ABSTRACT

Our project Hospital Management system includes registration of patients, storing their details into the system, and also booking their appointments with doctors. Our software has the facility to give a unique id for every patient and stores the details of every patient and the staff automatically. User can search availability of a doctor and the details of a patient using the id. 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 interface is very user-friendly. The data are well protected for personal use and makes the data processing very fast.

Hospital management system is a project which aims in developing a computerized system to maintain all the information of hospital entities. It has a facility of admin login through which the admin can monitor the whole system. Admin modules are manage patients, manage doctor s, and manage appointments. Overall this project of ours is being developed to help the hospital administration, maintain the hospital management in the best way possible and also reduce the human efforts.

CHAPTER 1
INTRODUCTION

This project is aimed to automate the hospital management system. This project is developed mainly to administrate doctor's appointment with the patients. 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 to register and store patient details and doctor details and retrieve these details as and when required, and also to manipulate these details meaningfully.

1.1 PURPOSE

This software will help the company to be more efficient in registration of their patients and manage appointments, records of patients. It enables doctors and admin to view and modify appointments schedules if required. The purpose of this project is to computerize all details regarding patient details and hospital details.

1.2 SCOPE

The system will be used as the application that serves hospitals, clinic, dispensaries or other health institutions. The intention of the system is to increase the number of patients that can be treated and managed properly. If the hospital management system is file based, management of the hospital has to put much effort on securing the files. They can be easily damaged by fire, insects and natural disasters. Also could be misplaced by losing data and information.

1.3 Overview

Our application contains single modules – the admin module . Our application will not only help the admin to preview the monthly and yearly data but it will also allow them to edit, add or update records. The admin will be able to manage and update information about doctors. The user information can be accessed by both the doctors and the staff. The doctor can confirm and cancel appointments.. The patients will be able to apply for the appointment and can even cancel appointments with the doctors. They can track details about the previous visit made by them.

Advantages

- The system automates the manual procedure of managing hospital activities.
- Doctors can view their patients' treatment records and details easily.
- It even generates an instant bill.
- The system is convenient and flexible to be used.
- It saves their time, efforts, money and resources.

Disadvantages

- Requires large database.
- The admin has to manually keep updating the information by entering the details in the system.
- Need Internet connection.

1.4 Objective

The main objective of this project is to manage the records of patients, doctors and appointments. Reduce the paper work and provide the 24*7 accessible website with user-friendly GUI (Graphical User Interface) to manage the records.

1.5 Problem Statement

In this busy world we don't have the time to wait in infamously long hospital queues. The problem is, queuing at hospital is often managed manually by administrative staff, then take a token there and then wait for our turn then ask for the doctor and the most frustrating thing - we went there by traveling a long distance and then we come to know the doctor is on leave or the doctor can't take appointments. HMS will help us overcome all these problems because now patients can book their appointments at home, they can check whether the doctor they want to meet is available or not. Doctors can also confirm or decline appointments, this help both patient and the doctor because if the doctor decline's appointment then patient will know this in advance and patient will visit hospital only when the doctor confirms' the appointment this will save time and money of the patient. Patients can also pay the doctor's consultant fee online to save their time. HMS is essential for all healthcare establishments, be it hospitals, nursing homes, health clinics, rehabilitation centers, dispensaries, or clinics. The main goal is to computerize all the details regarding the patient and the hospital. The installation of this healthcare software results in improvement in administrative functions and hence better patient care, which is the prime focus of any healthcare unit.

Benefits of implementing a hospital management system:

- ❖ Appointment booking
  - Helps patients cut the long queue and saves their time
  - Patient can contact us for appointment by sending message
- ❖ Role-Based Access Control
  - Allows employees to access only the necessary information to effectively perform their job duties
  - Increases data security and integrity
- ❖ Overall cost reduction
  - Cuts down paper costs as all the data are computerized
  - No separate costs for setting up physical servers
- ❖ Data accuracy
  - Removes human errors
  - Alerts when there's a shortage of stock
- ❖ Data security
  - Helps to keep patients records private
  - Restricts access through role-based access control
- ❖ Revenue management
  - Makes daily auditing simple
  - Helps with statistics and other financial aspects

CHAPTER 2
RELATED CONCEPT

2.1 Technologies Used

HTML

HTML (Hypertext Markup Language) is the set of markup symbols or codes inserted in a file intended for display on a World Wide Web browser page. The markup tells the Web browser how to display a Web page's words and images for the user. Each individual markup code is referred to as an element (but many people also refer to it as a tag). Some elements come in pairs that indicate when some display effect is to begin and when it is to end.

CASCADING STYLE SHEET (CSS)

Cascading Style Sheets (CSS) are a collection of rules we use to define and modify web pages. CSS are similar to styles in Word. CSS allow Web designers to have much more control over their pages look and layout. For instance, you could create a style that defines the body text to be Verdana, 10 point. Later on, you may easily change the body text to Times New Roman, 12 point by just changing the rule in the CSS. Instead of having to change the font on each page of your website, all you need to do is redefine the style on the style sheet, and it will instantly change on all of the pages that the style sheet has been applied to. With HTML styles, the font change would be applied to each instance of that font and have to be changed in each spot.

CSS can control the placement of text and objects on your pages as well as the look of those objects.

