Dr. Carolina Balangay
Room 302, 2nd floor, La Azotea Building,
Session Road Baguio City

Madam:

We the IT Project group from Saint Louis University, IT Department have deployed a RECOMED:A Web-Based Records Management System utilizing an Appointment Queueing System and Chat Application for your company. We now present to you the result of our studies, please accept the project we have developed for the ease of your efficient operation.

The system we have developed has the following functionalities

- User Registration & Authentication
- Records Management
- Appointment Scheduling & Queueing
- Chat Application
- Announcements
- Access Control & Permissions
- Mobile Accessibility

Also, included herewith are the User Manual and instruction which will guide you through the installation process.

We truly appreciate your cooperation during the project development and would be more grateful if you will use the system for your company.

Thank you very much,
Rainier Dohn Delirio
Vince Karlo Dulay
William Mauricio
Lovely Osngal
Paul Joshua Piso
Prince Jas Taguiling
Juan Carlos Ugale
Errol Donn Yabut

Mr. Ramel Cabanilla

CONFORME:

Dr. Carolina Balangay
Room 302, 2nd floor, La Azotea Building,
Session Road Baguio City

February 07, 2024

Ms. Glory I. De La Peña
Officer-In-Charge
School of Accountancy, Management, Computing
And Information Studies

THRU: Ms. Kasima Rose M. Mendoza
IT Department Head

ATTN: MR/MS.
IT Faculty- IT Project Adviser

RE: LETTER OF ACCEPTANCE

Dear Madam:

We politely acknowledge the successful installation of the RECOMED:
A Web-Based Records Management System utilizing an Appointment Queueing System and Chat Application that was developed by your students. The system gave us valuable functionalities contributing to the easement of our operations.

We are grateful for the capabilities of the system. It is capable of appointment scheduling, offers a user-friendly interface for record management, and facilitated communication through the integrated chat application. The system helped us a lot in optimizing our daily operations, although we encountered some minor challenges during our initial use.

We therefore would like to extend our most heartfelt appreciation to the following students for the hard work that they put in completing this project.

Rainier Dohn Delirio
Vince Karlo Dulay
William Mauricio
Lovely Osngal
Paul Joshua Piso
Prince Jas Taguiling
Juan Carlos Ugale
Errol Donn Yabut

Again, we thank you very much and God bless.

Dr. Carolina Balangay

RECOMED:

A Web-Based Records Management System utilizing an Appointment Queueing System and Chat Application

An IT Project
Presented to the
Faculty of the School of Accountancy, Management,
Computing and Information Studies
Saint Louis University

In Partial Fulfillment
of the Requirements for the Course
IT 411

by
Rainier Dohn Delirio
Vince Karlo Dulay
William Mauricio
Lovely Osngal
Paul Joshua Piso
Prince Jas Taguiling
Juan Carlos Ugale
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Ramel Cabanilla
Project Adviser

Submission Date
February 2024

ABSTRACT

This study addresses the challenges encountered in Doctor Balangay's clinics, including traditional pen and paper record-keeping, difficulties in retrieving patient files during emergencies, missing or destroyed patient records, and ineffective communication through third-party chat applications that are often left unread. To tackle these challenges, the team designed and implemented Recomed, a web-based records management system with integrated appointment queueing. This transition serves to address the issues mentioned previously.

Recomed is structured around five key objectives: identifying functional and non-functional requirements, conceptualizing a comprehensive system design, developing and testing the system, providing a deployment guide with user manuals and live demonstrations, and conducting thorough user experience evaluations and performance testing.

The adoption of the Iterative SDLC, along with the identification of functional and non-functional requirements, a review of related literature, and insightful interviews with the proponent, laid the foundation for designing the system. Various diagram techniques, including DFDs (Data Flow Diagrams), ERDs (Entity-Relationship Diagrams), Flowcharts, Use Case Diagrams, and Prototyping, were employed to visualize and communicate design decisions. The development phase utilized a range of tools and technologies, such as HTML, CSS, JavaScript, PHP, Visual Studio Code, and the WAMP server.

The system serves as a solution to the identified challenges in the clinics' business processes. Simplifying patient records management is expected to improve the accuracy, accessibility, and organizational efficiency. The integrated scheduling system tackles the challenges of appointment management, promoting improved coordination between the doctor, assistants and patients. Additionally, the user manual provides end-users with essential guidance for the smooth utilization of the system for the clinic operations.

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Chapter 1

INTRODUCTION

This chapter of the paper is divided into five sections. Section 1.1 provides the context of the study. It outlines healthcare records management and its challenges, and presents the benefits of electronic health record management systems. Section 1.2 talks about the proponent and describes the current paper-based record management system used in the proponent's clinics, its limitations and the specific problems. Section 1.3 outlines the objectives of the study in developing a web-based record management and appointment queueing system for the proponent. Section 1.4 discusses the scope and limitations of the project. Section 1.5 explains the project's significance to the developers, proponents, clients, and future researchers.

1.1 Context of the Study

Healthcare as an industry is one of the most complex and important sectors in the world today. This industry may pertain to businesses or organizations that provide medical services, manufacture drugs or equipment, as well as facilitate the provision of healthcare to patients (Investopedia, 2021). Healthcare continuously undergoes research and development in different departments to enhance the overall quality provided to its consumers.

Health records are defined as a collection of clinical related data about an individual’s lifetime in the form of a document structure as stated by Inbamani et al. (2022). Paper-based health records are not intended to be changed or removed once it has been written, the data is regarded as immutable as a result. A physical medical record is a chronology of incidents and is created in chronological order. When a new event occurs, information about it is entered in the space left open by the preceding event as stated by Salleh (2023).

Wali et al. (2020) stated that, due to manually writing the information, paper based health records are prone to a number of disadvantages starting from the illegible handwriting, insufficient storage capacity, to its accessibility when an emergency occurs. Similarly, the two clinics of the proponent encountered similar challenges when dealing with their current paper based system. These challenges included the inefficiency and difficulty of physically looking for a specific health record during emergencies, not to mention the large volume of records stored in the filing cabinets.

Additionally, when a patient's health record was misplaced or destroyed, important information about that patient would be irretrievable, leading to the need of creating a new record. The proponent had also identified another problem with the existing paper based health record management system used by the clinics: the accessibility of patient health records during emergencies. In such situations, doctors had to physically access the specific clinic to locate and retrieve the patient's health records. Lastly, the proponent mentioned that at that time, both clinics had no appointment system in place. Bookings by patients were made by messaging the proponent through their personal Facebook account.

The proponent giving their personal Facebook account raises a lot of data privacy issues, as well as the amount of appointments would be very troublesome for the proponent to handle on their own. According to Menachemi & Collum (2011), almost all significant industries made significant investments in computerization over the previous years. Electronic Health Record (EHR) systems have the potential to change the health care system from one that relies primarily on paper to one that makes use of clinical and other types of information to help doctors offer patients with greater quality care and service. Furthermore, Perlmutter (2022), Salleh (2023), and AlSadrah (2020) have also stated that easy access to digital records by being able to access patient files regardless of where they are being treated and the elimination of the terrible handwriting that has historically afflicted the medical chart are some of the fundamental advantages of EHRs.

Due to the problems which paper based health records have had through the years, there are multiple electronic management systems being developed and currently used in the healthcare industry. These systems have been around for several years and as such, have gone through several changes which have established their presence in the healthcare industry. The three mentioned systems were picked as reference points as they have robust security measures, are standardized, as well as incorporate best practices that have been refined by healthcare professionals as well as technology experts.

The developed system intends to implement a web-based patient health record management system that would enable the linking of patient health records between the proponent’s two medical clinics, incorporate an appointment and queueing system and chat feature, as well as automate the process of generating medical certificates. The system also makes use of email authentication as a way to verify user registration.

Table 1. List of Similar Applications

Similar Applications	**Features**
Praxis EMR	• Patient Information Management • Clinical Decision Support • Compliance and Security • Appointment Booking
Epic	• Patient portal • Reporting and analytics • Clinical decision support • Patient management • Appointment Booking
MEDITECH	• Patient management • Quality management • Revenue cycle management • Patient portal • Appointment Booking

As stated in Table 1, Gupta (2023) had also recognized these three systems namely Praxis EMR, Epic and MEDITECH as the top Electronic Health Records (EHR) or Electronic Medical Records (EMR) systems as of March 2023. As the plethora of EHR benefits become ever more evident to physicians and providers, several powerful and impressive companies have emerged as leaders in the EHR industry, and offer excellence in EHR development, deployment, and delivery. Each of these systems share common characteristics such as patient information management, mobile access, clinical decision support, as well as being secure. These systems have been around for several years and as such, have gone through several changes which have established their presence in the healthcare industry.

1.2 Background

1.2.1 The Proponent

Dra. Carolina Balangay is an Obstetrician-Gynecologist (Ob-Gyne) with professional focus on women's pregnancy and reproductive health. The doctor is partnered with two clinics, 2012 Multi-Specialty Clinic and QA Diagnostic Laboratory. The former operates from Tuesday to Saturday, between 2:00 pm and

4:00 pm, while the latter operates on Monday, Wednesday, and Friday from 11:00 am to 1:00 pm. The schedules may extend when necessary to accommodate more patients.

Dra. Balangay uses the "subjective, objective, assessment and plan," more commonly known as the SOAP process, and is widely used by healthcare providers (Ghassemzadeh) 2022 in both clinics. The SOAP process helps gathered data turn into relevant information. Subjective refers to the patient's chief complaint, the history of the present illness, and the patient's past medical and family history. Objective refers to the doctor's objective information collected from the patient's check-up and the different laboratory results performed on the patient. Assessment refers to the summary of the medical problem/s the doctor found based on the previous subjective and objective sections. Finally, the Plan focuses on the list of the patient's medical problems, the proposed plan for each problem, and the medications needed (Maldonado-Morales et al., 2018).

1.2.2 Clinics' Background

1.2.2.1 2012 Multi-Specialty Clinic

2012 Multi-Specialty Clinic is located at Room 302, 2nd floor, La Azotea Building, at Session Road Baguio City. This clinic caters to multiple doctors and specialties and has a common assistant that assists every doctor. The proponent accommodates an average of 5-10 patients each week for obstetrics and gynecology issues. The average number of patients seen does not include the number of patients that the other doctors with different specialties cater to.

The usual responsibility of the assistant is to inquire about a patient's personal information, basic medical history, other health information, and the reason for their appointment before giving the patient's form to the doctor. The assistant also calls on the next patient in queue when the doctor finishes the healthcare service with a different patient. The other responsibilities that the assistant has would be to handle the scheduling of appointments, management and organization of patients' records, as well as assisting the doctor. Once the healthcare service is finished, the assistant stores the patient record in a filing cabinet, but large boxes are also used to keep the records due to the numerous records on hand. There is not enough room for large medical equipment due to the clinic's size, so it only offers basic check-ups and cannot conduct in-depth medical examinations such as ultrasounds. Figure 1 shows the organizational chart for the 2012 Multi-Specialty Clinic where the Clinic Director is on the top of the hierarchy.

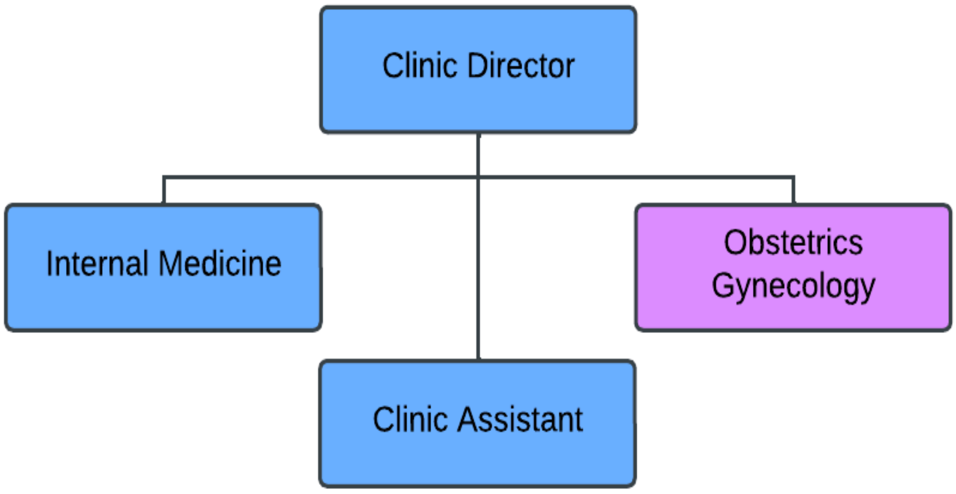

Figure 1. Organizational chart of 2012 Multi-Specialty Clinic

1.2.2.2 QA Diagnostic Laboratory

QA Diagnostic Laboratory is located on the second floor of Danes Building in Kayang Street, near the public market. QA Diagnostic Laboratory is a comprehensive clinic that provides a broad range of medical services such as laboratory tests. The clinic also caters to multiple doctors and specialties and is supported by a shared administrative staff, including a skilled assistant who assists all doctors. In contrast to the 2012 Multi-Specialty Clinic, QA Diagnostic Laboratory offers a variety of laboratory tests, including Medical Consultation, Clinical Laboratory, Radiology (X-Ray), Sonology (Ultrasound), Cardiology (ECG), and Drug Testing. On average, the clinic attends to 10-15 patients per week for the proponent. This comprises a mixture of both new and returning patients. The difference between the average number of patients between the two clinics is due to several factors, including the availability of laboratory tests at the QA Diagnostic Laboratory.

As for the QA Diagnostic Laboratory, the assistant greets patients and provides them with a queue number upon arrival. The assistant then collects the patient's personal information, basic medical history, other health information, and the purpose of their visit or appointment, The information is then recorded and stored in a computer system. After the patient is directed to their doctor, the healthcare services are provided. After which, the patient's health record is stored in a secure filing cabinet, which can be retrieved for future visits. Figure 2 shows the organizational chart for the QA Diagnostic Laboratory where the Clinic Director is on the top of the hierarchy.

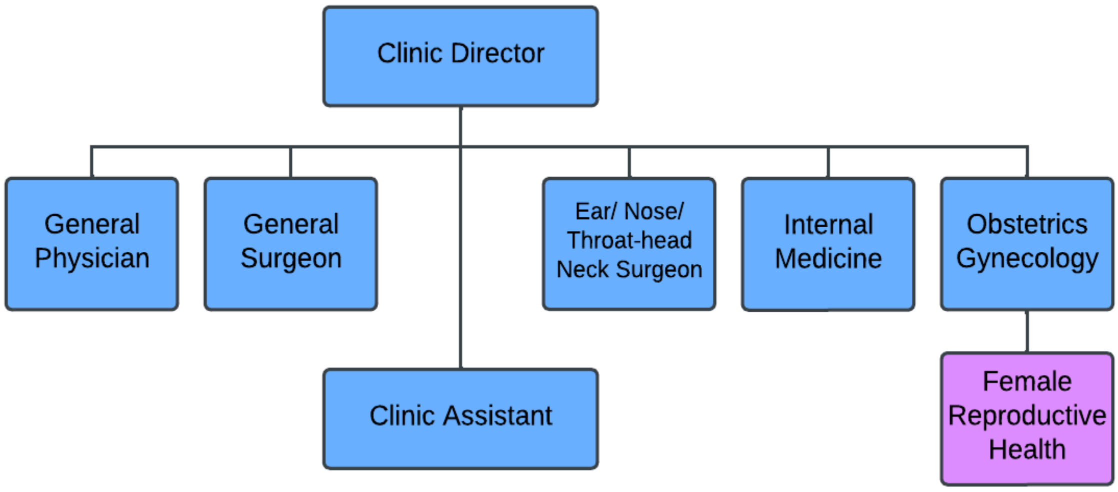

Figure 2. Organizational chart of QA Diagnostic Laboratory Clinic

1.2.3 Processes

Both the Multi-Specialty Clinic and QA Diagnostic Laboratory have similar, if not the exact processes, as they have similar circumstances since both clinics have multiple doctors, and cater to different patients seeking healthcare. The processes listed below are used in both clinics.

1.2.3.1 Client Acceptance Process

If the patient is new at the clinic, they would be asked by the assistant to fill up a form. The patient would have to input their basic information such as their name, address, date of birth, gender, age, civil status, contact number, and occupation. But if they are a returning patient, the assistant would look for their patient record from the storage cabinet and retrieve it. If they are a returning patient and their previous health record has been misplaced or destroyed, they have to fill up a form again, just like a new patient. Figure 3 shows how the Assistant retrieves the patient record.

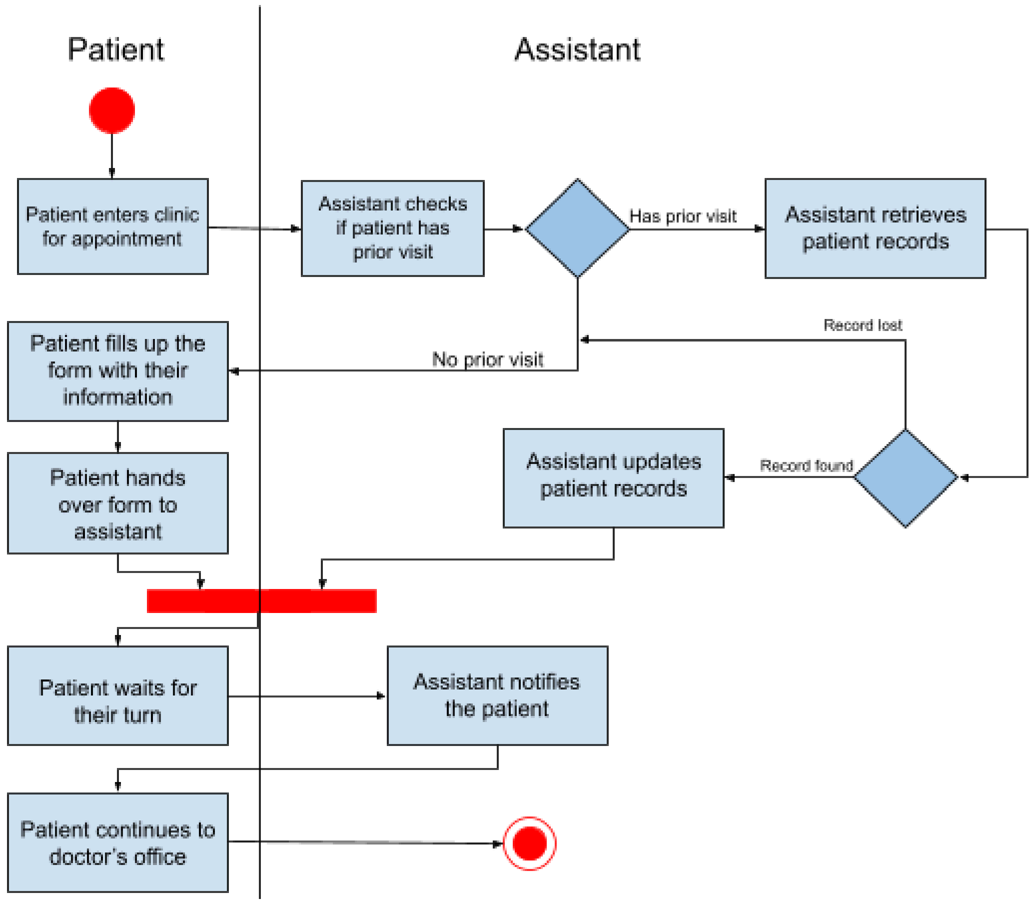

Figure 3 . Activity Diagram for Client Acceptance Process

1.2.3.2 Booking Process

For a patient to book an appointment, the doctor's personal Facebook Messenger details are given to the patient for them to communicate, and the booking only works with returning patients. The doctor would check messages sent by patients from time to time. The patient would chat with the doctor to request an appointment on a specific schedule which the doctor would check for availability. If the doctor is available on the said schedule, it will first be verified with the assistant, who will confirm if the schedule is available. But if the schedule is unavailable, the assistant would give a list of available schedules so that the doctor would relay it to the patient for them to choose. After the patient chooses an available schedule, the doctor informs the assistant and the appointment is then set. Figure 4, shows how the patient books an appointment while the doctor is the one who provides the schedules and the assistant is the one who confirms the appointment.

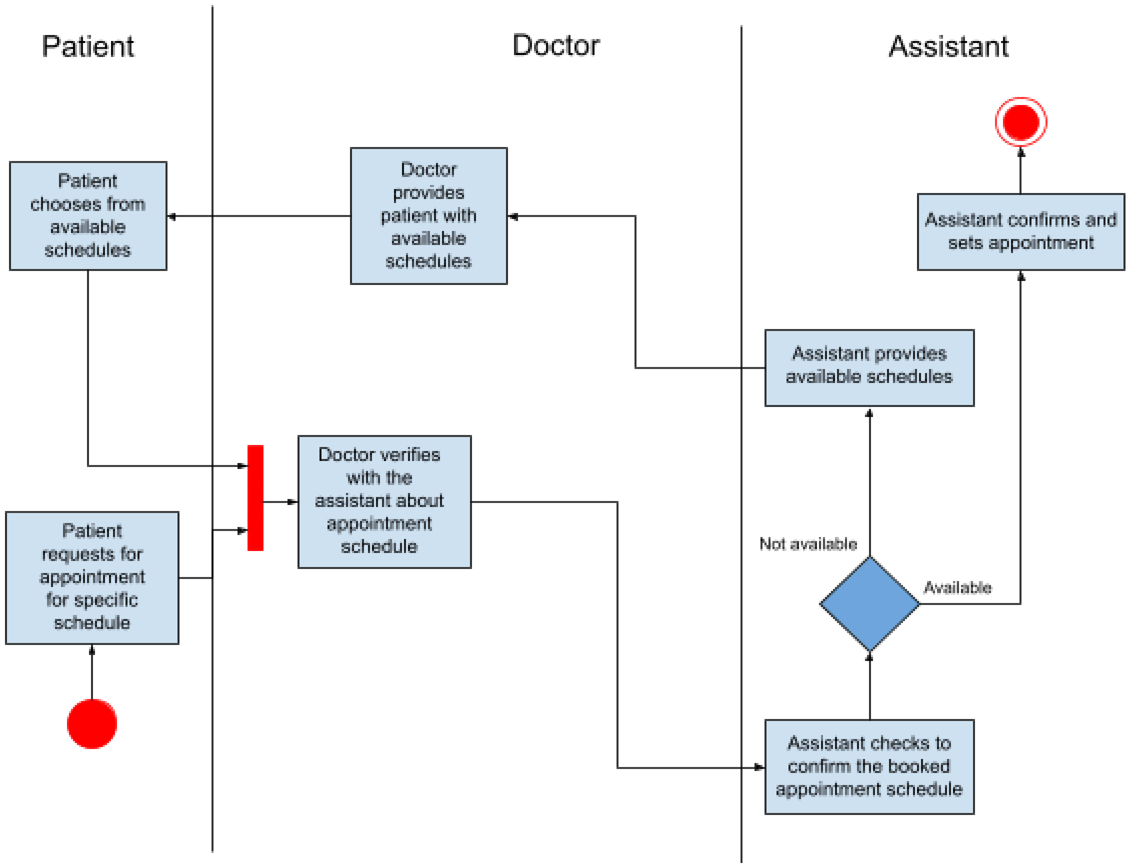

Figure 4. Activity Diagram for Booking Process

1.2.3.3 Service Process

Initially, the assistant would ask which doctor the patient has an appointment with, or the patient would like to see. If the patient has an appointment with the proponent, the assistant would ask if they have any previous records or visits with the doctor. If the patient has no previous records or visits, or when their record is misplaced or destroyed, they will be asked to fill up a form with their basic information (name, address, date of birth, gender, age, civil status, contact number, and occupation). The patient will then hand it over to the assistant and wait to be notified by the assistant when they can enter the doctor's office. However, if they already have a record prior to the current visit, the assistant would look for the patient's record and retrieve it. Once the patient is notified by the assistant to enter the doctor's office, the doctor will start with the SOAP process. After which, the doctor will assess whether the patient needs to return. If the patient needs to return for another appointment, the assistant would set a schedule and then update their patient record. Figure 5 shows the service processes for the clinic.

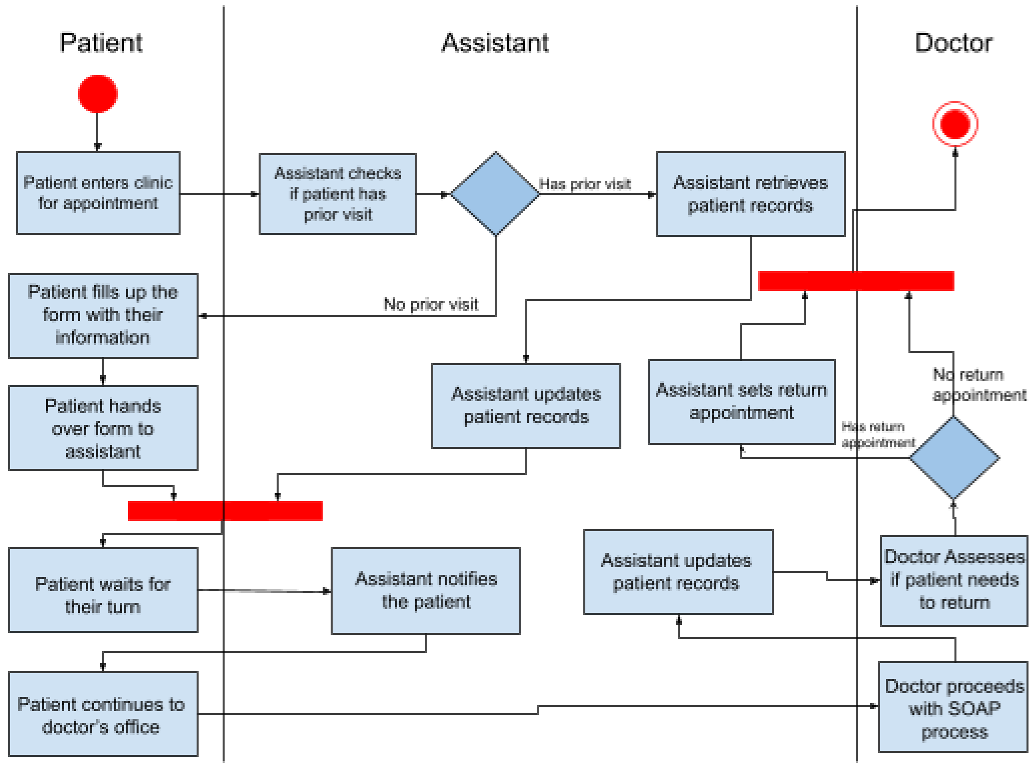

Figure 5. Activity Diagram of the Service Process

1.2.3.4 Update Client Record Process

When updating a returning patient's record, the doctor or the assistant would first have to look for the patient's previous records. Then the doctor would attach files such as laboratory results or notes about the patient's improvements to their condition, concerns, etc. The newly updated records will then be returned to patient records storage which would be the filing cabinets. If the patient's record was misplaced or lost, the clinic would have to replace it with a new one and ask the patient to fill up another form with their basic information. Figure 6 shows how the doctor and assistant update the patient's record.

