POKHARA UNIVERSITY

APEX COLLEGE

Department of Management

MAJOR PROJECT REPORT

ON

DOCCONNECT

DOCTOR'S APPOINTMENT BOOKING SYSTEM

BY

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A PROJECT WORK SUBMITTED TO THE DEPARTMENT OF MANAGEMENT IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE BACHELOR OF COMPUTER INFORMATION SYSTEM

KATHMANDU, NEPAL

July 30, 2023

POKHARA UNIVERSITY

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The undersigned certify that they have read, and recommended to Pokhara University for acceptance, the project report titled **"DOCTOR'S APPOINTMENT BOOKING SYSTEM"** submitted by Ajai Shakya (19080026), Anish Kayastha (19080030), Ishwor Shrestha (19080040), and Manish Chaulagain (19080047) in partial fulfillment of the requirement for the Bachelor of Computer Information System.

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DECLARATION

The project report titled "**DOCCONNECT**" submitted for the partial fulfillment of the requirement for the degree of Bachelors of Computer Information System to Pokhara University, comprises only original work and due acknowledgement have been made to the materials used in this report.

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July 30, 2023

ACKNOWLEDGEMENT

We want to express our gratitude to everyone who was involved in the creation of this project. Everyone involved in the project's development had to put in their whole effort. We would also like to express our thanks to Mr. Anmol Shrestha, the project coordinator, whose contribution of energizing suggestions and support enabled us to plan our project, particularly in drafting this report. Additionally, we want to express our gratitude for the direction offered by our project supervisor, Mr. Ujjwol Shakya, who gave our team the right advice and gave his all to help us reach our objective.

We would also like to express our gratitude for the instructor's vital contribution, who allowed us to utilize all necessary tools and supplies to finish the Major Project. We would especially want to thank our team members who worked well as a team to assemble the pieces and assist in the successful completion of this project. We appreciate the guidance provided by other supervisors and the panels, especially in regards to our project development and integration, which has helped us develop a better project overall as a result of their comments and suggestions. This project is the cumulative and collaborative effort of everything we have learned over the entire BCIS course with the assistance of everyone connected to "DOCCONNECT", who enabled us to successfully finish the project within the given time frame.

We promise that we will continue to improve in the future. We learned a lot about web application development and designing, thanks to this exploration.

Thank You!

ABSTRACT

This project titled ‘DocConnect’ is developed using Django along with HTML, CSS and JavaScript. We have used HTML, CSS and used the help of Bootstrap along with JavaScript in frontend and Django (Python) in backend. For the Database, SQLite will be used.

Firstly, the report represents the introduction about the concept. By recognizing the new trend of the market to book services online and understanding the demand of the majority of users, we have established a web application namely- DocConnect. It is a web application designed to make it easy for users (patients) to search for service providers (doctors) and book/schedule the best. Here doctors can list their service on flexible time-slots and that they can directly connect with users. The system consists of three main users: “Users (Patients), Service Providers (Doctors) and Admin (Super-user)”.

The chapter two includes a Literature Review which talks about comparison of this system with the existing systems in the market. Comparing them, analysis was done about the deficiencies in the concept of Appointment Booking System in Nepal. In the system design, the basic functionalities of the “DocConnect” are mentioned.

The chapter three contains System Design and Implementation which includes various diagrams like Use case diagram, Entity-Relationship Diagram, Data Flow Diagram, and Context Flow Diagram with System Description along with it.

The chapter four contains the flow of the project and testing. Also, includes the debugging and solution to them in order to obtain a smooth, error-free system. However, there is always some space for further improvements in a system. Therefore, the final chapter includes the limitations and future enhancement for the ongoing system.

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ABBREVIATIONS

AI	Artificial Intelligence
AJAX	Asynchronous JavaScript and XML
CSS	Cascading Style Sheets
ER	Entity Relationship
HTML	Hypertext Markup Language
HTTPS	Hypertext Transfer Protocol Secure
IoT	Internet of Things
JS	JavaScript
MVC	Model-View-Controller
ORM	Object-Relational Mapping
SHA	Secure Hash Algorithm
SQL	Structured Query Language
SRS	Software Requirements Specification
VS	Visual Studio

CHAPTER I

INTRODUCTION

1.1 Background

The healthcare system in Nepal and across the global context has long grappled with challenges related to healthcare accessibility and efficiency. In Nepal, the geographical terrain and disparities in medical infrastructure can pose significant hurdles for individuals seeking timely medical services, including doctor appointments. Moreover, in the face of increasing population demands and advancements in medical technology, the traditional approach to scheduling appointments often results in long waiting times and inconvenience for patients.

To address these issues and bridge the gap between patients and doctors, our team embarked on the development of a user-centric web-application called "DOCCONNECT". This project was born out of a vision to harness the potential of Information Technology to improve healthcare accessibility and enhance the patients experience in Nepal and beyond.

The inspiration for this project arose from the realization that modern technology has transformed various industries, and healthcare should not be an exception. Web applications have proven to be powerful tools in streamlining processes, optimizing resource allocation, and improving communication between service providers and users. By introducing DOCCONNECT as a dedicated platform for direct doctor appointments, we aim to transform the way patients access medical care and optimize the scheduling process for healthcare providers.

Moreover, the global tech context emphasizes the significance of digital solutions in overcoming healthcare challenges. Advanced economies have already witnessed the positive impact of web applications in healthcare, with several successful platforms facilitating doctor-patient interactions, appointment bookings, and remote consultations. Taking inspiration from such success stories, DOCCONECT seeks to adapt and innovate to cater to the unique needs and preferences of the Nepalese population and users worldwide.

In essence, the background of the DOCCONNECT project is rooted in the pressing need for a technology-driven solution that simplifies the process of scheduling doctor appointments and ultimately enhances the overall healthcare experience.

1.2 Scope

The scope of DOCCONNECT is comprehensive, aiming to provide a user-friendly platform that allows patients to easily search for available doctors, view their profiles, and book appointments online. The application is designed with a focus on patient convenience, providing features like patient registration, secure login systems, doctor profiles with detailed information and flexible appointment scheduling.

The platform will facilitate efficient appointment management for doctors, enabling them to manage their schedules, update availability, and access patient information securely. Furthermore, the application will incorporate features to enhance user experience, such as booking an appointment using payment methods such as eSewa.

It is essential to note that while the web-application aims to improve accessibility to medical services, it will not support real-time medical consultation or emergency services. The focus is primarily on simplifying the process of scheduling appointments and improving the overall patient experience.

1.3 Project Description

The Doctor Appointment Booking System - DOCCONNECT is a user-centric and innovative web application that seeks to transform the way individuals connect with healthcare providers. The primary goal of this platform is to simplify the appointment booking process, reduce waiting times, and streamline communication between patients and doctors, ultimately enhancing the overall healthcare experience for all parties involved.

Patients using the web application will enjoy a seamless and personalized experience. The platform's user-friendly interface empowers patients to filter, and search for doctors based on various criteria, such as name, clinic, and location. This

functionality ensures that patients can find the most suitable healthcare professionals who meet their specific needs and preferences.

One of the essential aspects of the DOCCONNECT is the transparent review and rating system. Patients can share their experiences and provide feedback on the quality of care they received, allowing others to make well-informed decisions when choosing a healthcare provider. This fosters trust between patients and doctors, improves the credibility of the platform, and encourages healthcare professionals to maintain high standards of service.

The web application further facilitates the appointment booking process through an integrated online payment system. Patients can securely make payments for their consultations using payment methods such eSewa, promoting cashless transactions and ensuring data security. This feature reduces the likelihood of appointment no-shows and leads to a more organized and efficient appointment management process.

For medical professionals, the DOCCONNECT offers a secure dashboard where they can manage their schedules, update their availability, and access patient information securely. Doctors receive real-time updates of new appointment requests and schedule changes, enabling effective appointment management and ensuring a smooth flow of consultations.

