MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE

Deemed to be University
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NAAC Accredited with A++ Grade

Project Report

on

Development of Doctor Appointment System (User Module)

Submitted By

Umakant Sharma
(0901CA221068)

Industry Mentor

Mrs. Sweety Gupta
(Project Guide, Praedico Global Research Pvt. Ltd)

Faculty Mentor

Dr. Parul Saxena
(Assistant Professor)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE
GWALIOR – 474005 (MP) Estd. 1957

JANUARY – JUNE 2024

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Development of Doctor Appointment System (User Module)

A project report submitted in partial fulfilment of the requirement for the degree of

MASTER IN COMPUTER APPLICATION

in

COMPUTER SCIENCE AND ENGINEERING

Submitted By

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JANUARY – JUNE 2024

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To whom so ever it may concern

This is to certify that **Mr./Mrs./Miss. UMAKANT SHARMA (0901CA221068)** student of MCA at MITS, Gwalior, has completed **Project** Training/Internship program as an online/offline trainee at our organization **PRAEDICO GLOBAL RESEARCH PVT. LTD.** Him/Her training details are:

Period - **01 JAN 2024 to 22 APR 2024**

Technology – **MERN Full Stack**

Project Title – **DOCTOR APPOINTMENT SYSTEM (USER MODULE)**

All of us at Praedico Global Research Pvt. Ltd. are pleased to have him/her in our team. This Project Training/Internship program includes training, orientation and focuses primarily on learning and developing new skills and gaining a deeper understanding of concepts through hands on application of the knowledge he/she learned.

We take this opportunity to wish him/her a long, happy and successful career.

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CERTIFICATE

This is certified that **Umakant Sharma** (0901CA221068) has submitted the project report titled **Doctor Appointment System (User Module)** under the mentorship of **Mrs. Sweety Gupta** (Project Guide, Praedico Global Research Pvt. Ltd.), in partial fulfilment of the requirement for the award of degree of **Master in Computer Application** in Computer Science and Engineering from **Madhav Institute of Technology and Science, Gwalior.**

26/4/24

Dr. Parul Saxena
(Assistant Professor)
Computer Science and Engineering

26/4/24

Dr. Manish Dixit
(Professor and Head)
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MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE

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DECLARATION

I hereby declare that the work being presented in this project report, for the partial fulfilment of requirement for the award of the degree of **Master in Computer Application** in Computer Science and Engineering at **Madhav Institute of Technology & Science, Gwalior** is an authenticated and original record of my work under the mentorship of **Mrs. Sweety Gupta** (Project Guide, Praedico Global Research Pvt. Ltd.).

I declare that I have not submitted the matter embodied in this report for the award of any degree or diploma anywhere else.

Umakant Sharma
0901CA221068
2022-2024
Master in Computer Application
Computer Science and Engineering

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE

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ACKNOWLEDGEMENT

The full semester project has proved to be pivotal to my career. I am thankful to my institute, **Madhav Institute of Technology and Science** to allow me to continue my disciplinary project. I extend my gratitude to the Director of the institute, **Dr. R. K. Pandit** and Dean Academics, **Dr. Manjaree Pandit** for this.

I would sincerely like to thank my department, **Department of Computer Science and Engineering**, for allowing me to explore this project. I humbly thank **Dr. Manish Dixit**, Professor and Head, Department of Computer Science and Engineering, for his continued support during the course of this engagement, which eased the process and formalities involved.

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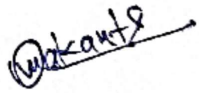
I am sincerely thankful to my faculty coordinator. I am grateful to the guidance of **Dr. Parul Saxena** (Assistant Professor), Computer Science and Engineering, for her continued support and guidance throughout the project. I am also very thankful to the faculty and staff of the department.



Umakant Sharma
0901CA221068
2022-2024
Master in Computer Application
Computer Science and Engineering

ABSTRACT

The **Doctor Appointment System** is a web application for scheduling healthcare appointments that facilitates communication between patients and doctors. It is an extremely vital prerequisite, particularly in light of the current rapid advancements in communication technology.

In order to meet the needs of patients and doctors by providing them with more rapid and convenient means of communication, the proposed system of the projects would develop a doctor-patient interaction system for booking and searching the nearby Clinics and Hospitals on websites or application platforms.

Through the connections between user terminals and specific services, the web's advantages can be fully utilized to bridge the time and distance gap between clinics and patients, offering quick and effective medical care. This allows patients and doctors to obtain the necessary data to improve their interactions.

To keep the data, secure in records, this website is helpful. In short, we use ReactJs, which is now quite popular in the web development community, for the frontend. We use NodeJS, a well-liked open-source server environment that is particularly well-suited to web development, for the backend. MONGODB is the database.

Technically, behaviourally, and economically, this idea is possible in every sense. The majority of people are aware of the technology we used for this project because it is so widely used. The project is designed with ease of use and functionality in mind, making it accessible to anyone.

सार

डॉक्टरऐप स्वास्थ्य देखभाल नियुक्तियों को शेड्यूल करने के लिए एक वेब एप्लिकेशन है जो मरीजों और डॉक्टरों के बीच संचार की सुविधा प्रदान करता है। यह एक अत्यंत महत्वपूर्ण शर्त है, विशेष रूप से संचार प्रौद्योगिकी में वर्तमान तीव्र प्रगति के आलोक में।

रोगियों और डॉक्टरों को संचार के अधिक तीव्र और सुविधाजनक साधन प्रदान करके उनकी जरूरतों को पूरा करने के लिए, परियोजनाओं की प्रस्तावित प्रणाली वेबसाइटों या एप्लिकेशन प्लेटफार्मों पर नजदीकी क्लीनिकों और अस्पतालों की बुकिंग और खोज के लिए एक डॉक्टर-रोगी संपर्क प्रणाली विकसित करेगी। .

उपयोगकर्ता टर्मिनलों और विशिष्ट सेवाओं के बीच कनेक्शन के माध्यम से, वेब के लाभों का पूरी तरह से उपयोग क्लीनिकों और रोगियों के बीच समय और दूरी के अंतर को पाटने, त्वरित और प्रभावी चिकित्सा देखभाल की पेशकश करने के लिए किया जा सकता है। इससे मरीजों और डॉक्टरों को अपनी बातचीत को बेहतर बनाने के लिए आवश्यक डेटा प्राप्त करने की अनुमति मिलती है।

डेटा को रिकॉर्ड में सुरक्षित रखने के लिए यह वेबसाइट मददगार है। संक्षेप में, हम फ्रंटएंड के लिए ReactJs का उपयोग करते हैं, जो अब वेब डेवलपमेंट समुदाय में काफी लोकप्रिय है। हम बैकएंड के लिए NodeJS का उपयोग करते हैं, जो एक लोकप्रिय ओपन-सोर्स सर्वर वातावरण है जो विशेष रूप से वेब विकास के लिए उपयुक्त है। MONGODB डेटाबेस है

तकनीकी रूप से, व्यवहारिक रूप से और आर्थिक रूप से, यह विचार हर दृष्टि से संभव है। अधिकांश लोग इस परियोजना के लिए हमारे द्वारा उपयोग की गई तकनीक से अवगत हैं क्योंकि इसका व्यापक रूप से उपयोग किया जाता है। प्रोजेक्ट को उपयोग में आसानी और कार्यक्षमता को ध्यान में रखकर डिज़ाइन किया गया है, जिससे यह किसी के लिए भी सुलभ हो सके।