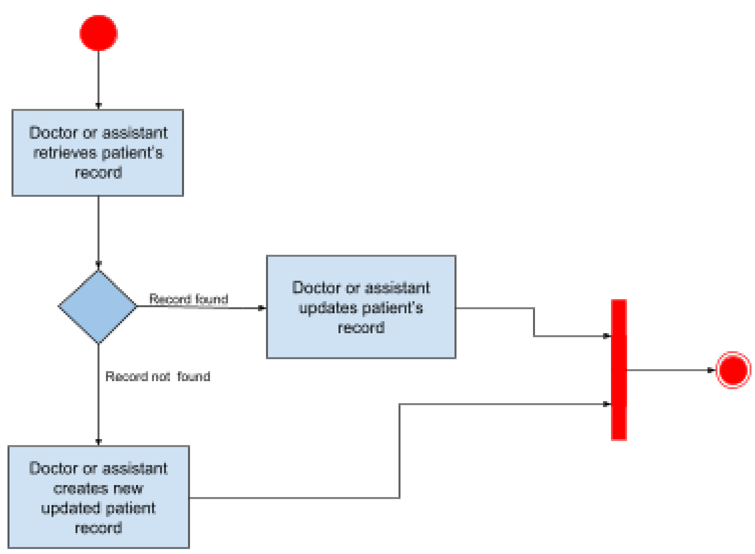

Figure 6. Activity Diagram of the Update Client Record Process

1.2.3.5 Retrieval of Client Record during Emergencies Process

During an emergency wherein the patient is rushed to the hospital, the hospital calls and informs the doctor of the situation. There are two (2) possible scenarios on how the doctor addresses these emergencies. The first scenario would be if the doctor is in the clinic where the patient's records are stored, the doctor would then ask the assistant to look for the patient's records in the storage cabinets and retrieve it. The doctor would read the file and may even take a picture of the record before rushing to the hospital. The second scenario is if the doctor does not have direct access to that patient's records. The doctor would have to contact the assistant to retrieve the records via Facebook Messenger or through SMS, the assistant would then retrieve the records, take a picture and send it through the Facebook Messenger application. Figure 7, shows the emergency process of the hospital to the doctor.

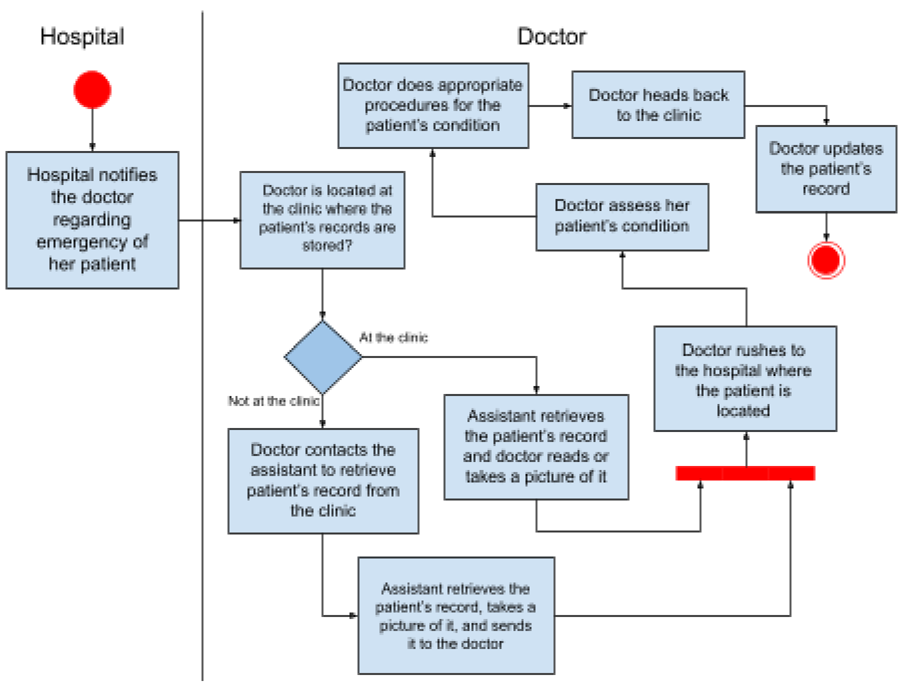

Figure 7. Activity Diagram of the Retrieval of Client Record during Emergencies Process

1.2.4 Problems Encountered with the Current System

1.2.4.1 Challenges in Retrieving Patient Files

When the patient is currently in the hospital or an emergency (giving birth, suddenly feeling sick, etc.), it may take the assistant some time to find the patient's file since there is a probability that the assistant is preoccupied with other work activities which causes delay in attending to the emergency as soon as possible. Emergencies with the patient may also occur outside of the clinic's operating hours which also causes delays and difficulties in retrieving patients' files.

1.2.4.2 Unread Messages of Appointment Booking Through Facebook Messenger

At present, appointments for returning patients are made via the Facebook Messenger application and SMS, as aforementioned. Communication through Facebook Messenger occurs via the doctor's personal account, where the patient initiates a private message to the doctor's profile and awaits a response. It is then at the discretion of the proponent whether to accept or reject the appointment request. This approach may lead to messages left unread or unseen, as the doctor's Messenger inbox is also cluttered with other private messages from non-patients, and the doctor may be occupied with other responsibilities such as emergencies or by diagnosing patients. This may leave little time to check every message on her inbox.

With SMS, patients may request the doctor's personal number after having a consultation, which can then be used to schedule an appointment. Similar to messaging through the Messenger application, patients will wait for a response, which may lead to the proponent unintentionally leaving them unread or unacknowledged due to it mixing up with other personal messages from non-patients, or being preoccupied with other external responsibilities.

1.2.4.3 Missing, Destroyed, or Misplacement of Health Records

Another problem for the proponent is that lack of information recovery whenever a patient's record is misplaced or destroyed. This could be due to the record being mixed with the patient health records of the other doctors due to the doctors sharing common filing cabinets and boxes for storage. When a patient's health record has been misplaced or destroyed, important patient information that was recorded becomes lost so the clinic has no other choice but to create a new record. In the event of creating a new record for the patient, the proponent could try their best to recall any information relating to the patient but some key information and diagnosis might not be included in the new record. This would mean that misinformation may occur and there would be a possibility that the proponent could make errors on their course of action due to the missing information.

1.3 Statement of Objectives

The team aims to develop a web-based patient record management and appointment queueing system for Dra. Balangay’s two clinics to improve its operations. Specifically, the study seeks to do the following:

a. To gather both functional and non-functional requirements of the web-based system.
b. To identify the features and modules of the system based on the identified requirements.
c. To design the system using system architecture, activity diagrams, use cases, data flow diagrams, entity-relationship diagrams, interfaces, and prototypes.
d. To develop and test the web-based patient record management and appointment queueing system
e. To deploy and create a user manual and live demonstrations for the end-users.

By achieving these objectives, the team aims to deliver a tailored solution that not only meets the immediate needs of the proponent’s clinics but also provides a foundation for efficient and scalable healthcare management.

1.4 Scope and Limitations of the Project

The research project is centered on developing a patient record management system for the 2012 Multi-Specialty Clinic and QA Diagnostic Laboratory intended explicitly for Dra. Carolina Balangay. The system's primary goal is to aid the proponent by simplifying the patient record management process, automating the consolidation of patient data from two separate clinics, integrating an appointment system, adding a chat feature, and streamlining the generation of medical certificates. The system, Recomed, is accessible to the proponent, assistants of the clinics, and her patients. It is to be compatible with any device with a web browser.

The project is only limited for the proponent, assistants for both clinics, as well as patients who exclusively seek healthcare services from the proponent. It is important to note that other medical practitioners working within these clinics will not have access to the system. Furthermore, the project does not encompass any mode of payment. ‘Recomed’ is designed exclusively for use within the clinics and does not encompass information related to patient admissions to the hospital but the proponent can still input remarks when deemed necessary.

1.5 Significance of Study

Through this study, the team used a suitable approach and method in creating a web-based patient records system for the clinics of Dra. Balangay. The study may benefit the following:

The Clinics, the study would benefit the proponent in managing their patient records faster and easier using the system. It has also been said that electronic/automated medical records have been touted as a solution to many problems encountered in the healthcare industry. Automated medical records increase the reliability, efficiency, and overall quality of the clinic's care and services (Janett & Yeracaris, 2020). In addition, implementing this study would also allow for quicker response time by the clinic during an emergency situation.

The system enables healthcare providers to efficiently locate the required information by simply entering the patient's name into the database, eliminating the need for manual searches through paper records within the clinic. As a result, patients can receive prompt medical attention in critical situations. It has also been mentioned that ensuring a linking system for different clinics is vital because it develops a reliable method for connecting patient records between various medical clinics (Dexheimer et al., 2019). This allows the proponent to access a patient's complete medical history, no matter where they received care.

The Patients of the Clinics, this project allows patients to have a better experience through faster check-ups. It dramatically reduces the waiting time to record and retrieve information about them. Medical certificate generation is also automated, and the web application is enabled for booking appointments.

The Developers, this project helped the team build their knowledge and sharpen their skills in order to be able to develop a more complex system in the future. It helped the team explore additional improvements to develop a successful patient record system for a business.

Chapter 2

METHODOLOGY

This chapter discusses the steps and processes followed in order to achieve the objectives of the project. Section 2.1 discusses how the researchers gathered the necessary functional and non-functional requirements for the system. Section 2.2 identifies the features and the modules to be used for the system. Section 2.3 tackles the design of the system. Section 2.4 discusses the tools the team used to develop the system. Section 2.5 presents the software and hardware requirements of the system. It further covers the deployment of the system using web hosting platforms as well as the manual for user guidance.

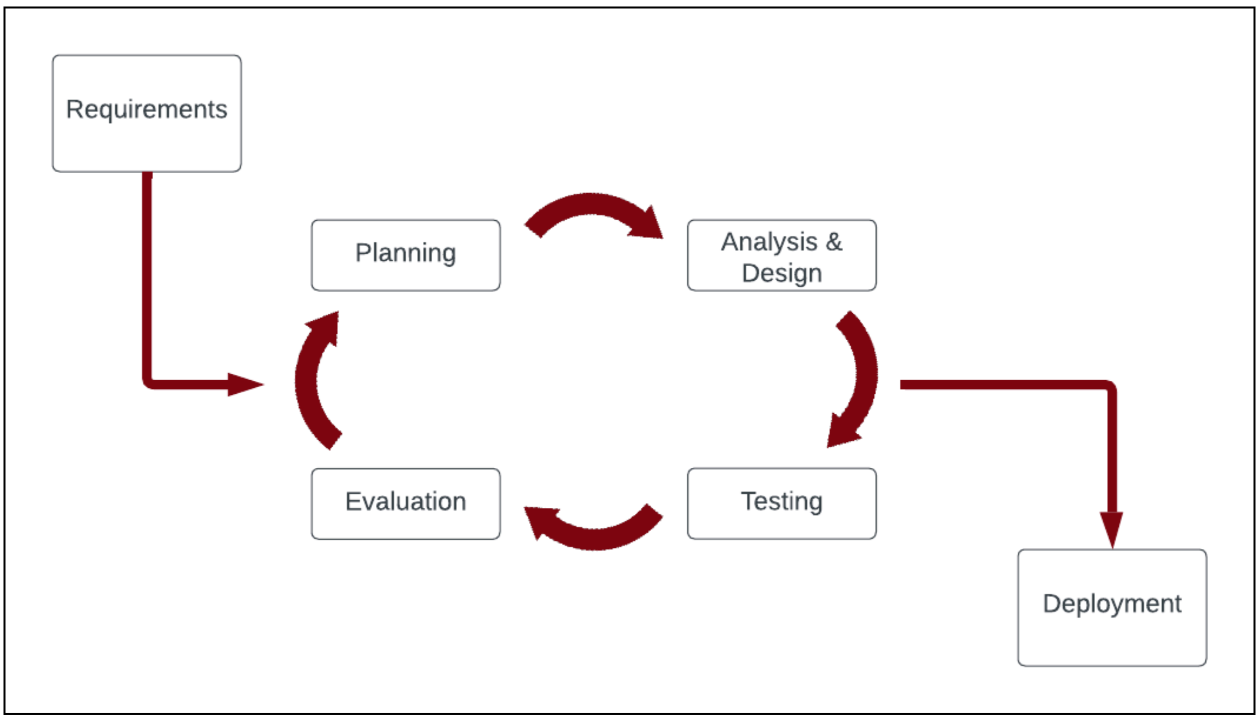

Figure 8. Iterative Model

Figure 8 shows an iterative model that is used as a basis for developing the system. The iterative model is a specific approach within the software development life cycle (SDLC) that emphasizes starting with a simple version of the software and gradually adding complexity and features until the final system is fully developed (Banks, 2016). This means developing small portions of the software and delivering them to the proponent for feedback. From there, the team used inputs from the proponent to make improvements and create new versions of the software. One of the advantages of using the iterative development model is that it allows for more flexibility and adaptability throughout the development. In essence, when more issues or changes were to be made, the team was made aware of them and were able to implement them in the next iteration.

The team gathered and analyzed the initial requirements through interviews with the proponent, followed by additional interviews to clarify any uncertainties. The information gathered from these interviews was used to separate the requirements into two categories: functional and non-functional. This process set the foundation to design and develop the web application to meet the identified requirements.

After the functional and non functional are identified, the team requested copies of the forms used in the clinics, which adhere to a specific process known as subjective, objective, assessment, and planning (SOAP). Upon identifying and gathering the specific requirements, the team proceeded to develop the system's architectural and detailed design. They utilized documentation and created diagrams, including Activity Diagrams, Entity Relationship Diagrams, and Use Case diagrams, to effectively communicate and document the design decisions.

In the Implementation and Test phase, the team focused on building and validating the web application. They paid attention to detail as they coded, developed, and tested each new modification and feature. In-depth testing was conducted throughout the various stages to identify and fix any potential issues or bugs. The aim was to ensure that the web application meets all the specified requirements. After testing, the team sought feedback from the proponent to better understand their perspective and expectations. The team analyzed the feedback, considering both positive feedback and constructive criticism to identify areas for improvement. Whenever necessary, the team revisited the design phase to make changes.

Lastly, throughout the development cycle, the team's goal was to achieve optimal performance, reliability, and usability for Recomed. They were committed to incorporating feedback and making necessary improvements to meet the proponent's requirements.

2.1 Gathering the Functional and Non-functional Requirements

The team applied the first phase of the iterative model, requirement analysis, to identify the functional and non-functional requirements of the system. Interviews were conducted with the proponent to gather information on how both the clinics worked, and additional information was obtained from sample forms, documents, and certificates. In addition, the team also researched document reviews and similar applications to the system. Further discussions and considerations concerning the requirements of the project were clarified with the proponent in the progressing days.

2.2 Identifying Features and Modules

This section defines the methodology employed for the development and specification of the Patient Record Management System. The identification and integration of system features were based on a comprehensive analysis of functional and non-functional requirements, coupled with an assessment of analogous systems, and the modules were identified as the actors that would utilize the system. The system is customized for both desktop and mobile devices, specifically designed as a web application.

Constant communication with the proponent and the team were done to come up with well defined features and modules that meet the project requirements.

2.3 Creating the System Design

The team utilized multiple diagram techniques, including Use Case Diagram, Entity Relationship Diagram (ERD), and Prototyping, for designing and implementing the automated patient record management system. Similar to the Feature and Modules, the design was based on functional and non-functional requirements, a review of related literature, and interviews with the proponent. Once certain functionalities of each module were completed by the team, they underwent testing, which was then evaluated by the proponent through physical meetings. This section is divided into five subsections. Section 2.3.1 discusses how the System Architecture was conceptualized, outlining the foundational principles guiding the design process. Section 2.3.2 focuses on creating the use case diagrams, detailing the process of identifying user interactions and translating them into visual representations. In Section 2.3.3, the creation of Data Flow Diagrams is discussed and expounded on. Section 2.3.4 delves into the database creation by forming an Entity Relationship Diagram as a basis, covering the identification of entities, attributes, and relationships. Lastly, Section 2.3.5 outlines the creation of prototypes, detailing the process of developing early versions of the system to gather feedback and refine requirements.

2.3.1 Designing the System Architecture

The System Architecture Diagram was generated based on the specified requirements, features, and modules. This diagram depicted the structural layout of the application, illustrating the relationships between technologies. It also showcased the technologies and services utilized, along with their connections to the modules and features.

2.3.2 Creating the Use Cases

The use case diagram allowed the team to describe the possible usage scenarios (use cases) that a system is developed for. It visually represented the dynamic behavior observed when the system was utilized or deployed by a specific user. The diagram depicted the features that each user could execute to interact with the system. The team utilized the identified functional and non-functional requirements, as well as the features and modules, to construct the Use Case Diagrams for the application. Adjustments were made to the use case diagrams to align with the updates implemented during the development phase and discussions with the proponent.

2.3.3 Creating the Data Flow Diagram

In developing the system's data flow diagram, the team incorporated insights from the use case diagrams and database model. These diagrams were regularly revised to incorporate modifications made during the development and evaluation phases in collaboration with the proponent.

2.3.4 Creating the Entity Relationship Diagram

The team identified the data and information used in the business process of the clinics by conducting a series of interviews. Using the information that was gathered, the team created an Entity Relationship Diagram (ERD), which served as a visual representation and guide used in creating the database. Additionally, it is used to figure out the relationship between different entities, like the other tables, which was made by thoroughly analyzing the system's design and figuring out the relationship between the modules that will be created. The entity relationship diagram was updated throughout the development phase when changes were made to the database.

2.3.5 Creating the Prototypes

Prototyping is crucial in system development, such as creating a web page. It provides a blueprint design for the system and serves as a guiding reference for the team. Additionally, prototypes can facilitate communication and collaboration between developers, stakeholders, and end-users, as they provide a tangible representation of the system's capabilities and limitations. Ultimately, prototyping can help ensure that the final system meets the needs and expectations of all involved parties as stated by Lonc (2023). The team referred to the identified features and modules as well as recommendations from the proponent. and attempted to create a representation of how the system should look upon development.

2.4 Development and Testing

In developing the system, the team covered multiple tools and technologies such as IDE's, programming languages, databases, development tools, and testing tools, and how they were selected. Section 2.4.1 outlines the selection of tools and technologies for building the system, as well as the procedures involved in its development. Section 2.4.2 discusses the team's approach on how to test the system.

2.4.1 Development of the System

This section is divided into two subsections. Section 2.4.1.1 discusses how the team selected the tools and technologies to be used in the development of the system and what factors were considered. Section 2.4.1.2 talks about how the team plans on developing the system.

2.4.1.1 Selecting the Tools and Technologies to be used

In selecting the different tools and technologies that were used in developing the application, the team thoroughly researched different web scripting languages and other development tools. The team considered multiple factors in selecting what tools and technologies were to be used such as its appropriateness and reliability, its availability, and the team's expertise and experience on handling the said tools and technologies.

2.4.1.2 Developing the System

Since the team implemented the iterative model, the team underwent multiple instances of the development phase wherein changes were made based on the feedback and suggestions given by the proponent. Each iteration is composed of the team requesting interviews with the proponent to check if the current state of the project meets the expectations and requirements, as well as requesting feedback from the proponent for improvements.

2.4.2 Testing of the System

For the testing phase, the team aimed to conduct manual testing to identify bugs or defects, ensuring that the system conforms to the specified requirements. After the development phase, the system will undergo unit testing to ensure that the system had no problems and was ready for deployment. Since the team utilized the iterative model, testing was done whenever changes were made in the system.

2.5 Deployment of the System

This section consists of subsections. Section 2.5.1 discusses how the team identified the minimum system requirements for the system. Section 2.5.2 talks about how the hosting system for the system is identified. Lastly, Section 2.5.3 describes how the team created the user manual.

2.5.1 Identifying the Hardware and Software Requirements

The interviews with the proponent allowed the team to identify the current infrastructure of available hardware in the clinics. The team also looked at the minimum requirements of systems that used similar technologies to the Recomed system in order to be certain about the system's requirements.

2.5.2 Determining the Hosting Services

As a web-based application, the system needs web hosting services and the team is tasked to handle its hosting for deployment. The team looked into credible, trustworthy, safe, and affordable web hosting options to be considered in deploying the system.

2.5.3 Creating the User Manual

The team created an instruction manual for the system. The instruction manual is a step-by-step guide on how to properly use each feature and function of the system. The proponent and her assistants will receive the instruction manual to become comfortable and familiar with the system without the team's supervision in order to prevent operational blunders and delays.

Chapter 3

RESULTS AND OUTCOMES

This chapter discusses the initial results achieved by following the methodology and is divided into 5 sections. Section 3.1 discusses and outlines the gathered necessary functional and non-functional requirements for the system. Section 3.2 delves into the specification of the system's features and modules, categorized into the doctor module, assistant module, and patient module. Section 3.3 tackled the system design encompassing the system architecture, use case diagram, data flow diagrams, database model and schema, and user interface design. In Section 3.4, the tools and technologies utilized in the development of the system are discussed and elaborated upon. Lastly, Section 3.5 discusses the software and hardware requirements needed to run the system as well as the hosting service selected for hosting the system. It also includes the user manual for user guidance.

3.1 Requirements Specification

This section is split into two sections. Section 3.1.1 discusses the functional requirements, while section 3.1.2 identifies the non-functional requirements.

3.1.1 Functional Requirements

The functional requirements which are shown in Figure 2, illustrate the features and modules of the system based on the target users. These were obtained from multiple interviews with the proponent to be able to understand how the system should work, and similar existing applications were also used as a basis to come up with a web-based record-keeping system with appointment scheduling and chat application.

Table 2. Functional Requirements

Feature	**Functional Requirements**
Register	• The doctor and assistant should be able to register a patient as a user using their personal information (fullname, password, contact number, address, civil status, date of birth, email). • The patient should be able to register as a user using their personal information.

Log In	• The doctor, assistant, and patient should be able to login to the web application.
Log Out	• The doctor, assistant, and patient should be able to logout from the web application.
Assistant Profile	• The assistant should be able to update the assistant profile.
Patient Profile	• The doctor and assistant should be able to view and update the patient's profile. • The doctor should be able to archive and unarchive the patient's profile. • The assistant should be able to unarchive a patient's profile. • The patient should be able to view the patient's profile. • The patient should be able to update their password.
Patient List	• The doctor should be able to view the list of patients.
Search	• The doctor and assistant should be able to search the name of the patient.
Patient Health Records	• The doctor should be able to create and view the diagnosis (Patient health record) on the patient. • The doctor and assistant should be able to create and view the physical exam of the patient. • The doctor and assistant should be able to upload and view lab results of the patient. • The doctor should be able to add and view medications for the patient. • The assistant should be able to view the medications for the patient.
Appointment	• The doctor and assistant should be able to schedule, update, and cancel appointments for a patient. • The doctor and assistant should be able to disable dates for appointments. • The doctor and assistant should also be able to view appointments made by patients.

	• The patient should be able to view, schedule, update, and cancel an appointment (date, time, and clinic).
Message	• The doctor should be able to message the assistant and the patient/s. • The assistant should be able to message the doctor and the patient/s. • The patient should be able to message the clinics.
Announcement	• The doctor and assistant should be able to post, view, update, and delete announcements. • The patient should be able to view announcements.
Gestational Age	• The doctor should be able to calculate and view a patient's gestational age. • The patient should be able to view their gestational age.
Medical Certificate	• The doctor should be able to generate a medical certificate when requested.

3.1.2 Non-Functional Requirements

After identifying the functional requirements, the team outlined the non-functional requirements. The system's standards for judging operations, attributes, and quality characteristics are shown in Table 3.

Table 3. Non-Functional Requirements

NON-FUNCTIONAL REQUIREMENTS	DESCRIPTION
Availability	• The system must be computer-accessible (macOS and Microsoft Windows). • Appointment queueing, as well as other features must be available at all times.
Performance	• The system must be capable of dealing with automated features such as sending out notifications whether a user has been successfully verified or not. • The system must be able to swiftly obtain and update data

	from the database.
Reliability	• The system must ensure that accurate information is provided by displaying error messages to the user.
Scalability/Manageability	• The system must be adaptive and extendable for any additional records, users, and functions that may be added in the future. • The system should still be up and running when additional changes in the code are being updated.
Security/Accessibility	• The system must be able to send an OTP (One-Time Password) to the user's email address for user verification upon registration or updating of user password. • The system must require the right OTP sent to the user's email address to ensure secure user verification. • The system must require the right username and password of the doctor, assistant, and patients prior to the use of the system. • The system must ensure that information shown is filtered by who is accessing it (patient, assistant, or doctor). • The system must only allow the user to engage with the system in ways that are appropriate for their user type (patient, assistant, or doctor).
Usability	• The system must enable the user to easily navigate through the sections of the web-based application. • The system must allow users to quickly perform tasks (schedule an appointment, input data in a record, etc). • The interface of the application must be user-friendly and simple to use.