HTML information creates the objects (or gives objects meaning), but styles describe how the objects should appear. The HTML gives your page structure, while the CSS creates the “presentation”. An external CSS is really just a text file with a (.css) extension. These files can be created with Dreamweaver, a CSS editor, or even Notepad.

Language Used :- Python

Python is a widely used general-purpose, high level programming language. It was initially designed by Guido van Rossum in 1991 and developed by Python Software Foundation. It was mainly developed for emphasis on code readability, and its syntax allows programmers to express concepts in fewer lines of code. Python is a programming language that lets you work quickly and integrate systems more efficiently. Python is dynamically typed and garbage-collected. It supports multiple programming paradigms, including procedural, object-oriented, and functional programming. Python is often described as a "batteries included" language due to its comprehensive standard library.

Django

Django is a web application framework written in Python programming language. It is based on MVT (Model View Template) design pattern. The Django is very demanding due to its rapid development feature. It takes less time to build application after collecting client requirement.

This framework uses a famous tag line:

The web framework for perfectionists with deadlines.

SQLite

SQLite3 can be integrated with Python using sqlite3 module, which was written by Gerhard Haring. It provides an SQL interface compliant with the DB-API 2.0 specification described by PEP 249. You do not need to install this module separately because it is shipped by default along with Python version 2.5.x onwards.

To use sqlite3 module, you must first create a connection object that represents the database and then optionally you can create a cursor object, which will help you in executing all the SQL statements.

CHAPTER 3
SOFTWARE & HARDWARE REQUIREMENT

3.1 Platform Require

Hardware/Software	Hardware / Software element	Specification /version
Hardware	Processor	i3/i5
	RAM	8GB or more
	Hard Disk or SDD	256GB or more
Software	OS	Windows
	Python IDE	Pycharm Visual Studio Code

Pycharm: It is an opensource cross-platform integrated development environment (IDE) for scientific programming in the Python language.

Pycharm: Available as a cross-platform application, PyCharm is compatible with Linux, macOS, and Windows platforms. Sitting gracefully among the best Python IDEs, PyCharm provides support for both Python 2 (2.7) and Python 3 (3.5 and above) versions. PyCharm comes with a plethora of modules, packages, and tools to hasten Python development while cutting-

down the effort required to do the same to a great extent, simultaneously. Further , PyCharm can be customized as per the development requirements, and personal preferences call for. It was released to the public for the very first time back in February of 2010. In addition to offering code analysis.

CHAPTER 4
IMPLEMENTATION

4.1 Algorithm

The Algorithm of this project can be divided into several parts as follows – Front-End, Back-End, Connectivity.

Front-End: For front-end we have used the web development languages i.e., HTML and CSS. As we already know the work of HTML is to give the basic structure to the web page and CSS provide us with styles and designing materials.

STEP 1: To Create a user login page.

STEP 2: Designing a home page which shows HOSPITAL information.

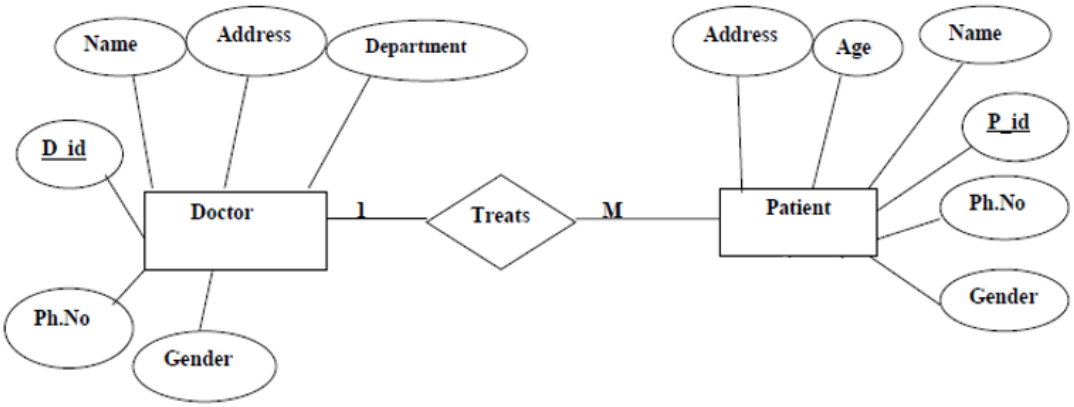
STEP 3: Creating a list which gives several options to the admin.

STEP 4: Linking each option to a different HTML page.

STEP 5: Creating HTML page for each particular option. Like different pages for add patient, add doctor, view patient details, view doctor information etc.

STEP 6: Adding the Hospital name and the tagline in home page respectively.