To prioritize user privacy and data security, the web application incorporates a session timeout feature (auto logout). This feature automatically logs out users after a period of inactivity, mitigating potential security risks and safeguarding sensitive medical information. Moreover, the platform implements an efficient email notification system that sends a token to change forgotten password recovery.

1.4 Objectives

1.4.1 Academic Objectives

- Partial fulfillment of required degree for Bachelors of Computer Information System.
- To learn cooperation and teamwork.

- To translate theoretical knowledge of web application development into real world solutions.
- To develop focus and increase the understanding of the activities being done.
- To develop effective communications and interpersonal skills.

1.4.2 Project Objectives

- To create a user-centric platform that connects patients with doctors effectively.
- To enable patients to search and filter doctors based on specific criteria.
- To implement a review and rating system to enhance transparency and credibility.
- To incorporate an online payment system for seamless transactions.
- To ensure secure sessions and automatic logout to protect user data.

CHAPTER II

LITERATURE REVIEW

2.1 Literature Review

The literature review is an essential component of the project, as it provides valuable insights into existing web applications that facilitate doctor appointments. Some web applications in the healthcare domain already existed prior to the development of this project such as “Doctors on Call”, “MeroDoctors”, “and Doctors Nepal”, and “Hamro Patro Health”, and extensive research was performed on similar projects to ensure DOCCONNECT stands as a valuable and convenient solution compared to other solutions in the market. Today's generation is technology based and relies more on the internet and technologies. But there is not much system available for searching products or services in Nepal.

The review will analyze the strengths and weaknesses of existing platforms, taking into account user experiences, platform performance, and user adoption rates. By understanding the successes and limitations of other applications, we can identify best practices and potential areas for improvement.

Furthermore, the literature review will delve into the impact of technology on healthcare accessibility, patient satisfaction, and overall healthcare outcomes. It will examine how other web applications have contributed to enhancing patient experiences, optimizing healthcare resource utilization, and improving doctor-patient communication.

The review helps explore technological advancements relevant to web application development in the healthcare sector. By staying abreast of the latest technologies and trends, we can leverage cutting-edge tools and frameworks to create an innovative and scalable platform.

Additionally, the literature review will consider regulations and standards governing healthcare data privacy and security. By aligning with industry guidelines, we can ensure the confidentiality and integrity of patient information, establishing trust with users and healthcare providers.

The insights gained from the literature review will serve as the foundation for DOCCONECT's conceptual framework, guiding the project team in making informed decisions to create a web application.

CHAPTER III

SYSTEM DESIGN AND IMPLEMENTATION

3.1 System Design

The system design phase is pivotal in shaping the architecture and functionalities of DOCCONNECT. The design will be centered on creating a robust, scalable, and user-centric platform.

3.1.1 Context Flow Diagram

The context flow diagram will provide a high-level view of DOCCONNECT, illustrating the interactions between users (patients and doctors) and the system. This diagram will highlight the key components of the application and how they collaborate to meet user needs.

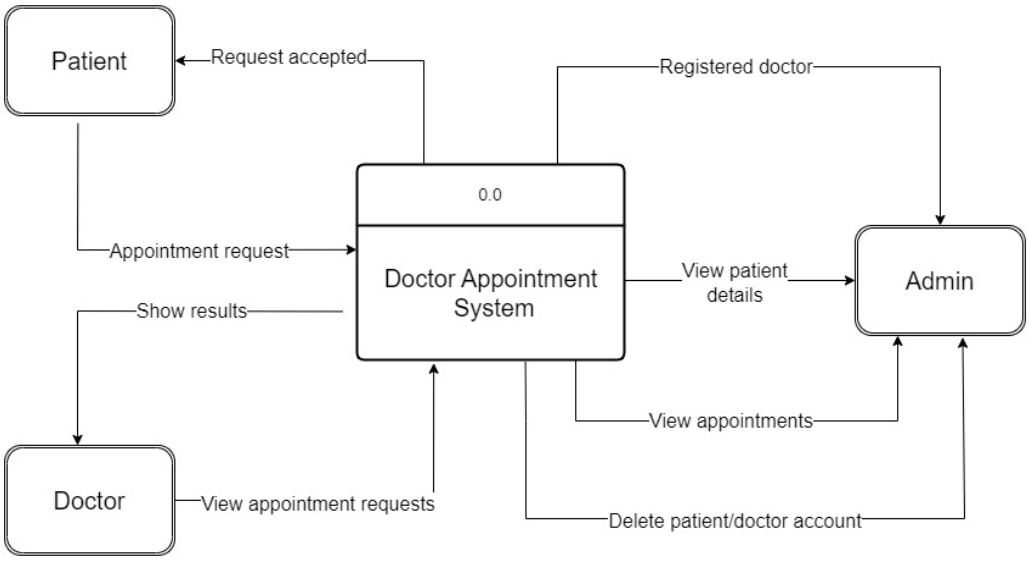

Figure 3.1.1- Context Flow Diagram

3.1.2 Data Flow Diagram

The data flow diagram will showcase the flow of information within DOCCONNECT. It will demonstrate how patient and doctor information, appointment requests, and notifications are processed and transferred throughout the system. This diagram will help identify potential bottlenecks and optimize data flow to enhance the application's performance.

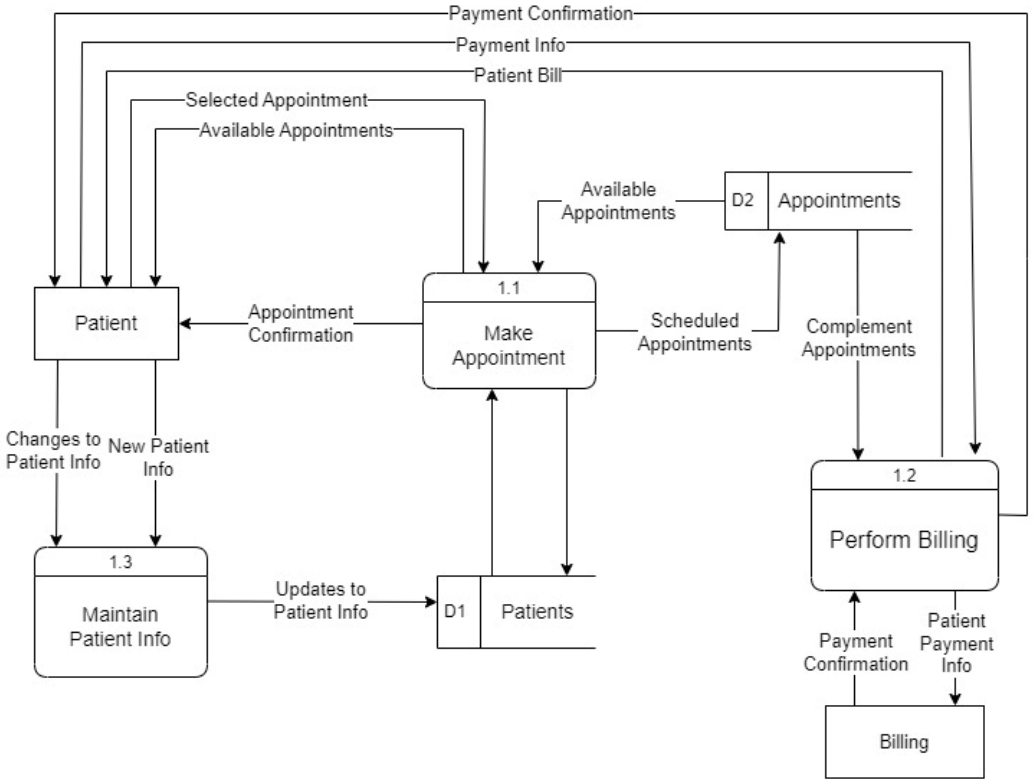

Figure 3.1.2- Data Flow Diagram

3.1.3 E-R Diagram

The Entity-Relationship (E-R) diagram will model DOCCONNECT's database schema, illustrating the relationships between different entities such as patients, doctors, & appointments. This diagram will provide a blueprint for the database implementation, ensuring efficient data organization and retrieval.

