

Title of the Project

# Nurse Finder App

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This Report presented in Partial Fulfilment of the Requirements for the degree of Bachelor of Science in Computing and Information System (Major in AI & IoT)

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Submission Date: 14 October 2025

## **APPROVAL**


This Project titled “Nurse Finder App”, Submitted by **Shah Md. Muhtasimul Haque Uday**, ID No: **213-16-595** to the Department of Computing and Information Systems, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computing & Information Systems and approved as to its style and contents. The presentation has been held on **14-10-2025**.

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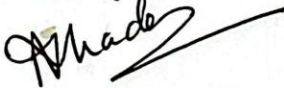
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## Declaration

I hereby declare that; this project has been done by me under supervision of **Md. Nasimul Kader (Assistant Professor)**, department of Computing and Information System (CIS) of Daffodil International University. I am also declaring that this project or any part of there has never been submitted anywhere else for the award of any educational degree like, B.Sc., M.Sc., Diploma or other qualifications.

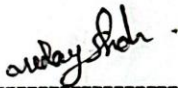
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## Acknowledgement

I want to express the most significant appreciation in the universe to Allah (VMH) for allowing me to learn and grow. I would not have been able to finish this work and all concomitant tasks without His assistance and support.

I am thankful to my department, my supervisor, and all the faculty for allowing me to undertake this project, as it has taught me a great deal. All these years, I have learned many things, technical and industry knowledge, but also all kinds of new tools, processes at work, etc.

I am very grateful to my project supervisor who is a lecturer in the department Md. Nasimul Kader sir, and of my academic faculty. Their firm support, advice and positive encouragement have contributed a lot in body of my professional development. They have been there to support, guide and most inspiring of all Educate me to overcome challenges.

I am sincerely grateful to them for their kindness, assistance and belief in my abilities. Their mentorship has not only helped me navigate through difficult tasks but has also taught me how to excel in demanding situations and handle large-scale projects in the future.

## Abstract

The proposed system “Nurse Finder App” is a Django-based web application project aims to connect the patients and qualified nurses in their area so that both can save their time and money. Besides its main objective is to reduce the sufferings of patient. Using this system, patient can easily find out the qualified nurse in short time, avoid long-time journey in traffic jam, reduce the healthcare cost and save time. Our system is a blessing for them especially who are incapable to move. It helps nurses to find their job in the nearest distance. Standing on a foundation of HTML, CSS, JavaScript, Bootstrap for mobile-friendly UI, Python Django for backend, PostgreSQL for database and Leaflet for map. The platform provides the patients registration, login approval, view options like see the upcoming appointments, recent appointments, messages from nurse, the detail information of nurse, quick action options like find nurse by searching name, location, specialty or on the attached google map according to the nearest area around 50 km, message in real time, update profile, write review and finally the most important task book nurse. To join the platform, nurses have to be verified by admin panel after registration. After verification, it provides the nurses login approval, view options like see the upcoming appointments, pending appointments, messages from patient, the detail information of patient, total review, average review in dashboard, quick action options like edit profile, update location on google map, manage their availability time, message in real time, accept or decline appointment. For administrators, it offers a set of powerful instruments for working with nurse, patient and promotions, as well as statistical specifications for the decision-making process. The project also focuses on factorability with features such as load balancing and efficient database queries for large traffic and volume data of nurses. Though, there has been a provision of security with compliance to standards for data protection. Some of the activities involved were designed to come up with the nurses included testing and documenting to ascertain whether the nurse was functional, reliable, and available for patient. The issue like performance, responsiveness, and the usability design was solved through the use of incremental problem-solving and teamwork. Through the use of these technologies and adopting the latest trends in designing, the platform seeks to help businesses grow while at the same time making searching for nurses easy and enjoyable for patients while equipping businesses with effective tools in their operation.

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# **Chapter 1**

## **Introduction**

## 1.1 Introduction

Today, with the rapid growth of digital health services, connecting patients and healthcare providers through online platforms has become increasingly common. Nurse Finder app is a comprehensive online platform designed to efficiently connect patients, families, and healthcare institutions with qualified nurses. The app was designed for ease of use and efficient administration, allowing nurses, patients and system administrators to easily interact with the service.

The platform uses HTML, CSS to create a rich and interactive frontend such as Python and the Django framework for a robust backend architecture. For efficient and secure database operations, I have chosen PostgreSQL – it is done so to store user profiles, service request and booking details reliably. For interface construction TailwindCSS and DaisyUI are utilized to produce a neat, responsive and modern feel Vs Code is used as build tool for development acceleration and project structure order.

On the admin side, Nurse Finder comes with a powerful dashboard and provides information in real-time statistics and charts which can be used to manage nurses, patients, bookings, payments and service packages. Administrators are able to manage nurse credentials, update user roles, approve or decline applications for nurses and control service categories and promotional offers to enhance visibility in the platform. Custom admin authentication Ensures sensitive administrative components are secure and accessible for your personnel.

For the user, the value proposition of Nurse Finder is reliability, availability and trust. Patients or their families can register easily, confirm identity and create detailed profile. Users can browse through categories such as home care, elderly support, emergency nursing or post-surgery care. They are able to see nurse profiles, as well as qualifications, availability and ratings, and book services in a secure way. Real-time notifications, guaranteed payment options, 24/7 customer support and a transparent service policy adds to the overall user trust and platform credibility.

Based on its extensive features, simple and intuitive design and powerful administrator dashboard, It stands out as the best solution for constructing high-level nurse service website exclusively used to find and hire professional nurses online.

## 1.2 Purpose of Project

With the Nurse Finder App project a new and successful IT environment for patients, relatives, nursing homes or the hospital into relevant care in real time addressed. This offering guarantees to address the needs of both clients and administrators with its intuitive, easy to use design which accommodate for secure communication, impact hiring patterns and awesome nurse management tools.

What we're seeking to give patients and families is an experience of health care that's accessible and reliable. It has its own features of speedy registration, authentic profile verification and it also maps the nurse in your area or locality and nurse society too as well as request for a place by sitting at home with prompt payment facility. The realtime units will be made available to user in a short time notice. Additional services like 24/7 support, supplemental nurse profiles with ratings and flexible booking options ensure user satisfaction and peace of mind.

For the Admin and managements it carries along features such as: nurse profile creation, job allotment & tracking and performance analytics that ease up the healthcare operation. Admin Dashboard provides insights to the data, including metrics on nurse-available status, service requests and user feedback. Admin can manage the payment transaction for patients. Quality assurance Controlling the people management process; Tools for nurse checkservice controlling and reporting to ensure service excellence and platform integrity.

The software also solves the problems of expandability and security with respect to the data, ensuring a smooth operation in case of increasing number of users and requests. Built with the most current technologies including HTML, CSS, Python Django, PostgreSQL and Bootstrap; the platform is a high performing application choice that offers user friendly interactions as well as room for future feature development.

In conclusion, you have the Nurse Finder App to bridge between healthcare seekers and professional nurses in a ready marketplace environment where healthcare service is deemed instant.

## **Chapter 2**

### **Initial Study**

## 2.1 Purpose of Project

The primary motive of the Nurse Finder App is to establish a new age efficient and satisfactory platform that connects the nurses and the patients in the online searching platform. This platform is intended to serve the needs of both patients and administrators through its practical design carrying out secure transactions and easy management tools.

### 1. Project Overview

This is a comprehensive Healthcare Service Platform to facilitate quick and easy nurse hiring & managing, for both patients and management. It leverages new age technologies to bring a dependable solution for healthcare organizations/homes to locate and hire quality nurses while making sure that the service is responsive, reliable, secure and feature-packed. Aims the objective is to develop a profile for the patient and for nursing issues in virtual environments, analyzing the long-term demand of nursing care via digital means that does not reach practice, but continues instead on written waiting lists.

### 2. Objectives

Deliver the best experience when a patient is finding nurse with the google map search or search by keyword, location, specialty of the nurse. Provide administrators with good solutions for organizing nurses, patients, and promotions. Make it cost effective and time saving for patient. Especially reduce the suffering of patients who are incapable to move or more than serious conditions. Need for a platform that will be able to accommodate a growing traffic and amounts of data as it will play a key role in the organization's performance. Some of these include, creating patients accounts, verification of nurse account, protection of verification information details, and availability of patient care services, all aimed at empowering trust and ensuring people stick with you.

### 3. Key Features

**Admin Features:** Admin Dashboard for tracking of real-time statistic data, Tools used to manage and verify nurses, patients, Specific and authorized access solutions for administration, Handle successful payment transaction.

**Patient Features:** It is easy to sign up and verification is done through admin approval. It adds the home page with finding nurse, messaging, booking appointment and viewing details of nurse.

## **Nurse Features:**

Qualified nurses are available for patient cares at near to them. Patient support available all day and night so that patients are well catered for at all times.

### 4. Technologies Used

**Frontend:** HTML, CSS, Bootstrap, JavaScript.

**Backend:** Python Django

**Database:** PostgreSQL

**Build Tool:** Vs code.

### 5. Benefits

**For patients:** Simplicity in locating and engaging skilled nurses, now with the guarantee of safe transaction payments, verified nurse profiles, and trusted healthcare support any time and place.

**For admins:** streamline operations with centralized management tools and real-time analytics on nurse activity, service requests, and performance data.

**For care providers/ agencies:** Provides for broader reach to increase patient or service request volume, faster response time and scalable digital model that can accommodate change and growth in health.

## 2.2 Project Scope

The main project for Nurse Finder App is the creation of a functional and secure e-platform conception for the patients and administration. This entails having an effective frontend to facilitate easy navigation, and actual booking process, as well as a robust backend to safely store all relevant information and securely carry out all essential transactions. The features to be included within the scope are basic, yet contain registration, personal account, service catalog, safe methods of payment option, and support. It offers the administrative control panel for nurses, users and promotions, real-time data and statistical data visualization. Technologically developed through HTML, CSS, Python Django, Bootstrap and PostgreSQL, the intended platform architecture for the transactions and the patients is comprehensive, secure, and malleable for any further enhancements that may be needed to provide long-term value.

## 2.3 Background of the project

This change of growth in e-platform has impacted the whole healthcare system as most organizations use the internet to expand their service. It means that the modern patient demands the qualified nurses near to their location at the shortest time, safely booking, payment etc. However, the development, management and scaling of such practices present many problems for the small and medium-sized clinics and hospitals. Understanding this necessity, Nurse Finder App was designed to be a fully functional online searching nurse near the patient's location that eliminating these problems and offering an easily navigable environment for patients.

It therefore models the project with e-healthcare giants attempting to import most of the present technological and design aspects into the platform. Built with the help of HTML, CSS, Python Django, Bootstrap and PostgreSQL, the platform guarantees fast and secure work with a high degree of scalability. It also focuses on such aspects as personal user profiles, safety of payments, and advertising campaigns in order to increase the share of patients' satisfaction. For administrators, such options as the integrated management tools delivering superior performance information in real time will help make work easier and allow healthcare system to concentrate in the areas of growth and patient satisfaction. It is therefore the goal of Nurse Finding App organization to ensure that any technological development will meet the applicable practical needs of the digital healthcare system.

## 2.4 Objective

Using appropriate internet technologies will make the platform convenient for users, making the healthcare experience smooth and accessible while giving administrators the essential tools to manage nurses, patients, and service requests effectively. Focus will be on incorporating functionality, scalability, and security to establish a strong backbone for health care service management.

The company aims to be a 'one-stop solution' for patients, where they can easily, quickly and safely search and book local nurses. Just a few more things that you can find in our app, fast registration and login, personalized patient profiles to help nurses get quick info before contact with clients, advanced search and spot any nurse by the area or specialty or even slot free at that day, payment option via online secure gateway/book your time in click button directly from comfort of your home and also for any other questions just use live support chat or call take every single interaction (doesn't matter if its a client) for 100% security high trust. With dynamic features such as Top-rated Nurses, Urgent Care Requests, and Personalized Recommendations, the users can receive latest information about nurses available making it a better consumption of experience.

On the commercial side of things, the project is about giving IT administrators useful tools. Accurate analytics, reports and booking data are available on the Admin Dashboard in a graphical form for all aspect of nurse performance and user engagement. Various management instruments for nurses, patients, and the service record are integrated to support the organization in responding to changing healthcare requirements while keeping their service quality.

Therefore, in order to reconcile patient convenience with effective business management, Nurse Finder App intends to operate as a dependable and easy-to-use system that will act as the glue needed for such a digital health landscape.

## **Chapter 3**

### **Literature Review**

### 3.1 Discussion on problem domain based on available solution

A major issue facing the entire world today is the lack of qualified nurses and other healthcare workers. Finding trustworthy nursing support when needed can be difficult for patients, families, and healthcare facilities. Solutions have historically been dispersed, depending on third-party organizations, hospital contacts, or word-of-mouth recommendations. This can be expensive, time-consuming, and ineffective. There are currently a number of web-based and mobile-based platforms available to address this problem. Many of these solutions offer marketplaces for general caregivers or job boards specifically for nurses. Although these platforms link nurses with patients or healthcare providers, they frequently lack specialized features like location-based search, emergency booking, verified nurse credentials, real-time availability tracking, and secure client-nurse communication. Furthermore, current solutions are often regionally restricted, fail to sufficiently validate professional credentials, or prioritize long-term staffing over on-demand services. Users thus struggle to guarantee trust, openness, and prompt access to qualified nurses. As a result, a dedicated Nurse Finder Web Application could improve on existing alternatives by offering:

Easy to use, centralized platform • Verified nurse profiles with credentials and experience  
Location-based filter and search capabilities updates. Rates: No in network costs on all participating suppliers.

Such a system bridges existing gaps, directly serving the need for efficient, reliable and available communication among nurses and with patients.

### 3.2 Discussion on problem solution based on available solution

When it comes to hiring nursing services, the Nurse Finder Web Application offers a comprehensive solution to the problems that patients and healthcare provider's encounter. Current software solutions in this field frequently offer few search options, do not adequately verify nurse credentials, and do not guarantee that medical professionals are available in real time. Furthermore, the majority of systems in use today rely on manual procedures or simple listings, which can lead to errors, delays, and a decline in user trust. The Nurse Finder Web Application uses cutting-edge computer technologies and prioritizes a seamless healthcare service experience to address these issues. A smooth user interface and responsive design across devices is ensured, for example, by using

HTML, CSS for the front end, and feature-rich Bootstrap. This eliminates the subpar optimization and non-responsiveness that many current Health platforms have. Regardless of the type of device, this ensures accessibility for patients and nurses.