4.2 E-R Diagram



4.3 Implementation

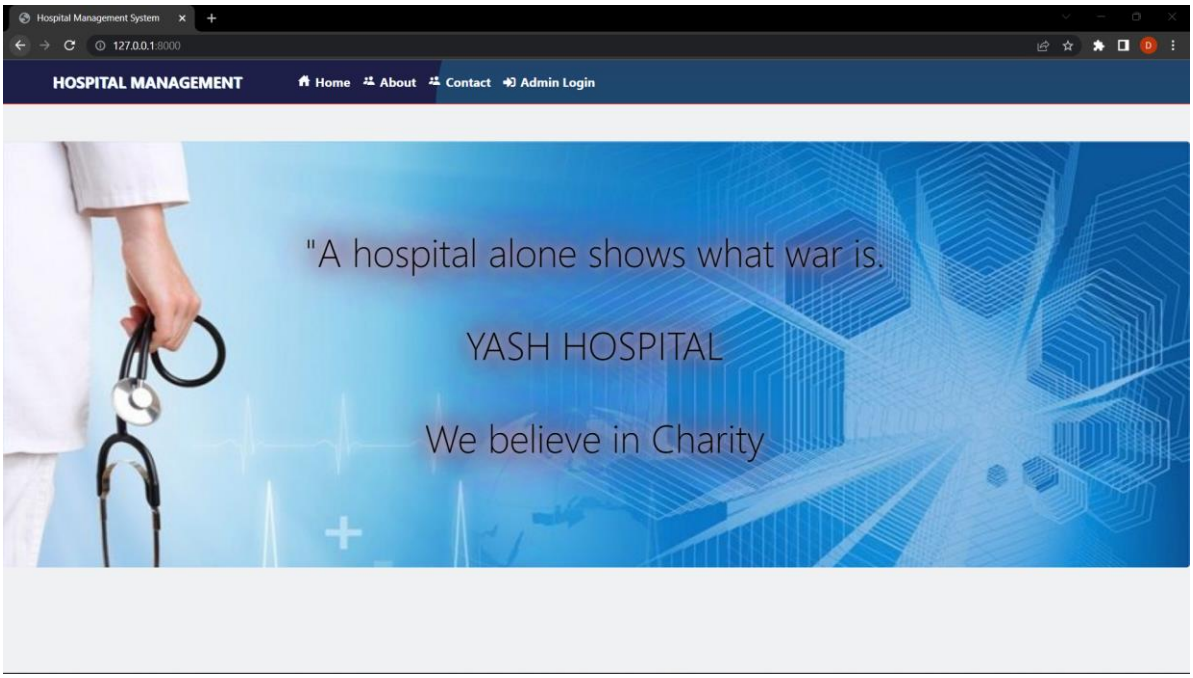


Figure 1 : Home Page

In Home page this is the first view of our project. In which we can see the name of Hospital and the tagline. And in navigation bar we can see four option, they are ‘Home’, ‘About’, ‘Contact’, and ‘Admin Login’. We have added a back picture

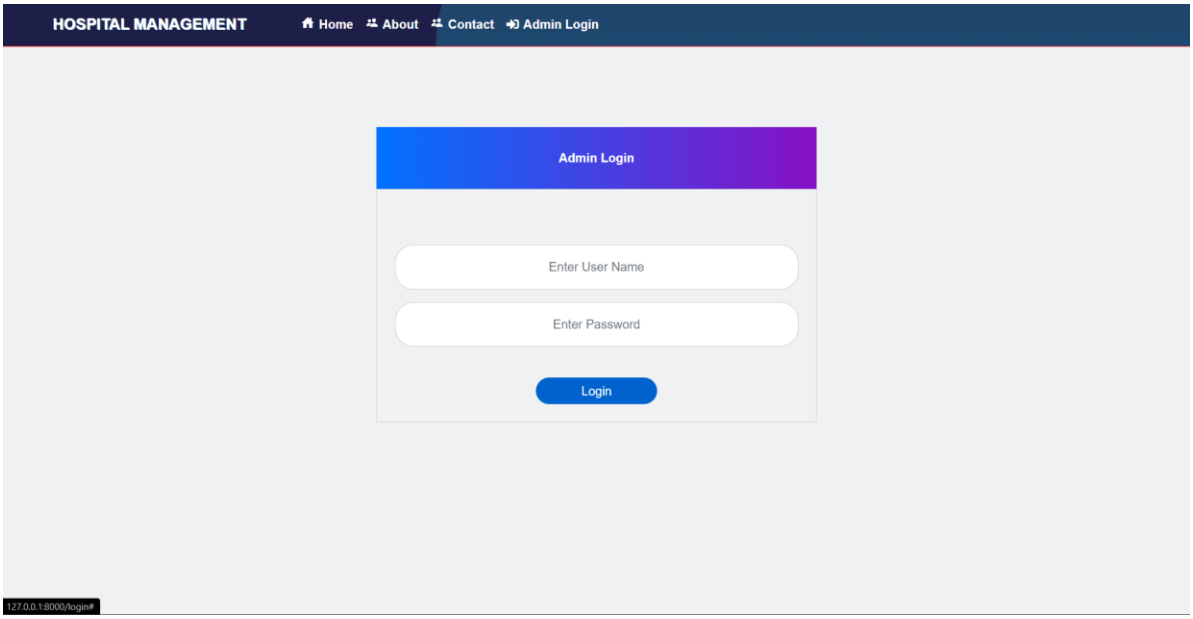


Figure 2 : Login

The Login page is created with HTML. Basically the <form> tag is used to make the login page. To insert the username, <input> tag is used of type text and to insert password, <input> > tag is used with type password. The login button is added with the <button> tag. The flexbox is aligned at the center background image is added. The data required in the login page is fetched from using person.