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Chapter - 1 Introduction

Doctor Appointment System, the doctor appointment health website, streamlines the process for patients to book appointments with specific doctors for various health concerns. Whether it's eye problems, ear issues, dental needs, asthma management, or mental health support, Doctor Appointment System facilitates efficient scheduling. To address the issues with the manual system in use, the "Doctor Appointment System" was created. The difficulties our current system has are intended to be eliminated or, in certain situations, lessened by this program. A physician appointment system can result in a rapid, safe, dependable, and error-free management system. Instead of focusing on maintaining records, it might help the user focus on other activities. It will therefore assist the organization in making better use of its resources. Every business, no matter how big or little, faces obstacles. The goal of the Doctor Appointment approach is to automate the current manual approach with the aid of sophisticated computer hardware and software, meeting their needs and preserving their priceless Data and information can be easily accessed and manipulated over an extended period of time when kept. The user can focus on record keeping with the help of readily available and user-friendly gear and software. It will therefore assist the organization in making better use of its resources. The company can keep digital records up to date without making duplicate entries. This indicates that even though the information is accessible, it is not relevant. In essence, the project outlines how to manage for optimal performance and improved client services

Here's Doctor App works:

a. **User-Friendly Booking**: Patients fill out relevant fields and submit their appointment requests. This straightforward process saves valuable time for both patients and doctors.

b. **Efficient Management**: Doctor Appointment System not only handles appointment bookings but also helps manage various aspects of the healthcare business effectively.

c. **Patient registration**: After logging into the admin dashboard, the admin can verify the patient's availability.

d. **Doctor**: The administrator has the power to introduce new doctor categories and physicians.

e. **Checking the availability of appointments**: The administrator can click on spaces to see the patient'savailability

f. **Online appointment scheduling for time and date**: Patients can schedule an appointment for the time andday that works best for them.

g. **Cancellation of reservations**: Users have the option to cancel reservations at any moment by logging intothe system.

h. **Appointment booking email**: When the user successfully confirms an appointment and receives a "thankyou" email indicating how many appointments are scheduled.

i. **Feedback**: The system includes a feedback form that the administrator can access and amend.

1.1 Problem identification

a. **Difficulty in Scheduling**: Securing an appointment at a convenient time can be challenging due to the limited availability of slots, especially with highly sought-after specialists.
b. **Long Wait Times**: Even with a scheduled appointment, patients often experience long wait times in the waiting room, which can be frustrating and inconvenient.
c. **Communication Barriers**: Patients may struggle to effectively communicate their symptoms or concerns to the doctor, leading to misunderstandings or incomplete diagnoses.
d. **Limited Time with Doctor**: Doctors are often pressed for time due to busy schedules, which can result in rushed appointments and inadequate attention to patients' needs.
e. **Language and Cultural Barriers**: Language barriers or cultural differences between patients and healthcare providers can hinder effective communication and understanding during appointments.
f. **Accessibility Challenges**: Patients with mobility issues or transportation limitations may struggle to physically access healthcare facilities for appointments.

1.2 Parent Organization

Praedico Global Research Pvt. Ltd. - Revolutionizing Financial Literacy in India

At Praedico, our goal is to democratize financial literacy in India, and we're taking this task on for free. We've led the way in the creation of financial neurons—sophisticated neural networks that underpin our state-of-the-art stock market intelligence offerings—inspired by the neural architecture of the human brain.

We are the first finance neuron developers in India, not simply another finance firm. We are able to anticipate stock market performance globally with high accuracy by utilizing the capabilities of neural networks that have been properly created. As a cutting-edge fintech business, we use artificial intelligence to find new financial research products with the goal of providing people with free, top notch research and insights.

With forecasts in the Indian stock market and financial goods over 80% precision, our products have an amazing track record of accuracy. This implies that ordinary Indian investors, who usually had to pay high fees for research and advisory services, may now use our services for free. Our goal is to spearhead the global effort to eradicate financial inequity. We're levelling the playing field and making sure that everyone, regardless of financial means, has the chance to prosper in the market by offering free access to financial information and tools.

We're dedicated to creating financial solutions that beat the market in terms of pricing and performance in order to realize our mission. Our goal is to become the industry leader in financial product creation by setting the bar for performance and cost-effectiveness in the marketplace.

At Praedico, we're changing the financial environment as a whole, not simply financial literacy. We are enabling people all throughout India to take charge of their financial lives with our creative strategy, steadfast attention to accuracy, and unwavering commitment to accessibility.

At Praedico Global Research Organization, we blend finance and technology seamlessly. As a web developer, my role revolves around creating user-friendly interfaces that facilitate efficient access to financial information and analysis. We're deeply involved in stock and ETF (Exchange Traded Fund) analysis, covering a wide range of assets, including GoldBees, NiftyBees, and SilverBees. Our joy stems from the comprehensive calculations and insights we derive from these analyses.

1.3 Hardware and Software Specification

"The MERN stack is used in the design and development of the doctor appointment system. The popular technology stack consists of Node.js, React.js, Express.js, and MongoDB. By making use of these technologies, the system offers patients a scalable, effective, and user-friendly platform for making medical appointments. You can begin developing your web application utilizing the MERN stack once your development environment satisfies these requirements."

1.3.1 Hardware Specification

a. **Processor**: A modern multi-core processor like Intel Core i5 or equivalent is recommended. This ensures smooth performance during development and can handle multiple tasks and servers efficiently.
b. **Memory**: 8 GB RAM is the minimum, but 16 GB or more is ideal. This allows you to run multiple applications and virtual machines without experiencing sluggish performance.
c. **Storage**: A 256 GB Solid State Drive (SSD) is the minimum, but a 512 GB SSD or larger is recommended. An SSD significantly reduces loading times for your development environment and tools.
d. **Display**: A monitor with a resolution of at least 1920x1080 is comfortable for coding. Consider a larger display or even a dual-monitor setup to maximize productivity.
e. **Network**: A stable internet connection is necessary for downloading dependencies, updates, and collaborating with team members if applicable.

1.3.2 Software Specification

a. **Operating System**: Choose from Windows 10 or 11 (64-bit), macOS (latest version), or Linux (popular distributions include Ubuntu and Fedora).
b. **Development Environment**: Install Node.js (latest LTS version), MongoDB Community Edition, and a text editor or IDE like Visual Studio Code for writing code.
c. **Dependencies**: Use **npm** or **yarn** to manage dependencies for the project. This includes packages for Express.js, React, and any other libraries or frameworks used in your application.
d. **MongoDB**: This NoSQL database serves as the data storage backbone for your MERN applications.
e. **Browser**: Make sure you have the latest versions of modern web browsers like Chrome, Firefox, or Edge for testing and debugging frontend components.
f. **Version Control**: Git is optional but recommended for version management. Platforms like GitHub provide collaboration features and make it easier to manage code changes.

g. **Deployment**: Choose a deployment environment compatible with Node.js and MongoDB. This could be cloud platforms like AWS or Azure, or hosting services like Heroku or DigitalOcean.

1.3.3 Additional Tools

a. **Postman or Thunder Client**: For testing API endpoints during development.
b. **DevTools**: Browser developer tools for debugging your front-end code.
c. **API Documentation Tools**: Optionally, you might want to use tools like Swagger or Postman for documenting your APIs.

Chapter - 2 Systems Analysis

The project's architecture is examined. The process of establishing a system's design, parts, and data in order to meet predetermined requirements is known as system analysis. This section provides a detailed description of the project's data flow diagram, feasibility assessment, and problem analysis.

2.1 Problem analysis

In the current healthcare landscape, the traditional methods of booking and managing doctor appointment are often ruined by inefficiencies, resulting is suboptimal patient experiences and operational challenges for healthcare providers. The current manual appointment system contributes to long waiting times, scheduling problem, and a lack of Real-time communication between patients and doctors.

a. **Waiting Time Patients**: The Doctor Appointment System aims to minimize patient waiting time by efficiently managing appointment and streamlining the patient flow.
b. **Access to Doctor Information**: The system provides easy access to essential information about doctors, including qualifications, specialization, availability, fees, and ratings.
c. **Secure Record Management**: Doctor Appointment System ensures secure and organized storage of patient and doctor records and reports.
d. **Workforce Optimization**: After implementing the system, workforce requirements can be minimized, leading to better resource utilization.
e. **User-Friendly Interface**: Patients may easily engage with the system thanks to Doctor Appointment System's user-friendly interface, which is simple and convenient

2.2 Feasibility study

The project's viability, likelihood of success, and likelihood that the system will benefit the company are all examined in the preliminary investigation. The primary goal of the feasibility study is to evaluate the viability from a technical, operational, and financial standpoint for adding new modules and fixing existing systems. If there are endless resources and time, then any system is possible.