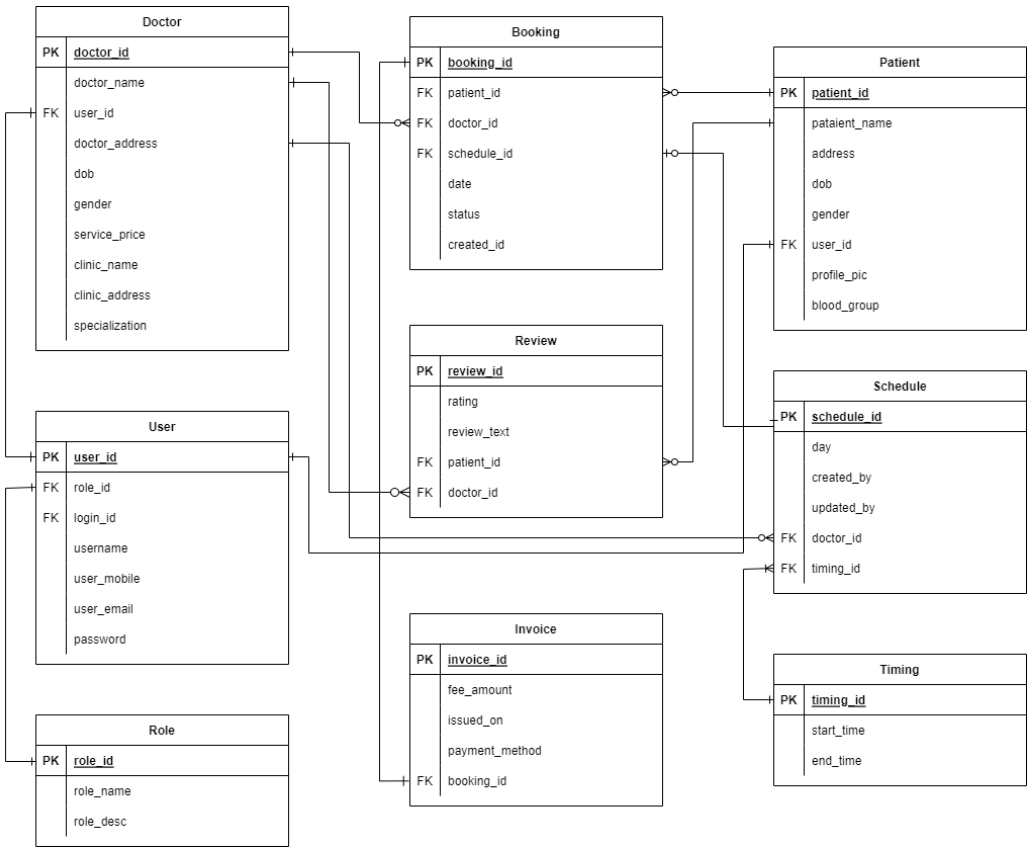

Figure 3.1.3- ER Diagram

3.1.4 Class Diagram

Class Diagram is a vital component of the system design for DOCCONNECT, illustrating the static structure of the web-application. It displays classes such as Patient, Doctor, Booking, User, Schedule, Invoice, Review and Timing, representing the essential entities in the system. Each class contains attributes and operation/methods like bookAppointment (), viewSchedule (), addTimeSlot () etc.

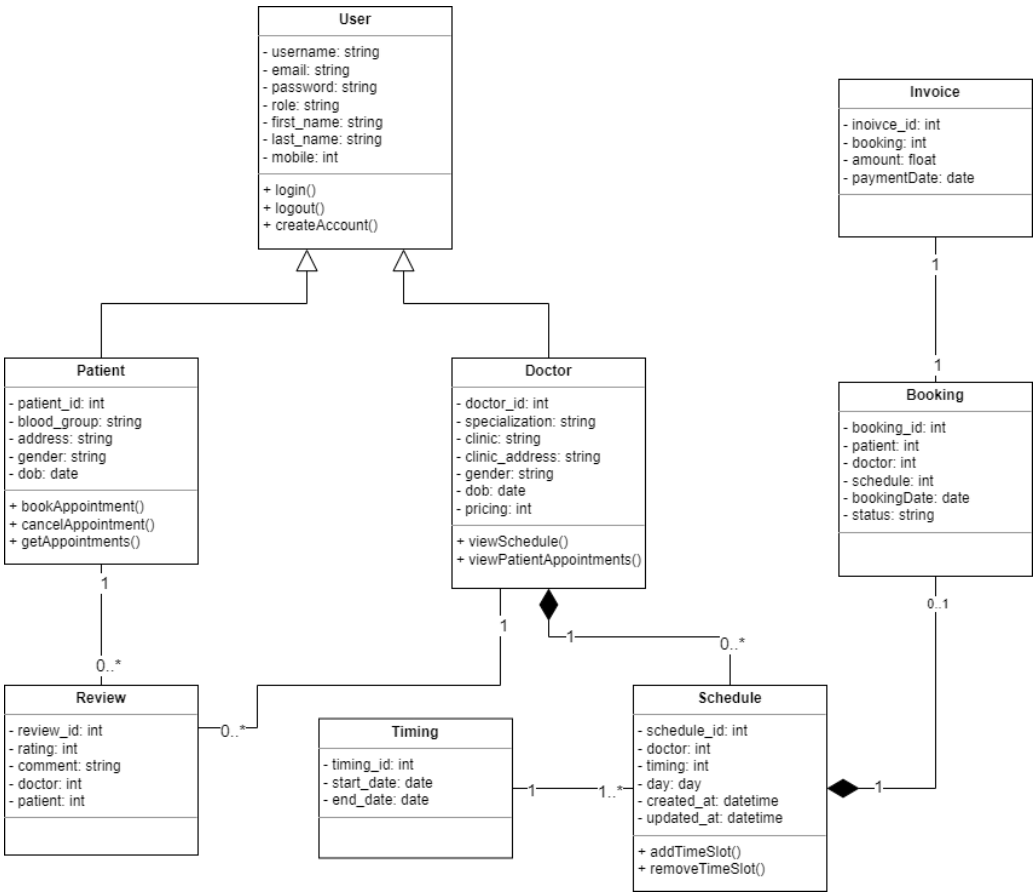

Figure 3.1.4- Class Diagram

3.1.5 Use Case Diagram

The use case diagram will outline the various interactions between actors (patients and doctors) and DOCCONNECT. It will showcase the functionalities available to each user role and how they can interact with the system. This diagram will facilitate a clear understanding of user roles and their actions within the platform.

