

**POKHARA UNIVERSITY**

**APEX COLLEGE**

Department of Management



**MAJOR PROJECT REPORT**

**ON**



**DOCCONNECT**

**DOCTOR'S APPOINTMENT BOOKING SYSTEM**

**BY**

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Anish Kayastha - (19080030)

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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**

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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, DOCCONNECT 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 as 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 DOCCONNECT'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 Activity Diagram

The Activity Diagram in DOCCONNECT is a visual representation of activities and processes in the web-application. It depicts the patient's appointment booking journey, including searching for doctors, selecting slots, and confirming bookings. Decision points enable patients to choose alternatives if needed. Simultaneous notifications enhance system efficiency. The diagram aids in understanding the system's logic, identifying improvements, and streamlining the process for a user-friendly experience

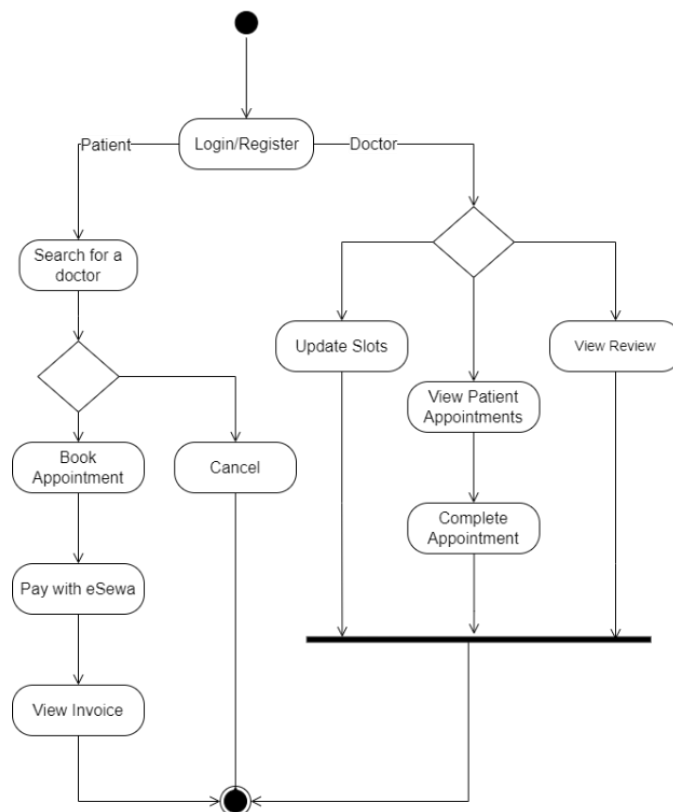


Figure 3.1.1- Activity Diagram

### 3.1.2 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.

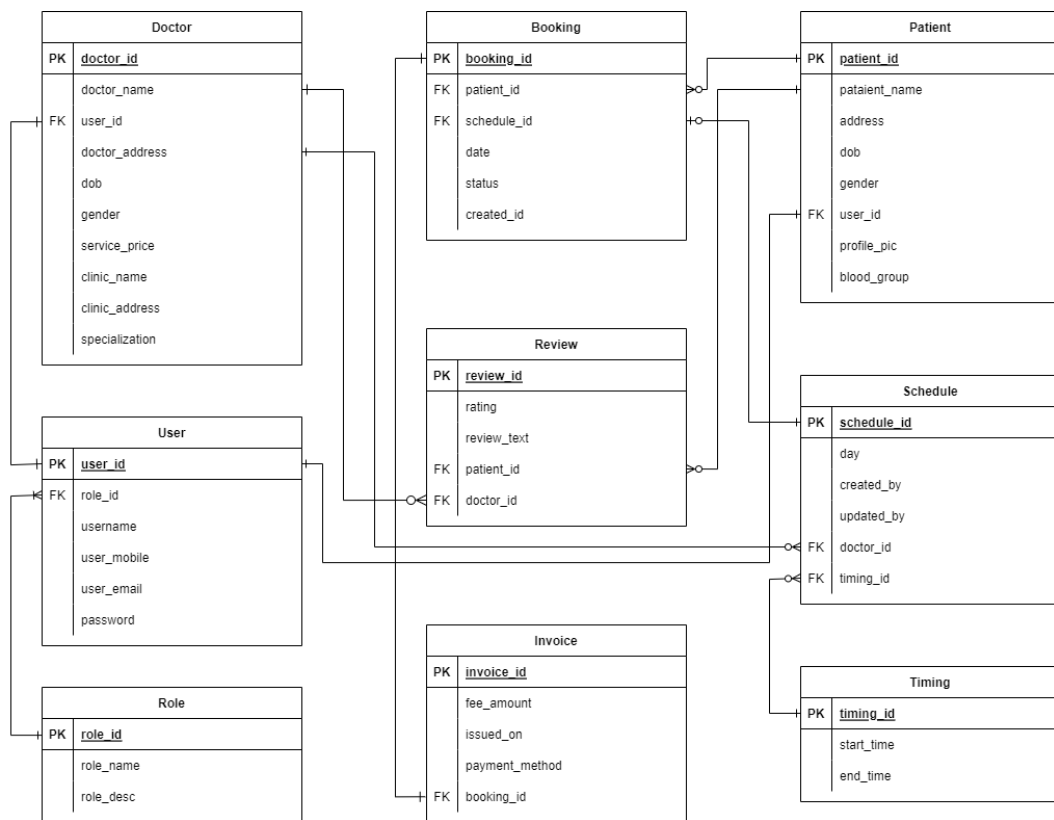


