Mahavir Education Trust's

SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE

Chembur, Mumbai - 400 088

UG Program in Computer Engineering

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DATABASE MANAGEMENT SYSTEM

A Mini Project Report on Hospital Management System

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CHAPTER 1: ABSTRACT

This project “Hospital Management System” includes Admin, doctor & patient login, storing/fetching their details into/from the system. The software has the facility to give a unique id for every patient & doctor; stores the clinical details of every patient. It includes a search facility to know the current status of each patient. One can login into Mapaish Hospital using an email and a password. It is accessible by an administrator, and only they can add data/delete into/from the database. The data can be retrieved easily. The interface is very user-friendly.

CHAPTER 2: INTRODUCTION

As long as each stage implementation needs to be accurate and explicit, the clinic management system provides certain automation of many vital daily processes. The hospital system software covers the services that unify and simplify the work of healthcare professionals as well as their interactions with patients.

There is always the wide choice of features that can be included in the system. Moreover, the most important thing is that they are created to streamline various procedures that meet the needs of all the users. The hospital management system feature list is concentrated on providing the smooth experience of patients, staff and hospital authorities. It might seem that their expectations differ, they still are covered by components of the hospital information system. Quality and security still remain the main criteria of the medical industry. It is also known for the constant and rapid changes to improve the efficiency of medical services and satisfaction of the patients.

Hospital management has greatly changed over the last decades. Business expertise, modern technologies, connected devices, mobile apps, and knowledge of healthcare are key elements for the implementation of hospital management system projects. The number of healthcare providers has increased and the patients have a wide choice of medical specialists. The interactions between the hospital and the patient can be simplified for the convenience of both sides. Each institution has the opportunity to create the efficient, clear and fast delivering healthcare model.

PROBLEM DEFINITION:

In a Mapaish Hospital a database is to be designed to store following requirements. Permanent doctors get fixed salaries. Personal information like name, address, date of birth, contact number, specialization, and salary are required. Consulting doctors visits at a fixed time every day. Personal information like name, address, date of birth, contact number, specialization, and charges are required. Patients are admitted to the hospital. Personal information like name, address, date of birth, contact number, blood group. relative's name & address, reasons for admission are required. Patients are admitted to rooms of different types, per day charges depends on room type. Various labs in hospitals, where several tests are conducted on patients, each test has fixed charge.

GUI should allow recording details of Doctors, Patients and rooms also modifying current details etc. Only the administrator is allowed to do these operations. Doctors can see information of patients if and only if the patient is under treatment of the doctor. Administrator is allowed to generate various reports based on data, patient, room types, doctors etc.

Query 1: Given any reason for admission, list the number of patients having that same reason

Query 2: Find permanent doctors having a salary in a range of salaries.

CHAPTER 3: HARDWARE AND SOFTWARE REQUIREMENT

Hardware Interface:

- Personal Computer
- 128 MB minimum RAM Required
- Internet or LAN Connections

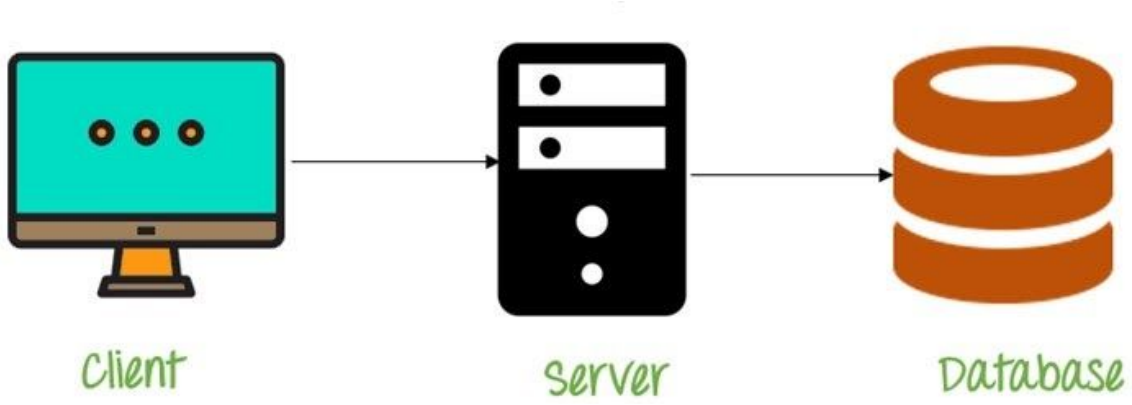
Software Requirement:

- Modern Browser
- PHP server
- Database Server(MariaDB/ MySQL)

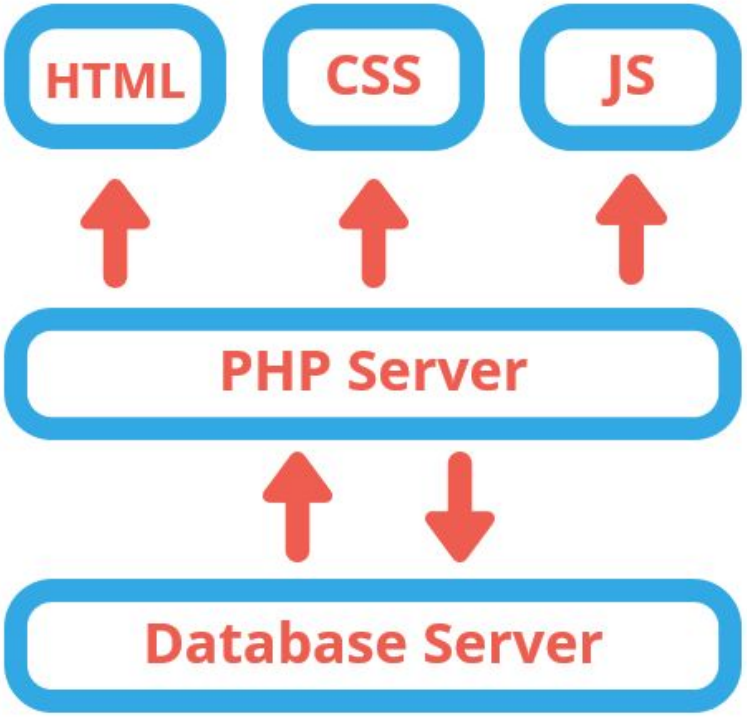
CHAPTER 4: DESIGN

The application follows a 3-tier architecture

1. Presentation layer (your PC, Tablet, Mobile, etc.)
2. Application layer (PHP server)
3. Database Server (MySQL, MariaDB)



Technology Stack:



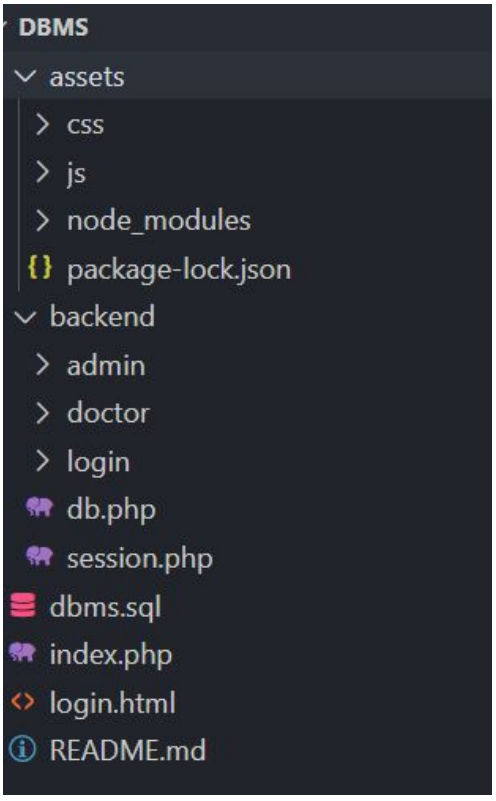
Client:

The user then needs to login to access the system, where they can view the data present in the hospital database. Only the admin can edit the data present in the database. The login form validation is done using **jQuery** library for **Javascript**, **PHP** and **Database**. Duplicate E-Mail IDs are validated against the database using AJAX and PHP. When the user logins, the user session is created to uniquely identify the user. The admin sends requests to the PHP server for addition/updation/deletion of data, which then updates the database as per the assigned query. In similar fashion other users view and sort the database.