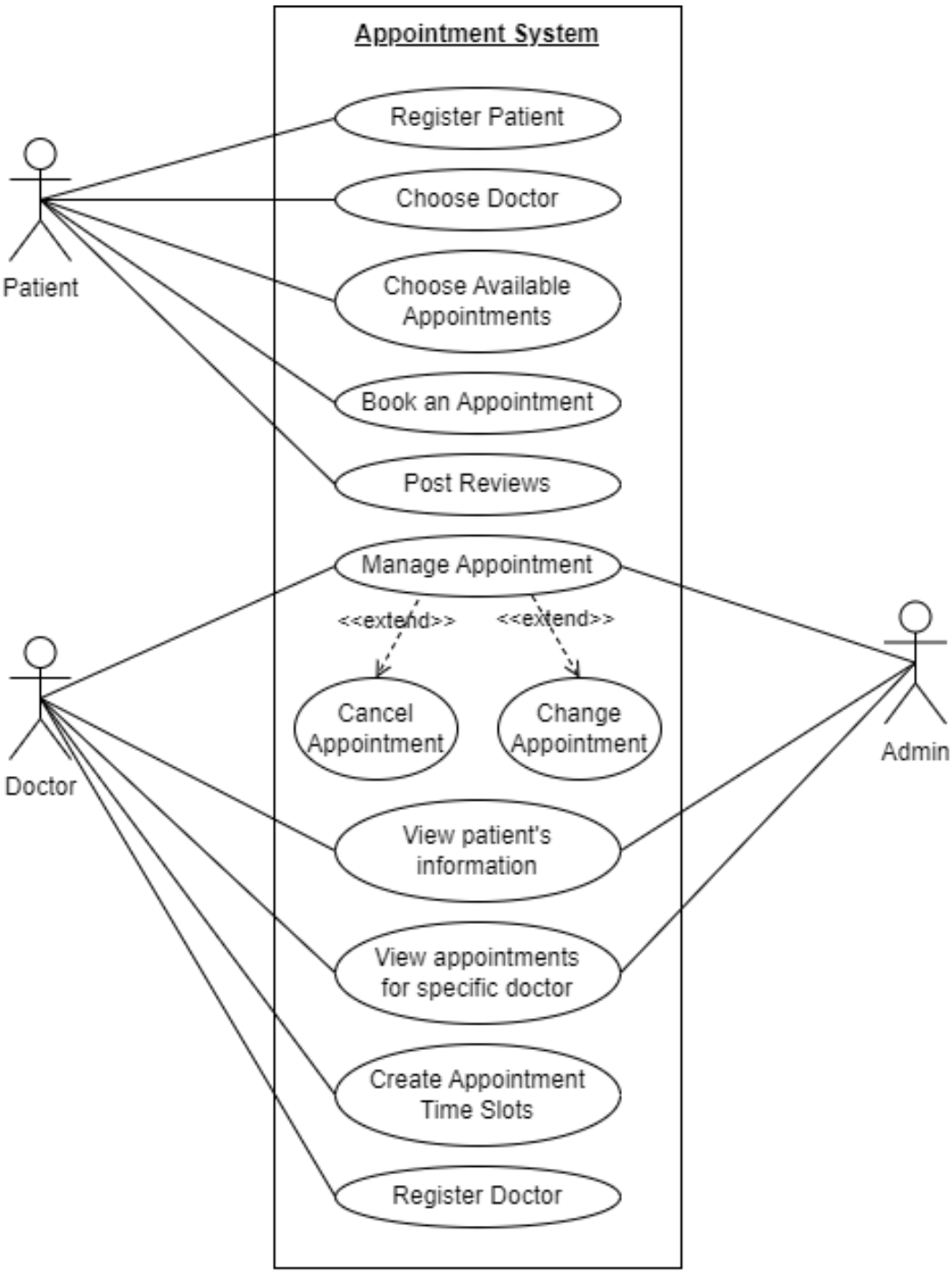

Figure 3.1.5- Use Case Diagram

3.2 System Description

The system description section provides a comprehensive explanation of the web-application's architecture, design, and implementation details. It offers an in-depth insight into how the system functions, the technologies used, and the rationale behind design choices.

3.2.1 User Registration and Authentication

To provide a secure and personalized experience, the web-application will implement user registration and authentication mechanisms. New users will be able to create accounts using a valid email address and password. User authentication will be enforced to ensure that only registered users can access the platform and its features.

To enhance security, the application incorporates strong password hashing with SHA-256, preventing the storage of plain-text passwords in the database. Additionally, account activation and password reset functionalities will be implemented, following industry-standard security practices.

3.2.2 Comprehensive Doctor Profiles

The doctor profiles within the web-application will be comprehensive, presenting essential information about each healthcare provider. The profiles will include details such as the doctor's full name, qualifications, years of experience, and areas of specialization, clinic addresses, and available time slots. These details will be dynamically fetched from the database to ensure accurate and up-to-date information.

The platform will offer a search and filter functionality that allows patients to find doctors based on specific criteria, such as medical specialties, clinic locations, and available time slots. The system will utilize efficient database queries to retrieve relevant results promptly.

3.2.3 Flexible Appointment Scheduling

The appointment scheduling feature will allow patients to select their preferred doctor and book appointments at their convenience. The platform will display

real-time updates on available time slots, enabling patients to choose appointments that suit their schedules.

The system will implement booking validation to prevent multiple users from booking the same time slot simultaneously. Once an appointment is confirmed, the platform will send real-time notifications to both the patient and the respective doctor, ensuring seamless communication.

3.2.4 Secure Dashboard for Doctors

To facilitate effective appointment management for healthcare providers, the web-application will offer a secure and intuitive dashboard. Doctors will have access to their schedule, appointment requests, and patient information from the dashboard. They can update their availability and approve appointment requests.

The doctor dashboard will be designed to prioritize user experience, making it easy for healthcare providers to manage their schedules efficiently.

3.2.5 Data Privacy and Security

Data privacy and security are paramount in the healthcare domain. The web-application will implement various measures to protect patient information. This includes:

- Encryption of sensitive data during transmission using HTTPS to ensure secure communication between clients and the server.
- Implementation of access control mechanisms to limit data access only to authorized personnel.

By adhering to strict security protocols, the platform aims to build trust and confidence among users, fostering a secure environment for doctor-patient interactions.

3.2.6 Technologies Tools used for System Development

VS Code

VS Code is a popular and lightweight source code editor developed by Microsoft. It provides a wide range of features that aid developers in writing, debugging, and managing code efficiently. It supports various programming languages and offers extensions that enhance its functionality. VS Code is known for its user-friendly interface and high customization options, making it a preferred choice for many developers.

DBeaver

DBeaver is a powerful and open-source universal database management tool. It supports multiple database management systems, including MySQL, PostgreSQL, SQLite, Oracle, and more. DBeaver provides a graphical user interface that enables developers to interact with databases, perform queries, manage database structures, and visualize data efficiently. Its flexibility and cross-platform compatibility make it a valuable tool for working with databases during the development process.

Frontend Technologies

- **HTML (Hypertext Markup Language):** HTML is the standard markup language used for creating the structure and content of web pages. It defines the elements and layout of a webpage, allowing developers to organize and present information to users. (W3Schools, 2022)
- **CSS (Cascading Style Sheets):** CSS is used to style the HTML elements, providing control over the appearance and layout of web pages. It allows developers to define colors, fonts, spacing, and other visual aspects of the website.
- **Bootstrap:** Bootstrap is a popular front-end framework that simplifies the process of designing responsive and mobile-friendly websites. It provides pre-designed CSS and JavaScript components that can be easily integrated into the project, saving development time and effort.
- **JS (JavaScript):** JavaScript is a versatile and widely-used programming language that enables the creation of interactive and dynamic elements on

web pages. It allows developers to implement features like form validation, animations, and user interactivity.

- **JQuery:** jQuery is a JavaScript library that simplifies HTML document manipulation, event handling, and AJAX interactions. It streamlines the process of writing JavaScript code, making it easier and more efficient.

Backend Technologies

- **Django:** Django is a high-level Python web framework that provides a clean and pragmatic design for building web applications. It follows the Model-View-Controller (MVC) architectural pattern, allowing developers to structure their applications logically and efficiently. Django comes with a built-in ORM (Object-Relational Mapping) system, which simplifies database interactions and helps manage data models. (Geeksforgeeks, 2023)
- **SQLite:** SQLite is a lightweight and self-contained database engine that is widely used for small to medium-sized applications. It allows developers to store data locally within the application without the need for a separate database server. SQLite is easy to set up and use, making it suitable for projects with limited data storage requirements. (Spheregen, 2021)

3.3 System Analysis

The system analysis phase for the Doctor's Appointment Booking System, "DOCCONNECT," plays a pivotal role in understanding the requirements, constraints, and objectives of the web-application. This phase involves a comprehensive investigation of user needs, existing healthcare processes, and technological feasibility to lay the groundwork for successful development.

