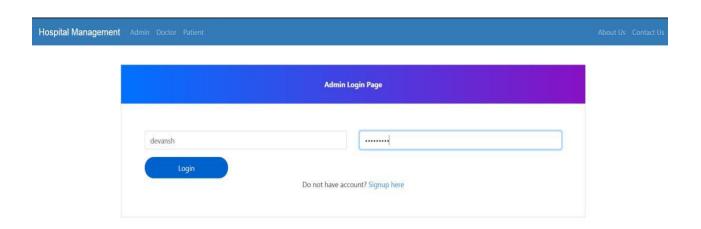




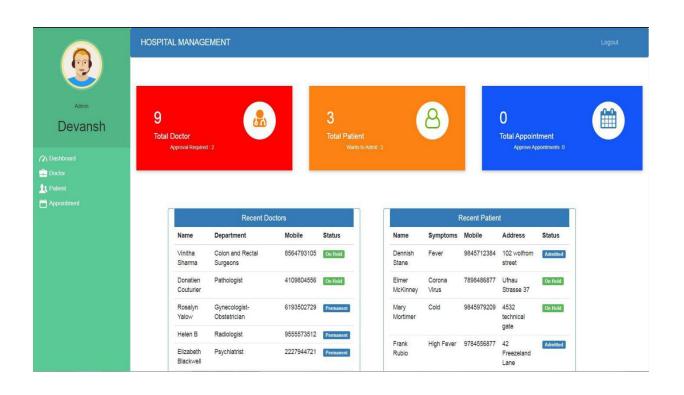




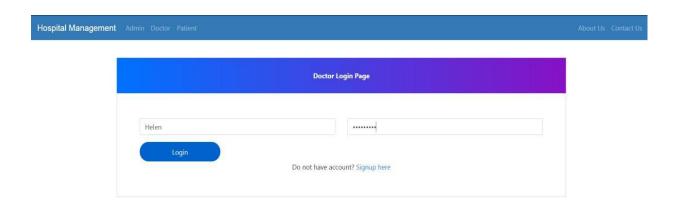
# Admin page:



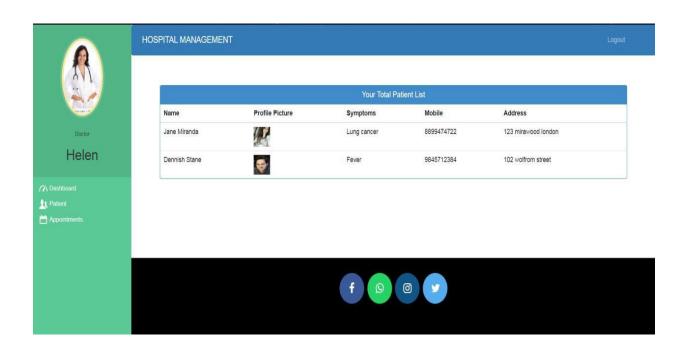




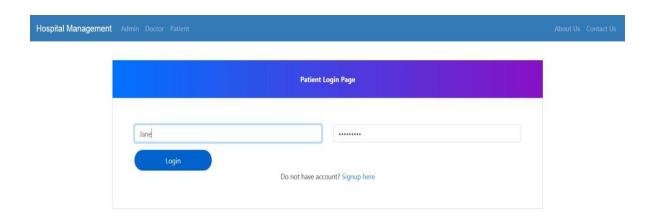
# **Doctor Page:**







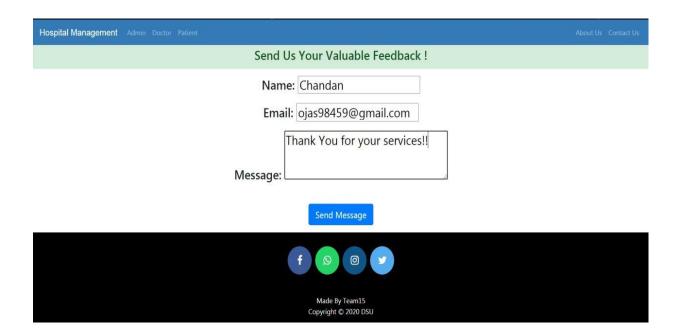
# **Patient Page:**







# Feedback Page:



## 6. Conclusion

The hospital management system organizes the stable functioning of daily tasks and interactions. This is a special tool to support the smooth operating of the software components that are vital for the clinic administration. The hospital records management software keeps a track of all the operations, stores the user's data, performs its analysis and generates the reports. The medical institution is given the opportunity to collect its information in one place. It includes the patient and doctors' records as well as the data concerning financial affairs, supply management, etc. Furthermore, it is only processed, classified and accessible for authorized users. The hospital database management system provides users with data security due to all regulations. Implementation of different functions empowers smooth and clear functionality.

The hospital records management software tracks the number of available doctors and their working hours. This allows to have the accurate schedule of each employee, manage your facility abilities and the supply chain in order to meet all the needs of the patients. It helps to arrange the appointments for both the staff and patient's convenience

## 7. References

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