DHA Suffa University
Department of Computer Science

HealthHub Connect

S-2042

Final Year Project Report

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Ms. Urooj Waheed

In partial fulfillment of the requirements for the degree of
Bachelor of Science in Computer Science
2024

Certificate of Approval

It is certified that the work presented in this report, entitled HealthHub Connect, was conducted by Rohain, Maliha, Karima, Hira under the supervision of Dr. Najeeb Ur Rehman Malik.

No part of this report has been submitted anywhere else for any other degree.

This report is submitted to the Department of Computer Science in partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science

at

DHA Suffa University (DSU)

Authors' Declaration

We declare that this project report was carried out in accordance with the rules and regulations of the DHA Suffa University (DSU). The work is original except where indicated by special references in the text and no part of the report has been submitted for any other degree. The report has not been presented to any other University for examination.

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Plagiarism Undertaking

We, Rohain, Maliha, Karima, Hira solemnly declare that the work presented in the Final Year Project Report titled HealthHub Connect has been carried out solely by ourselves with no significant help from any other person except few of those which are duly acknowledged. I confirm that no portion of our report has been plagiarized and any material used in the report from other sources is properly referenced.

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Acknowledgments

We would like to express our deepest gratitude to all those who have contributed to the successful completion of the HealthHub Connect project.

First and foremost, we would like to thank our supervisors, Dr. Najeeb Ur Rehman Malik and Ms. Urooj Waheed, for their invaluable guidance, support, and encouragement throughout this project. Their expertise and insights have been instrumental in shaping the direction and execution of our work.

We extend our heartfelt thanks to our institution, DHA Suffa University, and the Department of Computer Science for providing the necessary resources and a conducive environment for this project. Special thanks to the project coordinators and faculty members who offered their support and feedback during various stages of the project.

We also want to acknowledge the assistance and cooperation of the administrative staff at DHA Suffa University, who facilitated the smooth progress of our project.

Our sincere appreciation goes to the participants and users who took part in the testing and provided valuable feedback. Their contributions have been crucial in refining and improving HealthHub Connect.

Finally, we would like to thank our families and friends for their unwavering support and understanding throughout this endeavor. Their encouragement has been a constant source of motivation.

To all those who have contributed to this project in one way or another, we extend our deepest gratitude. Your support has been indispensable, and we are truly grateful.

Document Information

Table 1: Document Information

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Project Title	HealthHub Connect
Document	Final Year Project Report
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Definition of Terms, Acronyms, and Abbreviations

This section should provide the definitions of all terms, acronyms, and abbreviations required to interpret the terms used in the document properly.

Table 2: Definition of Terms, Acronyms, and Abbreviations

Term	Description
Clinic Management System	A Clinic Management System (CMS) automates healthcare facility operations for enhanced efficiency and patient care
Patient-Centric Health Care	Patient-centric healthcare emphasizes personalized, holistic, and empowering approaches to meet individual health needs and preferences
Centralized Platform	A centralized platform in the context of a clinic management system refers to a system where all the essential data and functionalities related to the management of a clinic are integrated into a single, unified platform
Html, CSS, JS, C#, .NET, SQL	All backend and frontend languages used to create the platform

Abstract

HealthHub Connect revolutionizes traditional healthcare systems by introducing an advanced Clinic Management System designed to enhance patient care and streamline administrative tasks. The system offers comprehensive patient profile management, efficient appointment scheduling, and detailed treatment history tracking. A key feature is the symptom-based doctor recommendation system, which helps patients find the most suitable healthcare provider. Additionally, the integrated GPS locator facilitates the discovery of nearby doctors. Built using C#, ASP.NET, SQL, JavaScript, and CSS, HealthHub Connect ensures a secure, organized, and user-friendly experience for patients, doctors, and administrators alike, ultimately improving the overall efficiency and quality of healthcare services.

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CHAPTER 1

INTRODUCTION

Description of the Project

HealthHub Connect is designed to bring a fresh and efficient approach to managing healthcare services. It simplifies the process for patients to manage their profiles, book appointments, and keep track of their medical history. The system offers a smart feature that recommends doctors based on patient symptoms, ensuring personalized care. Additionally, a GPS locator helps patients find nearby doctors, making healthcare more accessible.

For doctors, HealthHub Connect provides a centralized platform to manage their schedules, view patient histories, and update medical records, which streamlines their workflow. Administrators benefit from tools that offer insights into clinic operations and resource management, helping them make informed decisions.

Using technologies like C#, ASP.NET, SQL, JavaScript, and CSS, HealthHub Connect is built to be secure, scalable, and efficient. Overall, the goal is to enhance the quality of patient care and make healthcare management smoother for everyone involved.

Details about the Domain

The domain of this project is healthcare management, focusing on creating a robust and integrated system to address various inefficiencies in traditional healthcare practices. The healthcare management system, HealthHub Connect, aims to streamline operations within clinics and improve patient care through technology-driven solutions.

HealthHub Connect focuses on several key aspects of healthcare management: efficient patient profile handling, including personal details, medical histories, and treatment records, and a simplified appointment scheduling process with real-time updates and notifications. For doctors, the system offers a centralized platform to manage appointments, view patient histories, and update medical records, along with an intelligent tool that suggests suitable doctors based on patient symptoms. Administrators benefit from tools for overseeing clinic operations, managing resources, and accessing comprehensive clinic statistics for informed decision-making. Additionally, the GPS integration feature helps patients find nearby doctors and clinics, enhancing accessibility to healthcare services.

CHAPTER 2

RELEVANT BACKGROUND & DEFINITIONS

Relevant Background

In today's dynamic healthcare landscape, there is a pressing need for systems that can effectively integrate patient care, appointment scheduling, and medical record management. Traditional healthcare systems often rely on manual processes, leading to inefficiencies, communication gaps, and fragmented information flow. These issues can result in missed appointments, incomplete medical histories, and suboptimal treatment plans, ultimately affecting the quality of patient care.

HealthHub Connect was conceived to address these challenges by providing a centralized, automated, and user-friendly platform tailored to the specific needs of clinics and healthcare providers. By leveraging modern technologies such as C#, ASP.NET, SQL, JavaScript, and CSS, the project aims to streamline various aspects of healthcare management, including patient profile management, appointment scheduling, and treatment history tracking.

CHAPTER 3

LITERATURE REVIEW & RELATED WORK

Literature Review

Healthcare systems have traditionally struggled with managing patient information, scheduling appointments, and ensuring effective communication between patients and healthcare providers. Manual processes in these areas often lead to errors, delays, and miscommunication, which can compromise the quality of patient care.

Research has demonstrated the benefits of implementing electronic health records (EHR) and clinic management systems (CMS). These systems provide accurate, up-to-date patient information, facilitating better coordination among healthcare providers and enhancing overall efficiency in healthcare delivery.

The importance of integrated care systems, which allow seamless communication and data sharing among healthcare professionals, has been emphasized in various studies. Such systems improve patient outcomes, reduce healthcare costs, and increase patient satisfaction. Furthermore, intelligent recommendation systems, which analyze patient symptoms and medical histories to suggest suitable treatments and healthcare providers, have shown promise in personalizing patient care.

GPS-based location services also play a crucial role in improving healthcare accessibility. By integrating GPS functionality into healthcare applications, patients can easily find nearby healthcare providers, thereby reducing the effort and time needed to seek medical care.

HealthHub Connect builds on these advancements by offering a centralized, automated platform that includes patient profile management, appointment scheduling, treatment history tracking, and intelligent doctor recommendations. Utilizing technologies like C#, ASP.NET, SQL, JavaScript, and CSS, the system addresses the shortcomings of traditional healthcare practices, providing a streamlined, efficient, and user-friendly experience for patients, doctors, and administrators.

In summary, existing literature highlights the need for advanced healthcare management systems that enhance accuracy, efficiency, and accessibility. HealthHub Connect aims to fulfill these needs by delivering a comprehensive solution that improves patient care, optimizes doctor workflows, and supports effective clinic administration.

Related Work

Several existing systems and studies have influenced the development of HealthHub Connect

by addressing various aspects of healthcare management and integrating technology into healthcare services.

1. **Marham:**
    - **Reference:** Marham “Login” Accessed November 15, 2023. Marham
    - **Description:** Marham provides a platform for patients to find doctors, book appointments, and access online consultations. It focuses on connecting patients with healthcare providers and offers features such as doctor ratings and reviews, which help patients make informed decisions. This platform's success highlights the importance of user-friendly interfaces and reliable information in healthcare management systems.
2. **Memon Hospital:**
    - **Reference:** Memon Hospital “Find A Doctor” Accessed November 23, 2023. Memon Hospital
    - **Description:** Memon Hospital's "Find A Doctor" feature allows patients to search for doctors based on their specialties and availability. This functionality is crucial for streamlining the process of connecting patients with the appropriate healthcare providers. The integration of such a feature in HealthHub Connect enhances its capability to provide personalized healthcare services.
3. **Oladoc:**
    - **Reference:** Oladoc “Home Page” Accessed November 19, 2023. Oladoc
    - **Description:** Oladoc is a comprehensive platform that offers appointment booking, doctor searches, and telemedicine services. Oladoc's success demonstrates the value of integrating multiple healthcare services into a single platform, a concept that HealthHub Connect adopts to improve overall patient care and clinic management.
4. **Web-Based Clinic Management System (CMS):**
    - **Reference:** Muhammad, Jibrin, and Salisu Garba. "Web Based CMS." International Journal of Software Engineering & Applications 8, no. 5 (Year): Page range. Web Based CMS
    - **Description:** This article discusses the development and implementation of a web-based clinic management system. The study emphasizes the benefits of automating healthcare facility operations to enhance efficiency and patient care. The insights gained from this research have been instrumental in shaping the functional requirements and design of HealthHub Connect, particularly in areas such as patient profile management, appointment scheduling, and medical record keeping.

Gap Analysis

Features	Gaps in market	How Our Project Addresses Gaps
GPS-Based Doctor Recommendations	Absence of location-based suggestions	GPS functionality for personalized doctor recommendations
Symptom-Based Recommendation System	Lack of personalized doctor suggestions based on symptoms	Integration of a symptom-based recommendation system (the system will recommend registered doctors only).Using a Kaggle dataset, we'll train our recommendation system to match symptoms with the right type of doctor. After data preprocessing and model training, our system will suggest doctors based on symptom profiles.
Medication Tracking System	No dedicated medication tracking and reminders	Allows patients to input their prescribed medications into the system. The system sends timely reminders to patients for medication intake. Patients can track whether they have taken their medicine or not, and the medicine list is updated accordingly. This feature enhances patient adherence to medication schedules and contributes to effective healthcare management.
Doctor Records Update	Limited options for doctors to update patient records	Efficient update of patient records, prescriptions, and progress
Feedback and Reviews	Limited options for patient feedback and reviews	Inclusion of Feedback and Reviews for transparent patient-provider communication

CHAPTER 4

METHODOLOGY

Software Engineering Methodology

For the development of HealthHub Connect, an Agile methodology was chosen due to its iterative approach, flexibility, and emphasis on collaboration, which are crucial for managing the complex and evolving requirements of healthcare systems. Agile methodology allows for breaking down the project into small, manageable iterations, each delivering a functional part of the system. This iterative development ensures continuous delivery and integration of new features, enabling the team to adapt to user feedback and changing requirements swiftly. Regular meetings, such as daily stand-ups, sprint planning, and sprint reviews, facilitate ongoing communication among developers, testers, project managers, and stakeholders. This continuous collaboration ensures alignment with project goals and incorporates diverse insights, leading to a more user-centered product. Additionally, Agile's adaptive planning allows for quick adjustments in response to new information or changes in the project's scope, reducing risks and ensuring the final product meets the users' needs effectively.

Project Methodology

HealthHub Connect was developed using an Agile methodology, which is well-suited for managing the dynamic and complex requirements of a healthcare management system. The Agile approach emphasizes iterative development, continuous collaboration, and adaptive planning, ensuring a flexible and user-centered project execution.

The project was divided into several iterations or sprints, each lasting two to four weeks. During each sprint, specific features and functionalities were developed, tested, and delivered. This iterative development process allowed for continuous integration of new features and ensured that any issues were identified and addressed early in the development cycle.

Regular meetings were a cornerstone of the methodology. Daily stand-up meetings provided a platform for team members to discuss progress, challenges, and plans for the day. Sprint planning meetings were held at the beginning of each iteration to define the sprint goals and allocate tasks. Sprint reviews and retrospectives at the end of each sprint allowed the team to demonstrate completed work, gather feedback, and reflect on the process to identify areas for improvement.

Adaptive planning was crucial in managing the project's scope and responding to changes. The Agile approach allowed the team to quickly adjust plans based on user feedback and evolving requirements. This flexibility ensured that the final product was closely aligned with

user needs and expectations.

The project also incorporated continuous testing and quality assurance to maintain high standards of performance and reliability. Automated and manual testing processes were implemented to verify that each iteration met the predefined requirements and functioned as expected.

In summary, the Agile methodology provided a structured yet flexible framework for developing HealthHub Connect. It facilitated iterative development, encouraged continuous collaboration, and allowed for adaptive planning, resulting in a robust and user-friendly healthcare management system.

CHAPTER 5

EXPERIMENTAL EVALUATIONS & RESULTS

Evaluation Testbed

To make sure HealthHub Connect is both reliable and user-friendly, we set up a thorough evaluation process. This involves creating different environments and test cases to check how well the system performs, how easy it is to use, and how secure it is.

1. **Test Environments:**
    - **Development Environment:** We start testing in a controlled setting where developers can catch and fix issues early on.
    - **Staging Environment:** Next, we move to a staging environment that closely mimics the real-world setup. This allows us to test thoroughly without impacting actual users.
2. **Test Cases:**
    - **Functional Testing:** We check all the features, like patient profile management, appointment scheduling, and the doctor recommendation system, to make sure they work as expected.
    - **Usability Testing:** This involves assessing how easy and intuitive the system is for patients, doctors, and administrators to use.
    - **Integration Testing:** We verify that all parts of the system and external services, like the GPS feature, work well together.
3. **Testing Methods:**
    - **Manual Testing:** Human testers try out the system to evaluate its functionality and user experience.
    - **Regression Testing:** We ensure that new updates don't break existing features.
4. **Metrics for Evaluation:**
    - **Functionality Coverage:** We track how many features have been tested and passed.
    - **Performance Metrics:** We measure response times, how well the system handles high traffic, and uptime.
    - **Security Metrics:** We count the number of security issues found and fixed.

Results and Discussion

Overall, the testing process for HealthHub Connect was very positive. In our development and staging environments, we managed to identify and fix numerous issues early on, ensuring a smoother experience in real-world scenarios. Functional testing confirmed that key features

like patient profile management and appointment scheduling worked well, with only minor bugs that were quickly resolved. Users found the system intuitive during usability testing, though we plan to simplify the setup process based on their feedback. Integration with external services, like the GPS feature, was seamless, albeit with some minor delays we're working to optimize.

Human testers provided valuable insights through manual testing, and regression testing ensured that updates didn't break existing features. Performance testing indicated some slowdowns during peak times, which we're addressing. Security metrics were strong, with minimal issues promptly fixed. In summary, HealthHub Connect is robust, user-friendly, and secure, with ongoing efforts to further enhance performance and usability.

CHAPTER 6

CONCLUSION AND DISCUSSION

Limitations and Future Work

Limitations:

1. **Performance Slowdowns:**
    - Occasional slowdowns during peak usage times can impact user experience.
2. **GPS Functionality:**
    - Minor delays in fetching accurate location data.
3. **Lack of Integration with External Healthcare Systems:**
    - Limited usefulness in environments where multiple healthcare systems need to communicate seamlessly.
4. **Security Vigilance:**
    - Continuous need for vigilance to protect against emerging threats.
5. **Absence of Online Banking Feature:**
    - Inability to handle direct payments for services, which could enhance user convenience.
6. **Basic Patient Feedback System:**
    - Current feedback system could be improved to provide more detailed insights and support for patient-doctor interactions.

Future Work:

To address these limitations and enhance HealthHub Connect, we have outlined several areas for future work. First, we plan to continue optimizing the system's performance to handle peak loads more effectively. This includes improving our backend infrastructure and refining our database queries to ensure faster response times.

We also aim to enhance the GPS functionality to provide more accurate and timely location data. Integrating HealthHub Connect with other healthcare systems is another key area of focus. By enabling interoperability, we can ensure that our system can communicate seamlessly with other platforms, thereby increasing its utility in diverse healthcare environments.

Additionally, we will maintain a strong focus on security, conducting regular audits and updates to protect against new threats. Implementing an online banking feature is also on our roadmap, which will allow users to make direct payments for services, adding a layer of convenience. Furthermore, we plan to improve the patient feedback system to gather more comprehensive insights, facilitating better communication and service quality.

Reasons for Failure – If Any

Lack of Integration with External Healthcare Systems:

- **Reason:** The inability to integrate with other healthcare systems can limit the system's effectiveness in environments that require seamless communication across different platforms. Without this integration, HealthHub Connect may struggle to provide a comprehensive solution in complex healthcare environments, where interoperability with other systems is crucial for efficient data exchange and coordinated care.

Absence of Online Banking Feature:

- **Reason:** The lack of an online banking feature for direct payments is a significant drawback. Users are unable to handle financial transactions directly within the system, which reduces convenience and may deter some users from fully adopting the platform. This limitation could impact the overall user experience, as financial transactions are a critical component of healthcare services.

REFERENCES

Website reference:

- Marham “Login” Accessed November 15 2023. https://www.marham.pk
- Memon Hospital “Find A Doctor” Accessed November, 23 2023 https://mmi.edu.pk/
- Oladoc “Home Page” Accessed November,19 2023. https://oladoc.com

Article reference:

Authors: Muhammad, Jibrin, and Salisu Garba.

Title: "Web Based CMS."

Journal Title:

International Journal of Software Engineering & Applications 8, no. 5 (Year): Page range.

URL: https://ijsea.com/archive/volume8/volume8issue5.pdf

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Copy of Evaluation Comments by Jury for Project – II Mid Semester Evaluation
Copy of Evaluation Comments by Supervisor for Project – II End Semester Evaluation
Copy of Evaluation Comments by Jury for Project – II End Semester Evaluation
A7. Meetings' Minutes
A8. Research Paper
A10. Any other

A0. COPY OF PROJECT REGISTRATION FORM

CS Project I Registration Form
FALL 2022

30s

Project Type* (please tick one)	☐ Research Track	☐ Service Track	☑ Product Track	*to be selected by supervisor
Idea proposed by (please tick one)	☐ Supervisor	☐ Students	☐ Client	
Project Title:		HealthHub Connect		
Supervisor Name:	Mr. Najeeb ur Rehman Malik		**Note:** A faculty member cannot supervise **more than 5** projects accumulating both FYP-1 and FYP-II at a time.	
Co-Supervisor(s) Name:	Ms. Urooj Waheed			
Client Name	N/A		(Attached NDA / Letter)	
Team Lead Name:	Rohain Shaikh		**Reg. No.**	Cs201220
Team Member 2 Name:	Hira Amjad Daudpota		**Reg. No.**	Cs201182
Team Member 3 Name:	Karima Kotadia		**Reg. No.**	Cs201184
Team Member 4 Name:	Maliha Asghar		**Reg. No.**	Cs201188

Project Keywords (Comma separated terms describing your project domain)

Clinic Management System, Patient-Centric Healthcare, Appointment Scheduling, Billing Management, Treatment History, Centralized Platform, Resource Management, Patient Assistance Chatbot, C#, ASP.NET, SQL, JavaScript, CSS, Python, Organized Healthcare Ecosystem, Secure Healthcare System, Efficient Clinic Administration, Doctor Efficiency, Patient Care Enhancement.

CS Project I Registration Form
FALL 2022

	Project Abstract			
	This project addresses the inefficiencies in conventional healthcare systems by introducing a robust Clinic Management System. Designed with a patient-centric approach, the system allows patients to manage profiles, appointments, bills, and treatment histories seamlessly. The innovative "Take Appointment" feature streamlines scheduling, notifying patients of appointment status changes. Doctors access a centralized platform for appointment management, patient histories, and billing. Administrators benefit from comprehensive clinic statistics and resource management. Additionally, a Python-based chatbot provides patient assistance, enhancing the overall healthcare experience. Leveraging C#, ASP.NET, SQL, JavaScript, CSS, and Python, this system ensures an organized, secure, and efficient healthcare ecosystem, elevating patient care, doctor efficiency, and clinic administration.			
Supervisor		Team Lead	Team Member 2	Team Member 3	Team Member 4

DHA SUFFA UNIVERSITY

P-18XX FALL-23 CS

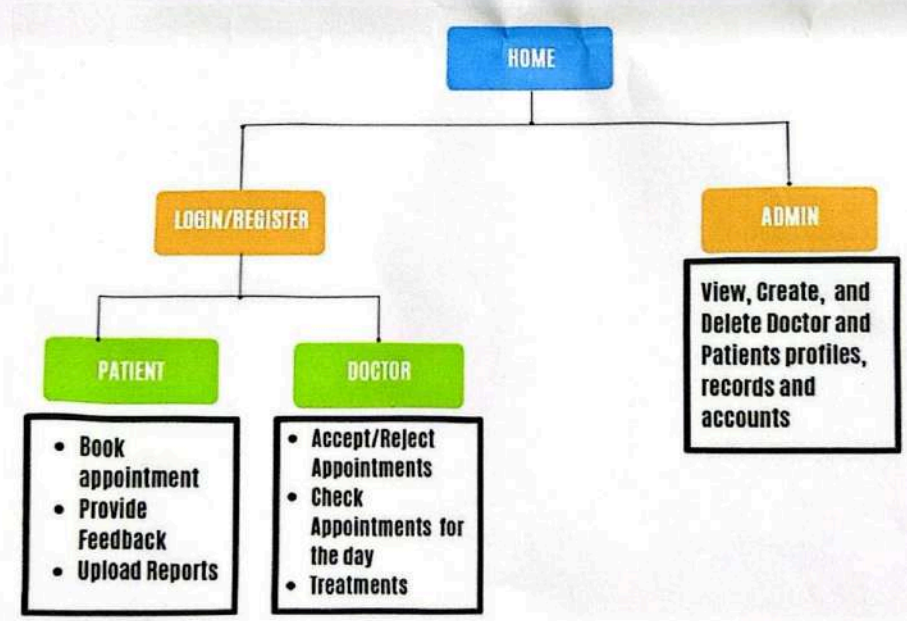
HealthHub Connect

Abstract:

This project addresses the inefficiencies in conventional healthcare systems by introducing a robust Clinic Management System. Designed with a patient-centric approach, the system allows patients to manage profiles, appointments, bills, and treatment histories seamlessly.

The innovative "Take Appointment" feature streamlines scheduling, notifying patients of appointment status changes. Doctors access a centralized platform for appointment management, patient histories, and billing. Administrators benefit from comprehensive clinic statistics and resource management. Additionally, a Python-based chatbot provides patient assistance, enhancing the overall healthcare experience. Leveraging C#, ASP.NET, SQL, JavaScript, CSS, and Python, this system ensures an organized, secure, and efficient healthcare ecosystem, elevating patient care, doctor efficiency, and clinic administration.

Workflow:



A1A. PROJECT PROPOSAL AND VISION DOCUMENTa

Any standard template may be used, as per project need approved by Project Coordinator & Supervisor. Following is a suggestive outline. **Also, the same outline should be used for Project Proposal Presentation.**

1 INTRODUCTION

1.1 Problem Statement

Fragmented Healthcare Systems	**This Lack of integration in healthcare systems leads to fragmented information flow, impacting patient care coordination.**
Communication Gaps in Patient Care	**Inefficient communication contributes to missed appointments, incomplete medical histories, and suboptimal treatment plans.**
Lack of Patient-Centric Approaches	**Many healthcare systems prioritize administrative efficiency over personalized care, neglecting individual patient needs and preferences.**

1.2 Product Position Statement:

Health Hub Connect is a comprehensive and innovative healthcare solution designed to solve the shortcomings of traditional healthcare systems. With an emphasis on improving patient care, optimizing doctor efficiency, and streamlining clinic administration, it provides a user-centric platform that transfigures the healthcare experience. Prioritizes the patient experience by offering a centralized platform for tracking patient profiles, appointments, and treatment histories. Patients gain seamless control over their healthcare journey.

1.3 Project Motivation and Background

This project addresses the inefficiencies in conventional healthcare systems by introducing a Clinic Management System (CMS). Motivated by the need to enhance patient care and streamline operations, the CMS prioritizes a patient-centric approach. By offering tools for managing profiles, appointments, and treatment histories in one central location, the project aims to empower individuals to actively participate in their healthcare management. It focuses on making healthcare services more accessible and convenient for both patients and healthcare providers, ultimately improving health outcomes. Using ASP.NET, C#, SQL, JavaScript, and CSS this system ensures an organized, secure, and efficient healthcare ecosystem, ultimately upgrading the overall healthcare experience.

1.4 Objectives

- **Enhance Patient Management:** Enable seamless patient profile, appointment, and treatment history management.
- **Streamline Appointments:** Introduce a user-friendly "Take Appointment" feature with real-time notifications.
- **Optimize Doctor Workflow:** Provide a centralized platform for registered doctors to manage appointments, access patient histories, and update patient records.
- **Improve Patient Experience:** Integrate a symptom-based recommendation system for real-time patient assistance.
- **Proximity-Based Doctor Discovery:** Facilitate the seamless discovery of nearby doctors through a GPS API.
- **Enable Scalability and Adaptability:** Design the system to accommodate future growth and evolving healthcare requirements.

Health Hub aims to revolutionize healthcare by enhancing efficiency, patient experience, and adaptability in the ever-evolving healthcare landscape.

1.5 Literature Review and GAP Analysis

GAP Analysis

Features	Gaps in market	How Our Project Addresses Gaps
GPS-Based Doctor Recommendations	Absence of location-based suggestions	GPS functionality for personalized doctor recommendations
Symptom-Based Recommendation System	Lack of personalized doctor suggestions based on symptoms	Integration of a symptom-based recommendation system (the system will recommend registered doctors only) Using a Kaggle dataset, we'll train our recommendation system to match symptoms with the right type of doctor. After data preprocessing and model training, our system will suggest doctors based on symptom profiles.

Medication Tracking System	No dedicated medication tracking and reminders	Allows patients to input their prescribed medications into the system. The system sends timely reminders to patients for medication intake. Patients can track whether they have taken their medicine or not, and the medicine list is updated accordingly. This feature enhances patient adherence to medication schedules and contributes to effective healthcare management.
Doctor Records Update	Limited options for doctors to update patient records	Efficient update of patient records, prescriptions, and progress
Feedback and Reviews	Limited options for patient feedback and reviews	Inclusion of Feedback and Reviews for transparent patient-provider communication

2 PROJECT VISION

2.1 Business Case and SWOT Analysis

Business Case:

- **Operational Efficiency:** Streamlines clinic workflows, reducing operational costs.
- **Increased Revenue:** Enhances revenue through efficient appointment scheduling.
- **Patient Satisfaction:** Improves patient experience, fostering loyalty and positive word-of-mouth.
- **Data Security and Compliance:** Ensures data security and compliance with healthcare regulations.
- **Competitive Edge:** Positions the clinic as a modern and efficient healthcare provider.
- **Sustained Growth:** Facilitates sustained growth by adapting to evolving healthcare demands.

SWOT Analysis:

	Strengths	**Weaknesses**	**Opportunities**	**Threads**
1	Efficiency Improvement	Technical Dependencies	Market Growth	Competitive Pressures
2	Patient-Centric Approach	Training Requirement	Technology Advancements	Data Security Risks
3	Comprehensive Data Management:		Expanded Service Offerings:	Regulatory Changes
4	Security Measures		Collaborations	User Resistance

2.2 Stakeholder Summary

Type	Description	Responsibilities

Patients	Individuals seeking healthcare services	Manage profiles, appointments and provide feedback. Engage with new features like medication tracking and symptom-based recommendations.
Doctors	Healthcare professionals providing services	Manage appointments, update patient records, and access treatment histories.
Administrators	Clinic management and support staff	Oversee overall clinic statistics, manage staff, handle system maintenance, and ensure compliance.
Developers	IT professionals responsible for system development	Design, developing, and maintaining the Clinic Management System, addressing technical challenges.

2.3 User Summary

Name	Description	Responsibilities	Stakeholder
Patient	Convenient appointment scheduling and management.	Seamless communication with healthcare providers.	● View and manage personal profiles. ● Schedule and track appointments across departments.
Doctors	Efficient management of appointments and patient information.	Access to patient histories and treatment details.	● View and update personal profiles. ● Manage pending and daily appointments. ● Access patient histories for informed decision-making.

Administrator	Comprehensive clinic statistics and performance insights	Efficient management of doctors, and patients	• View clinic statistics on the home dashboard. • Access and manage lists of doctors and patients • Utilize search functionality for quick information retrieval. • Add/remove doctors, patients, and staff members as needed.

2.4 Business Objectives and Success Criteria:

Business Objectives:

- Streamline clinic operations for enhanced efficiency.
- Prioritize a patient-centric experience for increased satisfaction.
- Foster an environment for sustained growth and expansion in the healthcare market.

Success Criteria:

- Measure an increase in patient satisfaction and retention.
- Measure a significant decrease in errors related to appointment scheduling.
- Maintain a high level of system uptime and reliability for uninterrupted service.

2.5 Project Risks and Risk Mitigation Plan:

Project Risks:

- The integration of various technologies (C#, ASP.NET, SQL, JavaScript, CSS) may lead to technical challenges and delays.
- Additional features or changes to the project scope may be requested during development, leading to scope creep.
- Security vulnerabilities may expose patient data or compromise the integrity of the system.
- Delays from external entities (e.g., regulatory approvals) may impact project timelines.

Risk Mitigation Plan:

These are the Risk mitigation for each of the above-mentioned risks respectively:

- Conduct a thorough technology feasibility study before implementation and allocate sufficient time for technology stack familiarization and training.
- Implement a change control process to assess and approve any scope changes. Regularly communicate with stakeholders to manage expectations and clarify scope boundaries.
- Implement robust security measures, including encryption and access controls.
- Identify critical dependencies early in the project. Communicate proactively with external entities and plan for potential delays.

2.6 Assumptions and Dependencies

Assumptions:

- **User Adoption**: Assumes seamless adoption by users (patients, doctors, administrators) without significant resistance.
- **Regulatory Compliance**: Assumes ongoing adherence to healthcare regulations, ensuring legal and ethical data handling.
- **Stable Technology**: Assumes stable functionality and compatibility of technologies used (C#, ASP.NET, SQL, JavaScript, CSS) without significant disruptions.

Dependencies:

- **IT Infrastructure**: Depends on a stable and reliable IT infrastructure for optimal system performance.
- **Data Security Protocols**: Relies on effective data security measures to prevent unauthorized access and protect patient information.
- **Regulatory Changes**: Dependencies on the stability of healthcare regulations; any changes may necessitate system updates or modifications.
- **GPS API Integration:** Requires seamless integration with a GPS API for accurate location-based services.

3 PROJECT SCOPE

3.1 In Scope

- Development and implementation of the Clinic Management System (CMS).
- Patient profile management, including appointments and treatment histories.
- Implementation of appointment scheduling for streamlined scheduling.
- Centralized platform for doctors to manage appointments, access patient histories, and update patient records.
- Comprehensive administration features providing insights into clinic statistics and resource management.
- System security and efficiency measures using C#, ASP.NET, SQL, JavaScript, CSS.
- Integration of a recommendation system for personalized doctor suggestions based on symptoms.
- Integration of GPS-based functionality to find doctors near the user's location.
- Scalability and adaptability features to accommodate future growth and evolving healthcare needs.

3.2 Out of Scope

- Integration with external healthcare systems not specified in the current project scope.
- Customization of the system beyond the defined features and functionalities.
- Training and onboarding of users beyond initial implementation.
- Hardware or infrastructure upgrades not explicitly included in the project plan.
- Addressing regulatory changes occurring after the project initiation.
- Any modifications or enhancements not explicitly outlined in the project scope document.

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4 PROPOSED METHODOLOGY

4.1 SDLC Approach (Waterfall/Agile/Spiral)

Considering the nature of the project, an appropriate SDLC approach could be:
Agile

Reasoning:

1. The project involves multiple stakeholders with evolving requirements.
2. Continuous feedback from users (doctors, patients, administrators) is crucial for system refinement.
3. Incremental development allows for regular releases of functional components, ensuring a more adaptive and responsive approach.

Benefits:

1. Early and continuous delivery of valuable features for quick user feedback.
2. Flexibility to accommodate changes during development.
3. Regular review and adaptation of the system based on evolving needs.

By adopting an Iterative and Incremental Development or Agile approach, the Clinic Management System project can respond effectively to changing requirements, provide continuous value to users, and adapt to the dynamic healthcare environment.

4.2 Team Role & responsibilities

1. **Dr Najeeb Ur Rehman Malik - Project Supervisor**
2. **Ms Urooj Waheed - Project Co-supervisor**

3. **Rohain Shaikh (Team Lead):**

- Team Coordination and Oversight: Lead and coordinate the development team, ensuring effective communication and progress tracking.
- UI/UX Design: Lead the design of the user interface and user experience.
- System Architecture: Contribute to designing the overall system architecture.
- Integrate Appointment Scheduling Logic: Implement the logic for appointment

scheduling.

- Doctor Module Development: Responsible for developing the doctor module.
- Recommendation system Development: Contribute to the development of the symptom-based recommendation system.

4. **Maliha Asghar (Team Member):**

- Develop Server-side Logic (C# and ASP.NET): Implement server-side logic and business processes.
- Integrate Appointment Scheduling Logic: Collaborate on integrating the frontend with backend services.
- Doctor Module Development: Contribute to the development of the doctor module.
- Recommendation system Development: Contribute to the development of the symptom-based recommendation system..
- Implement the "Take Appointment" Feature: Contribute to the implementation of the appointment scheduling feature.

5. **Hira Amjad (Team Member):**

- Implement the Database Structure (SQL): Design and implement the database structure.
- Server-side Logic (C# and ASP.NET): Implement server-side logic and business processes.
- Integrate with Backend Services: Collaborate on integrating frontend components with backend services.
- Patient Module Development: Responsible for developing the patient module.
- Recommendation system Development: Contribute to the development of the symptom-based recommendation system.

6. **Karima Kotadia (Team Member):**

- Database Schema: Design and implement the database schema.
- Integrate with Backend Services: Collaborate on integrating frontend components with backend services.
- Implement the "Take Appointment" Feature: Lead the implementation of the appointment scheduling feature.
- Patient Module Development: Contribute to the development of the patient module.
- Recommendation system Development: Contribute to the development of the symptom-based recommendation system.

4.3 Requirement Development Methodology

Data Collection:

- Conduct one-on-one or group interviews with stakeholders to gather in-depth information.
- Distribute surveys to a sample of users to collect quantitative and qualitative data on preferences and opinions.
- Review existing documentation, such as clinic policies, patient records, and regulatory guidelines.

Analysis and Design:

Analysis Phase:

1. Requirements Gathering:

- Conduct stakeholder interviews and surveys.
- Identify functional and non-functional requirements.
- Prioritize requirements based on impact.

2. Use Case Analysis:

- Develop use cases for key interactions.
- Create use case diagrams and specifications.

3. Data Modeling:

- Create an Entity-Relationship Diagram (ERD).
- Define attributes and relationships for data entities.

4. System Architecture:

- Define overall system architecture.
- Choose a technology stack for scalability and security.

5. Regulatory Compliance:

- Identify and document regulatory requirements.
- Ensure system design adheres to data security and privacy standards.

Design Phase:

1. High-Level Design:

- Create a high-level design document.
- Define system structure and modules.
- Consider architectural patterns.

2. Detailed Design:

- Develop detailed design specifications.
- Specify data structures, algorithms, and interfaces.
- Apply design patterns for maintainability.

3. User Interface (UI) Design:

- Create wireframes or prototypes.
- Design user-friendly interfaces.
- Ensure consistency in design elements.

4. Database Design:

- Implement database schema based on ERD.
- Define tables, relationships, and constraints.
- Optimize for performance.

5. Security Design:

- Implement user authentication and authorization.
- Apply encryption for sensitive data.
- Design access controls.

6. Integration Design:

- Plan for integration with external systems.
- Define APIs and communication protocols.
- Consider error handling for integration points.

7. Prototyping and Testing:

- Develop prototypes for validation.
- Plan unit testing, integration testing, and user acceptance testing.

8. Design Review:

- Conduct design reviews with stakeholders.
- Address feedback and concerns.

Development and Implementation:

1. Coding:

- Write code based on design specifications.
- Follow coding standards.

2. Database Implementation:

- Create and optimize the database schema.
- Populate initial data.

3. UI Development:

- Implement user interface using front-end technologies.
- Ensure consistency with design.

4. Functionality Development:

- Develop core functionalities.
- Address changes or enhancements.

5. Security Implementation:

- Integrate user authentication, authorization, and encryption.
- Test security features.

6. Integration Development:

- Implement interfaces for external system integration.
- Test integration points.

7. Testing:

- Conduct unit, integration, and system testing.
- Refine code based on feedback.

8. Refinement and Iteration:

- Address issues identified during testing.
- Conduct code reviews.

9. Documentation:

- Update documentation.

10. User Training:

- Develop training materials.
- Conduct training sessions.

11. Deployment:

- Plan and execute the deployment.
- Monitor system performance.

12. Post-Implementation Review:

- Assess deployment success.
- Gather user feedback.
- Identify areas for improvement.

Testing:

1. Unit Testing: Verify individual code components.

2. Integration Testing: Validate interactions between integrated modules.

3. System Testing: Test end-to-end functionalities and system behavior.

4. User Acceptance Testing (UAT): Involve users to validate system alignment with needs.

5. Performance Testing: Assess system responsiveness and stability.

6. Security Testing: Identify and address security vulnerabilities.

7. Regression Testing: Ensure new changes don't impact existing functionalities.

8. Usability Testing: Evaluate user interface intuitiveness and overall experience.

9. Compatibility Testing: Ensure CMS functions across devices and browsers.

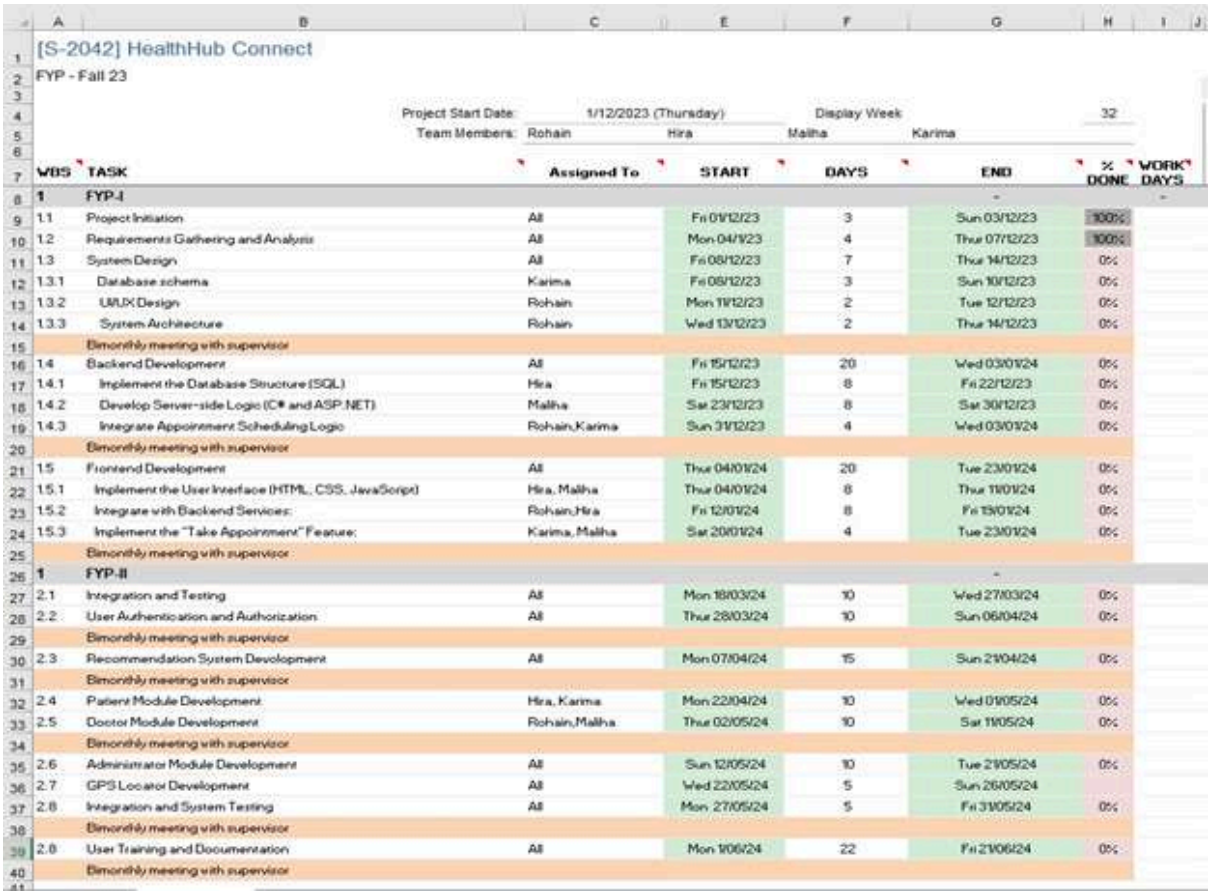
4.4 High level Architecture / Design

1. **Presentation Layer:**
    1. Web-based interface using HTML, CSS, and JavaScript.
    2. Responsive design for various devices.
    3. User authentication and authorization.
2. **Business Logic Layer:**
    1. Controller for data flow and user input validation.
    2. Service layer for business logic and rule implementation.
    3. Application components for functionalities like appointment scheduling.
3. **Data Storage Layer:**
    1. Microsoft SQL Server for data storage.
    2. Data Access Layer for executing queries and transactions.
4. **Integration and Communication:**
    1. RESTful APIs for communication.
    2. Facilitates integration with external systems.
5. **Security:**
    1. Authentication and authorization for secure login.
    2. Data encryption for transmission and storage.
6. **Scalability and Performance:**
    1. Load balancing to distribute traffic.
    2. Caching mechanisms for improved response times.

This architecture ensures a secure, scalable, and efficient Clinic Management System with a user-friendly interface.

5 PROJECT PLANNING

5.1 Gantt Chart



[S-2042] HealthHub Connect

FYP - Fall 23

Project Start Date: 1/12/2023 (Thursday) Display Week: 32

Team Members: Rohain, Hira, Maliha, Karima

WBS	TASK	Assigned To	START	DAYS	END	% DONE	WORK DAYS
1	FYP-I				-		-
1.1	Project Initiation	All	Fri 01/12/23	3	Sun 03/12/23	100%	
1.2	Requirements Gathering and Analysis	All	Mon 04/12/23	4	Thur 07/12/23	100%	
1.3	System Design	All	Fri 08/12/23	7	Thur 14/12/23	0%	
1.3.1	Database schema	Karima	Fri 08/12/23	3	Sun 10/12/23	0%	
1.3.2	UI/UX Design	Rohain	Mon 11/12/23	2	Tue 12/12/23	0%	
1.3.3	System Architecture	Rohain	Wed 13/12/23	2	Thur 14/12/23	0%	
	Bimonthly meeting with supervisor						
1.4	Backend Development	All	Fri 15/12/23	20	Wed 03/01/24	0%	
1.4.1	Implement the Database Structure (SQL)	Hira	Fri 15/12/23	8	Fri 22/12/23	0%	
1.4.2	Develop Server-side Logic (C# and ASP.NET)	Maliha	Sat 23/12/23	8	Sat 30/12/23	0%	
1.4.3	Integrate Appointment Scheduling Logic	Rohain,Karima	Sun 31/12/23	4	Wed 03/01/24	0%	
	Bimonthly meeting with supervisor						
1.5	Frontend Development	All	Thur 04/01/24	20	Tue 23/01/24	0%	
1.5.1	Implement the User Interface (HTML, CSS, JavaScript)	Hira, Maliha	Thur 04/01/24	8	Thur 11/01/24	0%	
1.5.2	Integrate with Backend Services:	Rohain,Hira	Fri 12/01/24	8	Fri 19/01/24	0%	
1.5.3	Implement the "Take Appointment" Feature:	Karima, Maliha	Sat 20/01/24	4	Tue 23/01/24	0%	
	Bimonthly meeting with supervisor						
1	FYP-II				-		
2.1	Integration and Testing	All	Mon 18/03/24	10	Wed 27/03/24	0%	
2.2	User Authentication and Authorization	All	Thur 28/03/24	10	Sun 06/04/24	0%	
	Bimonthly meeting with supervisor						
2.3	Recommendation System Development	All	Mon 07/04/24	15	Sun 21/04/24	0%	
	Bimonthly meeting with supervisor						
2.4	Patient Module Development	Hira, Karima	Mon 22/04/24	10	Wed 01/05/24	0%	
2.5	Doctor Module Development	Rohain,Maliha	Thur 02/05/24	10	Sat 11/05/24	0%	
	Bimonthly meeting with supervisor						
2.6	Administrator Module Development	All	Sun 12/05/24	10	Tue 21/05/24	0%	
2.7	GPS Locator Development	All	Wed 22/05/24	5	Sun 26/05/24		
2.8	Integration and System Testing	All	Mon 27/05/24	5	Fri 31/05/24	0%	
	Bimonthly meeting with supervisor						
2.9	User Training and Documentation	All	Mon 1/06/24	22	Fri 21/06/24	0%	
	Bimonthly meeting with supervisor						

6 PROJECT REQUIREMENTS

6.1 Software tools requirements:

Visual Studio, Microsoft SQL Server Express

6.2 Hardware requirements

- Processor: Quad-core processor (or higher) to handle concurrent requests.
- Memory (RAM): 16 GB or more to support database operations and application processes.
- Storage: 500 GB SSD for fast data retrieval and storage.