3.3.1 Requirements Gathering

During the requirements gathering stage based on SRS issued by college, the project team research activities of potential users (patients and doctors) and healthcare professionals.

User requirements are collected to ascertain the features and functionalities that will best serve patients seeking doctor appointments. These requirements may

include an intuitive and visually appealing user interface, comprehensive doctor profiles, updates on available time slots, and flexible appointment scheduling options

3.3.2 Feasibility Study

After requirements gathering, a feasibility study is conducted to assess the practicality and viability of the web-application project. The study evaluates various aspects, including technical, economic, operational, and schedule feasibility.

Technical Feasibility:

Technical feasibility evaluates whether the project can be successfully implemented from a technological standpoint. It assesses whether the required technologies, tools, and expertise are available or can be acquired within the project's constraints. The team examines the compatibility and integration of chosen technologies to ensure they can effectively support the desired functionalities of DOCCONECT. Additionally, technical feasibility includes considerations of scalability, performance, and data security to ensure that the web-application can handle potential user growth and maintain efficient operations.

Economic Feasibility:

Economic feasibility examines the financial aspect of the DOCCONECT project. It involves analyzing the costs associated with development, maintenance, and ongoing operations against the expected benefits and returns on investment. The team evaluates whether the projected benefits, such as improved healthcare accessibility and user satisfaction, outweigh the financial investments required for development. Economic feasibility also considers potential revenue generation models and cost-saving opportunities to ascertain the financial viability of the web-application.

Operational Feasibility:

Operational feasibility assesses the impact of DOCCONECT on the existing healthcare system and processes. It examines how the web-application will integrate with the current workflows of healthcare providers and how they will adapt to the new appointment management system. The team considers any potential disruptions to daily operations and ensures that DOCCONECT can seamlessly fit into the healthcare ecosystem without causing significant hindrances or resistance from healthcare professionals.

Schedule Feasibility:

Schedule feasibility focuses on setting realistic timelines for the project. It evaluates the project's scope, available resources, and potential risks to create a timeline that accounts for development, testing, and deployment phases. The team ensures that the development process aligns with project deadlines and meets any external constraints or commitments. By identifying potential challenges and allocating sufficient time for each phase, the team aims to ensure timely delivery of the DOCCONECT web-application.

CHAPTER IV

TESTING, DEBUGGING AND RESULTS

4.1 Testing

The testing phase is critical to ensure DOCCONECT's functionality, performance, and security to meet high standards. Various testing methodologies will be employed to thoroughly assess the application.

Unit testing will verify the accuracy of individual components and modules, ensuring they function as intended. Integration testing will examine the interaction between different components to guarantee seamless collaboration. System testing will evaluate the application as a whole, validating that it meets specified requirements and delivers an optimal user experience.

Test cases will be designed to cover a range of scenarios, including positive and negative test scenarios, edge cases, and stress testing. The goal is to identify and resolve any defects or issues before DOCCONNECT is made available to users.

Test ID	01
Description	User Registration - Valid Credentials
Preconditions	None
Test Steps	Navigate to the registration page. Enter valid and unique registration details (name, email, and password). Click on the "Register" button.
Expected Results	User registration is successful, and a confirmation message is displayed
Actual Results	User registration is successful, and a confirmation message is displayed.
Status	Pass

Test Data	Name: Manish Chaulagain Email: manish.chaulagain@example.com Password: P@ssw0rd123
Severity	Low

Table 4.1.1- User Registration - Valid Credentials

Test ID	02
Description	User Registration - Invalid or Duplicate Email
Preconditions	None
Test Steps	Navigate to the registration page. Enter an invalid email address format or a duplicate email. Click on the "Register" button.
Expected Results	Registration fails, and an appropriate error message is displayed.
Actual Results	Registration fails, and an appropriate error message is displayed.
Status	Pass
Test Data	Invalid Email: invalid_email Duplicate Email: john.doe@example.com (already registered)
Severity	Low

Table 4.1.2- User Registration - Invalid or Duplicate Email

Test ID	03
Description	Appointment Booking - Invalid or Unavailable Doctor

Preconditions	Users are logged in, and doctors and time slots are available.
Test Steps	Search for a doctor who is not available for appointments (e.g., on vacation). Attempt to book an appointment with the unavailable doctor.
Expected Results	The appointment booking fails, and an error message is displayed indicating the doctor's unavailability.
Actual Results	The appointment booking fails, and an error message is displayed indicating the doctor's unavailability.
Status	Pass
Test Data	Unavailable Doctor: Dr. Michael Adams
Severity	Medium

Table 4.1.3- Appointment Booking - Invalid or Unavailable Doctor

Test ID	04
Description	Appointment Booking - Valid Doctor and Time Slot
Preconditions	Users are logged in, and doctors and time slots are available.
Test Steps	Search for a valid doctor by name or specialty. Select an available time slot for the selected doctor. Click on the "Book Appointment" button.
Expected Results	The appointment is successfully booked, and a confirmation message is displayed.
Actual Results	The appointment is successfully booked, and a confirmation message is displayed.
Status	Pass
Test Data	Doctor: Dr. Sarah Johnson

	Time Slot: 2023-08-15 10:00 AM - 10:30 AM
Severity	Medium

Table 4.1. 4- Appointment Booking - Valid Doctor and Time Slot

Test ID	05
Description	Search and Filter - Doctors by Name, Specialty, and Location
Preconditions	Doctors with various specialties and locations are available in the system
Test Steps	Enter a doctor's name in the search bar and click on the search button. Enter a doctor's specialty in the search bar and click on the search button. Enter a doctor's location in the search bar and click on the search button.
Expected Results	The search results display doctors matching the entered name, specialty, and location, respectively.
Actual Results	The search results display doctors matching the entered name, specialty, and location, respectively.
Status	Pass
Test Data	Doctor Name: Dr. Sarah Johnson Doctor Specialty: Cardiologist Doctor Location: New York
Severity	Low

Table 4.1.5- Search and Filter - Doctors by Name, Specialty, and Location

Test ID	06

Description	Payment Integration - Invalid Payment Details
Preconditions	User is logged in, and a valid appointment is booked
Test Steps	Provide invalid or declined payment details during the payment process Complete the payment process
Expected Results	Payment processing fails, and an error message is displayed indicating invalid or declined payment details.
Actual Results	Payment processing fails, and an error message is displayed indicating invalid or declined payment details.
Status	Pass
Test Data	Invalid Payment Details: Username: 9861321551 Password: test#321 Token: 123456
Severity	Medium

Table 4.1.6- Payment Integration - Invalid Payment Details

Test ID	07
Description	Rating and Reviews - Average Rating Update
Preconditions	Users have submitted ratings and reviews for a doctor
Test Steps	Calculate the average rating for the doctor based on submitted reviews. Compare the calculated average rating with the displayed average rating on the doctor's profile.
Expected Results	The displayed average rating matches the calculated average rating based on user reviews.

Actual Results	The displayed average rating matches the calculated average rating based on user reviews.
Status	Pass
Test Data	Doctor: Dr. Emily Roberts Submitted Ratings: [4, 5, 3, 4, 5]
Severity	Low

Table 4.1.7- Rating and Reviews - Average Rating Update

Test ID	08
Description	Feedback Collection - Submitting Feedback
Preconditions	User is logged in, and the feedback form is available
Test Steps	Navigate to the feedback form and submit feedback. Check the feedback database for the submitted feedback.
Expected Results	The submitted feedback is recorded in the system database
Actual Results	The submitted feedback is recorded in the system database
Status	Pass
Test Data	Feedback: "Excellent service and friendly doctor."
Severity	Low

Table 4.1.8- Feedback Collection - Submitting Feedback

Test ID	09
Description	Email Notifications - Forget/Reset Password
Preconditions	User has registered in the Doctor Appointment System and has forgotten their password.