3.2 System Features and Modules

This section discusses and specifies the system's various modules and features. They are divided into three categories. Section 3.2.1 discusses the Doctor Module, 3.2.2 presents the Assistant Module, and 3.2.3 presents the Patient Module. The team was able to identify the following elements that were integrated into the patient record management system based on the defined functional and non-functional requirements, and an assessment of similar systems. The system is suitably used for desktops as it was designed in consideration as a web application.

3.2.1 Doctor Module

Figure 9 shows the Doctor Module. As shown in the figure, it extensively employs the diverse functionalities and features inherent in the web-based application.

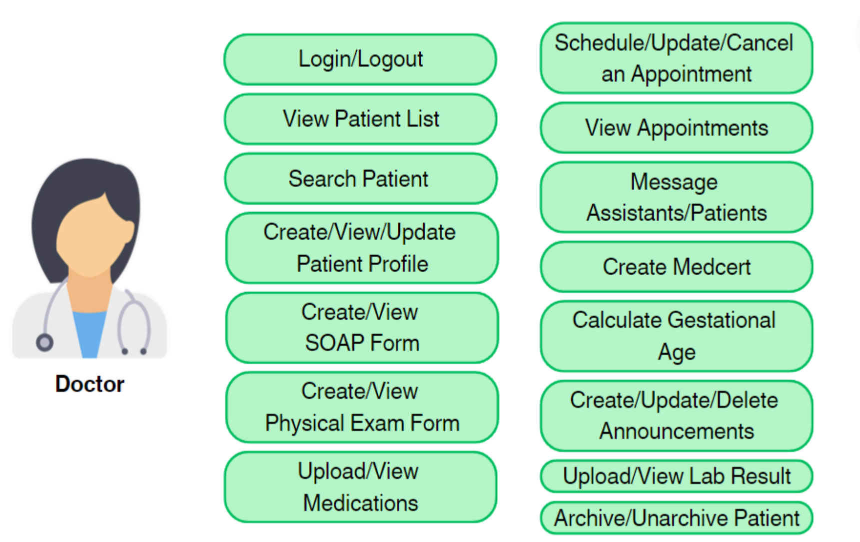

Figure 9. Doctor Module

This module has the ability to login or out of the system, view the list of patients of both clinics, and search for a patient using their first or last name. The module may also add new patients, as well as view and update their patient profile that contains their personal information. The module may also archive and unarchive patient accounts in events of inactivity. The doctor module can exclusively create, access, and view patients' health records - both for the SOAP form and the physical exam form; the doctor also has the ability to upload laboratory results into the records, as well as add medications for a patient. This module also allows the doctor to schedule and update appointments for patients, as well as disable dates for appointments whenever the doctor is unavailable; the doctor may select reasons for disabling and the disabled dates would then also reflect on the patient module. Appointments scheduled by patients can be viewed in this module. The doctor module also has the ability to message assistants of both clinics as well as the patients, serving as a communication channel between doctor and assistant or doctor and patient. Additionally, the module enables the doctor to generate a template for a medical certificate and print it whenever requested by a patient; the name of the patient as well as the date that it was requested will be 2.812.5 auto-filled by the system but the impression, the diagnosis of the doctor, and the remarks are to be inputted manually by the doctor.

3.2.2 Assistant Module

The assistant module, shown in Figure10, has similarities with that of the doctor module with the exception of creating patients' records, specifically for the patient health record, medications, and generating medical certificates.

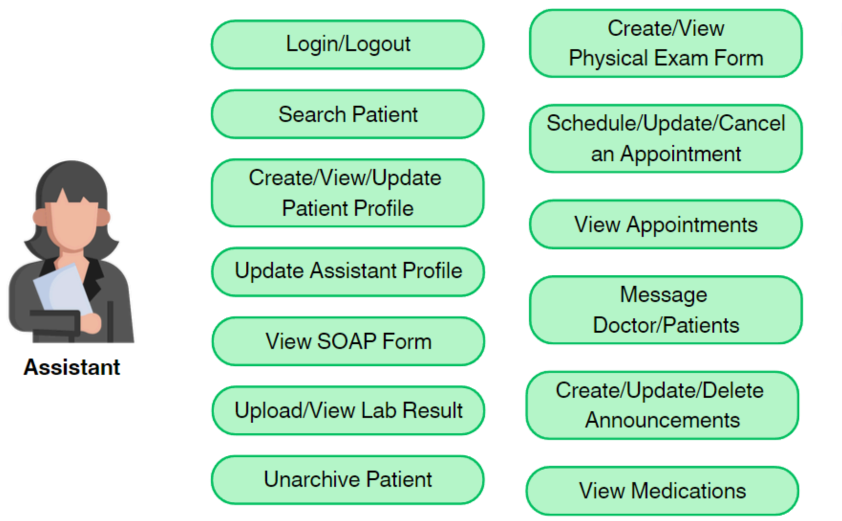

Figure 10. Assistant Module

This module has the ability to login or out of the system. Unlike the doctor module, this module cannot view the list of patients but may only search for a patient using their first or last name. The module may also add new patients, as well as view and update their patient profile that contains their personal information. The module may also unarchive patient accounts that have been archived by the doctor. The assistant module may access and view the patients' health records; they are able to have inputs for the physical exam form, but not the SOAP form. This module also allows the assistant to schedule and update appointments for patients, as well as disable dates for appointments whenever the doctor is unavailable; the assistant may select reasons for disabling and the disabled dates would then also reflect on the patient module. Appointments scheduled by patients can be viewed in this module. The assistant module also have the ability to message the doctor as well as the patients, serving as a communication channel between assistant and doctor or assistant and patient.

3.2.3 Patient Module

In Figure 11, the patient module has the ability to login or out of the system, also facilitating the registration of their user account. Additionally, the system incorporates account verification and updating of user password through an email OTP (One-Time Password). This module also allows patients to view and update their patient profile that contains their personal information. The patient module also gives patients the ability to schedule and update their appointments, and they may also view appointment dates that have been disabled by the doctor or assistant module. The appointment scheduled by the patient can also be viewed in this module. The patient module also has the ability to message, serving as a communication channel between patient and doctor or patient and assistant. The patient, however, will only be able to view that they are communicating with the clinic of their choice.

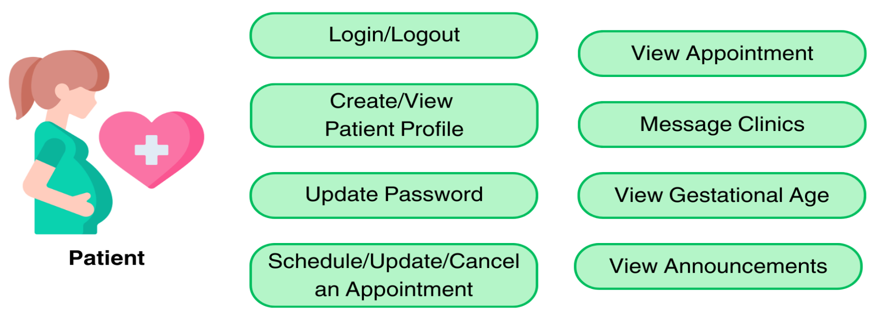

Figure 11. Patient Module

3.3 System Design

The system design is divided into 5 subsections. Section 3.3.1 discusses the system architecture, Section 3.3.2 depicts the use case diagram, Section 3.3.3 illustrates the data flow diagrams, Section 3.3.4 presents the database model and schema, and Section 3.3.5 outlines the user interface design of the system. The system design serves as a blueprint guiding the development and implementation of the system, ensuring alignment with project objectives and requirements.

3.3.1 System Architecture

Figure 12 showcases a clear and concise software architecture diagram for the system, enabling observers to easily grasp the interactions between its various components. Additionally, the diagram incorporated informative icons representing the specific technologies that were used for each component. This visual representation serves as a valuable aid in comprehending the system's design, promoting effective communication and development in the future.

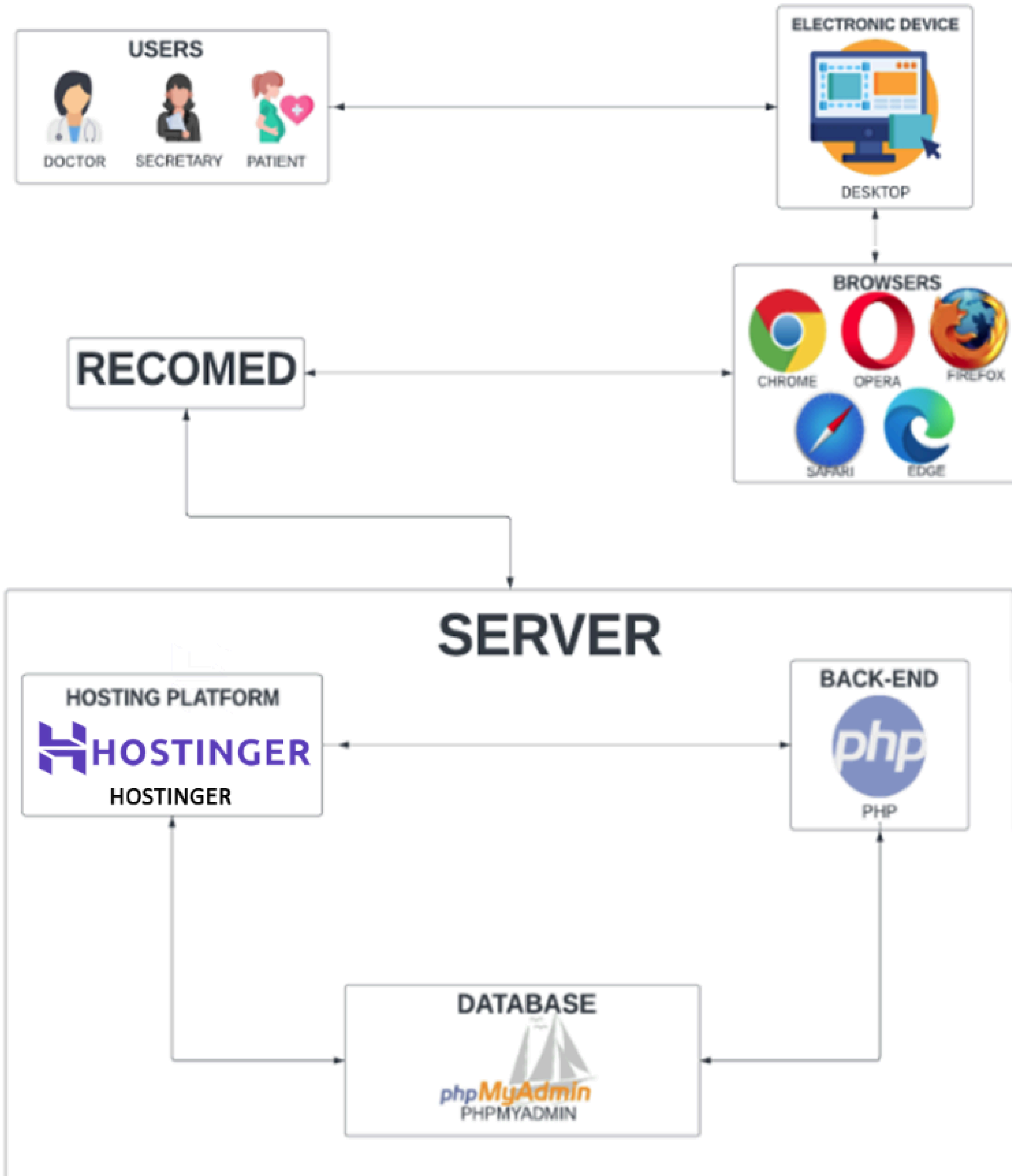

Figure 12. System Architecture

3.3.2 Use Case Diagram

The use case diagram illustrates all the possible interactions of the doctor, assistant, and patient/s within the system. The interactions were determined using the identified functional requirements.

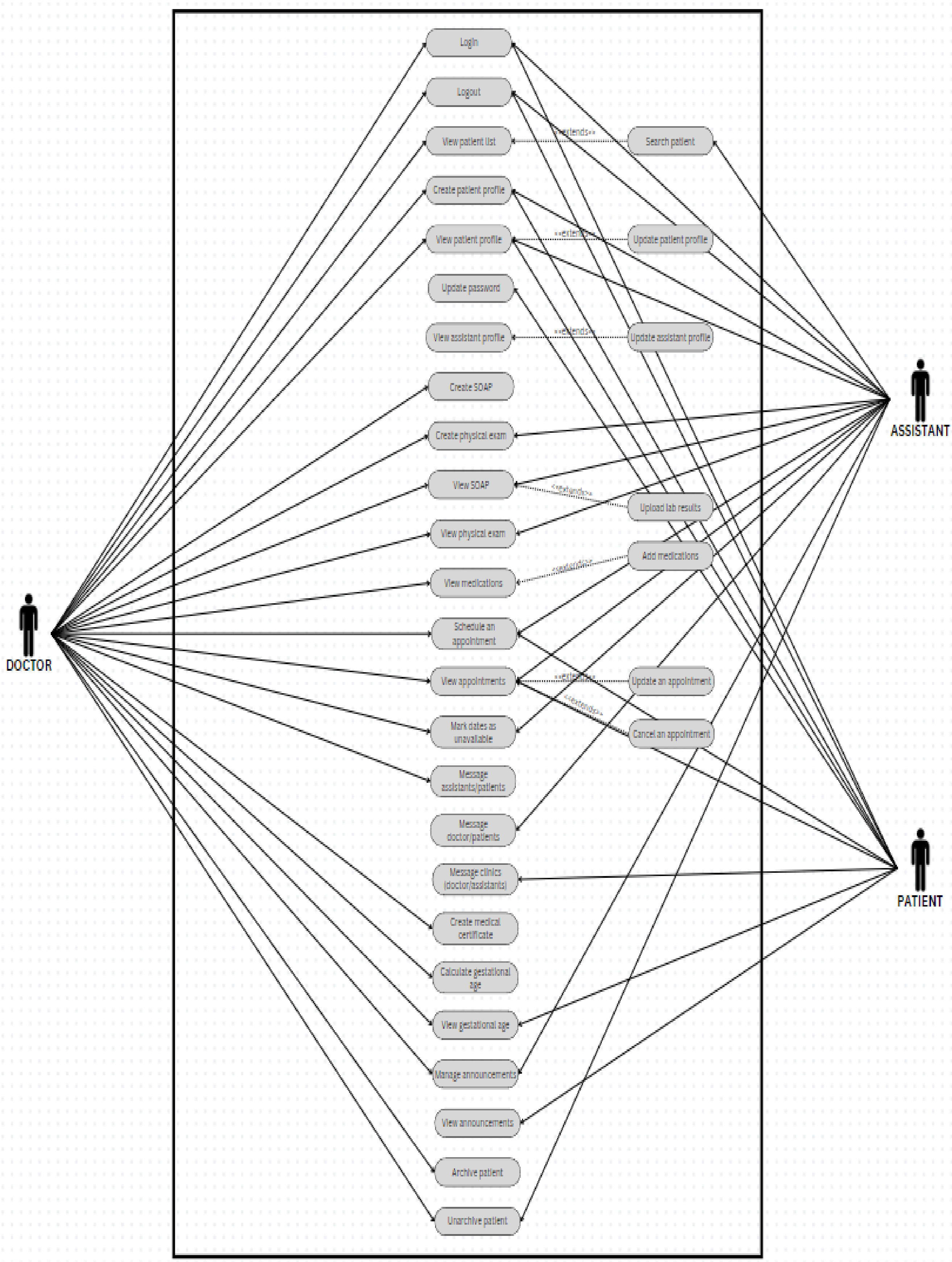

Figure 13. Use Case Diagram for the system

As shown in Figure 13, the doctor user has the most control and interactions with the system. First, they have the ability to login and logout of the system. The doctor is also able to view the patient list, as well as search for a specific patient using their first or last name. Patient accounts may be registered, viewed, updated, archived, and unarchived by the doctor user; they have the ability to view and create both the patient health form and physical exam form of each patient, including the uploading of their laboratory results as well as adding of their medications. The doctor user may also schedule appointments for patients, as well as cancel or update them; they are also able to disable dates for appointments in cases wherein they may be unavailable. Messaging of other users, assistants or patient/s, is also possible. The doctor user may generate and print medical certificates whenever a patient requests for them. A patient's gestational age may be calculated and viewed by the doctor. The doctor user may also manage announcements by posting, updating, or deleting them.

The assistant user almost has similar interactions with that of the doctor user within the system. First, they have the ability to login and logout of the system. The assistant, however, cannot view the patient list but is able to search for a specific patient using their first or last name. Patient accounts may be registered, viewed, updated, and unarchived by the assistant user; they have the ability to view both the patient health form and physical exam form of each patient but are only able to create the physical exam form, and not the patient health form. The assistant user may also update their assistant profile. The assistant user may also schedule appointments for patients, as well as cancel or update them; they are also able to disable dates for appointments in cases wherein the doctor may be unavailable. Messaging of other users, doctor or patient/s, is also possible. The assistant user may also manage announcements by posting, updating, or deleting them.

The patient user has the ability to login and logout of the system as well as register for a user account, they may view their account and update their account's password. The patient user may also schedule appointments, as well as cancel or update them. Messaging of other users, doctor or assistants, is also possible but they are only able to see that they are communicating with the clinics, not whether it is the doctor or assistant of a chosen clinic. The patient user may also view their gestational age. The patient user may also view announcements made by the doctor or assistants.

3.3.3 Data Flow Diagrams

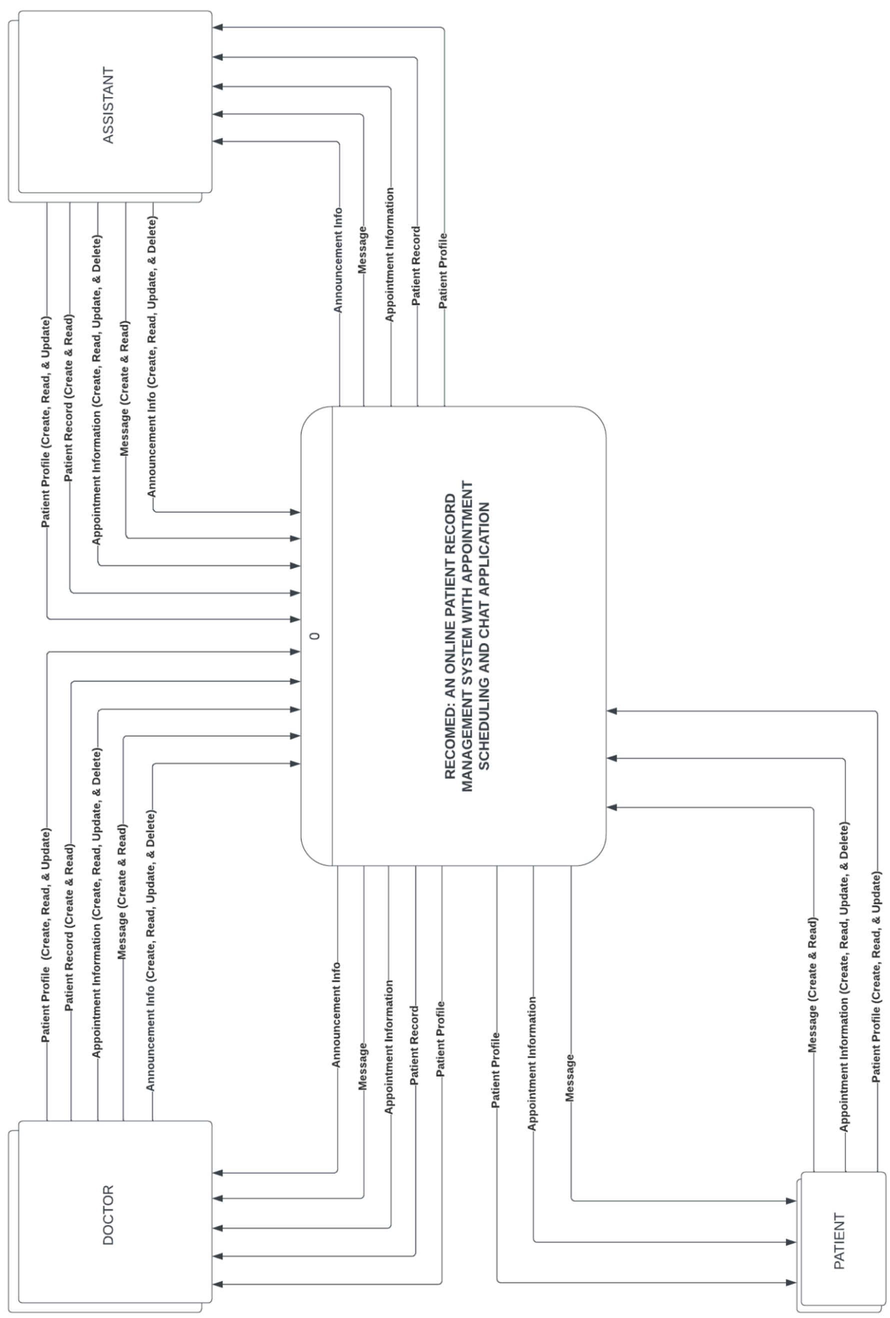

Figure 14. Context Diagram of Recomed

Figure 14 presents the context diagram of Recomed. It highlights the three main modules: the doctor, assistant, and patient modules. The doctor module offers a high level of control, allowing the doctor to access and manage patient information, manage appointments, message, and manage announcements as the crucial tasks through extensive inputs and outputs. The assistant module is responsible for accessing and managing patient information, inclusive of viewing the patient records, managing appointments, messaging both the doctor and patients, and managing announcements. The patient module facilitates managing their patient profile; appointment queueing, enabling patients to conveniently create appointment requests; and messaging. Each module was designed to meet the unique needs of the doctor, assistants, and patients, ensuring efficient management of appointments and patient information in a professional and user-friendly manner.

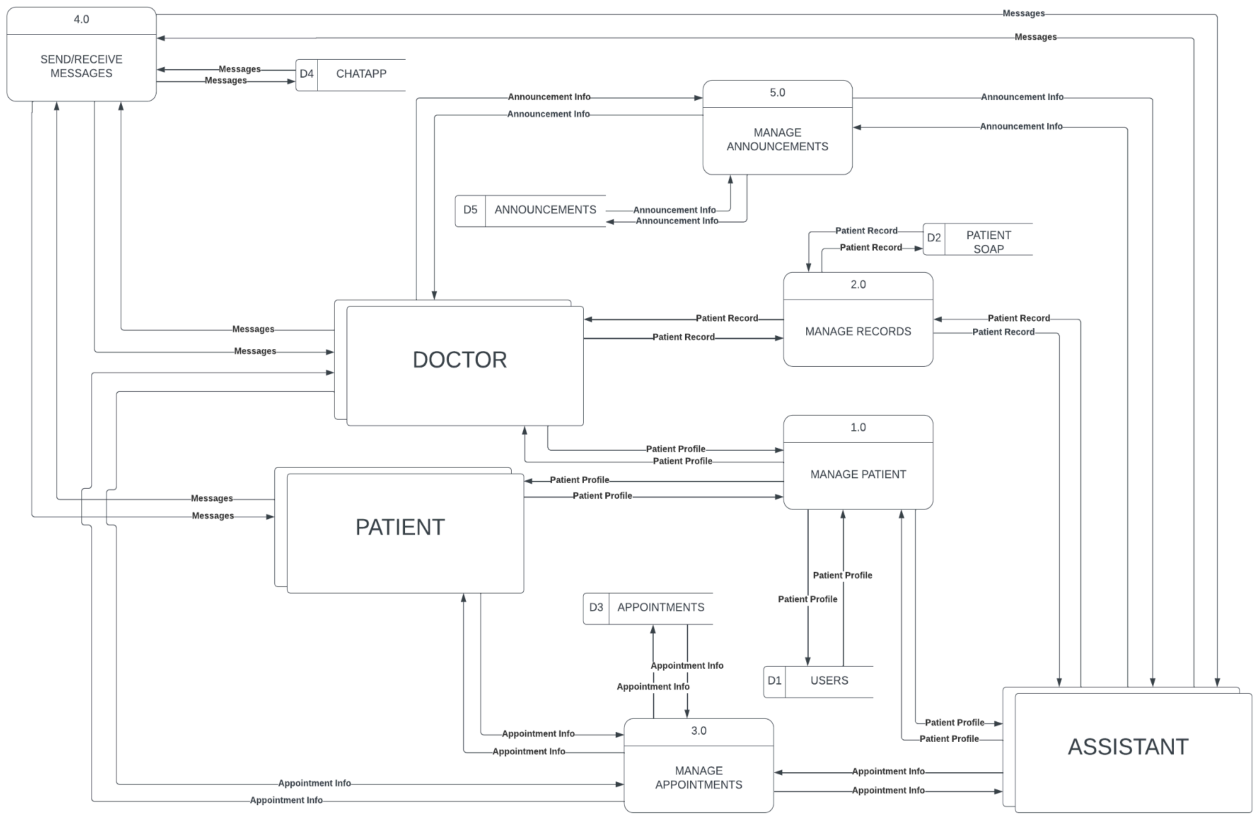

Figure 15. Level 0 Data Flow Diagram (DFD) of Recomed

Figure 15 presents the level 0 diagram of the web-based application. It offers a comprehensive breakdown of Recomed's primary functions. This diagram serves as a detailed visual representation of the core functionalities accessible within the application. Specifically, it highlights four main processes: Manage Patient, Manage Records, Manage Appointments, Send/Receive Messages, and Manage Announcements. These processes are pivotal components of Recomed and cater to the needs of the main users, namely the Doctor, Assistants, and Patients. The Manage Patient process enables users to efficiently handle patient-related tasks such as registration, and updating personal information. The Manage Records process facilitates the organization and retrieval of patient records, ensuring accurate documentation and seamless access to medical data. Additionally, the Manage Appointments process streamlines the scheduling process for both patients and healthcare providers, optimizing appointment management. The Send/Receive Messages process enables secure communication between users, allowing for timely exchange of vital information and enhancing collaboration within the healthcare environment. The Manage Announcements process involves the doctor and assistant facilitating the posting, editing, and deleting of announcements that will be reflected in the patient module.