Figure 3.1.2- ER Diagram

### 3.1.3 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.

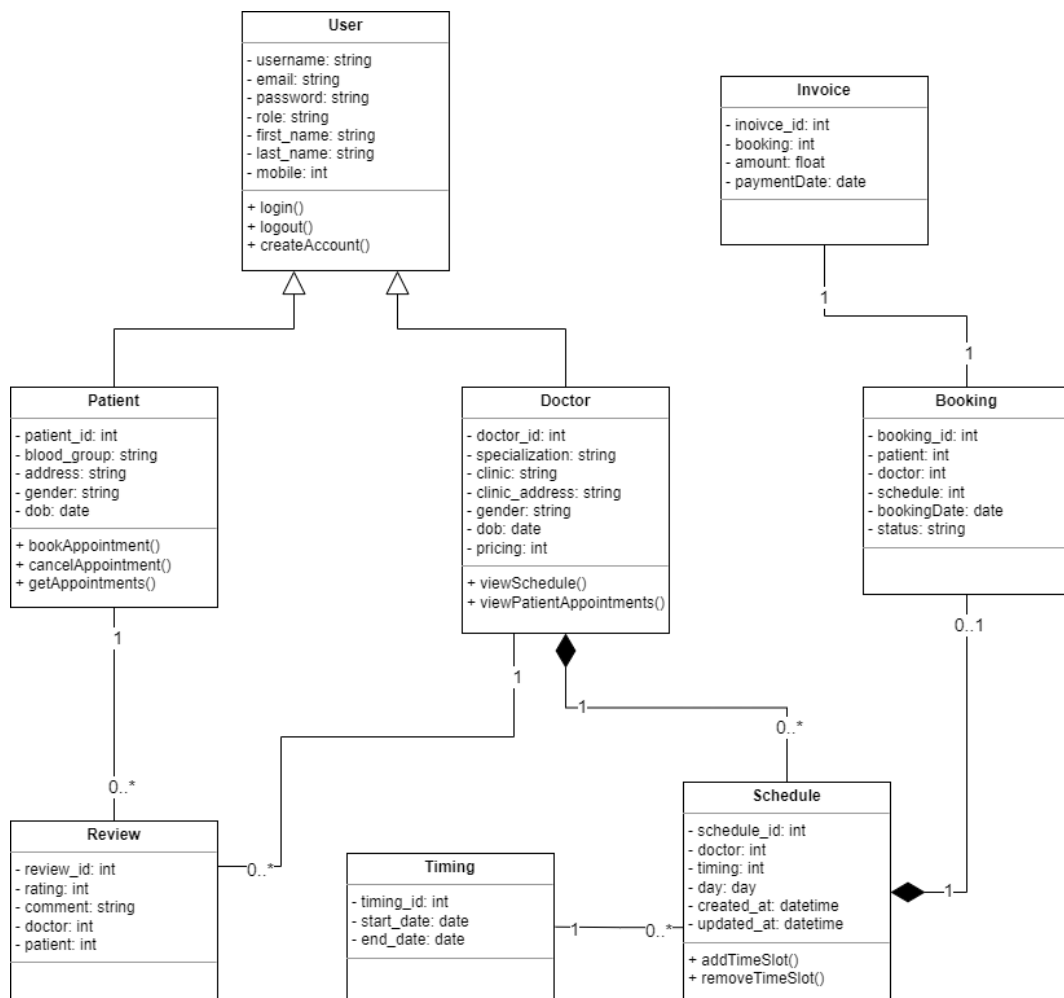


Figure 3.1.3- Class Diagram

### 3.1.4 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.

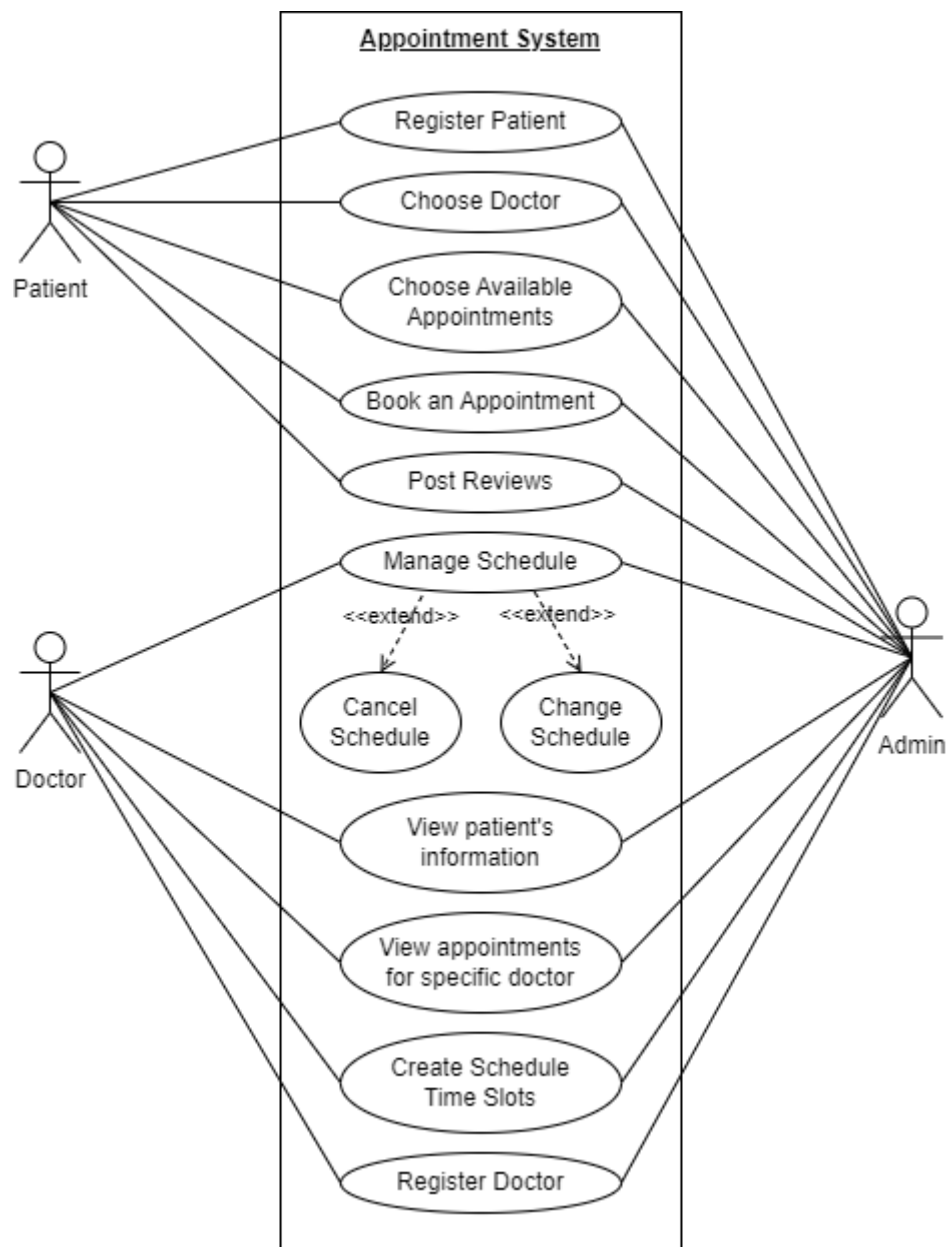


Figure 3.1.4- Use Case Diagram

## **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 DOCCONNECT. 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 DOCCONNECT 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 DOCCONNECT 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 DOCCONNECT 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 DOCCONNECT web-application.