7 BUDGET/COSTING

7.1 Estimated Budgeted Cost of the Project

Total Hours - 900 hrs

Per Hour Rate - 500 Rs

Total Hours Rate - 450,000 Rs

Hardware Cost - 50,000 Rs

Other resources - 0 Rs

Total cost Rs. - 500,000 Rs

8 PROJECT DELIVERABLES

8.1 Phase I - Alpha Prototype

1. Develop a functional alpha prototype of the Clinic Management System.

2. Include basic features such as user registration, appointment scheduling and treatment histories.

3. Conduct internal testing and gather feedback for refinement.

8.2 Phase II - Beta Prototype

1. Enhance the prototype with additional features like symptom-based recommendation system, GPS integration and improved user interfaces.

2. Conduct beta testing with a limited user group, collecting feedback for further improvements.

3. Address identified issues and optimize system performance.

8.3 Phase III - Release Candidate

1. Polish the system based on beta testing feedback.

2. Implement the complete set of features, including a comprehensive feedback system and refined user interfaces.

3. Conduct thorough testing to ensure stability and reliability.

8.4 Phase IV - Final Product

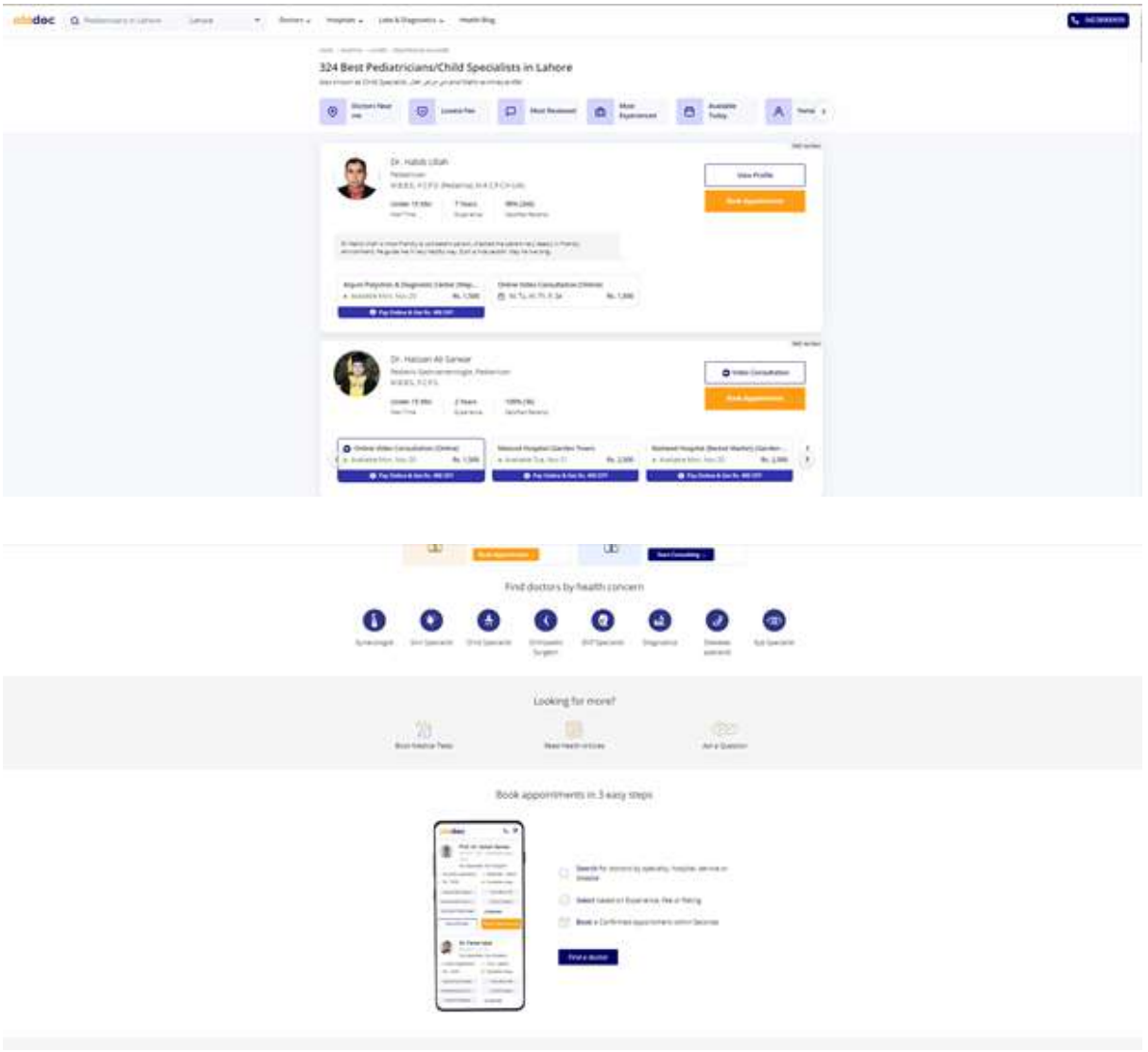
1. Finalize the Clinic Management System with all planned features.

2. Conduct extensive testing to address any remaining issues.

3. Prepare for system deployment and ensure documentation is complete.

4. Release the final product for full-scale implementation and use.

9 Proposed GUI (Prototype)



10 Meetings held with supervisor and/or client.

Bi-Monthly meetings with the supervisor as mentioned in the Gantt chart. .

11 REFERENCES

Website reference:

- Marham “Login” Accessed November, 15 2023. https://www.marham.pk
- Memon Hospital “Find A Doctor” Accessed November, 23 2023 https://mmi.edu.pk/
- Oladoc “Home Page” Accessed November,19 2023. https://oladoc.com

Article reference:

- Authors: Muhammad, Jibrin, and Salisu Garba.
- Title: "Web Based CMS."
- Journal Title:
- International Journal of Software Engineering & Applications 8, no. 5 (Year): Page range.
- URL: https://ijsea.com/archive/volume8/volume8issue5.pdf

A1B. COPY OF PROPOSAL EVALUATION COMMENTS BY JURY

PROJECT TITLE: HealthHub Connect

FYP-I Proposal Evaluation Feedback Response Report

PROJECT CODE: S-2042

CS - FALL - 23

PR0JECT STATUS: Reevaluate

Proposal Defense 2 Dec 23

	Jury Revision Comments	Response	Action	Supervisor Signature
1	Integration of GPS system.	Agreed	GPS functionality for personalized doctor recommendations	
2	Add more features.	Agreed	Integration of a symptom-based recommendation system (the system will recommend registered doctors only)	
3	Add more features	Agreed	Allows patients to input their prescribed medications into the system. The system sends timely reminders to patients for medication intake. Patients can track whether they have taken their medicine or not, and the medicine list is updated accordingly. This feature enhances patient adherence to medication schedules and contributes to effective healthcare management.	
4	….			
N	….			

A2. REQUIREMENT SPECIFICATIONS

Any standard template may be used, as per project need approved by Project Coordinator & Supervisor. Following is a suggestive outline.

1. Introduction
1.1. Purpose of Document
1.2. Intended Audience
1.3 Abbreviations
2. Overall System Description
2.1. Project Background
2.2. Project Scope
2.3. Not In Scope
2.4. Project Objectives
2.5. Stakeholders
2.6. Operating Environment
2.7. System Constraints
2.8. Assumptions & Dependencies
3. External Interface Requirements
3.1. Hardware Interfaces
3.2. Software Interfaces
3.3. Communications Interfaces
4. Functional Requirements
4.1. Functional Hierarchy
4.2. Use Cases
4.2.1. [use case 1]
4.2.2. [use case 2]
4.2.n. [use case n]
5. Non-functional Requirements
5.1. Performance Requirements
5.2. Safety Requirements
5.3. Security Requirements
5.4. User Documentation
6. References

1. INTRODUCTION

1.1 Purpose of Document

The HealthHub Connect SRS document outlines the scope, features, and constraints of the project. This document acts as a communication bridge between stakeholders, including developers, testers, and project managers, ensuring a shared understanding of the system's goals and functionalities. It clearly defines what the system will do, how it will perform.This ensures that everyone understands the goals and features of the system, facilitating smooth project planning, execution, and validation.

1.2 Intended Audience

The HealthHub Connect SRS document targets developers, testers, project managers, stakeholders (clinic administrators, healthcare professionals, end-users), and the documentation team. It provides a concise reference for understanding, testing, and managing the development of the Clinic Management System, ensuring a shared understanding across diverse project stakeholders.

2. OVERALL SYSTEM DESCRIPTION

2.1 Project Background

In the dynamic landscape of modern healthcare, there is a pressing need for a robust system that seamlessly integrates patient care, appointment scheduling, and medical record management. The project stems from recognising that existing healthcare practices often grapple with manual processes, resulting in inefficiencies and hindering effective communication between patients and medical professionals. The primary goal of HealthHub Connect is to introduce a centralized, automated, and user-friendly platform tailored to the specific requirements of clinics and healthcare providers. Key features include a sophisticated recommendation system, streamlined appointment scheduling and comprehensive tracking of treatment histories. HealthHub Connect aspires to elevate patient care, improve data accuracy, and foster seamless communication between patients, doctors, and administrators by embracing these functionalities.

2.2 Problem Statement

Fragmented Healthcare Systems	**This Lack of integration in healthcare systems leads to fragmented information flow, impacting patient care coordination.**
Communication Gaps in Patient Care	**Inefficient communication contributes to missed appointments, incomplete medical histories, and suboptimal treatment plans.**
Lack of Patient-Centric Approaches	**Many healthcare systems prioritize administrative efficiency over personalized care, neglecting individual patient needs and preferences.**

2.3 Project Scope

- Development and implementation of the Clinic Management System (CMS).
- Patient profile management, including appointments and treatment histories.
- Implementation of appointment scheduling for streamlined scheduling.
- Centralized platform for doctors to manage appointments, access patient histories, and update patient records.

- Comprehensive administration features providing insights into clinic statistics and resource management.
- System security and efficiency measures using C#, ASP.NET, SQL, JavaScript, CSS.
- Integration of a recommendation system for personalized doctor suggestions based on symptoms.
- Integration of GPS-based functionality to find doctors near the user's location.
- Scalability and adaptability features to accommodate future growth and evolving healthcare needs.

2.4 Not In Scope

- Integration with external healthcare systems not specified in the current project scope.
- Customization of the system beyond the defined features and functionalities.
- Training and onboarding of users beyond initial implementation.
- Hardware or infrastructure upgrades not explicitly included in the project plan.
- Addressing regulatory changes occurring after the project initiation.
- Any modifications or enhancements not explicitly outlined in the project scope document.

2.5 Project Objectives

- **Enhance Patient Management:** Enable seamless patient profile, appointment and treatment history management.
- **Streamline Appointments:** Introduce a user-friendly "Take Appointment" feature with real-time notifications.
- **Optimize Doctor Workflow:** Provide a centralized platform for registered doctors to manage appointments, access patient histories, and update patient records.
- **Improve Patient Experience:** Integrate a symptom-based recommendation system for real-time patient assistance.
- **Proximity-Based Doctor Discovery:** Facilitate seamless discovery of nearby doctors through a GPS API.
- **Enable Scalability and Adaptability:** Design the system to accommodate future growth and evolving healthcare requirements.

Health Hub aims to revolutionize healthcare by enhancing efficiency, patient experience, and adaptability in the ever-evolving healthcare landscape.

2.5 Stakeholders and Affected Groups

Stakeholders:

Name	Description	Responsibilities
Developers	IT professionals responsible for the creation and maintenance of the system.	Design, develop, and maintain the Clinic Management System, and address technical challenges.

Affected Groups:

Name	Description	Responsibilities
Patients	Patients are the end-users of the system. They use the system to schedule appointments, view their medical history, and manage billing information.	Manage profiles, appointments, bills, and treatment histories. Provide feedback on appointments.
Doctors	Healthcare professionals who use the system to streamline their daily tasks.	Manage appointments, update patient records, generate bills, and access treatment histories.
Administration	Administrative staff is responsible for the overall management of the clinic.	Oversee clinic statistics, manage staff, handle system maintenance, and add/remove doctors, patients, and staff.

2.6 Operating Environment

We aim to use ASP.NET for the back-end development and HTML, CSS and Javascript for the front-end development on Visual Studio. Python is to be used to develop the recommendation system.

2.7 System Constraints

- **Authentication and Access:** Users must securely authenticate to access the system and need compatible devices with internet access.
- **Digital Literacy**: Users require basic digital literacy to navigate the system effectively.
- **Location Data**: Users should provide precise location information for more accurate recommendations.

- **Consistent Internet and Device Compatibility:** Users should have consistent internet access and use devices compatible with the platform for optimal performance.

2.8 Assumptions & Dependencies

Assumptions:

- Users need a reliable internet connection for system access.
- Users provide accurate information during interactions.
- Users should use devices compatible with the platform's web interface.

- The success of the recommendation system assumes active user engagement in providing symptoms.

Dependencies:

- Accuracy of the "Doctors Near You" feature depends on geolocation services.
- System success depends on active user adoption.
- The system depends on the user having a reliable internal connection.

- The project is dependent on the stable performance and updates of technologies used, including Visual Studio, C#, .NET, HTML, CSS, JavaScript, and Python.

3. External Interface Requirements

3.1 Hardware Interfaces

Users should use devices compatible with the platform for the web interface.

Computers/Laptops/Mobiles

Logical Structure: The system communicates with computers through a web-based interface.

Physical Address: URLs for accessing the system (e.g., https://HealthHub.com).

Expected Behavior: Users interact with the system via a graphical user interface (GUI) on their computers. The system processes user inputs and displays information accordingly.

3.2 Software Interfaces

- Database Management System (DBMS)
- Web Browsers (HTTP/HTTPS)
- Server-Side Scripting Language (C#, ASP.NET)
- Client-Side Scripting Languages (JavaScript)

- External APIs for Location Services

3.3 Communications Interfaces

The primary communication interface for the overall system would still be HTTP/HTTPS. While other specific protocols may be used internally (such as for database connections), HTTP/HTTPS remains the overarching communication interface that ties together the client-side, server-side, and any other components within the system. It ensures standardization, interoperability, and secure data exchange between different parts of our website.

4. System Functions / Functional Requirements

4.1 System Functions

Ref #	*Functions*	*Category*	*Attribute*	*Details & Boundary Constraints*
R1	Launch application	Evident	-	Ensure a secure and smooth application launch.
R2	Patient access and registration			
R2.1	Patient Registration	Evident	Username, Password, Email	Collects user information during registration. Username and email must be unique.
R2.2	Patient Login	Evident	Username, Password	Authenticates users during login. Passwords are securely hashed.
R2.3	Load Patient Details on Dashboard	Hidden	-	Load patient details on the dashboard upon successful login.
R3	Doctor access and registration			
R3.1	Doctor Registration	Evident	Username, Password, Email	Collect essential doctor information securely. Username and email must be unique.
R3.2	Doctor Login	Evident	Username, Password	Authenticates doctor during login. Passwords are securely hashed.

R3.3	Load Doctor Details on Dashboard	Hidden	-	Load doctor details on the dashboard upon successful login.
R4	Admin role	Evident	Username,Password	Centralized control over user profiles, appointments, and analytics; implement secure admin access and actions.
R5	Profile Management of Patient			
R5.1	Access patient profile	Evident	-	Enable patients to securely access their profiles.
R5.2	Update personal information	Evident	Personal information	Allows users to edit and update personal details
R5.3	Upload medical records	Evident	Medical reports	Enables users to upload and manage their medical records.
R6	Profile Management of Doctor			
R6.1	Access doctor profile	Evident	-	Enable doctors to securely access their profiles.
R6.2	Update personal information	Evident	Personal information	Allows doctors to edit and update personal details
R6.3	Add details	Evident	Professional details	Provide a secure mechanism for doctors to add and manage additional details..
R7	Appointments			

R7.1	Appointment scheduling	Evident	Doctor, Date, Time	Users schedule appointments with specific doctors on chosen dates and times
R7.2	Check Doctor’s availability	Evident	Doctor, Date,Time	System checks the selected doctor's availability for appointments.
R7.3	Appointment confirmation	Evident	Date, Time	Confirms the scheduled appointment and notifies users.
R7.4	Reschedule appointment	Evident	Date, Time	Allows users to reschedule appointments, subject to doctor's availability
R7.5	Cancel Appointment	Evident	Reason	Users can cancel appointments with reasons; system enforces cancellation policies
R8	View Bill	Evident	-	Allows patients to view the bill amount after confirming the appointment.
R9	Doctor recommendation			
R9.1	Enter symptoms	Evident	Symptoms	Users input symptoms for doctor recommendation.
R9.2	Recommends best doctors	Evident	-	System analyzes symptoms to recommend suitable doctors.
R10	Medication			

R10.1	Enter prescribed medicines	Evident	Prescribed medicines	Users input prescribed medicines.
R10.2	Medicine reminder	Evident	-	System updates and sends timely reminders for medicine intake.
R11	Record treatment details	Evident	Treatment details	System records and displays the medical treatment history.
R12	Doctor’s discovery			
R12.1	Find doctor’s near me	Evident	Location	Finds doctors near the user's location.
R12.2	Find Doctors According to Different Filters:	Evident	Filters	Allows users to filter and find doctors based on various criteria.
R13	Patients can rate and review the doctors	Evident	Reviews, Rating	Enables patients to provide feedback by rating and reviewing doctors

System Attributes/ Nonfunctional Requirements

Attribute	Details and Boundary Constraints	Category
Response time	When booking an appointment, the system should respond within 3 seconds.	*Mandatory*
Concurrent User Load	The system should support a minimum of 20 concurrent users.	*Mandatory*

4.2 Use Cases

4.2.1 List of Actors

Patient: Person seeking healthcare services.

Doctors: Healthcare professionals providing services.

Administrator: Clinic management and support staff.

Developers: IT professionals responsible for system development.

4.2.2 List of Use Cases

Patient:

Manage personal profiles, schedule and track appointments and provide feedback regularly.

Doctor:

Manage appointments, update patient records, and access patient histories and treatment details. Also, provide feedback.

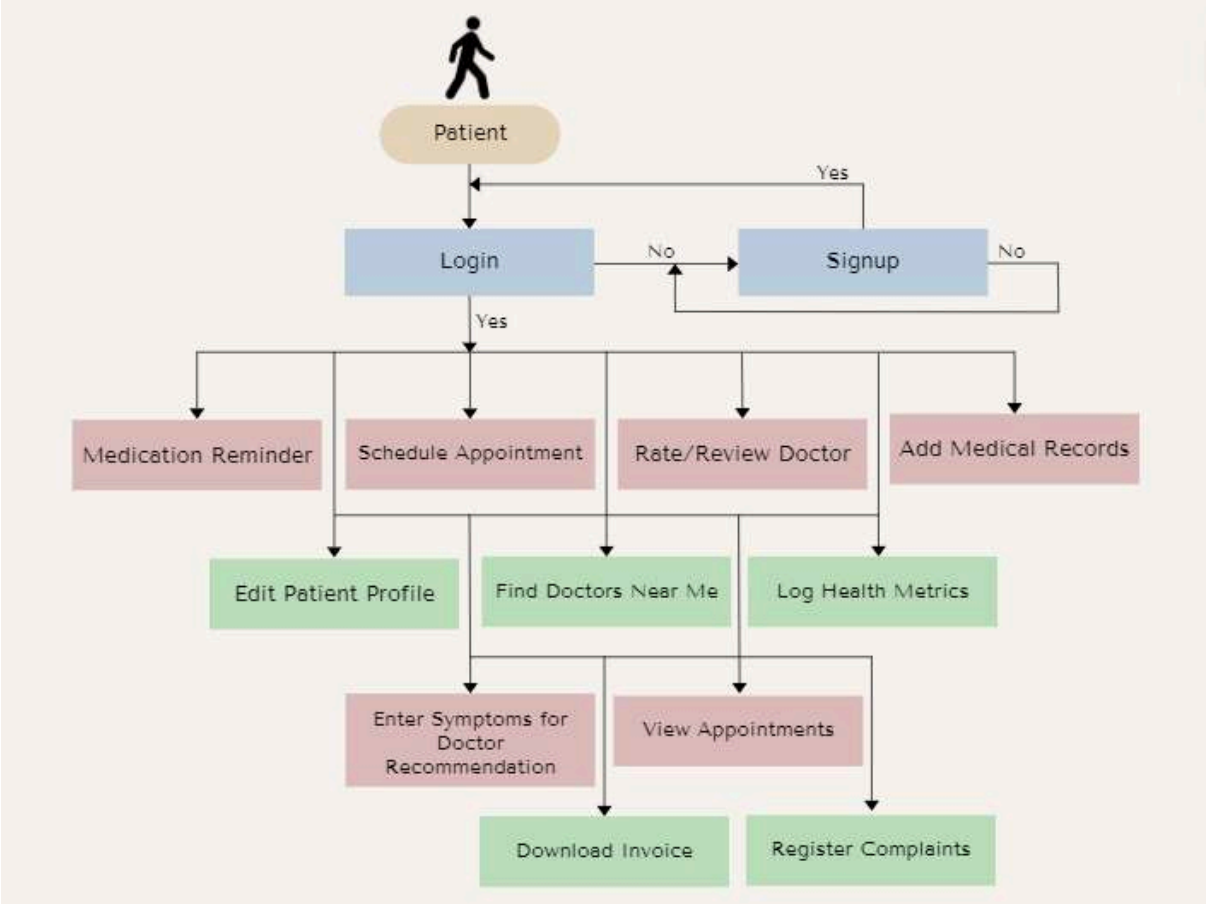
Administrator:

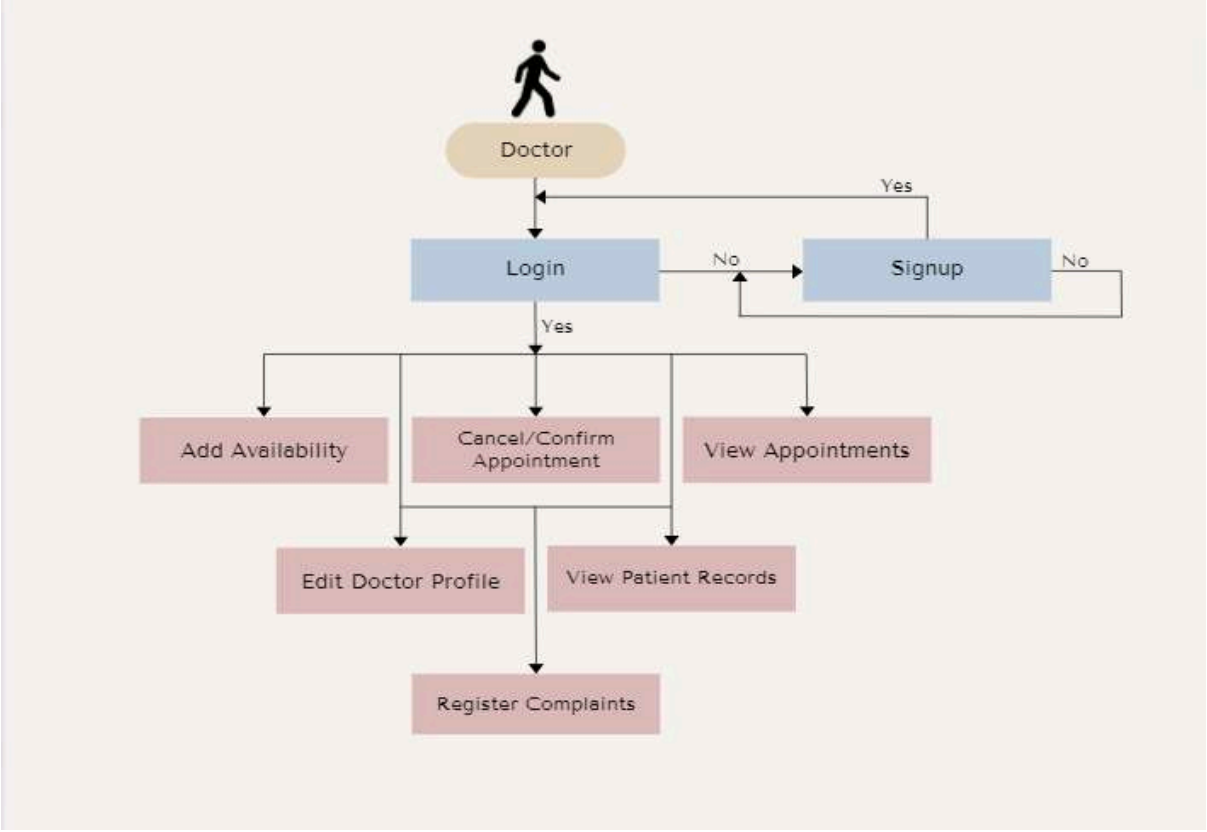
Oversee overall clinic statistics, manage doctors, and patients Access and manage lists of doctors and patients. Add/remove doctors and patients

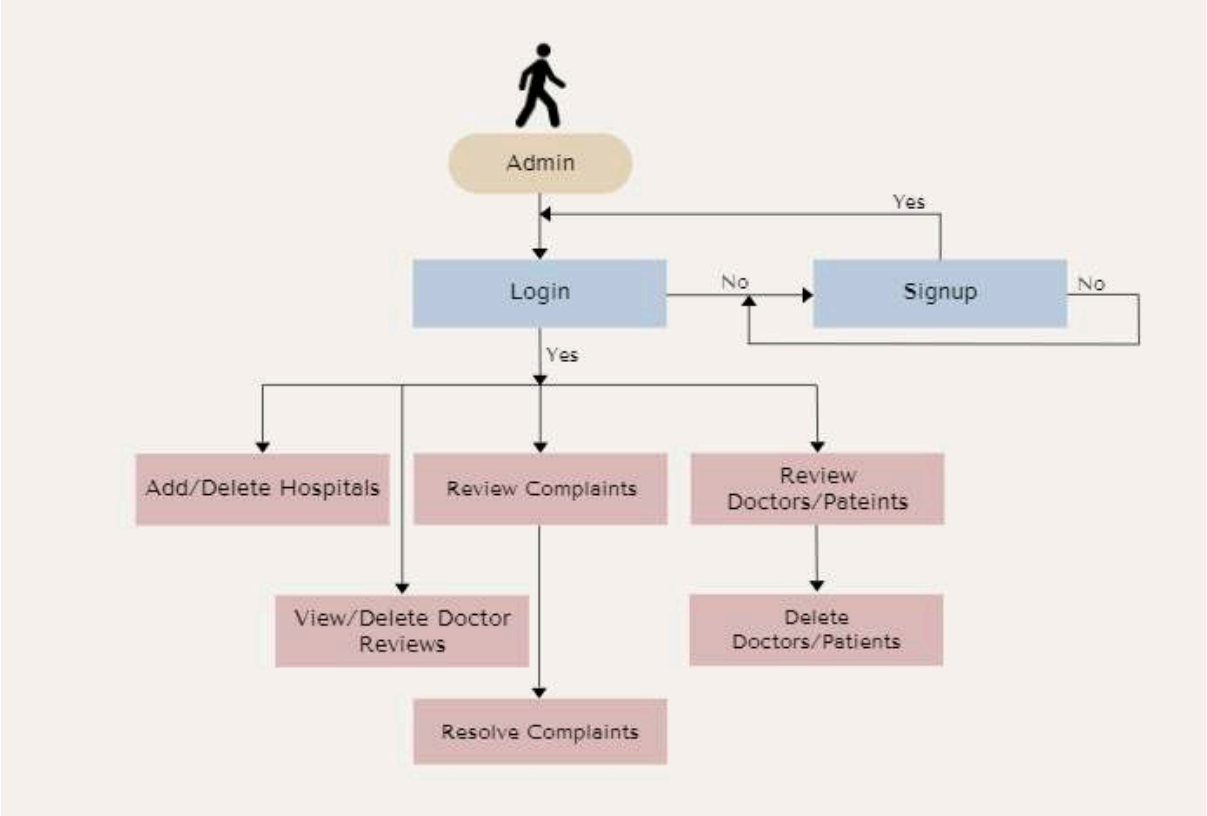
Developer:

Design, develop, and maintain the CMS. Address technical challenges and ensure system efficiency. Collaborate with other stakeholders for system improvement.

4.2.3 Use Case Diagram


Patient
Yes
Login
No
Signup
No
Yes
Medication Reminder
Schedule Appointment
Rate/Review Doctor
Add Medical Records
Edit Patient Profile
Find Doctors Near Me
Log Health Metrics
Enter Symptoms for Doctor Recommendation
View Appointments
Download Invoice
Register Complaints


Doctor
Yes
Login
No
Signup
No
Yes
Add Availability
Cancel/Confirm Appointment
View Appointments
Edit Doctor Profile
View Patient Records
Register Complaints



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4.2.4 Description of Use Cases

Section: Patient Login and Registration	
Name:	Patient Login and Registration
Actors:	Patient, Admin
Purpose:	Enable patients to register securely and login to the application.
Description:	Patients register with the application and subsequently log in to

	access personalized services.
Cross References:	Functions: R2, R2.1, R2.2, R2.3 Use Cases: User must be a registered patient to log in.
Pre-Conditions	User has a stable internet connection.
Successful Post-Conditions	Patient successfully logs into the application.
Failure Post-Conditions	Patient credentials for login are not valid.

Typical Course of Events		
Actor Action		System Response
1	Patient registers with the application.	Registration successful!
2	System validates the registration.	Registration validated.
3	Patient logs in	Login successful!
4	System verifies credentials.	Credentials verified.

Alternative Course	
Step 1:	Registration fails,User has an unstable internet connection during registration.
Step 3:	Login fails, Patient credentials for login are not valid.

Section: Doctor Registration and Login	
Name:	Doctor Registration and Login
Actors:	Doctor, Admin
Purpose:	Enable doctors to register securely and login to the application.
Description:	Doctors register with the application and subsequently log in to access their professional dashboard.
Cross References:	Functions: R3, R3.1, R3.2, R3.3 Use Cases: User must be a registered doctor to log in.
Pre-Conditions	User has a stable internet connection.

Successful Post-Conditions	Doctor successfully logs into the application.
Failure Post-Conditions	Doctor credentials for login are not valid.

Typical Course of Events		
Actor Action		System Response
1	Doctor registers with the application.	Registration successful!
2	System validates the registration.	Registration validated.
3	Doctor logs in.	Login successful!
4	System verifies credentials.	Credentials verified.

Alternative Course	
Step 1:	Registration fails,User has an unstable internet connection during registration.

Step 3:	Login fails, Doctor credentials for login are not valid.

Section: Admin Role	
Name:	Admin Role
Actors:	Admin
Purpose:	Centralized control over user profiles, appointments, and analytics.
Description:	Admins login to access the admin dashboard for managing users, appointments, and analytics.
Cross References:	Functions: R4 Use Cases: Admin credentials are required for access.
Pre-Conditions	Admin has a stable internet connection.
Successful	Admin successfully accesses the admin dashboard.

Post-Conditions	
Failure Post-Conditions	Admin credentials are not valid.

Typical Course of Events		
Actor Action		System Response
1	Admin logs in	Login successful!
2	System verifies credentials	Credentials verified.

Alternative Course	
Step 1:	Login fails, Admin credentials not valid.

Section: Profile Management of Patient	
Name:	Profile Management of Patient
Actors:	Patient
Purpose:	Allow patients to securely manage their profile information.

Description:	Patients access, update personal information, and upload medical records securely.
Cross References:	Functions: R5, R5.1, R5.2, R5.3 Use Cases: Patients must be logged in to manage their profile.
Pre-Conditions	Patient is logged in.
Successful Post-Conditions	Patient successfully manages their profile.
Failure Post-Conditions	Patients are unable to manage their profile.

Typical Course of Events		
Actor Action		System Response
1	Patient manages their profile.	Profile management page opened
2	System updates the profile information.	Profile information updated successfully

Alternative Course	
Step 1:	Patient fails to update personal information.
Step 2:	Patient fails to upload medical records, ensuring the files should be in the correct format.

Section: Profile Management of Doctor	
Name:	Profile Management of Doctor
Actors:	Doctor
Purpose:	Allow doctors to securely manage their profile information.
Description:	Doctors access, update personal information, and add additional details securely.
Cross References:	Functions: R6, R6.1, R6.2, R6.3 Use Cases: Doctors must be logged in to manage their profile.
Pre-Conditions	Doctor is logged in.
Successful Post-Conditions	Doctor successfully manages their profile.

Failure Post-Conditions	Doctors are unable to manage their profile.

Typical Course of Events		
Actor Action		System Response
1	Doctor manages their profile.	Profile management page opened
2	System updates the profile information.	Profile information updated successfully

Alternative Course	
Step 2:	Doctor fails to update personal information.

Section: Appointments	
Name:	Appointments
Actors:	Patient, Admin
Purpose:	Enable patients to schedule, check availability, confirm, reschedule, and cancel appointments.

Description:	Patients interact with the application to manage their appointments securely.
Cross References:	Functions: R7, R7.1, R7.2, R7.3, R7.4, R7.5 Use Cases: Patients must be logged in to manage appointments.
Pre-Conditions	Patient is logged in.
Successful Post-Conditions	Patients successfully manage their appointments.
Failure Post-Conditions	Appointment management fails.

Typical Course of Events		
Actor Action		System Response
1	Patients manage their appointments.	Appointments page opened.
2	System updates the appointment details.	Appointment details updated successfully.

Alternative Course	
Step 1:	Appointment can not be booked due to doctor’s unavailability.

Section: View Bill	
Name:	View Bill
Actors:	Patient
Purpose:	Allow patients to securely view detailed bills and payment history.
Description:	Patients access the application to view their bills and payment history securely.
Cross References:	Functions: R8 Use Cases: Patients must be logged in to view bills.
Pre-Conditions	Patient is logged in
Successful Post-Conditions	Patient successfully views their bills
Failure Post-Conditions	Bill viewing fails.

Typical Course of Events		
Actor Action		System Response
1	Patient views their bills	Bills displayed successfully.

Alternative Course	
Step 1:	Patient fails to view bill, network error

Section: Doctor Recommendation	
Name:	Doctor Recommendation
Actors:	Patient
Purpose:	Enhance the recommendation system for precise healthcare assistance.
Description:	Patients input symptoms to receive secure recommendations for doctors.
Cross References:	Functions: R9, R9.1, R9.2

	Use Cases: Patients must be logged in to receive recommendations.
Pre-Conditions	Patient is logged in.
Successful Post-Conditions	Patient successfully receives doctor recommendations.
Failure Post-Conditions	Recommendation system fails.

Typical Course of Events		
Actor Action		System Response
1	Patient enter their symptoms	System examines the symptoms.
2	Patient receives doctor recommendations.	Recommendations provided.

Alternative Course	
Step 2:	Recommendation failed; ensure accurate symptom input and try again.

Section: Medication

Name:	Medication
Actors:	Patient
Purpose:	Allow patients to securely enter prescribed medicines and set reminders..
Description:	Patients manage their medications securely through the application.
Cross References:	Functions: R10, R10.1, R10.2 Use Cases: Patients must be logged in to manage medications.
Pre-Conditions	Patient is logged in.
Successful Post-Conditions	Patient successfully manages their medications
Failure Post-Conditions	Medication management fails.

Typical Course of Events	
Actor Action	System Response

1	Patient manages their medications.	The Medications page opened.
2	System securely updates prescribed medicines and reminders.	Medications updated successfully.

Alternative Course	
Step 1:	Patient fails to manage medications, incorrect medicine input

Section: Record Treatment Details	
Name:	Record Treatment Details
Actors:	Doctor
Purpose:	Allow doctors to securely record comprehensive treatment details.
Description:	Doctors input treatment details securely for patient records.
Cross References:	Functions: R11 Use Cases: Doctor must be logged in to record treatment details.
Pre-Conditions	Doctor is logged in.

Successful Post-Conditions	Doctor successfully records treatment details.
Failure Post-Conditions	Treatment details recording fails.

Typical Course of Events		
Actor Action		System Response
1	Doctor records treatment details.	Treatment details recorded successfully.
2	System securely updates comprehensive treatment information	Treatment details updated.

Alternative Course	
Step 2:	Doctor fails to record treatment details.

Section: Doctor's Discovery	
Name:	Doctor's Discovery

Actors:	Patient
Purpose:	Enhance search capabilities for patients to discover doctors securely.
Description:	Patients search for doctors based on location and filters securely.
Cross References:	Functions: R12, R12.1, R12.2 Use Cases: Patients must be logged in to discover doctors.
Pre-Conditions	Patient is logged in.
Successful Post-Conditions	Patient successfully discovers doctors.
Failure Post-Conditions	Doctor discovery fails.

Typical Course of Events		
Actor Action		System Response
1	Patient discovers doctors securely.	Doctor discovery page opened.

2	System enhances search capabilities and securely provides doctor suggestions	Doctor suggestions displayed.

Alternative Course	
Step 2:	Patient fails to discover doctors.

Section: Patient Ratings and Reviews	
Name:	Patient Ratings and Reviews
Actors:	Patient
Purpose:	Allow patients to provide detailed reviews and ratings securely.
Description:	Patients rate and review doctors securely.
Cross References:	Functions: R13 Use Cases: Patients must be logged in to rate and review doctors.
Pre-Conditions	Patient is logged in.
Successful Post-Conditions	Patients successfully rate and review doctors.

Failure Post-Conditions	Rating and reviewing fail.

Typical Course of Events		
Actor Action		System Response
1	Patient rates and reviews doctors securely.	Ratings and reviews submitted successfully.
2	System securely processes and stores patient reviews and ratings.	Reviews and ratings stored.

Alternative Course		
Step 2:	Patients fails to rate and review doctors. failed;	Submission

5. Non-Functional Requirements

5.1 Performance Requirements

- **Response Time**: The system should provide real-time responses for user interactions, with a maximum delay of 2 seconds for loading pages and processing requests.
- **Scalability:** The platform must support a minimum of 10,000 simultaneous users, ensuring scalability to accommodate increasing user loads.
- **Data Retrieval Speed**: The recommendation system should swiftly retrieve and display doctor recommendations based on selected symptoms, aiming for a response time of under 1 second.

- **Location-Based Services:** The location-based doctor search feature should efficiently identify the user's location and display relevant information within 5 seconds.

5.2 Safety Requirements

- **User Privacy Protection**: Implement strict access controls to restrict unauthorized access to sensitive user information.
- **Reliability and System Availability:** Implement backup and recovery procedures to safeguard against data loss and system failures.

- **Community Well-Being:** Implement measures to prevent cyberbullying, harassment, or any form of harmful behaviour within the platform.

5.3 Security Requirements

- **Authentication Mechanisms**: Regularly update and audit authentication mechanisms to address potential vulnerabilities.

- **Incident Response and Monitoring:** Implement continuous monitoring mechanisms to identify and mitigate security threats in real time.

- **Secure User Controls**: Regularly update security features and educate users on best practices for online safety.

5.4 Reliability Requirements

- **System Availability:** The system should be available 24/7, with planned downtime communicated in advance.
- **Patient Data:** Patient records, appointment details, and other data must be accurate and secure.
- **Fault Tolerance:** The system should continue to operate seamlessly even in the presence of hardware failures or unexpected errors.

- **Scalability:** The system should maintain consistent performance under varying loads.

5.5 Usability Requirements

- **User Interface (UI) Design:** The system should have an intuitive and visually appealing user interface.
- **Navigation Efficiency:** Users should be able to navigate the system easily and locate desired functionalities without confusion.
- **Efficient Appointment Scheduling:** Streamline the appointment scheduling process to be quick and user-friendly.

- **GPS Navigation:** Patients must provide access to location services to navigate

the map to locate the doctors near them

5.6 Supportability Requirements

- **User Training and Documentation:** Provide easily accessible online resources for users to troubleshoot common issues.

- **Adaptability:** Ensure compatibility with emerging technologies and evolving healthcare standards.

5.7 User Documentation

- **Guidance for users**: A detailed user manual/tutorial will be provided for users to understand the features and their use.

6. References

- https://oladoc.com/
- https://www.marham.pk/
- https://eshifa.org/
- https://merisehat.pk/doctor-now

A3. DESIGN SPECIFICATIONS

Any standard template may be used, as per project need approved by Project Coordinator & Supervisor. Following is a suggestive outline.

1 Introduction
1.1 Purpose of Document
1.2 Intended Audience
1.3 Project Overview
1.4 Scope
2 Design Considerations
2.1 Assumptions and Dependencies
2.2 Risks and Volatile Areas
3 System Architecture
3.1 System Level Architecture
3.2 Software Architecture
4 Design Strategy
5 Detailed System Design
5.1 Database Design
5.1.1 ER Diagram
5.1.2 Data Dictionary
5.1.2.1 Data 1
5.1.2.2 Data 2
5.1.2.3 Data n
5.2 Application Design
5.2.1 Sequence Diagram
5.2.1.1 <Sequence Diagram 1>

1 Introduction

1.1 Purpose of Document

The SDS document serves as a blueprint for the entire development team, outlining the overall architecture, system components, and their interactions. It provides developers with a clear roadmap for building HealthHub Connect. It describes the detailed system architecture, including the database structure, server components, client interfaces, and any external dependencies. Considering the complexity and interconnected nature of healthcare systems, an object-oriented design methodology is often more suitable for projects like this one. Healthcare systems involve various entities such as patients, doctors, appointments, and treatments. Object-oriented design allows for a natural representation of these entities as objects, making it easier to model real-world scenarios.

1.2 Intended Audience

The Software Design Specification (SDS) for the Clinic Management System serves a diverse audience. Developers use it for technical guidance, testers rely on it for creating test cases, and project managers leverage it for decision-making. System architects find insights into design, database administrators reference it for database details, and UI/UX designers use it for user experience insights. Technical writers use the SDS for documentation, and stakeholders gain a high-level understanding. Tailoring content ensures effective collaboration.

1.3 Project Overview

In the dynamic landscape of modern healthcare, there is a pressing need for a robust system that seamlessly integrates patient care, appointment scheduling, and medical record management. The project stems from recognizing that existing healthcare practices often grapple with manual processes, resulting in inefficiencies and hindering effective communication between patients and medical professionals. The primary goal of HealthHub Connect is to introduce a centralized, automated, and user-friendly platform tailored to the specific requirements of clinics and healthcare providers. Key features include a sophisticated recommendation system, streamlined appointment scheduling and comprehensive tracking of treatment histories. HealthHub Connect aspires to elevate patient care, improve data accuracy, and foster seamless communication between patients, doctors, and administrators by embracing these functionalities.