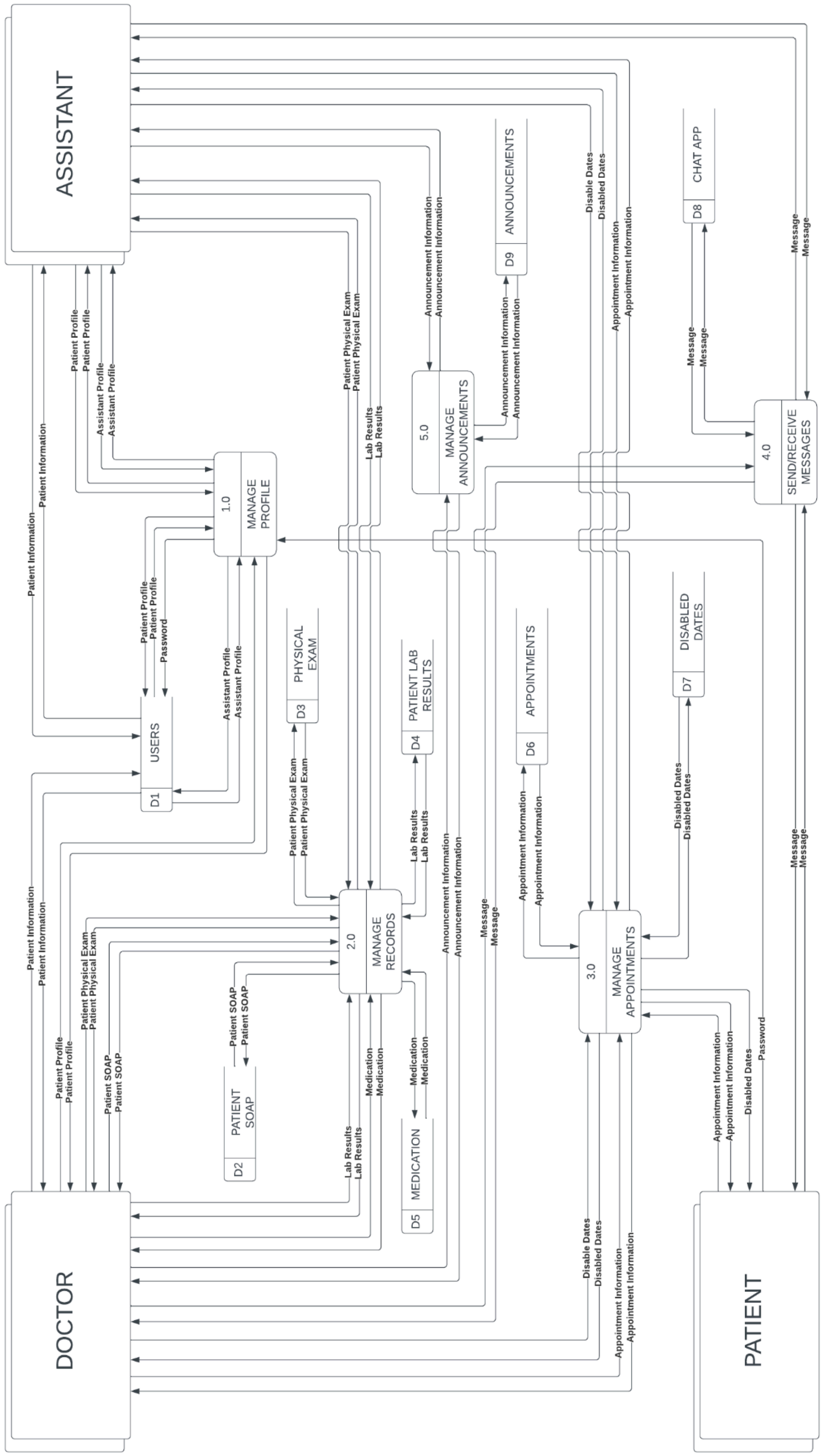

Figure 16. Level 1 Data Flow Diagram (DFD) of Recomed

Figure 16 illustrates the level 0 diagram of the web-based application, providing a detailed breakdown of the primary functions of Recomed and further elaborating on the high-level process depicted in the level 0 diagram in Figure 15. The diagram showcases several sub-processes that represent specific processing activities. The first process involves the management of profiles which can be performed by all users (doctor, assistants, patients). They have the ability to register and update a patient’s account using the patients’ information which is then stored in the users table, the assistant is also able to manage their profiles. The doctor may also archive and unarchive patients in this process while the assistant can only unarchive. The second process entails the management of records which is exclusive to both the doctor and assistants. In this process, the doctor is able to create a patient’s patient health form that would be stored in the SOAP table; the doctor and assistant is able to create a patient’s physical exam form that would be stored in the physical exam table; the doctor and assistant is able to upload a patient's lab results that would be stored in the lab results table; and the doctor is able to add a patient’s medications that would be stored in the medications table. The third process involves all users and it is the ability to schedule, view, update, or cancel an appointment, and it is stored in the appointment table. In this process, both the doctor and assistant are given the ability to disable dates for appointments in circumstances where the doctor is unavailable, and it is stored in the disabled dates table. The fourth process entails the sending and receiving of messages and all users are involved, the data is stored in the chat app table. The fifth process would be the management of announcements wherein both the doctor or assistant may post, update, or delete them; the data is stored in the announcements table.

3.3.4 Database Model and Schema

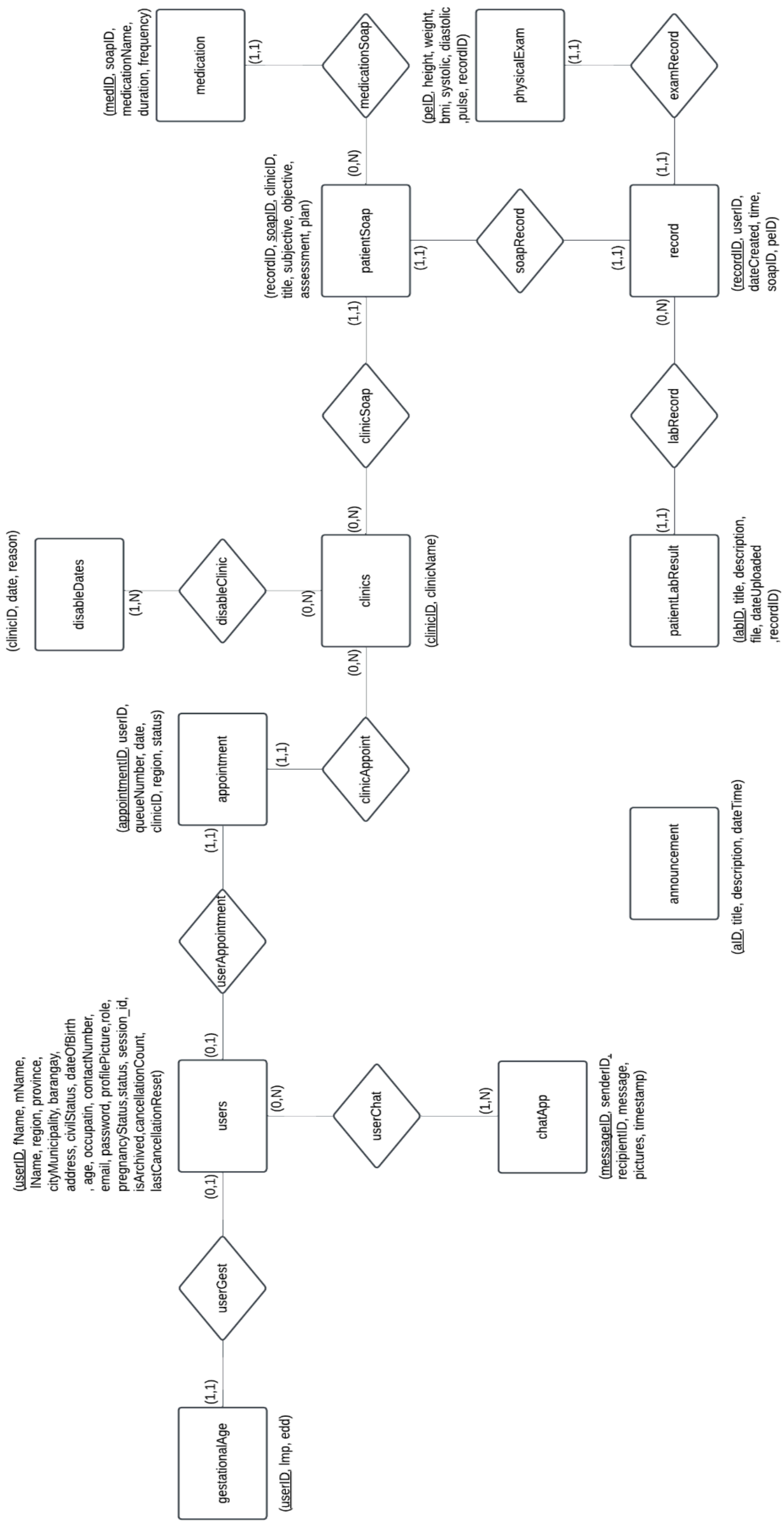

Figure 17. Entity Relationship Diagram (ERD)

Figure 17 showcases the entity-relationship diagram. The User entity contains relevant user's personal information such as the user’s ID, name, age, region, province, cityMunicipality, barangay, address, civilStatus, dateOfBirth, age, occupation, contactNumber, email, password, profilePicture, role, status, pregnancyStatus, session_id, isArchived, cancellationCount, and lastCancellation. The role field specifies whether it is a patient, assistant, or doctor. The status field will have the value ‘VERIFIED’ if the user successfully completed the verification process using the email OTP (One-Time-Password).

The Announcement entity contains the aID (announcement ID), title, description, and dateTime. The announcement entity is structured to store important details about announcements, that allows efficient dissemination and management of information within a system.

The Appointment entity contains the appointmentID, userID, date, queueNumber, clinicID, reason, and status. The Appointment entity is structured to efficiently manage and store information about scheduled appointments.

The Chat App entity contains the messageID, senderID, recipientID, message, pictures, and timestamp. In our system, the senderID and recipientID fields are ultimately linked to the ‘userID’ but are not directly exposed on the system’s front-end. Instead, we use a session mechanism in the system’s back-end to manage and maintain user authentication.

The Clinics entity basically contains the clinicID and the clinicName. Our proponent manages two clinics which are the 2012 Multi-Specialty Clinic and QA Diagnostic Laboratory.

The Disable Dates entity comprises the clinicID, date, and the reason. The Disabled Dates entity serves as a structured repository for information about clinic unavailability.

The Gestational Age entity contains the userID, lmp, and edd. LMP stands for Last Menstrual Period while EDD stands for Estimated Due Date.

The Patient Lab Result contains labID, recordID, title, description, file, and dateUploaded. The description summarizes the laboratory result of the patient.

The Patient SOAP contains soapID, clinicID, title, subjective, objective, assessment, and plan. SOAP format is used for a more systematic and structured way for healthcare professionals to document patient information.

The Physical Exam contains peID, height, weight, bmi, systolic, diastolic, pulse, and recordID. The Physical Lab Exam entity encompasses various parameters aimed at recording and assessing key physiological aspects of an individual's health.

The Medication entity contains the medID, soapID, medicationName, duration, and frequency. The duration field gives the information on what is the duration before taking medicines. While the frequency is how frequently will the patient take the medicine.

The Record entity contains the recordID, userID, dateCreated, time, soapID, and peID. The dateCreated and time gives us the information about when was the record created specifically on what day and what time.

3.3.4.1 Relational Schema

users (userID, fName, mName, lName, region, province, cityMunicipality, barangay, address, civilStatus, dateOfBirth, age, occupation, contactNumber, email, password profilePicture, role, status, session_id, isArchived, cancellationCount, lastCancellation)

announcement (aID, title, description, dateTime)

appointment (appointmentID, userID, date, queueNumber, clinicID, reason, status)

FK userID references users Nulls Not Allowed

Delete Restrict, Update Restrict

FK clinicID references clinics Nulls Not Allowed

Delete Restrict, Update Cascade

chatapp (messageID, senderID, recipientID, message, pictures, timestamp)

FK senderID references users Nulls Not Allowed

Delete Restrict, Update Restrict

FK recipientID references users Nulls Not Allowed

Delete Restrict, Update Restrict

clinics (clinicID, clinicName)

disabledates (clinicID, date, reason)

FK clinicID references clinics Nulls Not Allowed

Delete Cascade, Update Cascade

gestationalage (userID, lmp, edd)

FK userID references user Nulls Not Allowed

Delete Cascade, Update Cascade

medication(medID, soapID, medicationName, duration, frequency)

FK soapID references patientsoap Nulls Not Allowed

Delete Restrict, Update Restrict

patientlabresult (labID, recordID, title, description, file, dateUploaded)

FK recordID references record Nulls Not Allowed

Delete Restrict, Update Restrict

patientsoap (soapID, recordID, clinicID, title, subjective, objective, assessment, plan)

FK recordID reference record Nulls Not Allowed

Delete Restrict, Update Restrict

FK clinicID references clinics Nulls Not Allowed

Delete Restrict, Update Cascade

physicalexam (peID, height, weight, bmi, systolic, diastolic, pulse,recordID)

FK recordID reference record Nulls Not Allowed

Delete Restrict, Update Restrict

record (recordID, userID, dateCreated, time, soapID, peID)

FK userID reference user Nulls Not Allowed

Delete Restrict, Update Restrict
FK soapID reference patientsoap Nulls Not Allowed
Delete Restrict, Update Restrict
FK peID reference physicalexam Nulls Not Allowed
Delete Restrict, Update Restrict

3.3.5 User Interface Design

The user interface design showcases the interfaces created for each module, including the landing page, doctor module, assistant module, patient module, and edit profile. It offers guidance on navigating the user interface of the system.

3.3.5.1 Landing Page

Figure 18. Landing Page

Figure 18 illustrates the landing page of the website. In the upper section, users can access hyperlinks for Home, Features, About, Services, and Clinics. Additionally, there are Login and Sign Up buttons. Clicking on the 'Home' hyperlink directs users to the landing page. The 'Features' hyperlink showcases the main functionality of our website, encompassing appointment booking and messaging capabilities between the doctor, assistants, and patients. The About section provides information about Dra. Carolina Balangay. Under the Services hyperlink, users can explore the four services offered by both clinics, including consultation, prenatal check-ups, clinical laboratory services, and medical certificates. Lastly, the Clinics hyperlink displays images of the clinics.

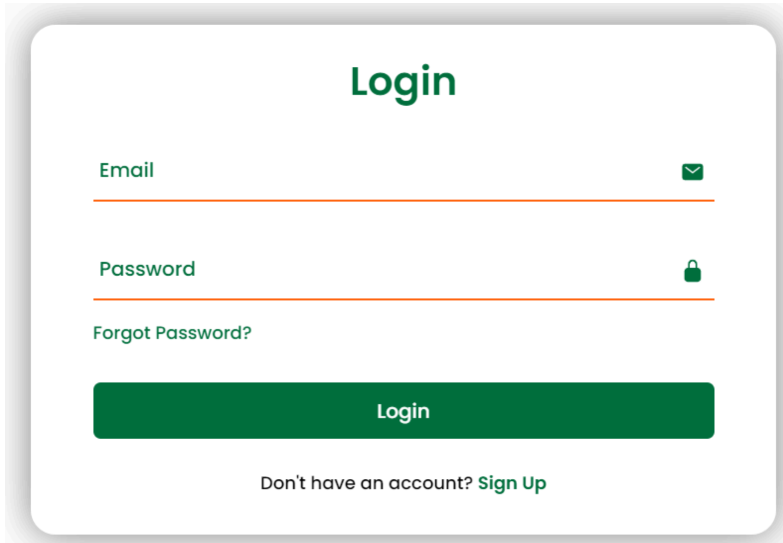

Figure 19. Login Page(Doctor, Assistants, Patients)

Figure 19 presents the Login page catering to diverse user types, such as Patients, Doctor, and Assistants. Users are prompted to input their account credentials, and the system, autonomously recognizing their roles, grants access to distinct features and pages. The page also features a "Forgot Password?" link, providing an option for password recovery. Error handling is implemented seamlessly: if the entered email is not found, an error message indicates non-registration; an incorrect password prompts the message "Incorrect email or password. Please try again." Moreover, for unverified users, the system notifies them that their email is yet to be verified, automatically redirecting them to the account verification page.

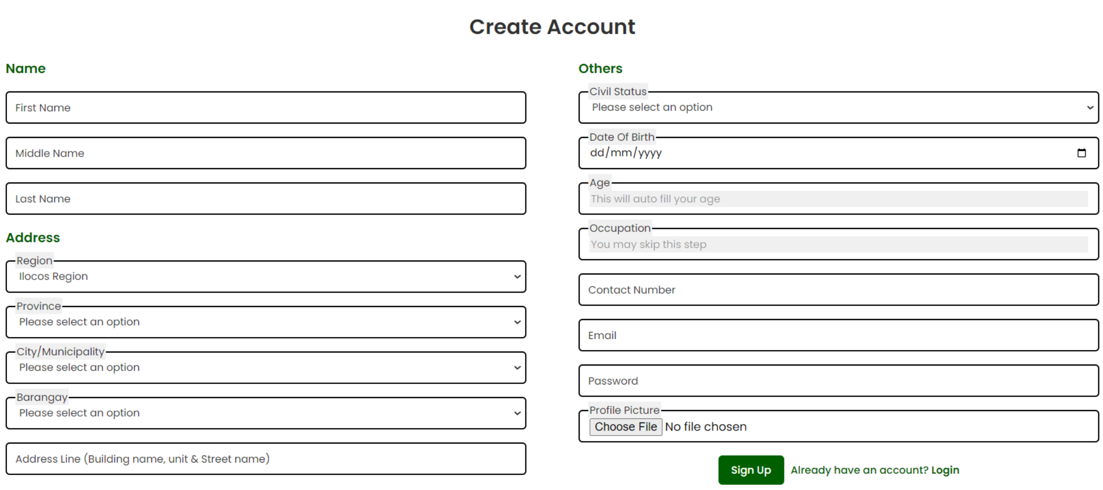

Figure 20. Sign-up Page(Patients Only)

Figure 20, shows the Sign-up page designed for patients, requiring essential personal information for account creation. Users are prompted to provide details such as their first name, middle name, last name, address (including region, province, city/municipality, and address line), civil status, date of birth, age (automatically calculated once date of birth is inserted), optional occupation, contact number, email, password, and an optional profile picture. The system employs effective error handling, notifying users if the entered email is already in use with a prompt stating "Email is already taken!" Additionally, for invalid email formats, a clear error message indicates "Invalid email." A proactive measure is taken for age verification, triggering a message prompting users to verify their birthdate for accuracy if the calculated age falls below zero. Upon completing this comprehensive form, users proceed to the Verify OTP (One-Time Password) page, where a secure and efficient verification process involves the system sending 6 random numbers to their email, and users confirm their email by entering this One-Time Password.

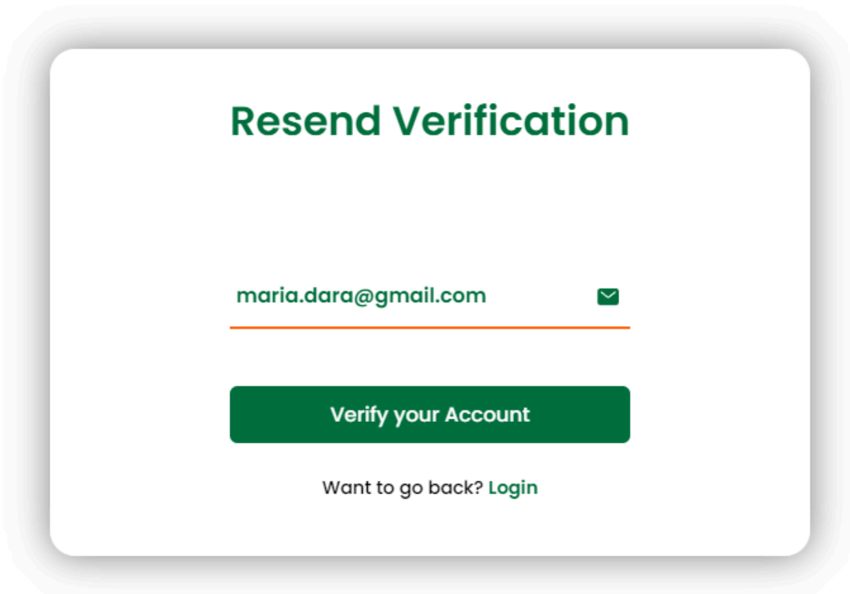

Figure 21. Resend Verification Page(Patients Only)

Figure 21 shows the Resend Verification page, a crucial step for users who are not yet verified. If a user is yet to confirm their email, they are guided to input their email address and press the "Verify Your Account" button. Upon this action, a One-Time Password (OTP) is promptly sent to their email. To complete the verification process, users are required to enter the received OTP. The page also features error handling: if the entered email is not found, the system generates an error message stating "Email not found." providing users with clear feedback. Similarly, for invalid email formats, a user-friendly error message indicates that the input is incorrect, facilitating a smoother user experience. This ensures a secure and streamlined process for users to verify their accounts.

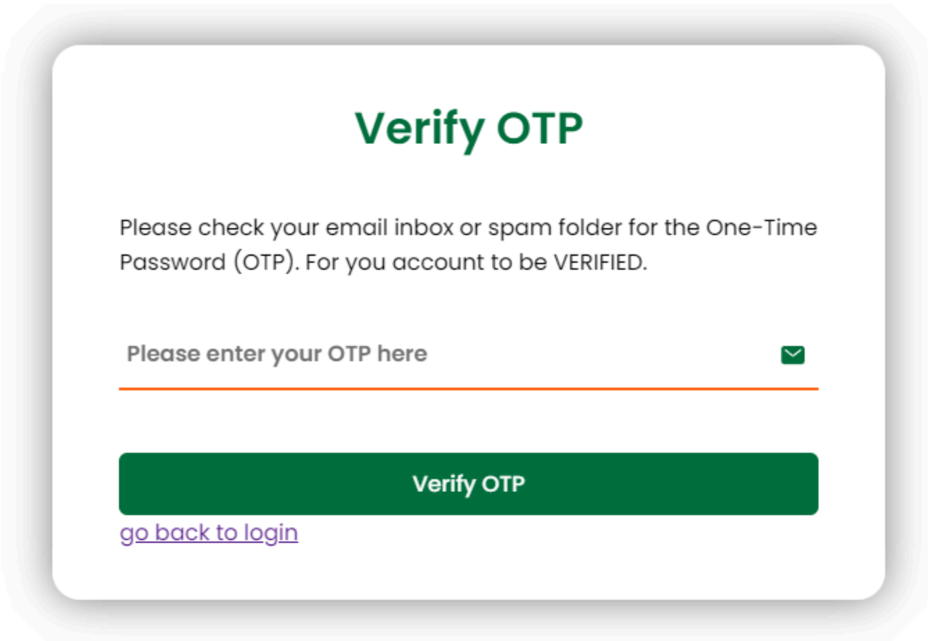

Figure 22. Verify OTP Page (Patients Only)

Figure 22 captures the Verify OTP page, a crucial phase in the account verification process. Users are instructed to check their inbox or spam folder in their email for the sent One-Time Password (OTP). If a user inputs an incorrect OTP, the system responds with an error message stating "Invalid OTP code," guiding users to enter the correct code for successful verification. Conversely, upon entering the correct OTP, a confirmation message is displayed, affirming "Verify account done, you may sign in now." This prompts an automatic redirection to the Login Page, providing users with a seamless transition to access the platform after successfully verifying their account.

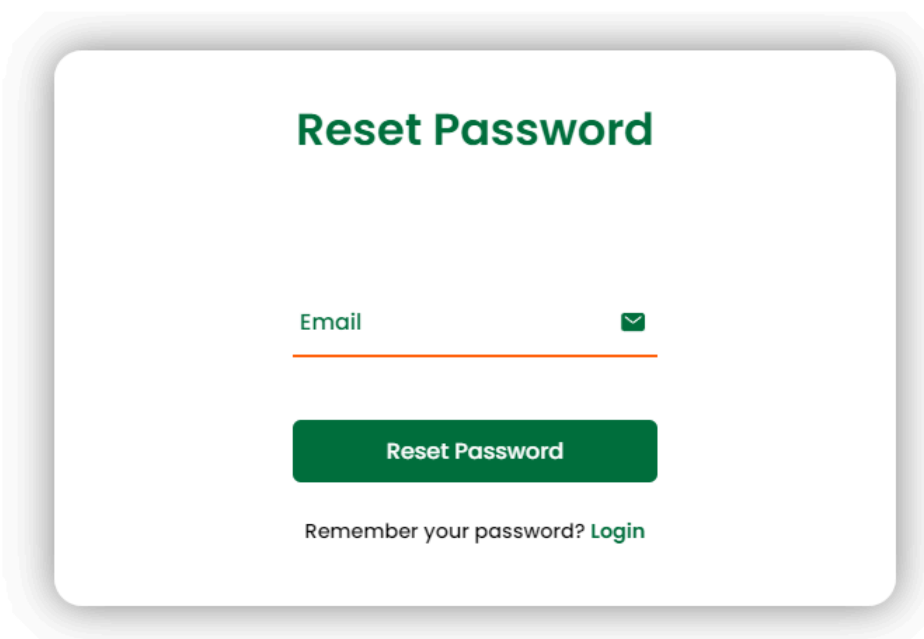

Figure 23. Reset Password Enter Email Page (Patients Only)

Figure 23 Reset Password Enter Email Page for password reset is similar to Figure 21, where users initiate the process by inputting their email address for password recovery. On this page, users are prompted to enter the email associated with their account, and upon hitting the designated "Reset Password" button, they are redirected to the Verify OTP page.