The Admin Dashboard is a useful and easy-to-use tool for administrators to track real-time patient Requests, booking status, and nurse availability and specialty. This specifically deals directly with the prevalent issue of having to rely on inefficient manual monitoring systems that often lead to errors and unsatisfactory management.

are ensured through the backend system that additionally provides scalability and asynchronous data processing.

Is powered by PostgreSQL / Python Django. This implies that the performance does not degrade in high

Loads and provides a reliable answer for the growing amount of users and requests. In order

In order to maintain confidentiality and confidence it also assist save storing of patient, nurse credentials

Histories, and booking information.

Nurse Finder addresses many of the issues with healthcare staffing solutions today

Feature-based architecture for the Web Application including nurse profiles, location based and verified nurses 3.

Scheduling, real-time availability and secured communication. This is concerning for patients who desire quality care and

For nurses looking for reliable income, this is a quicker, safer and more user friendly alternative.

### **3.3 Recommended Approach**

The agile method is the best method to build this platform, because it can offer improvements even after it is created and give flexibility along its development. The project folder structure will include features such as: registration, create nurse profile, patient bookings ( with calender), secure payment processing etc. Advanced features such as the Admin Dashboard, real-time nurse availability monitoring and data analytics can be implemented progressively once the basic features are set up. By endowing the platform with patient convenience, trust and security of

transactions from inception, a robust healthcare service journey can be delivered.

Scalability-wise, JavaScript is selected for the frontend which means fast response time as well. Answercard interactions become smoother when number of patients and nurses are being raised. With PostgreSQL database integration you can offer scalable data storage, such as expanding user records, and booking histories. For styling, you can use HTML, CSS or Bootstrap for clean and responsive professional look on all devices without any impact on performance. The work is to focus on the admin interface which should act as a control room for managing n. This iterative process ensures that the Nurse Finding App evolves into a time-efficient, cost-effective, and user-friendly solution for patients in need of medical support including incapacitated or paralyzed individuals while also providing nurses with a trustworthy platform to connect with those who require their services.

## **Chapter 4**

### **Methodology**

When it comes to Nurse Finding App, the approach used is the agile development based on the development of a set of core technologies with periodic enhancements. Python Django, JavaScript, PostgreSQL, HTML and CSS makes the design effective, scalable, responsive and enable an optimal user and admin management.

## **4.1 What to use**

The Project, Nurse Finder App has opted for HTML, CSS, Bootstrap and JavaScript for the front end, and Python Django for the back end, an efficient database for data storage is also considered. Styling is done by CSS and Bootstrap for mobile-friendly UI, Leaflet for map with web building tool Visual Studio code. Others are the verification; high-level admin panels; data visualization libraries for the analytics sections.

### **4.1.1 Agile Model**

Agile model is another style of software development that is iterative and collaborative in nature. It is centered on releasing usable software every sprint, and the flexibility and user involvement. Daily scrum meetings, sprint reviews and other gatherings that occur allow for the free exchange of information and permit fast decision making. This brings the ability to change or to make iterations to be added at any given number of phases in development based on changing requirements or user demands.



*Figure 4-1: Agile Model*

## 4.2 Why to use

The technologies in Nurse Finder App select for offering a modern, scalable and efficient healthcare solution.

Bootstrap makes the UI highly responsive to the user and has reusable components for the enhanced development of processes.

Django offer a framework that is flexible and compatible with the extensive traffic and real-time operations.

PostgreSQL has adaptable features when it comes to handling and storing massive data, popular during changes in inventories.

CSS and Bootstrap offer a quick way to implement attractive aesthetics that adhere to the latest design conventions together with a responsive layout framework.

It also provides that the development speed will be fast with the help of fast build and hot replacement.

### 4.3 Implementation Plan

Here's Phase 1: I chose the topic Planning and Design from the weekly options available on the course, so, Week 1 and Week 2 revolve around this theme. Collect and write information about project needs. Design mockups for the user interface and the back end and admin interface. The table structure for product, user, order and offer should be defined and finalized. Phase 2: Frontend development plan (Week 3-6) We decided to configure the basic HTML, CSS, JavaScript environment using the Vs code tool for faster development. Utilize the user interface with Bootstrap for its responsive functionality. Develop key pages: Home, Find Nurse, Nurse Profile, Patient Profile, and Booking Appointment and Messaging Section, Admin Panel. From this lesson, I implemented JavaScript Ajax to handle navigation between different pages. Phase 3: Backend Development (Week 7-10). Install the Python server and the Django framework. Include modules of authentication, products, orders, and offers. Integrate it with the PostgreSQL for storage of data back end to the PostgreSQL database. Ensure to validate admin authentication by use of custom hooks. Phase 4: Integration and Testing phase outlines in this section of the paper includes weeks 11 to 13. Make frontend integrate with backend APIs for it to work as intended. Test user features: web services like registration, user login, updating user profile, searching nurse and booking appointment. Test admin features: for nurse management, user management, specialist management, languages. Perform performance, security and cross-browser test. Phase 5: Deployment and maintenance are the two key strategies that are scheduled for the sixteenth week of the plan. Host the platform on a cloud hosting service Such performance will allow detecting and solving the problems related to post-deployment, which is critical for any IT project. Of course, you keep on collecting feedback from the user for future improvement of your application.

## **Chapter 5**

### **Project Plan**

## 5.1 Work Break Down structure

The work breakdown structure for Nurse Finder App is to segregate the project into five major phases. First, the Planning and Design phase is the process of requirement gathering, joining a number of wireframes, and establishing the final database schema. Secondly, the Frontend Development phase concerns layout and interface creation based on the user interface design utilizing HTML, CSS, and Bootstrap; navigation structure. The Backend Development can be divided into such steps as the setup of and Python Django, JavaScript setting, API implementation and usage of PostgreSQL for data management. Thus, there is Integration and Testing to guarantee that all the parts work together, Deployment and, at last, Maintenance for post-deployment enhancements. That is why our project has been divided into few subtasks and we have worked out a strict schedule of which part of the project will be given how much time. It enables us to see the entire project at the same timetable.

Task name	Duration (Days)	Start	End
Introduction	8	14 May-2025	21 May-2025
Initial study	5	22 May-2025	26 May-2025
Literature Review	3	27 May-2025	29 May-2025
Methodology	5	30 May-2025	03 Jun-2025
Project Plan	8	04 Jun-2025	11 Jun-2025
Feasibility Study	7	12 Jun-2025	18 Jun-2025
Foundation	7	19 Jun-2025	25 Jun-2025
Exploration	9	26 Jun-2025	04 Jul-2025
Engineering	12	05 Jul-2025	16 Jul-2025
UI/UX Development	5	17 Jul-2025	21 Jul-2025
Development	37	22 Jul-2025	27 Aug-2025
Testing	7	28 Aug-2025	03 Sep-2025
Implementation	5	04 Sep-2025	07 Sep-2025
Critical Appraisal	2	08 Sep-2025	09 Sep-2025
Lesson Learned	4	10 Sep-2025	13 Sep-2025
Conclusion	4	14 Sep-2025	17 Sep-2025
	<b>Total: 130 days</b>		

Figure 5-1: Work Break down Structure

## 5.2 Resource Allocation

Resource management is defined as the distribution and application of resources for executing project activities and achieving the defined goals of the project.

<b>Task name</b>	<b>Duration (Days)</b>	<b>Resource Allocation</b>
Introduction	8	Analyst, User
Initial study	5	Analyst
Literature Review	3	Analyst, Team Leader
Methodology	5	Analyst, Developer, Project Manager
Project Plan	8	Analyst, Project Manager, Team Leader
Feasibility Study	7	Analyst, Project Manager, Team Leader, User
Foundation	7	Analyst, Team Leader
Exploration	9	Analyst, Developer, Team Leader, Designer
Engineering	12	Project Manager, Team Leader
UI/UX Development	5	Designer, Developer, Team Leader, User
Development	37	Developer, Analyst, Tester
Testing	7	User, Developer, Tester, Team Leader
Implementation	5	Project Manager, Developer, Tester
Critical Appraisal	2	Analyst, User, Developer
Lesson Learned	4	Developer, Analyst
Conclusion	4	Analyst
	<b>Total: 130 days</b>	

Figure 5-2: Resource Allocation

### 5.3 Time Boxing

Time boxing can be described as project management technique or approach that presupposes that time is divided into certain fixed time segments called time boxes. It assists in the development of a conscientious work attitude, work culture and time - sensitive working norms within specified working hours. We have certain time boxing which is mentioned in the below part of this project.

Time Boxes	Task name	Duration (Days)	Resource Allocation
TB1	Introduction	8	Analyst, User
	Initial study	5	Analyst
TB2	Literature Review	3	Analyst, Team Leader
	Methodology	5	Analyst, Developer, Project Manager
TB3	Project Plan	8	Analyst, Project Manager, Team Leader
	Feasibility Study	7	Analyst, Project Manager, Team Leader, User
	Foundation	7	Analyst, Team Leader
TB4	Exploration	9	Analyst, Developer, Team Leader, Designer
	Engineering	12	Project Manager, Team Leader
	UI/UX Development	5	Designer, Developer, Team Leader, User
TB5	Development	37	Developer, Analyst, Tester
TB6	Testing	7	User, Developer, Tester, Team Leader
	Implementation	5	Project Manager, Developer, Tester
TB7	Critical Appraisal	2	Analyst, User, Developer
	Lesson Learned	4	Developer, Analyst
	Conclusion	4	Analyst
		<b>Total: 130 days</b>	

Figure 5-3: Time Boxing

## 5.4 Gantt chart

A Gantt chart is a graphical project management tool which displays the schedule of your tasks or activities and their dependencies, over time. It lists when tasks begin and end, as well as their dependencies and milestones.

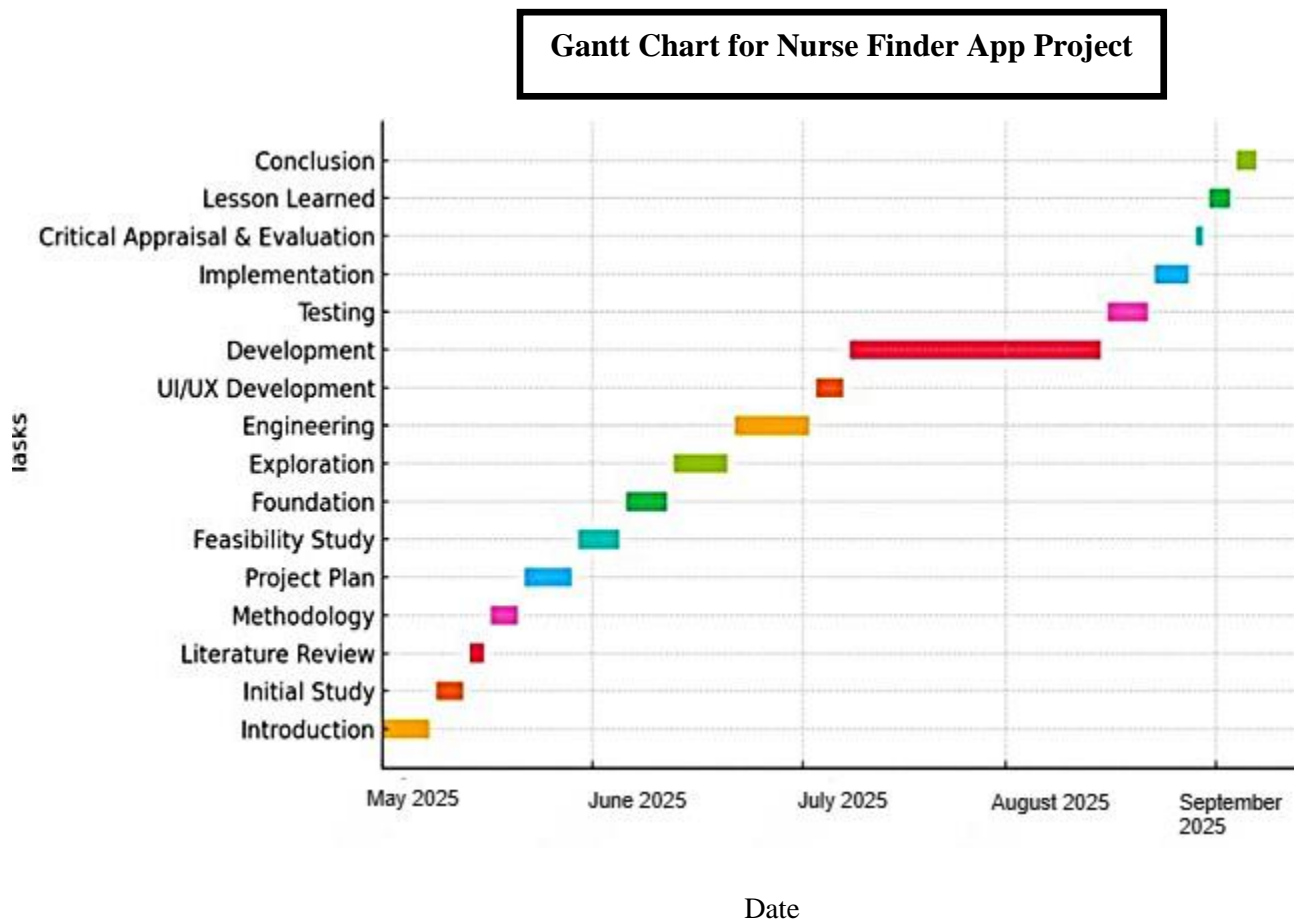


Figure 5-4: Gantt chart

## **Chapter 6**

### **Feasibility Study**

## **6.1 All possible types of feasibility study:**

The common types of feasibility studies are technical feasibility that is checking on the available technology and resources, economic feasibility that focuses on the cost/benefit analysis and return on investment, operational feasibility that checks whether the project meets the users' requirement, legal feasibility that checks whether the project complies with the law and lastly schedule feasibility that looks at the viability of completing the project within the set timeframe.

## **6.2 Technical Feasibility:**

The technical capabilities and existing resources, which will be need to deliver the project. The JavaScript, Python Django, PostgreSQL and Bootstrap, CSS technologies provide scalability, efficient performance, and up-to-date approach in the Nurse Finder App plan.

## **6.3 Economic Feasibility:**

This study examines of Nurse Finder App platform and determines whether the project can yield repeatable returns to make the investments viable. The initial development cost comprises of technology (platform and languages used: HTML, CSS, Bootstrap, JavaScript, Python Django, and PostgreSQL), physical infrastructure (servers and hosting service), and human resource (developers, testers, designers). The main cost operation costs are related to server maintenance, advertising, and consumers' service. This is because the platform's revenue generating model will rely on sales, promotions, and subscriptions for the premium account. A breakeven calculation and ROI forecast suggests that further growth into functional domains backed by the systematic implementation of advertising, acquisition, and other promotional techniques presents appealing and sustainable acquisitive and profitable opportunities in the long term.