1.4 Scope

- Development and implementation of the Clinic Management System (CMS).
- Patient profile management, including appointments and treatment histories.
- Implementation of appointment scheduling for streamlined scheduling.
- Centralized platform for doctors to manage appointments, access patient histories, and update patient records.
- Comprehensive administration features providing insights into clinic statistics and resource management.
- System security and efficiency measures using C#, ASP.NET, SQL, JavaScript, CSS.
- Integration of a recommendation system for personalized doctor suggestions based on symptoms.
- Integration of GPS-based functionality to find doctors near the user's location.
- Scalability and adaptability features to accommodate future growth and evolving healthcare needs.

2 Design Considerations

2.1 Assumptions and Dependencies

Assumptions:

- Users need a reliable internet connection for system access.
- Users provide accurate information during interactions.
- Users should use devices compatible with the platform's web interface.
- The success of the recommendation system assumes active user engagement in providing symptoms.

Dependencies:

- Accuracy of the "Doctors Near You" feature depends on geolocation services.
- System success depends on active user adoption.
- The system depends on the user having a reliable internal connection.
- The project is dependent on the stable performance and updates of technologies used, including Visual Studio, C#, .NET, HTML, CSS, JavaScript, and Python.

2.2 Risks and Volatile Areas

- **Regulatory Changes:**

Source of Change: Changes in healthcare regulations or data protection laws may necessitate adjustments in the system.

Risk: Failure to comply with new regulations could result in legal consequences or data breaches.

Contingency: Regular monitoring of regulatory updates and maintaining flexibility in the system architecture to accommodate changes swiftly.

- **Technological Advancements:**

Source of Change: Rapid advancements in technology may introduce new tools, frameworks, or security measures.

Risk: Outdated technology may lead to security vulnerabilities or decreased system performance.

Contingency: Adopting modular and scalable architecture, allowing for the seamless integration of new technologies without disrupting the entire system.

- **User Feedback and Evolving Requirements:**

Source of Change: User feedback or evolving requirements from clinics, doctors, or patients may lead to feature additions or modifications.

Risk: Failure to adapt to changing user needs may result in user dissatisfaction and decreased system adoption.

Contingency: Implementing an agile development approach, such as Scrum, to facilitate iterative development and incorporate changes based on user feedback in short cycles.

- **Security Threats and Data Breaches:**

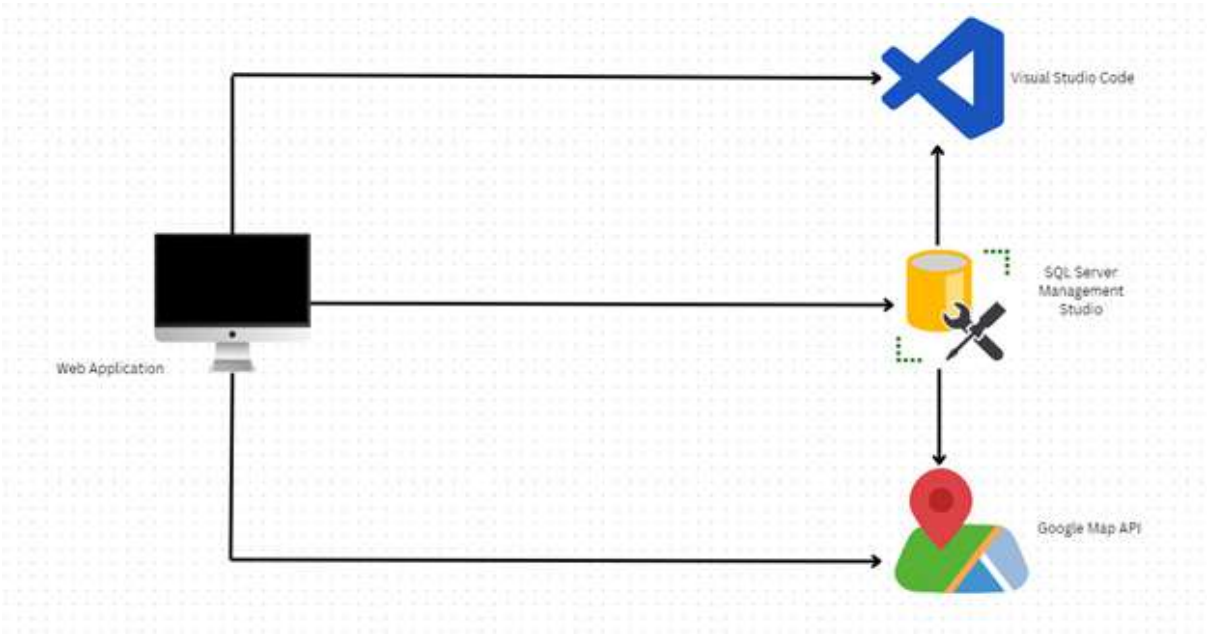
Source of Change: Emergence of new security threats or vulnerabilities.

Risk: Data breaches can compromise patient information and damage the system's reputation.

Contingency: Implementing robust security measures, conducting regular security audits, and having response plans in place to address security incidents promptly

3 System Architecture

3.1 System Level Architecture



The Health Hub Connect system architecture is composed of a web application, Visual Studio Code, SQL Server Management Studio (SSMS), and the Google Maps API.

Web Application:

Manages the user interface and interactions.

Interfaces with Visual Studio Code and the Google Maps API for data processing and mapping functionalities.

Visual Studio Code:

Integrated development environment (IDE) for software development.

Collaborates with the web application for implementation and deployment.

SQL Server Management Studio (SSMS):

Manages the SQL Server database for critical healthcare data.

Interfaces with the web application for data retrieval and storage operations.

Google Maps API:

Provides geographical services and mapping functionalities.

Integrates with the web application for location-related features.

Relationships:

The web application orchestrates interactions between Visual Studio Code, SSMS, and the Google Maps API.

Visual Studio Code supports application development and deployment.

SSMS ensures data integrity and efficient storage.

The Google Maps API enhances the application with geographical services.

Interfaces:

The web application interacts with Visual Studio Code, SSMS, and the Google Maps API.

Physical Design:

Execution occurs in distributed environments.

Visual Studio Code operates on developers' machines.

SSMS manages the database on dedicated servers.

The Google Maps API provides mapping services externally.

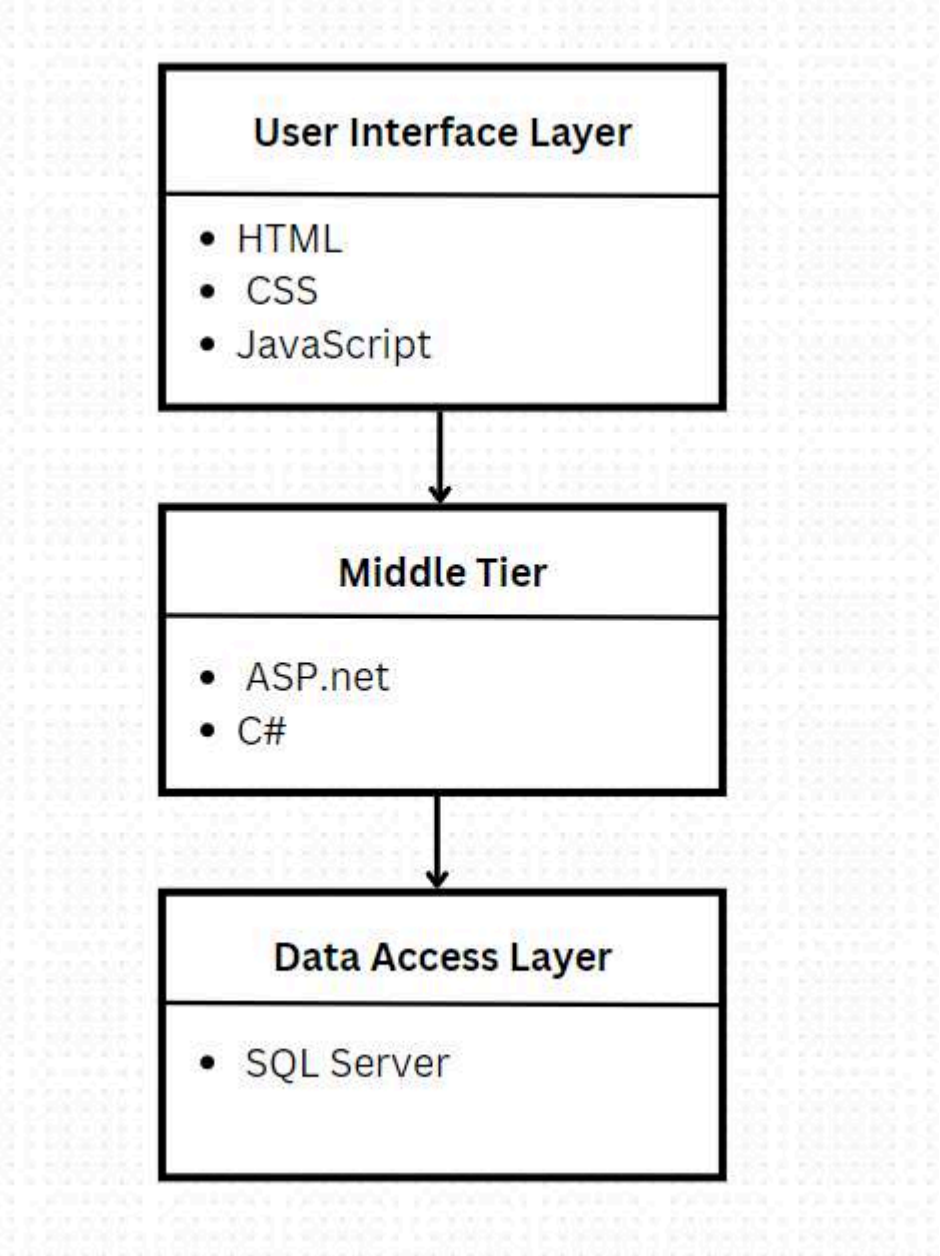
Global Design Strategies:

Error handling is implemented throughout the system.

Emphasis on data integrity and secure healthcare data management.

This architecture lays the foundation for detailed design, outlining the roles and relationships of key components in Health Hub Connect.

3.2 Software Architecture



User Interface Layer:

Components: HTML, CSS, JavaScript.

Responsible for presenting the graphical user interface (GUI) to users.

Utilizes JavaScript for dynamic and responsive user interactions.

Middle Tier:

Components: ASP.NET (C#).

Serves as the intermediary between the User Interface Layer and the Data Access Layer.

Implements business logic, processing user requests, and managing overall application flow.

Data Access Layer:

Components: SQL server.

Handles interactions with the SQL Server database.

Ensures efficient data retrieval and storage, maintaining database integrity.

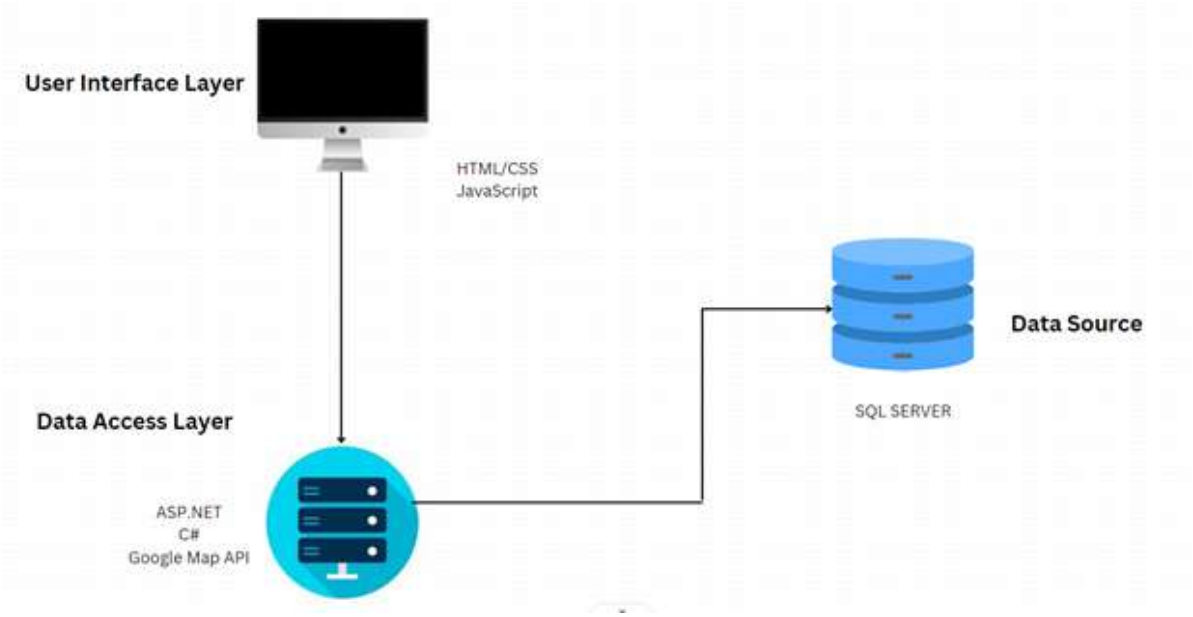
Interaction Between Layers:

User Interface Layer communicates user requests to the Middle Tier through APIs.

The Middle Tier processes requests, executes business logic, and communicates with the Data Access Layer for database operations.

The Data Access Layer directly interacts with the SQL Server database to retrieve or update data.

4 Design Strategy



Future System Extension or Enhancement:

Our strategy for Health Hub Connect adopts a modular MVC architecture, facilitating seamless integration of future features. Despite some initial complexity, this approach ensures adaptability to evolving healthcare needs without extensive redesigns.

System Reuse:

Embracing a modular structure promotes code reuse, minimizing redundancy and enhancing code consistency. Despite requiring careful planning, this approach accelerates development and ensures a consistent codebase.

User Interface Paradigms:

Our UI strategy prioritizes a responsive and intuitive design using HTML, CSS, and JavaScript. Balancing

aesthetics and functionality, it aims for a visually appealing and user-friendly interface tailored to healthcare.

Data Management:

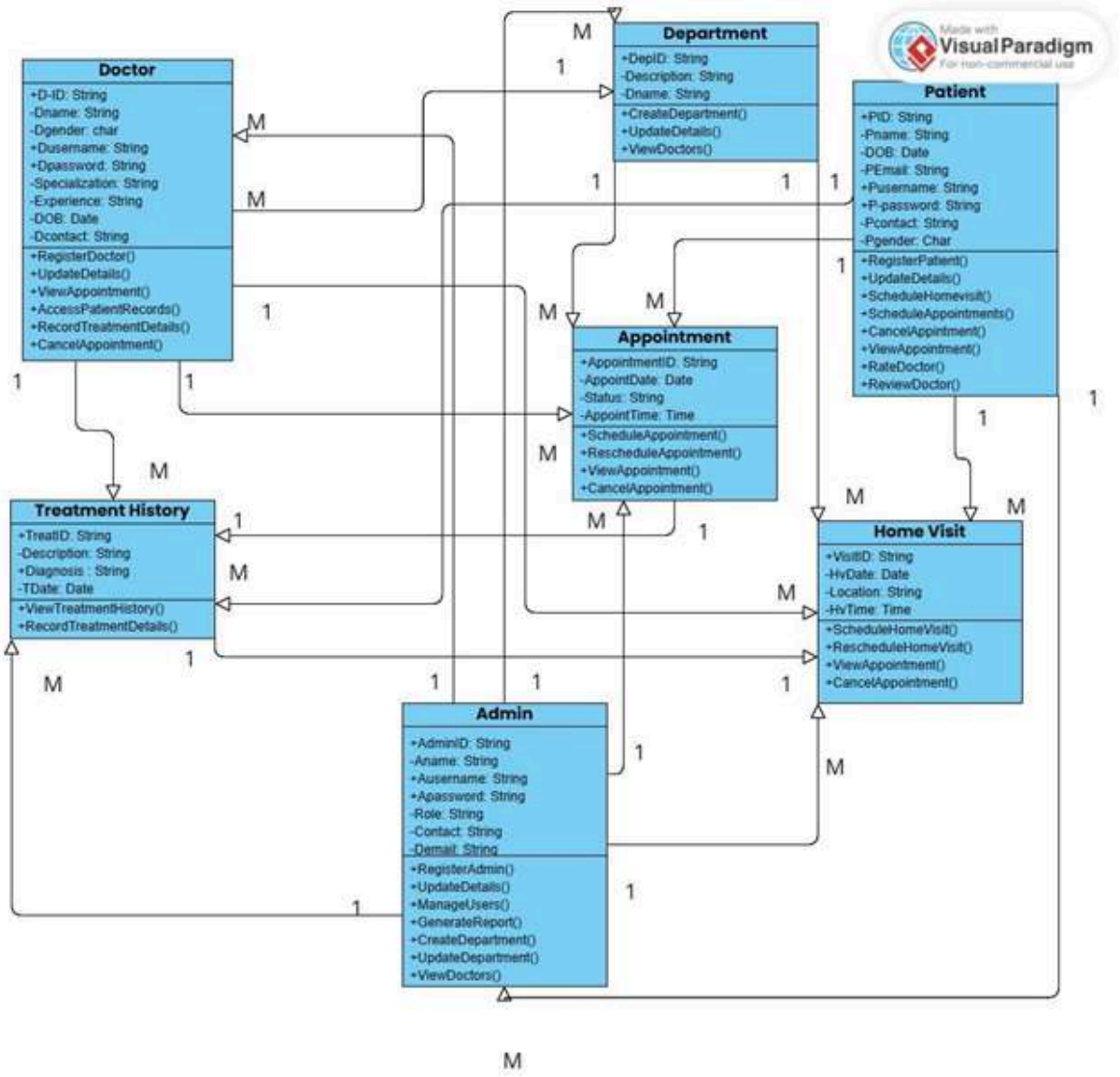
SQL Server is chosen for structured data storage, providing robust capabilities. Thoughtful database design ensures efficient data retrieval and storage, forming a reliable foundation for Health Hub Connect.

Concurrency and Synchronization:

Implementing effective mechanisms for concurrency and synchronization is crucial for maintaining data consistency. Despite added complexity, these mechanisms are necessary for the reliability of our healthcare application.

5 Detailed System Design

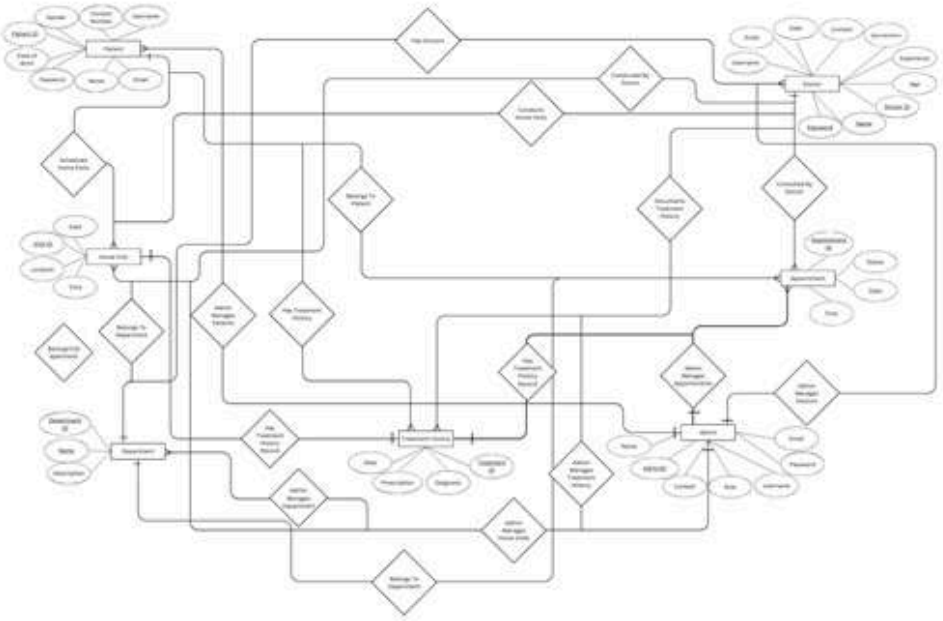
5.1 Database Design



M: many

1: one

5.1.1 ER Diagram



The HealthHub Connect ERD illustrates the key entities and their relationships in the system. Doctors are characterized by attributes such as specialization, experience, and age, and they also maintain treatment histories. Patients, identified by attributes like date of birth and contact number, are associated with specific departments and have comprehensive treatment histories documented. Appointments are facilitated by doctors and managed by administrators, intertwining with treatment history records. Administrators oversee patients, doctors, appointments, departments, and treatment histories, ensuring effective system management. Departments encapsulate the affiliation of both patients and doctors. This ERD encapsulates the core structure of the HealthHub Connect system, emphasizing the relationships between entities for seamless healthcare management.

5.1.2 Data Dictionary

5.1.2.1 Data 1

Patient

Name	Patient
Alias	User
Where-used/how-used	● Authentication during login/signup. ● Booking and managing appointments. ● Patient data is stored and retrieved during the login process. ● Used to identify patients when scheduling or canceling appointments.
Content description	Main user of the applications, book appointments and find doctors

Column Name	**Description**	**Type**	**Length**	**Null able**	**Default Value**	**Key Type**
P_ID	Unique ID to represent patient	String	Unlimited	No	None	PK
P_Name	Patient's name	String	Unlimited	No	None	
P_DOB	Patient's date of birth	Date	Unlimited	No	None	
P_Email	Patient's email address	String	Unlimited	No	None	
P_Username	Patient's username	String	Unlimited	No	None	

P_Password	Patient's password	String	Unlimited	No	None	
P_ContactNo	Patient's contact number	Number	Unlimited	No	None	
P_Gender	Patient's gender	String	Unlimited	No	None	

5.1.2.2 Data 2

Doctor	
Name	Doctor
Alias	User
Where-used/how-used	● Authentication during login/signup. ● Providing specialization for appointment recommendations. ● Doctor's data is used for authentication during the login process. ● Specialization information is used for recommending suitable doctors during appointment scheduling.
Content description	Main user of the application, accepts appointments and deals with patients.

Column Name	**Description**	**Type**	**Length**	**Null able**	**Default Value**	**Key Type**
D_ID	Unique ID to represent doctor	String	Unlimited	No	None	PK
D_Name	Doctor's name	String	Unlimited	No	None	
D_Gender	Doctor's gender	String	Unlimited	No	None	
D_Username	Doctor's username	String	Unlimited	No	None	
D_Password	Doctor's password	String	Unlimited	No	None	
D_Specialization	Doctor's specialization	String	Unlimited	No	None	
D_ContactNo	Doctor's contact number	Number	Unlimited	No	None	
D_Email	Doctor's email address	String	Unlimited	No	None	

5.1.2.3 Data 3

Admin	
Name	Adnin

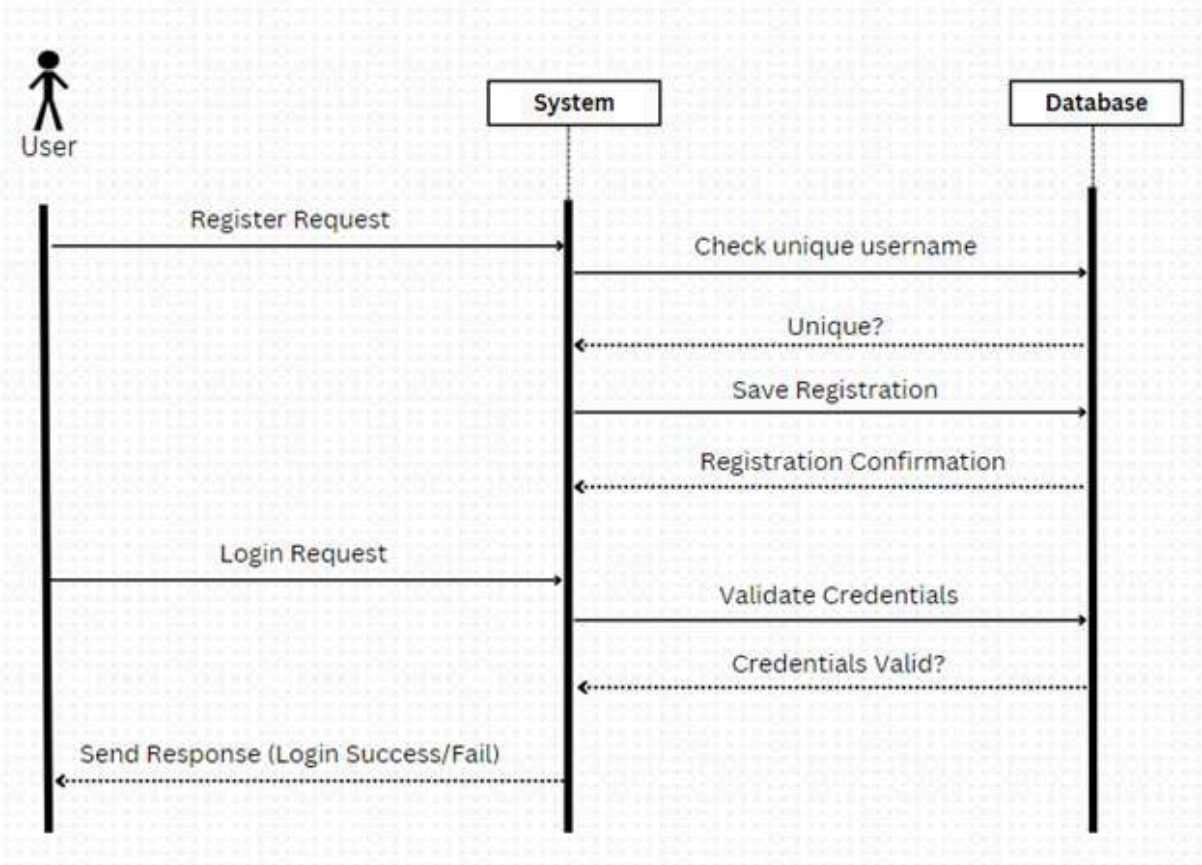
Alias	-
Where-used/how-used	● Authentication during login. ● Admin's data is used for authentication during the login process.
Content description	Administrative details for system management.

Column Name	**Description**	**Type**	**Length**	**Null able**	**Default Value**	**Key Type**
A_ID	Unique ID to represent admin	String	Unlimited	No	None	PK
A_Name	Admin's name	String	Unlimited	No	None	
A_Username	Admin's username	String	Unlimited	No	None	
A_Password	Admin's password	String	Unlimited	No	None	
A_Contact	Admin's contact number	Number	Unlimited	No	None	
A_Email	Admin's email address	String	Unlimited	No	None	

5.2 Application Design

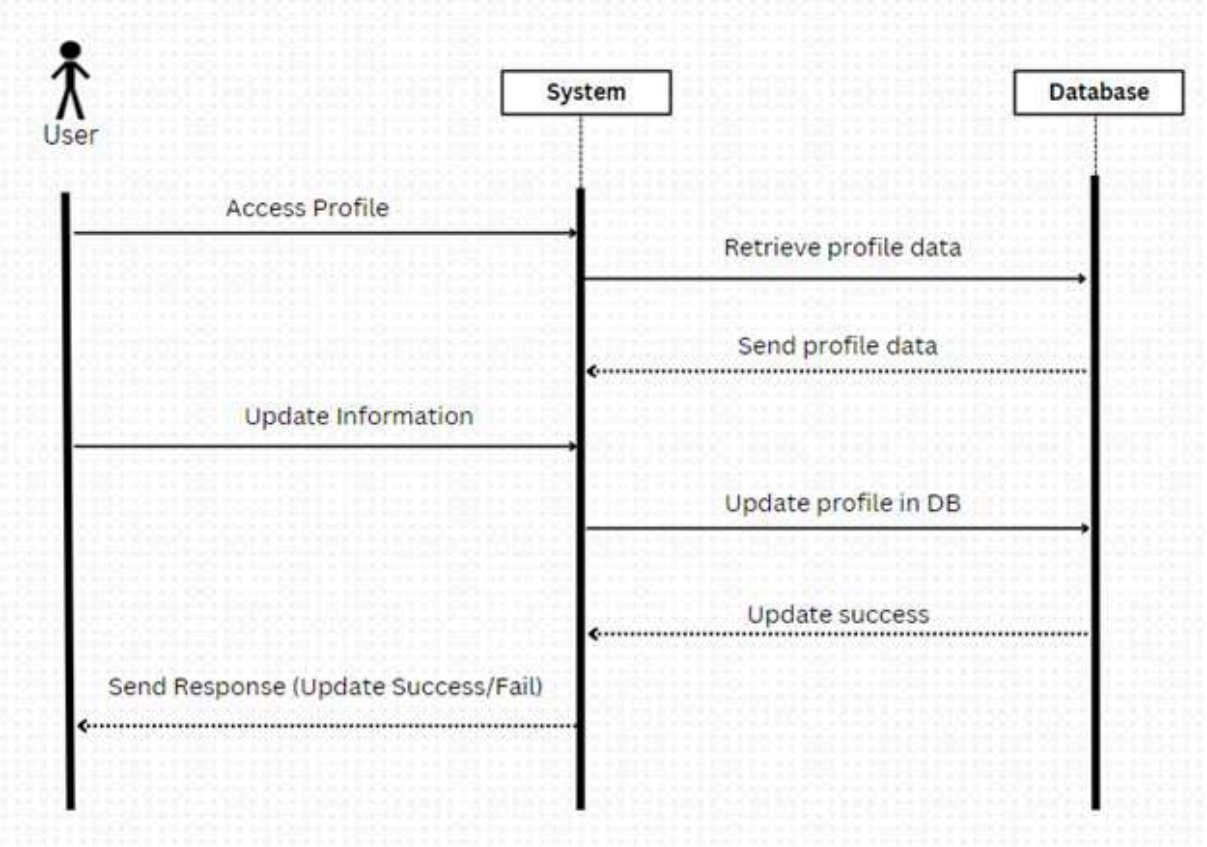
5.2.1 Sequence Diagram

5.2.1.1 Patient/Doctor/Admin Registration and Login:



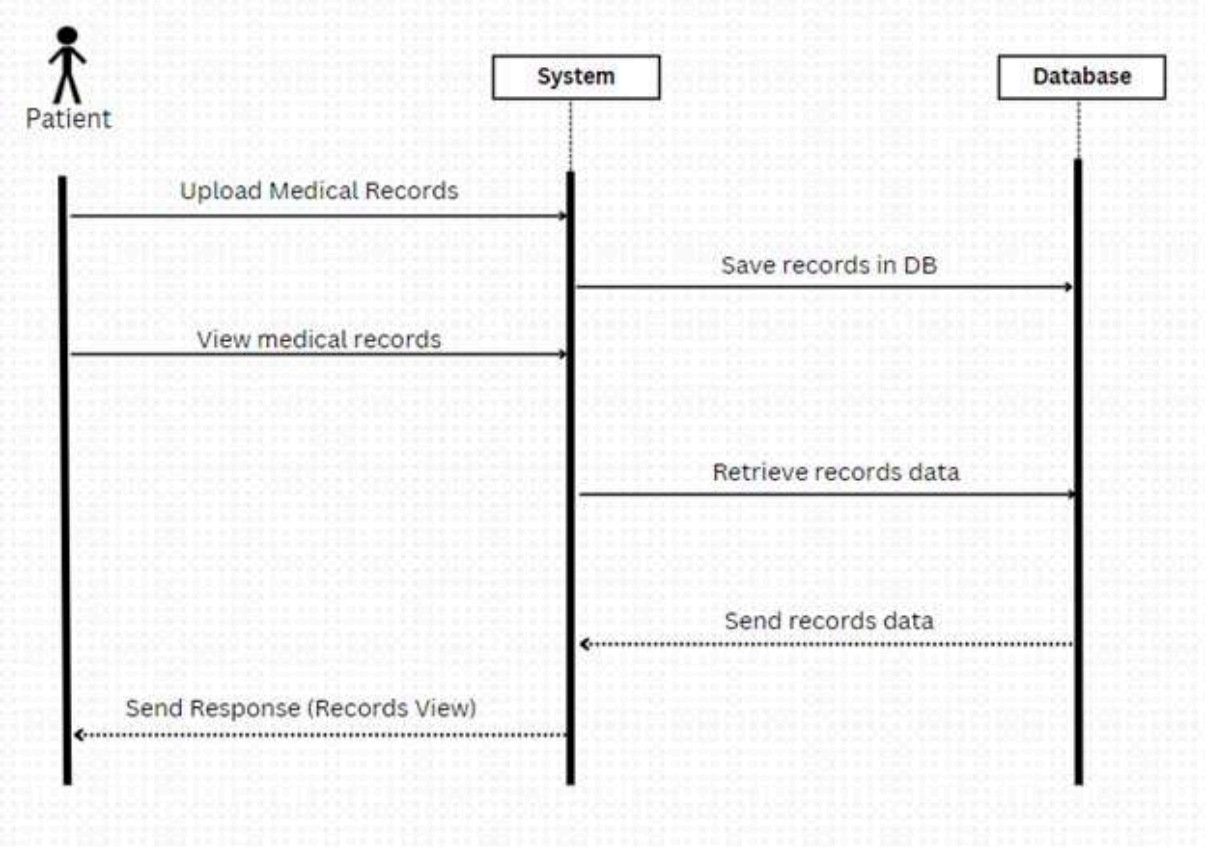
The User Registration and Login module oversees the processes of user registration and login. During registration, it ensures data integrity by verifying unique usernames, saves registration details in the database, and provides confirmation upon successful registration. For logins, the module validates credentials, checks their authenticity with the database, and responds to the patient with either a successful login or a failure message.

5.2.1.2 Profile Management:



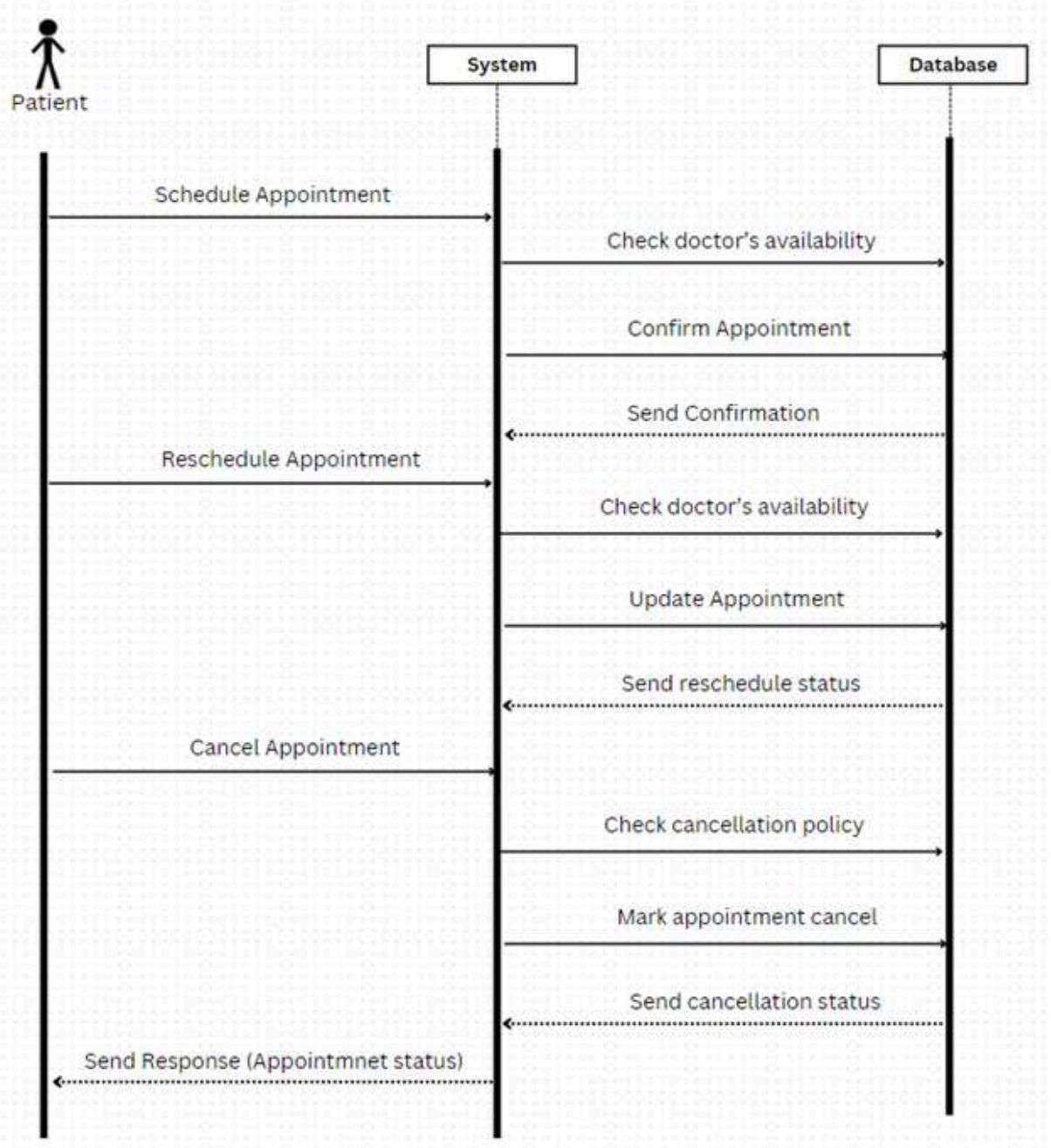
The Profile Management module empowers patients to interact with their profiles. It allows patients to access, retrieve, and update their profiles, which are stored in the database. The module communicates changes with success or failure updates, ensuring patients have control over their personal and health-related information.

5.2.1.3 Medical Records:



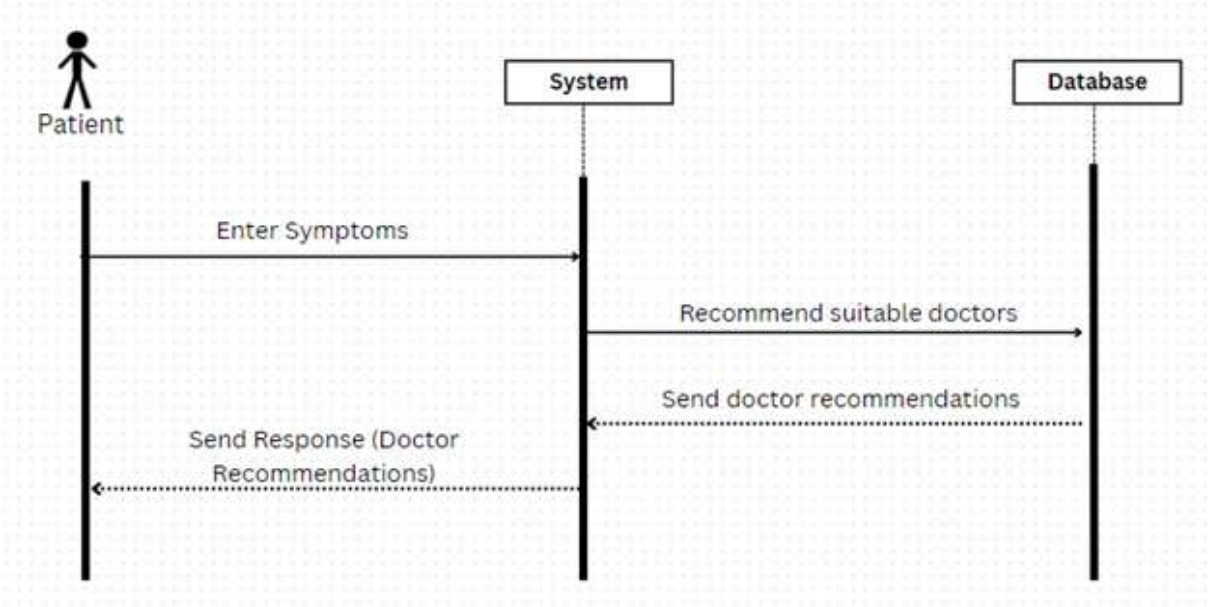
The Medical Records module is responsible for the secure management of patient medical records. It facilitates the upload of medical records, ensuring their confidentiality and integrity. When patients request to view their records, the module retrieves and sends the records or confirmation, maintaining patient privacy.

5.2.1.4 Appointment:



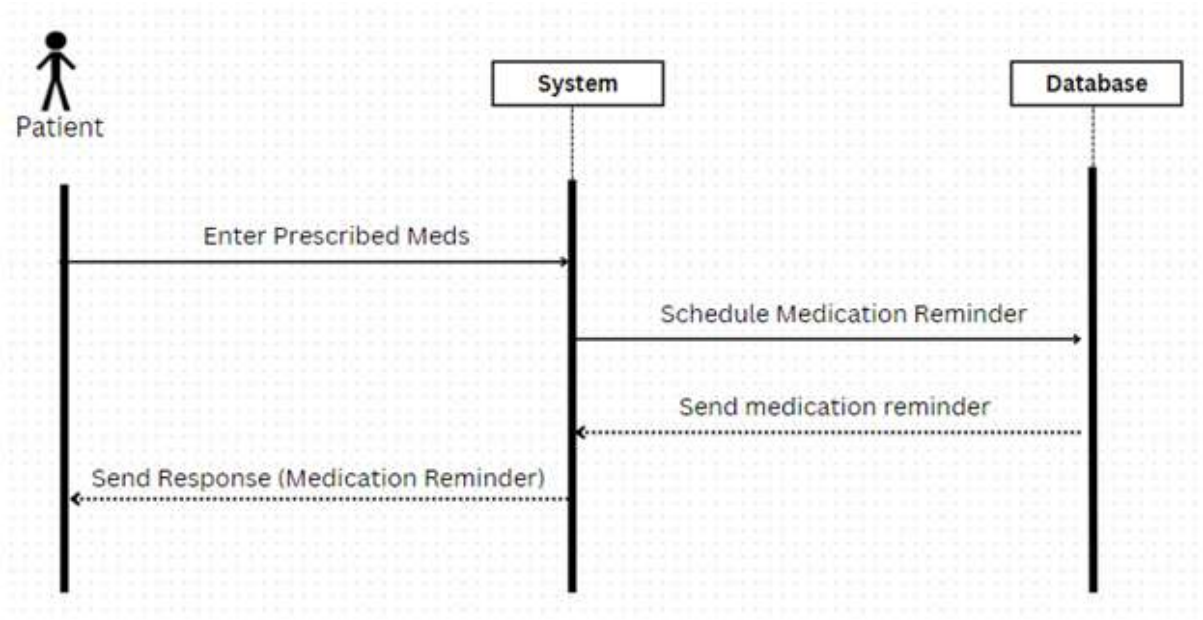
The Appointment module manages the scheduling, rescheduling, and cancellation of appointments. It checks doctor availability, confirms scheduled appointments, and provides updates on rescheduled or canceled appointments. The module ensures effective communication between patients and healthcare providers regarding appointment-related activities.

5.2.1.5 Recommendation System:



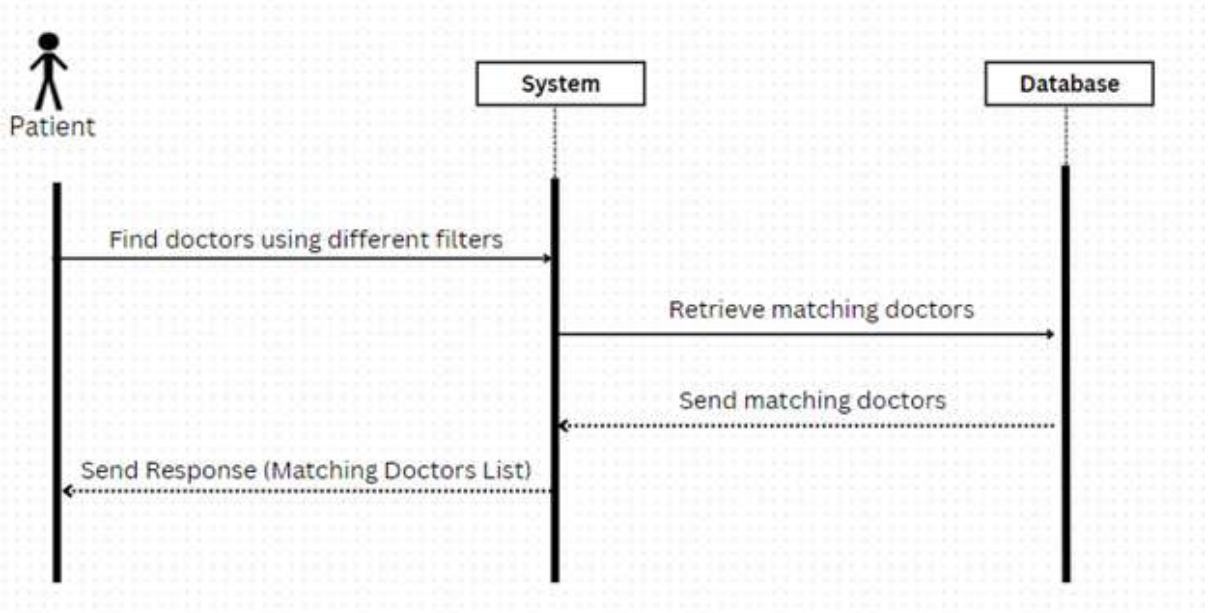
The Recommendation System module utilizes patient-entered symptoms to suggest suitable doctors. It analyzes patient data stored in the database, recommends relevant healthcare professionals, and sends doctor recommendations. The system enhances the patient's ability to find healthcare providers tailored to their specific medical needs.