2.2.1 Technical feasibility

a. Hardware Requirements

S. No.	Component	Specification
1.	Processor (CPU)	Intel Core i5 or AMD Ryzen 5 or higher
2.	Monitor	FHD (1920x1080)
3.	Memory (RAM)	At least 8 GB or above
4.	Storage (SSD)	256 GB
5.	Internet	512 KB (Speed)
6.	Keyboard	USB Wired or Wireless
7.	Mouse	USB Wired or Wireless
8.	Printer	HP Laser MFP 136w

b. Programming Languages

S. No.	Component	Specification
1.	Front-End	HTML, CSS, JS6, ReactJs
2.	Back-End	ExpressJs, NodeJs
3.	Database	MongoDB

c. Software Requirements

S. No.	Component	Specification
1.	Operating System	Windows XP, 7 or later, MacOS, Ubuntu
2.	Internet Browser	Chrome, Edge, Mozilla and Similar
3.	IDE	Visual Studio Code, Sublime Text Editor
4.	Dependencies	npm or yarn
5.	Deployment Server	AWS or Azure, or hosting services like Heroku or DigitalOcean.

2.2.2 Economical feasibility

a. Personal Expenses

S. No.	Resource	Cost
1.	System Analyst [15 days/month]	₹3500 /-
2.	Programmer [20 days/month]	₹4000 /-
3.	Backend Specialist [15 days/month]	₹2500 /-
Total		**₹10000 /-**

b. Other Expenses

S. No.	Resource	Cost
1.	Electricity (in 4 month) 200 /- per month	₹800/-
2.	Stationary	₹400/-
3.	Workplace facilities	₹1000/-
4.	Internet/Wi-Fi	₹2000/-
Total		**₹4200 /-**

c. Other Expenses

S. No.	Resource	Cost
1.	Development Server (ExpressJs)	₹2000/-
2.	Server Software (O.S.)	₹1500/-
Total		**₹3500 /-**

Total	**₹17700 /-**

2.2.3 Behavioural feasibility

The phrase "behaviour feasibility" is used to characterize people's perspectives on many topics. It also examines human reactions to various stimuli. We can declare a system to be behaviourally feasible if it satisfies the administrator's and patient's needs.

The suggested system will only be useful if it can be created and implemented to suit the project's criteria and if people are willing to support it enough. Only then will the client benefit from the suggested projects. When will the project's behavioural viability be tested?

a. Health Literacy Ensure that the system provides clear information about the importance of regular medical appointments, the significance of follow-up visits, and any specific instructions related to appointments of medical conditions.

b. Appointment Flexibility Offering flexibility in scheduling appointments, such as providing options for different slot, times and date can improve the likelihood of individuals making and keeping appointments but admin case view only appointment.

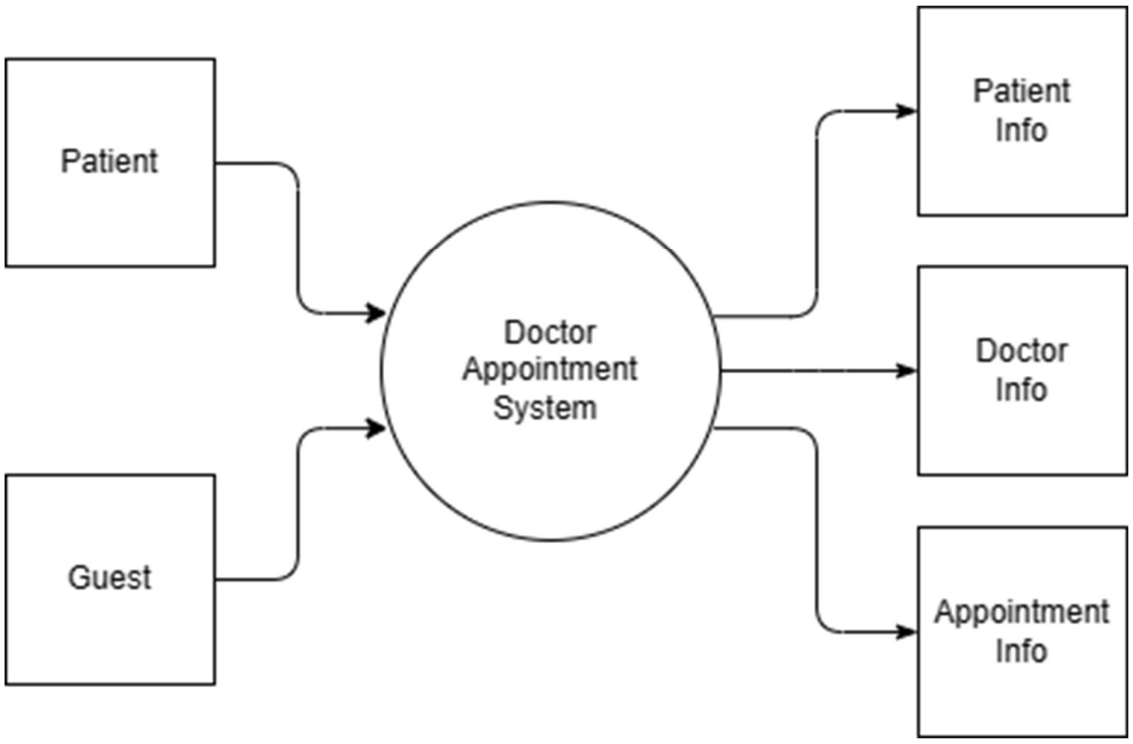
c. Security and compliance the administrator must give top priority to the system's security and compliance, making sure that patient data is safeguarded and that the system conforms with all applicable healthcare laws.

d. In order to employ this technological help, we can additionally offer training. Give a description of the new system’s user training timetable. Shared the strategy for ongoing support and upkeep.