Modules:

1. Login Validation (Login Page)
    a. Client side validation is done using jQuery and server side validation is done using AJAX, PHP and database.
2. Header
    a. If the user is logged in as a doctor then the patient page will be inactive.
    b. Same goes for the patient who won't be able to access the doctor page .
3. JumboTron
    a. It greets every user that logs on the system.
    b. It performs Sorting query for the doctor and Search query for the patient.
    c. And an add button only available for admin.
4. Container
    a. It displays the data in the form of a table.

Server/Host:



Admins needs to host the website on a PHP server like Xampp or a PHP supported web hosting platform.

Assets folder holds Javascript and CSS files. Javascript and CSS libraries like Bootstrap are also included in this folder.

Backend directory includes all the PHP script.

Database Schema:

The SQL file in the project needs to be imported in MySQL/MariaDB Database server. The Database contains the following tables.

Login: It has 3 attributes: password, email and user_type.

Patient: It has 7 attributes: patient_ID, name, dob, gender, blood_group, email and mobile number.

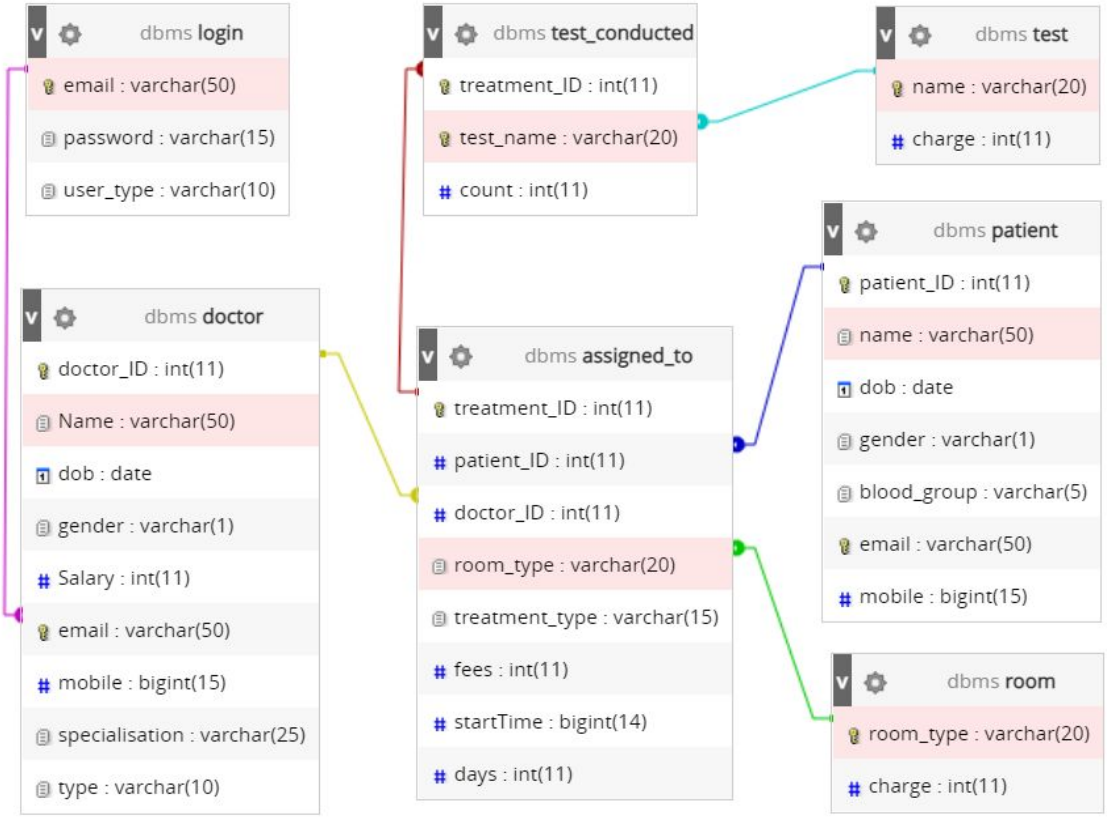
Doctor: It has 9 attributes: doctor_ID, Name, dob, gender, salary, email, mobile number, specialization and type.