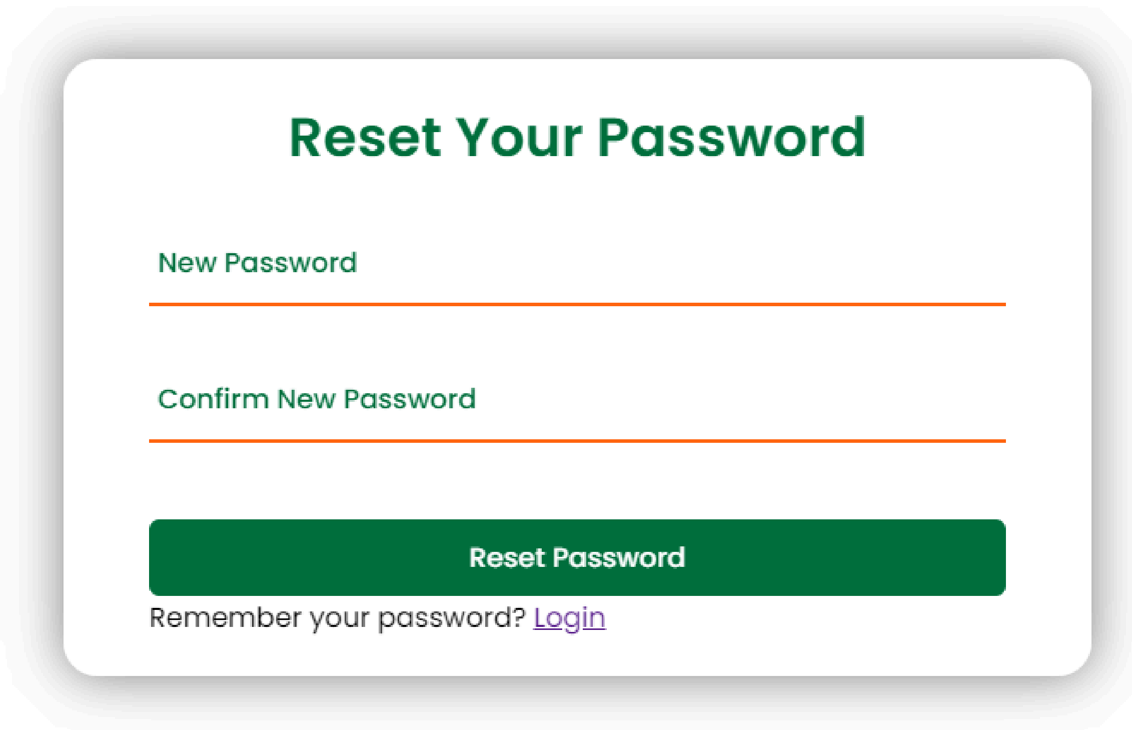

Figure 24. Reset Password Page (Patients Only)

Figure 24 Reset Password Page serves as the interface for users to create their new password. On this page, users input their desired password and confirm it in a designated field. A crucial aspect of this process is the system's error handling mechanism: if the entered password does not match the confirmed password, an error message promptly informs the user, stating "Passwords do not match." This ensures that users are alerted to any discrepancies, prompting them to review and correct their input. Conversely, upon successfully matching the entered password and its confirmation, users are seamlessly redirected to the Login Page. This intuitive design guarantees a secure and user-friendly experience as individuals complete the password reset process and regain access to their accounts.

3.3.5.2 Doctor Module

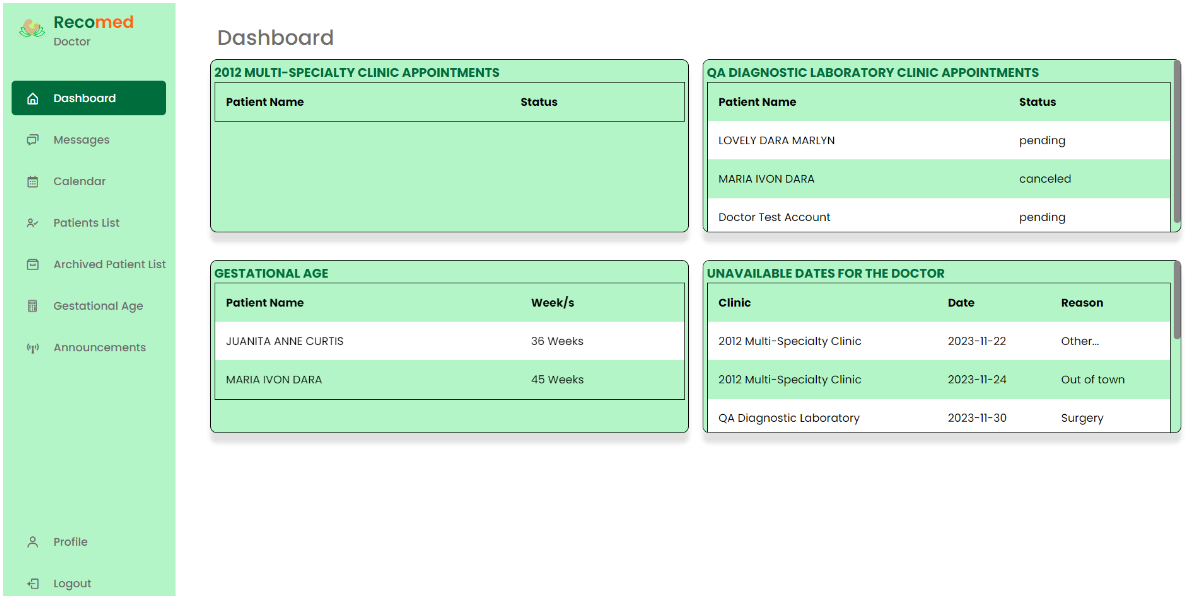

Figure 25. Doctor Dashboard Page

Figure 25 showcases the Doctor Dashboard, a comprehensive interface comprising four tables: 2012 Multi-Specialty Clinic and QA Diagnostic Laboratory Upcoming Appointments, Gestational Age, and Upcoming Surgery. The 2012 Multi-Specialty Clinic Appointments table and QA Diagnostic Laboratory table exhibit patients under their respective clinics, displaying patient names and appointment statuses. Similarly, the Gestational Age of Patients table provides valuable insights into patients' specific weeks of gestation, accompanied by their full names. Additionally, the Unavailable Dates table compiles information on all the dates the doctor has disabled. Notably, the dashboard is designed with user-friendly error messaging, and if there is no data available, it elegantly communicates this with a clear "No records found" message.

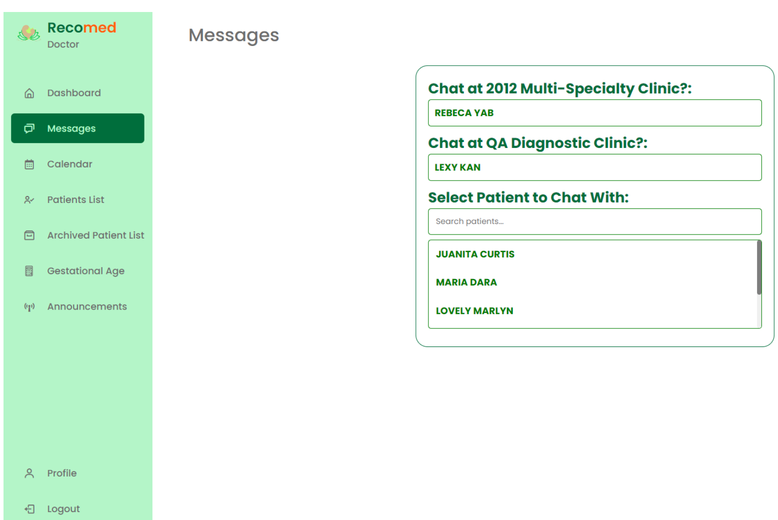

Figure 26. Doctor Message Page

Figure 26 shows the message page where the doctor can communicate with the assistants or patients. The doctor can select the recipient, choosing between the 2012 Multi-Specialty Clinic (Assistant), QA Diagnostic Clinic (Assistant), or directly with the patient. An added feature is the search functionality, enabling the doctor to efficiently find and initiate conversations with specific patients.

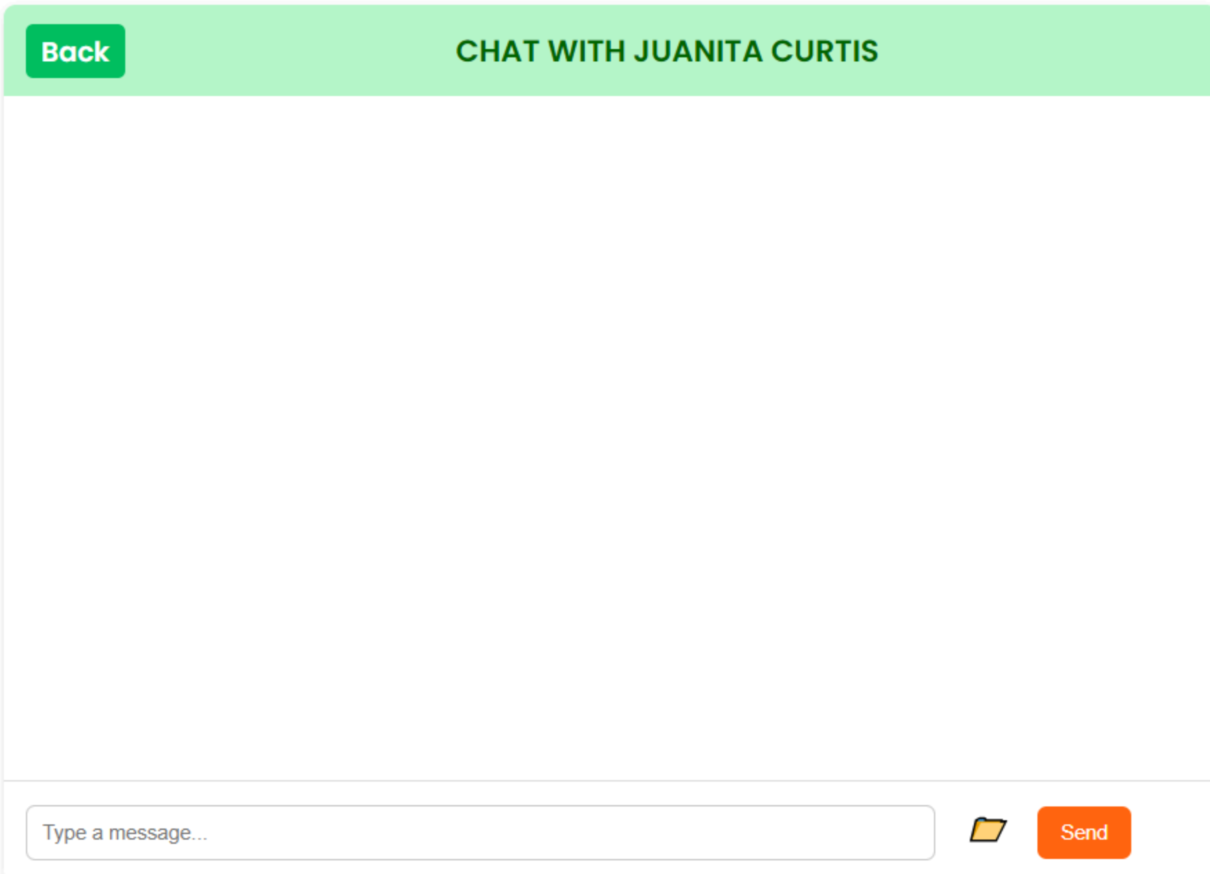

Figure 27. Doctor Message Page

After the doctor selects a patient or clinic, Figure 27 is displayed, presenting a dedicated chat interface. This space facilitates real-time communication, allowing the doctor to exchange messages and information seamlessly. If there's no previous communication, the figure displays a clear interface.

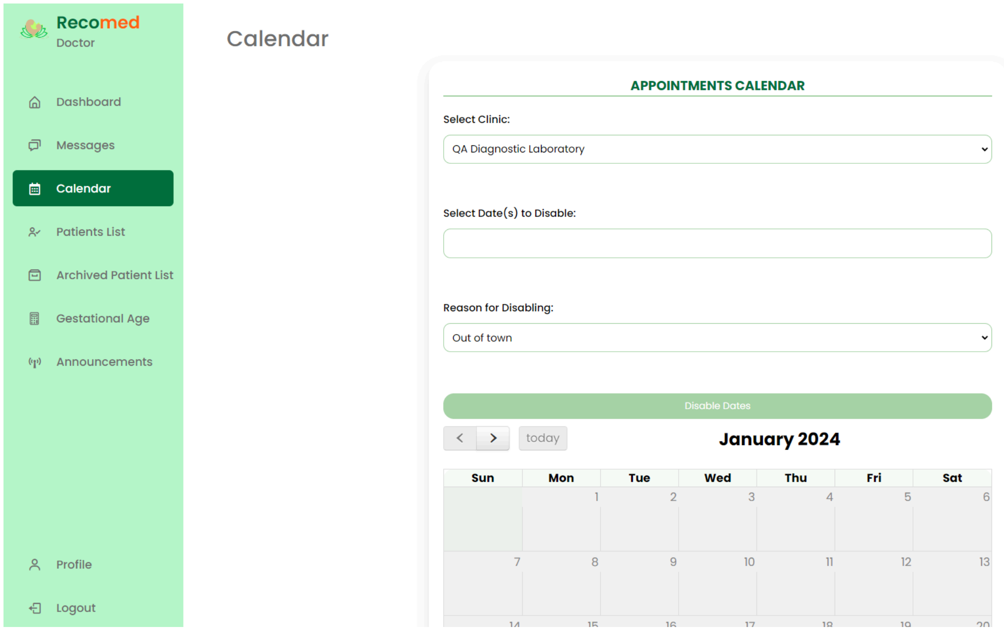

Figure 28. Doctor Calendar Page(Top Part)

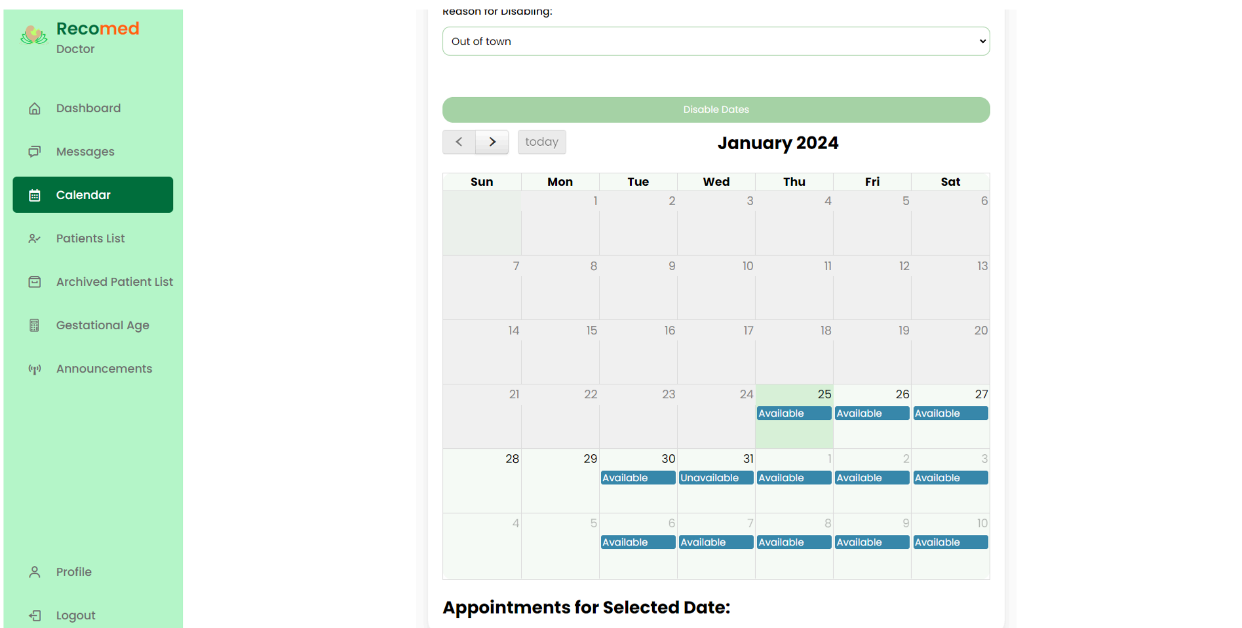

Figure 28. Doctor Calendar Page(Bottom Part)

Figure 28 shows the calendar page where it provides the doctor with the capability to deactivate specific dates, particularly in situations where the doctor is unable to attend clinics due to unforeseen emergencies. The functionality prompts the doctor to select a date for deactivation and provide a concise reason for the unavailability. This information serves to notify both the assistant and the patient, offering transparency regarding the circumstances leading to the date deactivation. There is also the ‘Appointments for Selected Date’ at the bottom where it will show the patients that have booked a date that the doctor wants to deactivate.

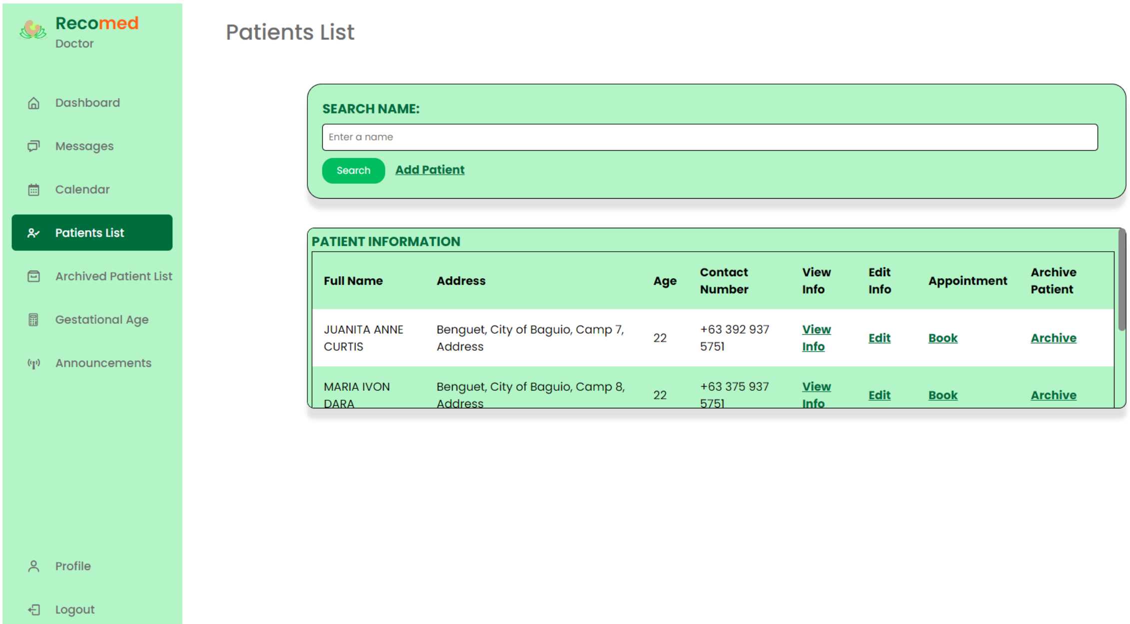

Figure 29. Doctor Patient List Page

Figure 29 shows the Patient List page where the doctor can search for patient information. The search container provides a seamless experience, allowing the doctor to quickly locate specific patients. Even prior to initiating a search, a comprehensive list of all patients is readily available in the lower container (unlike in the assistant side), ensuring efficient access to patient records. The doctor is presented with the option to view patient information, edit details, and book or edit appointments for the patient.

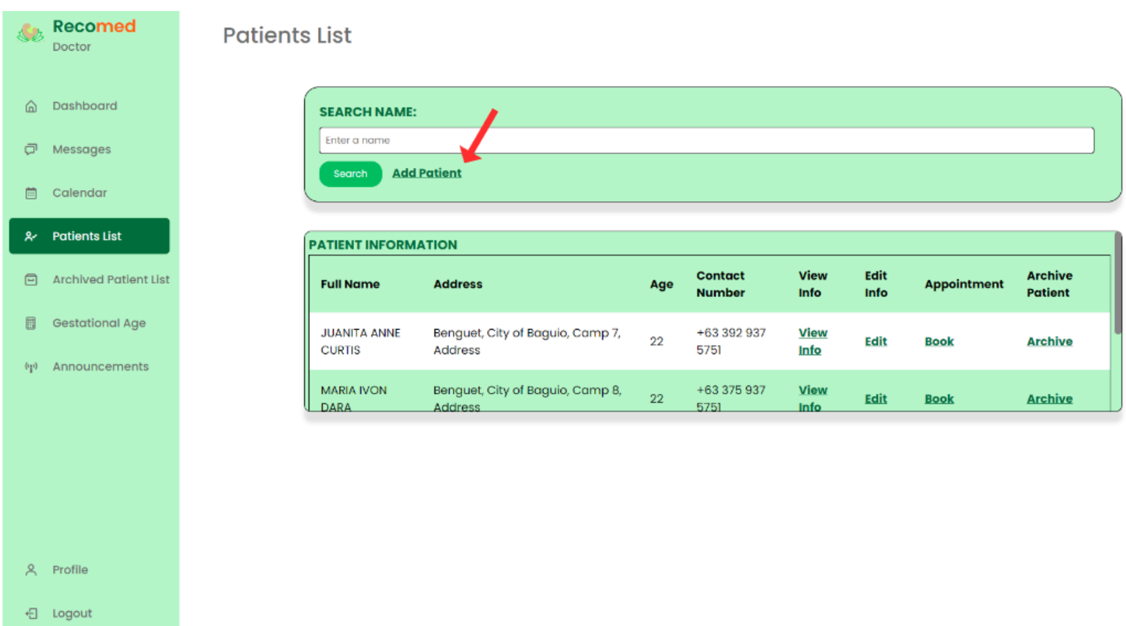

Figure 30. Doctor Add Patient Button

Figure 30 is where the Doctor 'Add Patient' button is located that the doctor can click to be redirected to the next figure.

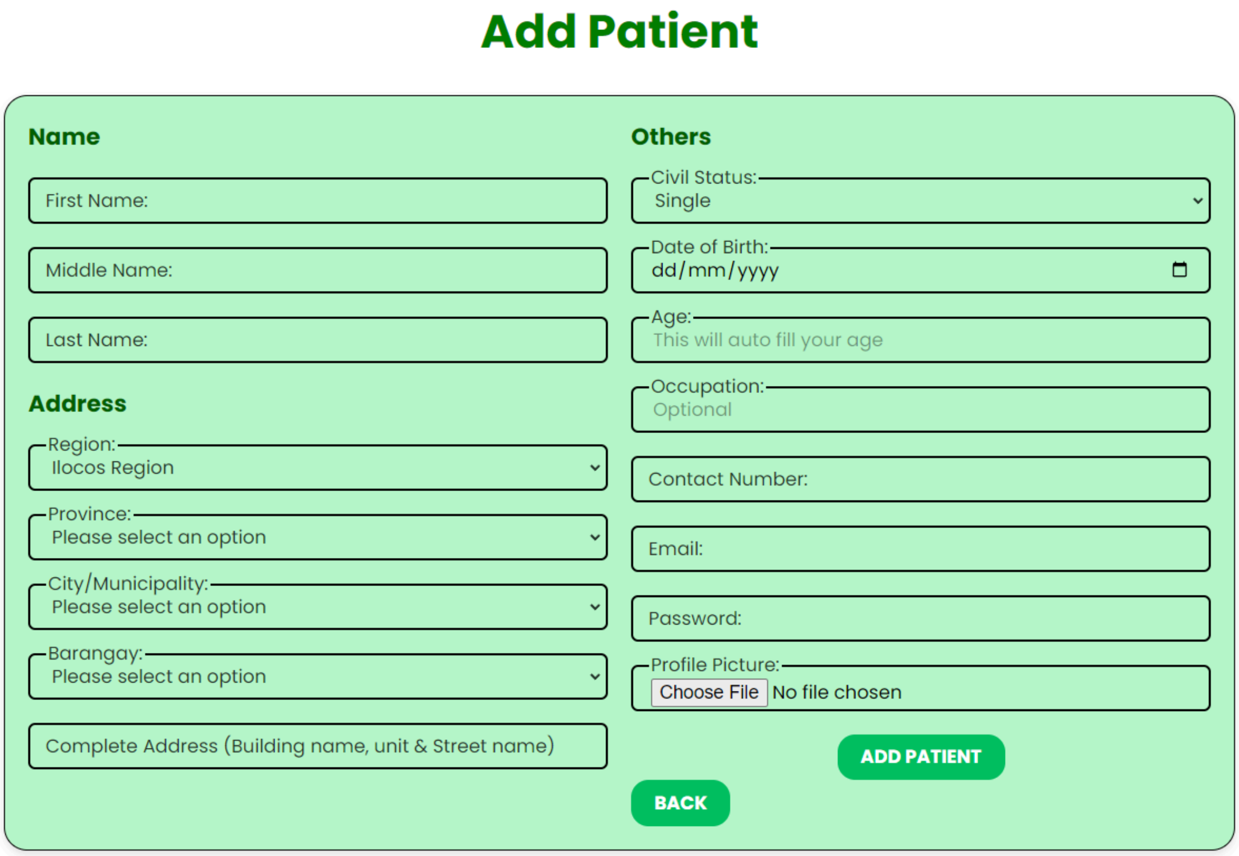

Figure 31. Doctor Add Patient Page

Figure 31 will show upon clicking the 'Add Patient' button at the bottom right of the search container(from the previous image). This page resembles the signup page, providing a dedicated space for the doctor to add a new patient, this dedicated interface prompts users to input essential personal information, including first name, middle name, last name, address details (region, province, city/municipality, and address line), civil status, date of birth (automatically calculating age), optional occupation, contact number, email, and an optional profile picture. Error handling is integrated, notifying users if the entered email is already in use ("Email is already taken!") or if an invalid email format is detected. The page includes proactive age verification, triggering a prompt for users to verify their birthdate if the calculated age falls below zero.