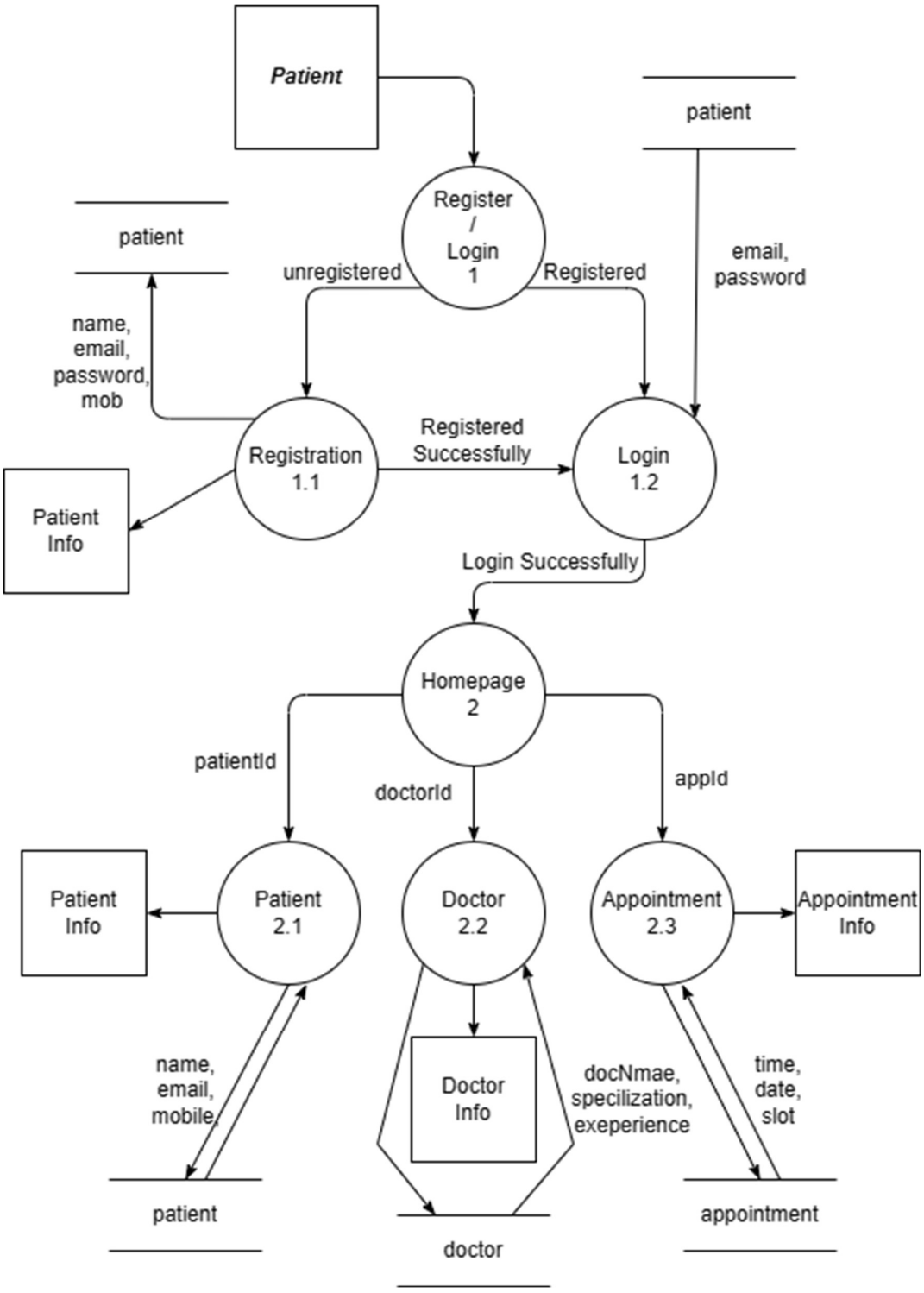
e. Experts or specialists met with team twice a month to ensure optimum participation and satisfaction during our growth process. They review each team member’s activity and offer improved solutions to address their concern

2.3 Data Flow Diagram

2.3.1 DFD 0



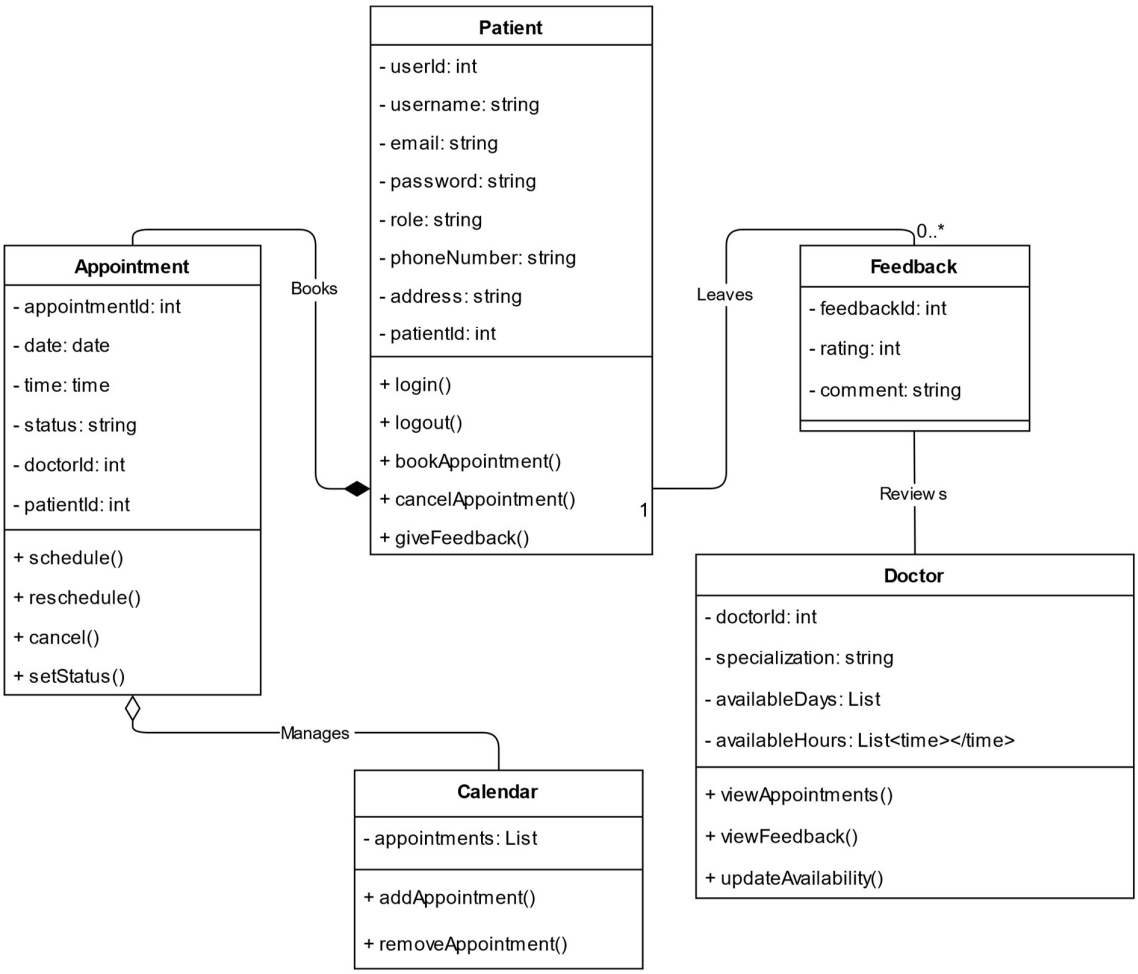
2.3.2 DFD 1 for Patient



Chapter - 3 Systems Design

3.1 Structure Chart (UML)

Unified Modelling Language (UML) diagrams are visual tools used in software engineering to illustrate various aspects of a system's design, structure, and behaviour. They employ standardized symbols and notation to represent different elements and relationships within the system, such as classes, interactions, activities, and states. UML diagrams serve as blueprints for developers and stakeholders, facilitating communication, analysis, and design throughout the software development lifecycle by providing clear, concise, and standardized representations of complex systems.



Chapter – 4 Testing

Testing is the process of assessing a system or program to find flaws, faults, malfunctions, and other problems that could compromise its functionality, quality, or dependability. It entails comparing the application's intended and actual results, as well as executing it in a controlled environment to ensure that it operates as expected. Testing's primary goal is to confirm that the program satisfies the needs and guidelines provided by its clients or users and that it operates consistently, dependably, and effectively to carry out the activities for which it was created. Thus, in order to determine whether or not the produced system satisfies the criteria, we are employing a variety of testing techniques.

4.1 Unit Testing

We performed unit testing in each and every smallest unit of the project individually to check it's working. We used different test data to perform the testing. We try each and every type of possible input to check their corresponding outputs and its working. We performed these tests on user login, check doctor's availability, book appointment other remaining units. We also tested the complete user module.

Test Case ID	Section	Element Name	Test Data	Expected Result	Actual Result	Test Result
TC-001	User Registration	Name, email, password, mob	No Data	Error message displayed.	Please fill out the field.	Test case passed.
			Rakesh Kumar, user@gmai....., **********, 916743****	Pop-up message displayed.	User Successfully Registered	Test case passed.
TC-002	User Login	email, password	No Data	Error message displayed.	Please fill out the field.	Test case passed.
			user@gmai....., **********, (Incorrect Data)	Pop-up message displayed.	Invalid email and password	Test case passed.
			user@gmai....., **********, (Correct Data)	Pop-up message displayed.	Login successfully	Test case passed.