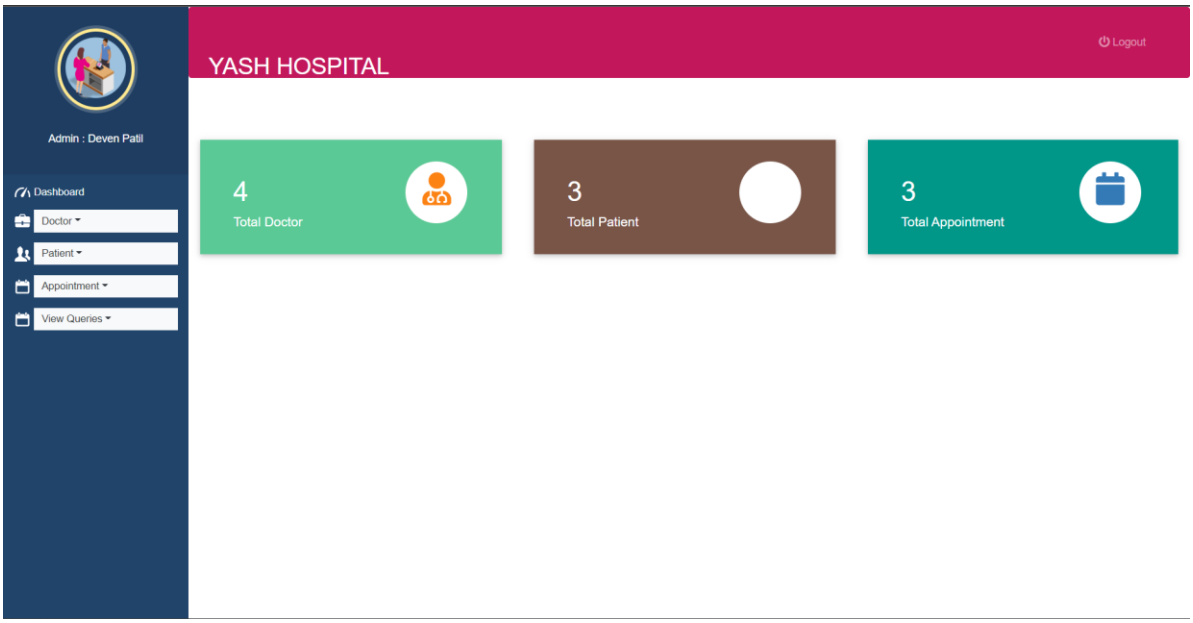


Figure 3 : Admin Home

Admin home shows the hospital name in navigation bar and also the logout button. In between we can see the total number of doctor's , patient's , total appointment.

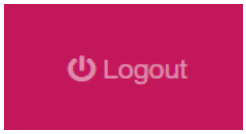


Figure 4 : Logout button

The Home Page also includes a sidebar which provides user with multiple options like Doctor, Patient, Appointment, View Queries, Admin name.

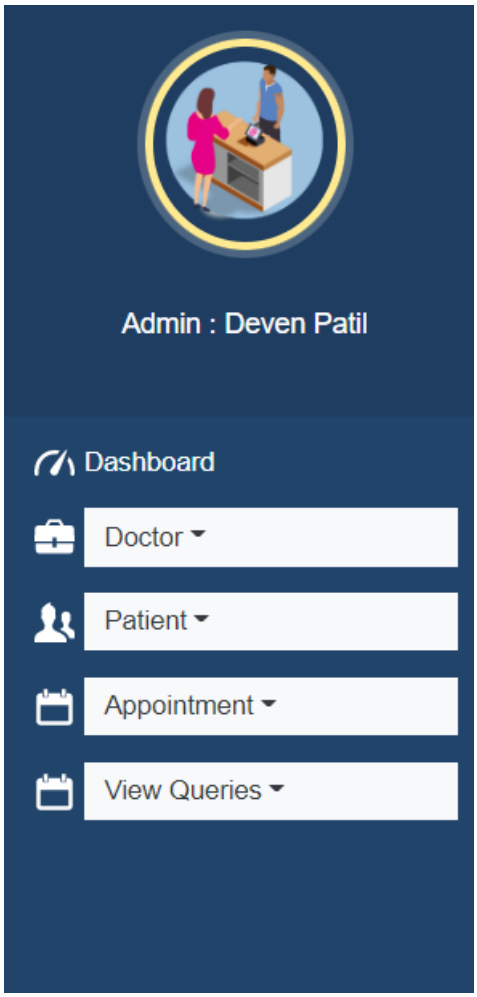
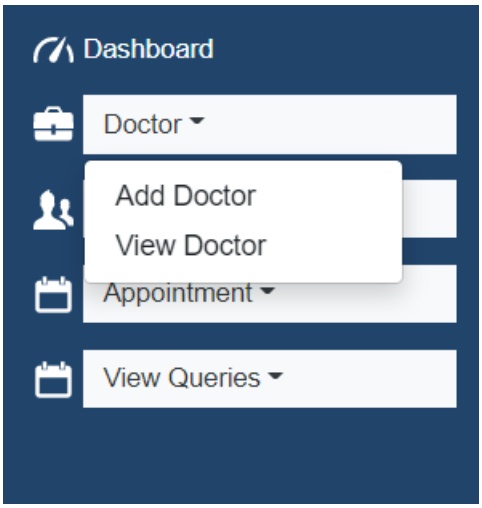


Figure 5 : Sidebar

As we click on ‘Doctor’ we will get two choice that is ‘Add Doctor’ and ‘View Doctor’



As we click on view doctor it shows us the information about doctors. In this we have ID, Doctor name, Contact, Specialization etc. In action column we have two option EDIT / Delete. We can edit and delete the doctor option.