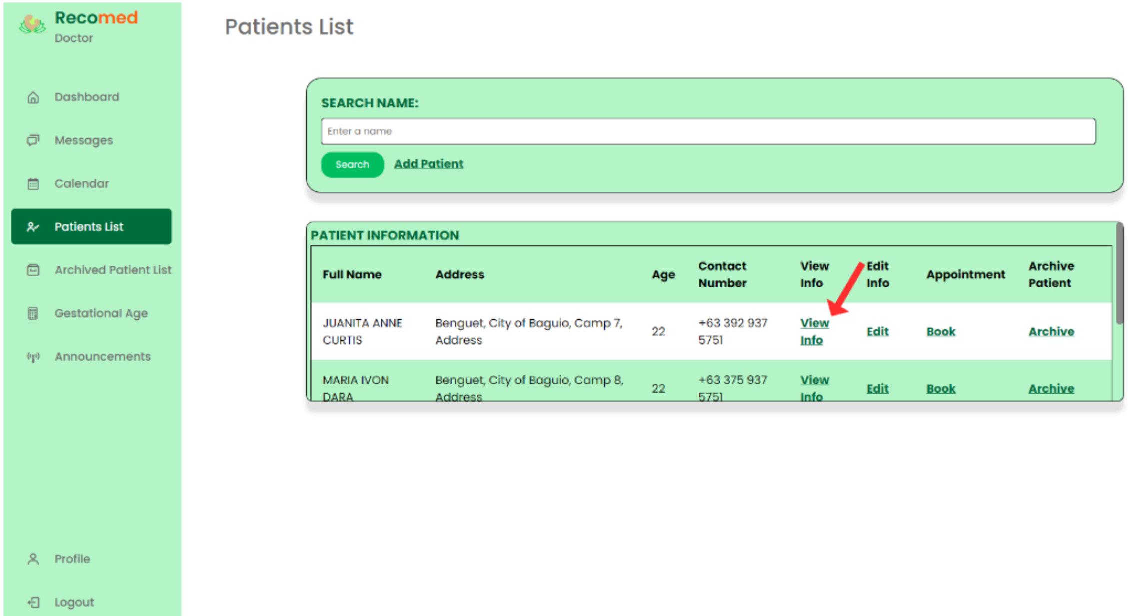

Figure 32. Doctor View Information(Profile) Button

Figure 32 is where the Doctor 'View Information' button is located that the doctor can click to be redirected to the next figure.

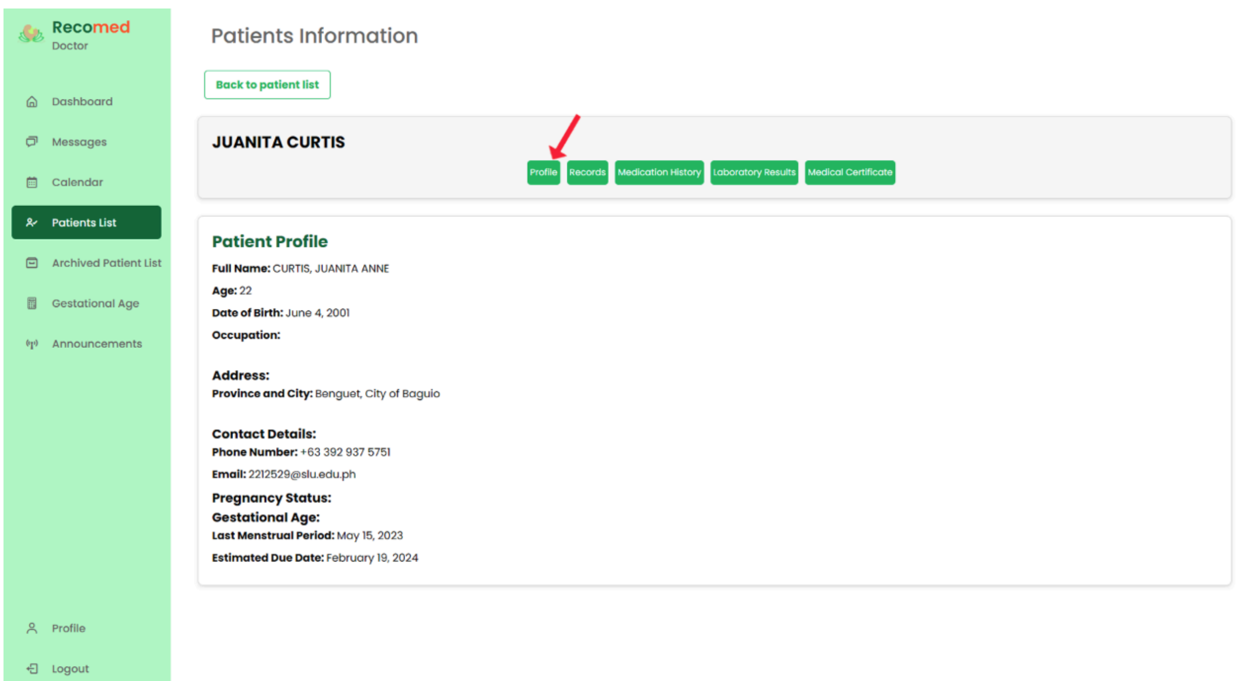

Figure 33. Doctor View Information Page(Profile)

Figure 33 is triggered when a doctor performs a patient search by name or scrolls through the list in the bottom container and clicks the 'View Info' button, as seen in Figure 33. This dedicated information page provides an in-depth view of the patient's profile. The patient's comprehensive details are presented, including their full name, age, date of birth, occupation, address, and contact details encompassing phone number and email. Alongside the patient profile details,

Figure 33 also introduces additional actionable buttons: 'Record', ‘Subjective’, ‘Objective’, ‘Assessment’, ‘Plan’, ‘Medical History’, ‘Laboratory Results’ and 'Medical Certificate.’

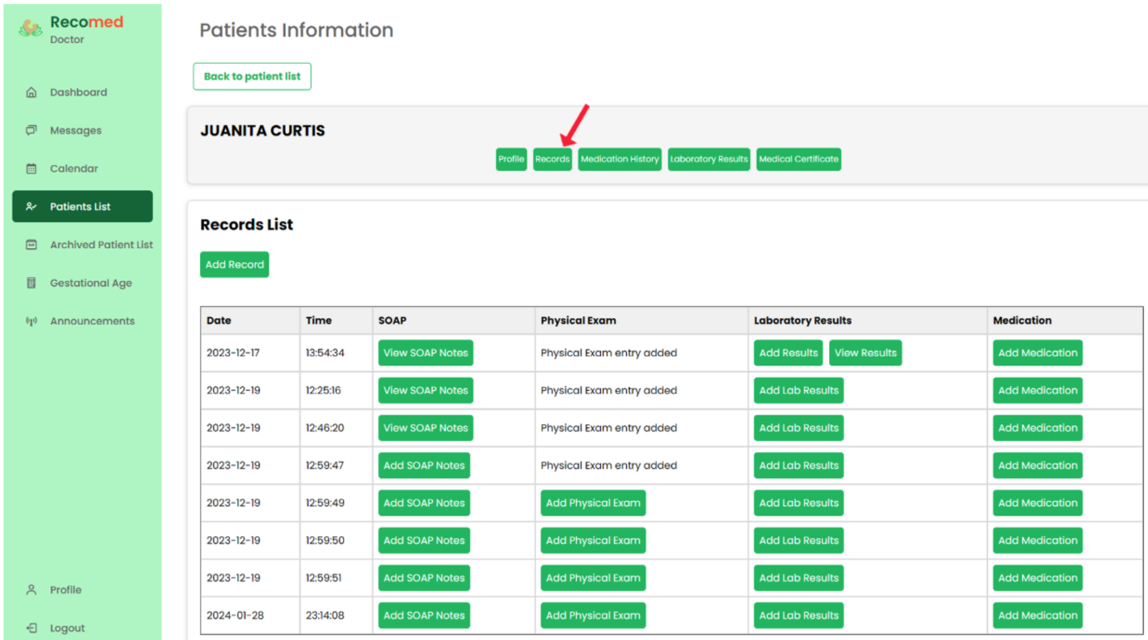

Figure 34. Doctor Record Button

Figure 34 will be displayed once the doctor clicks the ‘Record’ button from the previous image. The Record page enables the doctor to access and review the patient's Health Records and Physical Examination Records, with the flexibility to sort them from newest to oldest.

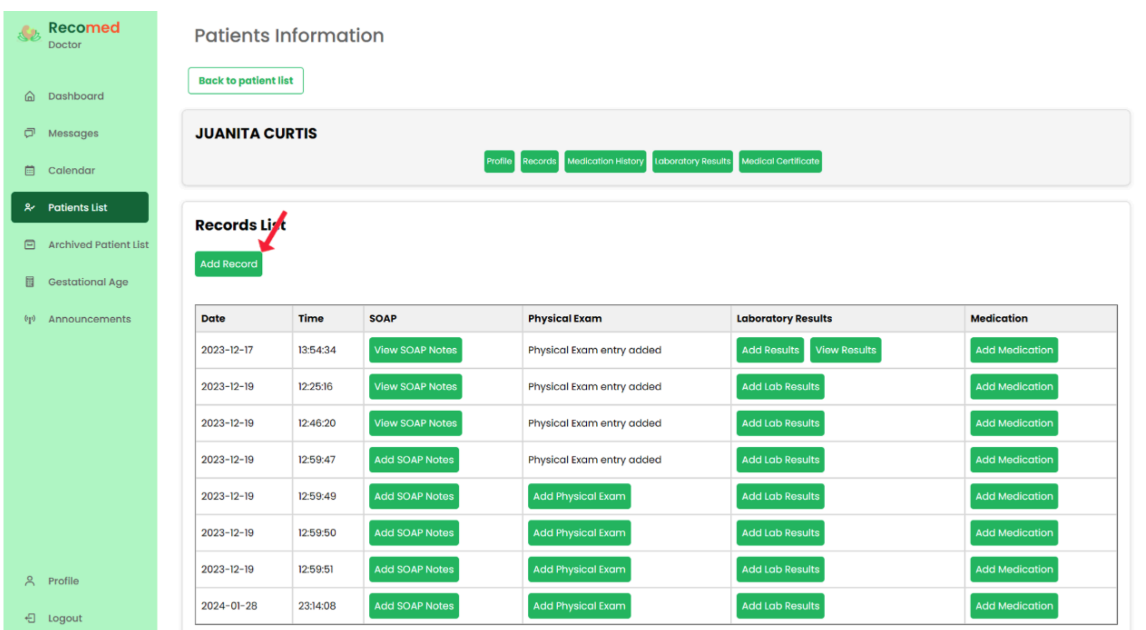

Figure 35. Doctor Add Record Button

Figure 35 shows the 'Add Record' button that allows the doctor to add another row of records.

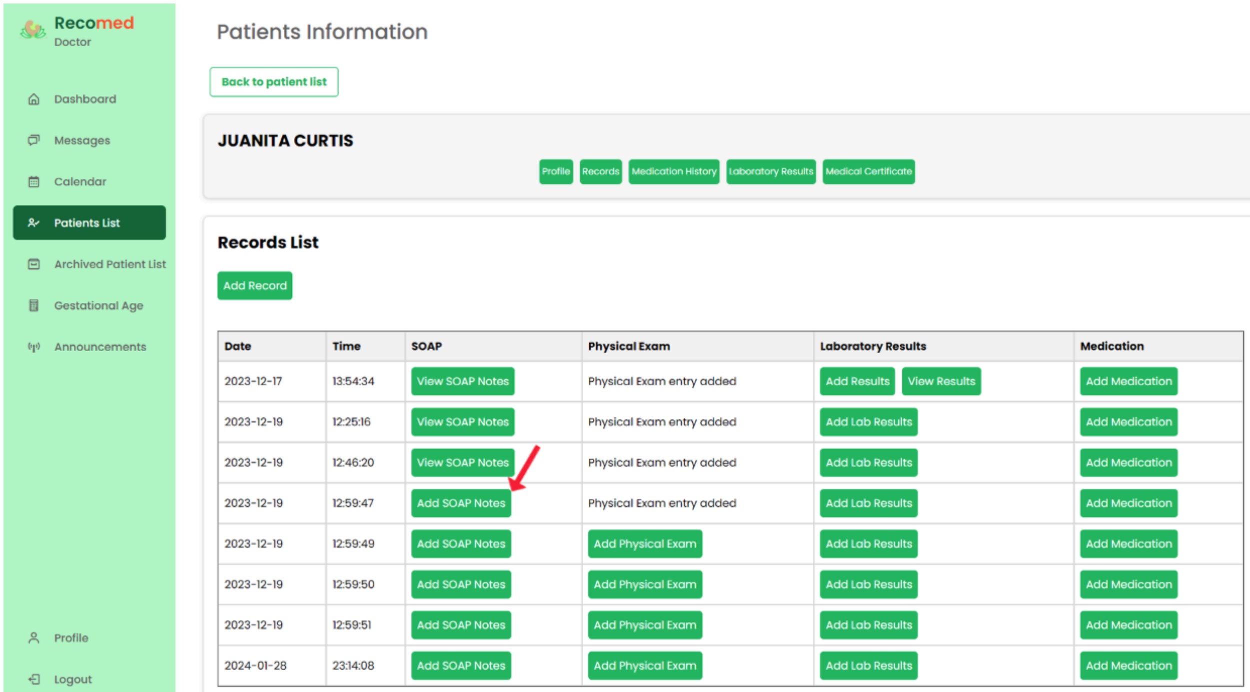

Figure 36. Doctor Add SOAP Notes Button

Figure 36 is where the 'Add SOAP Notes' button is located that the doctor can click to be redirected to the next figure.

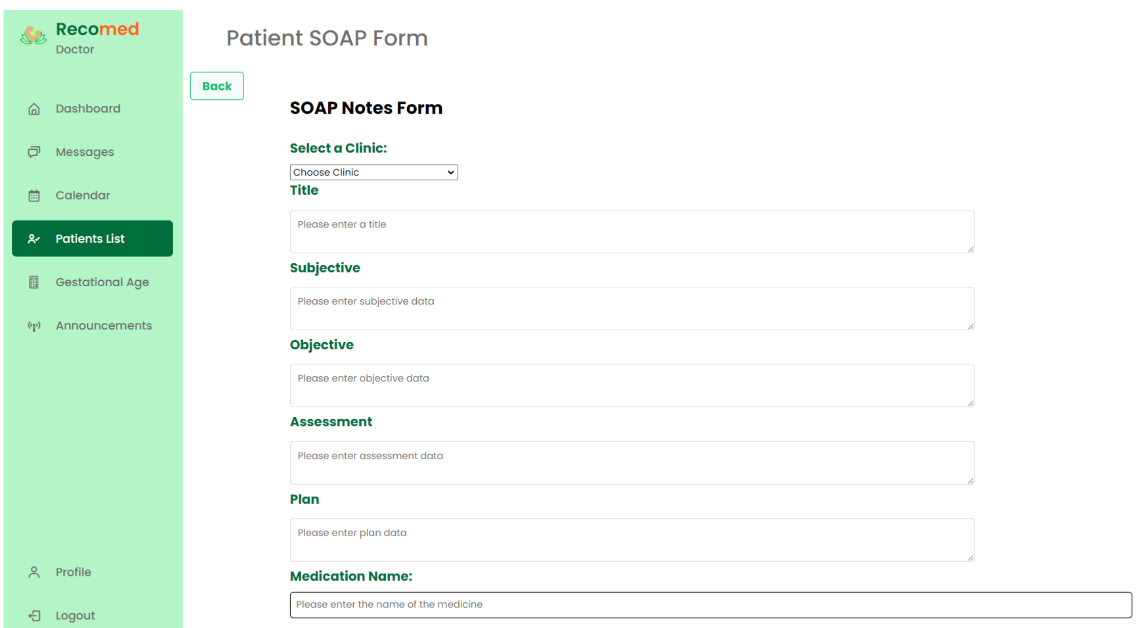

Figure 37. Doctor Add SOAP Notes (Top Part)

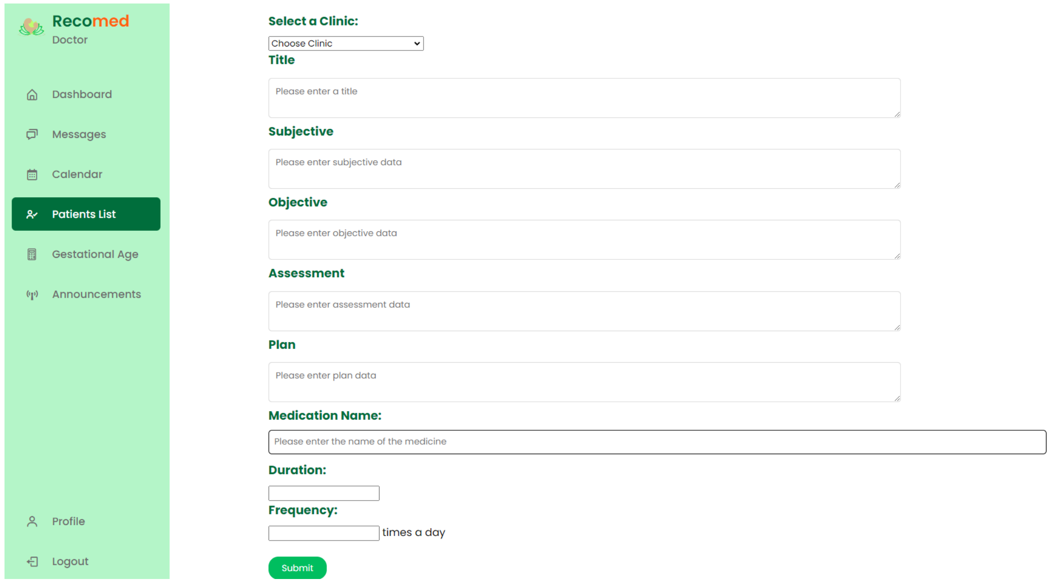

Figure 37. Doctor Add SOAP Notes (Bottom Part)

Figure 37 provides the doctor with the capability to create SOAP notes(documentation) for the patient. The process begins by selecting the clinic the patient is currently visiting, followed by providing a title for easy identification of the SOAP (Subjective, Objective, Assessment, Plan) documentation. In the subjective section, the doctor can inquire about the patient's chief complaint. The objective section allows the doctor to record their examination findings. The assessment section is where the doctor can input the diagnosis, while the plan section outlines the treatment plan. Additionally, the doctor has the option to include any medications, specifying their duration and frequency of intake if applicable.

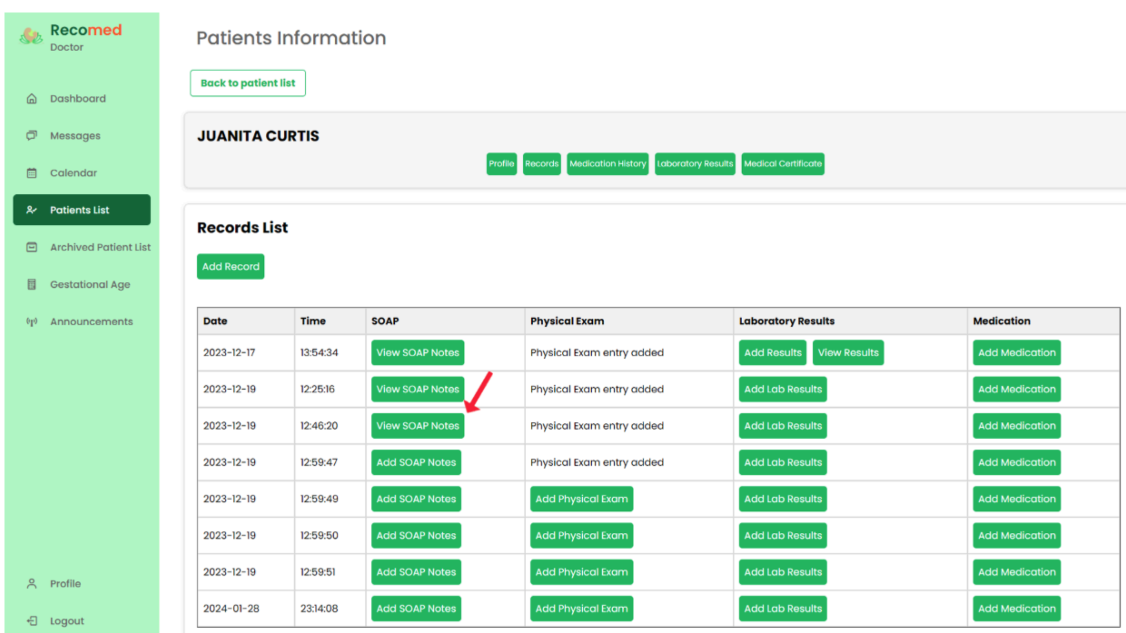

Figure 38. Doctor View SOAP Notes Button

Figure 38 is where the 'View SOAP Notes' button is located that the doctor can click to be redirected to the next figure.

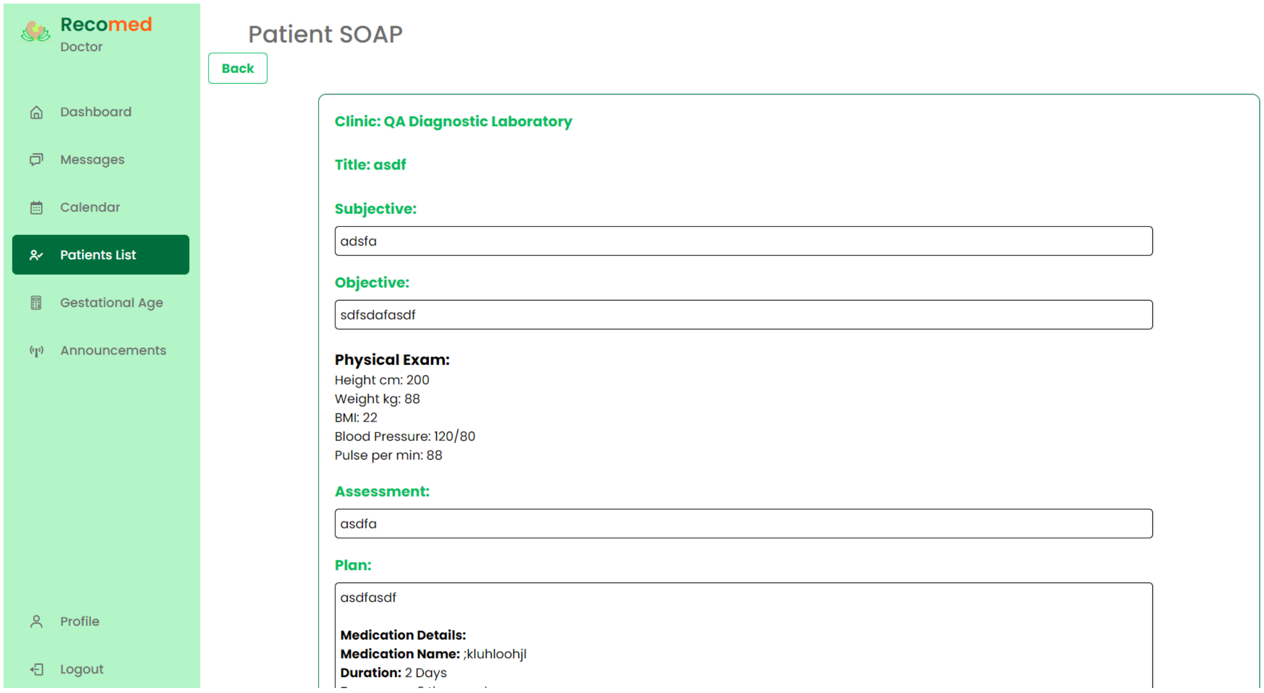

Figure 39. Doctor View SOAP Notes Button(Top Part)

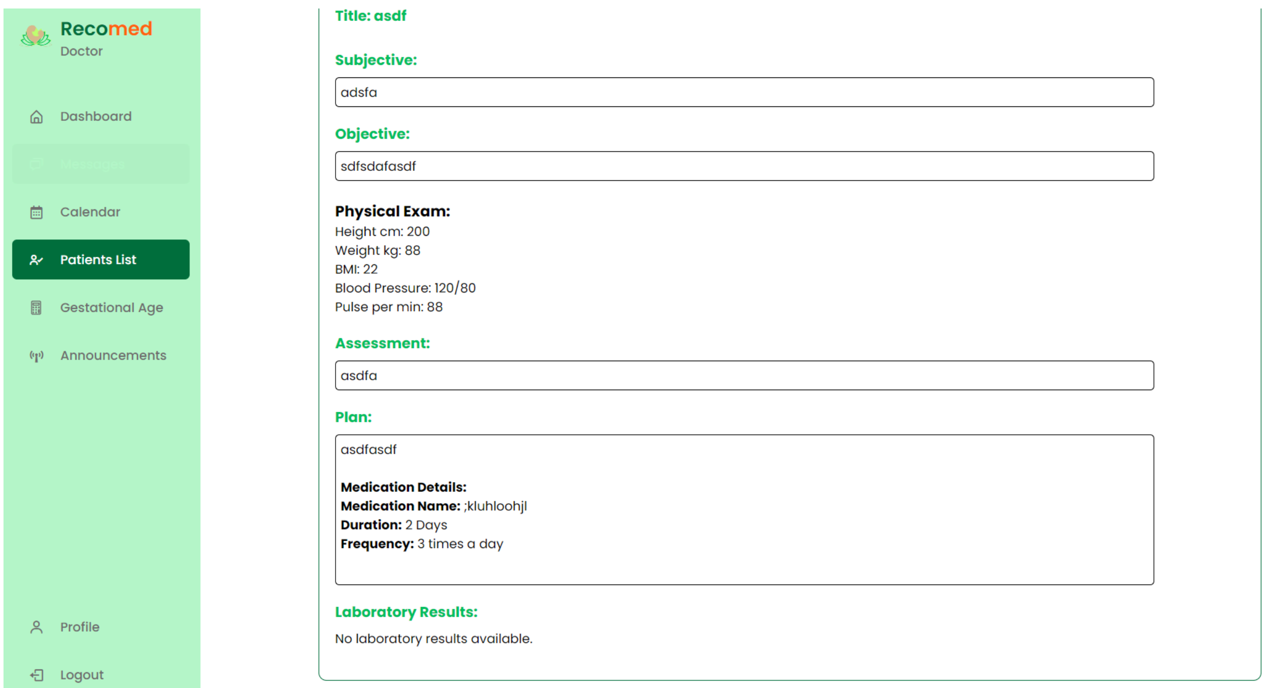

Figure 39. Doctor View SOAP Notes(Bottom Part)

Figure 39 allows the doctor to see the information inputted on the Add Soap Notes.