TC-003	Book Appointment	Time, Date, slot	01:24PM, 23/*/2024, 65	No error message displayed.	Booked successfully.	Test case passed

4.2 Compatibility Testing

Compatibility testing refers to the process of testing its compatibility across different platforms, devices, browsers, operating system, and network environments. The objective is to ensure that the website functions work properly and consistently for users.

Test Case ID	Element Name	Element Type	Test Condition	Expected Result	Actual Result	Test Result
TC-001	Device Compatibility	Responsiveness on different devices	Checking Responsiveness on devices for e.g., Laptops, tablets, Smartphones	Website will adapt different screen sizes on different devices without any disbalancing	As expected, the website is full responsive and working perfectly	Test case passed
TC-002	Operating System	Checking website behaviour on different operating systems	Working on different Operating Systems e.g., Android systems, macOS, iOS, Windows, etc.	There shouldn't be any changes in website Designing, Working, Accessibility and Performance speed, while switching the Operating System	Compatibility as Expected, The Website is working all same even on different Operating System expect Linux operating system	Test case passed

TC-003	End-user Security	Data Security	Testing security measures of users	The logged in user will be able to see his/her own details related information only or correct user-profile is opened for user while logging in	As Expected, Details of login Email is shown, no details of other user are visible to all. Hence Secured	Test case passed

4.3 Functionality Testing

We check all the features of the Doctor Appointment System are working as expected. For example, verify that user can browse through different functionality such as view profile, delete user and update user profile, book appointment etc.

Verify that user can successfully login with their credentials. Test login mechanisms to ensure user can securely access their homepage. Test the process which include user book appointment, check doctor's availability, including selecting appropriate category, choosing appointment time.

Here we also ensure the functionality that is the book appointment when doctors will be available.

Chapter - 5 Implementation

Firstly, we need to install some IDE and other software for implementing our project successfully which are as follows: -

5.1 Visual Studio Code

a. Go to the official Visual Studio website: Download Visual Studio Code - Mac, Linux, Windows

b. Click on the " Download " button for the version of Visual Studio according to your operating system (e.g. Windows, macOS, or Linux).

c. Choose the components you want to install, such as languages, frameworks, and tools.

d. To install this, click on the "Install" to start the installation process and follow the instruction of installation wizard.

e. Follow the instruction of installation wizard and select the options that suit your needs.

f. Click on exit

5.2 MongoDB

a. Go to the official MongoDB website: MongoDB Community Server Download

b. Select the suitable version of MongoDB from the website for according to your operating system (e.g. Windows, macOS, or Linux).

c. Click on the "Download" button to start the download.

d. Once the download is completed, run the downloaded installer and follow the instruction of installation wizard and select the options that suit your needs. Also make sure to check the box of Compass Installation which is a GUI to manage MongoDB.

5.3 NodeJS

a. Visit the Node.js official website: Get Node.js here.

b. Choose the Node.js version that is compatible with your operating system (e.g., Windows, macOS, or Linux).

c. To begin the download, click the "Download" button.

d. Launch the installer after the download is finished. Choose the options that best suit your needs by following the installation procedure.

e. After the installation is finished, you can verify that Node.js is installed correctly by opening a terminal or command prompt and typing node -v. This should show the latest version of Node.js thatyou installed, indicating that the installation was successful.

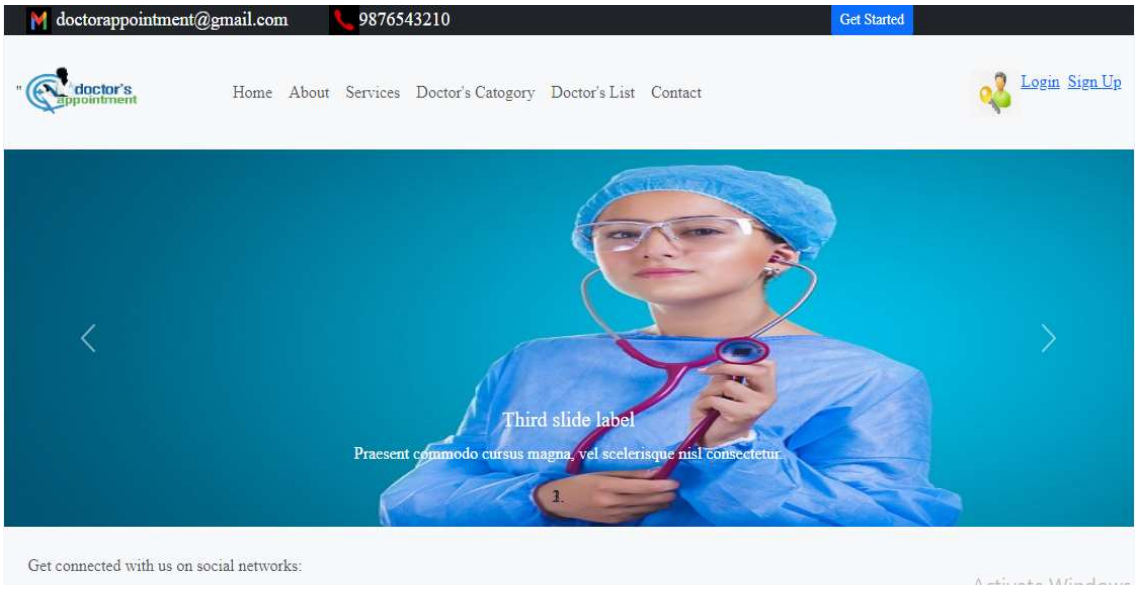
f. To verify that Node.js is installed correctly, you can open a terminal or command prompt when the installation is finished and execute node -v. This should show the latest version of Node.js that you installed, indicating that the installation was successful.

Standard MERN Modules and Libraries (Express.js, React.js, Node.js, MongoDB) Stack Utilized in Projects:

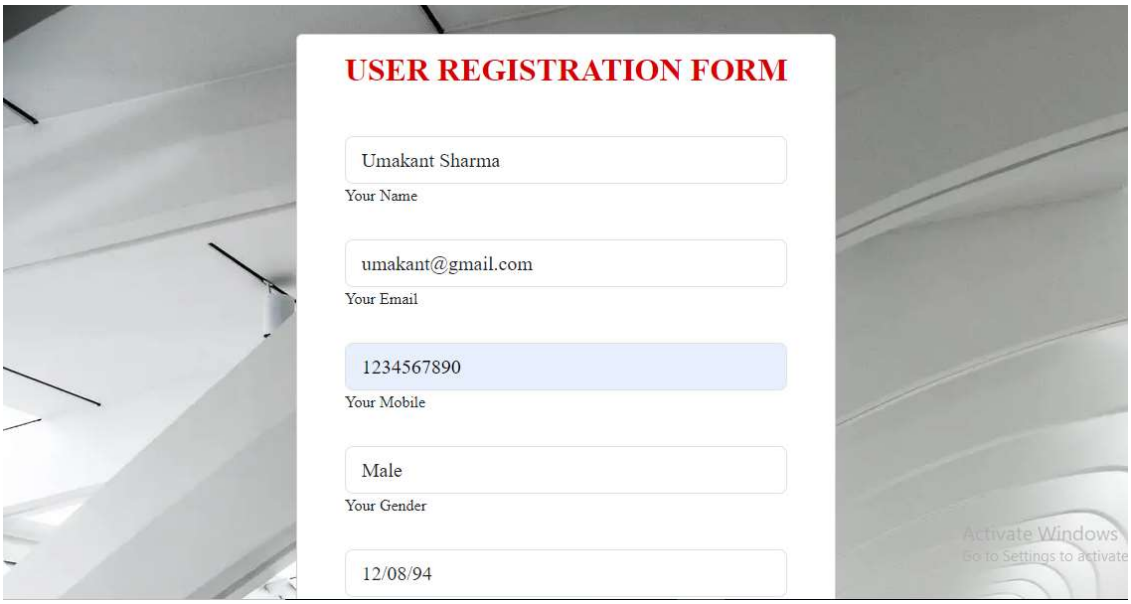
a. **React.js:** An interactive and reusable component creation tool for JavaScript user interface development.
b. **node.js:** A runtime environment that enables the building of scalable and fast backend applications by running JavaScript code on the sever side.
c. **mongoose:** An ODM (Object Data Modeling) module for MongoDB that offers a simple interface for defining data structures and interacting with the database
d. **Bcrypt:** A password hashing and encryption library that is frequently used for safe password storingand verification.
e. **cors:** A middleware for Express.js that permits Cross-origin Resource sharing (CORS), Whichis necessary to manage requests from the frontends to the backend in a MERN application. It permits regulated access to resources from many origins.
f. **dotenv:** A module that allows the safe and practical configuration of application settings and sensitivedata by loading environment variables from a.env file into process.env.
g. **Axios:** A well-known HTTP client library that makes asynchronous HTTP requests from Node.js andbrowsers easier to make.
h. **React Router:** A React routing module that facilitates routing navigation inside a single-page application, enabling components to be dynamically rendered according to the URL.