Test Steps	Click on the "Forgot Password" link on the login page. Enter the registered email address for the user. Click on the "Reset Password" button. Check the email inbox for the registered email address. Look for an email notification with the password reset link.
Expected Results	An email notification with the password reset link is received in the user's inbox. The email contains clear instructions on how to reset the password. The password reset link is unique to the user's request and expires after a certain time to enhance security. The email content includes appropriate security warnings and recommendations (e.g., not sharing the link with others).
Actual Results	An email notification with the password reset link is received in the user's inbox. The email contains clear instructions on how to reset the password. The password reset link is unique and expires after a certain time. The email content includes appropriate security warnings and recommendations.
Status	Pass
Test Data	Registered Email Address: john.doe@example.com
Severity	High

Table 4.1.9- Email Notifications - Forget/Reset Password

4.2 Debugging

Debugging is a critical phase that follows the testing process in the development of the Doctor’s Appointment Booking System, "DOCCONNECT." Debugging

involves identifying, analyzing, and resolving defects, errors, and issues that were discovered during testing. The primary goal of debugging is to ensure that the web-application functions correctly and meets the specified requirements.

This is an integral part of the software development lifecycle for DOCCONNECT. It ensures that the web-application functions as intended, meets user requirements, and provides a seamless experience for patients and healthcare providers. Through systematic defect identification, root cause analysis, and iterative debugging, the project team delivers a reliable, secure, and user-friendly platform that fulfills its objectives in facilitating doctor appointment bookings.

4.3 Results

The rigorous testing and debugging efforts during the development of the Doctor's Appointment Booking System, "DOCCONNECT," have yielded promising results. Through comprehensive testing methodologies, including unit testing, integration testing, system testing, performance testing, security testing, and usability testing, the web-application has been thoroughly evaluated for functionality, performance, and security. Defects and issues identified during testing were meticulously debugged and resolved, ensuring that the system meets its intended objectives.

CHAPTER V

SUMMARY

5.1 Conclusion

The Doctor’s Appointment Booking System, "DOCCONNECT," represents a significant milestone in enhancing healthcare accessibility and efficiency for patients and healthcare providers in Nepal and the global tech context. Through a rigorous development process, including system analysis, design, testing, and debugging, DOCCONNECT has evolved into a robust and user-friendly web-application.

The project's main objective was to create a platform that streamlines the doctor appointment booking process, offering patients a seamless and convenient experience. This system achieves this goal by providing a user-friendly interface, comprehensive doctor profiles, and real-time updates on available appointment slots. Patients can easily find suitable healthcare providers based on their medical needs and book appointments at their convenience.

Moreover, this system addresses the needs of healthcare providers by offering a secure and efficient dashboard for appointment management. Doctors can effortlessly handle appointment requests, access patient information securely, and manage their schedules with ease.

The success of the project is attributed to the thorough testing and debugging phases, which ensured that the web-application operates seamlessly and securely. Comprehensive functionality testing, usability testing, and security testing were conducted to validate the platform's performance, ease of use, and data protection measures. The results of these tests, combined with user feedback, have guided the iterative development process and continuous improvement of the platform.

DOCCONNECT's positive results and user satisfaction underscore its potential to user-centric the healthcare experience. By leveraging technology to connect patients directly with doctors, this system enhances healthcare accessibility, reduces waiting times, and fosters efficient appointment management.

5.2 Limitations

In this project, we've implemented all the major features, but there are few limitations on this project which will be catered in future:

- No video calling feature available for communication between patients and doctors
- No sophisticated algorithm used to display highly rated or relevant doctors
- Doctors are not able to generate and provide reports in digital format to patients
- Online prescription and lab test results is not available to patients
- Patients are not able to analyze their overall health data and metrics

5.3 Future Enhancement

Future enhancements for a doctor appointment system can focus on improving functionality, user experience, security, and scalability. Here are some potential areas for enhancement:

- Telemedicine Integration
- Patient Health Records
- Chatbot Integration
- AI-Powered Appointment Scheduling
- AI-Powered Medical Diagnosis
- Data Analytics and Reporting (Predictive Analytics for Health Trends)
- Online Prescription and Lab Test Requests
- Integration with Health Insurance Providers
- IoT Health Monitoring Devices
- Enhanced Security Measures and Cloud-Based Sharing

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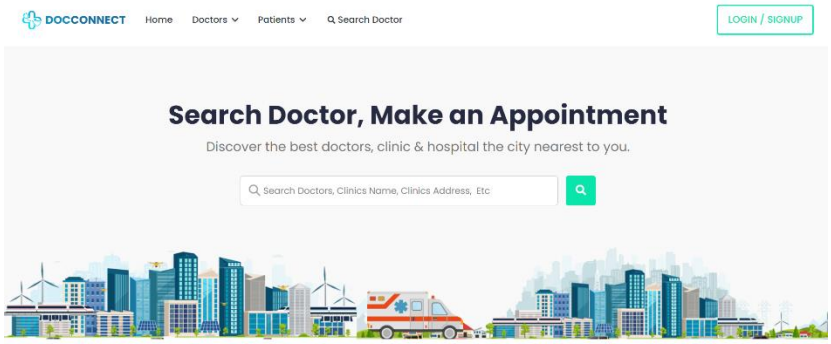
APPENDICES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Home
Doctors
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Search Doctor
LOGIN / SIGNUP
Search Doctor, Make an Appointment
Discover the best doctors, clinic & hospital the city nearest to you.
Search Doctors, Clinics Name, Clinics Address, Etc


Clinic and Specialities
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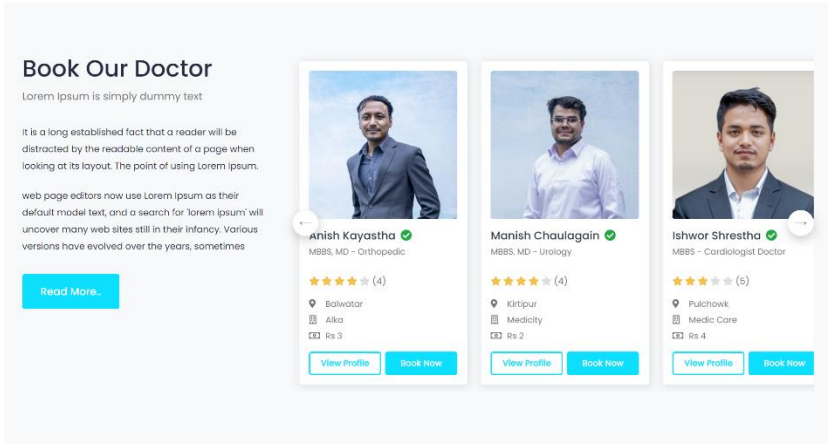
Dentist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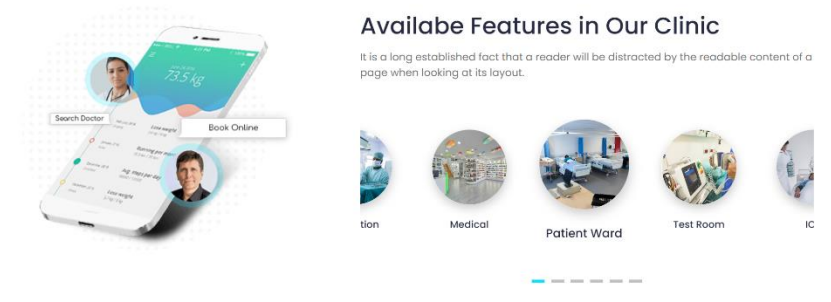
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Patient Ward
Test Room