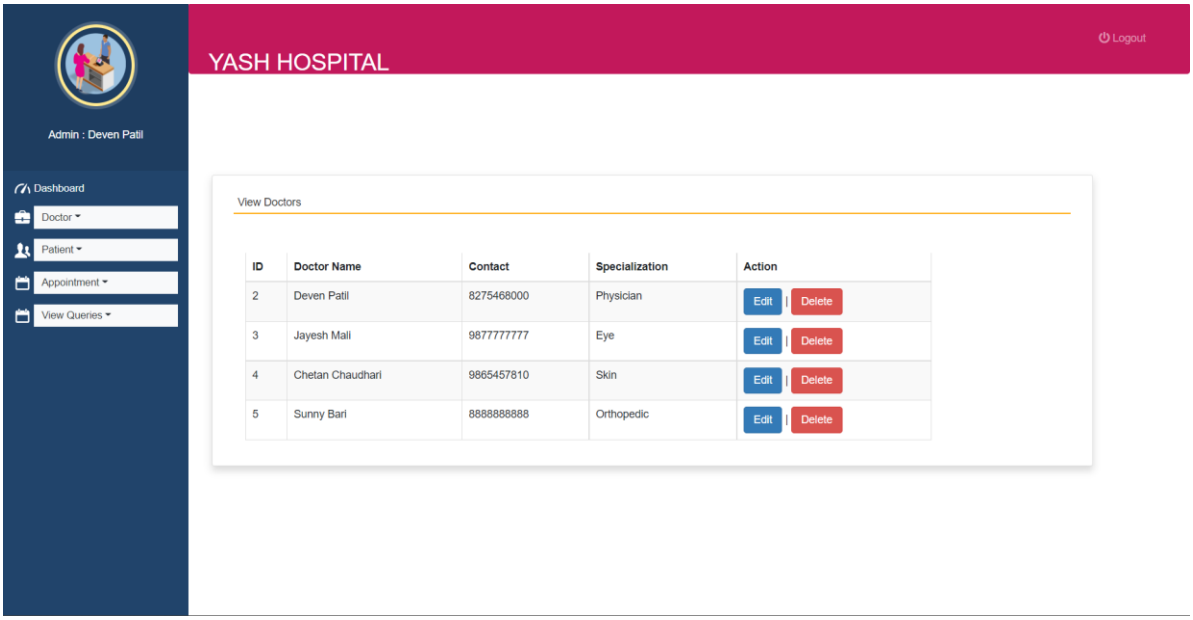


Figure 6 : View Doctor

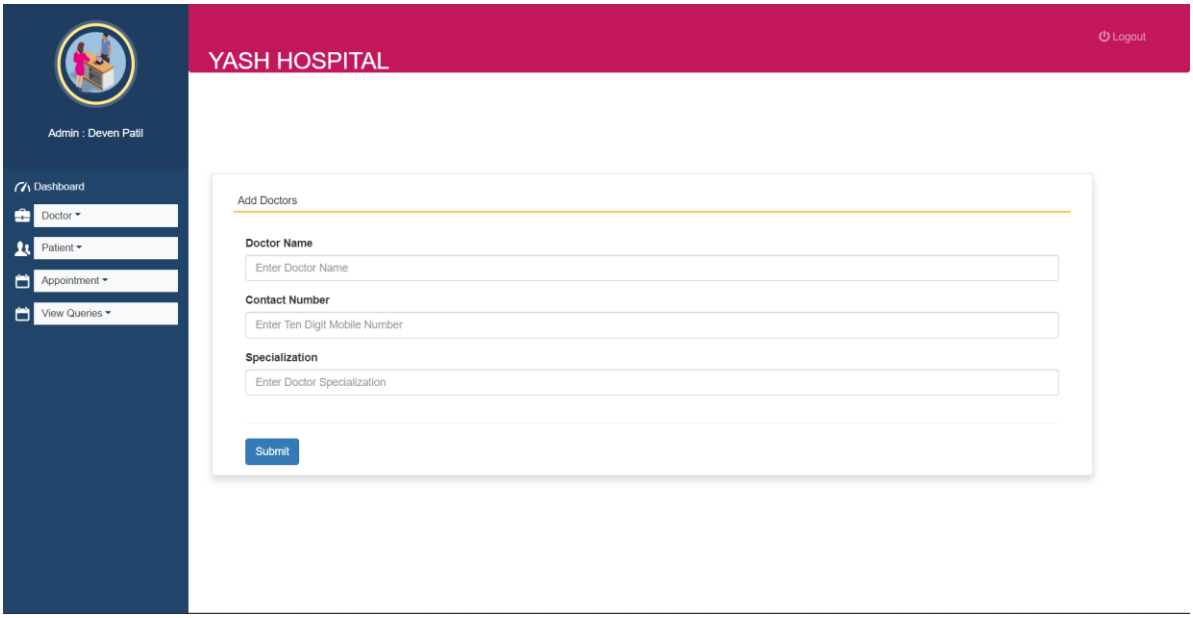


Figure 7 : Add Doctor

Same as doctor our project have patient option same as add patient and view patient. As all information gets fill such as patient name , mobile number , gender , address etc. We gets the message of successfully login. We can see this information in view patient option