Chapter - 6 Sample Forms and Reports

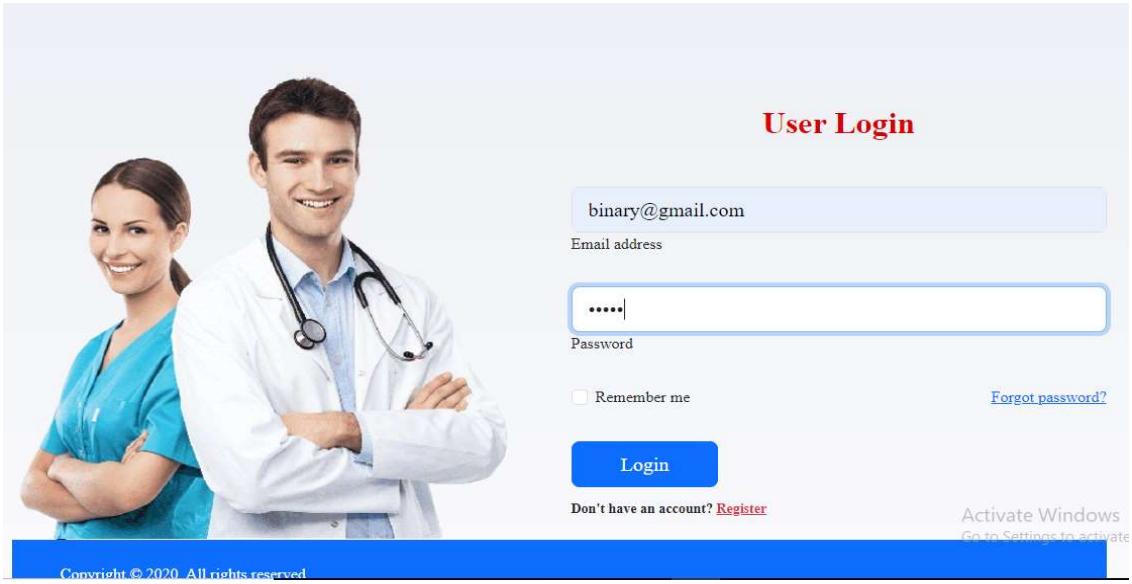
6.1 User home page



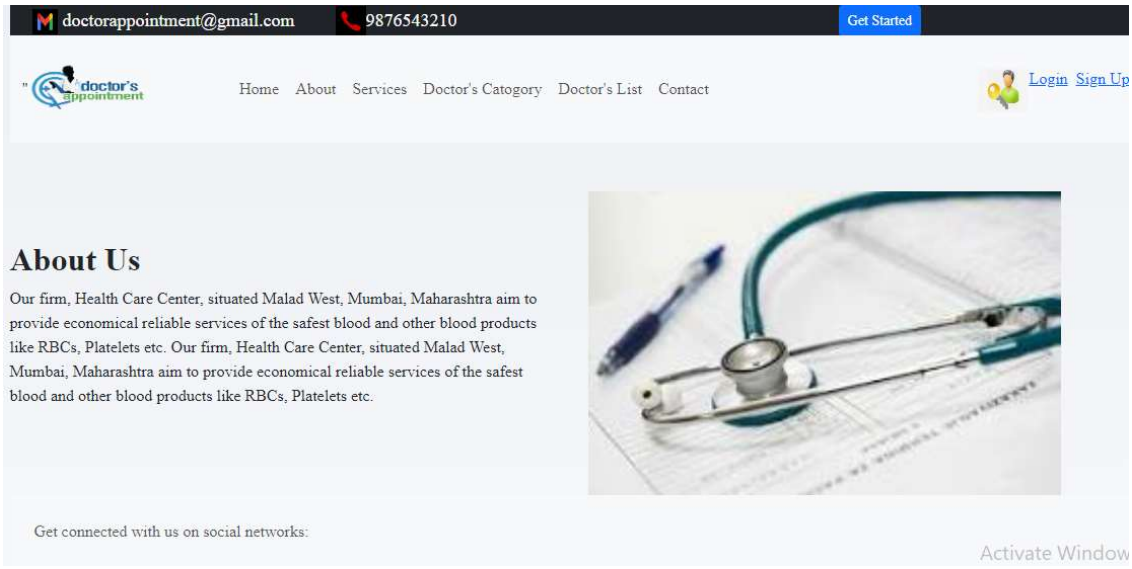
6.2 User registration form



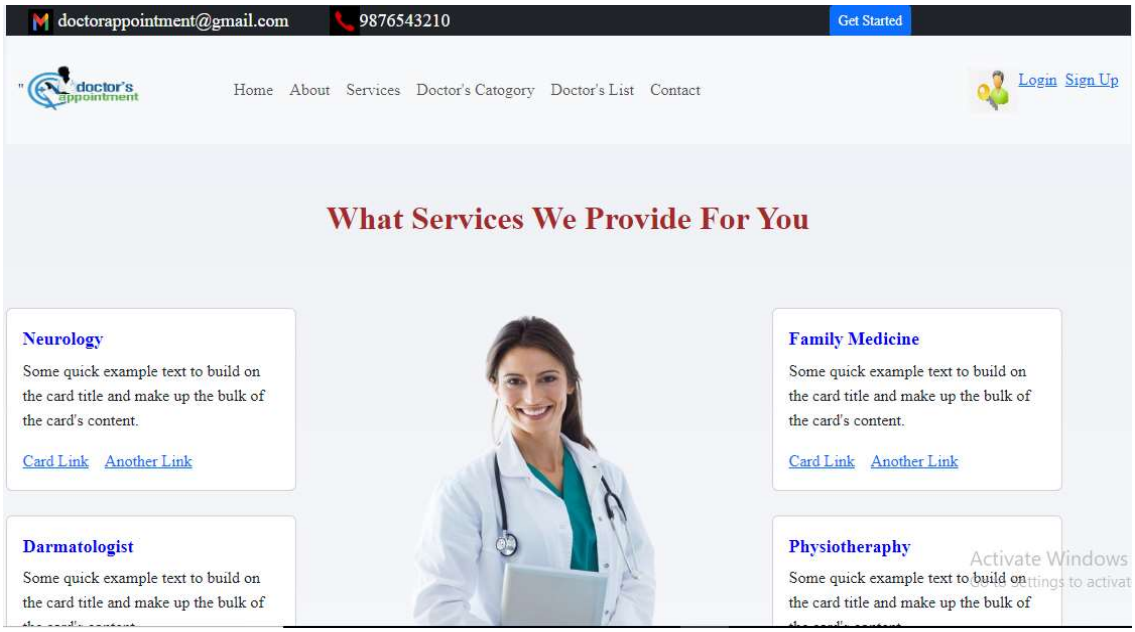
6.3 User login form



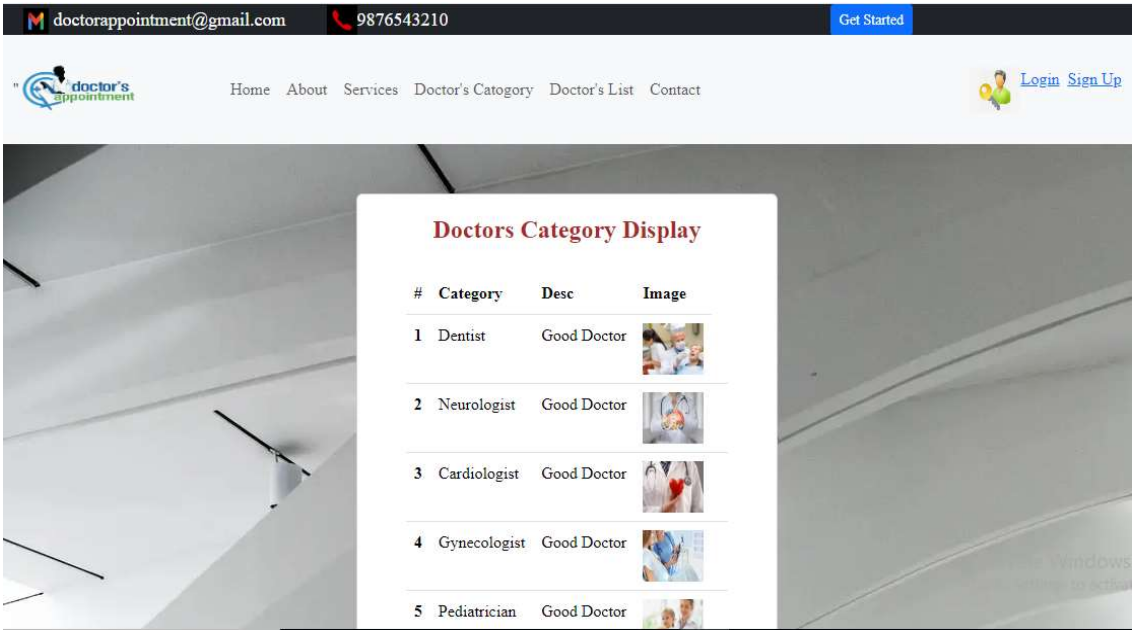
6.4 About section



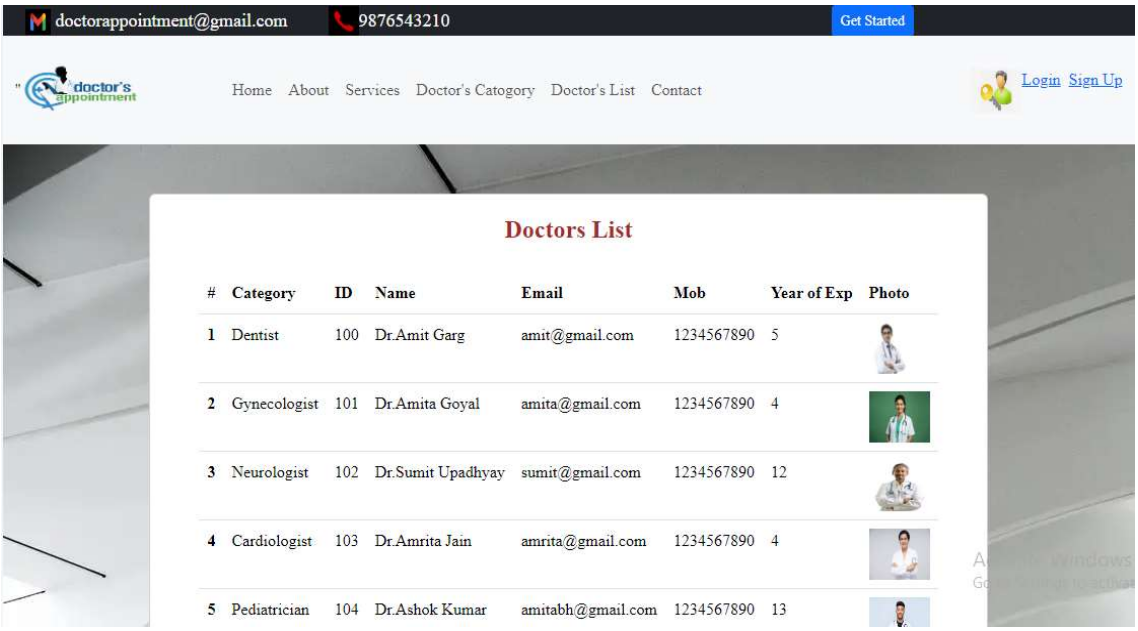
6.5 Service section



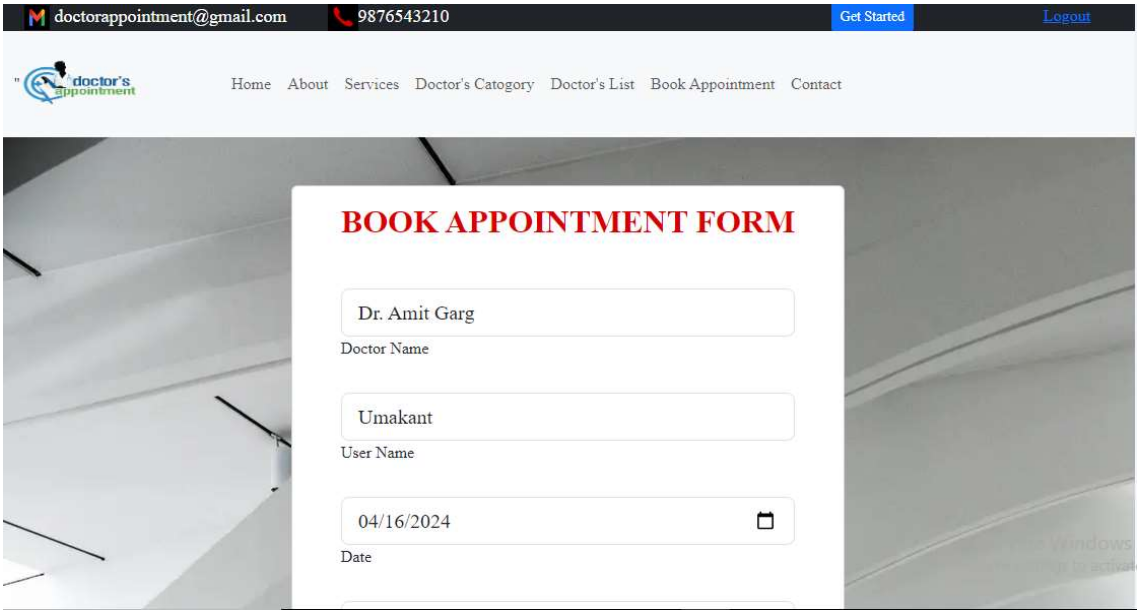
6.6 Doctors categories section



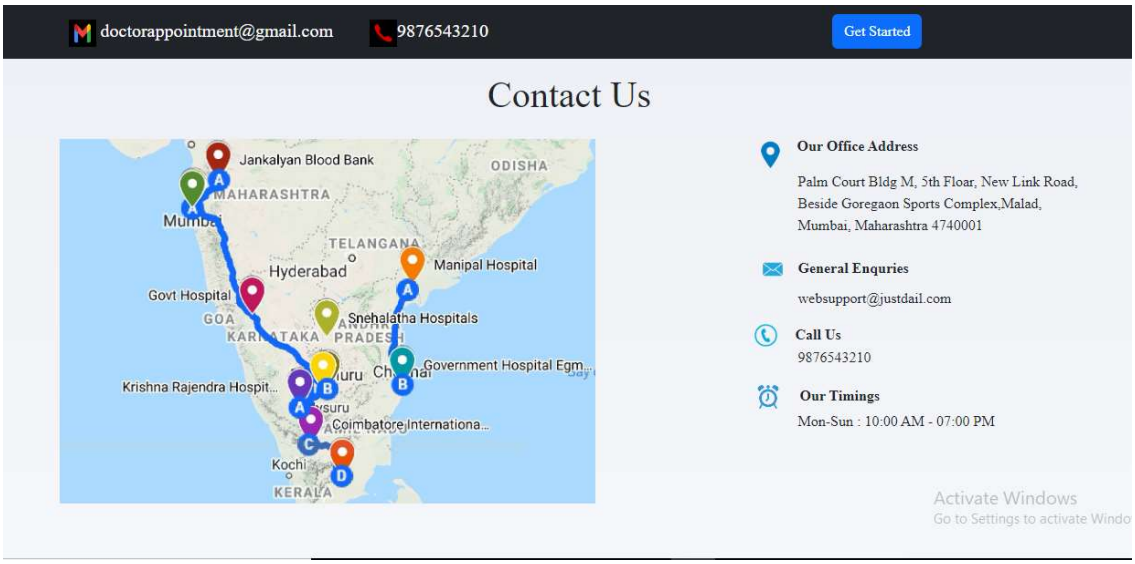
6.7 Doctors list



6.8 Book appointment form



6.9 Contact us section



Chapter - 7 Conclusion & Future Scope

In conclusion, the Doctor appointment system stands as a transformative solution to the challenges inherent in traditional healthcare appointment management. Through the systematic design, development, and implementations of this system, we have addressed critical issues such as appointment inefficiencies, limited accessibility, and operational burdens on healthcare providers.

The creation of the Doctor Appointment System admin module is a major step toward streamlining the appointment-scheduling and management process for patients and healthcare providers alike. By providing administrators and medical personnel with strong capabilities to manage appointment scheduling, monitoring, and analysis, this consolidated platform improves the overall efficacy and efficiency of healthcare delivery.

I made every effort to design the system in a way that would be most appropriate, practical, and simple for the administrator to utilize. Users with varying privileges can readily access the information they expect. This program is web-based and may be used via the internet from any computer in the user's network. To ascertain the system's versatility, I have evaluated it using a number of methods. I tried to create automated medical appointment and assistance scheduling systems.

Administrators can easily manage doctor availability, allocate appointment slots, and monitor appointment bookings in real-time, ensuring optimal resource utilization and minimizing scheduling conflicts. Patients gain from the system's accessibility and convenience because it makes it simple for them to schedule appointments online whenever it's convenient for them to do so rather than by phone or in person. This flexibility accommodates busy schedules and empowers patients to take control of their healthcare appointments with ease.

Additionally, the Doctor Appointment System offers extra features designed to enhance the patient experience in general, going above and beyond standard appointment scheduling. For example, it might incorporate telemedicine features, which would enable patients to arrange online consultations with medical professionals from the comfort of their homes.

In order to guarantee the confidentiality and integrity of patient information at all times, the system also places a high priority on data security and adherence to healthcare legislation. Through the use of technology.

Future Scope