5.2.1.6 Medication:



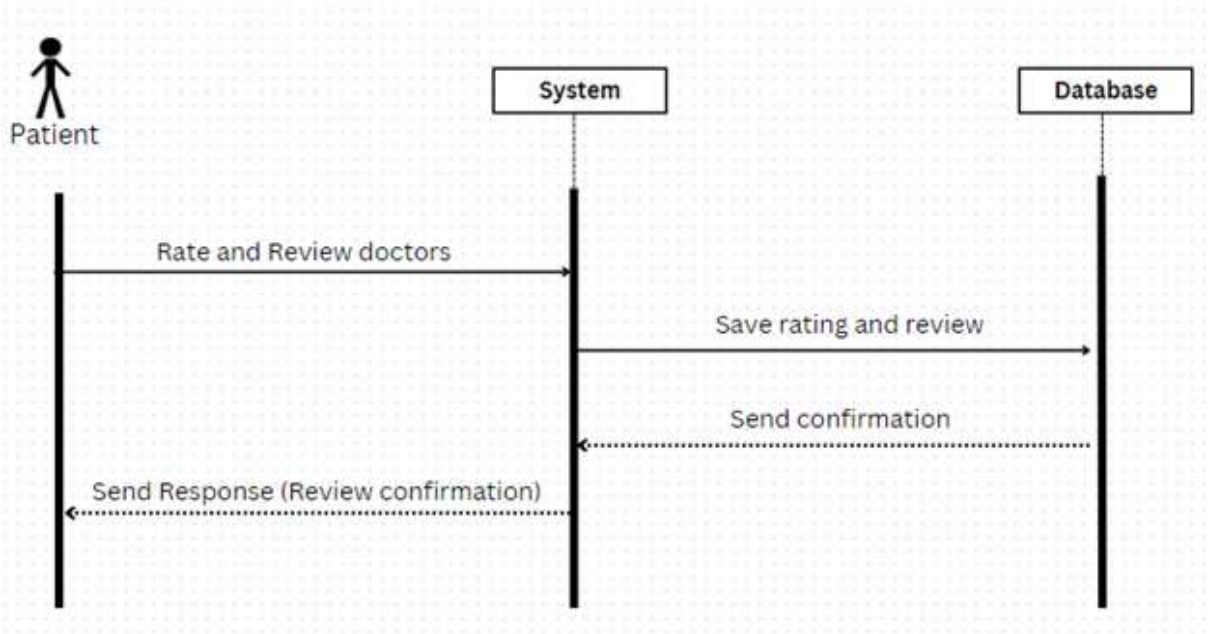
The Medication module manages prescribed medications, scheduling reminders, and sending alerts. It connects with the database to ensure timely medication reminders, contributing to better health outcomes and medication compliance. This module plays a crucial role in patient self-care and medication management.

5.2.1.7 Doctor's Discovery:



The Doctor's Discovery module assists patients in finding doctors beyond geographical constraints. By searching for doctors based on various filters and criteria, it retrieves matching doctors' data from the database and sends a list of nearby doctors or those meeting specific criteria, broadening patients' options.

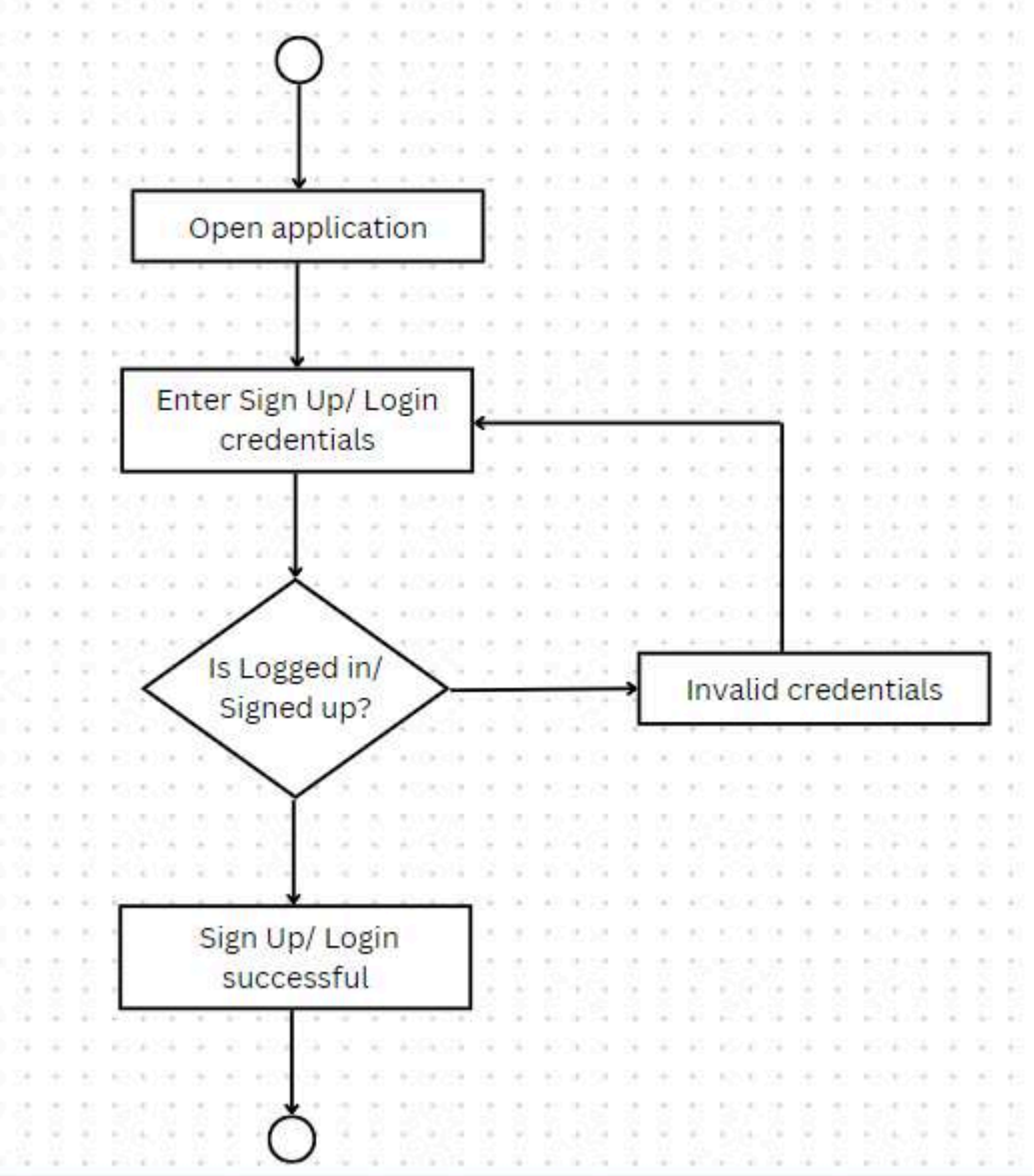
5.2.1.8 Rating and Reviews:



The Rating and Reviews module allows patients to rate and review doctors, storing feedback in the database. It sends confirmation of successful rating and review submissions, promoting transparency and accountability in healthcare services. The ratings and reviews provided by patients serve as valuable insights for other users seeking healthcare providers.

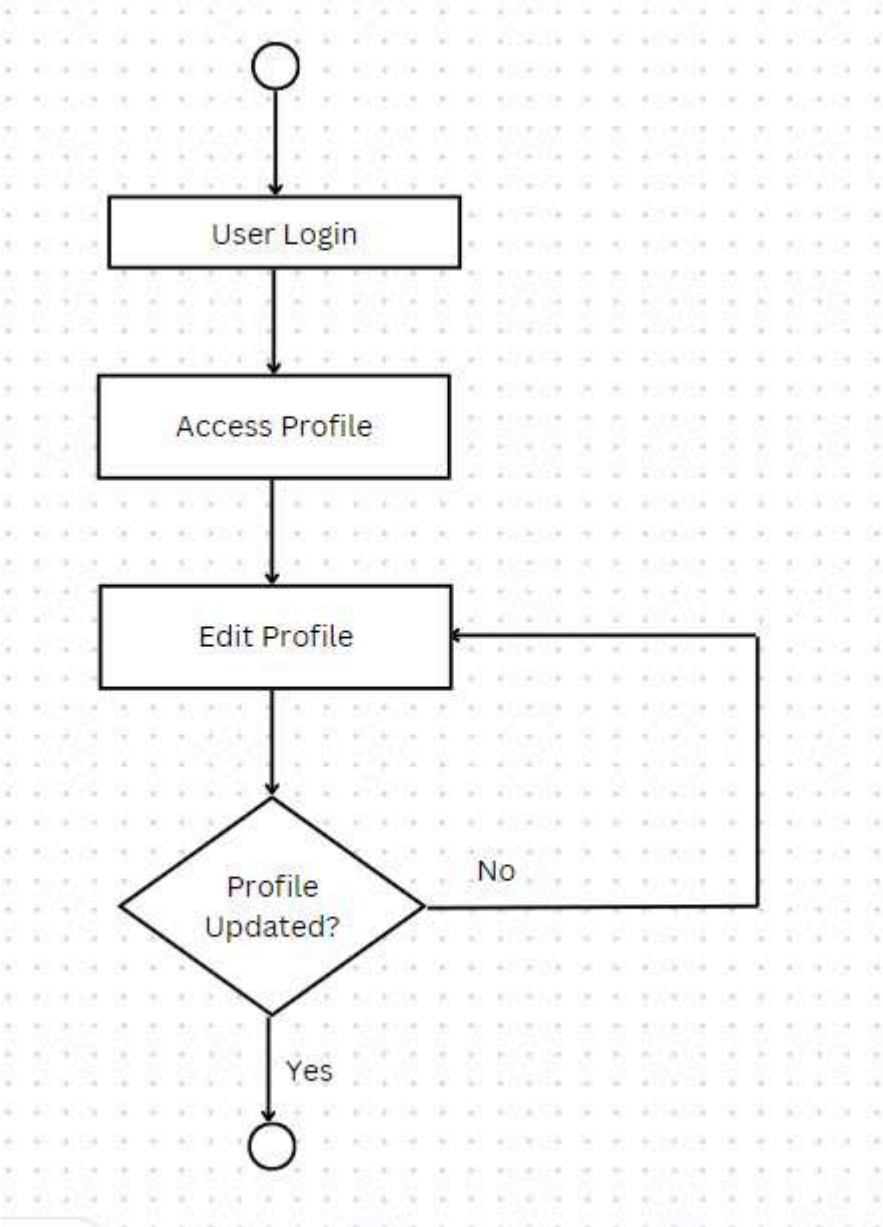
5.2.2 State Diagram

5.2.2.1 Patient/Doctor/Admin Registration and Login:



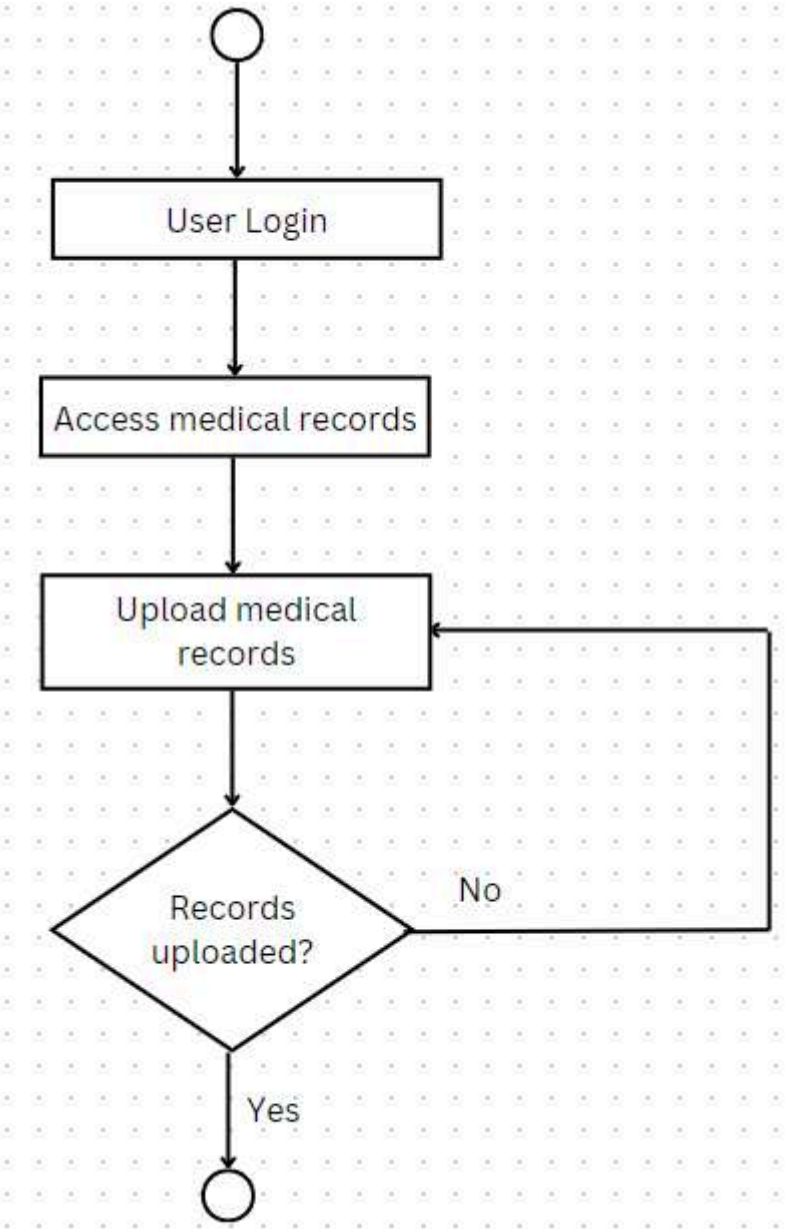
In the registration phase, users enter personal details, and the system verifies and stores this information. During login, users submit credentials, and the system authenticates them. Successful login grants access to personalized features, while unsuccessful attempts prompt users to re-enter correct details.

5.2.2.2 Profile Management:



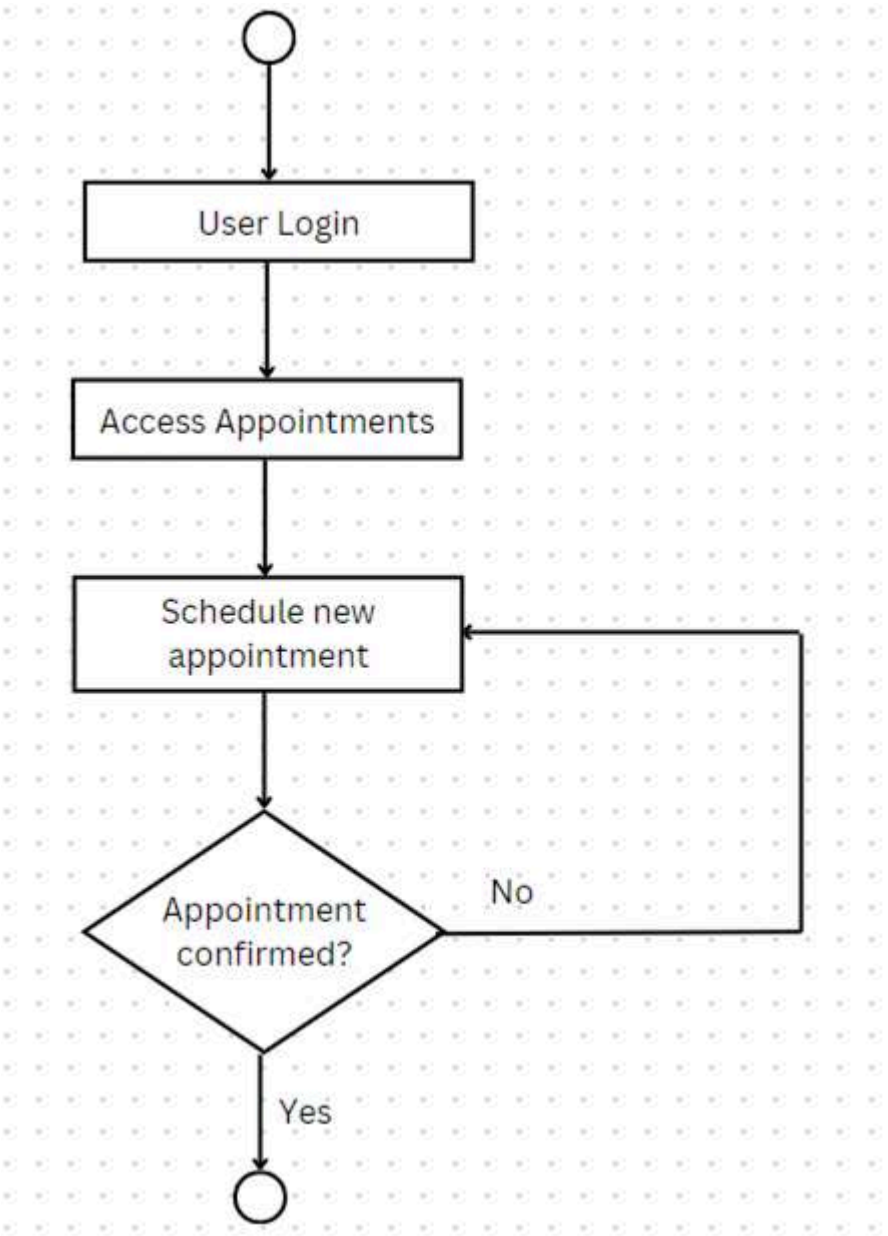
Profile management allows users to edit personal data, add medical records, and update information. The system validates and saves changes. If errors occur, users are prompted to address them.

5.2.2.3 Medical Records:



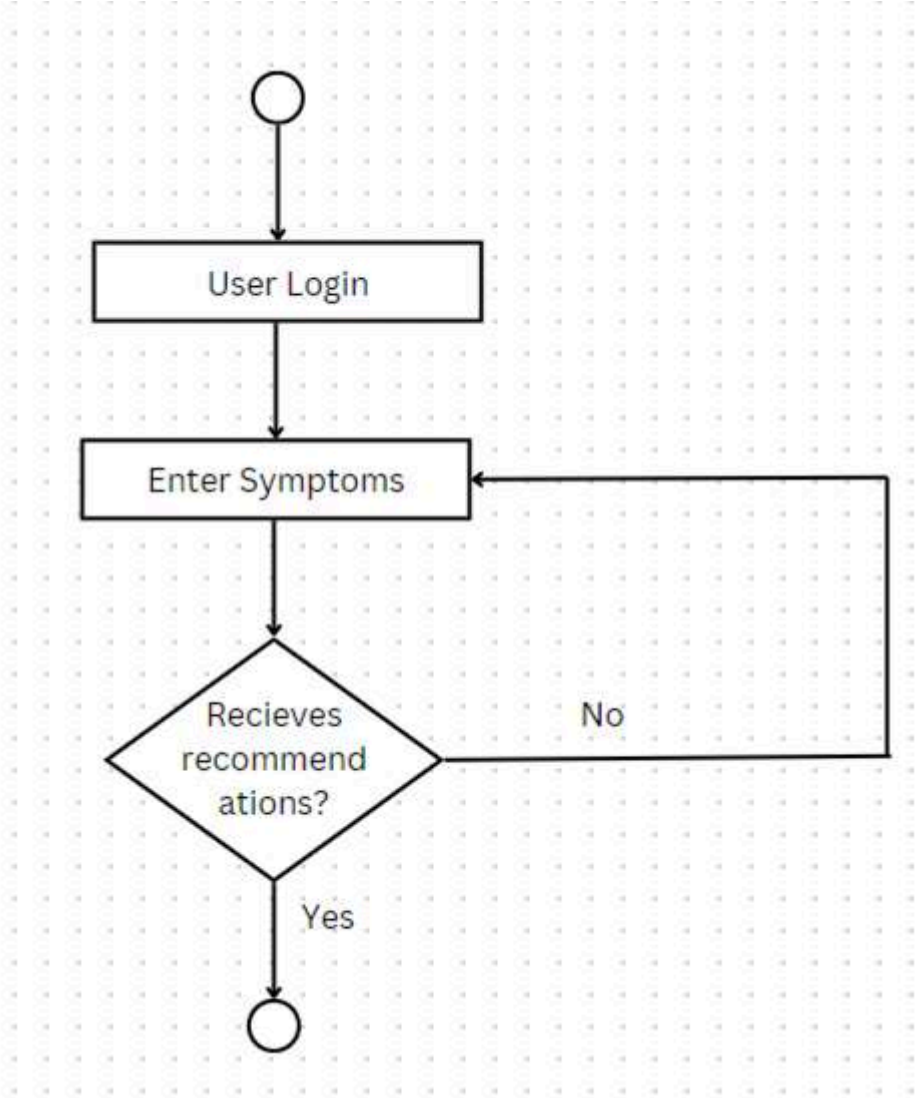
Managing medical records includes users inputting health information. The system acknowledges successful additions, displaying a confirmation. If errors occur, users are prompted to review and correct the entered details.

5.2.2.4 Appointment:



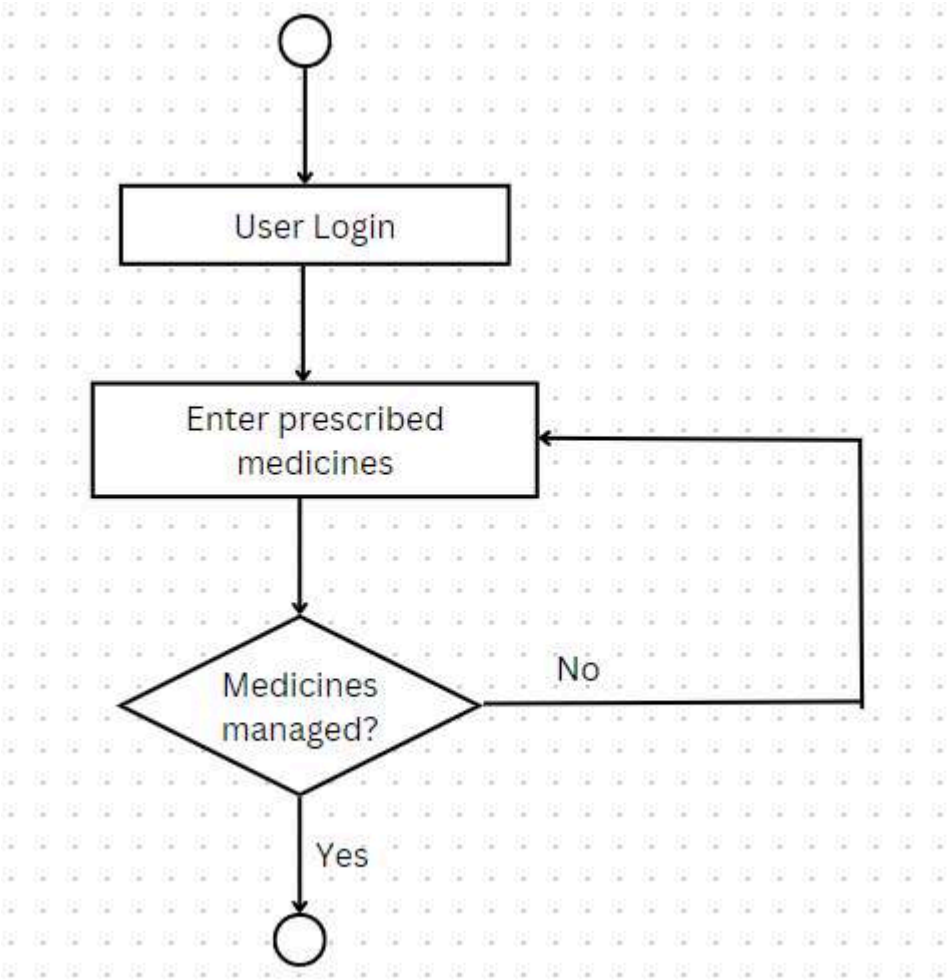
Users initiate the appointment process, selecting a date and time. The system confirms successful scheduling, providing details. In case of conflicts or errors, users are guided to resolve the issues.

5.2.2.5 Recommendation System:



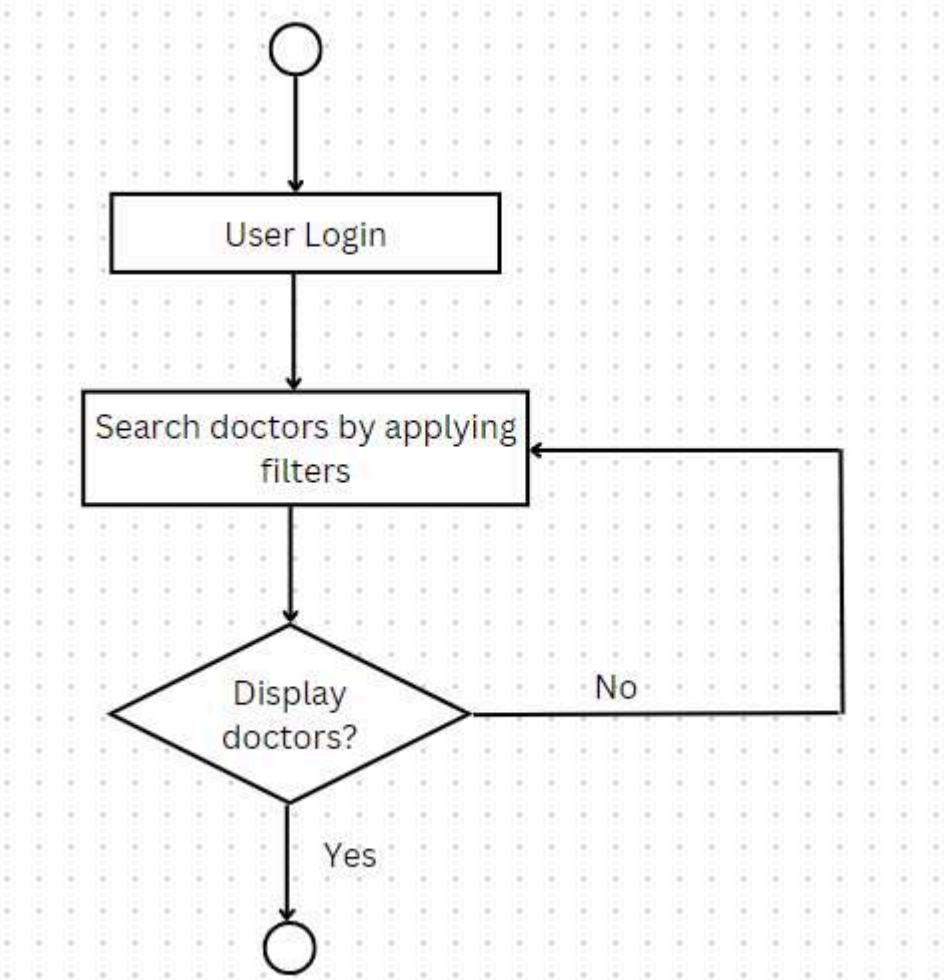
The recommendation system processes user-inputted symptoms, offering doctor suggestions. The system guides users to refine their inputs for more accurate recommendations. Clear instructions help users throughout the process.

5.2.2.6 Medication:



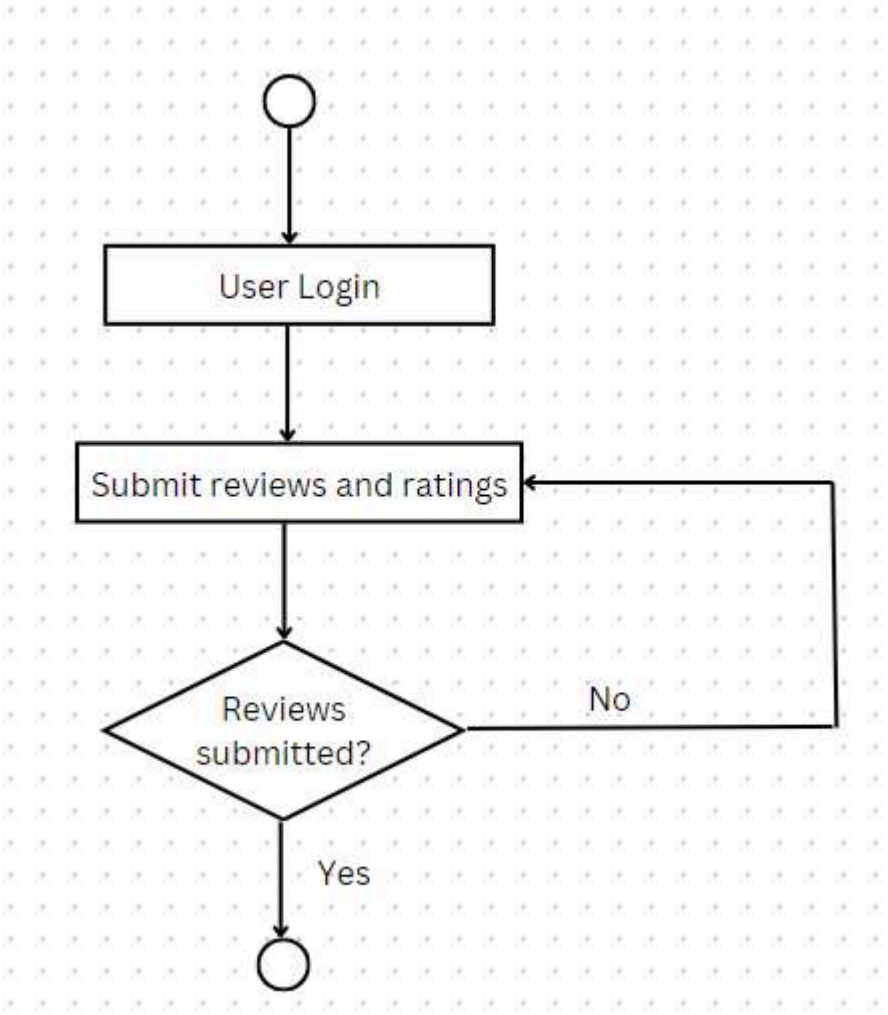
Users input prescribed medicines and set reminders. The system acknowledges successful management, displaying confirmation. In case of errors, users receive guidance on correcting the entered medication information.

5.2.2.7 Doctor's Discovery:



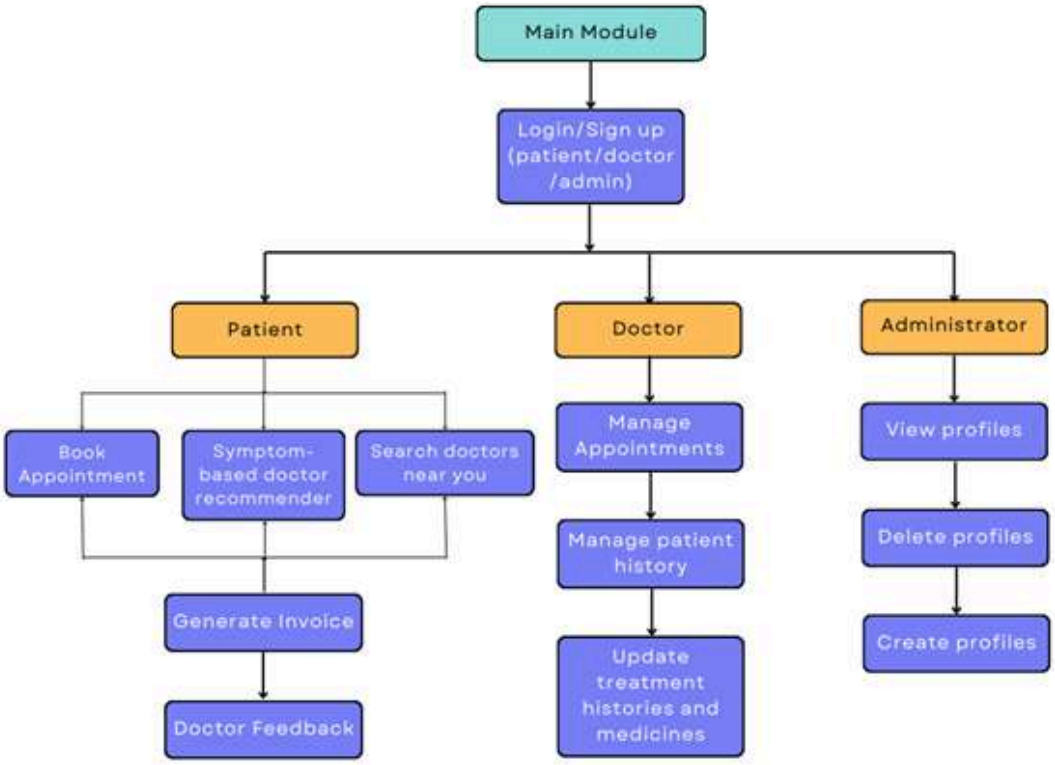
Users search for doctors based on preferences, and the system displays relevant results. Refinement options are provided to enhance search accuracy. Clear feedback guides users in optimizing their search.

5.2.2.8 Rating and Reviews:



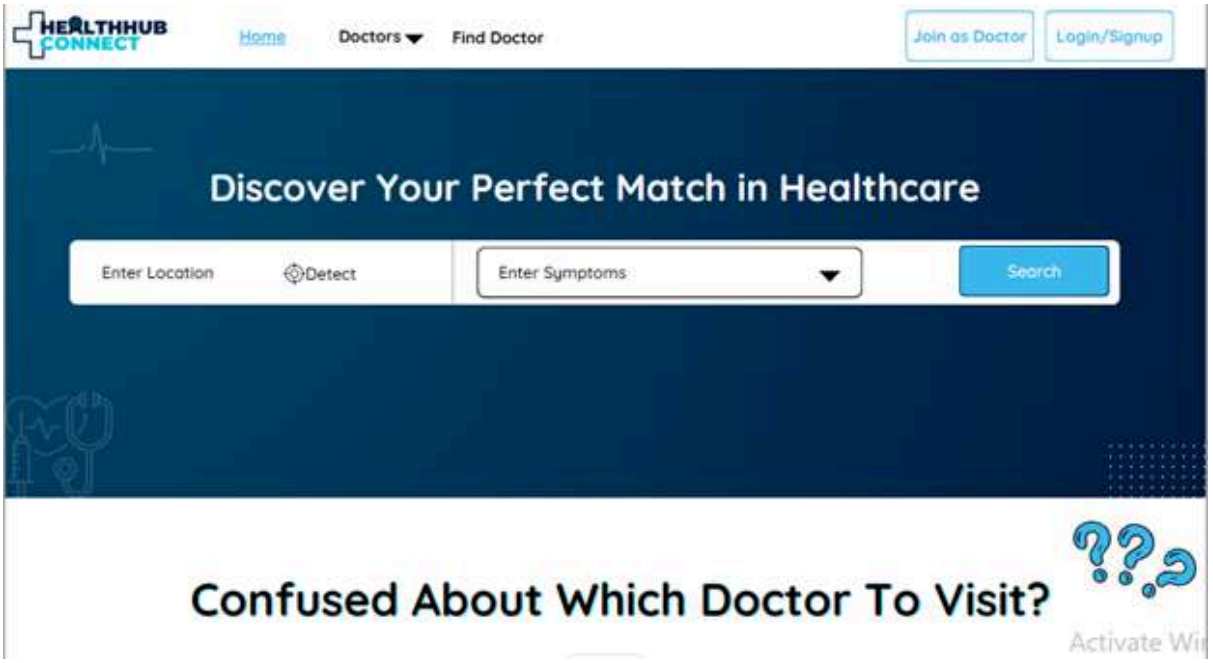
Users provide ratings and reviews for doctors, and the system confirms successful submission. In case of submission issues, users receive guidance to ensure their feedback is successfully recorded.

DFD level 1 diagram

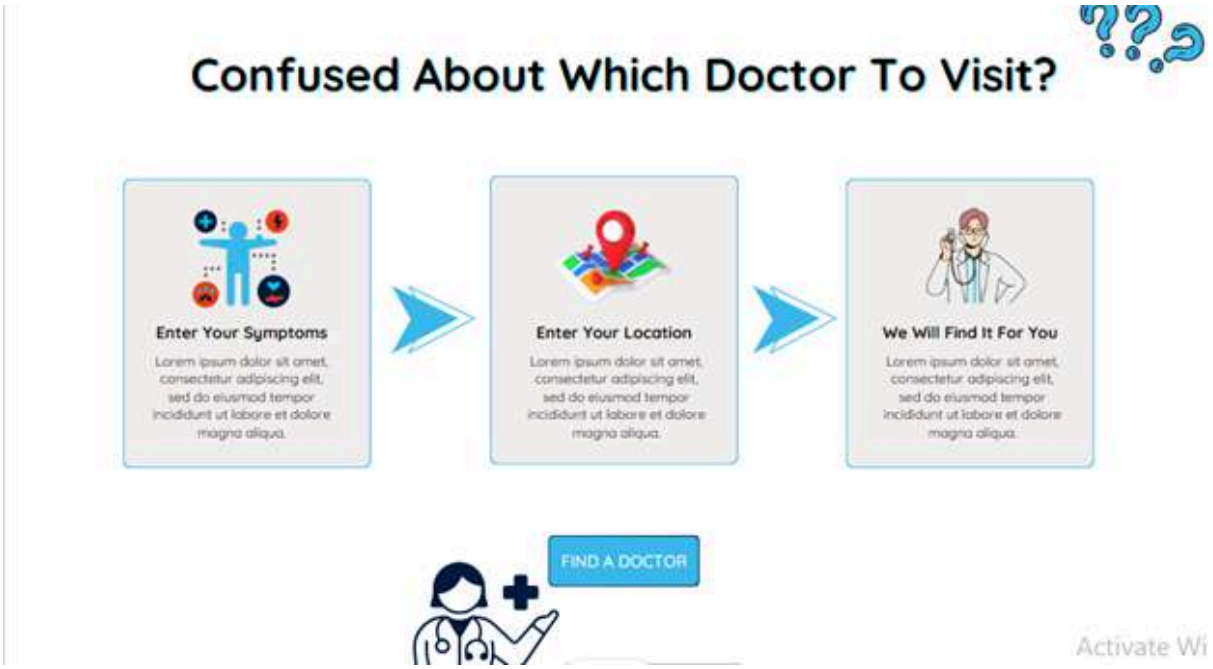


1.3 GUI Design

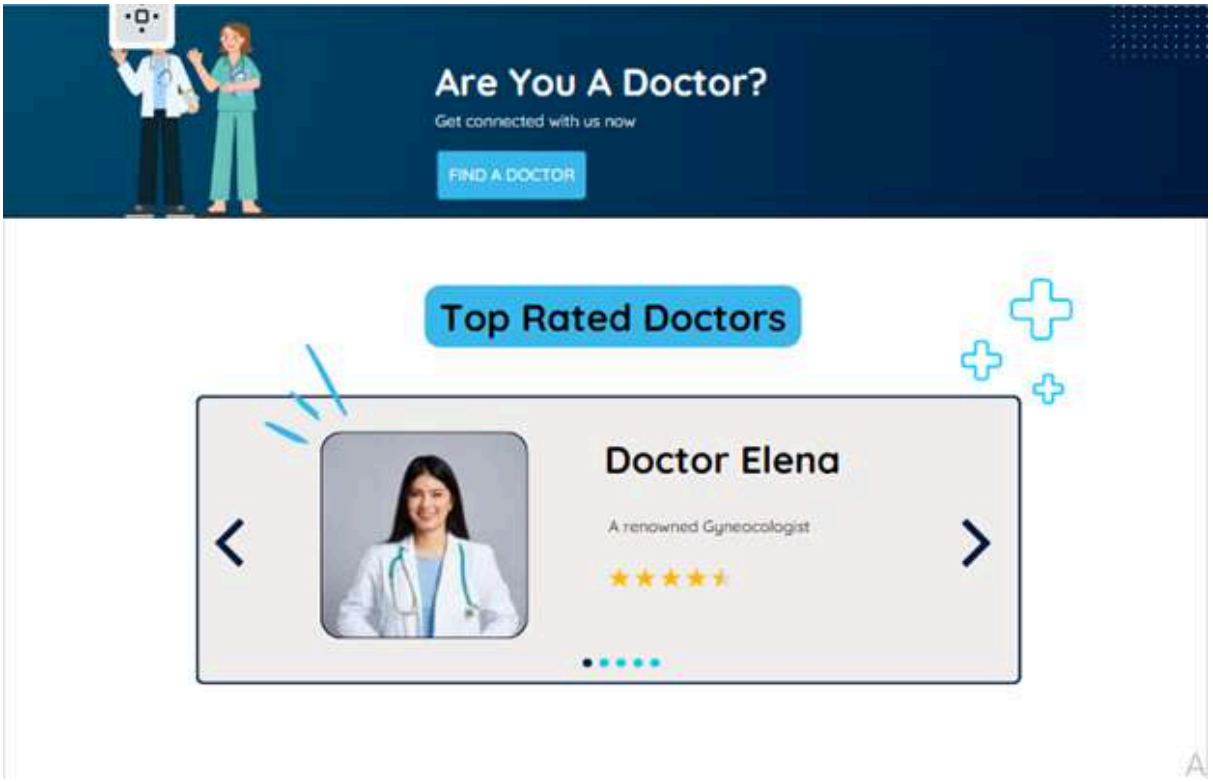
7.2.1s <Main Page - Mock Screen 1>



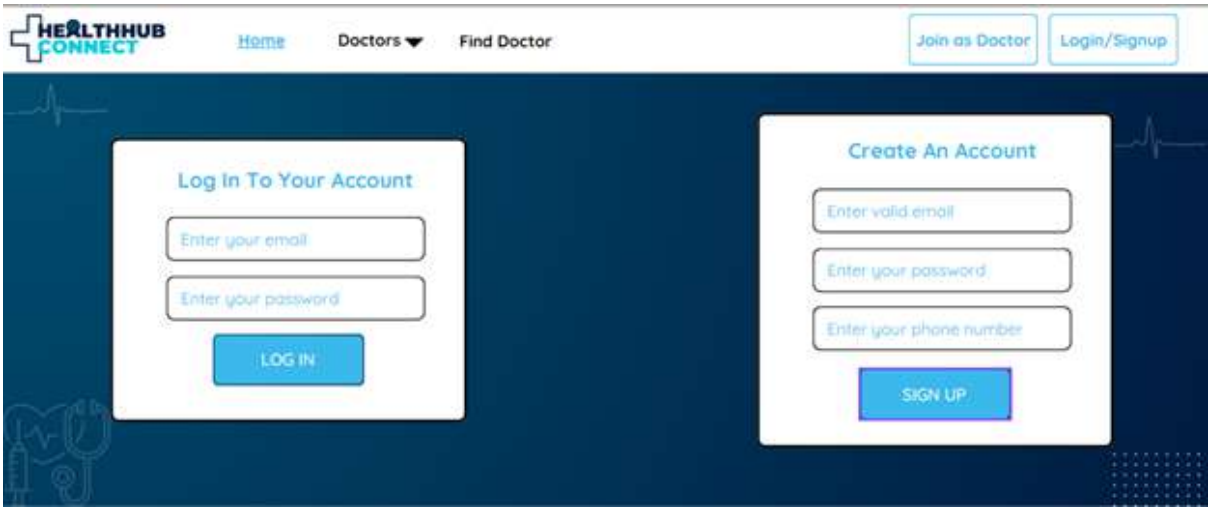
7.2.2 <Main Page - Mock Screen 2>



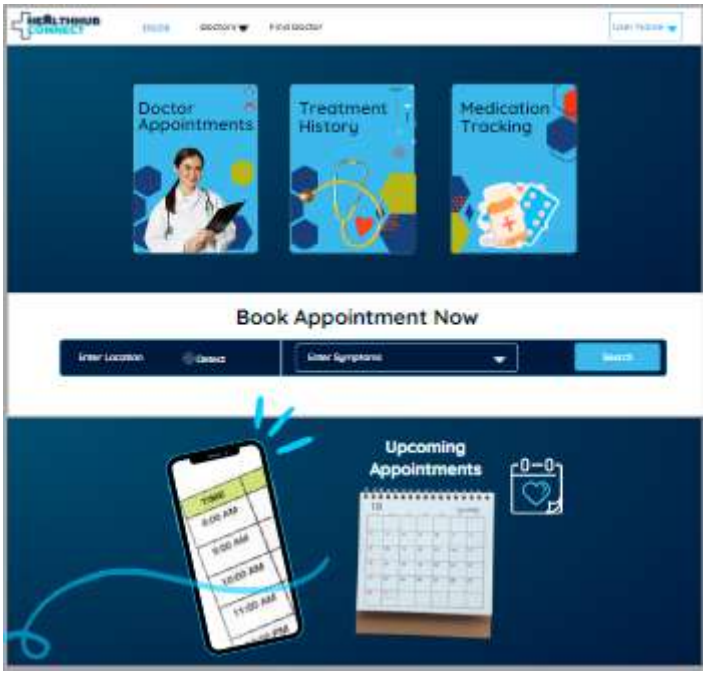
7.2.3 <Main Page - Mock Screen 3>



7.2.4 <Login/Sign Up Page - Mock Screen 1>



7.2.5 <Patient Dashboard - Mock Screen 5>



2. 7.2.6 <Appointment Page - Mock Screen 6>

7. References

- https://oladoc.com/
- https://www.marham.pk/
- https://eshifa.org/
- https://merisehat.pk/doctor-now