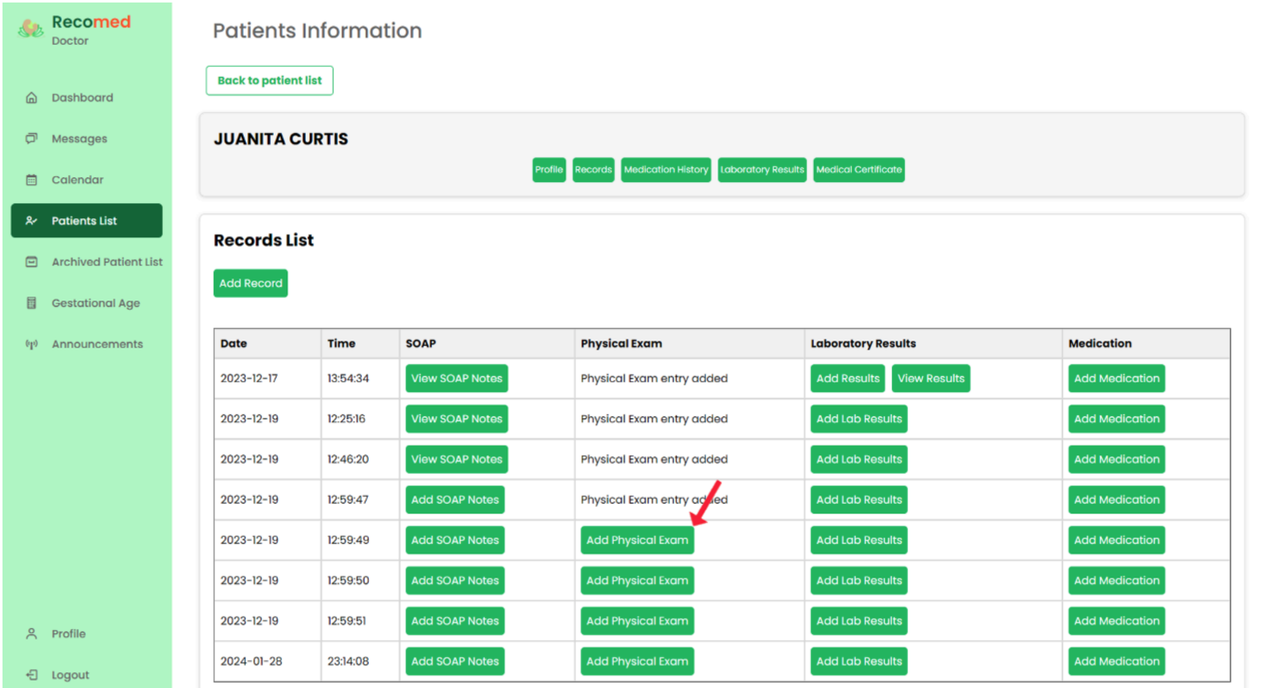

Figure 40. Doctor Add Physical Exam Button

Figure 40 is where the 'Add Physical Exam' button is located that the doctor can click to be redirected to the next figure.

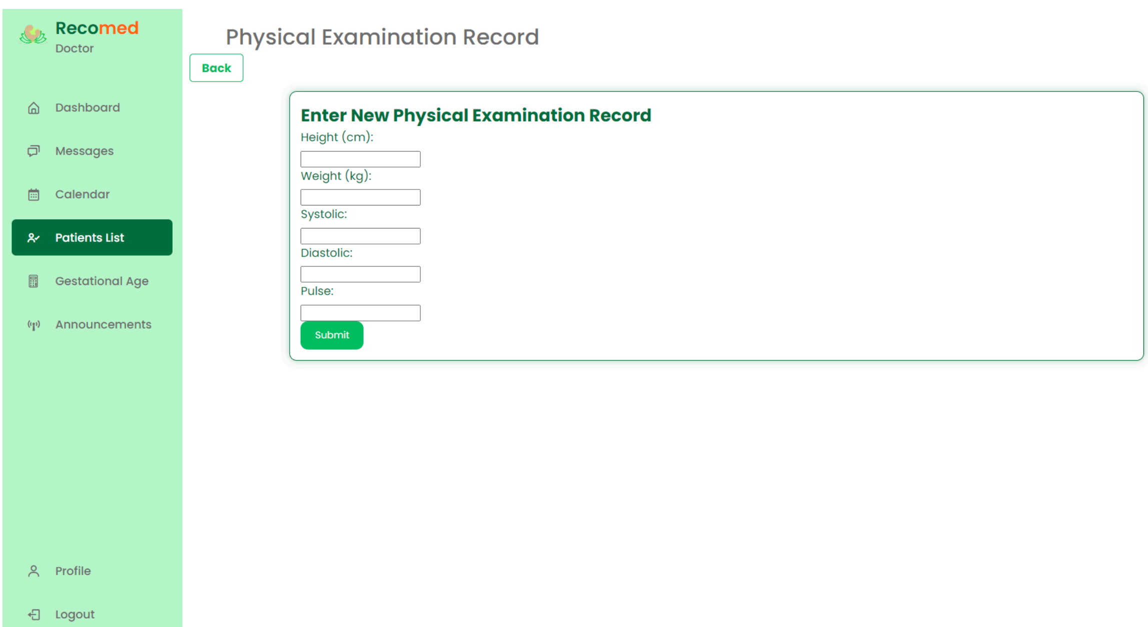

Figure 41. Doctor Add Physical Exam

Figure 41 provides the doctor with the capability to enter the Physical Examination of the patient such as the Height, Weight, Systolic, Diastolic and Pulse.

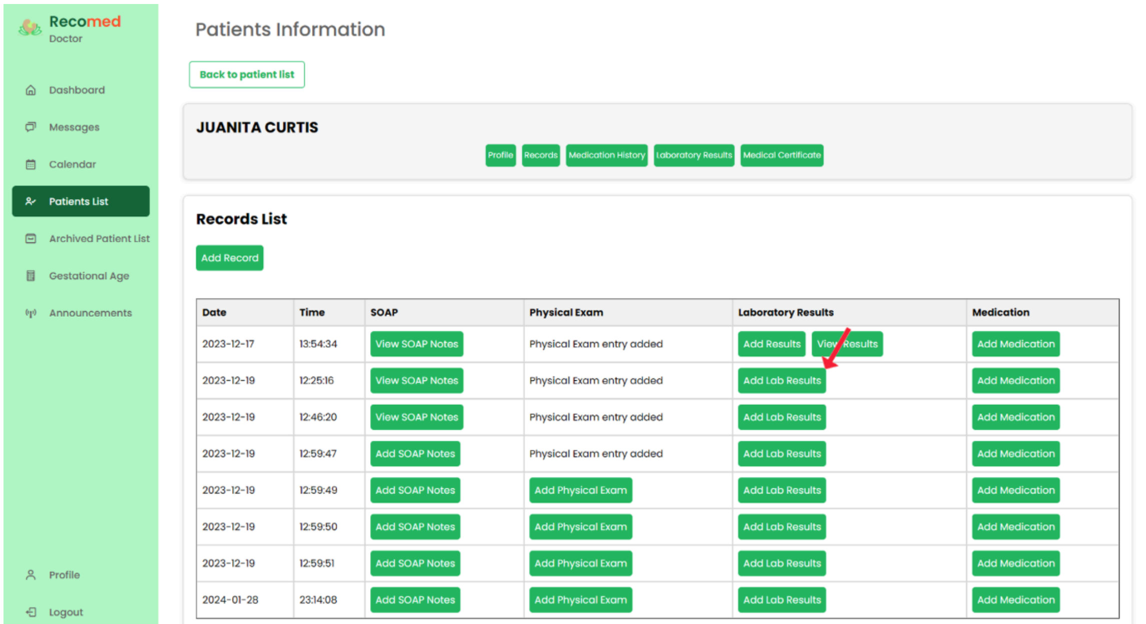

Figure 42. Doctor Add Lab Results Button

Figure 42 is where the 'Add Lab Results' button is located that the doctor can click to be redirected to the next figure.

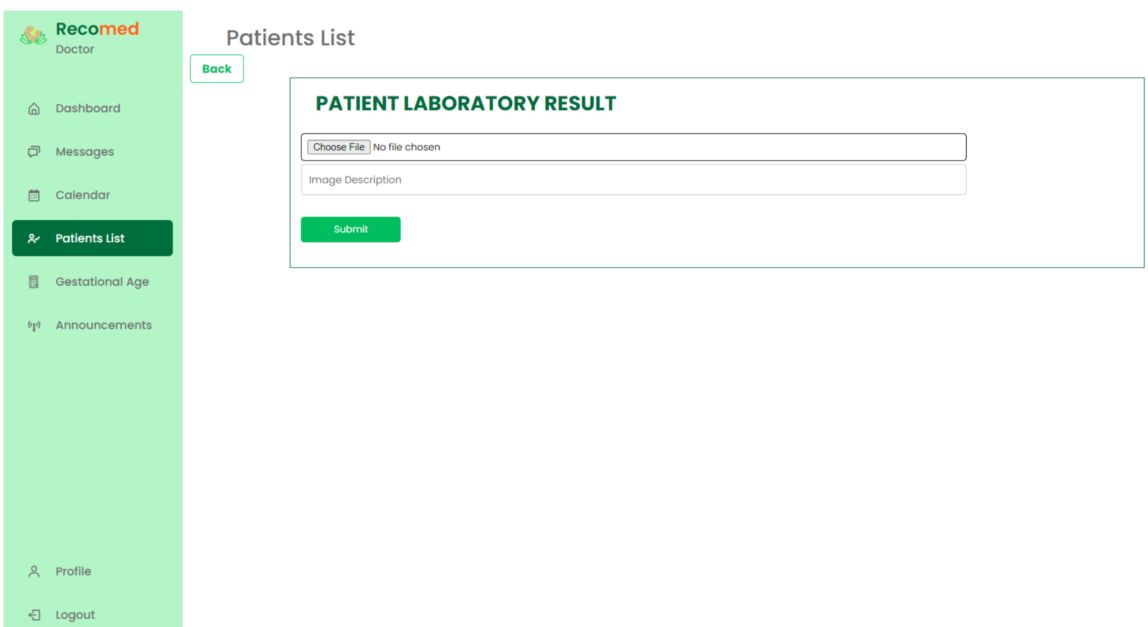

Figure 43. Doctor Add Lab Results

Figure 43 enables the doctor to maintain a record of patients' lab results, if available, by capturing a picture and uploading it into the system. This functionality allows for easy access and retrieval of lab results when necessary.

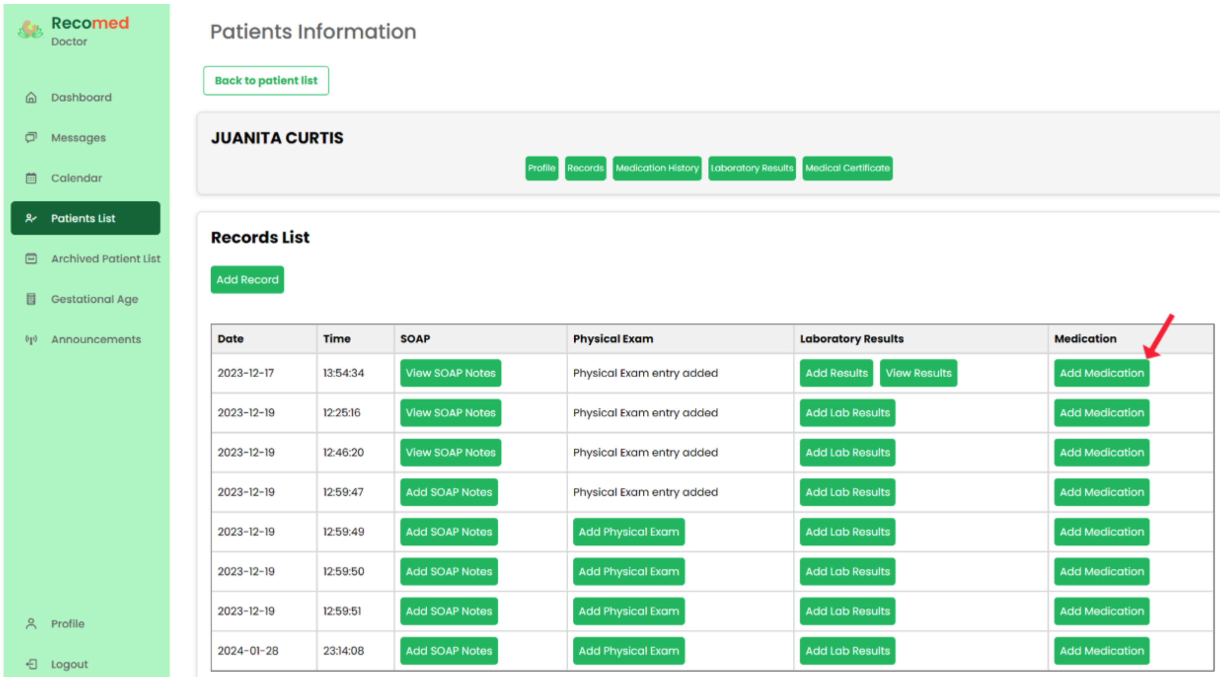

Figure 44. Doctor Add Medication Button

Figure 44 is where the ‘Add Medication’ button is located that the doctor can click to be redirected to the next figure.

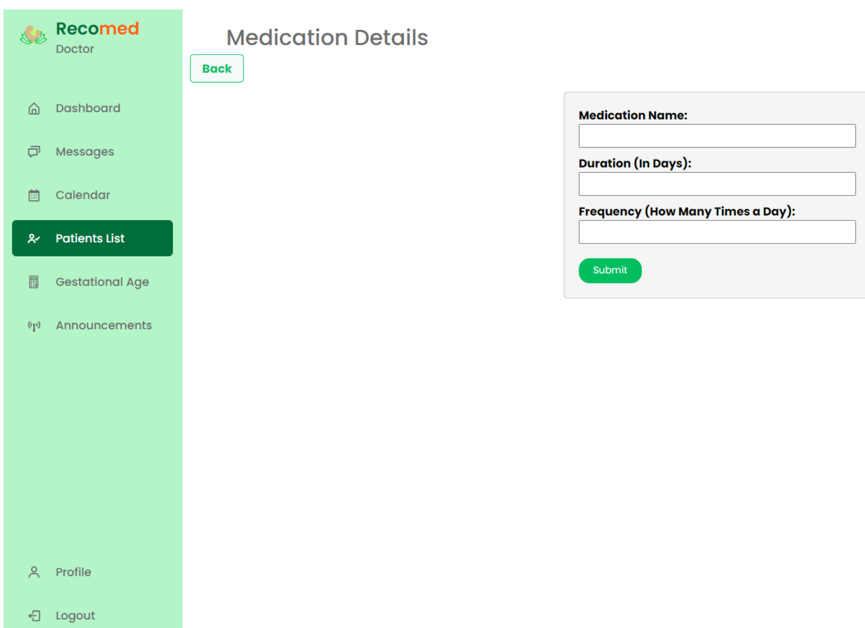

Figure 45. Doctor Add Medication

Figure 45 allows the doctor to include any medications, specifying their duration and frequency of intake if applicable.

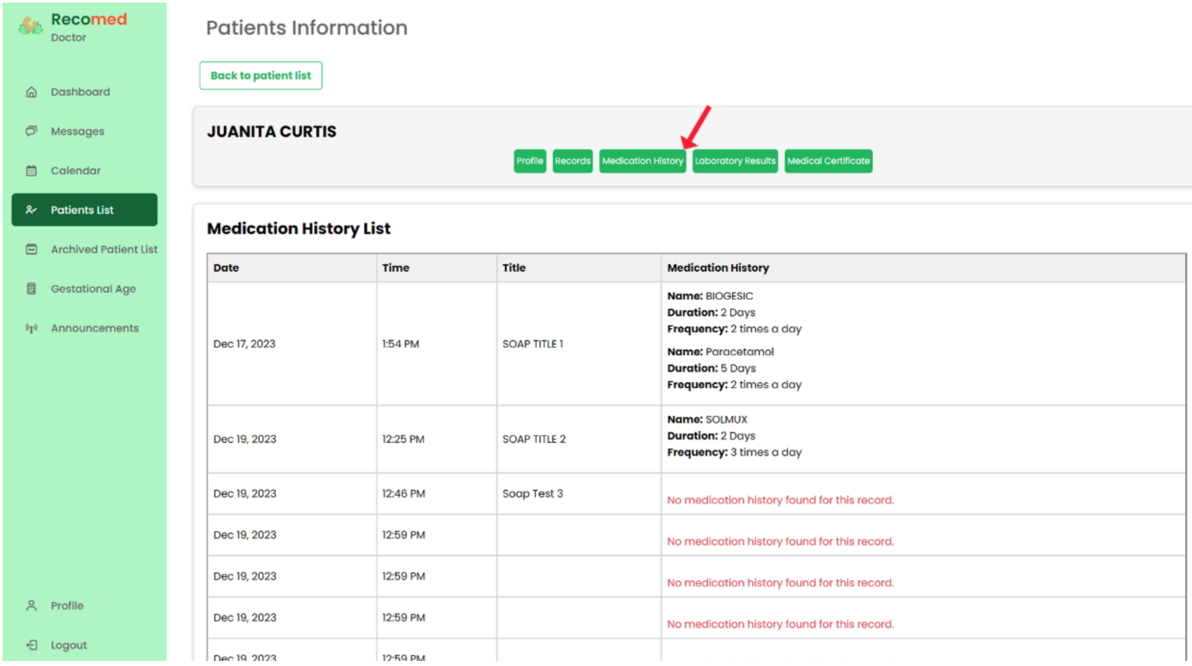

Figure 46. Doctor Medication History Button

Figure 46 shows all the medications that were prescribed by the doctor including the date of prescription, time of when the medication was prescribed, title and medication history.

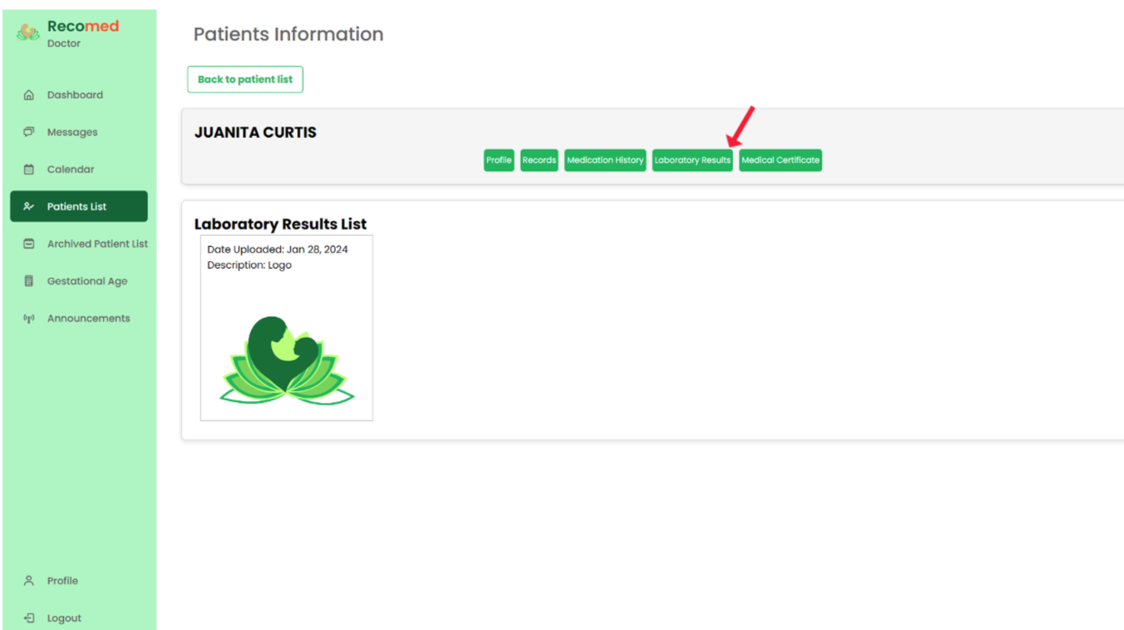

Figure 47. Doctor Laboratory Results Button

Figure 47 allows the doctor to have the capability to enhance patient records by adding lab results pictures, such as ultrasound reports, particularly beneficial when sourced from third parties. This feature proves particularly valuable for the 2012 Multi-Specialty Clinic, which lacks clinical laboratory facilities. The interface encourages a seamless integration of external lab results, enhancing the clinic's diagnostic capabilities. To utilize this feature, the doctor must choose an image for submission and provide an image description. This additional context ensures a comprehensive and organized patient record, empowering healthcare professionals to make informed decisions based on a holistic view of the patient's medical history and diagnostic information.

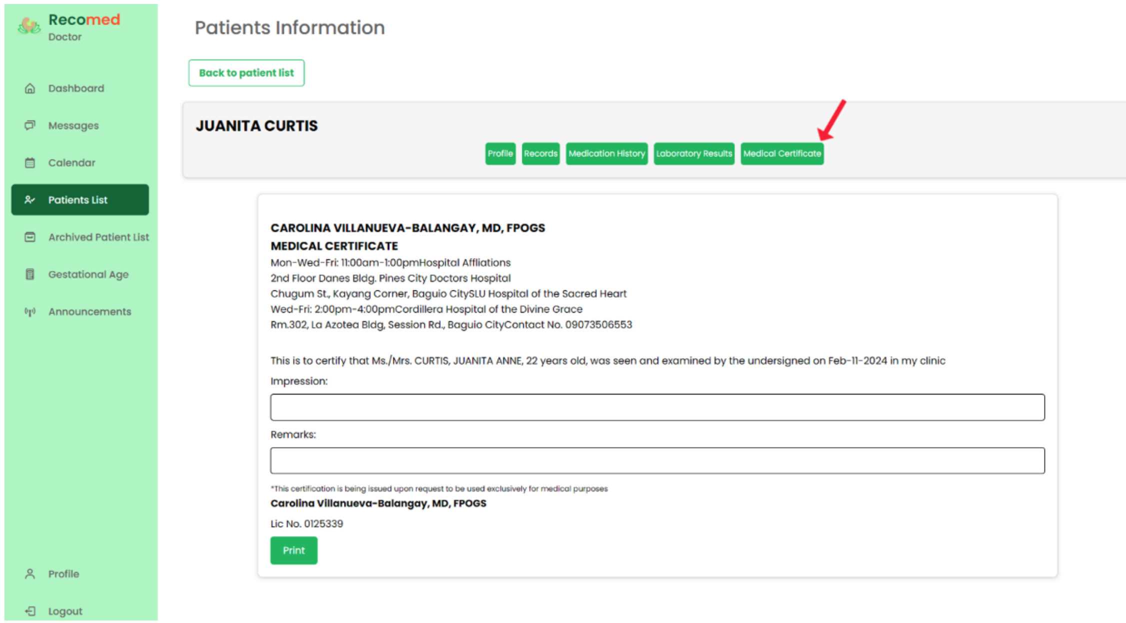

Figure 48. Doctor Medical Certificate Button

Figure 48 shows the medical certificate where the Doctor can generate a medical certificate prior to a patient's request. Within this interface, doctors can input the necessary information for the medical certificate. Upon completing all the necessary fields, a convenient 'Print' button becomes available. Upon clicking the 'Print' button, if all fields have been appropriately filled, the interface seamlessly transitions to the print view of the medical certificate. This ready-to-print display facilitates efficient document preparation.