The Doctor Appointment System is an excellent example of our dedication to using innovation to address the changing demands of healthcare providers and patients in the digital age. It streamlines administrative procedures and improves patient access to care.

The Doctor Appointment System can be improved and expanded in a number of ways to better meet the needs of patients and healthcare professionals and to keep up with the changing healthcare environment. The following are some possible areas for further development.

a. **Integration with Electronic Health Record (EHR) Systems**: Explore opportunities to integrate the appointment system with existing EHR platforms to streamline patient information management and improve continuity of care. This integration would enable healthcare providers to access relevant patient data during appointment scheduling and enhance decision-making processes.
b. **Improved Patient Communication Features**: Put in place tools that let patients and healthcare professionals communicate safely and individually, like post-visit follow-ups, medication alerts, and appointment reminders. Better patient participation and adherence to treatment programs result from this, which eventually improves health outcomes.
c. **Integration of Telehealth**: Increase the appointment system's capacity to accommodate telehealth appointments, enabling patients to arrange online consultations with medical professionals. This makes it possible for people who live in rural places or have limited mobility to get healthcare services remotely.
d. **Real-Time Availability Updates**: Develop functionality that provides real-time updates on doctor availability, allowing patients to see current appointment slots and book appointments instantly. This reduces wait times and improves patient satisfaction by offering greater flexibility and convenience.
e. **Patient Feedback and Satisfaction Surveys**: Implement tools for collecting patient feedback and satisfaction surveys following appointments, enabling healthcare providers to gather valuable insights into patient experiences and identify areas for improvement. This feedback loop fosters continuous quality improvement and strengthens patient-provider relations.

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7 https://www.youtube.com/

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Summary

Fortnightly Progress Report

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Name of student	Umakant Sharma		Department	MCA	
Industry/Organization	Praedico Global Research Pvt Ltd.		Date/Duration	01/01/24-15/01/24	
Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work				✓	
Learning capacity/Knowledge up gradation			✓		
Performance/Quality of work			✓		
Behaviour/Discipline/Team work				✓	
Sincerity/Hard work			✓		
Comment on nature of work done/Area/Topic	Learn HTML, CSS and JavaScript				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT**				
Name of Industry Mentor	Sweety Gupta				
Signature of Industry Mentor	Gupta				