## **6.4 Operational Feasibility:**

There are three key subtypes in analyzing Operational Feasibility for the Nurse Finder App platform, to do with the question of whether the system can be effectively kept running and managed in the long run. As for the usability, the platform is non-complex from patient's perspective and does not require complex backend administration. Some of these are staff training and documentation to facilitate easy operation of the organization. Therefore, the availability of large cloud-based structure facilitates management of extra traffic and booking is facilitated.

## **6.5 Legal & Compliance Feasibility:**

Legal & Compliance Feasibility for the Nurse Finder App platform checks the compatibility of each proposed system in meeting legal requirements. This coupled with other Data protection laws that tackle issues like GDPR (General Data Protection Regulation) when it comes to handling patients' data. Also, the platform has to adhere to rules of intellectual property for the patients and nurses' information and content as well. Legal compliance is imperative in as it reduces risks related to the firm as well as increase the confidence of the users and stakeholders in the company.

## **Chapter 7**

### **Foundation**

## **7.1 The problem area identification:**

Nurse Finder App is that existing nurse searching solutions often offer a subpar user experience, are inefficient for nurse searching in short time and booking appointment management, don't provide real-time messages, analytical tools, and these messaging, booking are not always safe. The adopted approach of slow performance results in challenging usability for patients, and administrators are often limited when trying to manage patients, nurses, searching, messaging, booking and payment transactions and promotions effectively. Furthermore, few platforms have individualization and compatibility, making patient interactions less enjoyable and organizational processes less effective. In order to address these challenges this project sets for itself a goal of implementing an easily searchable, expandable and secure healthcare solution appropriate for patients, nurses and administrative use.

## **7.2 Interview:**

Surveys include getting information from patients, nurses, entrepreneurs and managers, which would be interested to use Nurse Finder App platform. They revolve around choices, drawbacks with existing nurse searching models, required features, and functional issue. This feedback also helps to define or clarify requirements, and keep a project on track.

## **7.3 Questionnaire:**

An assessment form for the project includes all necessary information about patients, nurses and administrators to improve the features of the Nurse Finder App site. From the patients, it is important to understand their choice in searching location on google map, nurse categories, mode of booking, messaging, payment and the support services they expect. For administrators, questions are concerned with the difficulties in handling searching for nurse in short time, patients, booking, messaging and needed analytics. The questionnaire also aims at getting an opinion on issues to do with security, mobile compatibility, and convenience. It also helps in the identification of the platform that meets the stakeholders' needs and offer the best and efficient solution.

## 7.4 Requirement Specification:

The Requirement Specification for Nurse Finder App identifies the features that are functional and the un-functional of the intended platform. Functional requirements are the registration of patients, nurses, verification of qualified nurses, management of profiles, search and view nurse in short time, secure messaging in real time, payment via mobile wallet like Bkash or in cash and booking appointment. Non-functional requirements include scalability, performance, security of data and the ability to provide with work on a mobile interface. The platform has to cater for the ease of making purchase, the organization's backend processes as well as analytics in real-time. The return to modern solutions and healthcare goals is guaranteed by such technologies as JavaScript, Python Django, PostgreSQL and Bootstrap, CSS.

# **Chapter 8**

## **Exploration**

## 8.1 Activity diagram:

Activity diagrams are most useful for modeling the behavior of a system or a process, documenting the activities that are necessary and identifying the utilize pale or opportunities for improvement. They offer an illustration of complex methodologies, and the relative positioning of different activities can be easily ascertained by the different stakeholders.

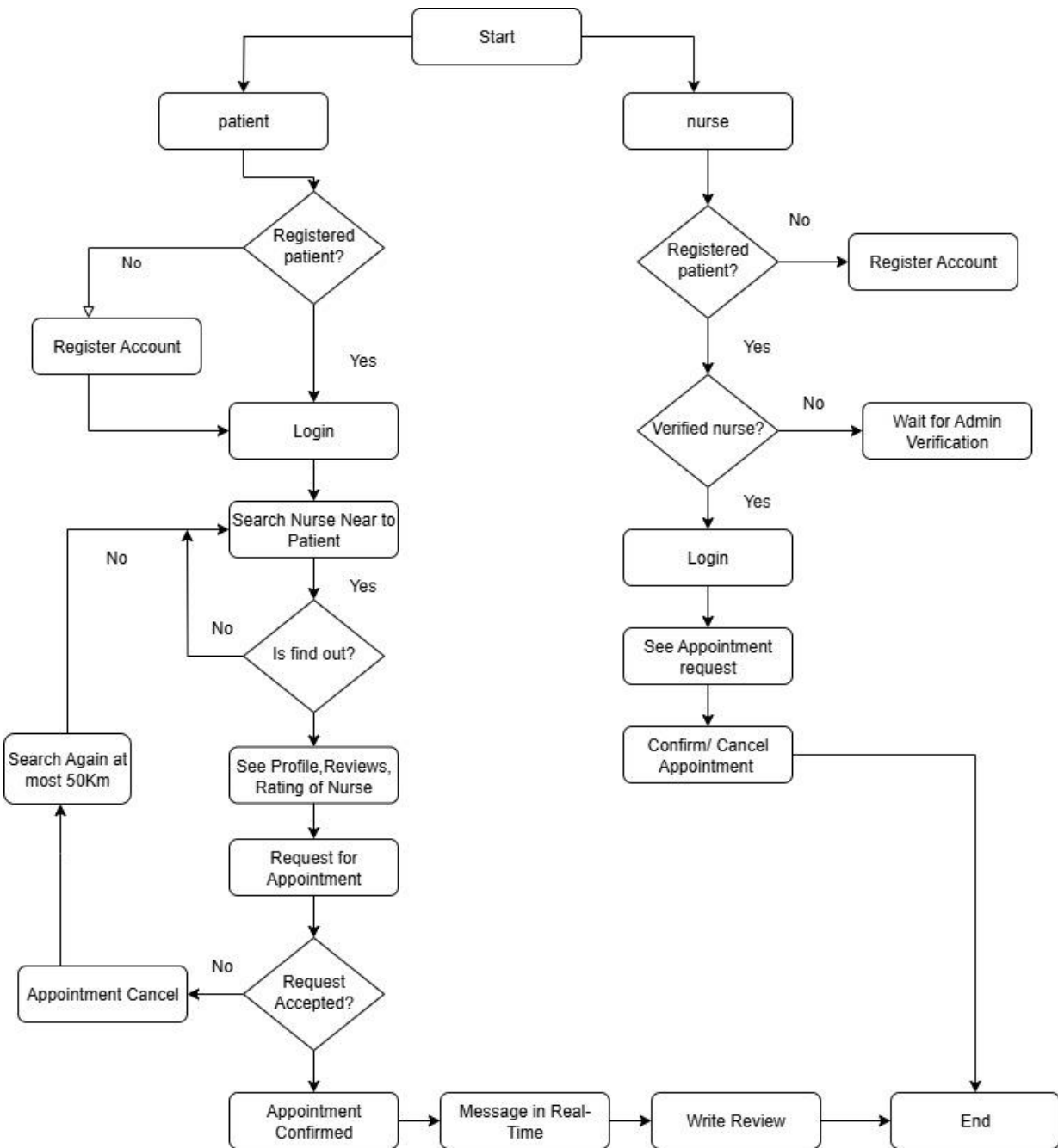


Figure 8-1: Activity Diagram

8.2 Use case of Dashboard:

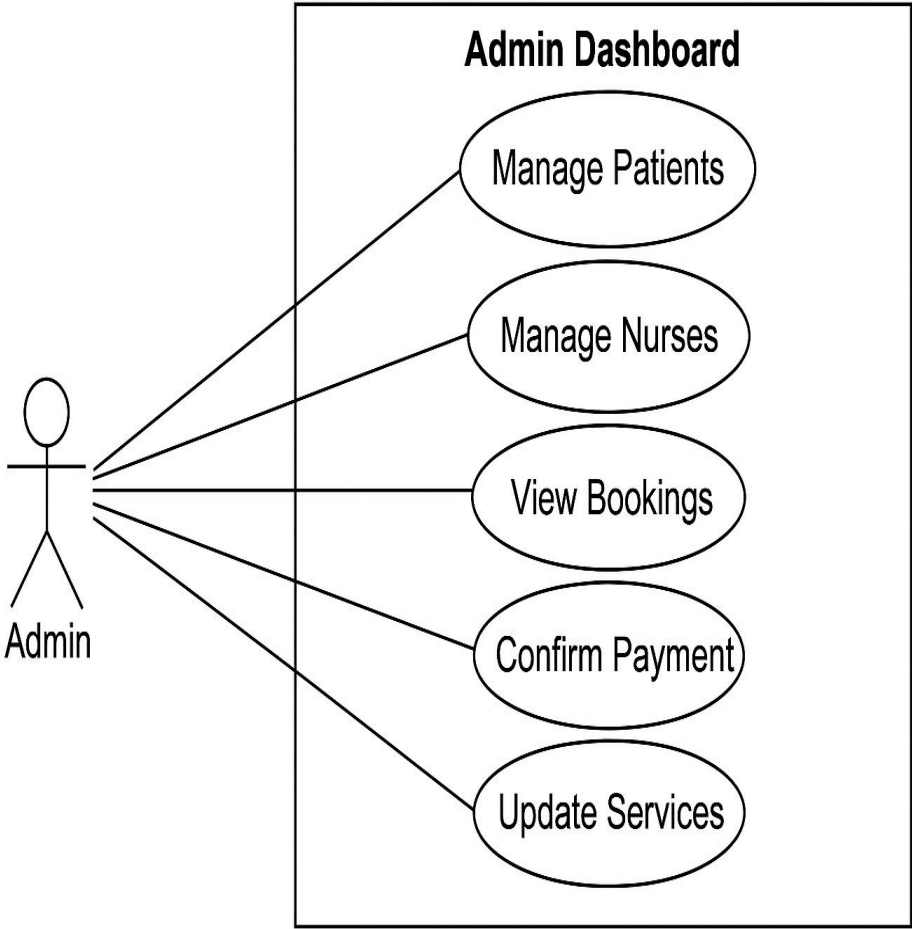


Figure 8-2: Use case of Dashboard

## **Chapter 9**

### **Exploration**

## 9.1 Module of the system:

Serial of Action	User Action	System Interaction
1	Patient opens the platform	System loads the homepage with searching option in google map near to patients.
2	Patient register / login	System validates credential and grants access.
3	Patient searches for nurses	System fetches and displays nurses at most 50 km near to patients' location according to specialty.
4	Patient requests for booking	The system records the booking request and notifies the selected nurse in real-time through the nurse's dashboard.
5	Patient proceeds to payments	The system generates a secure payment page showing booking details, total cost, and available payment methods.
6	Patient completes payments	The system verifies the payment, updates the transaction status, and confirms booking upon success.
7	Patient views transaction status	The system retrieves payment data from the database and displays real-time transaction history with status (successful, pending, or failed).
8	Patient views booking status	The system fetches the booking details and displays the nurse's confirmation, appointment time, and booking progress.
9	Patient chats in real-time with nurses	The system connects the patient and nurse using a real-time chat module allowing instant message exchange.
10	Patient gives reviews for nurse	The system records the patient's feedback and updates the nurse's overall rating in the database.
11	Nurse register / login	The system validates the nurse's credentials, authenticates the account, and loads their dashboard showing appointments and availability.
12	Nurse views the appointments	The system retrieves and displays all current, pending, and past bookings for that nurse.
13	Nurse confirm / cancel appointments	The system updates the booking status (confirmed/cancelled) and notifies the patient of the nurse's response.
14	Nurse chats in real-time with patients	The system synchronizes the chat module to allow nurses to respond instantly to patient messages.
15	Admin manages patients and	The system loads the admin dashboard

	nurses	showing lists of users, nurses, and related data for monitoring and management.
16	Admin reviews patient details	System fetches and displays patients data for management
17	Admin confirm the payment	The system updates the transaction record as “verified” and allows further processing of the booking.
18	Admin confirm the booking	The system updates the booking record as “approved” and notifies both the nurse and patient.
19	Admin updates the services	The system applies the new settings or updates to the database and refreshes the service options available to patients and nurses.