## CHAPTER IV

### TESTING, DEBUGGING AND RESULTS

#### 4.1 Testing

The testing phase is critical to ensure DOCCONNECT'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.

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

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

*Table 4.1.1- User Registration - Valid Credentials*

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

*Table 4.1.2- User Registration - Invalid or Duplicate Email*

<b>Test ID</b>	03
<b>Description</b>	Appointment Booking - Invalid or Unavailable Doctor

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

*Table 4.1.3- Appointment Booking - Invalid or Unavailable Doctor*

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

	Time Slot: 2023-08-15 10:00 AM - 10:30 AM
<b>Severity</b>	Medium

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

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

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

<b>Test ID</b>	06
----------------	----



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

*Table 4.1.6- Payment Integration - Invalid Payment Details*

<b>Test ID</b>	07
<b>Description</b>	Rating and Reviews - Average Rating Update
<b>Preconditions</b>	Users have submitted ratings and reviews for a doctor
<b>Test Steps</b>	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.
<b>Expected Results</b>	The displayed average rating matches the calculated average rating based on user reviews.

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

*Table 4.1.7- Rating and Reviews - Average Rating Update*

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

*Table 4.1.8- Feedback Collection - Submitting Feedback*

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

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

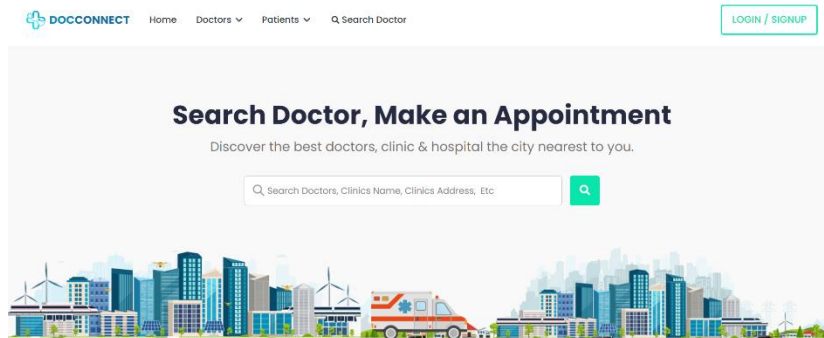
## REFERENCES

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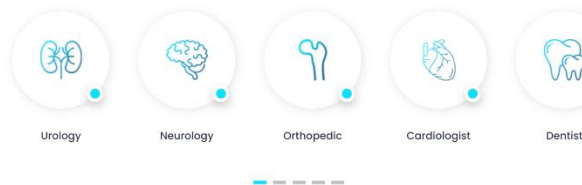
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# APPENDICES



## Clinic and Specialities

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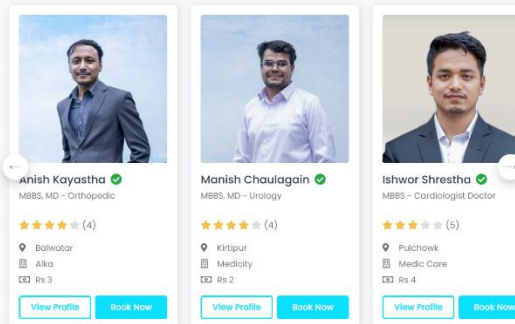
## Book Our Doctor

Lorem ipsum is simply dummy text

It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout. The point of using Lorem ipsum,

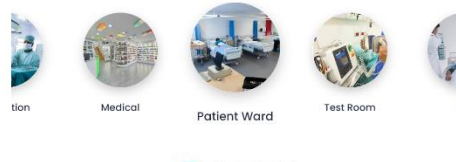
web page editors now use Lorem ipsum as their default model text, and a search for 'lorem ipsum' will uncover many web sites still in their infancy. Various versions have evolved over the years, sometimes

[Read More...](#)



## Available Features in Our Clinic

It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout.