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Search Doctors, Clinics Name, Clinics Address, Etc

Filter

Gender

Dr. Ajai Shakya
MBBS - Cardiologist Doctor
Cardiologist
(6)
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Pulchowk
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Dr. Anish Kayastha
MBBS, MD - Orthopedic
Orthopedic
(4)
Balwatar
Balwatar
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Dr. Nirmala Gurung
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Urology
(4)
Kirtipur
Kirtipur
Rs 500
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CDM Club Nepal

Nirmala Gurung

MBBS, MD - Urology

Urology

(4)

Kirtipur

Medicity

Kalimati

Rs 500

BOOK APPOINTMENT

Overview | Reviews | Business Hours

About Me

Dr. Nirmal is a renowned Orthopedic Surgeon with over four decades of experience and an impressive MBBS background. Known for his exceptional diagnostic skills, he has tackled countless complex cases, providing successful orthopedic surgeries and treatments. Despite his unconventional bedside manner, patients appreciate his honesty and dedication to their well-being.

Dr. Nirmal's contributions to medical research have earned him a global reputation, making him a sought-after specialist.

Education

- American Dental Medical University
  BDS
  1998 - 2003
- American Dental Medical University
  MDS
  2003 - 2005

Work & Experience

- Glowing Smiles Family Dental Clinic
  2010 - Present (5 years)
- Comfort Care Dental Clinic
  2007 - 2010 (3 years)
- Dream Smile Dental Practice
  2005 - 2007 (2 years)

DOCCONNECT

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Patient Register

Are you a Doctor?

Full Name

Username
patient

Email

Create Password
•••••••

Already have an account?

Signup

Login Doccure

Email
ishwor.shrestha@outlook.com

Password
•••••

Forgot Password ?

Login

Don't have an account? Register

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Home / Dashboard

Dashboard

Ajai Shakya
Oct. 8, 1998
Kathmandu, Nepal

Dashboard
Profile Settings
Change Password
Logout

Appointments | Billing | History

Doctor	Appt Date	Booking Date	Amount	Status
Dr. Anish Kayastha Orthopedic	July 30, 2023 2 p.m. - 2:30 p.m.	July 24, 2023	Rs. 3.0	Confirmed

DOCCONNECT

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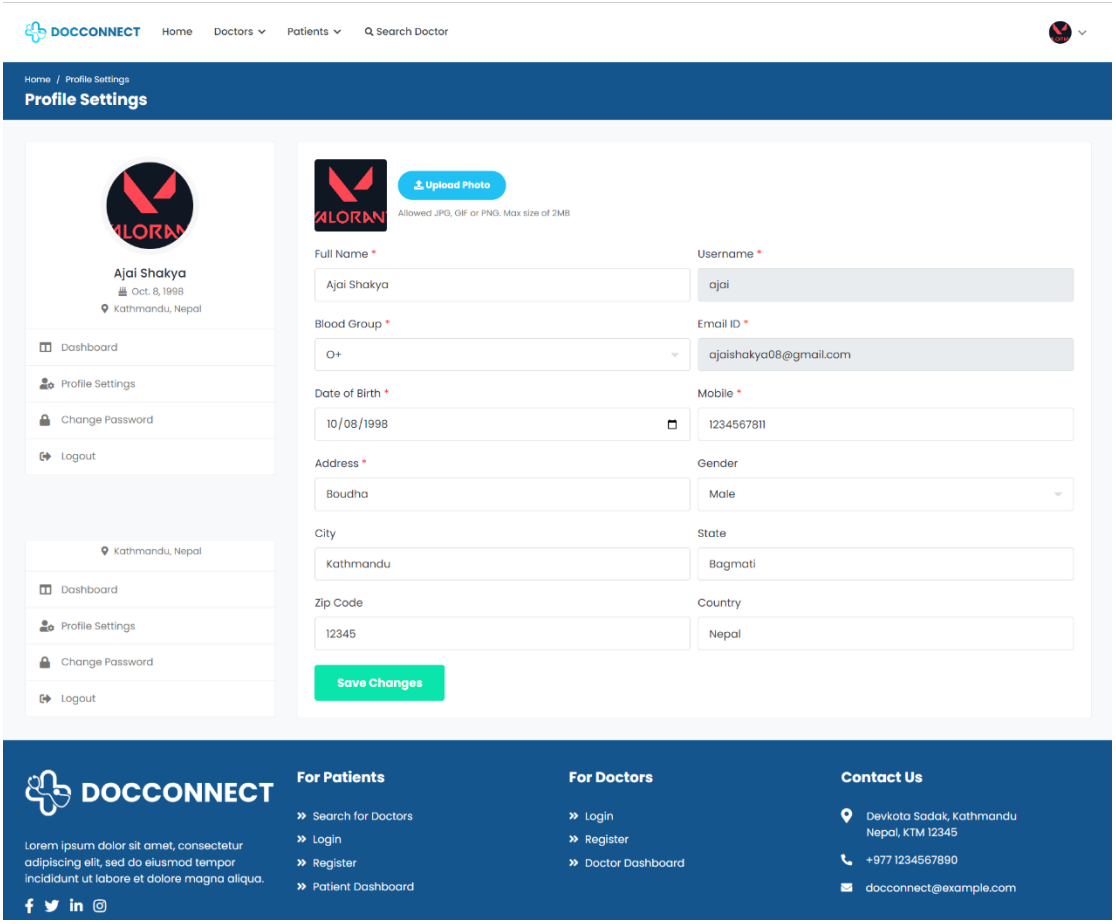
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Oct. 8, 1998
Kathmandu, Nepal
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Profile Settings
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Allowed JPG, GIF or PNG. Max size of 2MB
Full Name *
Ajai Shakya
Username *
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Blood Group *
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Email ID *
ajaishakya08@gmail.com
Date of Birth *
10/08/1998
Mobile *
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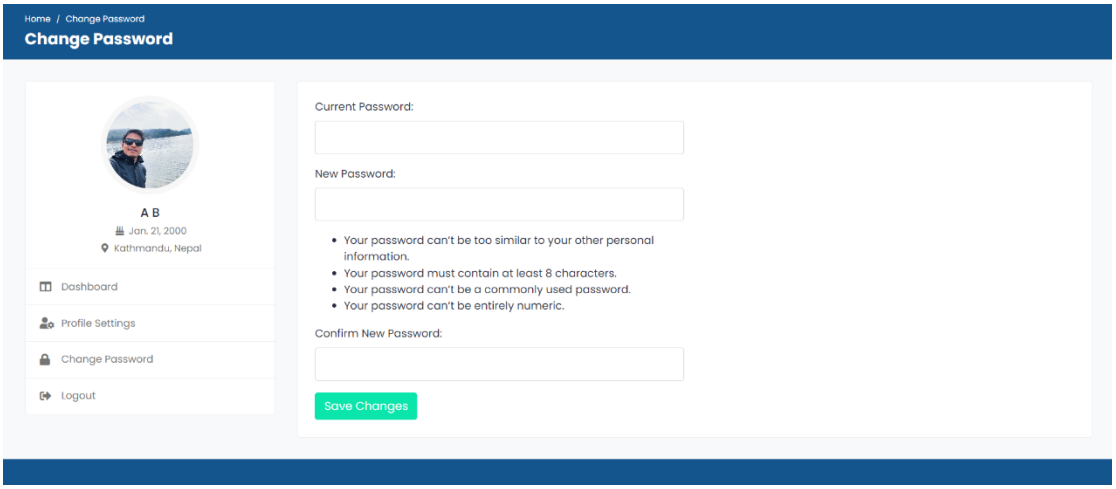
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Current Password:
New Password:
Your password can't be too similar to your other personal information.
Your password must contain at least 8 characters.
Your password can't be a commonly used password.
Your password can't be entirely numeric.
Confirm New Password:
Save Changes