*Table 8.1.3-1: Table of Module system*

## 9.2 Class diagram of the system:

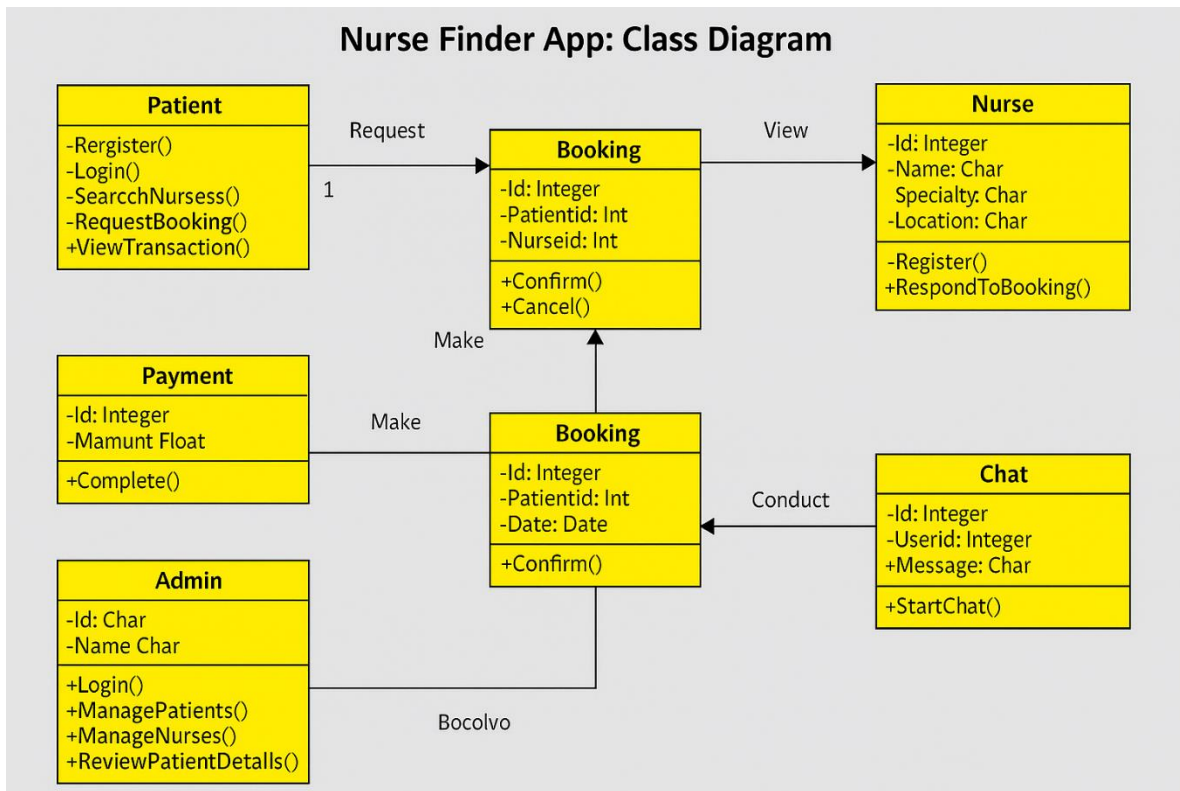


Figure 9-1: Class Diagram

## 9.3 High-fidelity prototype of the system:

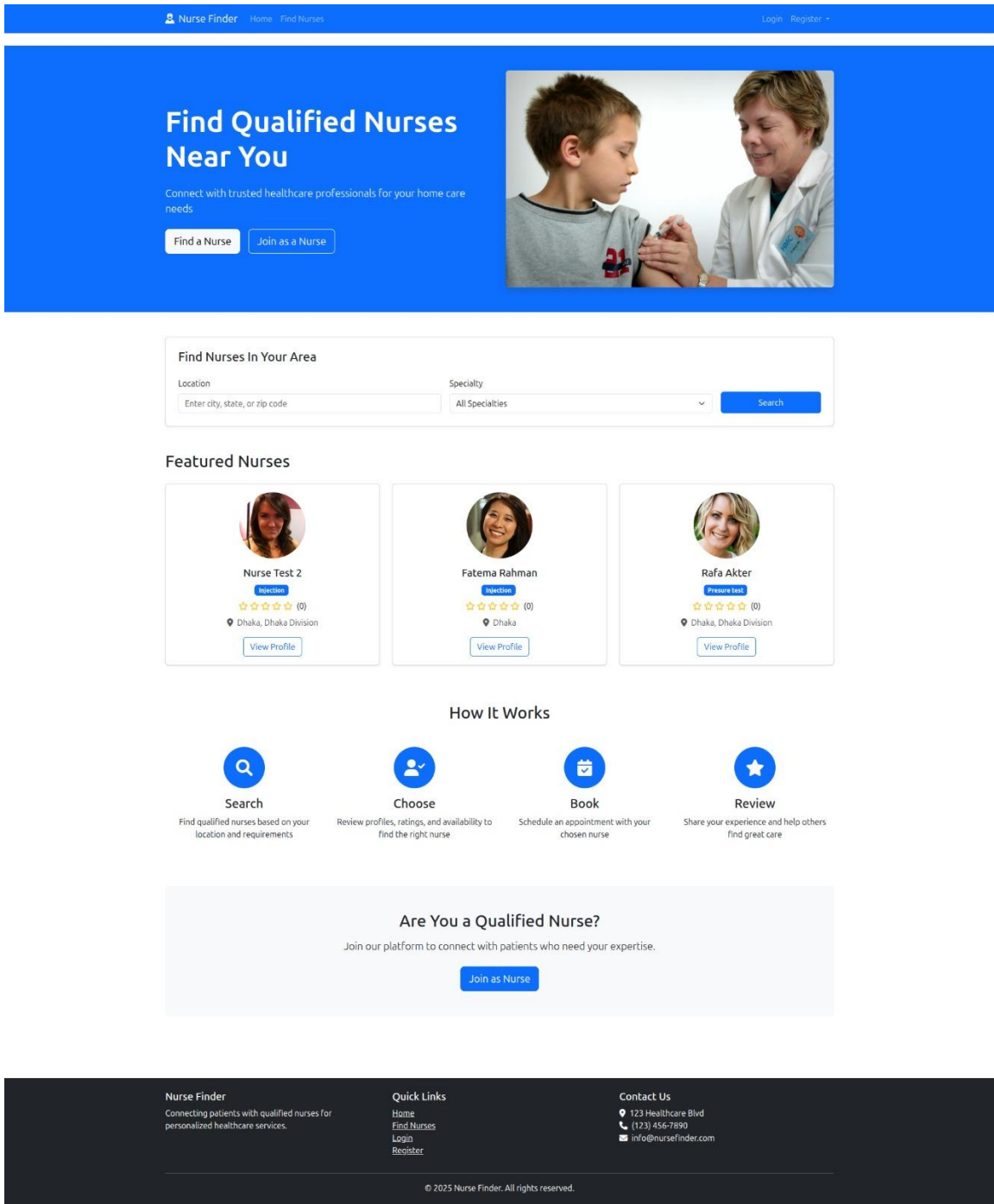


Figure 9-8: High Fidelity prototype (Home page)

# Find the Perfect Nurse

Search by name, location, or use your current location to find qualified nurses near you

Search by nurse name, city, or address...

All Specialties

Search

Use My Current Location

Radius: 10 miles



Found 3 nurses

3 results

<p>Nurse Test 2 Test 2 ★★★★★ (0 reviews)</p> <p>Injection</p> <p>Experience: 5 years uytyt</p> <p><a href="#">View Profile</a> <a href="#">Book Now</a></p>	<p>Fatema Rahman Fatema Rahman ★★★★★ (0 reviews)</p> <p>Injection</p> <p>Experience: 5 years jkhjk</p> <p><a href="#">View Profile</a> <a href="#">Book Now</a></p>	<p>Rafa Akter Rafa Akter ★★★★★ (0 reviews)</p> <p>Pressure test</p> <p>Experience: 5 years uytyt</p> <p><a href="#">View Profile</a> <a href="#">Book Now</a></p>
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## Nurse Finder

Connecting patients with qualified nurses for personalized healthcare services.

## Quick Links

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- [Find Nurses](#)
- [Login](#)
- [Register](#)

## Contact Us

- 123 Healthcare Blvd
- (123) 456-7890
- info@nursefinder.com

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Figure 9-9: High fidelity prototype (Nurse Finding page)

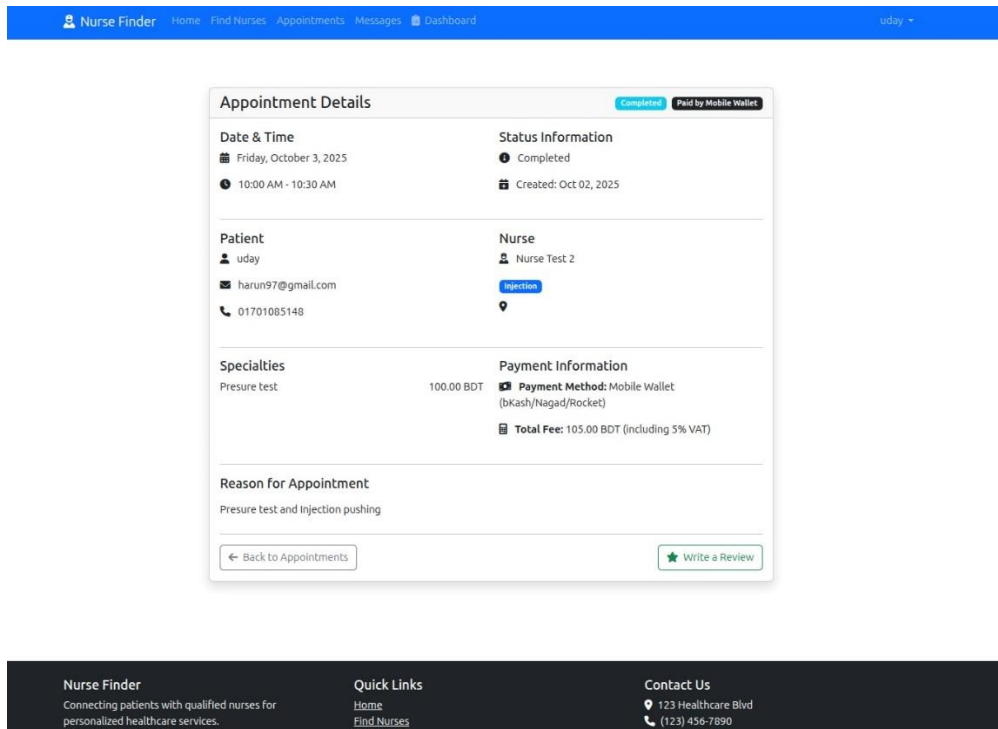


Figure 9-10: High fidelity prototype (Appointment booking page)

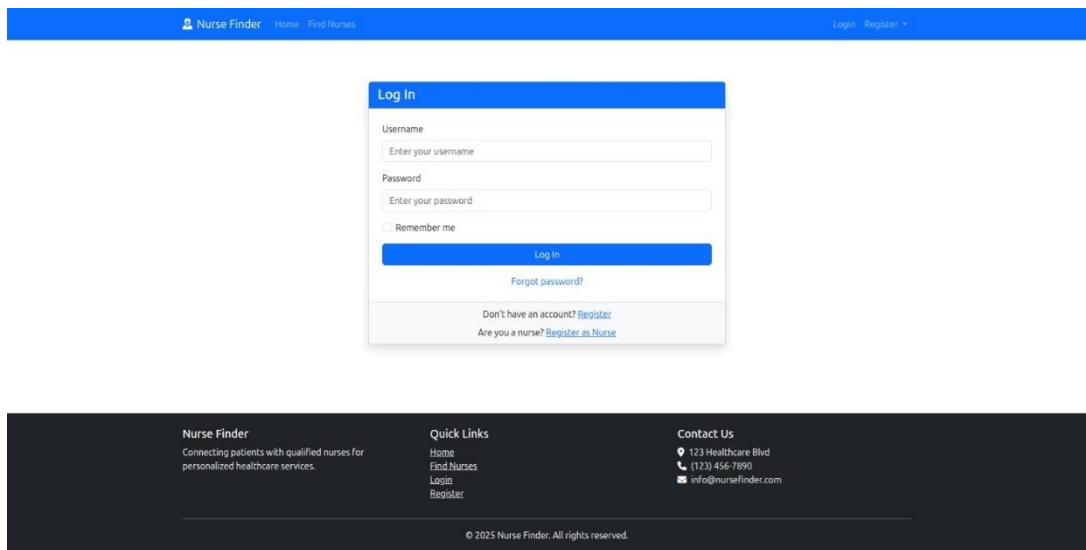


Figure 9-11: High fidelity prototype (Login page)

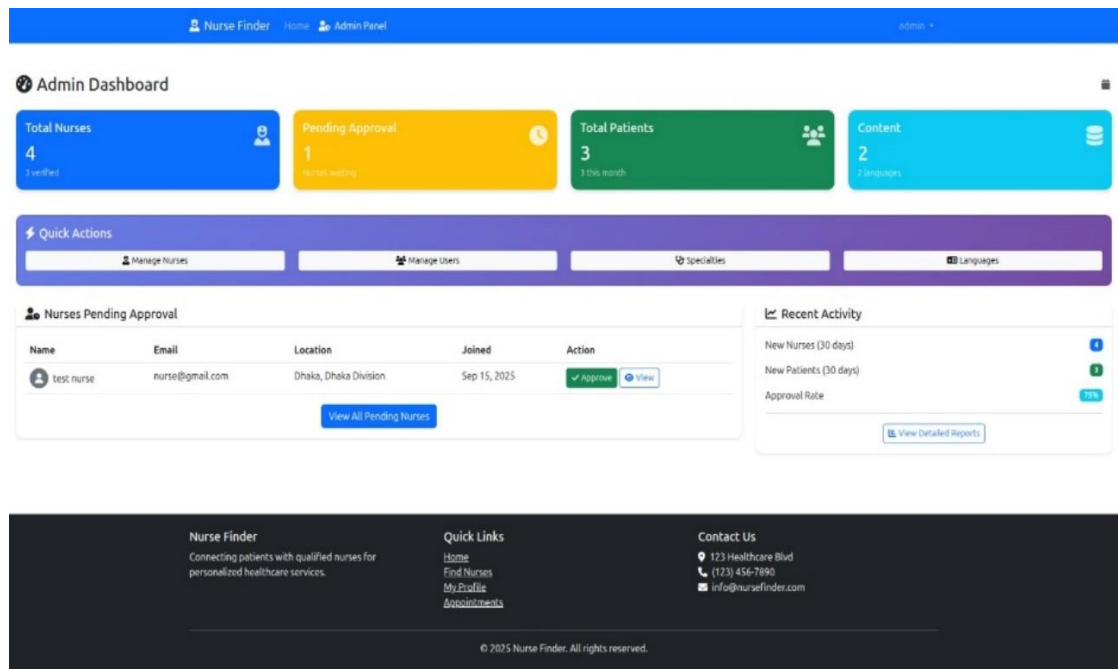


Figure 9-12: High fidelity prototype (dashboard page)