Assigned to: It is a relationship table containing the following attributes: treatment_ID, patient_OD, doctor_ID, room_type, treatment_type, fees, startTime, days.

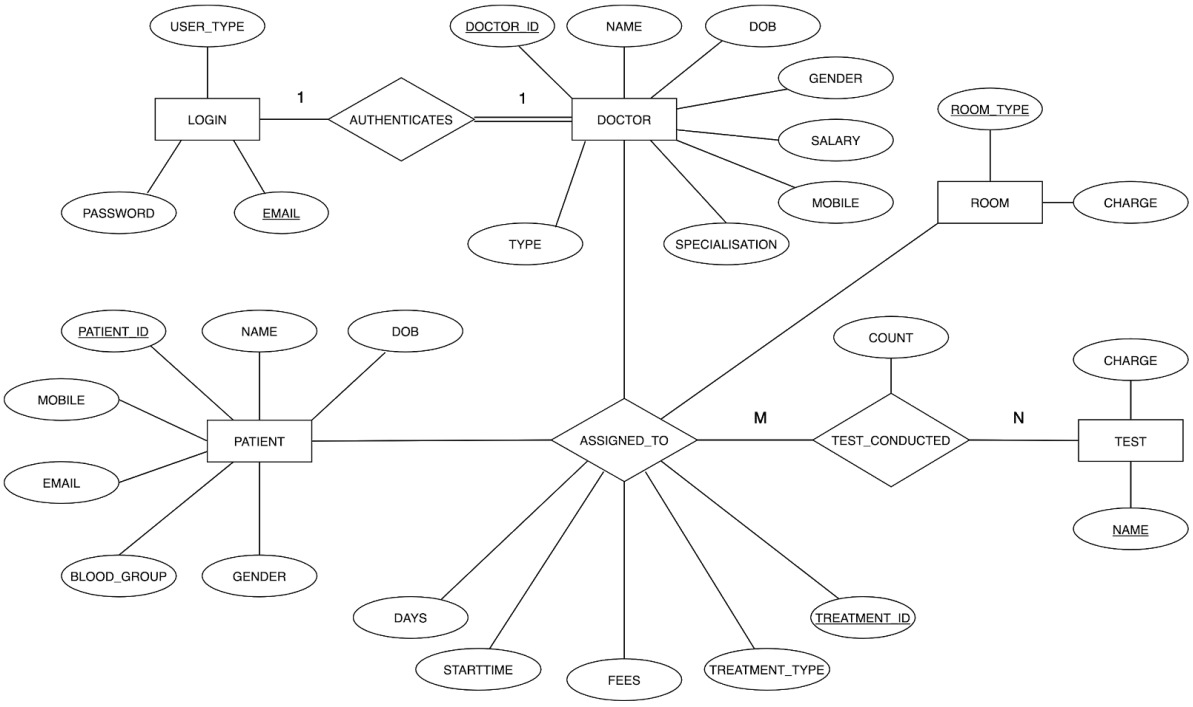
Room: It has 2 attributes: room_type and charge.

Test: It has 2 attributes: name and charge.