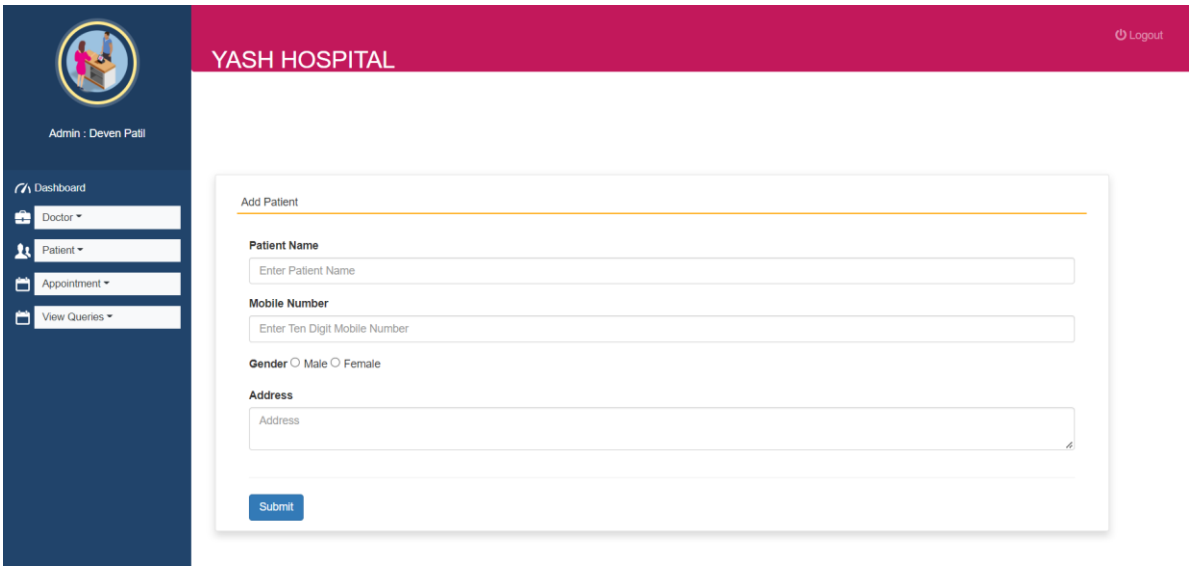


Figure 8 : Add Patient

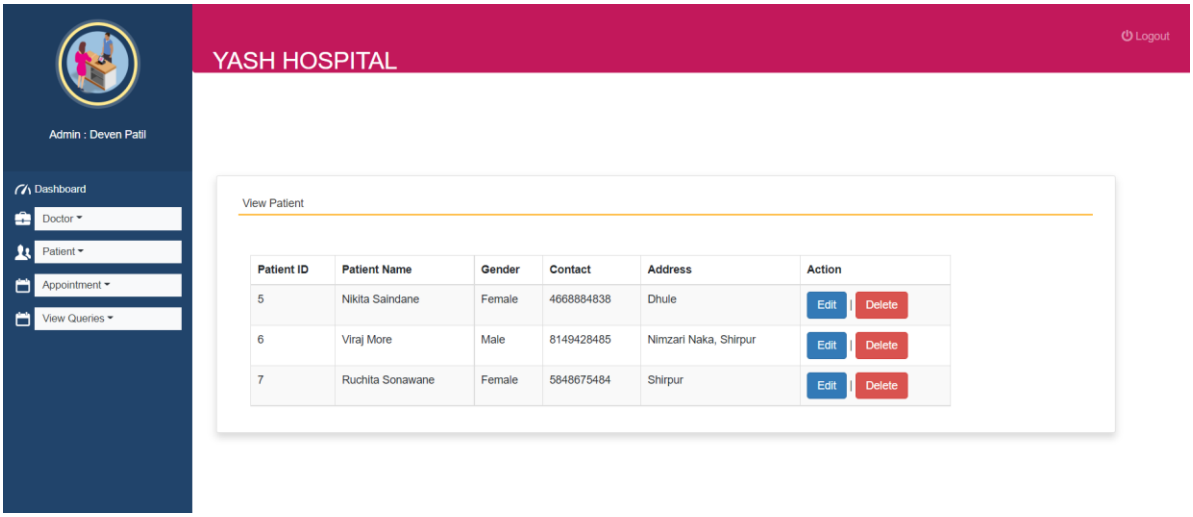


Figure 9 : View Patient

In our project there is option of add appointment in this patient appointment can be schedule were we have choose the doctor name , patient name , date & time of appointment. For this patient should be already register in our database. Also we can see the appointment made, in which doctor can know there appointment for a day by having a view on appointment