A4. OTHER TECHNICAL DETAIL DOCUMENTS

Test Cases Document

With reference to FYP new policy

22. FYP Deliverables (Pg-16)

Software Test Plan

S. No	Description	Test Engineer	Start Date	End Date
1	**Home**	Rohain Shaikh	**01-July-2024**	**06-July-2024**
2	Patient Signup	Rohain Shaikh	02-July-2024	02-July-2024
3	Patient Login	Rohain Shaikh	03-July-2024	03-July-2024
4	Doctor Signup	Rohain Shaikh	04-July-2024	04-July-2024
5	Doctor Login	Rohain Shaikh	05-July-2024	05-July-2024
6	Find Doctors Near Me	Rohain Shaikh	06-July-2024	06-July-2024
7	**Patient Dashboard**	Rohain Shaikh	**07-July-2024**	**12-July-2024**
8	Edit Patient Profile	Rohain Shaikh	08-July-2024	08-July-2024
9	Medication Tracker	Rohain Shaikh	09-July-2024	09-July-2024
10	Add Medical Records	Rohain Shaikh	10-July-2024	10-July-2024
11	Complaint Form	Rohain Shaikh	11-July-2024	11-July-2024
12	Add Health Metrics	Rohain Shaikh	12-July-2024	12-July-2024
13	**Doctor Dashboard**	Rohain Shaikh	**15-July-2024**	**18-July-2024**
14	Edit Profile	Rohain Shaikh	16-July-2024	16-July-2024
15	Add availability	Rohain Shaikh	17-July-2024	17-July-2024
16	Complaint Form	Rohain Shaikh	18-July-2024	18-July-2024
17	**Admin Dashboard**	Rohain Shaikh	**19-July-2024**	**19-July-2024**

Test Case

Project Name: HealthHub Connect
Iteration No: 01
Module Name: Home Screen
Date: 01-July-2024
Test Case ID: TC-001
Test Engineer: Rohain Shaikh
Test Case Description: Testing all home screen functionalities

S. No	Steps	Input Data	Expected Result	Actual Result	Pass/Fail
TC-1	Enter Symptoms for Doctor based Recommendation	Acne, Allergic reactions, Sneezing	Top 3 doctors for the symptoms entered	Top 3 doctors for the symptoms entered	Pass
TC-2	Enter invalid data in search bar	“gleba”	Message "No results found" is displayed	Message "No results found" is displayed	Pass

TC-3	Click Join as Patient	none	Redirects to Sign Up as Patient Form	Redirects to Sign Up as Patient Form	Pass
TC-4	Click Join as Doctor	none	Redirects to Sign Up as Doctor Form	Redirects to Sign Up as Doctor Form	Pass
TC-5	Click Doctors by Specialization	dermatologist	Opens all dermatologists with an option to Find Doctors Near Me	Opens all dermatologists with an option to Find Doctors Near Me	Pass
TC-6	Click “Book Appointment” without logging in	none	Error Message Displayed on screen: “invalid patient session error”	Error Message Displayed on screen: “invalid patient session error”	Pass

Test Case

Project Name: HealthHub Connect
Iteration No: 01
Module Name: Patient SignUp
Date: 02-July-2024
Test Case ID: TC-002
Test Engineer: Rohain Shaikh
Test Case Description: Testing if new patient can sign up successfully

S. No	Steps	Input Data	Expected Result	Actual Result	Pass/Fail
TC-1	Enter all form details	Patien Name: Ramsha Daudpota DOB: 28/11/1996 Email: ramshadaudpota@gmail.com Password: Ramsha1234 Gender: Female Phone no: 03452105153 Security Question: What is your favorite color Security Answer: Green	Registration Successful Message displayed	Registration Successful Message displayed	Pass
TC-2	If an email that already exists is entered	ramshadaudpota@gmail.com	Error Message Displayed on screen: “Email already exists, please sign up with a different email”.	Error Message Displayed on screen: “Email already exists, please sign up with a different email”.	Pass
TC-3	If any Field is left empty	“One field left empty”	Error Message Displayed on screen: “Patient name is required”. “Email is required”.	Error Message Displayed on screen: “Patient name is required”. “Email is required”.	Pass
TC-4	Checking Password Validation	Password: owais1	Error Message Displayed on screen:	Error Message Displayed on screen:	Pass

			“Password must contain at least 8 characters and have one uppercase character and one number”.	“Password must contain at least 8 characters and have one uppercase character and one number”.	
TC-5	Checking Phone Number Validation	Number:0983289	Error Message Displayed on screen: “Phone no must contain 10 digits.”	Error Message Displayed on screen: “Phone no must contain 10 digits.”	Pass
TC-6	Verify that terms and condition validation works	“T&C button not checked”	Error Message Displayed on screen: “ You must agree to terms and condition to continue”	Error Message Displayed on screen: “ You must agree to terms and condition to continue”	Pass

Test Case

Project Name: HealthHub Connect
Iteration No: 01
Module Name: Patient Login
Date: 03-July-2024
Test Case ID: TC-003
Test Engineer: Rohain Shaikh
Test Case Description: Testing if patient can log in successfully

S. No	Steps	Input Data	Expected Result	Actual Result	Pass/Fail
TC-1	Enter all form details correctly		User is logged in and redirected to the dashboard	User is logged in and redirected to the dashboard	Pass
TC-2	If incorrect email is entered	ramshadadsfpotaa@gmail.com	Error message "Email not registered" is displayed	Error message "Email not registered" is displayed	Pass
TC-3	Enter invalid email and password	Email: ramdasshadaudpota@gmail.com Password: Ramsha	Error message "Invalid credentials" is displayed	Error message "Invalid credentials" is displayed	Pass
TC-4	leave email and password fields empty	Password:”” Email:””	Error message "Email and Password are required" is displayed	Error message "Email and Password are required" is displayed	Pass
TC-5					

Test Case

Project Name: HealthHub Connect
Iteration No: 01
Module Name: Doctor Signup
Date: 04-July-2024
Test Case ID: TC-004
Test Engineer: Rohain Shaikh
Test Case Description: Testing if new doctor can sign up successfully

S. No	Steps	Input Data	Expected Result	Actual Result	Pass/Fail
TC-1	Enter all form details correctly	Email: ramshadaudpota@gmail.com Password: Ramsha1234	User is logged in and redirected to the dashboard	User is logged in and redirected to the dashboard	Pass
TC-2	If incorrect email is entered	ramshadadsfpotaa@gmail.com	Error message "Email not registered" is displayed	Error message "Email not registered" is displayed	Pass
TC-3	Enter invalid email and password	Email: ramdasshadaudpota@gmail.com Password: Ramsha	Error message "Invalid credentials" is displayed	Error message "Invalid credentials" is displayed	Pass
TC-4	leave email and password fields empty	Password:”” Email:””	Error message "Email and Password are required" is displayed	Error message "Email and Password are required" is displayed	Pass

Test Case

Project Name: HealthHub Connect
Iteration No: 01
Module Name: Doctor Login
Date: 05-July-2024
Test Case ID: TC-005
Test Engineer: Rohain Shaikh
Test Case Description: Testing if doctor can log in successfully

S. No	Steps	Input Data	Expected Result	Actual Result	Pass/Fail
TC-1	Enter all form details correctly	Name: Adil Asghar Email: adilasghar78@gmail.com Phone number: 0309265433 Specialization: Dermatologist City: Karach Hospital: Indus Hospital Password: adilAsghar123	Registration Successful Message displayed	Registration Successful Message displayed	Pass

		Medical license: 123456-P Bio: etc etc Years of experience: 7			
TC-2	If an email that already exists is entered	ramshadaudpota@gmail.com	Error Message Displayed on screen: “Email already exists, please sign up with a different email”.	Error Message Displayed on screen: “Email already exists, please sign up with a different email”.	Pass
TC-3	If any Field is left empty	“One field left empty”	Error Message Displayed on screen: “Patient name is required”. “Email is required”.	Error Message Displayed on screen: “Patient name is required”. “Email is required”.	Pass
TC-4	Checking Password Validation	Password: adil1	Error Message Displayed on screen: “Password must contain at least 8 characters and have one uppercase character and one number”.	Error Message Displayed on screen: “Password must contain at least 8 characters and have one uppercase character and one number”.	Pass

Test Case

Project Name: HealthHub Connect
Iteration No: 01
Module Name: Find Doctors Near Me
Date: 06-July-2024
Test Case ID: TC-006
Test Engineer: Rohain Shaikh
Test Case Description: User finds doctors near their location based on input data.

S. No	Steps	Input Data	Expected Result	Actual Result	Pass/Fail
TC-1	Enter a valid location and click "Search"	Location: “North Nazimabad”	A list of nearby doctors is displayed	A list of nearby doctors is displayed	Pass
TC-2	Enter an invalid location and click "Search"	Location:”esgfysye”	An error message indicating an invalid location	An error message indicating an invalid location	Pass

TC-3	Enter a non-existent location and click "Search"	Location:”Fazimabad”	Gives no Result	Gives no Result	Pass
TC-4	Enter a valid location and click "Search"	Location: “North Nazimabad”	The system displays the correct distance to doctors	The system displays the correct distance to doctors	Pass

Test Case

Project Name: HealthHub Connect
Iteration No: 01
Module Name: Patient Dashboard
Date: 07-July-2024
Test Case ID: TC-007
Test Engineer: Rohain Shaikh
Test Case Description: Verify that the patient dashboard displays upcoming and past appointments, medication schedules, and medical records accurately, with options to manage these items.

S. No	**Steps**	**Input Data**	**Expected Result**	**Actual Result**	**Pass/Fail**
TC-1	Check everything is functioning when patient logs in	none	previous and upcoming appointments are being shown	previous and upcoming appointments are being shown	Pass
TC-2	When user logs in for the first time default image is shown	none	Default Image is displayed	Default Image is displayed	Pass
TC-3	When user logs in after changing the profile Picture the new image shows	none	New Image is displayed	New Image is displayed	Pass
TC-4	Graphs of health metric show stats when you set them	none	Graph shows drop and rise in BP and Glucose levels	Graph shows drop and rise in BP and Glucose levels	Pass
TC-5	Upload Medical records	PDF is added and Upload is clicked	Medical Record is added	Medical Record is added	Pass
TC-6	View Medical Record	none	Views the PDF recorded	Views the PDF recorded	Pass
TC-7	Delete Medical Record	none	PDF is deleted	PDF is deleted	Pass

Test Case

Project Name: HealthHub Connect
Iteration No: 01
Module Name: Edit Patient Profile
Date: 08-July-2024
Test Case ID: TC-008
Test Engineer: Rohain Shaikh

Test Case Description: Verify that the system allows patients to update their profile information, including personal details and contact information, and saves the changes successfully to the database.

S. No	Steps	Input Data	Expected Result	Actual Result	Pass/Fail
TC-1	Access the edit patient profile page.	none	Patient profile fields are populated with correct data.	Patient profile fields are populated with correct data.	Pass
TC-2	Clear all fields and click Save.	none	Error message "All fields are required." is displayed.	Error message "All fields are required." is displayed.	Pass
TC-4	Enter valid data in all fields and click Save.	Name: Rohain Shaikh, Email: sheikhrohain@hotmail.com, Phone: 1234567890, DOB: 1980-01-01, Gender: Female	Profile saved successfully message is displayed.	Profile saved successfully message is displayed.	Pass
TC-5	Select an image file and click Upload.	Image file	Image uploaded successfully message is displayed and profile image updated.	Image uploaded successfully message is displayed and profile image updated.	Pass
TC-6	Click the Upload button without selecting an image.	none	Error message "Please select an image to upload." is displayed.	Error message "Please select an image to upload." is displayed.	Pass

Test Case

Project Name: HealthHub Connect
Iteration No: 01
Module Name: Medication Tracker
Date: 09-July-2024
Test Case ID: TC-009
Test Engineer: Rohain Shaikh
Test Case Description: Verify that the medication tracker allows patients to add, view, update, and delete medication schedules, and sends timely email reminders for each dose.

S. No	Steps	Input Data	Expected Result	Actual Result	Pass/Fail
TC-1	Check if email and username are being retrieved correctly	none	correct email and username	correct email and username	Pass
TC-2	Enter valid data	Medicine name: Panadol Dose times: 10 Start date: 10-07-2024	Medicine schedule added successfully.	Medicine schedule added successfully.	Pass

		end date: 15-07-2024			
TC-3	Enter Invalid dosage details	Dose Times: e2	error “Please enter a Number”	error “Please enter a Number”	Pass
TC-4	Check delete medicine	none	Medicine data is being deleted	Medicine data is being deleted	Pass
TC-5	Check email reminder mails	none	Email is being received	Email is being received	Pass
TC-6	Check if medication is being updated	Check the dosage details and update	Dose status updated successfully.	Dose status updated successfully.	Pass

Test Case

Project Name: HealthHub Connect
Iteration No: 01
Module Name: Add Medical Records
Date: 10-July-2024
Test Case ID: TC-010
Test Engineer: Rohain Shaikh
Test Case Description: Verify that the system allows patients to upload and save multiple medical records (PDFs) successfully, and displays the uploaded records correctly on the patient's dashboard.

S. No	**Steps**	**Input Data**	**Expected Result**	**Actual Result**	**Pass/Fail**
TC-1	Check everything is functioning when patient logs in	none	previous and upcoming appointments are being shown	previous and upcoming appointments are being shown	Pass
TC-2	When user logs in for the first time default image is shown	none	Default Image is displayed	Default Image is displayed	Pass
TC-3	When user logs in after changing the profile Picture the new image shows	none	New Image is displayed	New Image is displayed	Pass
TC-4	Graphs of health metric show stats when you set them	none	Graph shows drop and rise in BP and Glucose levels	Graph shows drop and rise in BP and Glucose levels	Pass
TC-5	Upload Medical records	PDF is added and Upload is clicked	Medical Record is added	Medical Record is added	Pass
TC-6	View Medical Record	none	Views the PDF recorded	Views the PDF recorded	Pass
TC-7	Delete Medical Record	none	PDF is deleted	PDF is deleted	Pass

Test Case

Project Name: HealthHub Connect
Iteration No: 01
Module Name: Complaint Form
Date: 11-July-2024
Test Case ID: TC-011
Test Engineer: Rohain Shaikh
Test Case Description: Verify that the complaint form allows users to submit complaints with required details and successfully saves the data to the database.

S. No	Steps	Input Data	Expected Result	Actual Result	Pass/Fail
TC-1	Fill all Fields and submit	Complaint From: “patient” Name: Maliha Asghar Email: malihaasghar23@gmail.com phone: 0123456789 Complaint:”confirm appointments button not showing”	Complaint submitted successfully message is displayed.	Complaint submitted successfully message is displayed.	Pass
TC-2	All Fields are left Empty	none	Error message "All fields are required." is displayed.	Error message "All fields are required." is displayed.	Pass
TC-3	Invalid Email Address	malihaasghar23gmail.com	Error message indicating invalid email address is displayed.	Error message indicating invalid email address is displayed.	Pass
TC-4	invalid Phone number	Complaint From: “patient” Name: Maliha Asghar Email: malihaasghar23@gmail.com phone: 0123dsfdse789 Complaint:”confirm appointments button not showing”	Error message indicating invalid phone number is displayed.	Error message indicating invalid phone number is displayed.	Pass

Test Case

Project Name: HealthHub Connect
Iteration No: 01
Module Name: Health Metrics
Date: 12-July-2024
Test Case ID: TC-012
Test Engineer: Rohain Shaikh
Test Case Description: Log and view Health Metrics

S. No	Steps	Input Data	Expected Result	Actual Result	Pass/Fail
TC-1	Enter correct field value	Blood glucose: 80	Blood glucose logged successfully.	Blood glucose logged successfully.	Pass

TC-2	Enter correct field value	Blood pressure: 140	Blood pressure logged successfully	Blood pressure logged successfully	Pass
TC-3	Enter correct field value	Cholesterol :80	Cholesterol logged successfully.	Cholesterol logged successfully.	Pass
TC-4	Enter incorrect field value	Cholesterol :sdbfjksd	Error Incorrect value entered	Error Incorrect value entered	Pass

Test Case

Project Name: HealthHub Connect
Iteration No: 01
Module Name: Doctor Dashboard
Date: 15-July-2024
Test Case ID: TC-013
Test Engineer: Rohain Shaikh
Test Case Description: Verify that the doctor dashboard displays patient records, doctor details, and appointment schedules, with functionalities to update availability and manage appointments.

S. No	**Steps**	**Input Data**	**Expected Result**	**Actual Result**	**Pass/Fail**
TC-1	Check everything is functioning when patient logs in	none	previous and upcoming appointments and availability are being shown	previous and upcoming appointments and availability are being shown	Pass
TC-2	When user logs in for the first time default image is shown	none	Default Image is displayed	Default Image is displayed	Pass
TC-3	When user logs in after changing the profile Picture the new image shows	none	New Image is displayed	New Image is displayed	Pass
TC-4	Cancel appointment	none	Appointment is canceled	Appointment is canceled	Pass
TC-5	Confirm appointment	none	Appointment is confirmed	Appointment is confirmed	Pass

Test Case

Project Name: HealthHub Connect
Iteration No: 01
Module Name: Edit Doctor Profile
Date: 16-July-2024
Test Case ID: TC-014
Test Engineer: Rohain Shaikh
Test Case Description:

S. No	**Steps**	**Input Data**	**Expected Result**	**Actual Result**	**Pass/Fail**

TC-1	Access the edit doctor profile page.	none	Doctor profile fields are populated with correct data.	Doctor profile fields are populated with correct data.	Pass
TC-2	Clear all fields and click Save.	none	Error message "All fields are required." is displayed.	Error message "All fields are required." is displayed.	Pass
TC-3	Enter valid data in all fields and click Save.	Name: Rohain Shaikh, Email: sheikhrohain@hotmail.com, Specialization: Cardiology, MedicalLicenseNumber: 123456-P, YearsOfExperience: 10, Bio: Experienced cardiologist, Phone: 1234567890, Education: MBBS, MD, Specializations: Heart Surgery	Profile saved successfully message is displayed.	Profile saved successfully message is displayed.	Pass
TC-4	Select an image file and click Upload.	Image file	Image uploaded successfully message is displayed and profile image updated.	Image uploaded successfully message is displayed and profile image updated.	Pass
TC-5	Click the Upload button without selecting an image.	none	Error message "Please select an image to upload." is displayed.	Error message "Please select an image to upload." is displayed.	Pass
TC-6	Access the edit doctor profile page.	none	Hospitals list and fees are displayed correctly.	Hospitals list and fees are displayed correctly.	Pass
TC-7	Clear all fees fields and click Save Fees.	none	Error message "Please fill in all the fees before saving." is displayed.	Error message "Please fill in all the fees before saving." is displayed.	Pass
TC-8	Enter valid fees in all fields and click Save Fees.	Fees: 2000, 3000, 4000	Fees updated successfully message is displayed.	Fees updated successfully message is displayed.	Pass

Test Case

Project Name: HealthHub Connect
Iteration No: 01
Module Name: Add Availability
Date: 17-July-2024
Test Case ID: TC-015
Test Engineer: Rohain Shaikh
Test Case Description: Check if we can add, delete and update doctor availability.

S. No	Steps	Input Data	Expected Result	Actual Result	Pass/Fail
TC-1	Enter all valid data	Available Day: Monday Start time: 12 PM End time: 2 PM Select Hospital: AKH	Availability added successfully!	Availability added successfully!	Pass
TC-2	Check if we can update availability	Available Day: Monday Start time: 10 AM End time: 2 PM Select Hospital: AKH	Availability updated successfully!	Availability updated successfully!	Pass
TC-3	Check if availability can be deleted	none	Availability deleted successfully!	Availability deleted successfully!	Pass
TC-4	Leave start time and end time fields empty	Available Day: Monday Select Hospital: AKH	Code gives error	Code gives error	Pass

Test Case

Project Name: HealthHub Connect
Iteration No: 01
Module Name: Complaint Form
Date: 18-July-2024
Test Case ID: TC-016
Test Engineer: Rohain Shaikh
Test Case Description: Verify that the complaint form allows users to submit complaints with required details and successfully saves the data to the database.

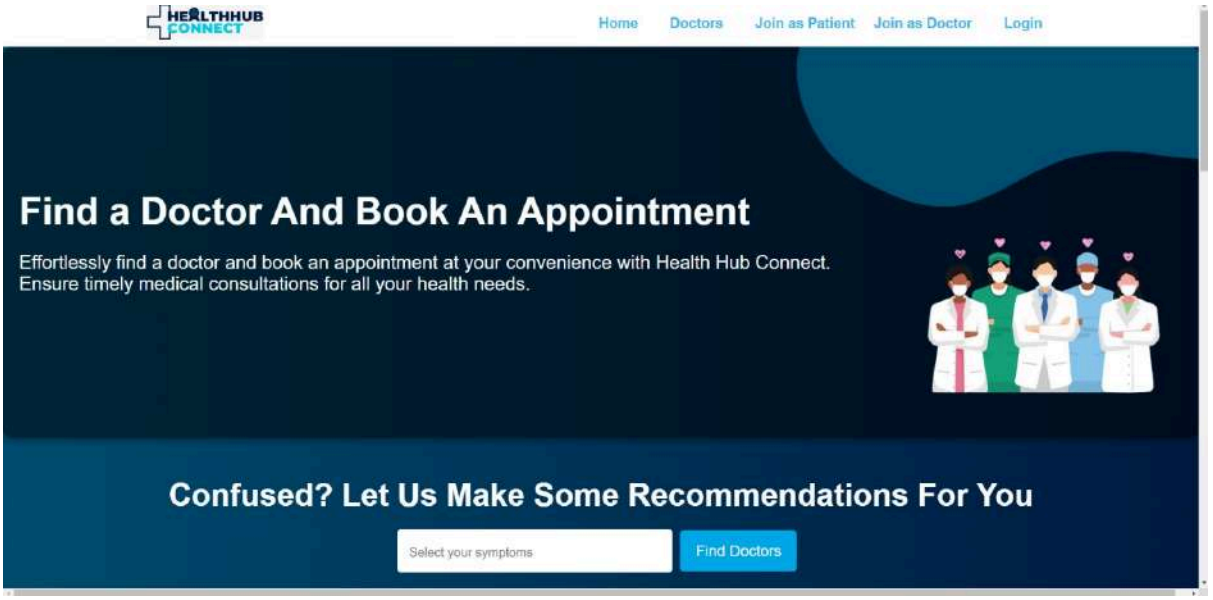
S. No	Steps	Input Data	Expected Result	Actual Result	Pass/Fail
TC-1	Fill all Fields and submit	Complaint From: “doctor” Name: Maliha Asghar Email: malihaasghar23@gmail.com phone: 0123456789 Complaint:”confirm appointments button not showing”	Complaint submitted successfully message is displayed.	Complaint submitted successfully message is displayed.	Pass
TC-2	All Fields are left Empty	none	Error message "All fields are required." is displayed.	Error message "All fields are required." is displayed.	Pass
TC-3	invalid Phone number	Complaint From: “doctor” Name: Maliha Asghar Email: malihaasghar23@gmail.com phone: 0123dsfdse789 Complaint:”confirm appointments button not showing”	Error message indicating invalid phone number is displayed.	Error message indicating invalid phone number is displayed.	Pass
TC-4	Invalid Email Address	malihaasghar23gmail.com	Error message indicating invalid email address is displayed.	Error message indicating invalid email address is displayed.	Pass

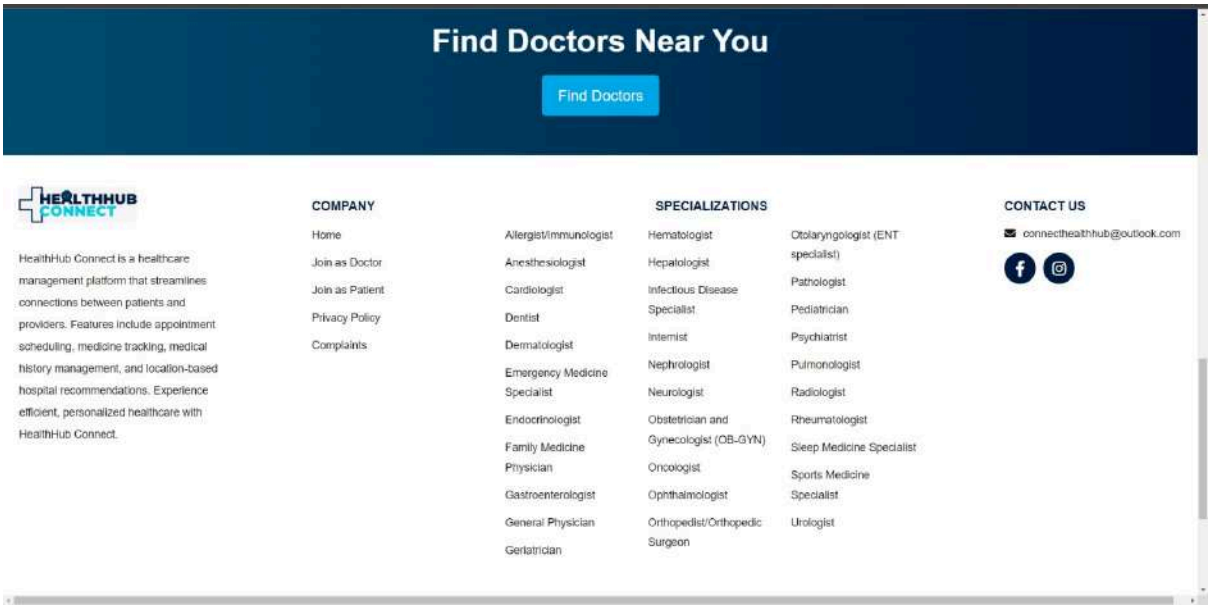
Test Case

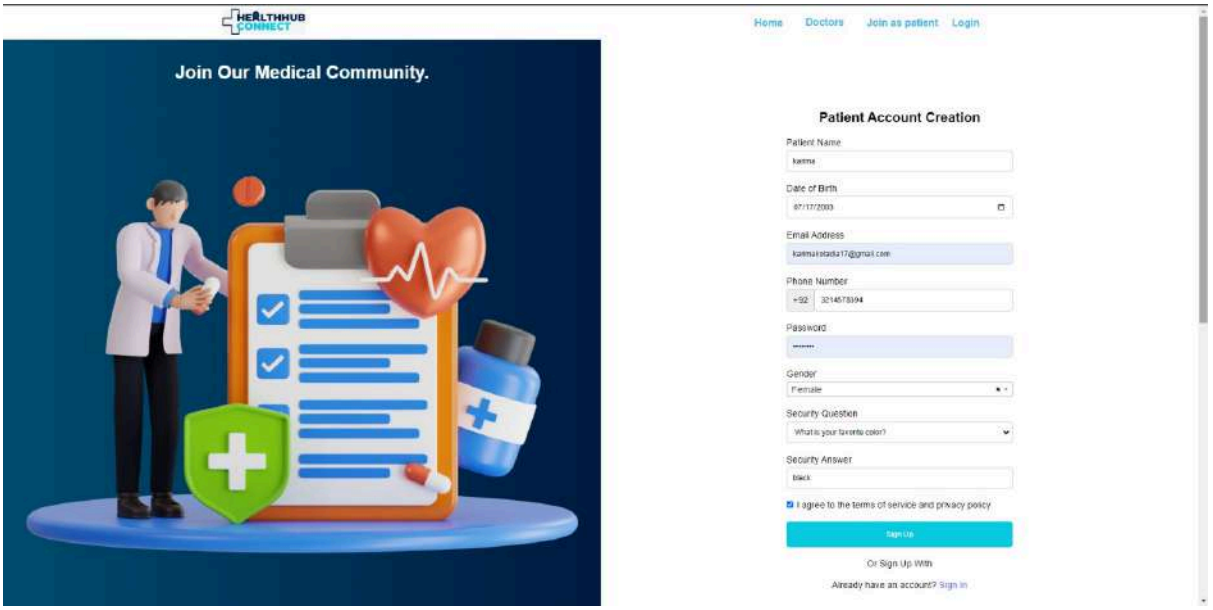
Project Name: HealthHub Connect
Iteration No: 01
Module Name: Admin Dashboard
Date: 19-July-2024
Test Case ID: TC-017
Test Engineer: Rohain Shaikh
Test Case Description: Check that the admin dashboard correctly displays doctor and patient data, with functionalities to add, edit, and delete records.

S. No	Steps	Input Data	Expected Result	Actual Result	Pass/Fail
TC-1	View total number of doctors, patients, appointments and hospitals	none	total doctors and patients on dashboard	total doctors and patients on dashboard	Pass
TC-2	View patient records/doctor records	none	patient records/ doctor records are shown	patient records/ doctor records are shown	Pass
TC-3	Filter by doctor/ patient names	by patient/ doctor name	records are shown by patient/doctor names	records are shown by patient/doctor names	Pass
TC-4	Enter all correct data to enter a new hospital	Hospital: BHYC Hospital City: Karachi Location: Gulshan Longitude: 1.0908 Latitude: 1.782781	Hospital is added	Hospital is added	Pass
TC-5	Delete hospital	none	Hospital is deleted	Hospital is deleted	Pass
TC-6	Can view and delete reviews	none	review is deleted/all reviews are shown	review is deleted/all reviews are shown	Pass
TC-7	Review complaints by doctors and patients	none	all complaints are shown	all complaints are shown	Pass
TC-8	Resolve complaints by doctors and patients	none	complaint is resolved	complaint is resolved	Pass

UI/UX Detail Document

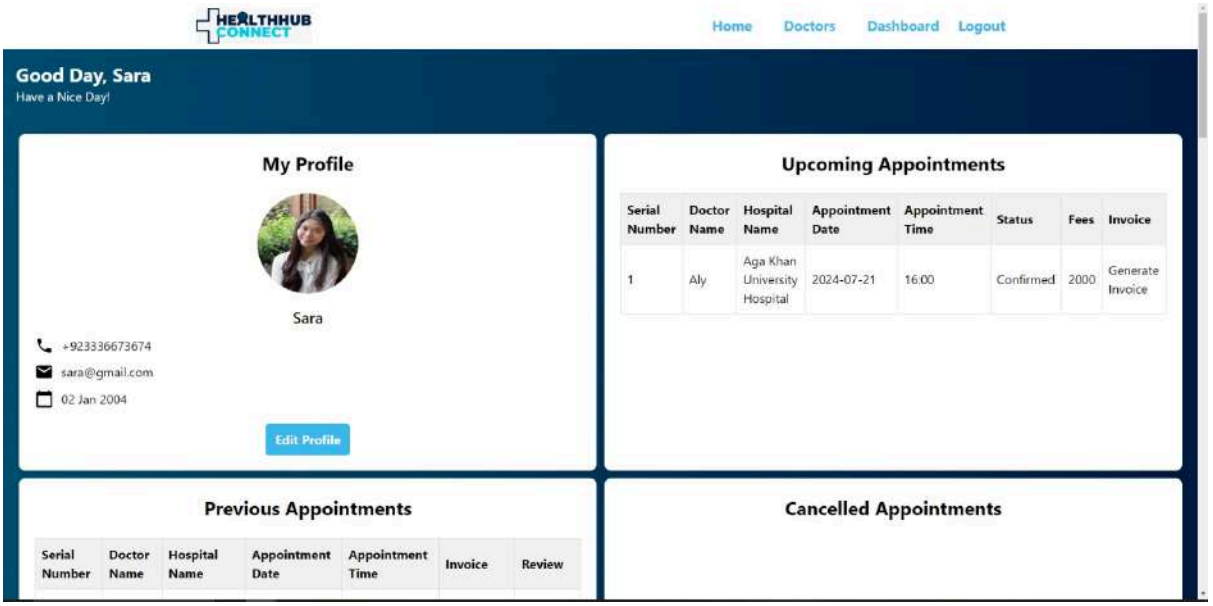


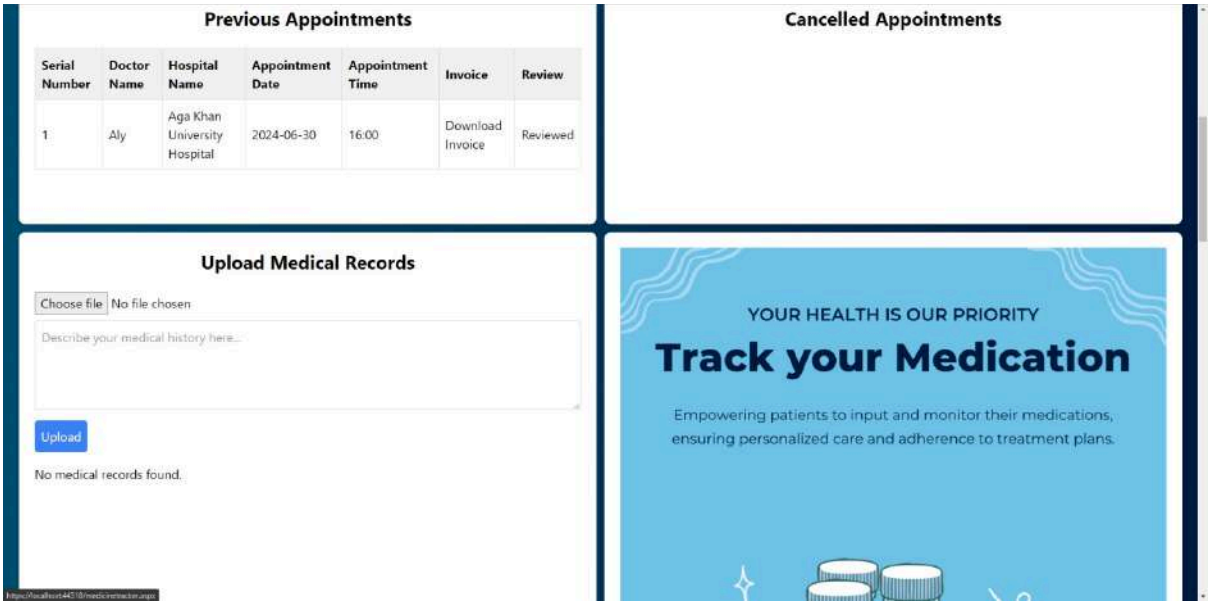

Find Doctors Near You
Find Doctors
HEALTHHUB CONNECT
HealthHub Connect is a healthcare management platform that streamlines connections between patients and providers. Features include appointment scheduling, medicine tracking, medical history management, and location-based hospital recommendations. Experience efficient, personalized healthcare with HealthHub Connect.
COMPANY
Home
Join as Doctor
Join as Patient
Privacy Policy
Complaints
SPECIALIZATIONS
Allergist/Immunologist
Anesthesiologist
Cardiologist
Dentist
Dermatologist
Emergency Medicine Specialist
Endocrinologist
Family Medicine Physician
Gastroenterologist
General Physician
Geriatrician
Hematologist
Hepatologist
Infectious Disease Specialist
Internist
Nephrologist
Neurologist
Obstetrician and Gynecologist (OB-GYN)
Oncologist
Ophthalmologist
Orthopedist/Orthopedic Surgeon
Otolaryngologist (ENT specialist)
Pathologist
Pediatrician
Psychiatrist
Pulmonologist
Radiologist
Rheumatologist
Sleep Medicine Specialist
Sports Medicine Specialist
Urologist
CONTACT US
connecthealthhub@outlook.com

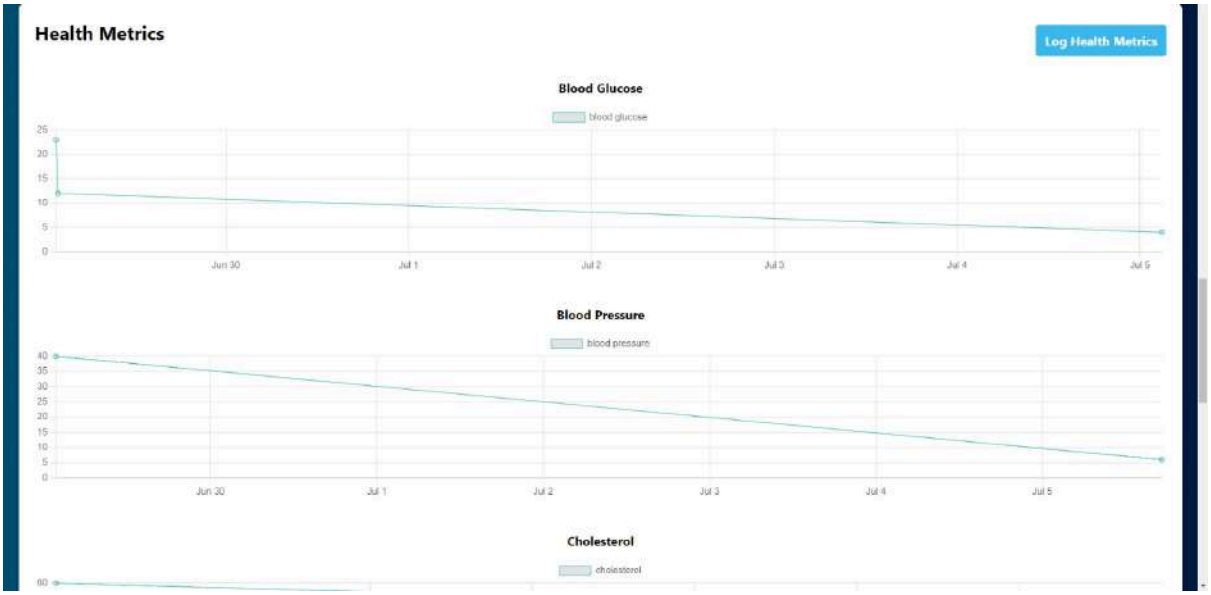

HEALTHHUB CONNECT
Join Our Medical Community.
Home
Doctors
Join as patient
Login
Patient Account Creation
Patient Name
Date of Birth
Email Address
Phone Number
Password
Gender
Female
Security Question
Security Answer
black
I agree to the terms of service and privacy policy
Sign Up
Or Sign Up With
Already have an account? Sign In

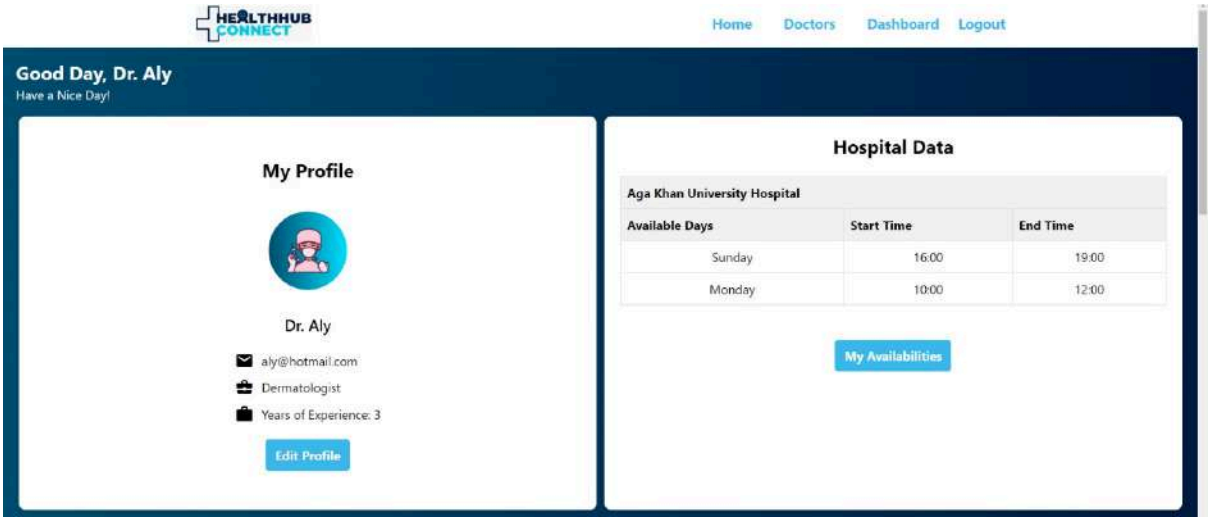

HEALTHHUB CONNECT
Welcome Back to the HealthHub Experience.