# **Chapter 10**

## **Development**

## 10.1 Folder structure of the system:

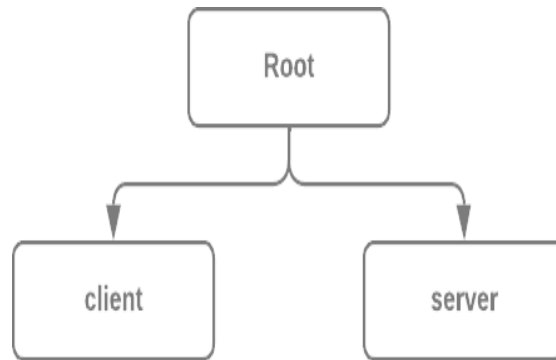


Figure 10-1: Root folder

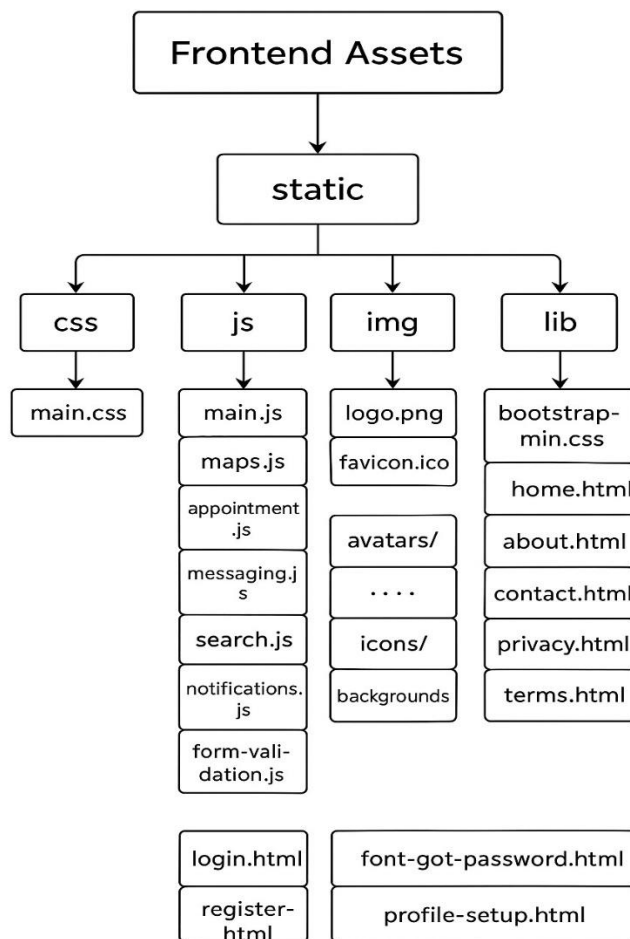
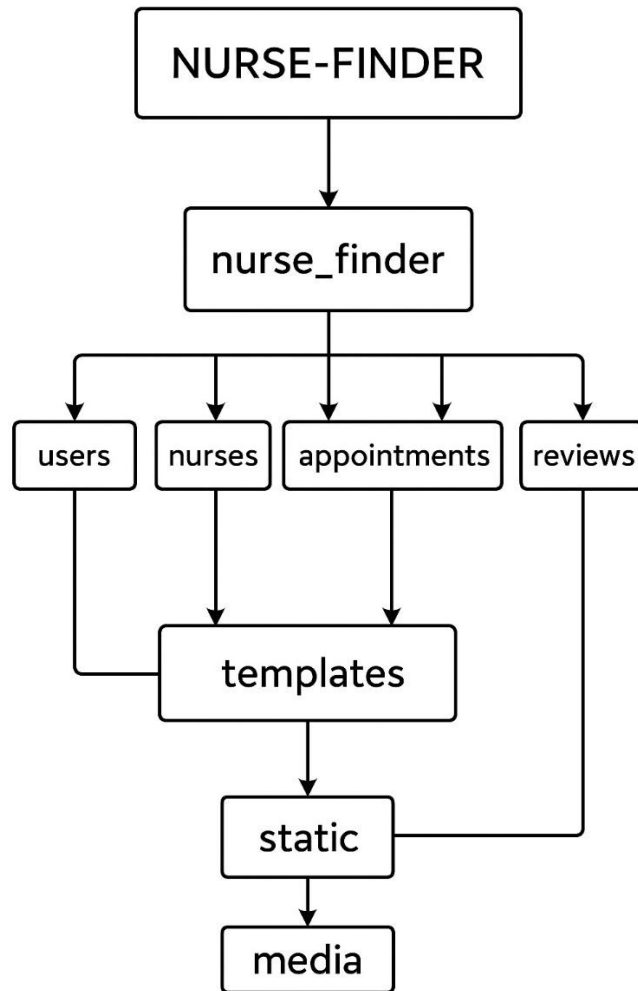


Figure 10-2: Client-side Folder structure



*Figure 10-3: Server-side folder structure*

# 10.2 Core module output sample:

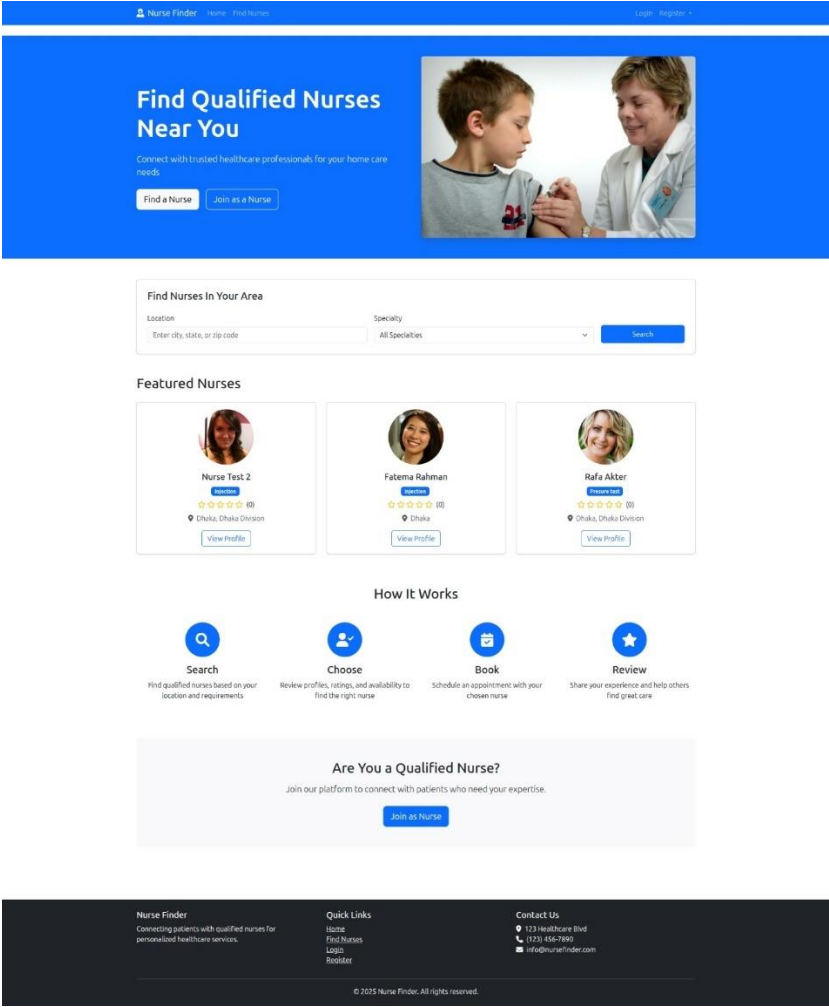


Figure 10-4: Output of Home page

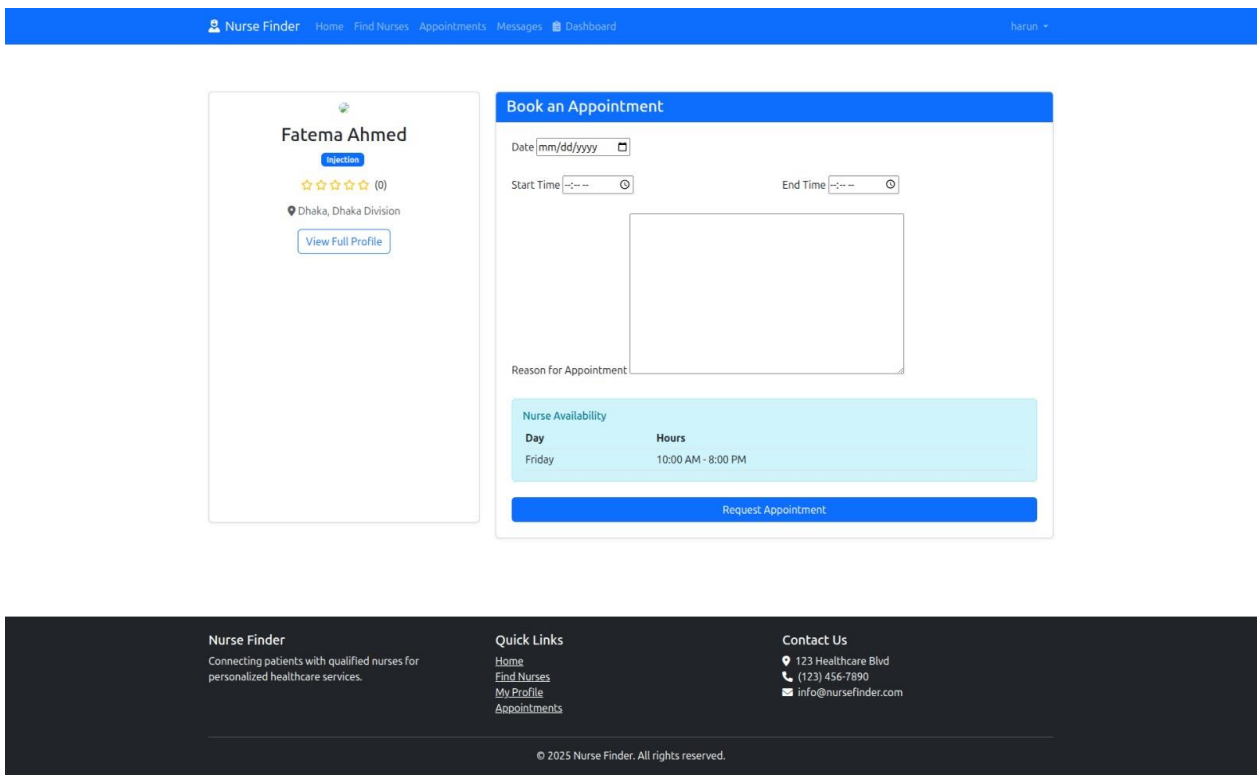


Figure 10-5: Patient (Request for Booking Appointment nurse)

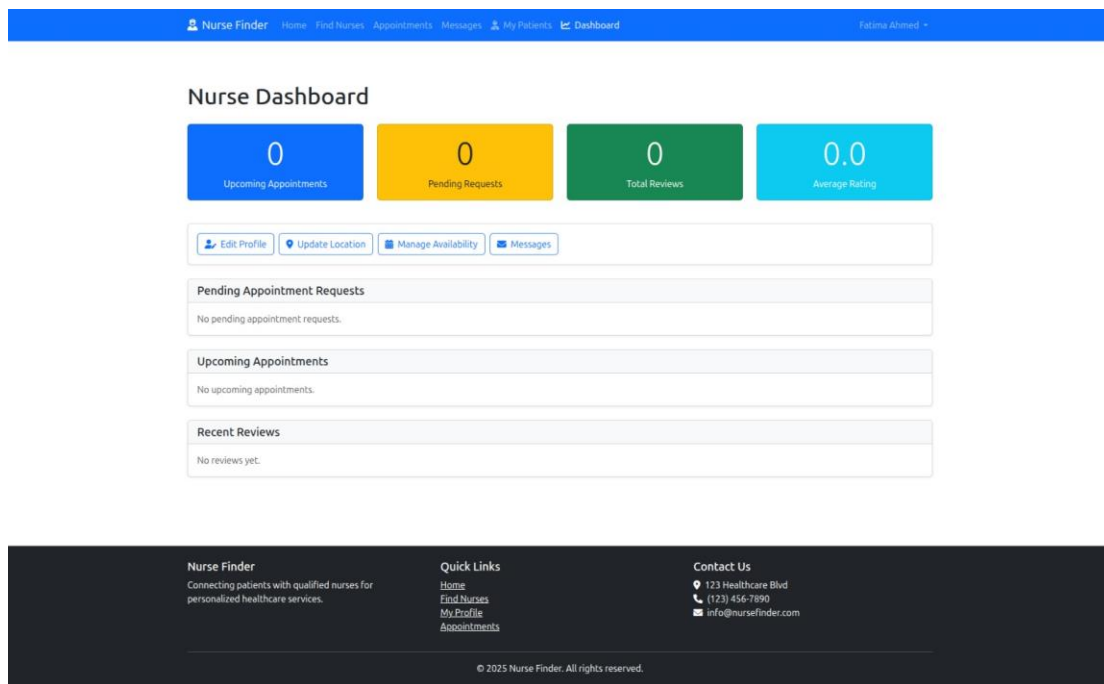


Figure 10-6: Nurse (Dashboard)

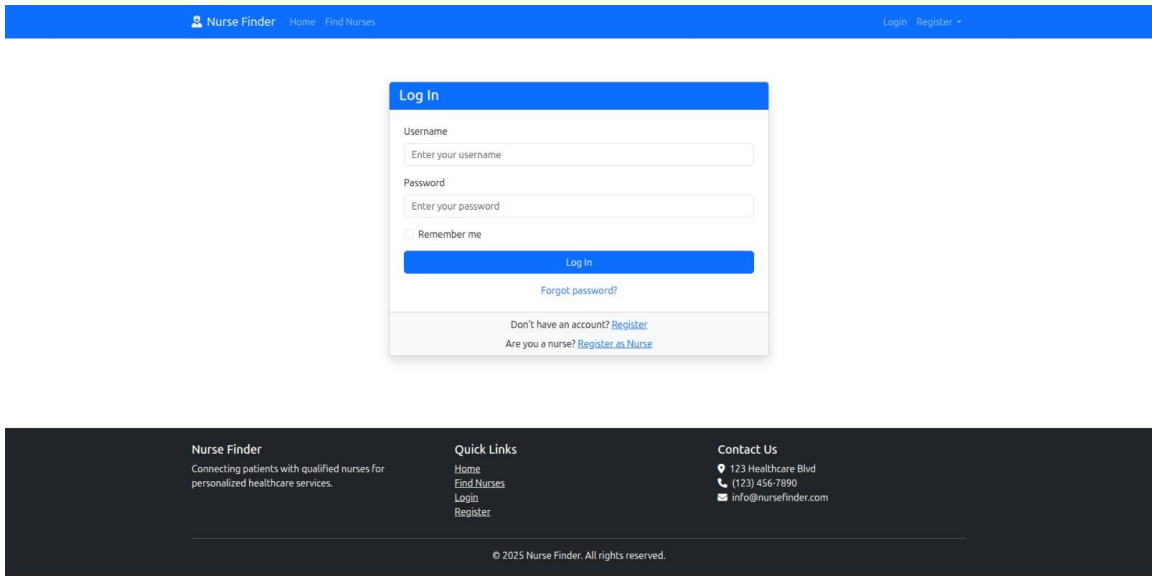


Figure 10-7: Nurse (Login)

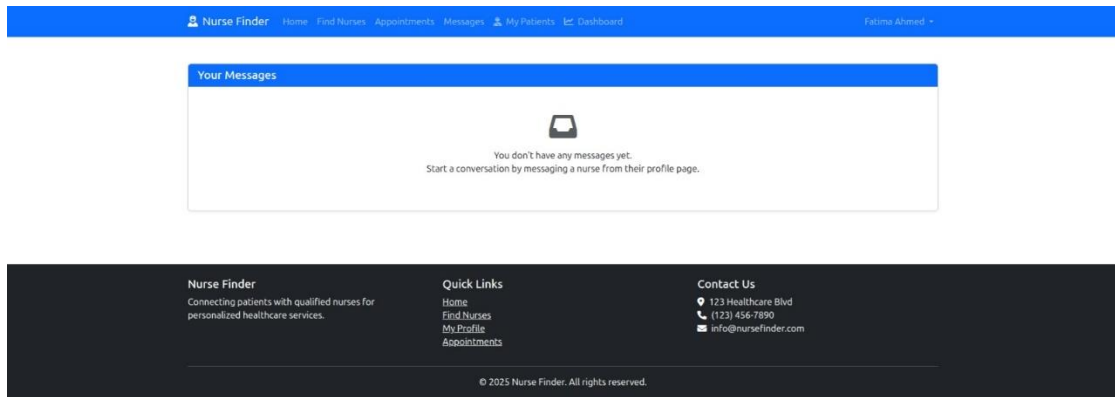


Figure 10-8: Nurse-Patient (Messages)

Nurse Finder Home Find Nurses Login Register

### Register as Healthcare Professional

**Account Information**

Username: Choose a username  
 Email: Your email address

First Name: Your first name  
 Last Name: Your last name

Phone Number: Your phone number

Password: Create a password  
 Confirm Password: Confirm your password

- Must be at least 8 characters
- Can't be a commonly used password

Profile Picture: Choose File | No file chosen  
Optional. Recommended size: 300x300 pixels.