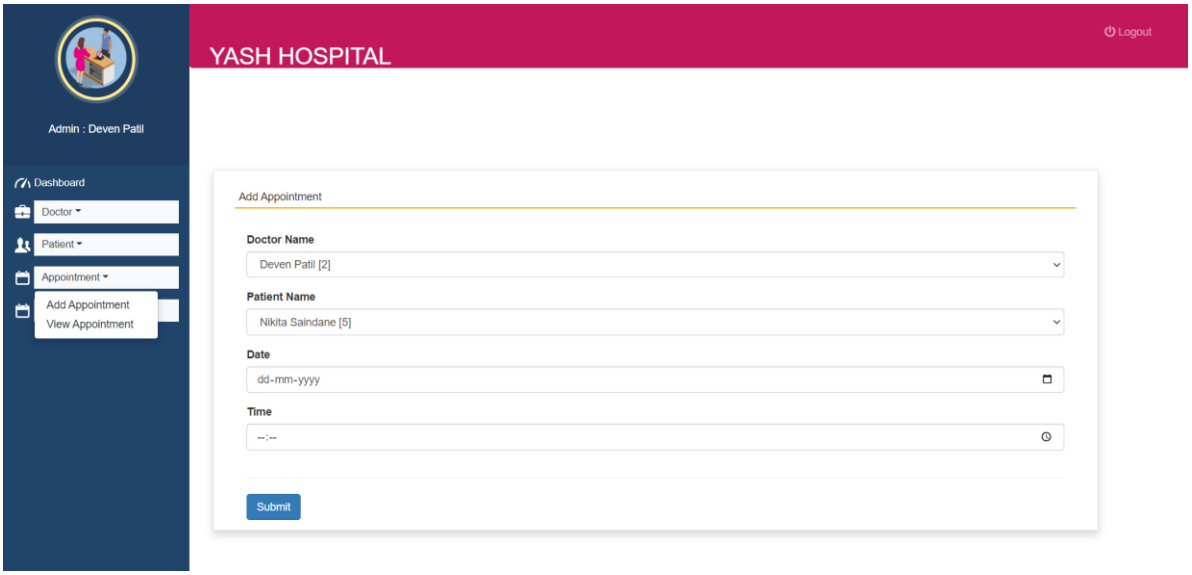


Figure 10 : Add Appointment

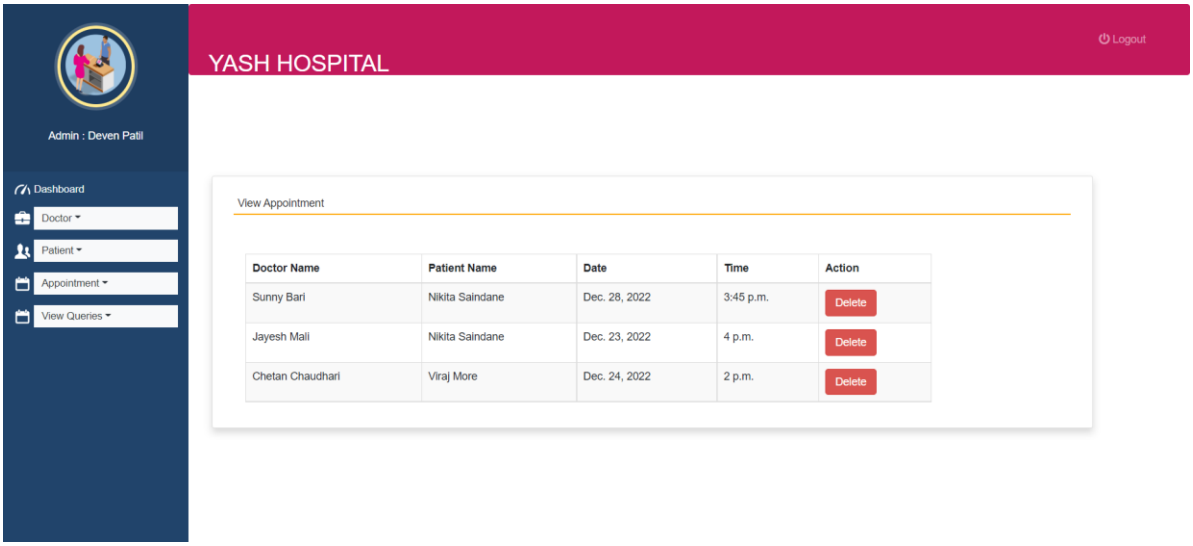


Figure 11 : View Appointment

Coming towards our 4th feature that is View Queries in which is the patient have send us a message form ‘Contact’ section they can been seen here