## Search Doctor, Make an Appointment

Discover the best doctors, clinic & hospital the city nearest to you.

Search Doctors, Clinics Name, Clinics Address, Etc



Filter

Gender



**Dr. Ajai Shakya**  
MBBS - Cardiologist Doctor  
Cardiologist  
★★★★★ (6)  
Pulchowk

Pulchowk  
Rs 500

VIEW PROFILE

BOOK APPOINTMENT



**Dr. Anish Kayastha**  
MBBS, MD - Orthopedic  
Orthopedic  
★★★★★ (4)  
Balwatar

Balwatar  
Rs 700

VIEW PROFILE

BOOK APPOINTMENT



**Dr. Nirmala Gurung**  
MBBS, MD - Urology  
Urology  
★★★★★ (4)  
Kirtipur

Kirtipur  
Rs 500

VIEW PROFILE

BOOK APPOINTMENT



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### For Patients

- » Search for Doctors
- » Login
- » Register
- » Patient Dashboard

### For Doctors

- » Login
- » Register
- » Doctor Dashboard

### Contact Us

Devkota Sadak, Kathmandu  
Nepal, KTM 12345  
+977 1234567890  
docconnect@example.com

[Home](#)
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## Doctor Profile

**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)

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 Nepal, KTM 12345

+977 1234567890

docconnect@example.com



### Patient Register

Are you a Doctor?

Already have an account?

[Signup](#)



### Login Doccure

Email  
ishwor.shrestha@outlook.com

Password  
\*\*\*\*\*

[Forgot Password ?](#)

Login

Don't have an account? [Register](#)



## Dashboard



Ajai Shakyu  
Oct. 8, 1998  
Kathmandu, Nepal

- Dashboard
- Profile Settings
- Change Password
- Logout

### Appointments

### Billing

### History

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



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DOCCONNECT

Home

Doctors

Patients

Search Doctor

Home / Profile Settings

Profile Settings

Ajai Shakyaa

Oct. 8, 1998

Kathmandu, Nepal

Dashboard

Profile Settings

Change Password

Logout

Kathmandu, Nepal

Dashboard

Profile Settings

Change Password

Logout

Upload Photo

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

Full Name \*

Ajai Shakyaa

Username \*

ajai

Blood Group \*

O+

Email ID \*

ajai.shakya08@gmail.com

Date of Birth \*

10/08/1998

Mobile \*

1234567811

Address \*

Boudha

Gender

Male

City

Kathmandu

State

Bagmati

Zip Code

12345

Country

Nepal

Save Changes

DOCCONNECT

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Patient Dashboard

Login

Register

Doctor Dashboard

Devkota Sadak, Kathmandu  
Nepal, KTM 12345

+977 1234567890

docconnect@example.com

Home / Change Password

Change Password

A B

Jan. 21, 2000

Kathmandu, Nepal

Dashboard

Profile Settings

Change Password

Logout

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

32



### Doctor Register

[Not a Doctor?](#)

[Already have an account?](#)

Signup



### Login Doccure

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Login


[Don't have an account? Register](#)

DOCCONNECT

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Dashboard



Dr. Ajai Shakya

MBBS - Cardiologist Doctor

Dashboard

Schedule Timings

Reviews

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Change Password

Logout

Total Patient

1

Today Patient

0

Total Appointments

1

Patient Appointment

Upcoming

Today

History

Patient Name	Appt Date	Purpose	Paid Amount	Status
No upcoming appointments				

DOCCONNECT

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

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For Patients

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MBBS - Cardiologist Doctor

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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

★★★★★

DOCCONNECT

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docconnect@example.com

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**Profile Settings**



**Dr. Ajai Shakya**  
 MBBS - Cardiologist Doctor

Dashboard

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Profile Settings

Change Password

Logout



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

### Education

Degree \*

MBBS

### Experience

Experience (in years) \*

3

Designation

Cardiologist Doctor

Save Changes



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