**Professional Information**

Professional Bio: Share your background, approach to care, and areas of expertise

Address Line 1: Street address

City: City  
 State/Province: State or province

ZIP/Postal Code: ZIP or postal code  
 Country: United States

Specialties: Injection, Pressure test  
Hold Ctrl (or Cmd on Mac) to select multiple specialties.

Languages: Bangla, English  
Hold Ctrl (or Cmd on Mac) to select multiple languages.

Years of Experience: How many years have you been practicing?

**Verification Information**

License Number: Your professional license number

License Document: Choose File | No file chosen  
Upload a scan or photo of your professional license (PDF, JPG, or PNG).

ID Proof: Choose File | No file chosen  
Upload a scan or photo of your government-issued ID (PDF, JPG, or PNG).

Your account will need to be verified by our team before you can start accepting appointments. This typically takes 1-3 business days.

I agree to the [Terms of Service](#), [Privacy Policy](#), and [Provider Code of Conduct](#)

Register as Healthcare Professional

Already have an account? [Log In](#)  
 Looking for care? [Register as Patient](#)

Figure 10-9: Nurse (Register as Professional)

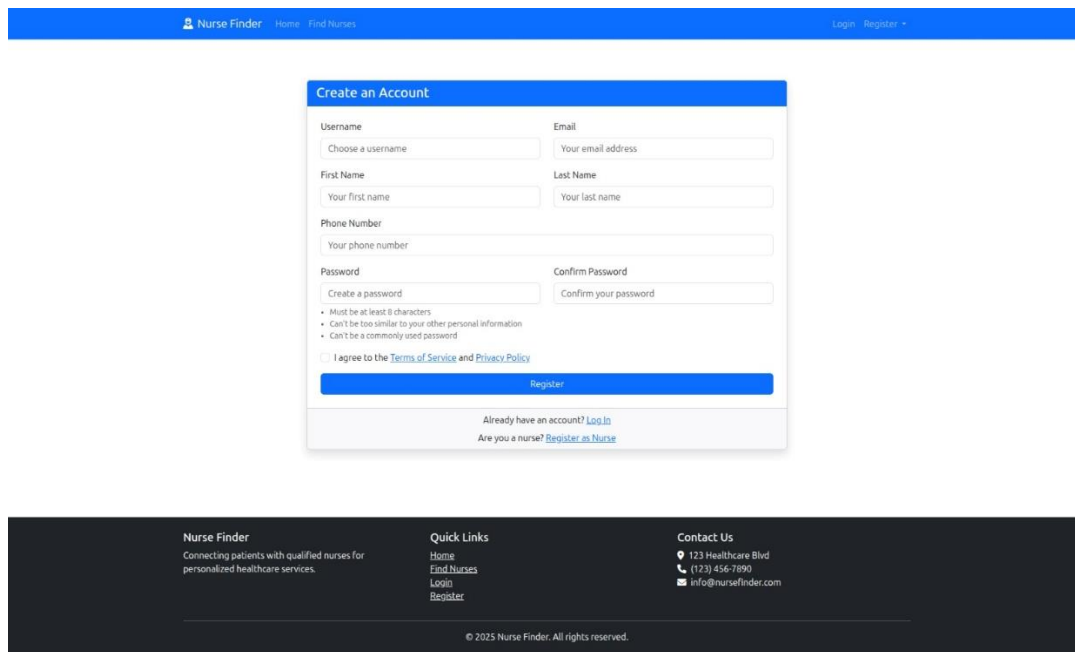


Figure 10-10: Patient (Registration)

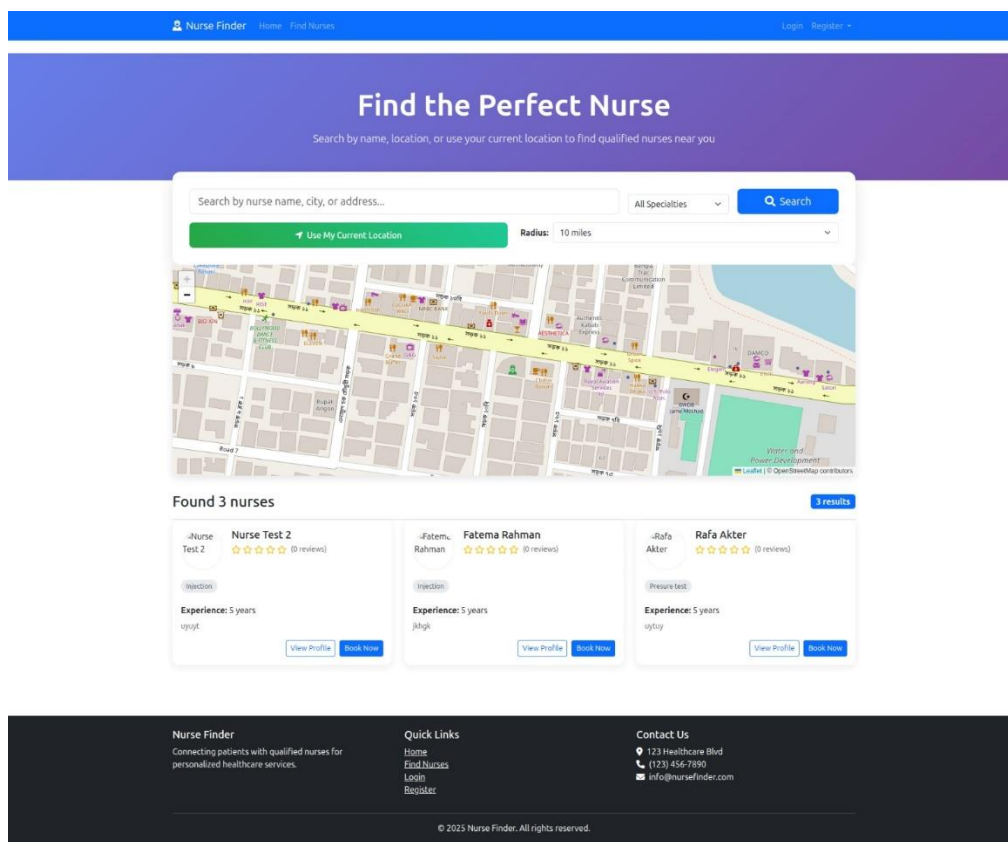


Figure 10-11: Patient (Location-based Nurse Searching)

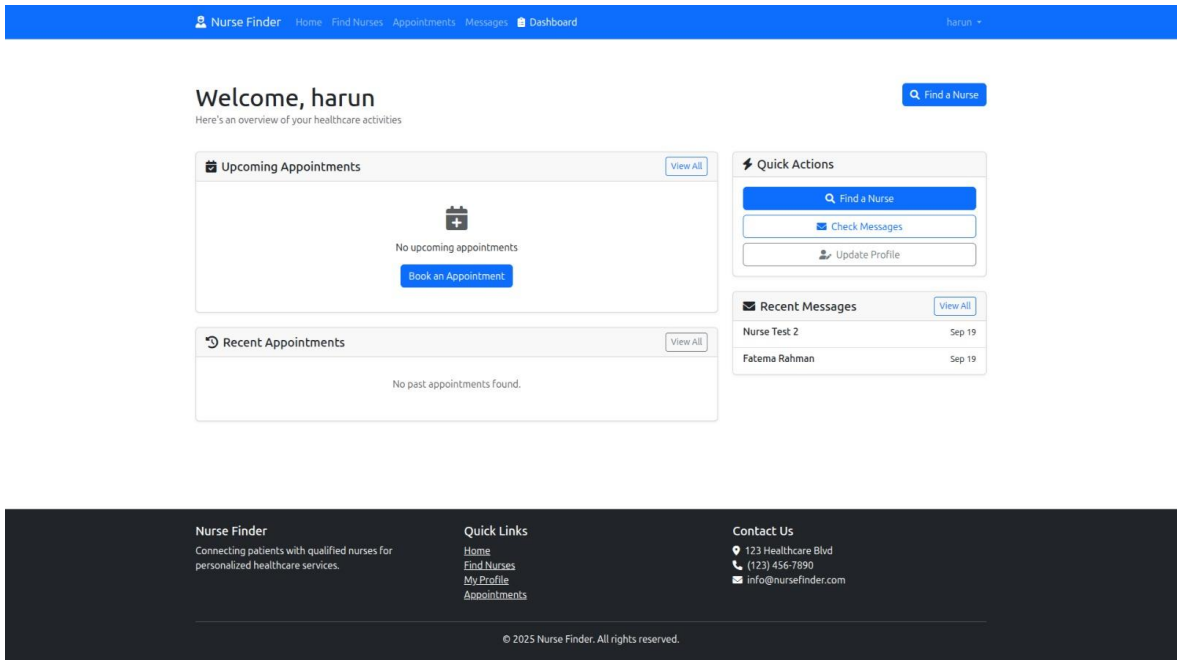


Figure 10-12: Patient(Dashboard )

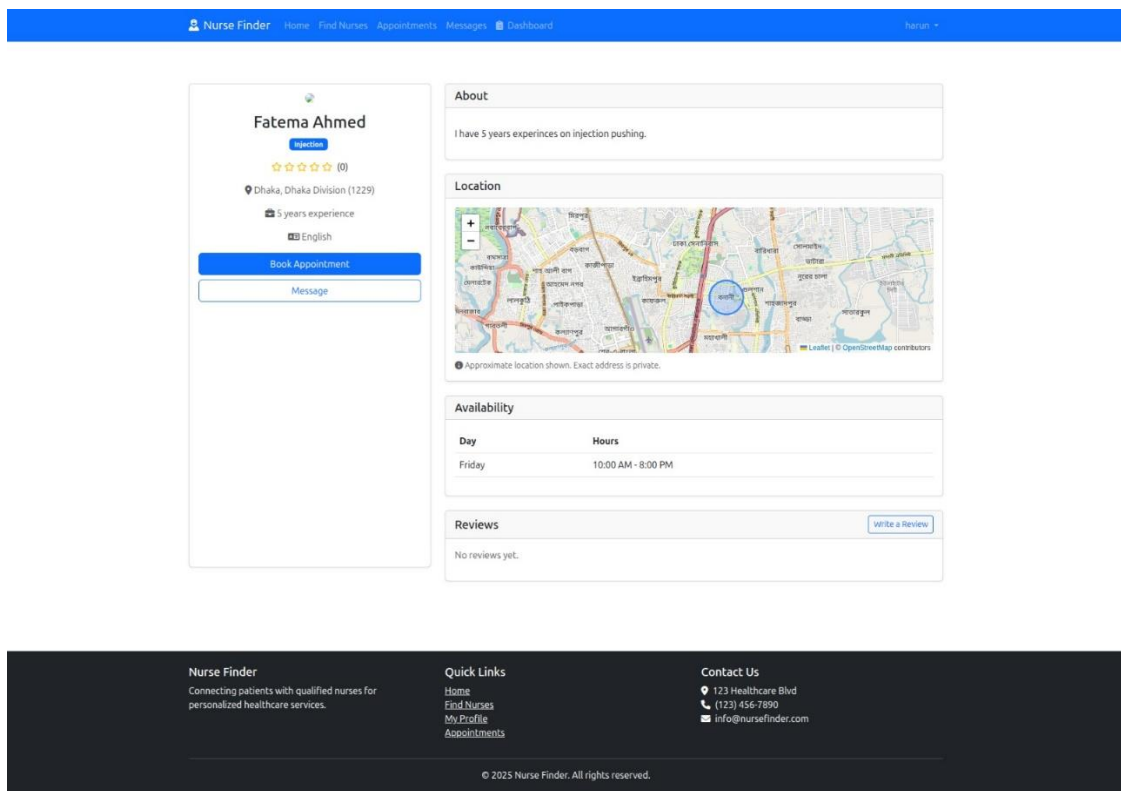


Figure 10-13:Patient (Nurse Profile views for Appointment)

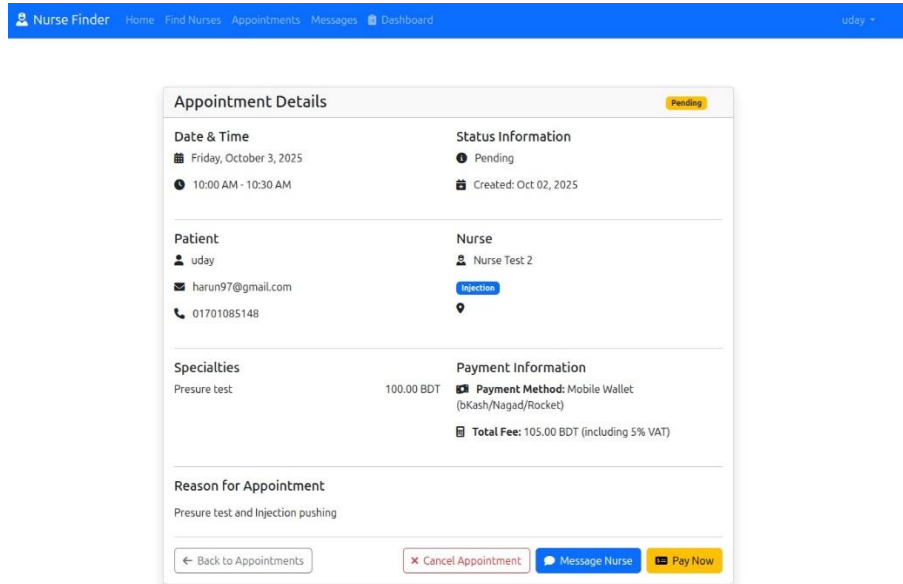


Figure 10-14: Patient( Appointment’s Payment option with Pending Status)