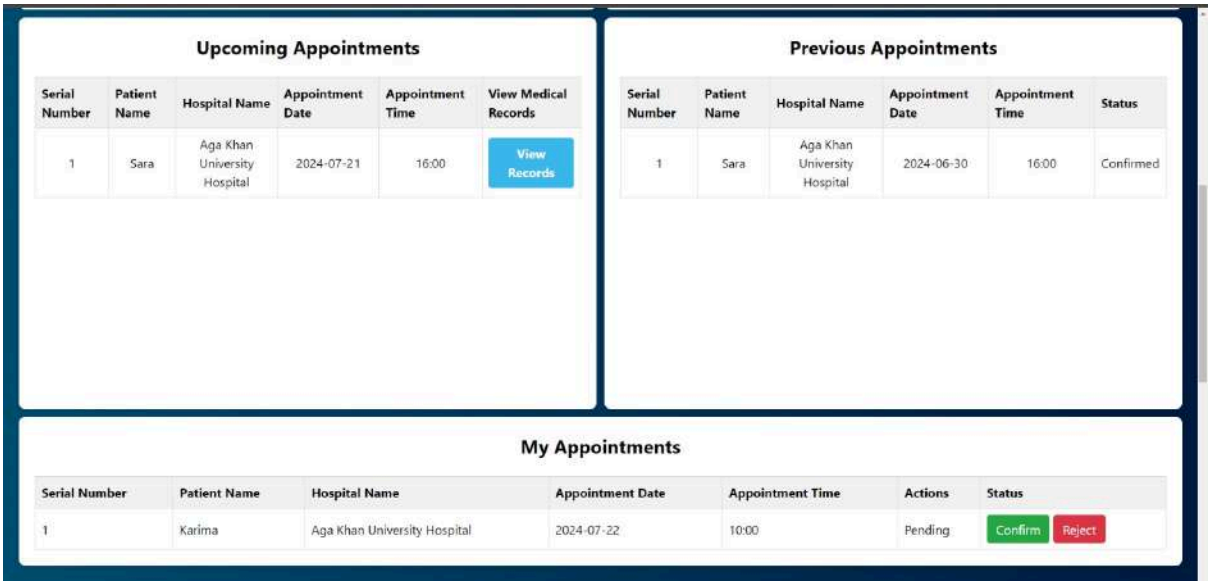
Home
Doctors
Join as patient
Login
Log In
Email Address
Password
Log In
Forgot Password?
Or Log In With
Don't have an account? Sign Up

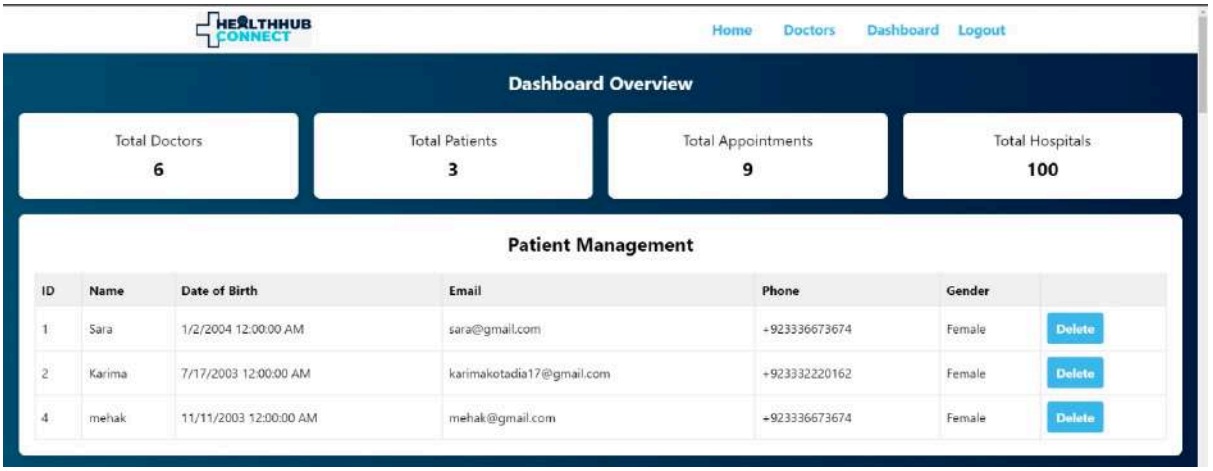

HEALTHHUB CONNECT
Home
Doctors
Dashboard
Logout
Good Day, Sara
Have a Nice Day!
My Profile
Sara
+923336673674
sara@gmail.com
02 Jan 2004
Edit Profile
Upcoming Appointments
Serial Number
Doctor Name
Hospital Name
Appointment Date
Appointment Time
Status
Fees
Invoice
1
Aly
Aga Khan University Hospital
2024-07-21
16:00
Confirmed
2000
Generate Invoice
Previous Appointments
Serial Number
Doctor Name
Hospital Name
Appointment Date
Appointment Time
Invoice
Review
Cancelled Appointments

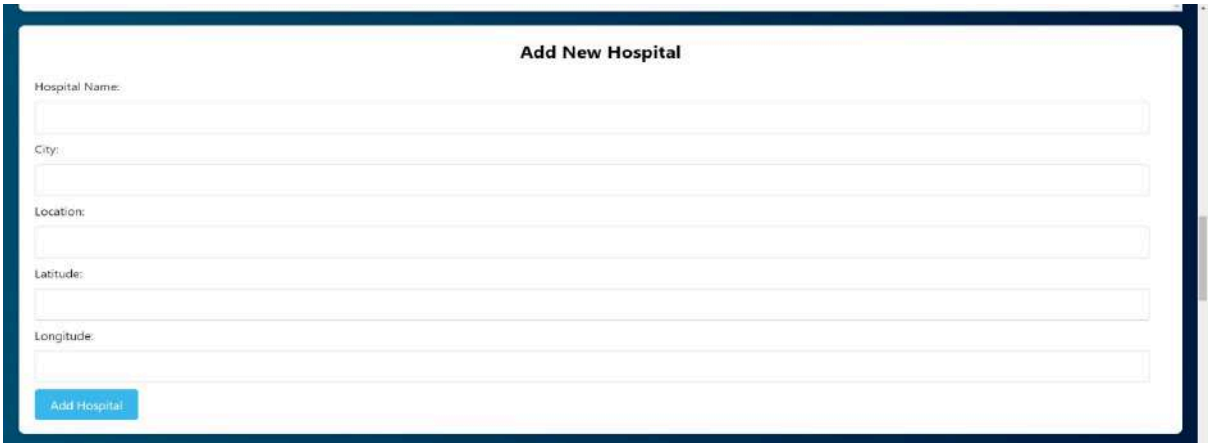

Previous Appointments
Serial Number
Doctor Name
Hospital Name
Appointment Date
Appointment Time
Invoice
Review
1
Aly
Aga Khan University Hospital
2024-06-30
16:00
Download Invoice
Reviewed
Cancelled Appointments
Upload Medical Records
Choose file
No file chosen
Describe your medical history here...
Upload
No medical records found.
YOUR HEALTH IS OUR PRIORITY
Track your Medication
Empowering patients to input and monitor their medications, ensuring personalized care and adherence to treatment plans.

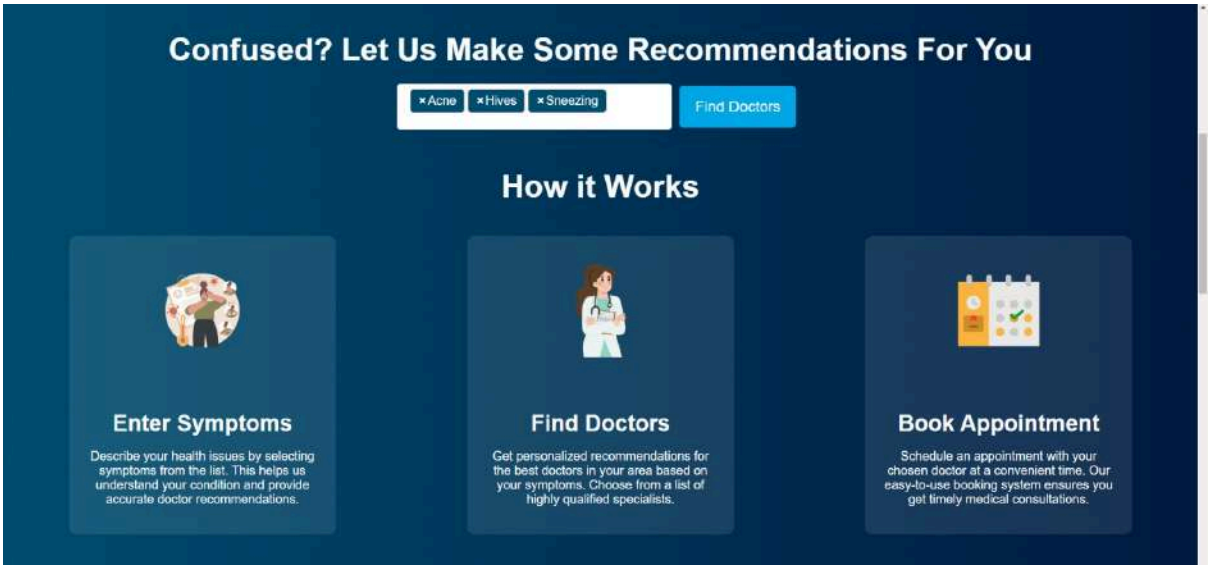

Health Metrics
Log Health Metrics
Blood Glucose
blood glucose
Blood Pressure
blood pressure
Cholesterol
cholesterol

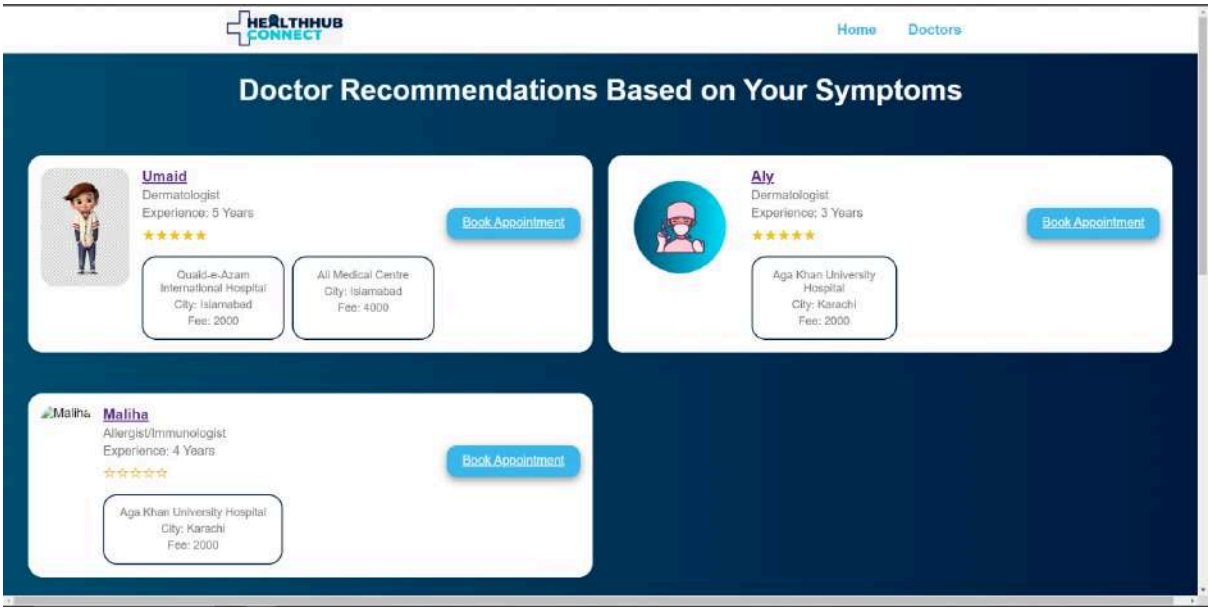

HEALTHHUB CONNECT
Home
Doctors
Dashboard
Logout
Good Day, Dr. Aly
Have a Nice Day!
My Profile
Dr. Aly
aly@hotmail.com
Dermatologist
Years of Experience: 3
Edit Profile
Hospital Data
Aga Khan University Hospital
Available Days
Start Time
End Time
Sunday
16:00
19:00
Monday
10:00
12:00
My Availabilities

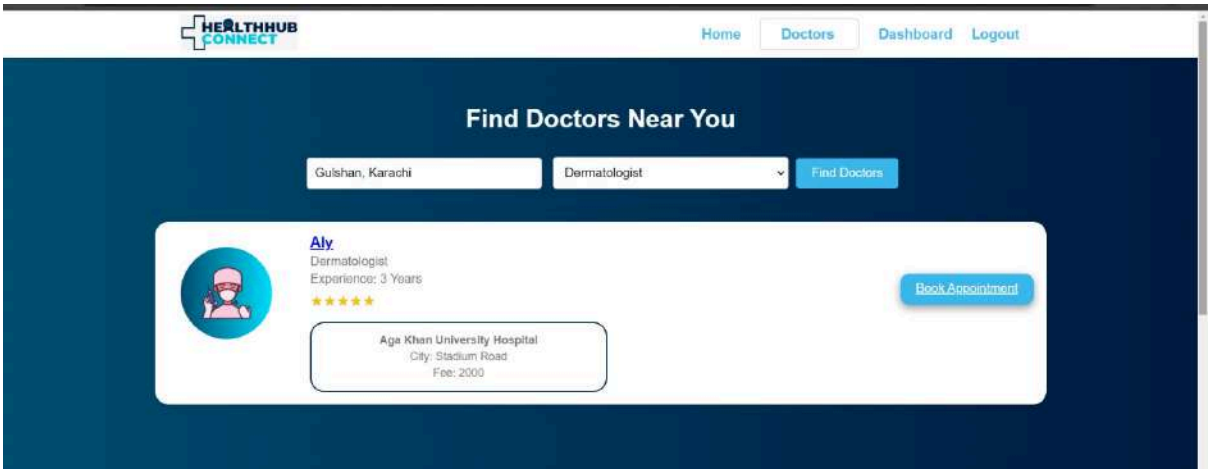

Upcoming Appointments
Serial Number
Patient Name
Hospital Name
Appointment Date
Appointment Time
View Medical Records
1
Sara
Aga Khan University Hospital
2024-07-21
16:00
View Records
Previous Appointments
Serial Number
Patient Name
Hospital Name
Appointment Date
Appointment Time
Status
1
Sara
Aga Khan University Hospital
2024-06-30
16:00
Confirmed
My Appointments
Serial Number
Patient Name
Hospital Name
Appointment Date
Appointment Time
Actions
Status
1
Karima
Aga Khan University Hospital
2024-07-22
10:00
Pending
Confirm
Reject

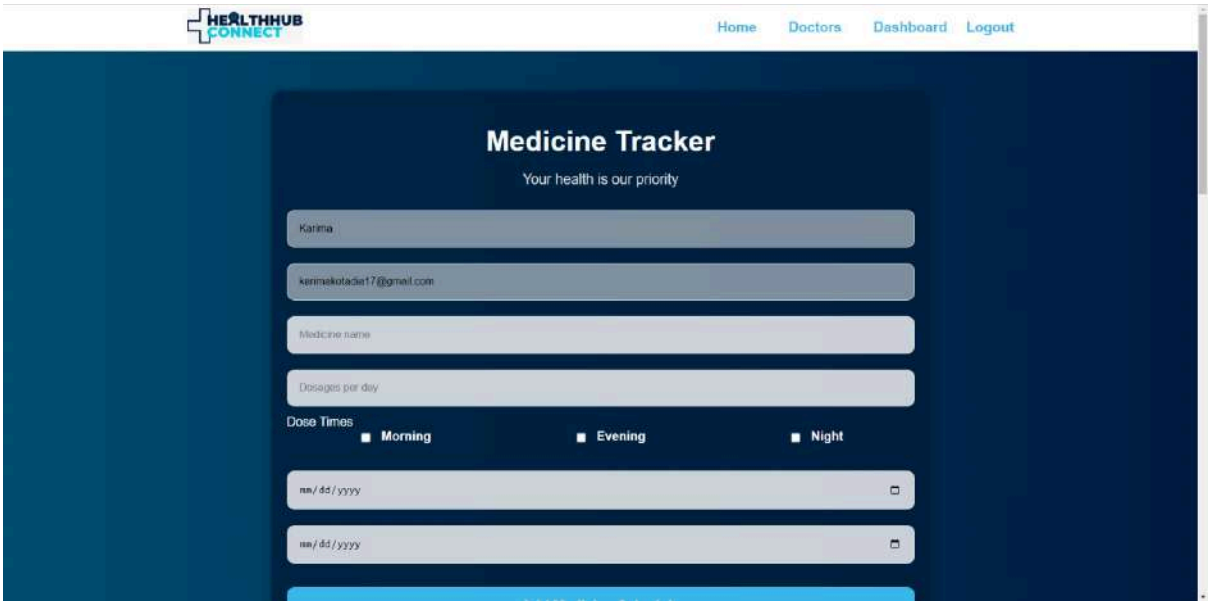

HEALTHHUB CONNECT
Home
Doctors
Dashboard
Logout
Dashboard Overview
Total Doctors
6
Total Patients
3
Total Appointments
9
Total Hospitals
100
Patient Management
ID
Name
Date of Birth
Email
Phone
Gender
1
Sara
1/2/2004 12:00:00 AM
sara@gmail.com
+923336673674
Female
Delete
2
Karima
7/17/2003 12:00:00 AM
karimakotadia17@gmail.com
+923332220162
Female
Delete
4
mehak
11/11/2003 12:00:00 AM
mehak@gmail.com
+923336673674
Female
Delete

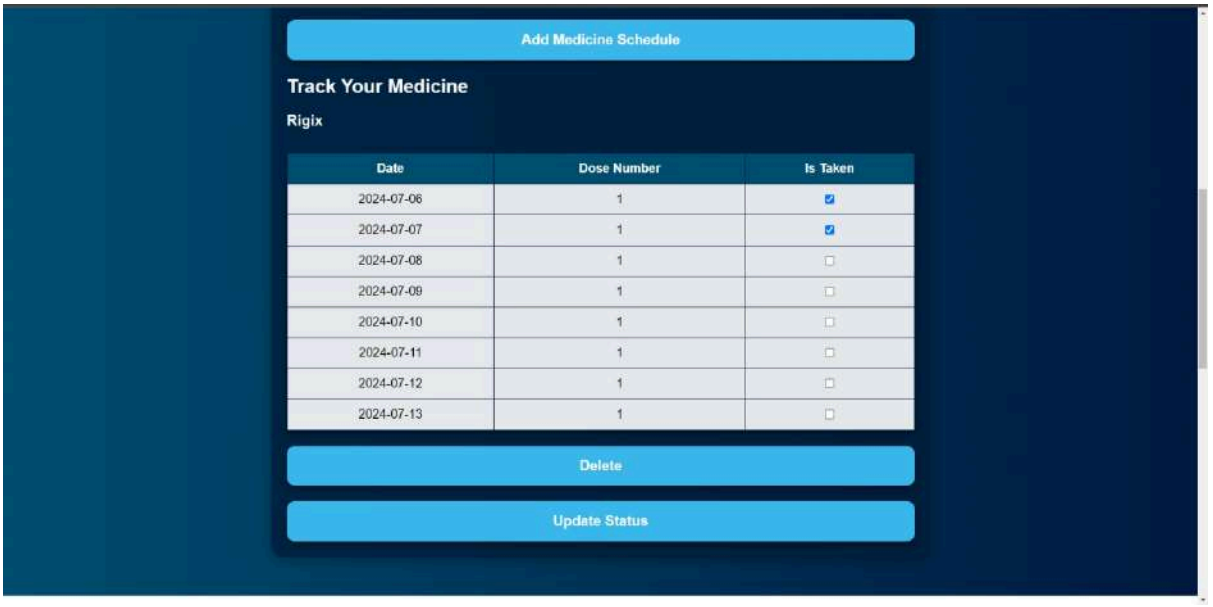

Add New Hospital
Hospital Name:
City:
Location:
Latitude:
Longitude:
Add Hospital


Confused? Let Us Make Some Recommendations For You
×Acne
×Hives
×Sneezing
Find Doctors
How it Works
Enter Symptoms
Describe your health issues by selecting symptoms from the list. This helps us understand your condition and provide accurate doctor recommendations.
Find Doctors
Get personalized recommendations for the best doctors in your area based on your symptoms. Choose from a list of highly qualified specialists.
Book Appointment
Schedule an appointment with your chosen doctor at a convenient time. Our easy-to-use booking system ensures you get timely medical consultations.


HEALTHHUB CONNECT
Home
Doctors
Doctor Recommendations Based on Your Symptoms
Umaid
Dermatologist
Experience: 5 Years
Book Appointment
Quaid-e-Azam International Hospital
City: Islamabad
Fee: 2000
Ali Medical Centre
City: Islamabad
Fee: 4000
Aly
Dermatologist
Experience: 3 Years
Book Appointment
Aga Khan University Hospital
City: Karachi
Fee: 2000
Maliha
Allergist/Immunologist
Experience: 4 Years
Book Appointment
Aga Khan University Hospital
City: Karachi
Fee: 2000


HEALTHHUB CONNECT
Home
Doctors
Dashboard
Logout
Find Doctors Near You
Gulshan, Karachi
Dermatologist
Find Doctors
Aly
Dermatologist
Experience: 3 Years
Book Appointment
Aga Khan University Hospital
City: Stadium Road
Fee: 2000


HEALTHHUB CONNECT
Home
Doctors
Dashboard
Logout
Medicine Tracker
Your health is our priority
Karima
Medicine name
Dosages per day
Dose Times
Morning
Evening
Night
mm/dd/yyyy
mm/dd/yyyy


Add Medicine Schedule
Track Your Medicine
Rigix
Date
Dose Number
Is Taken
2024-07-06
1
2024-07-07
1
2024-07-08
1
2024-07-09
1
2024-07-10
1
2024-07-11
1
2024-07-12
1
2024-07-13
1
Delete
Update Status

HEALTHHUB CONNECT

INVOICE

Invoice No.	2202407081120
Date	20/07/2024
Due Date	08/07/2024

Patient:	Karima
Hospital:	Quaid-e-Azam International Hospital
Doctor:	Umaid
Appointment Date:	08/07/2024
Appointment Time:	11:20

Description	Amount
Appointment Charges	2000
Subtotal	2000
Tax(5%)	100.00
Total	**2100.00**

Making healthcare accessible and affordable.

connecthealthhub@outlook.com

Coding Standards Document

Introduction

This document outlines the coding standards for HealthHub Connect to ensure that the codebase remains clean, readable, and maintainable, facilitating collaboration among team members.

General Principles

The general principles of coding ensure that the codebase remains clean, readable, and maintainable. Consistency is key; therefore, formatting should be uniform across the entire project. Adhering to naming conventions and coding practices outlined in this document helps maintain this consistency. Readability is another crucial aspect; code should be written in a manner that is easy to understand. Using meaningful names for variables, functions, and classes contributes to this readability. Finally, maintainability ensures that code is modular and reusable, with appropriate documentation to support future updates and collaboration among team members.

Naming Conventions

Naming conventions play a significant role in making the code understandable and easy to navigate. For variables, use camelCase, such as `userAge` or `firstName`, and ensure that names are descriptive, like `daysUntilAppointment` or `doctorSpecialization`. Functions and methods should use PascalCase, starting with a verb to indicate action, like `CalculatePatientAge` or `SaveAppointmentDetails`. Similarly, classes and interfaces should follow PascalCase, such as `PatientRecord` or `IDoctorService`. Constants should be in ALL_CAPS, for example, `MAX_PATIENTS` or `DEFAULT_SPECIALIZATION`. These conventions help in quickly identifying the purpose and type of each element, improving code clarity and maintainability.

Code Structure

Maintaining a consistent code structure is essential for readability and maintainability. Use four spaces for indentation and ensure there is no trailing whitespace at the end of lines. Place a blank line between methods to enhance readability. Limit lines to 80 characters to keep the code manageable and easy to read. When writing conditional statements or loops, place the opening curly brace on the same line as the statement and the closing curly brace on a new line. This formatting style keeps the code organized and consistent across the entire codebase.

Comments and Documentation

Proper comments and documentation are crucial for understanding and maintaining the code. Use inline comments sparingly and only when the code is not self-explanatory, placing them

on the same line as the code they describe. For more complex logic, use block comments placed above the code to provide detailed explanations. Additionally, use XML documentation comments for public methods and classes to describe their purpose, parameters, and return values. This practice ensures that anyone reading the code can quickly grasp its functionality and purpose, facilitating better collaboration and future maintenance.

Error Handling

Effective error handling is vital for building robust and reliable software. Use try-catch blocks to handle exceptions, ensuring that errors are logged and meaningful messages are provided. This approach helps in diagnosing issues quickly and maintaining the application's stability. Additionally, validate all user inputs to prevent invalid data from causing errors. For example, check for empty strings or invalid formats and handle such cases gracefully by providing clear error messages. By implementing thorough error handling, we can ensure that the application remains reliable and user-friendly.

Code Reviews

- Conduct regular code reviews to ensure adherence to coding standards.
- Provide constructive feedback to improve code quality.

Conclusion

Following these coding standards will help maintain a high-quality codebase for HealthHub Connect. Consistent, readable, and maintainable code will facilitate better collaboration and contribute to the project's success.

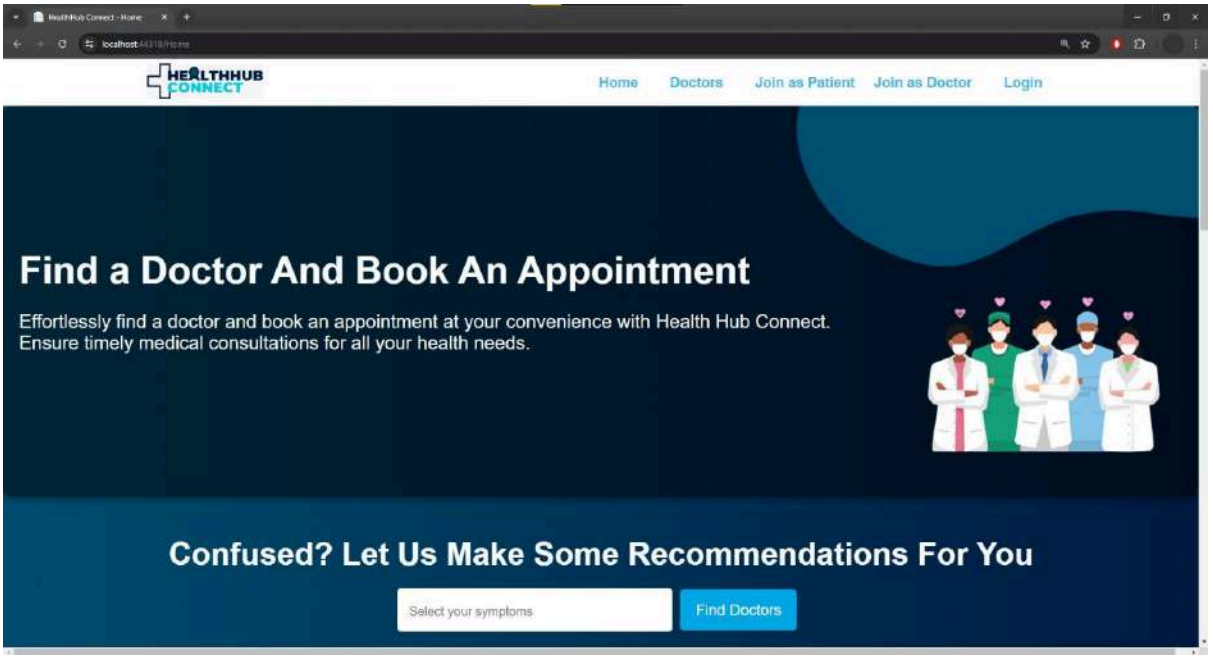
User Manual Document

1. Introduction

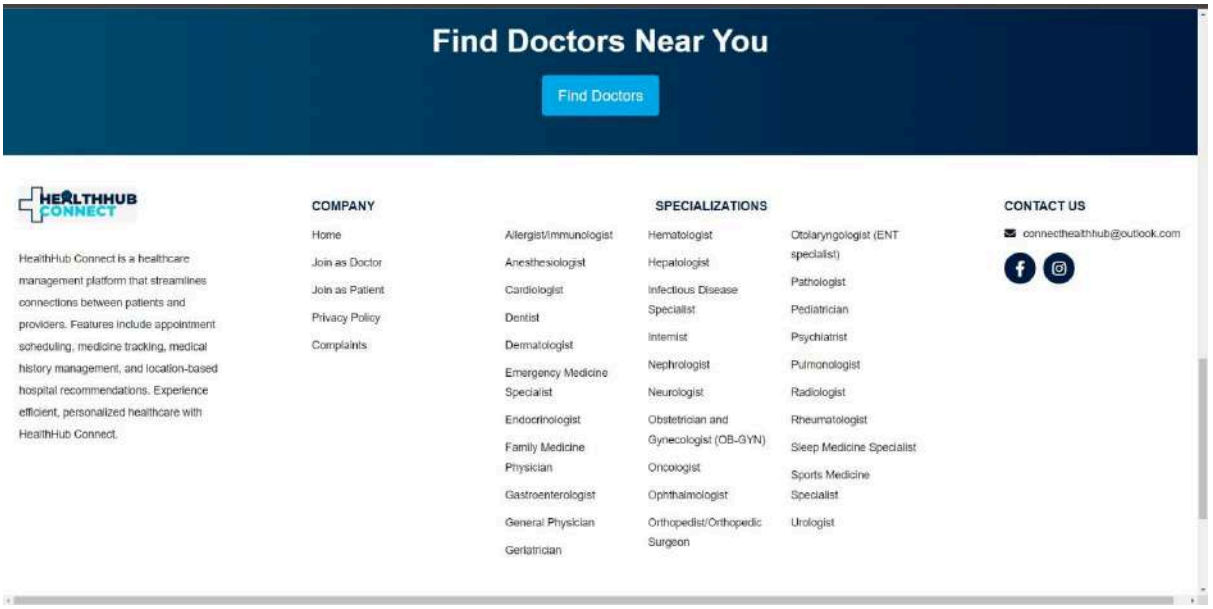
Welcome to Health Hub Connect, your comprehensive healthcare management platform. This manual will guide you through the features and functionalities of the platform, ensuring you make the most out of its capabilities.

2. Getting Started

To begin using Health Hub Connect, navigate to the website and sign up as either a doctor or a patient. Follow the instructions to complete the registration process. Ensure all necessary details are filled in accurately.


HEALTHHUB CONNECT
Home
Doctors
Join as Patient
Join as Doctor
Login
Find a Doctor And Book An Appointment
Effortlessly find a doctor and book an appointment at your convenience with Health Hub Connect. Ensure timely medical consultations for all your health needs.
Confused? Let Us Make Some Recommendations For You
Select your symptoms
Find Doctors

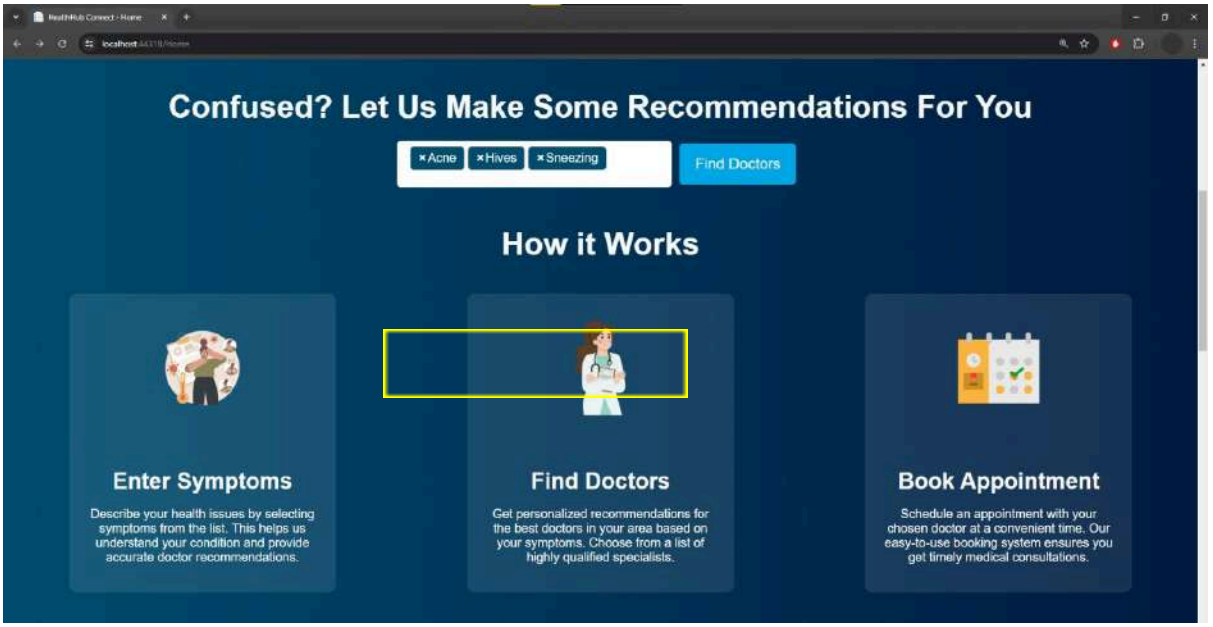

How it Works
Enter Symptoms
Describe your health issues by selecting symptoms from the list. This helps us understand your condition and provide accurate doctor recommendations.
Find Doctors
Get personalized recommendations for the best doctors in your area based on your symptoms. Choose from a list of highly qualified specialists.
Book Appointment
Schedule an appointment with your chosen doctor at a convenient time. Our easy-to-use booking system ensures you get timely medical consultations.
Consult Best Doctors Online
View More
Allergist/Immunologist
Anesthesiologist
Cardiologist
Dentist
Dermatologist
Emergency Medicine
Endocrinologist



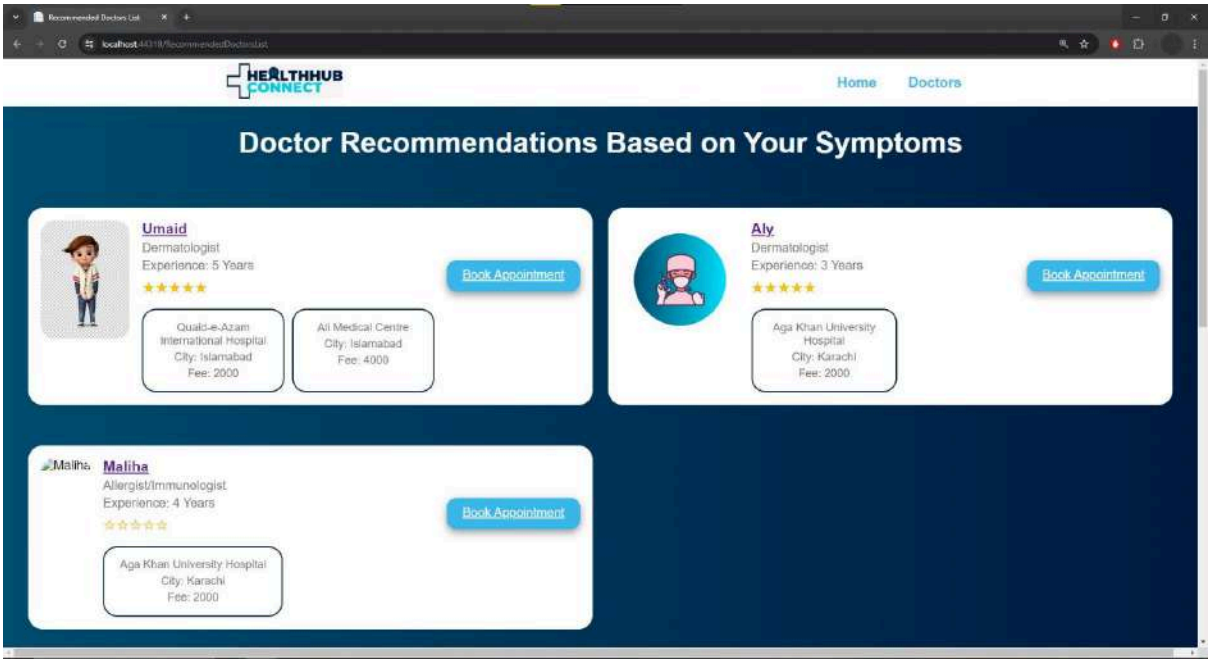
3. Main Features

Symptom based Doctor Recommendation System

The Symptom-Based Doctor Recommendation System utilizes advanced machine learning to match patients with the most suitable doctors based on their reported symptoms, ensuring personalized and efficient healthcare.

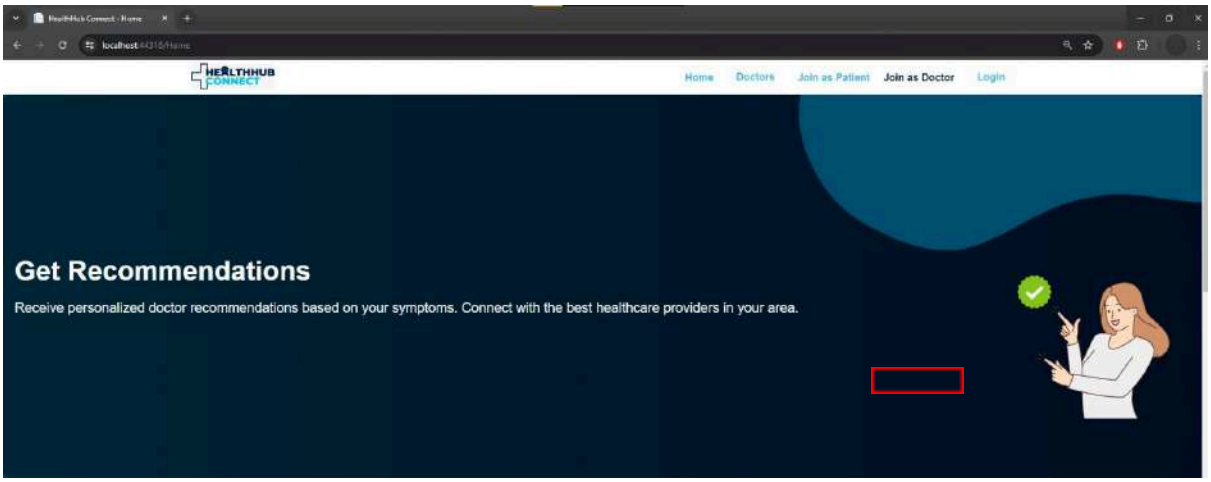


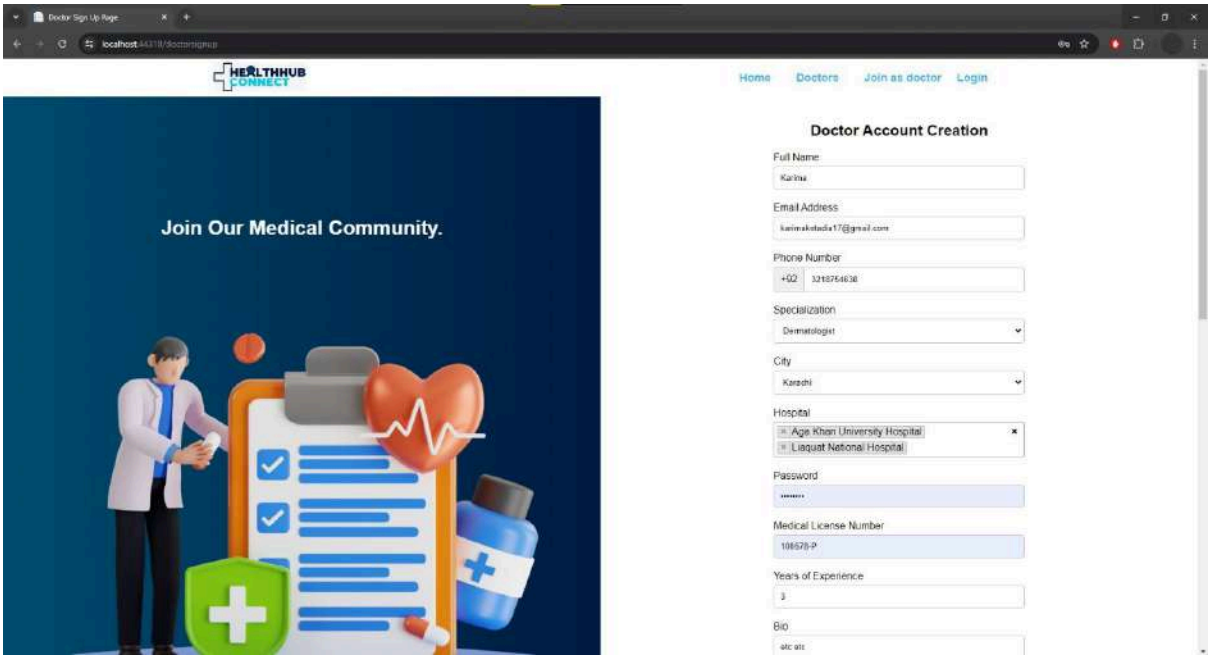
Enter the symptoms and click “Find Doctors”



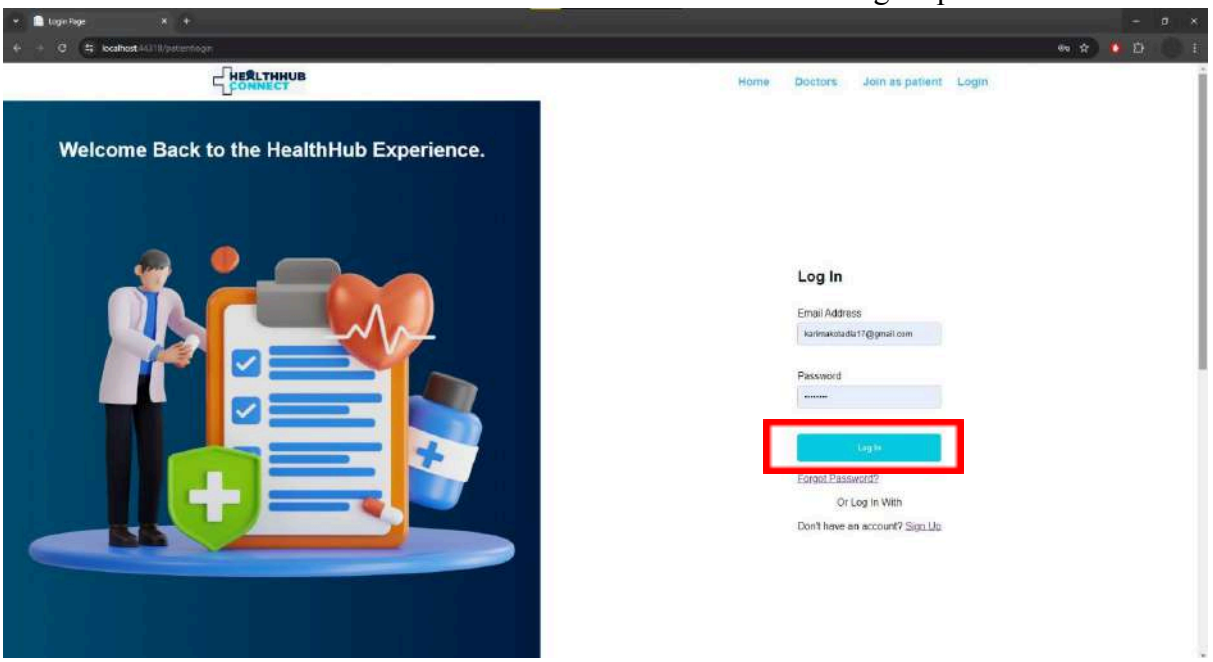
Doctor Sign-Up

Doctors can sign up by providing their name, specialization, and associated hospitals. This information is stored in the database and can be updated later via the doctor dashboard.