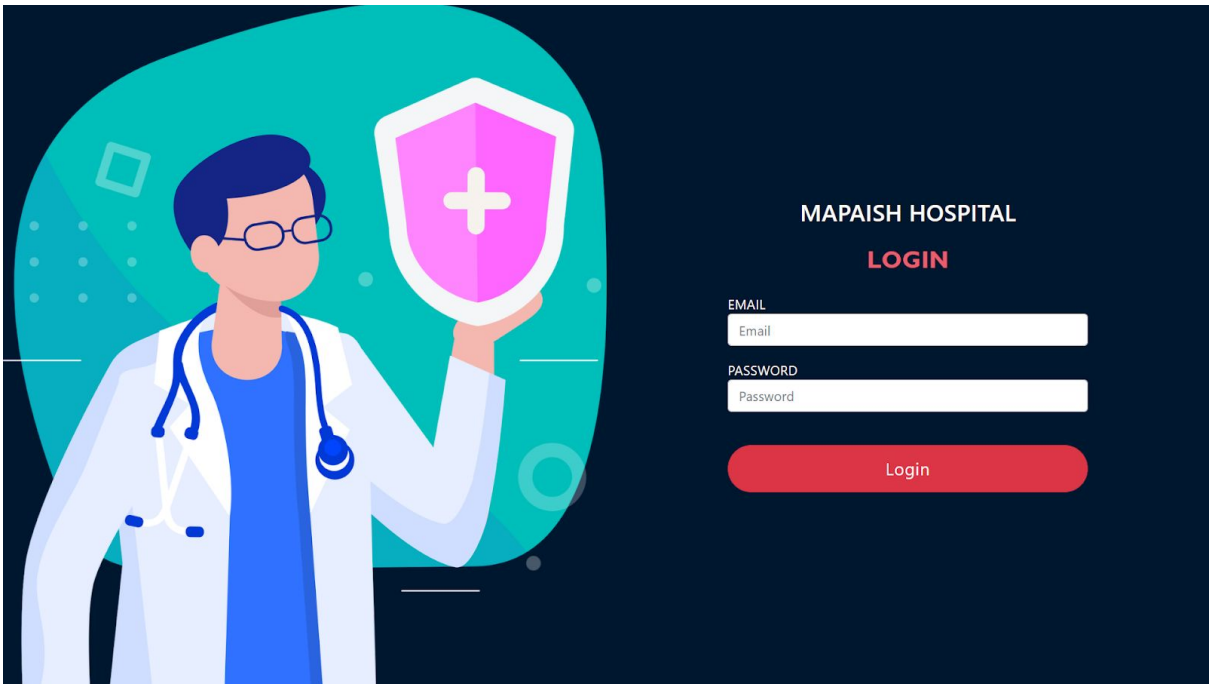
Test Conducted: It is a relationship table containing the following attributes: treament_ID, test_name and count.