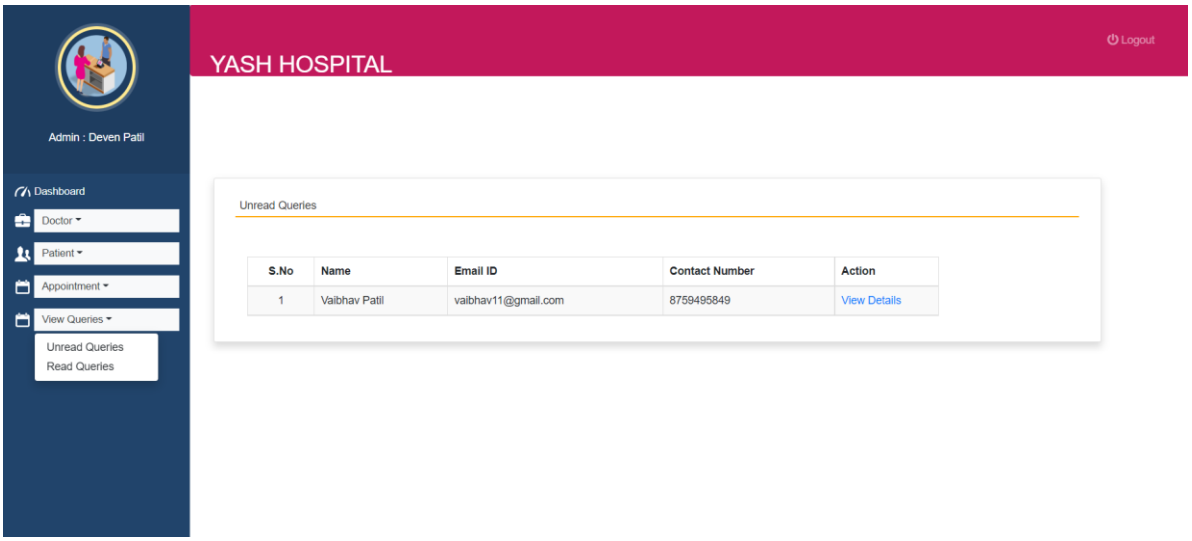


Figure 12 : Unread Queries

As we click on unread queries we can the message send by the patient to a hospital. By view details we can see all the details and message send by patient.

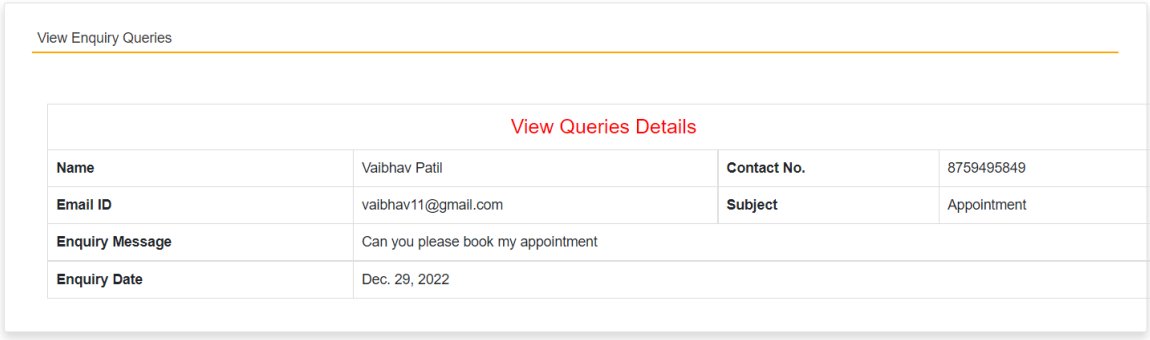


Figure 13 : View Queries Details

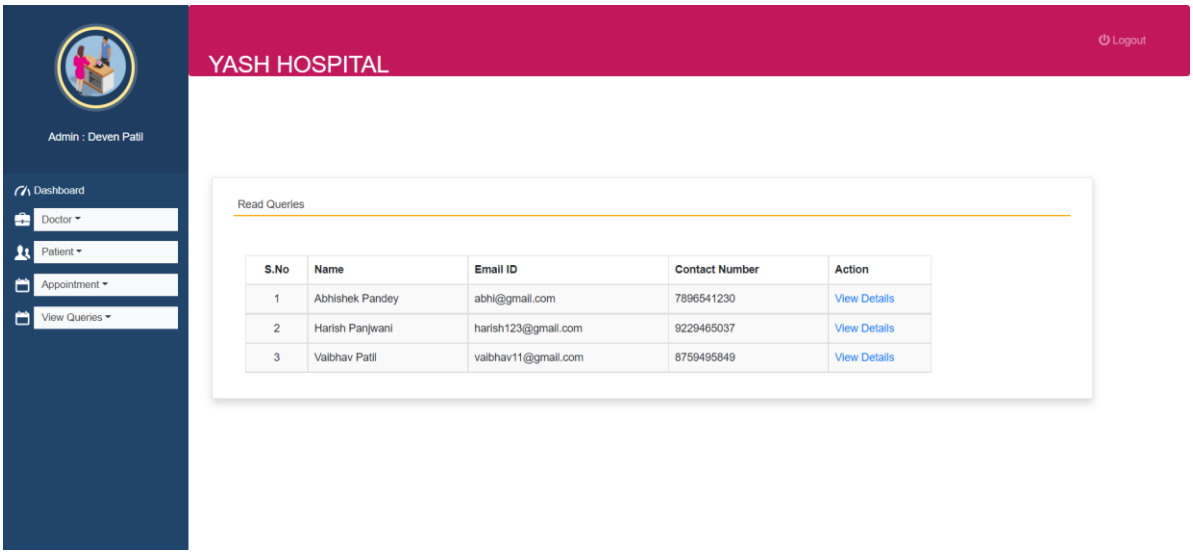


Figure 14 : Read Queries

Conclusion

The project entitled “Hospital Management System” is developed using HTML , CSS as front end and Python SQLite database in back end to computerize the process of management of hospital. This project covers only the basic features required. After the implementation of the HMS project, we come to a conclusion that this project is ready to be deployed in the market. The front-end and back-end works perfectly together. The UI of this website is very much user-friendly and interactive. The user gets a whole lot of features within the website which makes their work pretty much easier. The security of the hospital records is also maintained with the help of unique and changeable user IDs and password. If any error occurs, the admin can easily interfere and solve the problem as it manages the database at the bank-end. The admin can also go through requests and messages of the patient sent through contacting the hospital. Summary is, this website is an easy and secured way of hospital management and is a great alternative of the conventional hospital system as most of the things are covered through digitally managing the records.

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