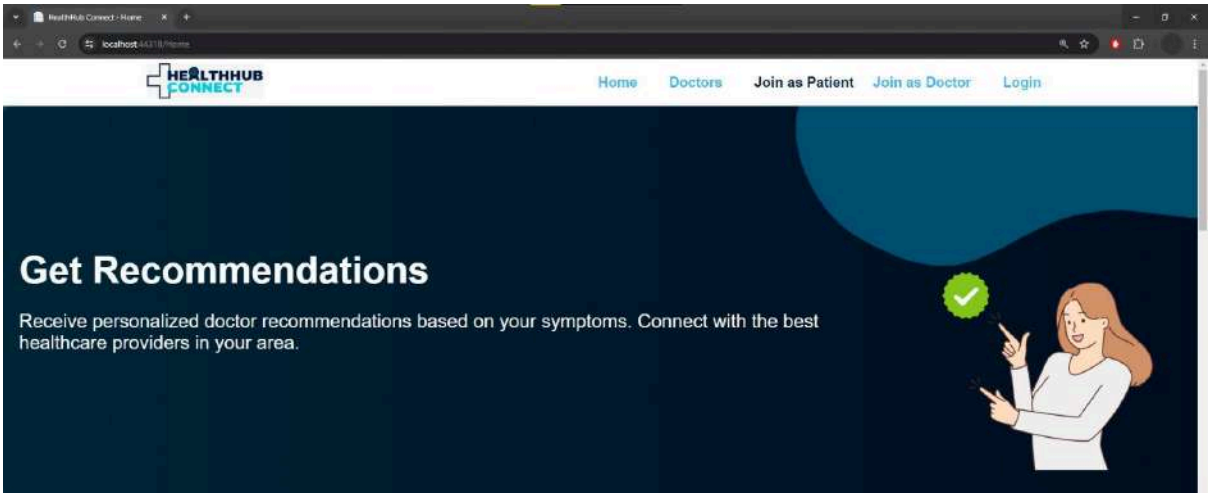
Click Join as doctor then enter valid data in all fields and click on Sign Up

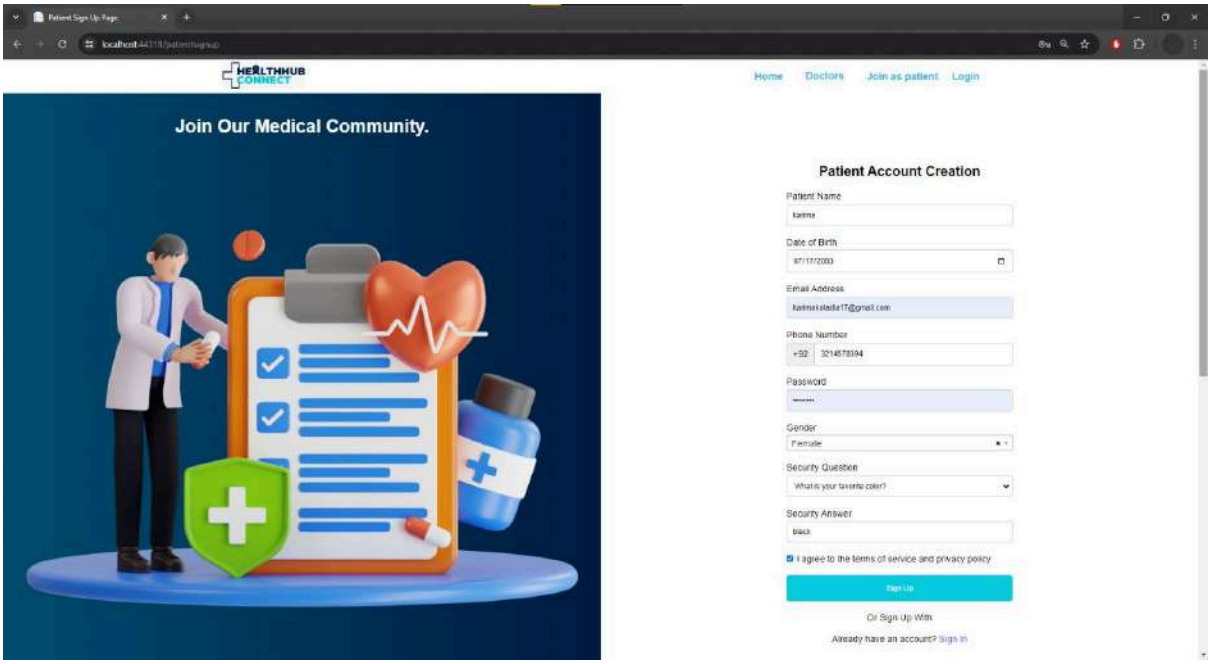


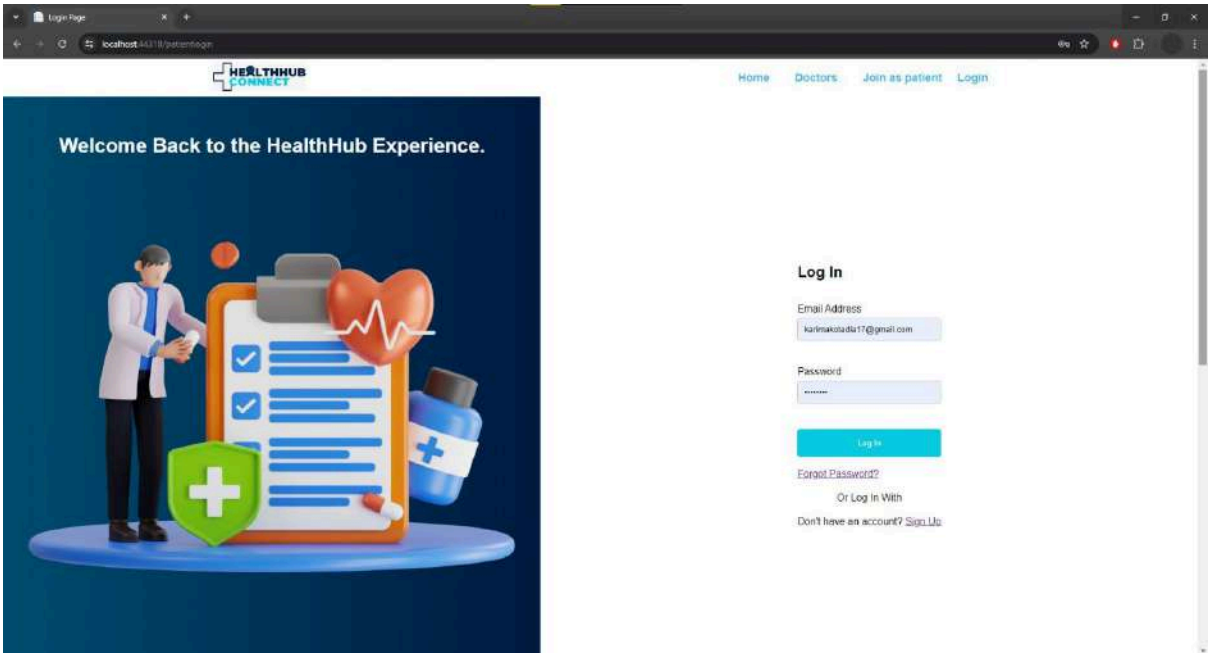
Use the Email and Password you set to log in and access your dashboard

Patient Sign-Up

Patients can sign up by providing their basic details and symptoms. This will help in recommending the most suitable doctors based on their location and medical needs.

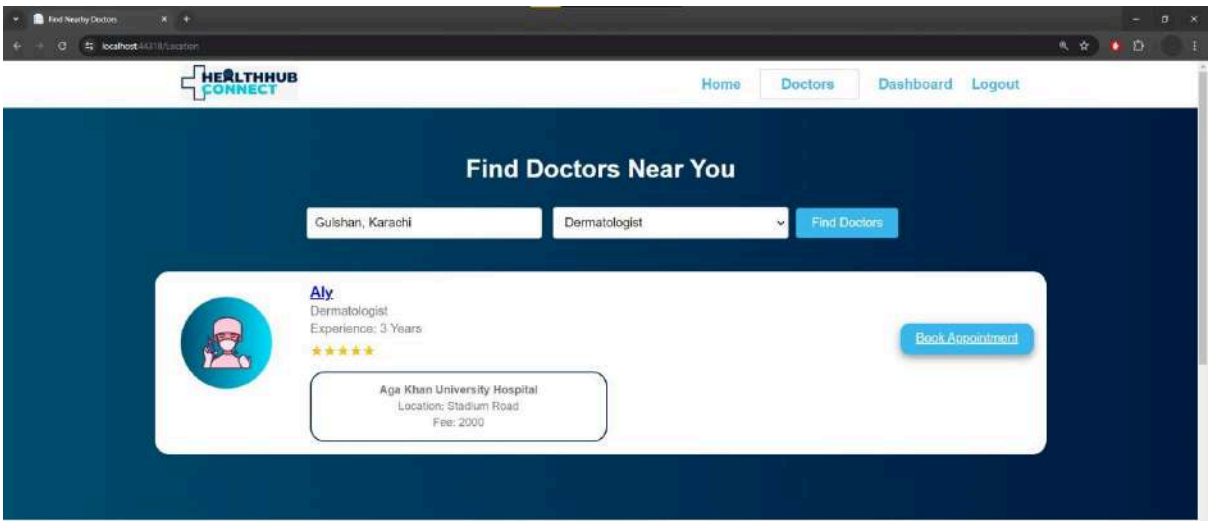

HEALTHHUB CONNECT
Home
Doctors
Join as Patient
Join as Doctor
Login
Get Recommendations
Receive personalized doctor recommendations based on your symptoms. Connect with the best healthcare providers in your area.

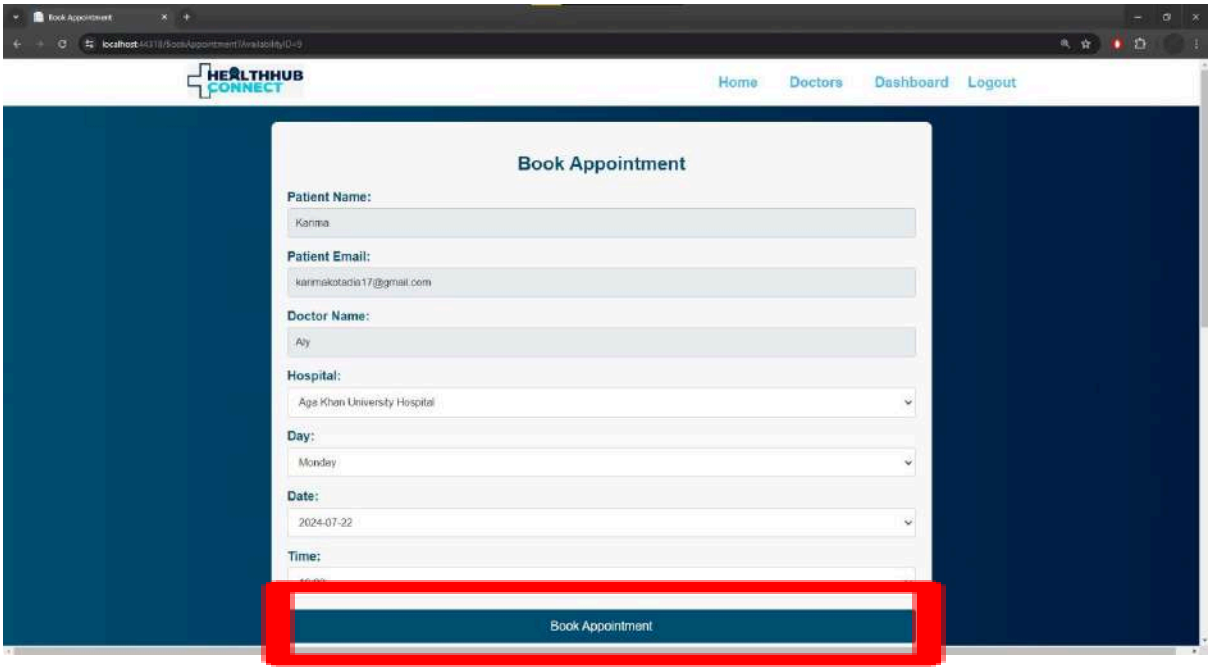

HEALTHHUB CONNECT
Home
Doctors
Join as patient
Login
Join Our Medical Community.
Patient Account Creation
Patient Name
Date of Birth
Email Address
Phone Number
Password
Gender
Security Question
Security Answer
I agree to the terms of service and privacy policy
Sign Up
Or Sign Up With
Already have an account? Sign in

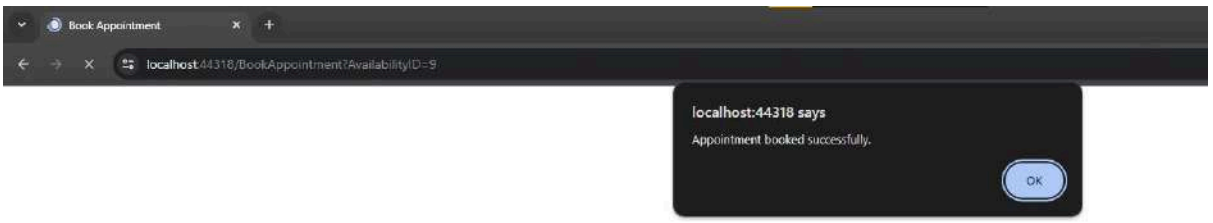


Booking an Appointment

Patients can book appointments by selecting a doctor and a suitable time slot from the available options. The system checks the doctor's availability and confirms the booking.

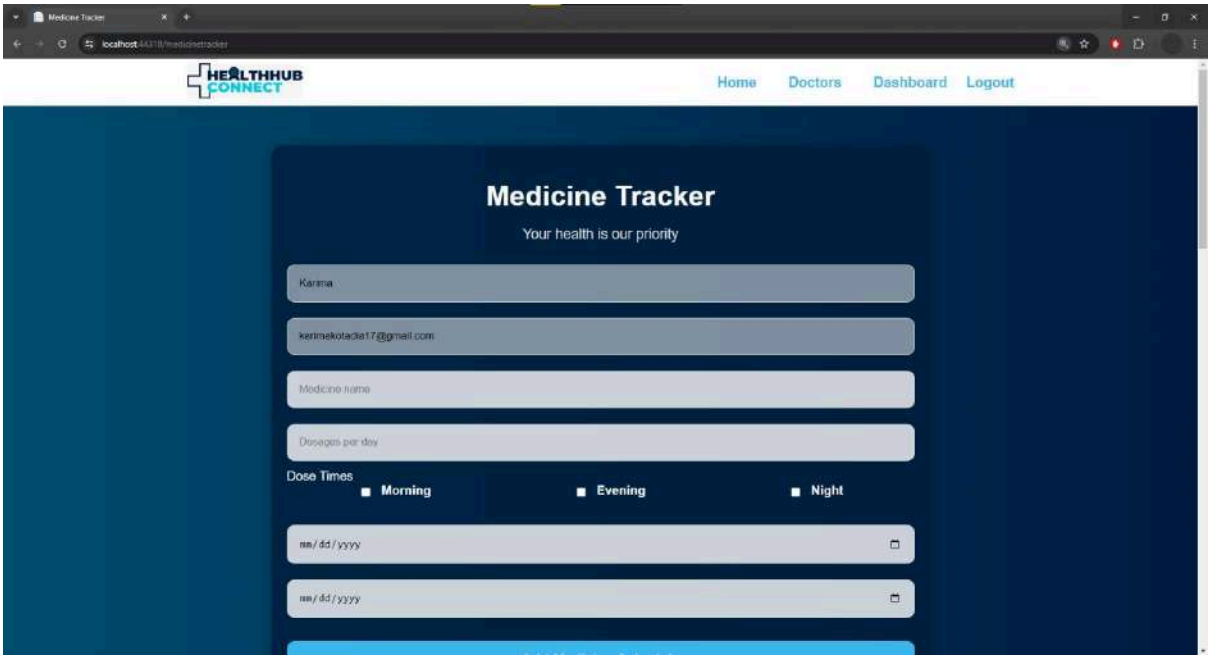


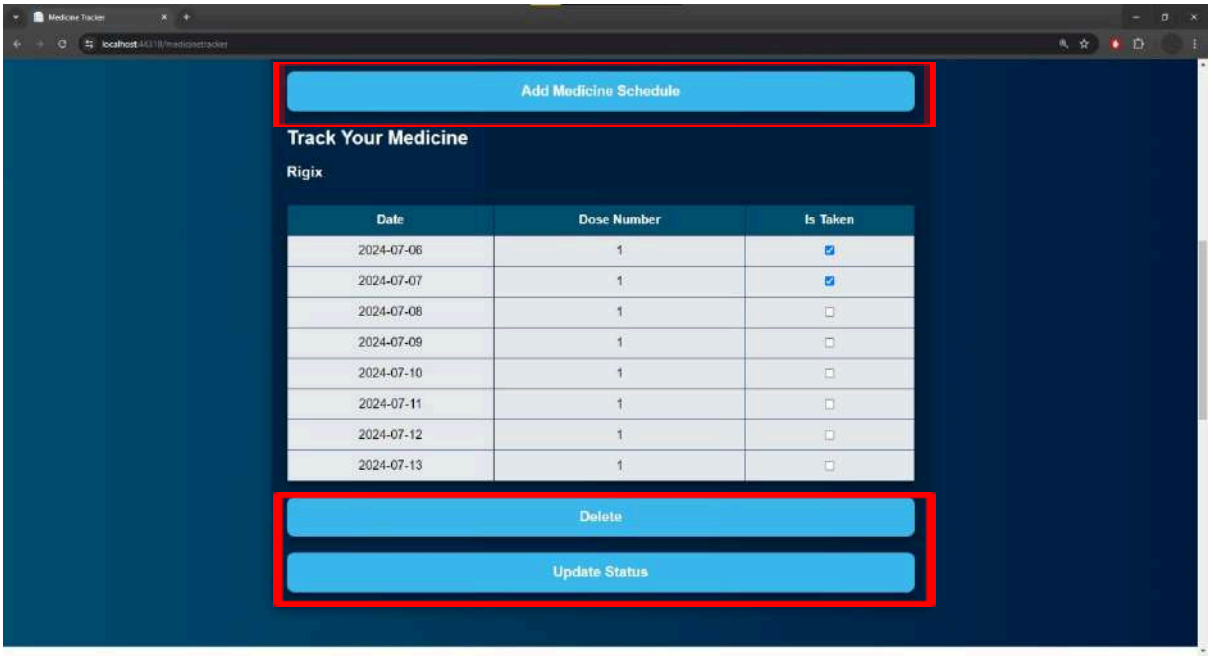




Medicine Tracking

Patients can track their medication schedules by entering details such as medicine name, dosage, start and end dates, and dose times (morning, evening, night). Daily reminders will be sent via email.





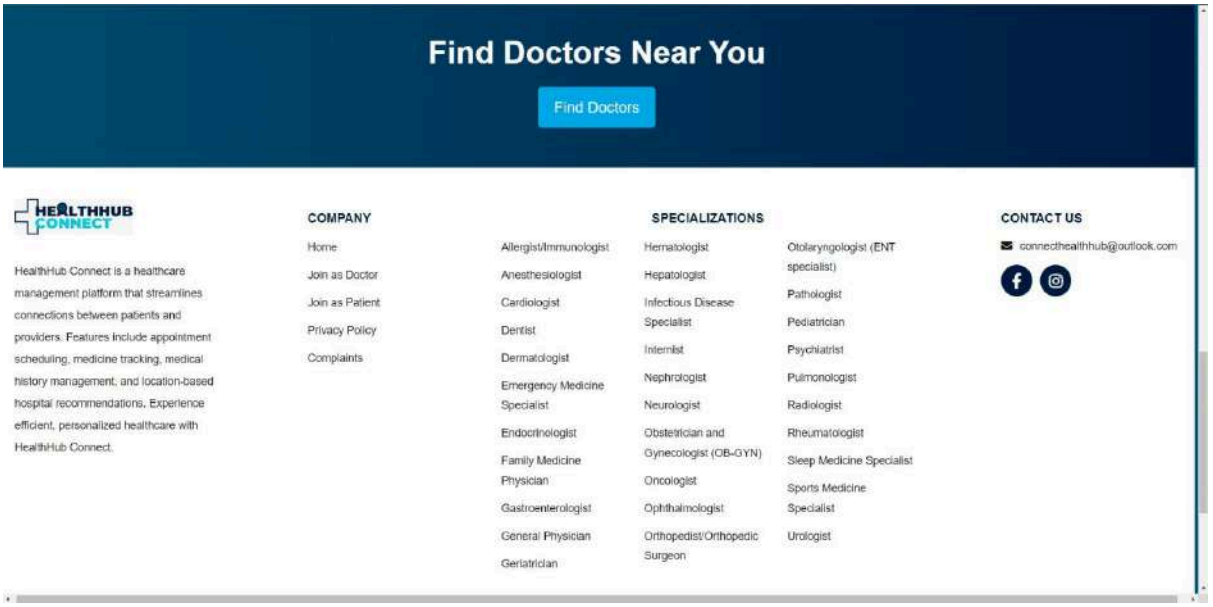
Enter all valid data in all the fields and click on add medicine schedule. To update the Status click on the “update status button after checking the boxes”. If you wish to delete the medication just click on Delete button.

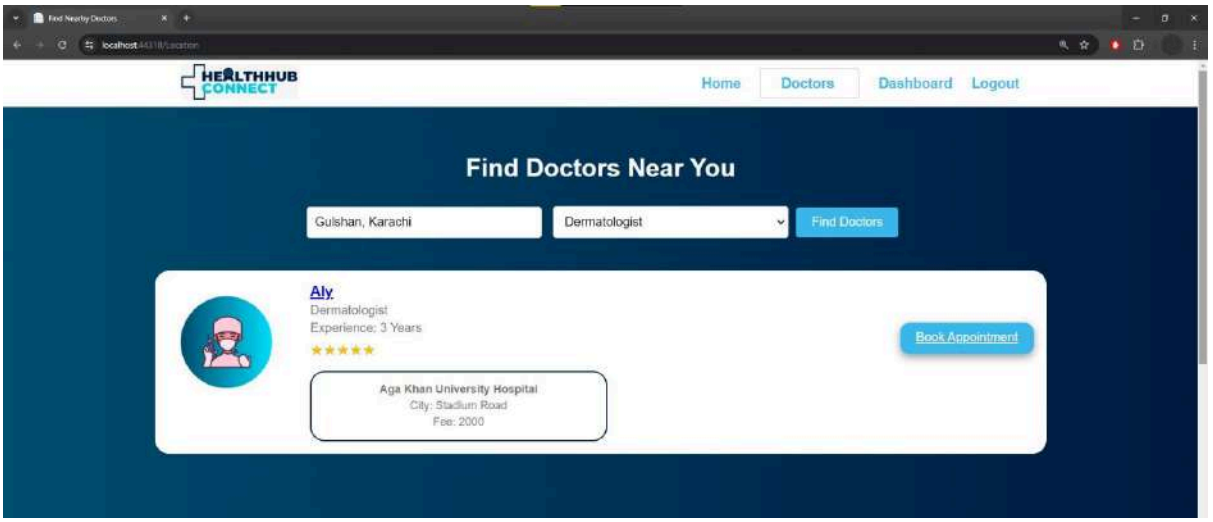
Medical History Upload

Patients can upload their medical reports in PDF format. Other information such as blood group, family diseases, and major surgeries can also be recorded.

Location-Based Hospital Search

Using the Google Maps API, patients can enter their location to find nearby hospitals. The system retrieves the latitude and longitude to provide accurate search results.

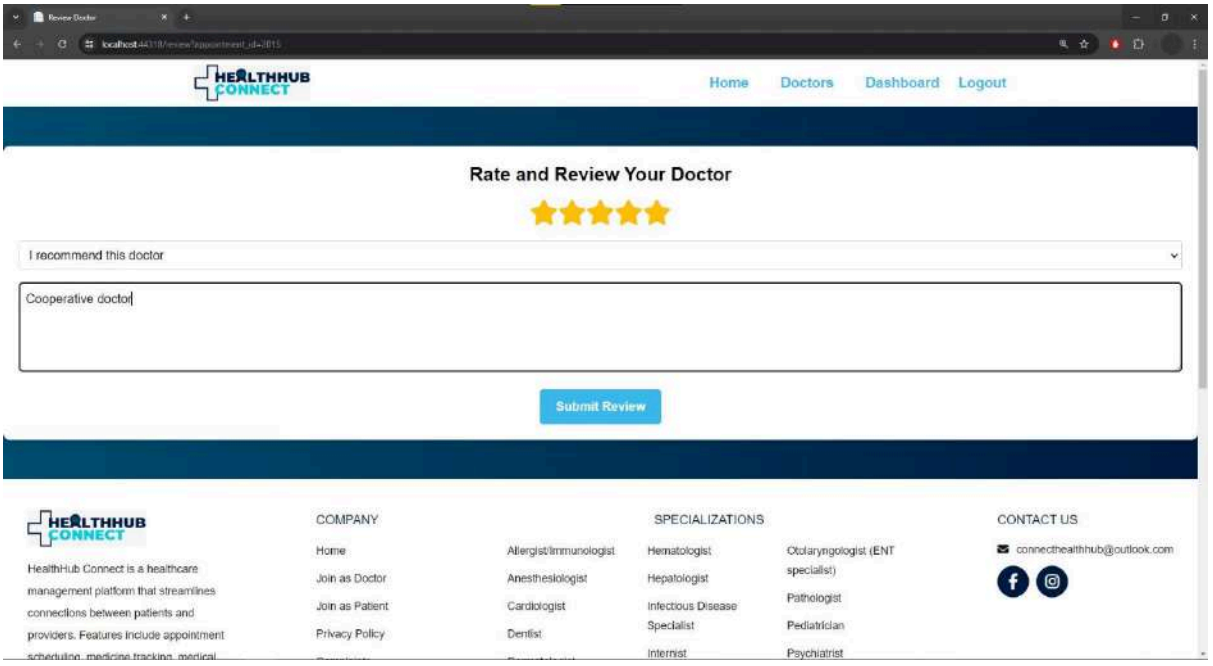




Review, Rating and Generate Invoice

Patients can review and rate their experience with doctors. This helps in maintaining quality and improving the overall service.


Previous Appointments
Serial Number
Doctor Name
Hospital Name
Appointment Date
Appointment Time
Invoice
Review
1
Umaid
Quaid-e-Azam International Hospital
2024-07-08
11:20
Download Invoice
Reviewed
2
Umaid
Quaid-e-Azam International Hospital
2024-07-08
11:00
Download Invoice
Review


HEALTHHUB CONNECT
Home
Doctors
Dashboard
Logout
Rate and Review Your Doctor
I recommend this doctor
Cooperative doctor
Submit Review
HEALTHHUB CONNECT
HealthHub Connect is a healthcare management platform that streamlines connections between patients and providers. Features include appointment
COMPANY
Home
Join as Doctor
Join as Patient
Privacy Policy
Allergist/Immunologist
Anesthesiologist
Cardiologist
Dentist
SPECIALIZATIONS
Hematologist
Hepatologist
Infectious Disease Specialist
Internist
Otolaryngologist (ENT specialist)
Pathologist
Pediatrician
Psychiatrist
CONTACT US
connecthealthhub@outlook.com

HEALTHHUB CONNECT

INVOICE

Invoice No.	2202407081120
Date	20/07/2024
Due Date	08/07/2024

Patient:	Karima
Hospital:	Quaid-e-Azam International Hospital
Doctor:	Umaid
Appointment Date:	08/07/2024
Appointment Time:	11:20

Description	Amount
Appointment Charges	2000
Subtotal	2000
Tax(5%)	100.00
Total	**2100.00**

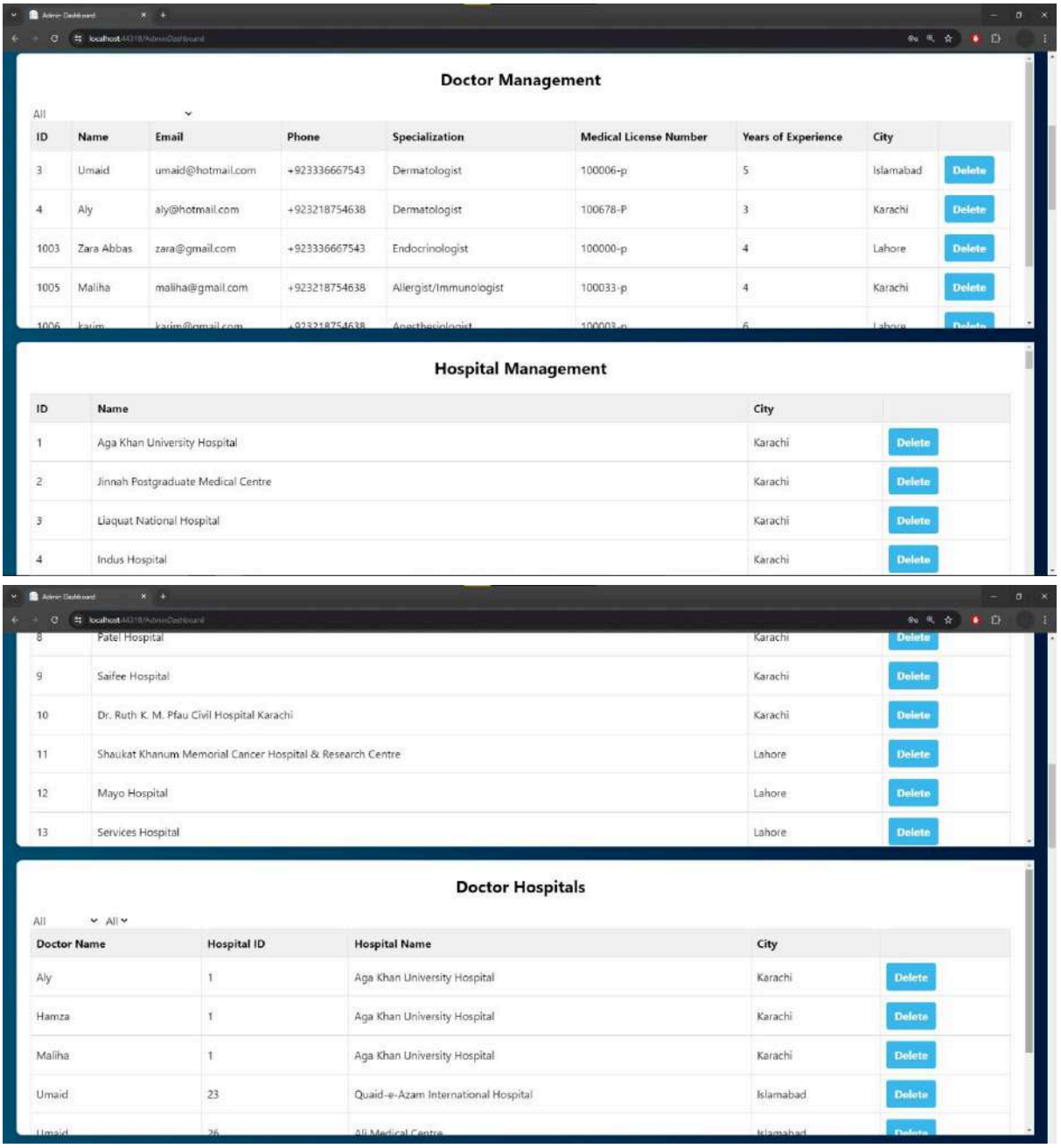
Making healthcare accessible and affordable.

connecthealthhub@outlook.com

4. Admin Dashboard

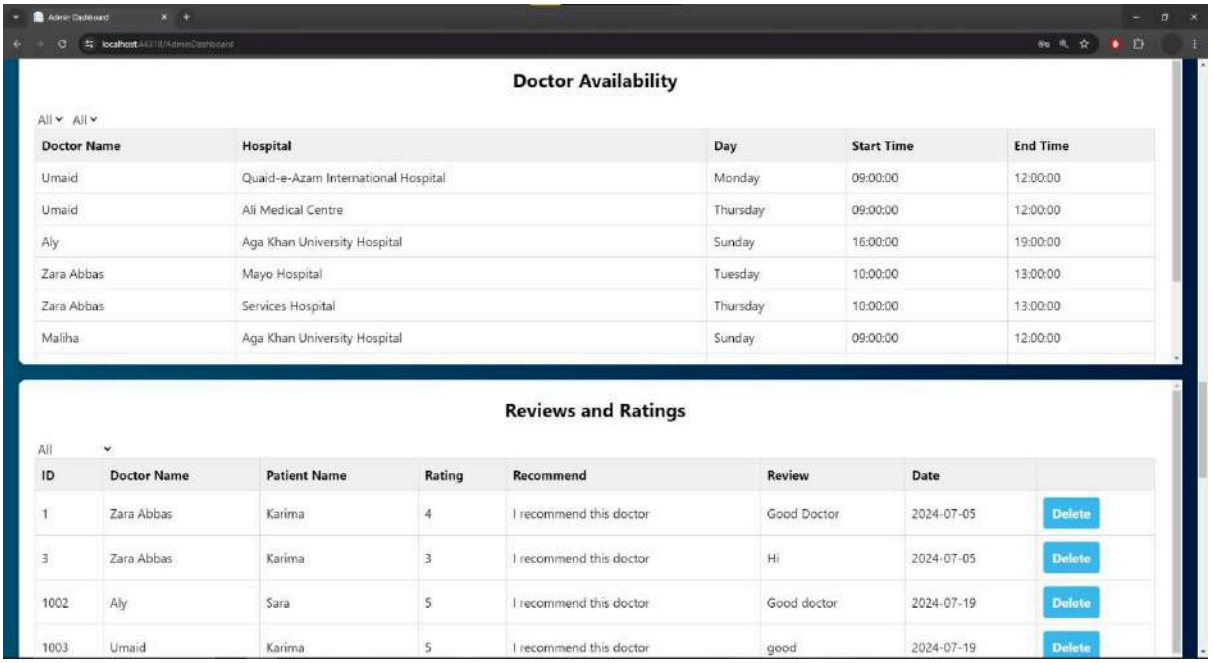
Viewing and Managing Doctors and Patients

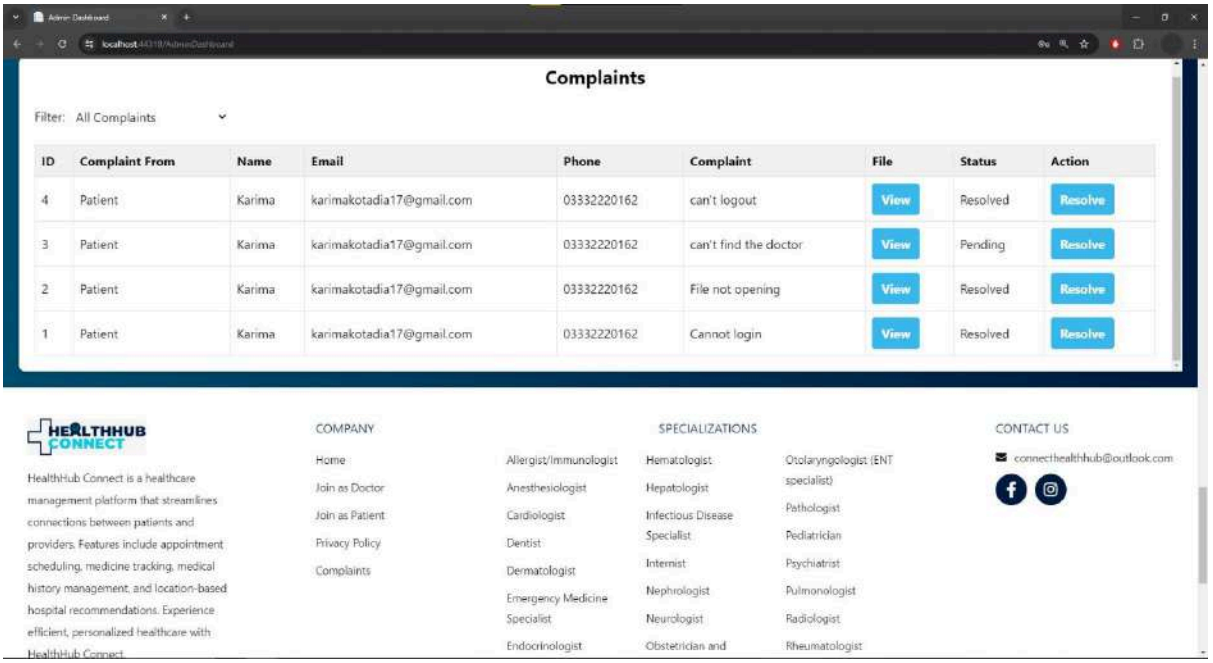
The admin can view, edit, and delete doctor and patient records. Doctors can also manage their profiles and view patient records associated with their appointments.


Doctor Management
All
ID Name Email Phone Specialization Medical License Number Years of Experience City
3 Umaid umaid@hotmail.com +923336667543 Dermatologist 100006-p 5 Islamabad Delete
4 Aly aly@hotmail.com +923218754638 Dermatologist 100678-P 3 Karachi Delete
1003 Zara Abbas zara@gmail.com +923336667543 Endocrinologist 100000-p 4 Lahore Delete
1005 Maliha maliha@gmail.com +923218754638 Allergist/Immunologist 100033-p 4 Karachi Delete
Hospital Management
ID Name City
1 Aga Khan University Hospital Karachi Delete
2 Jinnah Postgraduate Medical Centre Karachi Delete
3 Liaquat National Hospital Karachi Delete
4 Indus Hospital Karachi Delete

8 Patel Hospital Karachi Delete
9 Saifee Hospital Karachi Delete
10 Dr. Ruth K. M. Pfau Civil Hospital Karachi Karachi Delete
11 Shaukat Khanum Memorial Cancer Hospital & Research Centre Lahore Delete
12 Mayo Hospital Lahore Delete
13 Services Hospital Lahore Delete
Doctor Hospitals
All All
Doctor Name Hospital ID Hospital Name City
Aly 1 Aga Khan University Hospital Karachi Delete
Hamza 1 Aga Khan University Hospital Karachi Delete
Maliha 1 Aga Khan University Hospital Karachi Delete
Umaid 23 Quaid-e-Azam International Hospital Islamabad Delete

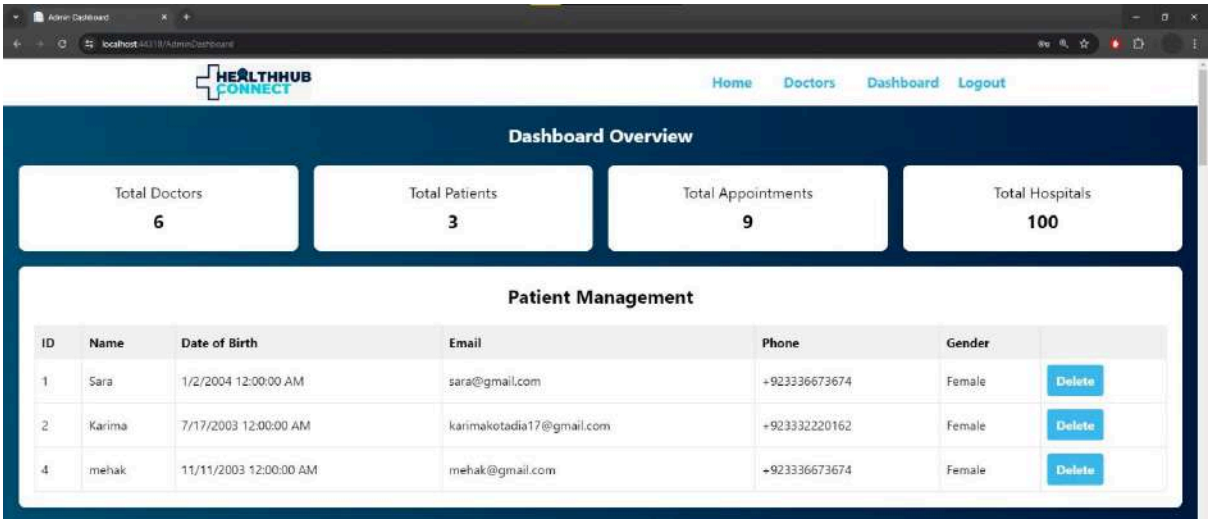

Add New Hospital
Hospital Name:
City:
Location:
Latitude:
Longitude:
Add Hospital


Doctor Availability
All All
Doctor Name | Hospital | Day | Start Time | End Time
Umaid | Quaid-e-Azam International Hospital | Monday | 09:00:00 | 12:00:00
Umaid | Ali Medical Centre | Thursday | 09:00:00 | 12:00:00
Aly | Aga Khan University Hospital | Sunday | 16:00:00 | 19:00:00
Zara Abbas | Mayo Hospital | Tuesday | 10:00:00 | 13:00:00
Zara Abbas | Services Hospital | Thursday | 10:00:00 | 13:00:00
Maliha | Aga Khan University Hospital | Sunday | 09:00:00 | 12:00:00
Reviews and Ratings
All
ID | Doctor Name | Patient Name | Rating | Recommend | Review | Date
1 | Zara Abbas | Karima | 4 | I recommend this doctor | Good Doctor | 2024-07-05 | Delete
3 | Zara Abbas | Karima | 3 | I recommend this doctor | Hi | 2024-07-05 | Delete
1002 | Aly | Sara | 5 | I recommend this doctor | Good doctor | 2024-07-19 | Delete
1003 | Umaid | Karima | 5 | I recommend this doctor | good | 2024-07-19 | Delete



Viewing Appointments

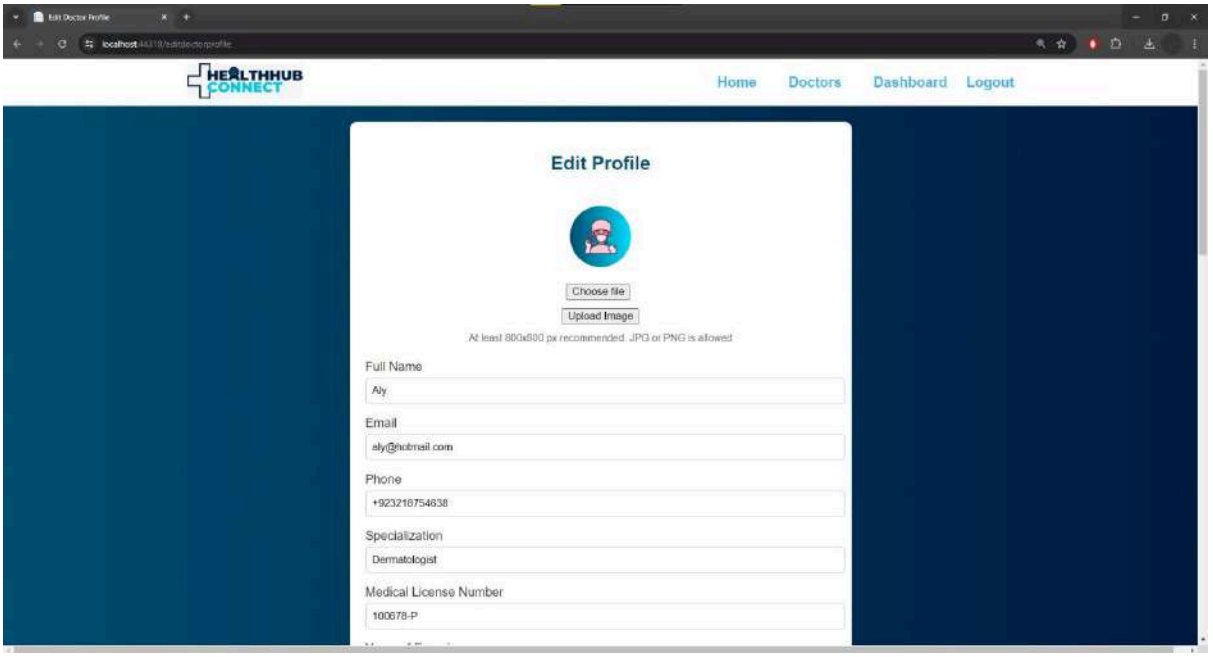
Both doctors and patients can view upcoming and previous appointments. Doctors can approve or reject appointments, and patients can see the status of their bookings.