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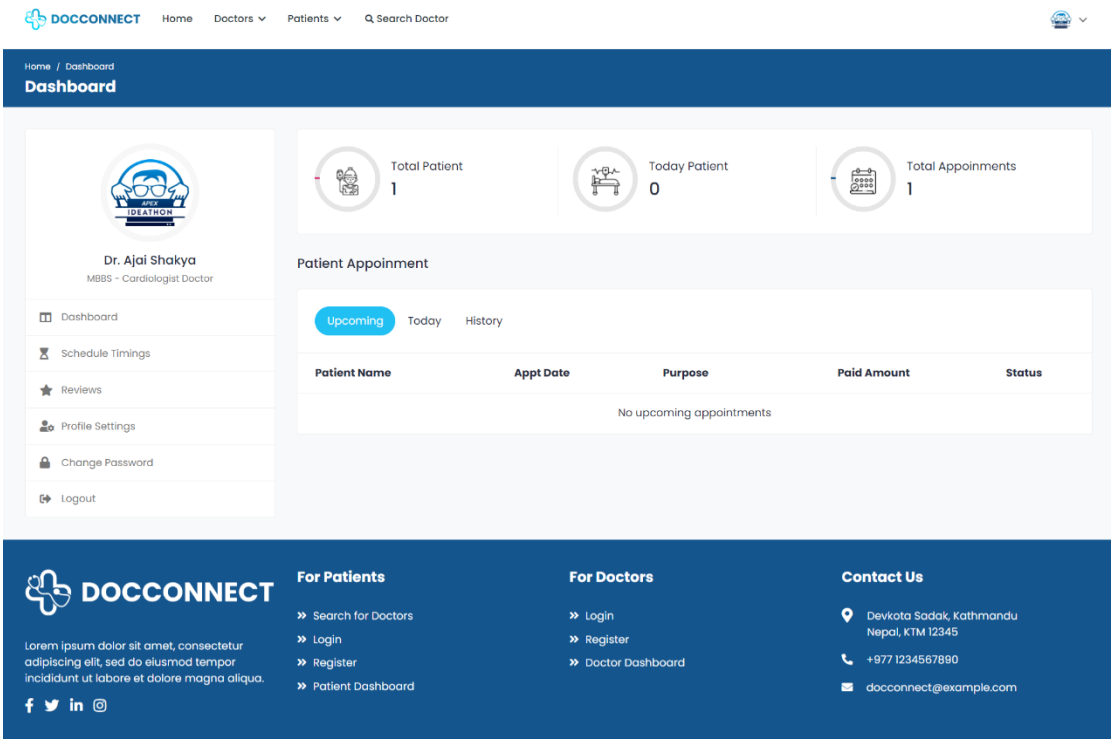
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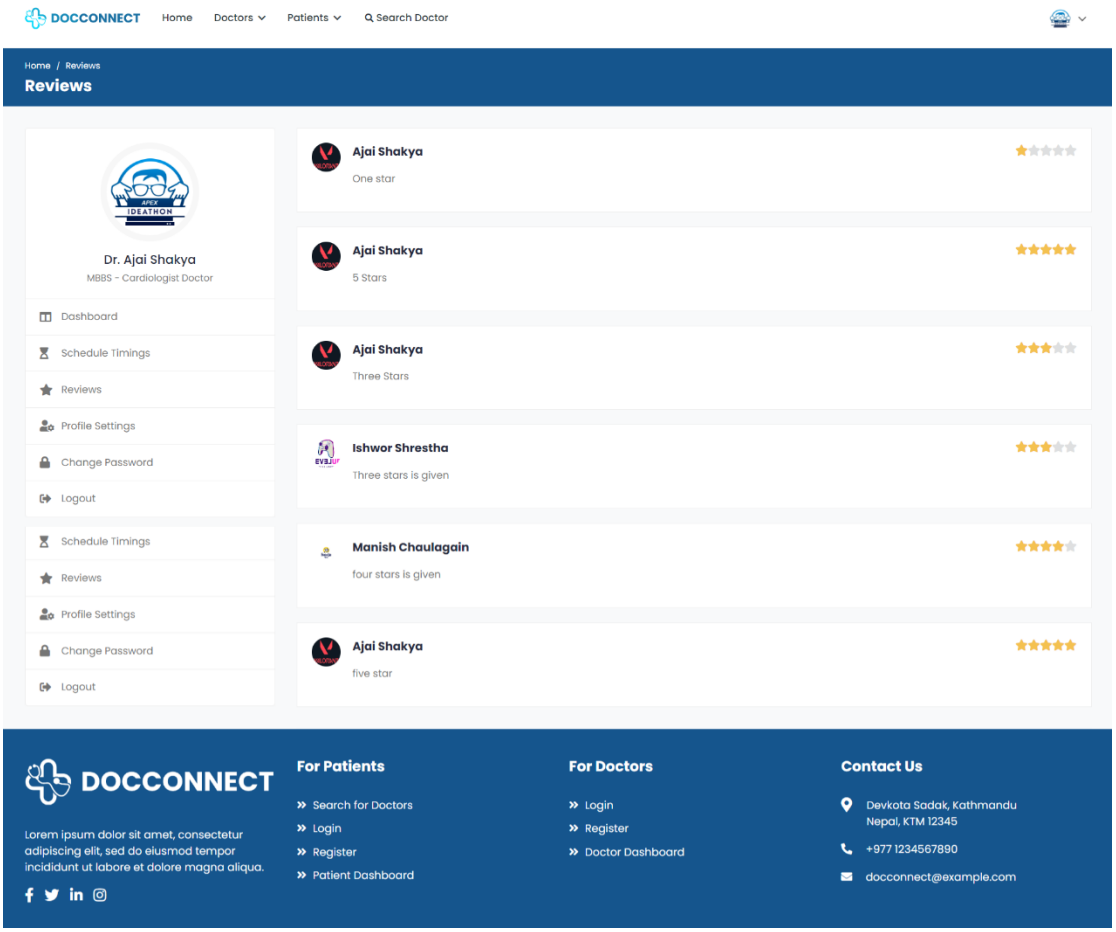
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Ajai Shakya
One star
Ajai Shakya
5 Stars
Ajai Shakya
Three Stars
Ishwor Shrestha
Three stars is given
Manish Chaulagain
four stars is given
Ajai Shakya
five star
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Dr. Ajai Shakya

MBBS - Cardiologist Doctor

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Basic Information

Upload Photo

Allowed JPG, GIF or PNG. Max size of 2MB

Username *: docshakya

Email *: docshakya@gmail.com

Full Name *: Ajai Shakya

Date of Birth *: 08/10/1998

Gender: Male

About Me

Biography

Dr. Doctor Shakya is a renowned Orthopedic Surgeon with over four decades of experience and an impressive MBBS background. Known for his exceptional diagnostic skills, he has tackled countless complex cases, providing successful orthopedic surgeries and treatments. Despite his unconventional bedside manner, patients appreciate his honesty and dedication to their well-being.

Dr. Shakya's contributions to medical research have earned him a global reputation, making him a sought-after specialist.

Clinic Info

Clinic Name *: Medic Care

Clinic Address *: Mahankal

Contact Details

Phone Number *: 1234567897

Address *: Pulchowk

Pricing *

500

Specialization

Cardiology

Dr. Ajai Shakya

MBBS - Cardiologist Doctor

- Dashboard
- Schedule Timings
- Reviews
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- Change Password
- Logout

Education

Degree *: MBBS

Experience

Experience (in years) *: 3

Designation: Cardiologist Doctor

Save Changes