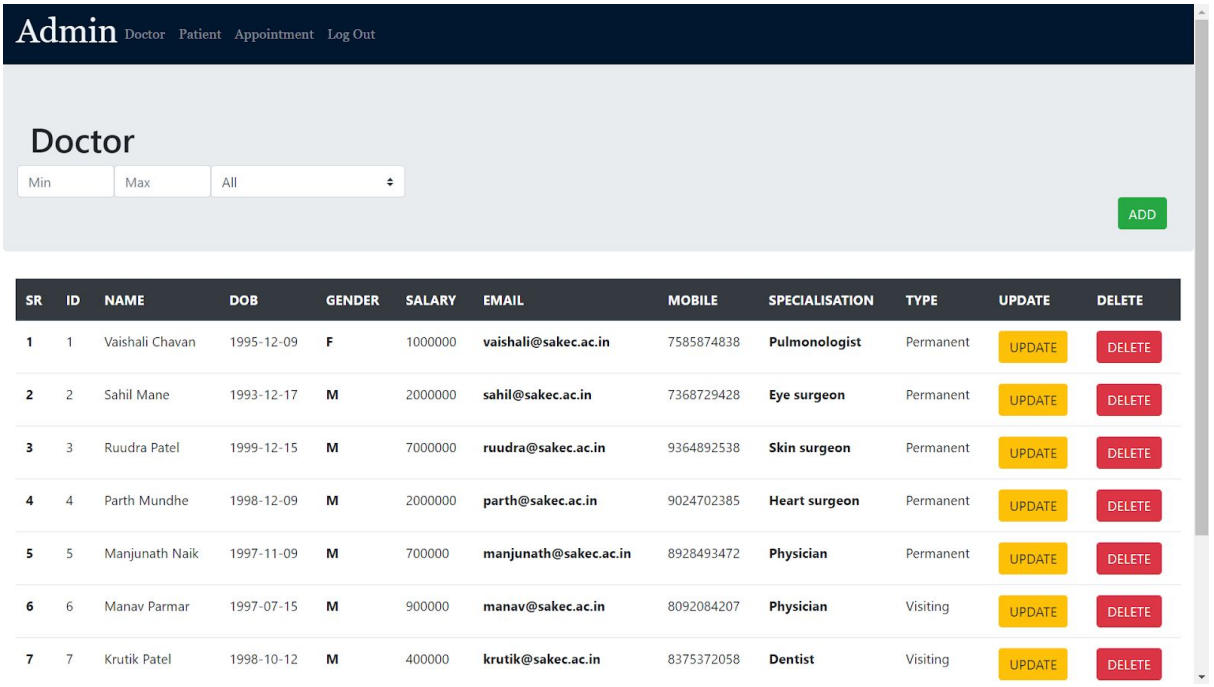


ER Diagram:

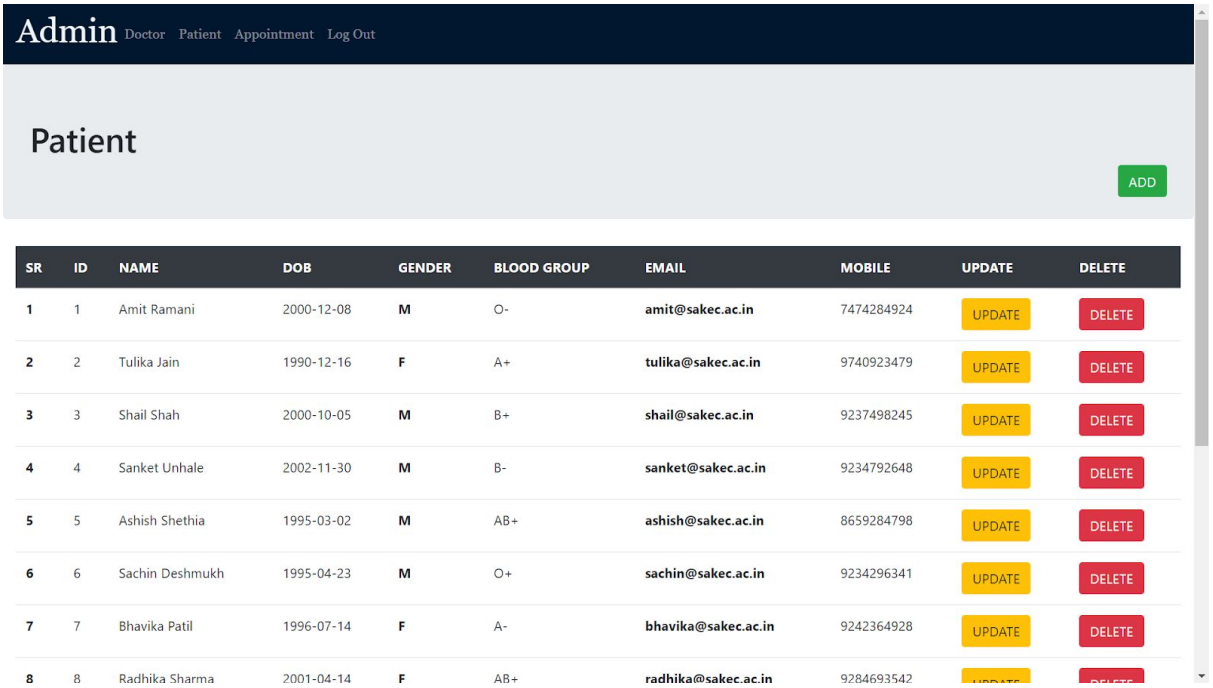


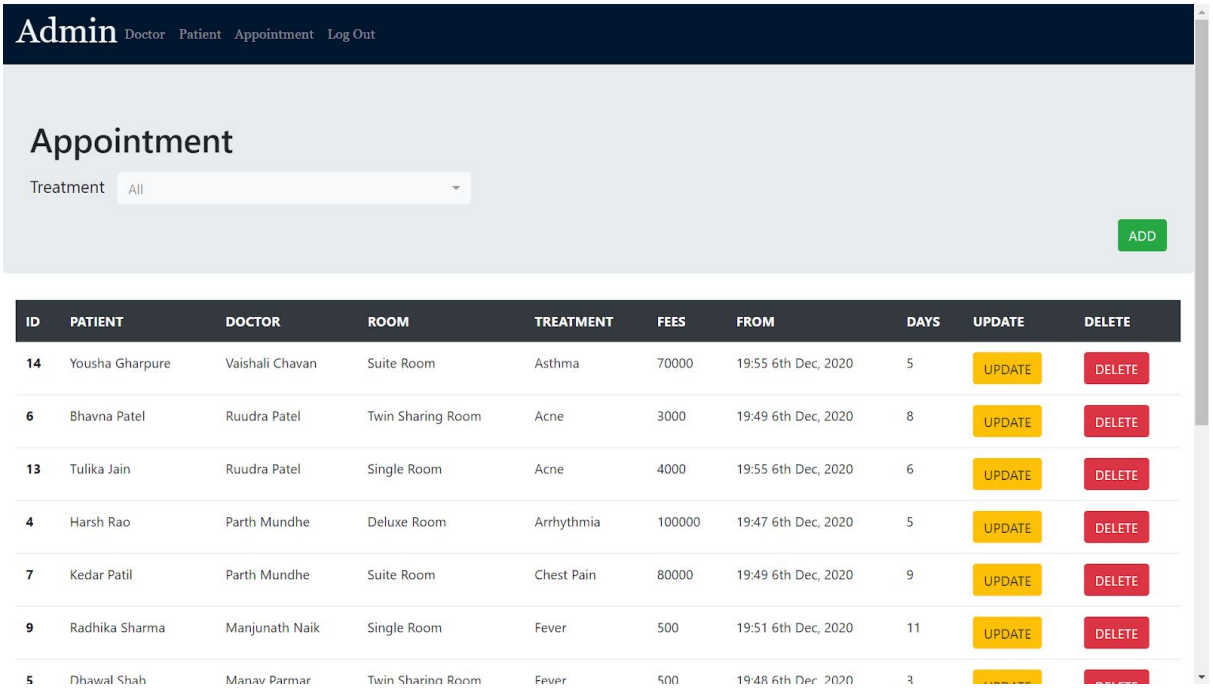
CHAPTER 5: RESULTS





SR	ID	NAME	DOB	GENDER	SALARY	EMAIL	MOBILE	SPECIALISATION	TYPE	UPDATE	DELETE
1	1	Vaishali Chavan	1995-12-09	F	1000000	vaishali@sakec.ac.in	7585874838	Pulmonologist	Permanent	UPDATE	DELETE
2	2	Sahil Mane	1993-12-17	M	2000000	sahil@sakec.ac.in	7368729428	Eye surgeon	Permanent	UPDATE	DELETE
3	3	Ruudra Patel	1999-12-15	M	7000000	ruudra@sakec.ac.in	9364892538	Skin surgeon	Permanent	UPDATE	DELETE
4	4	Parth Mundhe	1998-12-09	M	2000000	parth@sakec.ac.in	9024702385	Heart surgeon	Permanent	UPDATE	DELETE
5	5	Manjunath Naik	1997-11-09	M	700000	manjunath@sakec.ac.in	8928493472	Physician	Permanent	UPDATE	DELETE
6	6	Manav Parmar	1997-07-15	M	900000	manav@sakec.ac.in	8092084207	Physician	Visiting	UPDATE	DELETE
7	7	Krutik Patel	1998-10-12	M	400000	krutik@sakec.ac.in	8375372058	Dentist	Visiting	UPDATE	DELETE