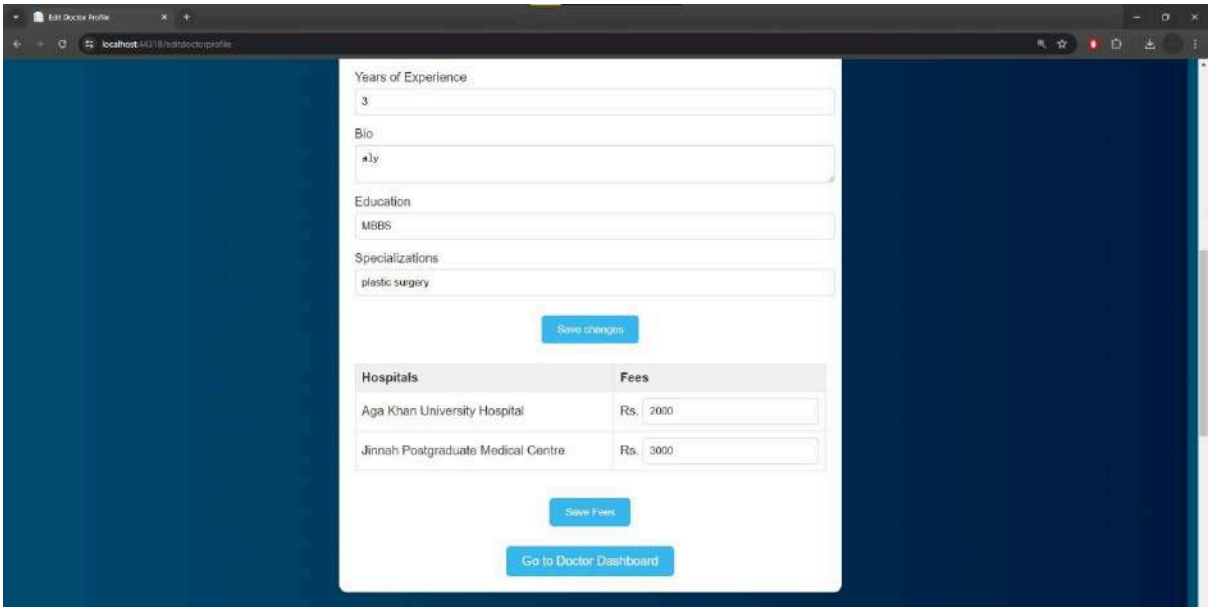


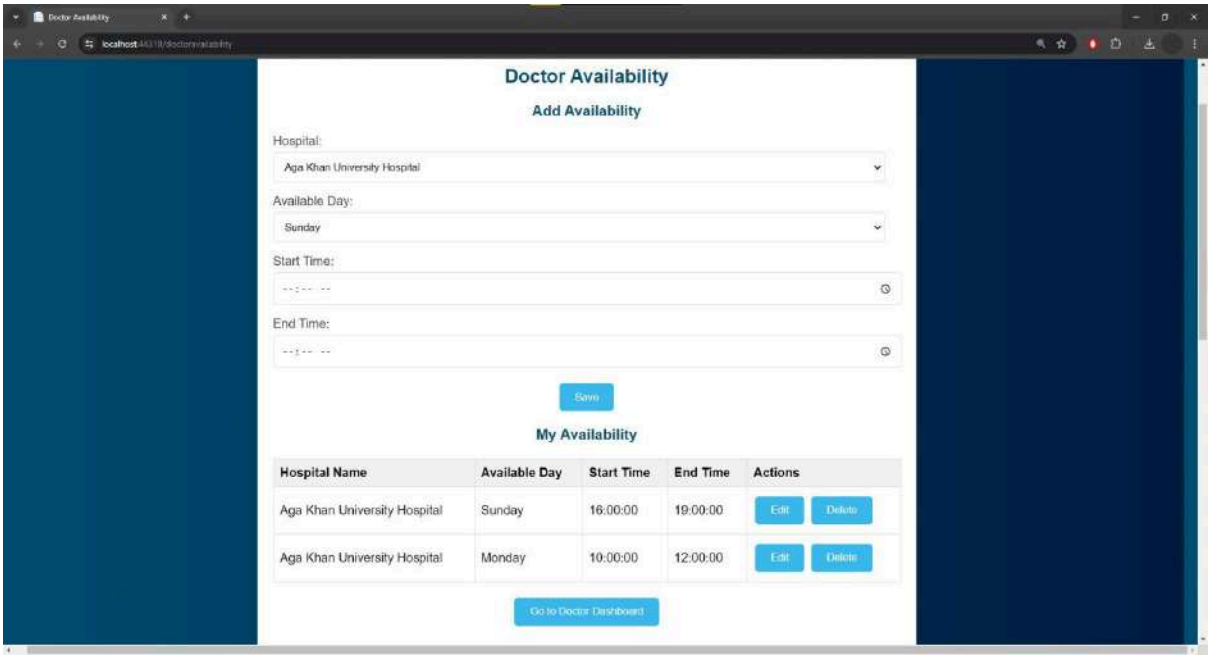
4.5. Doctor Dashboard

Editing Doctor Profiles

Doctors can update their profiles, including available days and times for each hospital. This ensures accurate information is displayed to patients booking appointments.

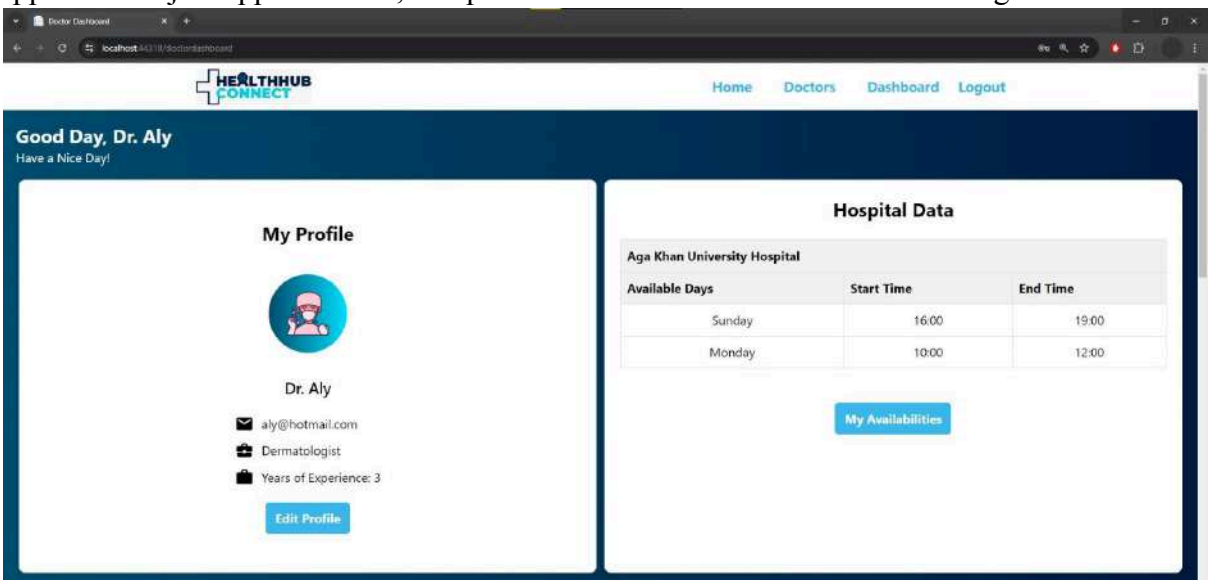

HEALTHHUB CONNECT
Home
Doctors
Dashboard
Logout
Edit Profile
Choose file
Upload Image
At least 800x800 px recommended. JPG or PNG is allowed
Full Name
Aly
Email
aly@hotmail.com
Phone
+923218754638
Specialization
Dermatologist
Medical License Number
100678-P

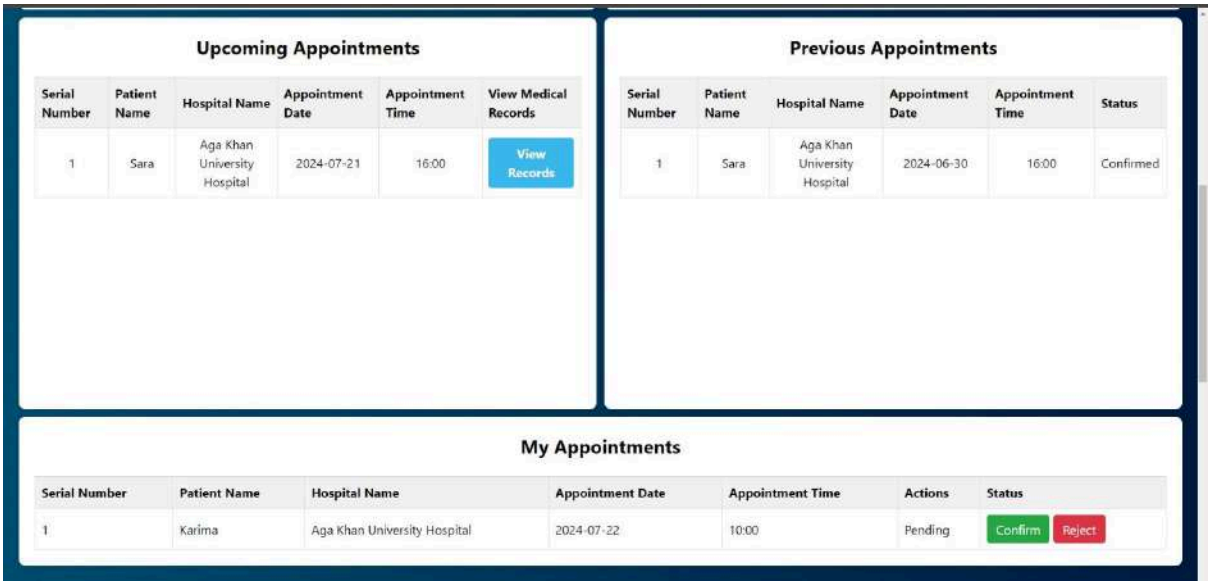

Years of Experience
3
Bio
aly
Education
MBBS
Specializations
plastic surgery
Save changes
Hospitals
Fees
Aga Khan University Hospital
Rs. 2000
Jinnah Postgraduate Medical Centre
Rs. 3000
Save Fees
Go to Doctor Dashboard



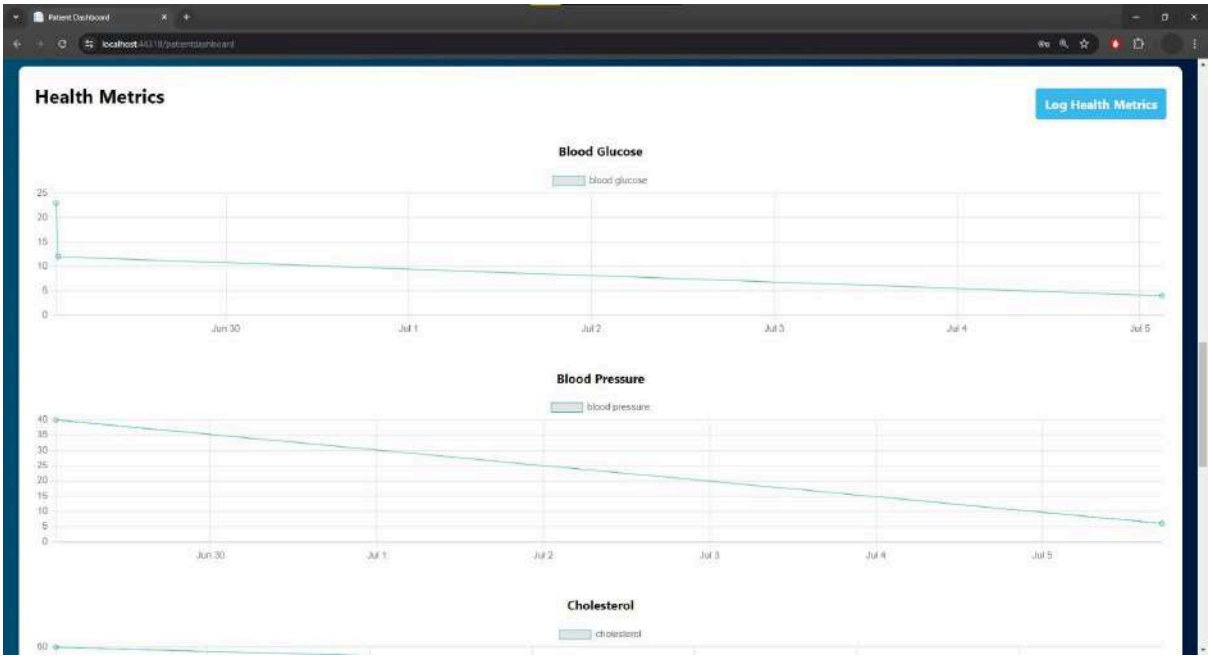
Viewing Appointments

Both doctors and patients can view upcoming and previous appointments. Doctors can approve or reject appointments, and patients can see the status of their bookings.



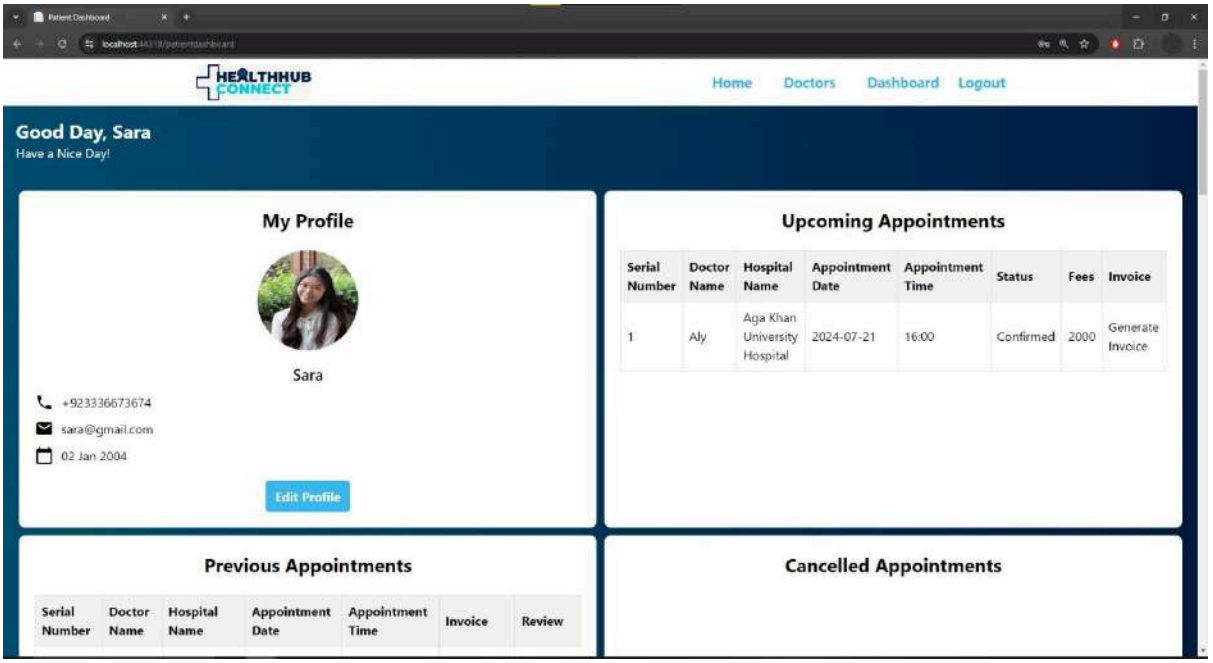


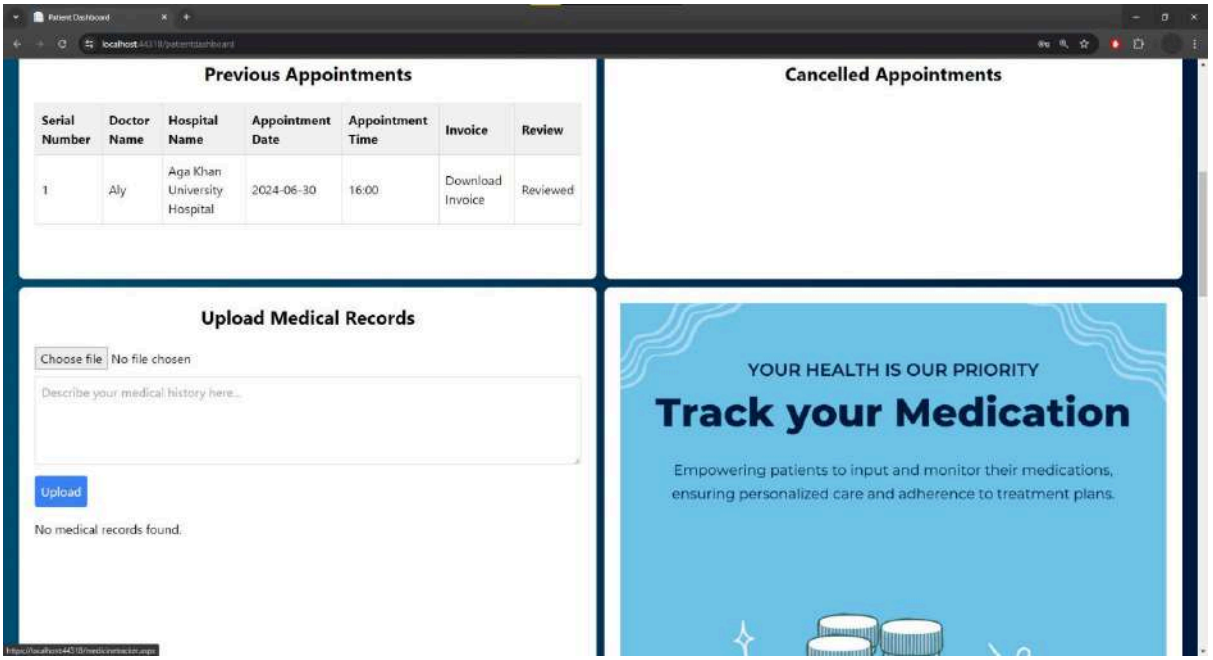
5. Patient Dashboard



Viewing Appointments

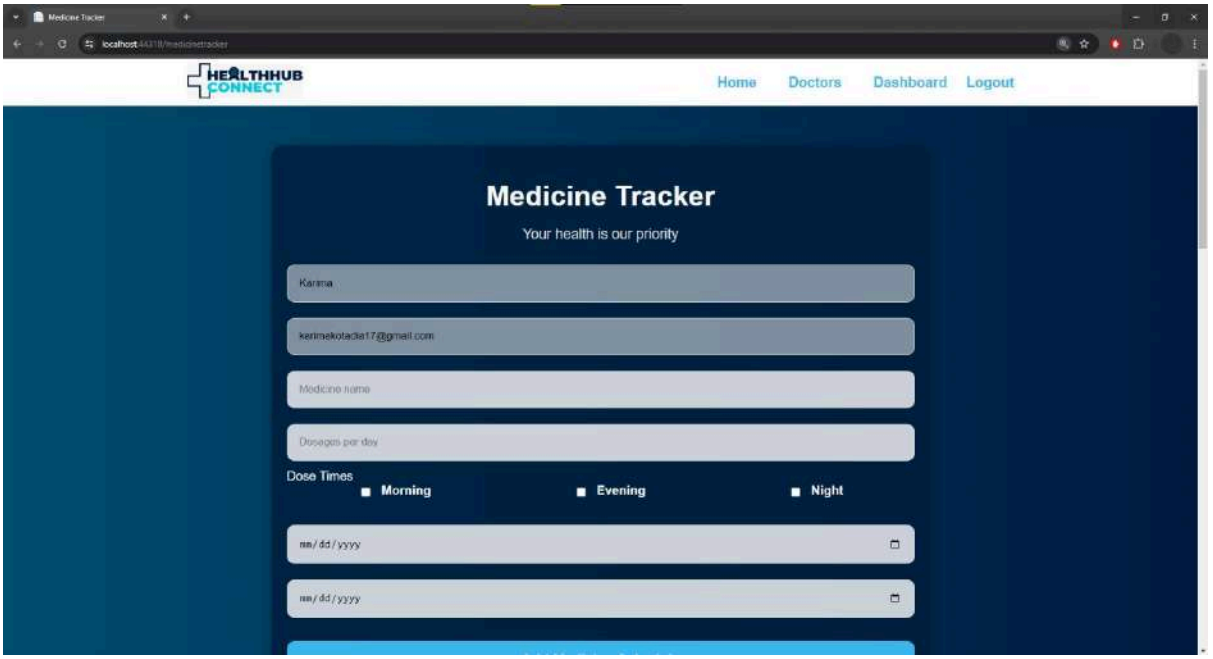
Patients can view their scheduled and previous appointments. The dashboard provides a comprehensive view of their interactions with doctors.

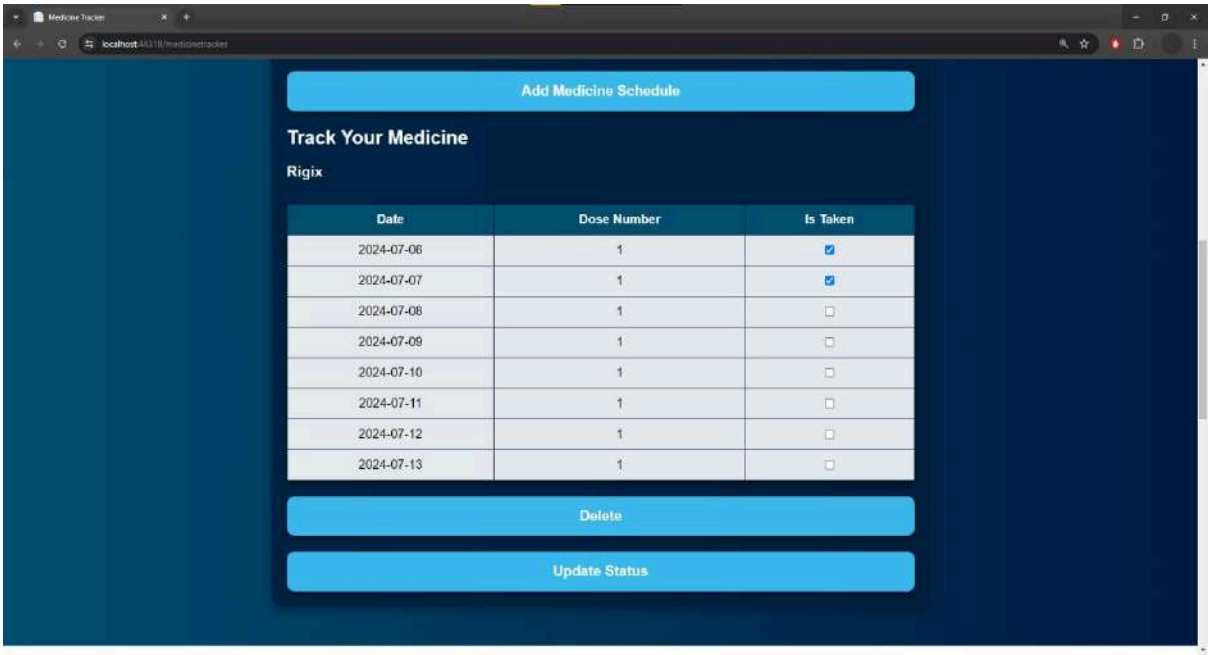




Medicine Tracking

The medicine tracking feature allows patients to view and update their medication schedules. The system sends reminders based on the entered details.



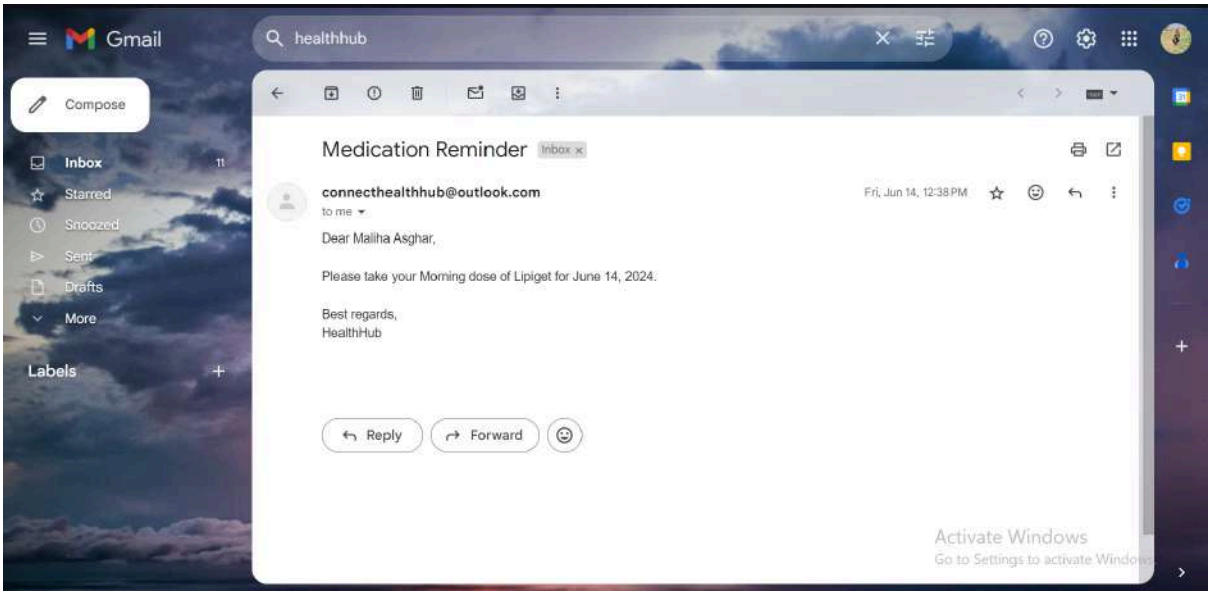


Medical History

Patients can upload and view their medical history, including medical reports and other relevant health information.

6. Notifications and Reminders

Health Hub Connect provides automated email notifications for appointment confirmations, cancellations, and medication reminders. This ensures patients stay informed and adhere to their schedules.



7. Technical Support

For any technical issues or support, users can contact our support team through the contact form on the website or via email at connecthealthhub@outlook.com

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A5. FLYER & POSTER DESIGN

A6. COPY OF EVALUATION COMMENTS

COPY OF EVALUATION COMMENTS BY SUPERVISOR FOR PROJECT – I MID SEMESTER EVALUATION

Yusra Mansoor	S-2008 Rapid Receipt	Overall good
Noor Ali	S-2012 Alumni Connect	Overall good understanding of the project and the team is
Engr. Asif Raifq	S-2022 Cancer Sense	Students are trying hard but they need to concentrate more on
saeed ahmed	S-2029 Convo Genius	This group is very punctual and good
Dr. Ahmad Bilal	S-2030 Techiemation	Students need to work on NLP (theoretical concept and
Dr. Ahmad Bilal	S-2033 Customer Sentiment Analysis	Student need to earn more knowledge about role of NLP in
sumeera hashmi	S-2035 Digital Prose- (S-2035)	they are not exceeding in their domain
Noor Ali	S-2037 EASY WEDDING	Ok progress.
Huma Jamshed	S-2041 CConnect	None
Dr. Najeeb ur Rehman	S-2042 HealthHub Connect	Excellent
Yusra Mansoor	S-2044 Oracle Fusion cloud human	Overall progress is good.
raazia sosan	S-2054 SyncPulse CRM	ok
Arifa Mustafa	S-2061 Human Resource Automation	Students are on track. They need the same dedication in
Tehniyat mirza	S-2062 University chatter	Students are motivated and responsible.
Mobin Idrees	S-2065 Insighta	The progress is satisfactory.
Zahid Hussain	S-2070 ChatDSU	Group coordination is weak

COPY OF EVALUATION COMMENTS BY SUPERVISOR FOR PROJECT – I END SEMESTER EVALUATION

Yusra Mansoor	S-2008 Rapid Receipt	Overall good
Noor Ali	S-2012 Alumni Connect	Overall good understanding of the project and the team is
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sumeera hashmi	S-2035 Digital Prose- (S-2035)	they are not exceeding in their domain
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Tehniyat mirza	S-2062 University chatter	Students are motivated and responsible.
Mobin Idrees	S-2065 Insighta	The progress is satisfactory.
Zahid Hussain	S-2070 ChatDSU	Group coordination is weak

COPY OF EVALUATION COMMENTS BY JURY FOR PROJECT – I END SEMESTER EVALUATION

S-2029 Convo Genius	0	1	2	Strong Accept
S-2030 Techiemation	0	0	3	Strong Accept
S-2033 Customer Sentiment Analysis through Voice Recog	2	0	0	Re-Evaluate
S-2035 Digital Prose- (S-2035)	0	0	2	Strong Accept
S-2037 EASY WEDDING	0	0	3	Strong Accept
S-2041 CConnect	0	1	2	Strong Accept
S-2042 HealthHub Connect	0	1	2	Strong Accept
S-2044 Oracle Fusion cloud human capital management (H	0	1	2	Strong Accept
S-2054 SyncPulse CRM	0	0	3	Strong Accept
S-2061 Human Resource Automation Using Artificial Intelli	0	2	0	Weak Accept
S-2062 University chatter	0	0	3	Strong Accept
S-2065 Insighta	0	1	1	Weak Accept
S-2070 ChatDSU	0	1	2	Strong Accept

2034	P-2034 Tellfeed	1. No novel approach was found in this project because it seems that students didn't carryout proper gape analysis and literature review rather it seemed that they are doing the same thing which has already been done by most of the social media platforms. 2. It is therefore decided by all jury members that they must bring some innovation in order to get the true spirit of FYP.
2034	P-2034 Tellfeed	No uniqueness in the application.
2036	R-2036 Kidsâ€™ Emotion Recognition Using Convolutional Neural Networks	Students need to work on Algorithm understanding
2038	P-2038 Posture4U.AI	The progress made so far is minimal, no datasets were collected, additionally, it appears to be falling far behind FYP-I plan, Overall Idea and presentation was good but didn't delivered 30% of the project.
2039	P-2039 BotFX	Students need to understand role of ML in project
2041	S-2041 CConnect	1. Commodity must be limited 2. Validity & Credibility issues persist regarding service providers (Plumbers/Carpenter/electrician etc)
2041	S-2041 CConnect	Scope should be limited considering the risk factor associated with sending people at home.
2041	S-2041 CConnect	Security issue is not resolved
2042	S-2042 HealthHub Connect	Limited novelty. Consider adding more features
2043	P-2043 Advanced security system	No work has been on the identification of the object.

COPY OF EVALUATION COMMENTS BY SUPERVISOR FOR PROJECT – II MID SEMESTER EVALUATION

Yusra Mansoor	S-2008 Rapid Receipt	Overall good
Noor Ali	S-2012 Alumni Connect	Overall good understanding of the project and the team is
Engr. Asif Raifq	S-2022 Cancer Sense	Students are trying hard but they need to concentrate more on
saeed ahmed	S-2029 Convo Genius	This group is very punctual and good
Dr. Ahmad Bilal	S-2030 Techiemation	Students need to work on NLP (theoretical concept and
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COPY OF EVALUATION COMMENTS BY SUPERVISOR FOR PROJECT – II END SEMESTER EVALUATION

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Noor Ali	S-2012 Alumni Connect	Overall good understanding of the project and the team is
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Arifa Mustafa	S-2061 Human Resource Automation	Students are on track. They need the same dedication in
Tehniyat mirza	S-2062 University chatter	Students are motivated and responsible.
Mobin Idrees	S-2065 Insighta	The progress is satisfactory.
Zahid Hussain	S-2070 ChatDSU	Group coordination is weak

A7. MEETINGS' MINUTES

FYP Project Meeting # 1

Minutes of Meeting

Meeting Date: 10/11/2023
Meeting Location: Google Meet
Meeting Time: 2:00 – 2:30

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Give the General idea about the project
- Review documentation

3- Agenda Points discussed in meeting

In the meeting, we presented a comprehensive overview of the project, covering its initiation, goals, and objectives. We discussed specific details such as the database schema, UI/UX design, and system architecture. Progress in backend development, focusing on SQL implementation and appointment scheduling logic, was highlighted. Progress in user authentication, recommendation system development, and modules for patients, doctors, and administrators was discussed. Plans for integration and system testing, user training, and documentation were shared. The meeting aimed to ensure project alignment with the supervisor's expectations and obtain necessary approvals.

4- Action List

- Complete the documentation
- Prepare for the defense presentation

5- Next Meeting for this project

23-11-2023 at 2:00 pm SF-234

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 2

Minutes of Meeting

Meeting Date: 23/11/2023
Meeting Location: SF-234
Meeting Time: 2:00 – 2:30

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Clarify queries concerning the evaluation
- Review presentation and proposal defense

3- Agenda Points discussed in meeting

During the meeting, the team sought clarification on various aspects of the project evaluation, ensuring a thorough understanding of the university's criteria. The supervisor patiently addressed queries, providing valuable insights to meet the evaluation requirements effectively. Subsequently, the team presented the project proposal and defense, and the supervisor conducted a detailed review. Constructive feedback was shared, focusing on refining the presentation and enhancing the proposal's clarity.

4- Action List

- Add ERD in the presentation
- Collect relevant datasets

5- Next Meeting for this project

04-12-2023 at 3:00 pm room SF-234

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 3

Minutes of Meeting

Meeting Date: 04/12/2023
Meeting Location: SF-234
Meeting Time: 3:00 – 3:30

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Discuss the project reevaluation after defense presentation
- Debate on what new features to add

3- Agenda Points discussed in meeting

After our project proposal defense presentation, there was a reevaluation phase as the jury highlighted a need for additional features. We had a constructive discussion with our supervisor to address this feedback. He suggested reaching out to the jury to gather insights into the specific requirements they were looking for. Following this advice, we communicated with the jury and proposed the integration of a symptom-based recommender system. This addition aimed to enhance the user experience by providing personalized doctor recommendations based on reported symptoms. Simultaneously, we decided to exclude the chatbot from the project scope to streamline development efforts. The meeting was collaborative, and our supervisor's guidance played a crucial role in shaping our response to the feedback, leading to a more refined and impactful project plan.

4- Action List

- Contact jury for clarifications
- Refine the project scope

5- Next Meeting for this project

18-12-2023 at 2:00 pm room SF-234

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 4

Minutes of Meeting

Meeting Date: 18/12/2023
Meeting Location: SF-234
Meeting Time: 2:00 – 2:30

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Review and talk about how the recently added features will be implemented in the project

3- Agenda Points discussed in meeting

In the meeting, we extensively discussed the implementation plan for the newly added features in the project. Our focus was on understanding how these features, particularly the symptom-based recommender, would be integrated into the existing system. We delved into the technical aspects, ensuring a seamless and efficient incorporation that aligns with the overall project goals. The discussion also touched upon any potential challenges and how the team plans to address them during the implementation phase. The supervisor provided valuable insights and guidance, ensuring that the new features enhance the project's functionality and align with the project's objectives.

4- Action List

- Understand technical implementation of these features

5- Next Meeting for this project

01-01-2024 at 2:00 pm room SF-234

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 5

Minutes of Meeting

Meeting Date: 01/01/2024
Meeting Location: SF-234
Meeting Time: 2:00 – 2:30

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Clarify queries concerning SRS and SDS
- Review the advancement of the project.

3- Agenda Points discussed in meeting

In the meeting, we discussed and clarified any questions related to the Software Requirements Specification (SRS) and System Design Specification (SDS). The team addressed concerns raised by the supervisor regarding specific requirements and design elements. Additionally, we provided updates on the overall progress of the project, highlighting key milestones achieved and potential challenges encountered. The supervisor provided valuable feedback and suggestions, ensuring alignment with the project objectives and specifications.

4- Action List

- Start working on SDS and SRS
- Begin working on UI/UX Design

5- Next Meeting for this project

18-01-2024 at 3:00 pm room SF-234

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 6

Minutes of Meeting

Meeting Date: 18/01/2024
Meeting Location: SF-234
Meeting Time: 3:00 – 3:30

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Review UI/UX diagram
- Track SDS and SRS progress

3- Agenda Points discussed in meeting

During our recent meeting, the focus was on evaluating the User Interface (UI) and User Experience (UX) diagrams, seeking alignment with the project's vision and user needs. The team presented design elements, interactive features, and navigation flow, incorporating valuable feedback from the supervisor to enhance the user journey. Transitioning to tracking the progress of the System Design Specification (SDS) and Software Requirements Specification (SRS), the team provided updates on various sections' completion status, addressing challenges and proposing solutions. The discussion clarified design decisions and adjustments needed based on evolving project requirements.

4- Action List

- Complete SDS and SRS documentation

5- Next Meeting for this project

23-01-2024 at 2:00 pm Google Meet

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 7

Minutes of Meeting

Meeting Date: 23/01/2024
Meeting Location: Google Meet
Meeting Time: 2:00 – 2:30

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Discuss mid evaluation requirements
- Review SRS and SDS

3- Agenda Points discussed in meeting

During the meeting, the team engaged in a thorough discussion regarding the mid-evaluation requirements set by the university. The supervisor provided insights and recommendations to ensure the project's alignment with these criteria. Additionally, the team presented the Software Requirements Specification (SRS) and System Design Specification (SDS) documents for review. The supervisor offered constructive feedback, emphasizing clarity, completeness, and the need for precise alignment with project objectives. The interactive session allowed for a comprehensive understanding of the project's current status and provided valuable guidance for further enhancements in both project execution and documentation.

4- Action List

- Complete the working of SDS and SRS with a few changes
- Start working on frontend

5- Next Meeting for this project

26-01-2024 at 3:00 pm room SF-234

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 8

Minutes of Meeting

Meeting Date: 26/01/2024
Meeting Location: SF-234
Meeting Time: 3:00 – 4:00

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Mid evaluation

3- Agenda Points discussed in meeting

In our mid-evaluation meeting with our supervisor for Healthhub Connect, we engaged in a comprehensive discussion covering various aspects of our project's progress. Our supervisor actively questioned us on different facets of the project, probing into the intricacies of our development process and the challenges we faced. Specifically, he reviewed the frontend UI/UX design, offering valuable feedback on its usability and visual appeal. Additionally, the supervisor meticulously examined the Software Requirements Specification (SRS) and Software Design Specification (SDS) documents, ensuring they were aligned with the project's objectives and scope. Throughout the meeting, we collaboratively addressed queries concerning the evaluation criteria and process, seeking to enhance the project's quality and adherence to standards. Overall, the session served as a constructive platform for refining our project trajectory and aligning it with academic and industry expectations.

4- Action List

- Keep working on frontend

5- Next Meeting for this project

08-02-2024 at 5:00 pm on Google Meet

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 9

Minutes of Meeting

Meeting Date: 8/02/2024
Meeting Location: Google Meet
Meeting Time: 5:00 – 5:30

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Discuss queries regarding mid evaluation by jury
- Discuss presentation requirements

3- Agenda Points discussed in meeting

In the recent session with our supervisor, we focused on two main agenda points: queries regarding the mid-evaluation by the jury and presentation requirements. We discussed potential questions that the jury might raise during the mid-evaluation and strategized on how to address them effectively. Our supervisor provided valuable insights into anticipating and preparing for various inquiries related to project methodology, outcomes, and future prospects. Additionally, we reviewed the requirements for the upcoming presentation, ensuring that all necessary information and visuals are included to convey the project's progress, achievements, and future plans concisely. We discussed the structure of the presentation, allocating sufficient time for each section, and incorporating interactive elements to engage the audience effectively. Overall, the session was instrumental in refining our approach to both the mid-evaluation and the presentation

4- Action List

- Prepare for all possible questions that may be asked by jury
- Prepare Presentation

5- Next Meeting for this project

27-02-2024 at 3:00 pm on Google Meet

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 10

Minutes of Meeting

Meeting Date: 27/02/2024
Meeting Location: Google Meet
Meeting Time: 3:00 – 4:00

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Review Presentation
- Deliver Presentation for practise

3- Agenda Points discussed in meeting

During the meeting for the Review Presentation of our Healthhub Connect project with our supervisor, we discussed various agenda points to ensure the effectiveness of our upcoming presentation. We deliberated on refining the presentation content to cover all essential aspects comprehensively and discussed the structure to ensure a logical flow of information. Afterward, we engaged in a practice session where team members delivered the presentation, allowing us to simulate the actual presentation scenario and receive valuable feedback. We also discussed how to incorporate this feedback to improve the presentation's clarity and effectiveness. Lastly, we prepared for potential questions from the supervisor by anticipating inquiries related to project implementation, outcomes, and future milestones.

4- Action List

- Work on the deliverance of the Presentation

5- Next Meeting for this project

20-03-2024 at 3:00 pm on Google Meet

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 11

Minutes of Meeting

Meeting Date: 20/03/2024
Meeting Location: Google Meet
Meeting Time: 3:00 – 4:00

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Backend Development
- Implement Database Structure

3- Agenda Points discussed in meeting

- Reviewed the progress on backend development, focusing on the implementation of the database structure.
- Discussed the schema design and any challenges faced during development.
- Planned the next steps to ensure the database structure aligns with project requirements.

4- Action List

- Finalize and test the database schema
- Document the database structure for future reference

5- Next Meeting for this project

08-04-2024 at 2:00 pm on Google Meet

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 12

Minutes of Meeting

Meeting Date: 08/04/2024
Meeting Location: Google Meet
Meeting Time: 2:00 – 3:00

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Integration and Testing
- Start work on the take appointment feature

3- Agenda Points discussed in meeting

- Evaluated the integration process of various modules and conducted initial testing.
- Began development on the appointment scheduling feature, discussing the logic and user interface requirements.
- Identified potential issues and planned solutions for a smooth integration.

4- Action List

- Complete integration testing
- Develop and test the appointment scheduling feature

5- Next Meeting for this project

22-04-2024 at 3:00 pm room SF-234

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 13

Minutes of Meeting

Meeting Date: 22/04/2024
Meeting Location: Room SF-234
Meeting Time: 3:00 – 4:00

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Start developing patient and doctor module
- Implement ‘Doctors Near You’ feature

3- Agenda Points discussed in meeting

- Discussed the initial development of the patient and doctor modules, focusing on key functionalities and user interface design.
- Planned the integration of the 'Doctors Near You' feature, leveraging GPS to locate nearby healthcare providers.
- Identified the technical requirements and potential challenges in implementing these features.

4- Action List

- Develop and test the patient and doctor modules
- Integrate and test the 'Doctors Near You' feature

5- Next Meeting for this project

06-05-2024 at 2:00 pm on Google Meet

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 14

Minutes of Meeting

Meeting Date: 06/05/2024
Meeting Location: Google Meet
Meeting Time: 2:00 – 3:00

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Integration and Testing
- Start Working on User Manual

3- Agenda Points discussed in meeting

- Reviewed the progress of integrating different modules into the main system.
- Conducted extensive testing to identify any issues and ensure seamless functionality.
- Discussed the creation of a comprehensive user manual to assist users in navigating the system.

4- Action List

- Continue integration testing
- Resolve any identified issues
- Begin drafting the user manual

5- Next Meeting for this project

20-05-2024 at 1:00 pm room SF-234

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 15

Minutes of Meeting

Meeting Date: 20/05/2024
Meeting Location: Room SF-234
Meeting Time: 1:00 – 2:00

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Mid Evaluation

3- Agenda Points discussed in meeting

- Conducted a mid-evaluation of the project's progress, focusing on key deliverables and milestones.
- Discussed feedback from the mid-evaluation review, identifying areas for improvement.
- Planned the next steps to address any issues and enhance the project's development.

4- Action List

- Implement feedback from the mid-evaluation
- Continue working on pending tasks

5- Next Meeting for this project

10-06-2024 at 3:00 pm on Google Meet

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 16

Minutes of Meeting

Meeting Date: 10/06/2024
Meeting Location: Google Meet
Meeting Time: 3:00 – 4:00

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Start working on recommendation system

3- Agenda Points discussed in meeting

- Began development of the symptom-based recommendation system.
- Discussed the algorithm and data sources required to implement an effective recommendation system.
- Planned the integration of the recommendation system with the existing modules.

4- Action List

- Develop and test the recommendation system
- Integrate the recommendation system with the main platform

5- Next Meeting for this project

28-06-2024 at 11:00 am Room SF-234

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 17

Minutes of Meeting

Meeting Date: 28/06/2024
Meeting Location: Room SF-234
Meeting Time: 11:00 – 12:00

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Integration and testing
- Start documentation

3- Agenda Points discussed in meeting

- Reviewed the integration of the newly developed recommendation system with the main platform.
- Conducted comprehensive testing to ensure all modules are functioning seamlessly together.
- Initiated the documentation process to ensure all aspects of the project are thoroughly recorded.

4- Action List

- Continue integration testing
- Resolve any remaining issues
- Complete project documentation

5- Next Meeting for this project

15-07-2024 at 2:00 pm Google Meet

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 18

Minutes of Meeting

Meeting Date: 15/07/2024
Meeting Location: Google Meet
Meeting Time: 2:00 – 3:00

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Final CSS touches
- Administrator module development and integration

3- Agenda Points discussed in meeting

- Applied final CSS touches to enhance the user interface and user experience.
- Discussed the development and integration of the administrator module, focusing on its functionality and user access controls.
- Ensured all features align with the overall project objectives and design guidelines.

4- Action List

- Finalize CSS and UI enhancements
- Complete and integrate the administrator module

5- Next Meeting for this project

19-07-2024 at 3:00 pm on Google Meet

Supervisor/Co-Supervisor Signature _____

FYP Project Meeting # 19

Minutes of Meeting

Meeting Date: 19/07/2024
Meeting Location: Google Meet
Meeting Time: 3:00 – 5:00

1- List of Participants

Name	Project Role
Rohain Shaikh	Team Coordination and Oversight, UI/UX Design, Integrate Appointment Scheduling Logic
Hira Amjad	Implement the Database Structure
Karima Kotadia	Implement Database Schema
Maliha Asghar	Develop Server-side Logic

2- Meeting Agenda

- Review Presentation
- Deliver Presentation for practice

3- Agenda Points discussed in meeting

- Reviewed the final presentation content, ensuring it covers all essential aspects of the project comprehensively.
- Practiced delivering the presentation to simulate the actual evaluation scenario and receive feedback.
- Discussed potential questions and prepared responses to ensure readiness for the final evaluation.

4- Action List

- Work on the deliverance of the Presentation

5- Next Meeting for this project

TBD if needed

Supervisor/Co-Supervisor Signature _____

A8. DOCUMENT CHANGE RECORD

Date	Version	Author	Change Details
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