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Name of student	Umakant Sharma		Department	MCA	
Industry / Organization	Praedico Global Research Pvt. Ltd.		Date / Duration	26/01/24 - 31/01/24	
Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality / Timely completion of assigned work				✓	
Learning capacity / Knowledge up gradation			✓		
Performance / Quality of work			✓		
Behavior / Discipline / Teamwork				✓	
Sincerity / Hard work			✓		
Comment on nature of work done / Area / Topic	Learn Bootstrap, Advance Javascript (ES6), Introduction of React				
OVERALL GRADE (Any One)	POOR / AVERAGE / GOOD ✓ / VERY GOOD / EXCELLENT				
Name of Industry Mentor	Sweety Gupta				
Signature of Industry Mentor	Gupta				

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Name of student	Umakant Sharma		Department	MCA	
Industry/Organization	Praedico Global Research Pvt. Ltd.		Date/Duration	01/02/24 - 15/02/24	
Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
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Learning capacity/Knowledge up gradation			✓		
Performance/Quality of work			✓		
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Sincerity/Hard work			✓		
Comment on nature of work done/Area/Topic	React setup, Components, Hooks, Props and React Bootstrap Integration				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT**				
Name of Industry Mentor	Sweety Gupta				
Signature of Industry Mentor	Gupta				

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Learning capacity/Knowledge up gradation			✓		
Performance/Quality of work			✓		
Behaviour/Discipline/Team work				✓	
Sincerity/Hard work			✓		
Comment on nature of work done/Area/Topic	Working on Frontend Development using React and Bootstrap				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT**				
Name of Industry Mentor	Sweety Gupta				
Signature of Industry Mentor	Gupta				

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Industry/Organization	Praedico Global Research Pvt Ltd		Date/Duration	01/03/24 - 15/03/24	
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Behaviour/Discipline/Team work			✓		
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Comment on nature of work done/Area/Topic	Worked on Node JS, Express JS, MongoDB for Backend & DataBase				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT**				
Name of Industry Mentor	Sweety Gupta				
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Learning capacity/Knowledge up gradation			✓		
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Sincerity/Hard work			✓		
Comment on nature of work done/Area/Topic	Worked on Project using MERN Technology.				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT**				
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Comment on nature of work done/Area/Topic	Worked on Project				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT**				
Name of Industry Mentor	Sweety Gupta				
Signature of Industry Mentor	Gupta				

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