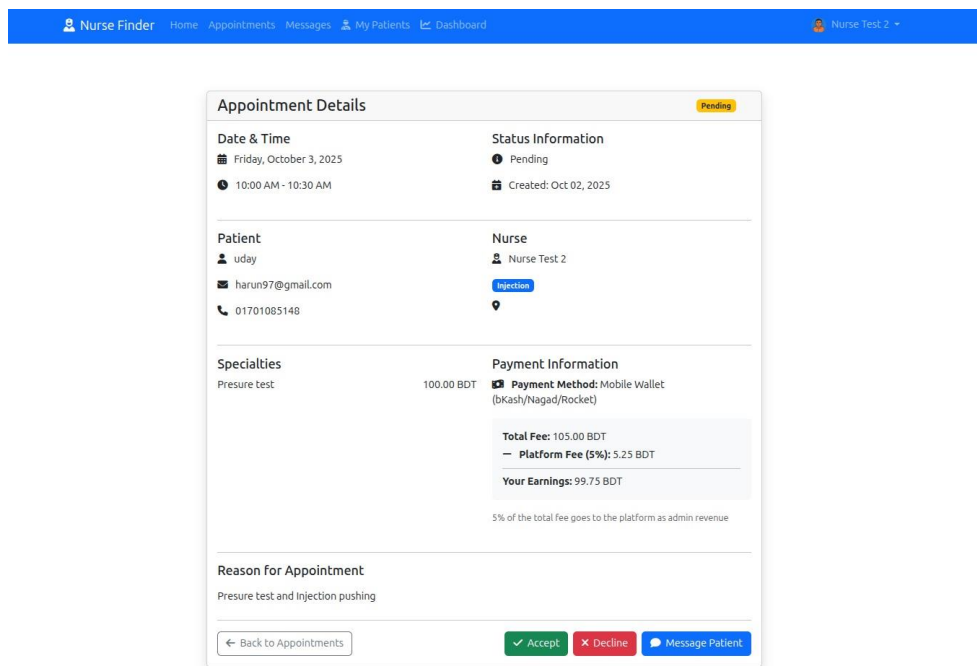


Figure 10-15: Nurse ( Appointment Pending Status for Approval )

Nurse Finder Home Appointments Messages My Patients Dashboard Nurse Test 2

### Appointment Details Confirmed

<b>Date &amp; Time</b> Friday, October 3, 2025 10:00 AM - 10:30 AM	<b>Status Information</b> Confirmed Created: Oct 02, 2025
<b>Patient</b> uday harun97@gmail.com 01701085148	<b>Nurse</b> Nurse Test 2 <span style="background-color: #007bff; color: white; padding: 2px;">Injection</span>
<b>Specialties</b> Presure test 100.00 BDT	<b>Payment Information</b> Payment Method: Mobile Wallet (bKash/Nagad/Rocket) <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;">           Total Fee: 105.00 BDT            - Platform Fee (5%): 5.25 BDT  <b>Your Earnings: 99.75 BDT</b> </div> <small>5% of the total fee goes to the platform as admin revenue</small>
<b>Reason for Appointment</b> Presure test and Injection pushing	
<a href="#">← Back to Appointments</a>	<span style="background-color: #007bff; color: white; padding: 5px 10px;">✔ Complete Appointment</span> <span style="background-color: #007bff; color: white; padding: 5px 10px;">➡ Message Patient</span>

Figure 10-16: Patient (Appointment Confirmed Status)

Nurse Finder Home Appointments Messages My Patients Dashboard Nurse Test 2

### Appointment Details Pending Payment

<b>Date &amp; Time</b> Friday, October 3, 2025 10:00 AM - 10:30 AM	<b>Status Information</b> Completed Created: Oct 02, 2025
<b>Patient</b> uday harun97@gmail.com 01701085148	<b>Nurse</b> Nurse Test 2 <span style="background-color: #007bff; color: white; padding: 2px;">Injection</span>
<b>Specialties</b> Presure test 100.00 BDT	<b>Payment Information</b> Payment Method: Mobile wallet (bKash/Nagad/Rocket) <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;">           Total Fee: 105.00 BDT            - Platform Fee (5%): 5.25 BDT  <b>Your Earnings: 99.75 BDT</b> </div> <small>5% of the total fee goes to the platform as admin revenue</small>
<b>Reason for Appointment</b> Presure test and Injection pushing	
<a href="#">← Back to Appointments</a>	

Figure 10-17: Patient (Appointment's payment PendingStatus)

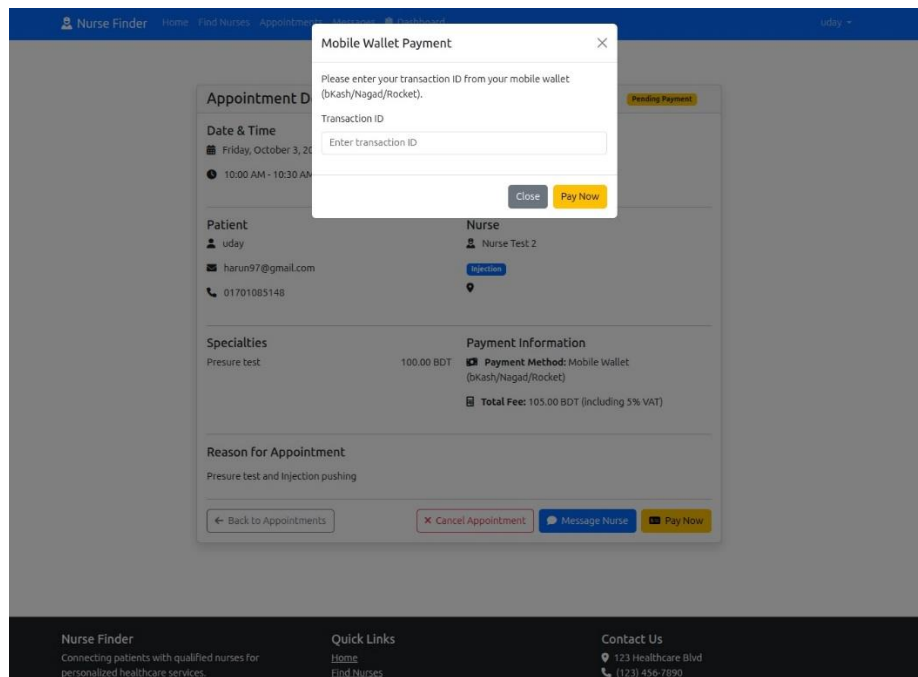


Figure 10-18: Patient (Transaction ID for mobile wallet payment)

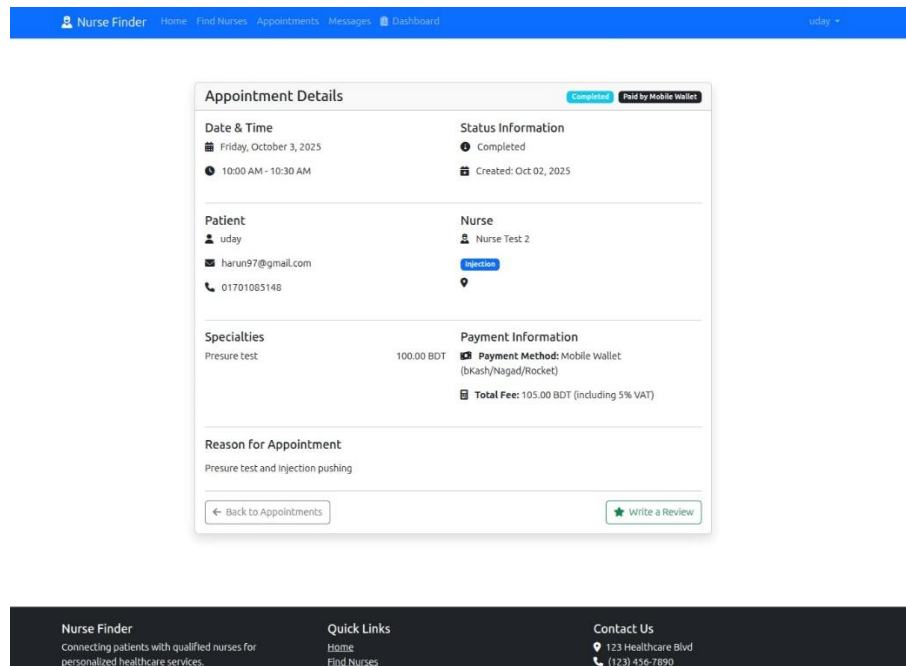


Figure 10-19: Admin (Payment completed via mobile wallet)

Nurse Finder Home Admin Panel admin

### Admin Dashboard

**Total Nurses**  
5  
4 verified

**Pending Approval**  
1  
Nurses waiting

**Total Patients**  
4  
4 this month

**Platform Revenue**  
112.13 BDT  
No confirmed or completed appointments yet.

**Pending Transactions**  
9  
Awaiting validation

**Quick Actions**

Manage Nurses
Manage Users
Specialties
Languages
Manage Transactions

**Nurses Pending Approval**

Name	Email	Location	Joined	Action
test nurse	nurse@gmail.com	Dhaka, Dhaka Division	Sep 15, 2025	<a href="#">Approve</a> <a href="#">View</a>

**Recent Activity**

- New Nurses (30 days) 1
- New Patients (30 days) 4
- Approval Rate 80.0%
- Platform Revenue 112.13 BDT

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 info@nursefinder.com

Figure 10-20:Admin Dashboard

Nurse Finder Home Admin Panel admin

### Manage Specialties

[← Back to Dashboard](#)

**+ Add New Specialty**

Specialty Name

Specialty Fee (BDT)

+ Add Specialty

**Existing Specialties** 3

Specialty Name	Specialty Fee	Nurses Count	Actions
Care Giving	৳500.00	2 nurses	<a href="#">Edit</a> <a href="#">Delete</a>
Injection	৳250.00	1 nurses	<a href="#">Edit</a> <span style="color: red;">ⓘ Cannot delete (has nurses)</span>
Pressure test	৳100.00	1 nurses	<a href="#">Edit</a> <span style="color: red;">ⓘ Cannot delete (has nurses)</span>

**Statistics**

Total Specialties: 3

Most Popular: Care Giving

Avg. Fee: ৳283.33

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Figure 10-21:Admin (Manage specialties of nurses)

Nurse Finder Home Admin Panel admin

### Manage Transactions

← Back to Dashboard

Transactions List 12 total

Patient Name	Amount	Payment Method	Transaction ID	Date	Status	Actions
uday	105.00 BDT	Mobile Wallet Payment(bKash/Nagad/Rocket)	CH509FL5QE	Oct 03, 2025	Pending	✓ ✕ 🗑
uday	367.50 BDT	Cash Payment	None	Sep 26, 2025	Validated	🗑
uday	367.50 BDT	Mobile Wallet Payment(bKash/Nagad/Rocket)	CH509FL5QE	Sep 26, 2025	Validated	🗑
uday	367.50 BDT	Mobile Wallet Payment(bKash/Nagad/Rocket)	CH509FL5QE	Sep 26, 2025	Rejected	🗑
uday	210.00 BDT	Cash Payment	None	Sep 26, 2025	Pending	✓ ✕ 🗑
uday	105.00 BDT	Cash Payment	None	Sep 26, 2025	Pending	✓ ✕ 🗑
uday	210.00 BDT	Cash Payment	None	Sep 26, 2025	Pending	✓ ✕ 🗑
uday	210.00 BDT	Cash Payment	None	Sep 26, 2025	Pending	✓ ✕ 🗑
uday	300.00 BDT	Cash Payment	None	Sep 26, 2025	Pending	✓ ✕ 🗑
uday	0.00 BDT	Cash Payment	None	Sep 26, 2025	Pending	✓ ✕ 🗑

1 2 Next

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Find Nurses  
My Profile  
Appointments

Contact Us  
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info@nursefinder.com

Figure 10-22:Admin (Manage transaction list of patients)

### 10.3 Prioritization while developing:

Serial	Requirements	Priority
1	Patient registration and authentication with email or phone verification.	High
2	Nurse registration and authentication with admin approval.	High
3	Patient login and dashboard to access profile, bookings, and payments.	Medium
4	Search and filtering system for patients to request appointments (within 50 km) by specialty or location.	High
6	Payment module for patients to request accurate online payments.	High
7	Transaction management system for viewing/reviewing payment history.	Medium
8	Real-time chat system between patients and nurses for communication.	Medium
9	Review and rating system for patients to provide feedback on nurses.	Medium
10	Admin login and authentication for secure system access	High
11	Admin management of patients, nurses, and bookings (view, edit, delete).	Medium
12	Admin dashboard with analytics (total users, active nurses, completed	Medium
13	Notification system for booking confirmations and status updates.	Medium
14	Data security, privacy and encryption for user and payment information.	High

*Table 10-8.1.3-1: Table of Module system*

# **Chapter 11**

## **Testing**

## 11.1 Test Case:

Test Case ID	Test Scenario	Test Steps	Expected Result	Status
TC1	Patient Registration	<ol style="list-style-type: none"> <li>1. Navigate to the registration page.</li> <li>2. Enter valid name, email, password, and location.</li> <li>3. Click on “Register”.</li> </ol>	Patient is registered successfully and verification email is sent.	Pending
TC2	Patient Login	<ol style="list-style-type: none"> <li>1. Navigate to the login page.</li> <li>2. Enter valid credentials.</li> <li>3. Click on “Login”.</li> </ol>	Patient is logged in and redirected to the dashboard.	Pending
TC3	Search for Nurses	<ol style="list-style-type: none"> <li>1. Go to the nurse search page.</li> <li>2. Enter specialty or location.</li> <li>3. Click “Search”.</li> </ol>	Nurses near the patient (within 50 km) are displayed with details.	Pending
TC4	Request Booking	<ol style="list-style-type: none"> <li>1. Select a nurse from the list.</li> <li>2. Click on “Book Now”.</li> <li>3. Enter preferred date and time.</li> <li>4. Click “Confirm Request”.</li> </ol>	Booking request is sent to the selected nurse.	Pending
TC5	Proceed to Payment	<ol style="list-style-type: none"> <li>1. After booking request, click “Proceed to Payment”.</li> </ol>	Payment loads with correct booking details.	Pending