Admin Doctor Patient Appointment Log Out
Patient
ADD
SR ID NAME DOB GENDER BLOOD GROUP EMAIL MOBILE UPDATE DELETE
1 1 Amit Ramani 2000-12-08 M O- amit@sakec.ac.in 7474284924 UPDATE DELETE
2 2 Tulika Jain 1990-12-16 F A+ tulika@sakec.ac.in 9740923479 UPDATE DELETE
3 3 Shail Shah 2000-10-05 M B+ shail@sakec.ac.in 9237498245 UPDATE DELETE
4 4 Sanket Unhale 2002-11-30 M B- sanket@sakec.ac.in 9234792648 UPDATE DELETE
5 5 Ashish Shethia 1995-03-02 M AB+ ashish@sakec.ac.in 8659284798 UPDATE DELETE
6 6 Sachin Deshmukh 1995-04-23 M O+ sachin@sakec.ac.in 9234296341 UPDATE DELETE
7 7 Bhavika Patil 1996-07-14 F A- bhavika@sakec.ac.in 9242364928 UPDATE DELETE
8 8 Radhika Sharma 2001-04-14 F AB+ radhika@sakec.ac.in 9284693542


Admin Doctor Patient Appointment Log Out
Appointment
Treatment All
ADD
ID PATIENT DOCTOR ROOM TREATMENT FEES FROM DAYS UPDATE DELETE
14 Yousha Gharpure Vaishali Chavan Suite Room Asthma 70000 19:55 6th Dec, 2020 5 UPDATE DELETE
6 Bhavna Patel Ruudra Patel Twin Sharing Room Acne 3000 19:49 6th Dec, 2020 8 UPDATE DELETE
13 Tulika Jain Ruudra Patel Single Room Acne 4000 19:55 6th Dec, 2020 6 UPDATE DELETE
4 Harsh Rao Parth Mundhe Deluxe Room Arrhythmia 100000 19:47 6th Dec, 2020 5 UPDATE DELETE
7 Kedar Patil Parth Mundhe Suite Room Chest Pain 80000 19:49 6th Dec, 2020 9 UPDATE DELETE
9 Radhika Sharma Manjunath Naik Single Room Fever 500 19:51 6th Dec, 2020 11 UPDATE DELETE
5 Dhawal Shah Manav Parmar Twin Sharing Room Fever 500 19:48 6th Dec, 2020 3

SR	ID	PATIENT	ROOM	TREATMENT	FEES	FROM	DAYS
1	3	Bhavika Patil	Single Room	Acne	5000	19:46 6th Dec, 2020	1
2	8	Nidhi Kulkarni	Single Room	Acne	2500	19:51 6th Dec, 2020	6
3	11	Sanket Unhale	Deluxe Room	Acne	4000	19:53 6th Dec, 2020	1

CHAPTER 6: CONCLUSION

Taking into account all the mentioned details, we can make the conclusion that the hospital management system is the inevitable part of the lifecycle of the modern medical institution. It automates numerous daily operations and enables smooth interactions of the users. Developing the hospital system software is a great opportunity to create the distinct, efficient and fast delivering healthcare model.

Implementation of hospital management system projects helps to store all kinds of records, provide coordination and user communication, implement policies, improve day-to-day operations, arrange the supply chain, manage financial and human resources, and market hospital services. This beneficial decision covers the needs of the patients, staff and hospital authorities and simplifies their interactions. It has become the usual approach to manage the hospital. Many clinics have already experienced its advantages and continue developing new hospital management system project modules.

CHAPTER 7: REFERENCES

1. https://getbootstrap.com/docs/4.5/getting-started/
2. https://developer.mozilla.org/en-US/docs/Glossary/jQuery
3. https://www.w3schools.com/
4. https://mariadb.com/kb/en/documentation/
5. https://www.php.net/docs.php