		<ol style="list-style-type: none"> <li>2. Select payment method.</li> <li>3. Enter payment details.</li> </ol>		
TC6	Complete Payment	<ol style="list-style-type: none"> <li>1. Enter valid payment information.</li> <li>2. Confirm payment.</li> <li>3. Wait for transaction to process.</li> </ol>	Payment is completed successfully and transaction is recorded.	Pending
TC7	View Transaction Status	<ol style="list-style-type: none"> <li>1. Navigate to “My Payments”.</li> <li>2. Select a transaction to view.</li> </ol>	Payment history is displayed with real-time transaction status.	Pending
TC8	View Booking Status	<ol style="list-style-type: none"> <li>1. Navigate to “My Bookings”.</li> <li>2. Select the recent booking.</li> </ol>	Booking status (Pending / Confirmed / Cancelled) is displayed.	Pending
TC9	Real-Time Chat with Nurse	<ol style="list-style-type: none"> <li>1. Open the chat section from the dashboard.</li> <li>2. Select a nurse.</li> <li>3. Send a message.</li> </ol>	Real-time chat starts and messages appear instantly for both users.	Pending
TC10	Give Nurse Review	<ol style="list-style-type: none"> <li>1. After booking completion, go to “My Bookings”.</li> <li>2. Click “Leave Review”.</li> <li>3. Enter rating and comment.</li> </ol>	Review is submitted and displayed on the nurse’s profile.	Pending
TC11	Nurse Registration	<ol style="list-style-type: none"> <li>1. Navigate to nurse registration page.</li> <li>2. Enter name, email, password, specialty, location and put resume pdf.</li> </ol>	Nurse is registered successfully and awaits admin approval.	Pending

		3. Click “Register”.		
TC12	Nurse Login	1. Enter valid credentials. 2. Click “Login”.	Nurse is logged in and redirected to their dashboard.	Pending
TC13	View Appointments	1. Go to “My Appointments”. 2. View current and past bookings.	List of appointments is displayed correctly.	Pending
TC14	Confirm or Cancel Booking	1. Click on a pending appointment. 2. Choose “Confirm” or “Cancel”.	Booking status updates and patient is notified.	Pending
TC15	Nurse-Patient Chat	1. Open chat tab. 2. Select a patient. 3. Send and receive messages.	Messages appear in real-time for both nurse and patient.	Pending
TC16	Admin Login	1. Go to admin panel. 2. Enter valid credentials. 3. Click “Login”.	Admin is logged in successfully.	Pending
TC17	Manage Patients	1. Navigate to “Patients List”. 2. View or update patient information.	Admin can view, edit, or remove patient records.	Pending
TC18	Manage Nurses	1. Navigate to “Nurses List”. 2. Approve or deactivate nurse profiles.	Admin successfully manages nurse accounts.	Pending
TC19	Confirm Payments	1. Go to “Payments” section. 2. Verify payment transaction. 3. Click “Confirm”.	Payment is verified and marked as completed.	Pending
TC20	Confirm Bookings	1. View pending	Bookings are	Pending

		bookings. 2. Approve confirmed ones.	confirmed and system notifies both parties.	
TC21	Update Services / Specialty	1. Go to “Service / Specialty Settings”. 2. Modify or add new services / specialty. 3. Save changes.	Updated services/ specialty appears immediately on the platform.	Pending

## **Chapter 12**

### **Implementation**

## 12.1 Scaling:

Nurse Finder App, the system is able to easily and cost effectively respond at scale as more users, nurses, bookings and data are added to the solution. To make sure you have a smoothly-running site that can handle heavy loads, technologies like caching for quick database retrieval, Content Delivery Networks (CDNs) for handling many users at once, and database optimisation are put in place. The scalable Nurse Finder App has the cloud infrastructure. System can be built by two methods: Vertical Scaling (increasing the capacity of existing server) and Horizontal Scaling (adding more servers to distribute load). The frontend/backend can scale relatively easily to support sudden bursts of traffic. This is because at times-the time of health campaigns and emergencies-many users turn to the app concurrently. #On the backend, Python Django has very strong scalability support, such as connection pooling and load balancing etc., which make it possible to deal with many requests effectively. PostgreSQL also has features such as table partitioning, replication and query optimization which allow large data set to be managed quickly and securely. Using HTML, CSS Bootstrap and JS on the front end help to make it lightweight and responsive. These solutions help increase scalability by allowing client-side rendering and minimizing the server roundtrips, consequently leading to faster page response times and user responsiveness.

The Nurse Finder App need to be able scale, scalability is a must have not a would like. That it scales as we have more of users, nurses and bookings. This enables the system to scale out without downtime or failures, while providing an uninterrupted and reliable healthcare experience to everyone.

## 12.2 Load Balancing:

Load balancing refers to dividing incoming traffic or user requests among multiple servers so that no single server becomes overwhelmed. This ensures that the system is faster, more reliable, and always available for users. In the Nurse Finder App, load balancing makes sure there will be enough space for many users at once. For instance, when large numbers of patients attempt to schedule nurses during peak hours or health campaigns. Some popular methods of load balancing include round-robin, least connections and IP hash.

The round robin is the method of sending requests to every server in turn and starting over once it hits the last one. In this mode, all servers receive the same work load. The least connections approach forwards a new request to the server with the fewest current users. This also keeps the workers balanced, and that's what makes all servers run effectively. IP hash – This method takes the user's IP address to determine which server needs to process the request. So the next time that person connects, they typically land on the same server as before — and their browsing experience is faster and more efficient. If one server is working too hard or goes offline, a system must send the users something to do via other available servers.

And with load balancing, the Nurse Finder App remains fast, stable and reliable even when people access the app in high numbers. Such an arrangement allows the app to be instantly available for patients as well as nurses and makes on line healthcare (or tele health) easy and secure for all.

## **Chapter 13**

# **Critical Appraisal and Evaluation**

### **13.1 Objective that could be met:**

The primary mission of the Nurse Finder App is to provide a simple and intuitive way for patients to find, book, connect with nurses near them while providing administrators comprehensive tools for managing everything behind the scenes. The app offers a seamless experience for patients through simple registration, fast nurse searches, safe booking and payments and management of personal profiles. Administrators can use it for managing nurses, patients and bookings as well as real time reports and analytics to keep track of performance and activities.

The type of technologies applied are HTML, CSS, Bootstrap, Javascript (frontend), Python Django (backend) and PostgreSQL for the database. The platform is designed to be reliable, fast and convenient with features such as responsiveness, safe login system, load balancing and a scalable architecture. The idea is to increase access to healthcare services, and make nurse management more convenient for everyone.

### **13.2 How much better could have been done:**

Online medical booking is one of the major app features for the Nurse Finder. We could scale some of those infrastructures to have a powerful, interesting way of finding qualified nurses.

For instance: Integrating AI-powered nurse recommendations can support patients in finding the nurses that fit best their needs and personal preferences. Some popular multiple languages that would make the app more accessible to people across various regions. Timely Tracking location and Intelligent Scheduling improve service accuracy. On a technical side, transitioning from monolithic to microservices architecture could contribute into performance and reliability as the app scales.

And, adding data analytics and predictive insights would allow administrators to get a sense for trends, make more informed decisions, and provide better healthcare. These enhancements would enable the Nurse Finder App to be more flexible and intelligent as well as prepared for future digital healthcare expansion.

### **13.3 Which features could not be touched:**

Although many aspects of the Nurse Finder App are critical and should not be altered, given that they constitute the backbone of the system and engender user trust. One such is the secure login and registration which takes care of their user data and privacy. Another very important feature is the nurse search and filtering system, which allows patients to quickly access nurses according to their location, specialization, and schedule.

Last but not least, the booking and scheduling system must be robust and trustworthy as it influences patient-nurse confrontation directly. The admin dashboard (this is where administrators manage nurses, patients and bookings) should be unchanged as it's currently a key feature on enabling NOCs to run smoothly.

Possibly, some features such as AI-driven recommendations or predictive analytics could be implemented into this app in iterations; the main functionality of finding, ordering and managing services should remain unchanged. These foundational systems keep the app stable and still functioning, while providing the opportunity for more innovative applications like AI-powered nurse matching, automated health advice or data-inspired performance insights to be layered on top at a later date.

## **Chapter 14**

### **Lesson Learned**

## 14.1 Pre Project – Review – Closing:

### Pre-Project Phase

The pre-project phase is about scope of the project, requirement analysis, and possibility of project implement. In other words, feasibility entails collecting nurse information, identifying goals and outlining a specific plan. Everyone affected by its implementation defines the issues that the project may face, the features are agreed, and the resources are assigned. Pre-feasibility (technical and operational) and post feasibility (financial) studies are conducted to check the project feasibility. There is also formation of a clear chart and time line that helps in the development process to take place.

### Review Phase

This is routine checking as well as approval of the project at some intervals to ensure that it meets the laid down objectives or not. There are periodical progress meetings, unit, integration and system tests, and feedback from stakeholders. During this phase developers make sure that all sub-systems work rightly, all the laid down user interface is right and its back bone systems are efficient. Any questions or variances that come up, are resolved so the project does not experience any delay.

### Closing Phase

The closing phase is a process in which the product is completed and a project is final, and deliver to the stakeholders. This is undertaken through the installation of the platform in a live environment being tested and confirmed if all features are working properly and offering necessary user and administrator training. For purpose of determining if the project was successful, and to conduct an assessment and get feedback of the project and the lessons learnt, the post project review is conducted. Preventive and support strategies are also developed to make certain that the system continues to be dependable and current when actually implemented.

## 14.2 The Problem I Have Faced:

Several challenges appeared during the development of the **Nurse Finder App**, especially when trying to make the platform smooth, fast, and reliable for patients and nurses. One major issue was handling many users simultaneously. For example, during busy hours or when many patients were booking nurses at once. In direct handlersistic was a manyards Idea and getting in the way since I needed to manage all of that traffic without bogging down the system.

Another was ways to make the system fast and affordable. High levels of performance can equally swell the bill for using a server, so they had to balance well with caches, load balancing and the right requests handling.

Doing secure online payments was a bit of challenge as well that needed some data protection and standard compliance handling. On top of that, certain features such as real-time analytics, tracking bookings and AI-powered nurse recommendations also required heavy database operations making the app less responsive when it was built initially. On the front end, making sure the website looked nice and worked well on various devices — from cellphones to desktops involved testing and subsequent user interface tweaks.

Another major challenge was trying to balance the patient side and the admin side. Each required entirely different features, and interfaces, but they needed to work together without conflict. Finally, ensuring the frontend, backend and database teams were all working in sync was sometimes challenging. Version compatibility issues and update conflicts were a hinderance in the development process, particularly when multiple developers worked concurrently.

### 14.3 What Solutions Occurred:

In order to address these challenges a number of refinements were introduced during the evolution of the Nurse Finder App. To deal with high traffic, Nginx load balancing tools and cloud hosting were also implemented to balance network requests, so the app remained steady for a large amount of users. The backend, implemented using Python Django, was made efficient through async tasks and utilizing Redis caching for faster data processing and less server load.

PostgreSQL indexing and query optimization were used to increase database speeds, as well as make real time analytics and search faster. But it is to ensure that the process would remain smooth even when dealing with multiple bookings or nurse profiles.

On the frontend, HTML, CSS, Bootstrap and JavaScript were tested to work smoothly on all screen sizes by utilizing Browser Stack. The design was further polished after testing to enhance usability and loading time.

To make things organized, the user and admin modules were built separately so that code conflicts can be reared off without any difficulty in fast track updates. Clear version control and improved team communication were also introduced to enable seamless interactions with frontend, backend and database teams.

On the whole, these solutions were used to get the Nurse Finder app to be more reliable, faster, and easier for both users and management.

# **Chapter 15**

## **Lesson Learned**

## **15.1 Summary of the project:**

Nurse Finder App project is a concept that started as an online searching site where patients want to find qualified nurse near to them in short time while providing adequate administrative tools that will allow for easy management of the site. Using JavaScript for the frontend, and Python Django for backend, supplemented by HTML, CSS, Bootstrap and PostgreSQL database this application includes such intuitive UI options as account creation, details information of nurse viewing, searching, and booking for nurse, checking messages in real time and personal profiles. The administrators have a privileged access that covers the management of patients, nurses, booking, reviews, and messages all in one easy to use dashboard. Verification and searching of qualified nurses, analytics, and scalability combine reliably with challenges for booking enhanced competitive online searching platform.

## **15.2 Goal of the project:**

Nurse Finder App is the created project aimed to minimize the distance, cost, sufferings and save time for patients especially who are incapacitated. Also making the Nurse Finding App more convenient on online platform for patients and effective for admin and management. It is supposed to offer convenient searching, booking, as well as customizable user tools like personal account and booking status indication. For administrators it can potentially provide convenient means of managing nurses, booking, messaging, confirming payment transaction, reviewing, rating and analytics. Through the adaptive features including integrated added technologies, secure booking, messaging, and responsive design, the project aims to assist healthcare development and bring value to its patients.

### 15.3 What I have done in Documentation:

This document of Nurse Finder App project includes every stage of the platform development from the planning point to the deployment point. I described the aims and characteristics of the project and provided the features for the patients, nurses and administrator interfaces. These are HTML, CSS, JavaScript, Python, PostgreSQL and using frameworks like Django on which I explained in detail on the parts they played in the creation of the system. Also, I prepared patient, nurse and admin documentation setting out the registration, login process, searching, and booking nurse management. I also created technical specifications, activity diagram, class diagram, and test cases to make it easier to come back to and modify. The documentation is intended for further evolution of the system, as well as for testing and staff training.

#### My Experience:

While working on the Nurse Finder App project, I learned about the peculiarities of web development and the management of the project. I was writing both frontend and backend code using JavaScript, Python, PostgreSQL and using frameworks like Django. I wrote interfaces and served as an interface between frontend and backend, created dynamic plots generated in respond to user interaction.

I also did some architectural tuning of the platform to make it run faster and to support the planned growth of user numbers through horizontal scaling techniques and by improving the database performance. Also, I work in cooperation with my colleagues, adhere to the process of the regular meetings' conducting, and take an active part in documentation. I was able to pick improvements in my problem-solving skills especially when it comes to understanding and handling numerous demands in different system aspects.

All in all, the project consolidated the knowledge of creating full-stack applications and improve the skills in overcoming problems in technical as well as in a team setting.

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