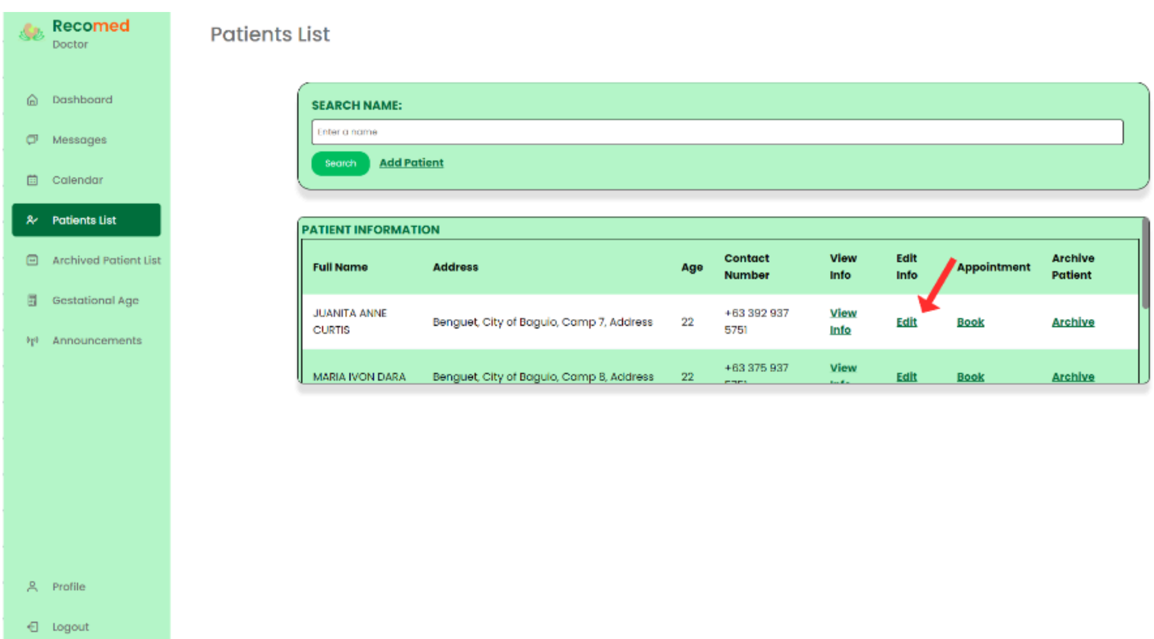

Figure 49. Doctor Patient Edit Information Button

Figure 49 is where the Doctor Edit Patient Information Button is located that the doctor can click to be redirected to the next figure.

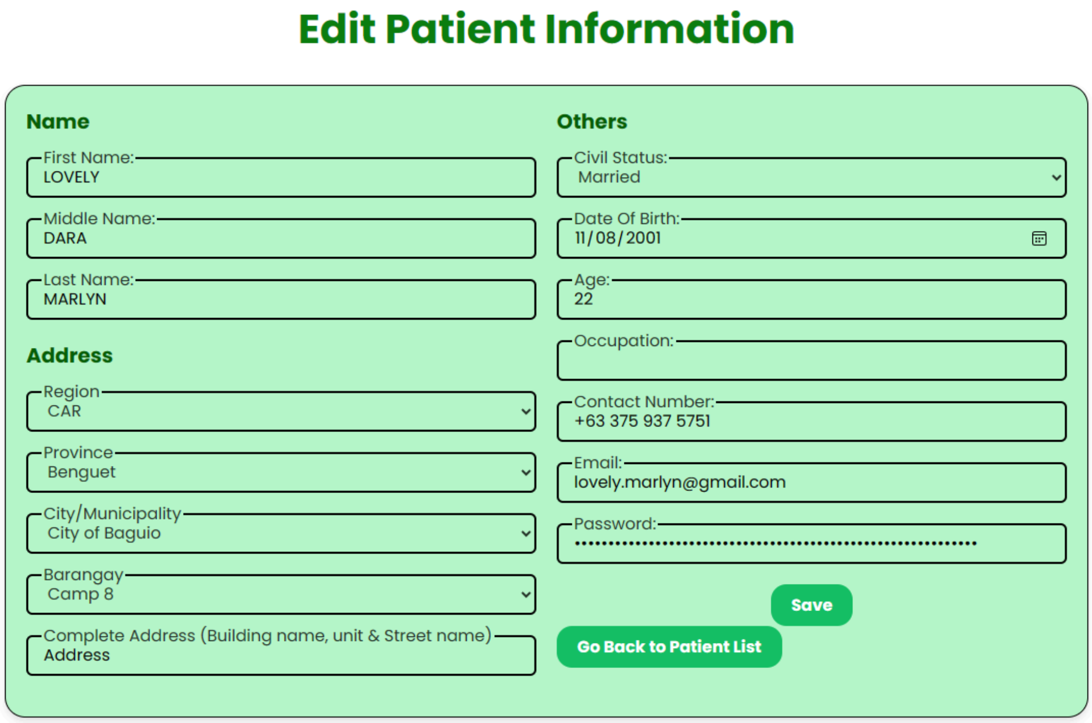

Figure 50. Doctor Patient Edit Info

Figure 50 allows the doctor to edit the patient's information such as the first name, middle name, last name, region, province, city or municipality, barangay, complete address, civil status, date of birth, age, occupation, contact number, email and password.

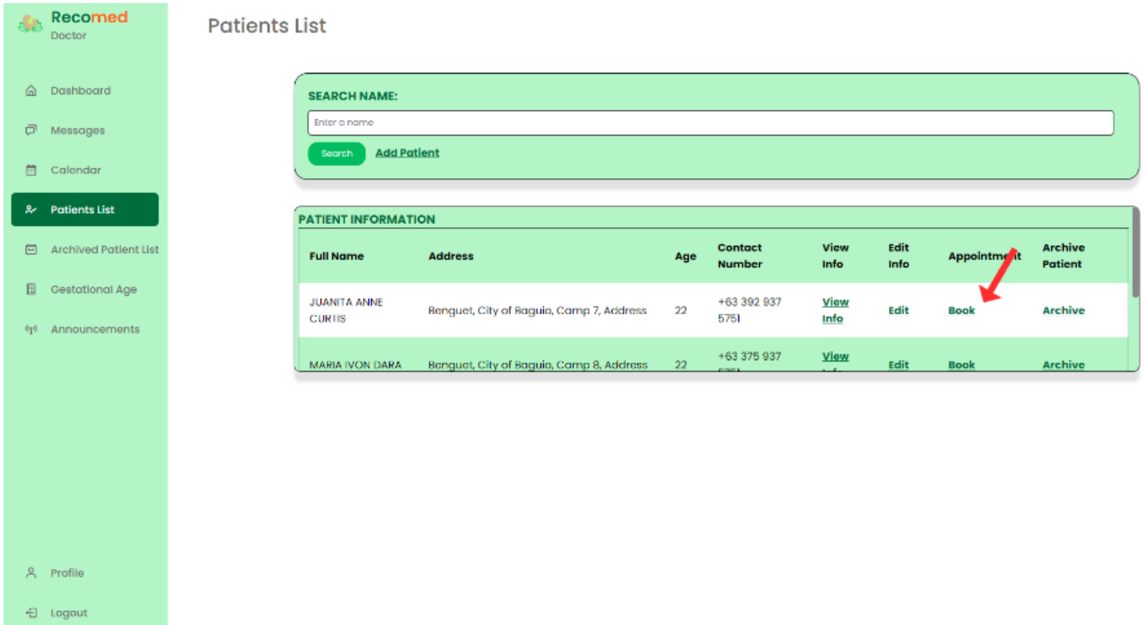

Figure 51. Doctor Patient Book Appointment Button

Figure 51 is where the Doctor 'Book' Patient Appointment Button is located that the doctor can click to be redirected to the next figure.

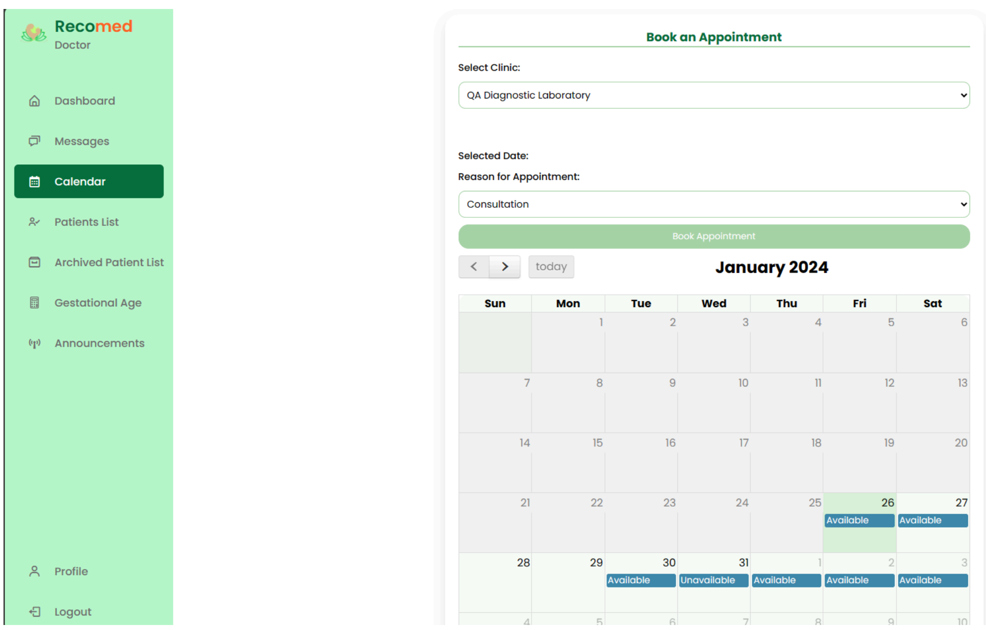

Figure 52. Doctor Book Patient Appointment(Top Part)

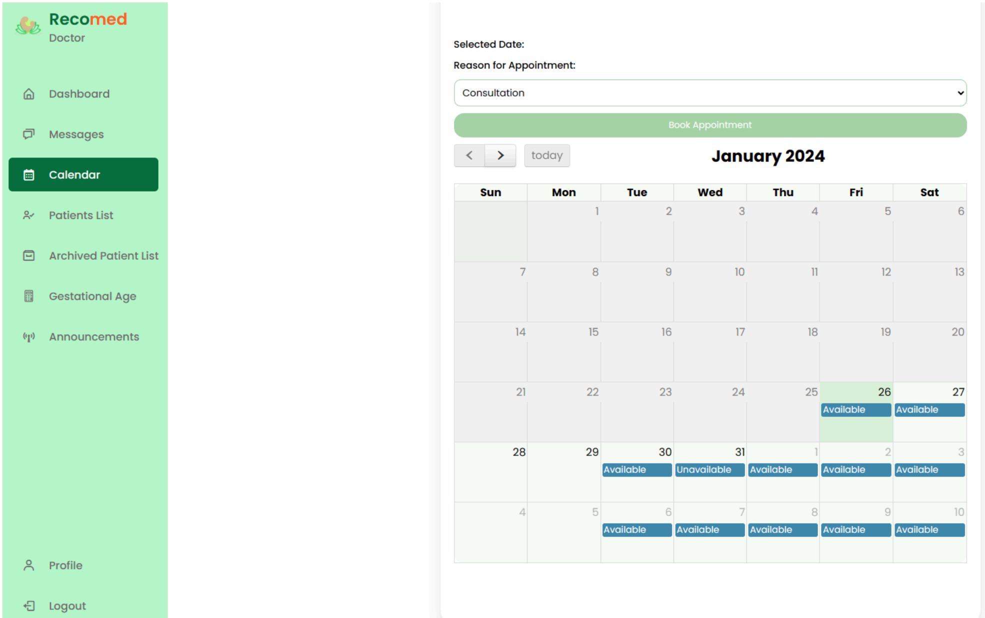

Figure 52. Doctor Book Patient Appointment(Bottom Part)

Figure 52 shows the Appointment Booking Page where the doctor can book an appointment *(same functionality with the appointment page in the assistant side)*. The doctor has the option to choose between two clinics—2012 Multi-Specialty Clinic and QA Diagnostic Laboratory Clinic. The booking process involves selecting a preferred date, choosing a timeslot, and specifying the reason for the appointment. This intuitive system empowers the doctor to let the patients easily customize their appointments according to their preferences and needs.

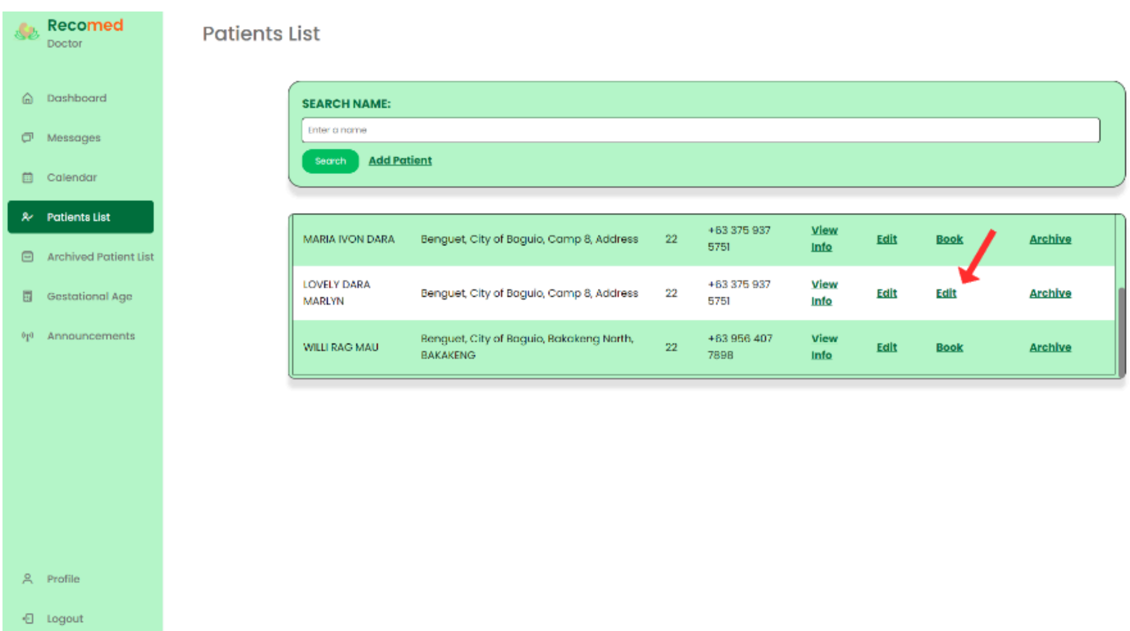

Figure 53. Doctor Patient Edit Appointment Button

Figure 53 is where the Doctor ‘Edit’ Patient Appointment Button is located that the doctor can click to be redirected to the next figure.

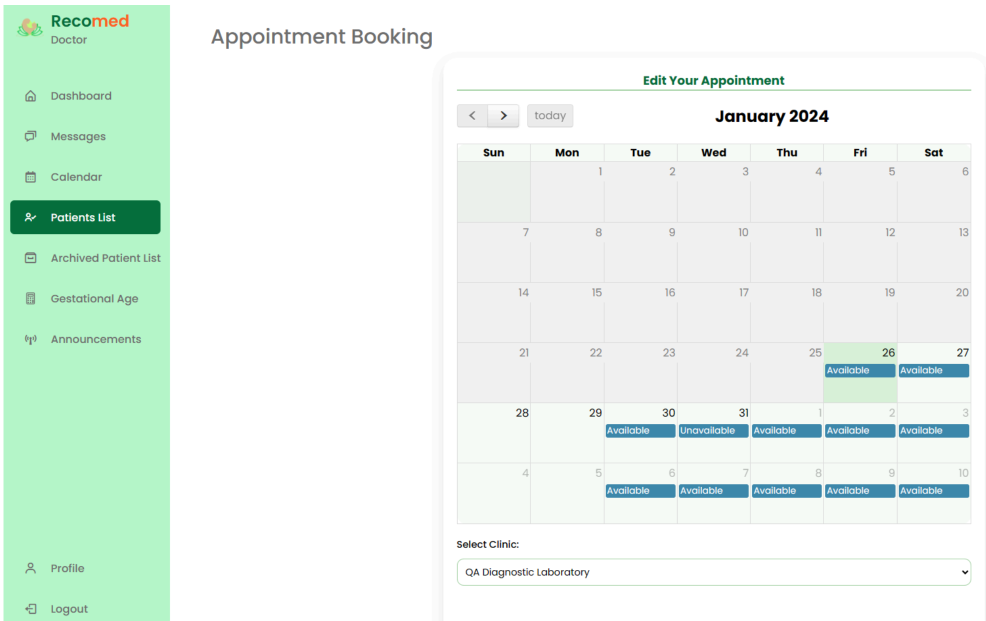

Figure 54. Doctor Patient Edit Appointment(Top Part)

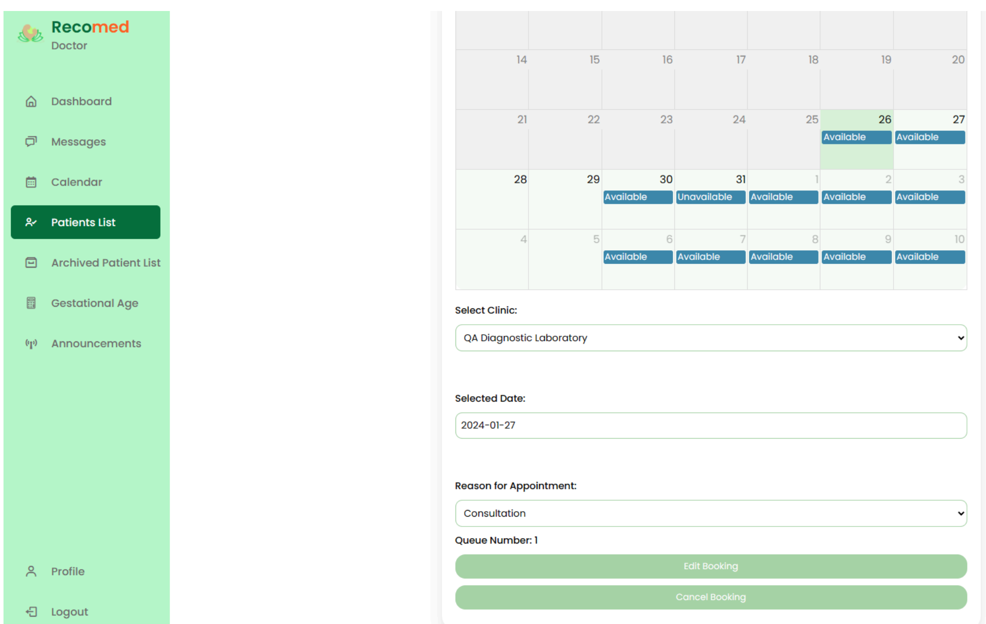

Figure 54. Doctor Patient Edit Appointment(Bottom Part)

Figure 54 provides the doctor with the capability to modify a patient's appointment details, enabling the selection of the clinic, date, timeslot, and reason for the appointment.

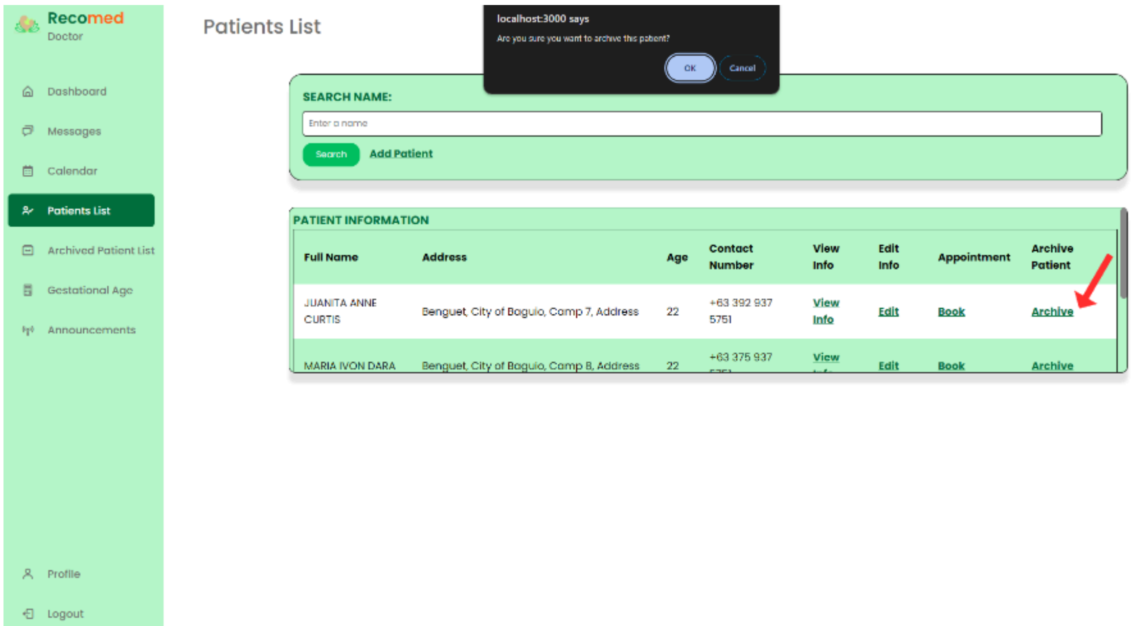

Figure 55. Doctor Patient Archive Button

Figure 55 is where the Doctor 'Edit' Patient Appointment Button is located that the doctor can click to be redirected to the next figure.

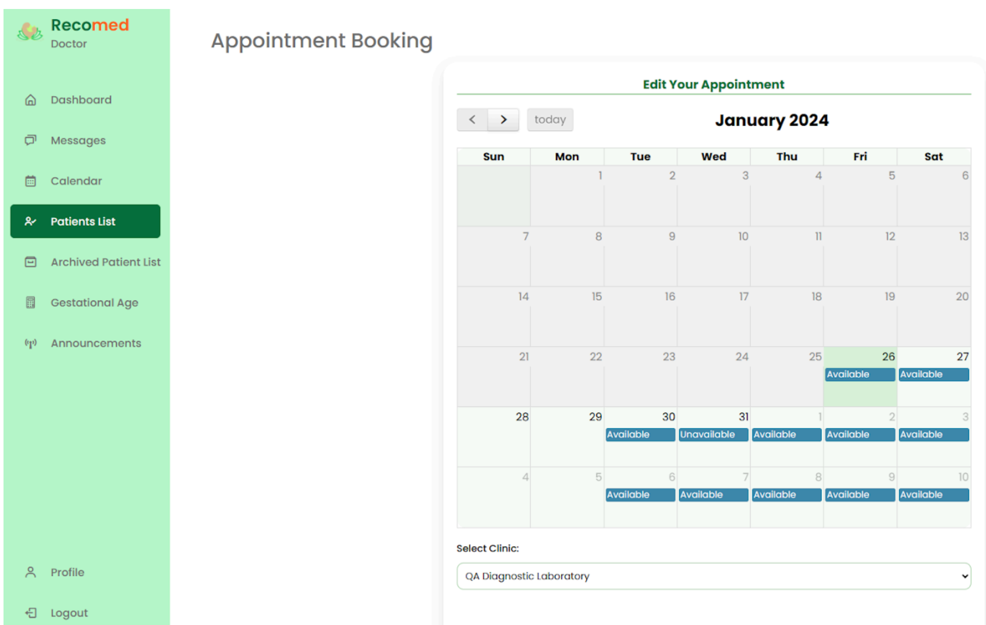

Figure 56. Doctor Patient Edit Appointment(Top Part)

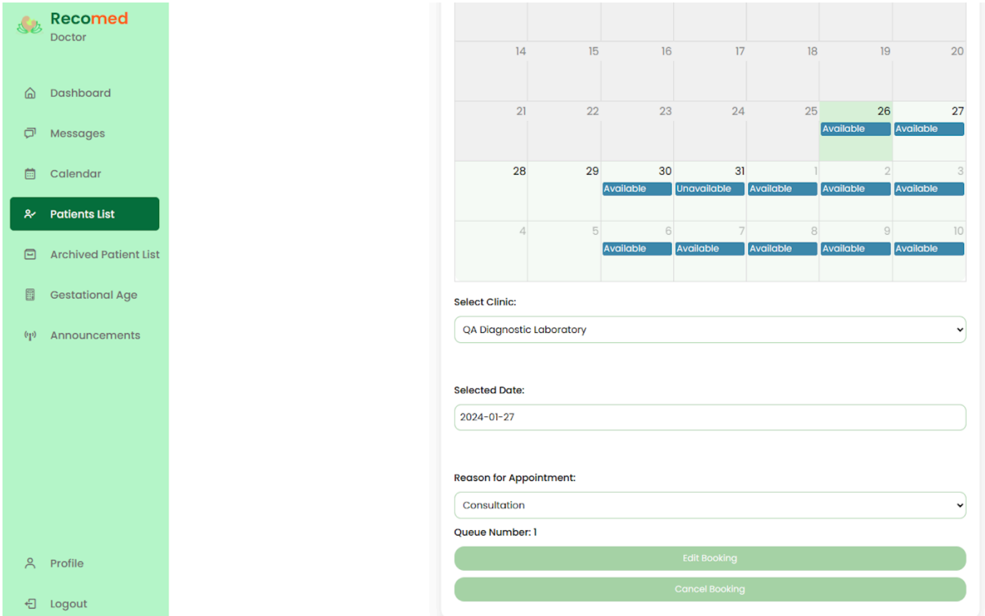

Figure 56. Doctor Patient Edit Appointment(Bottom Part)

Figure 56 provides the doctor with the capability to modify a patient's appointment details, enabling the selection of the clinic, date, timeslot, and reason for the appointment.

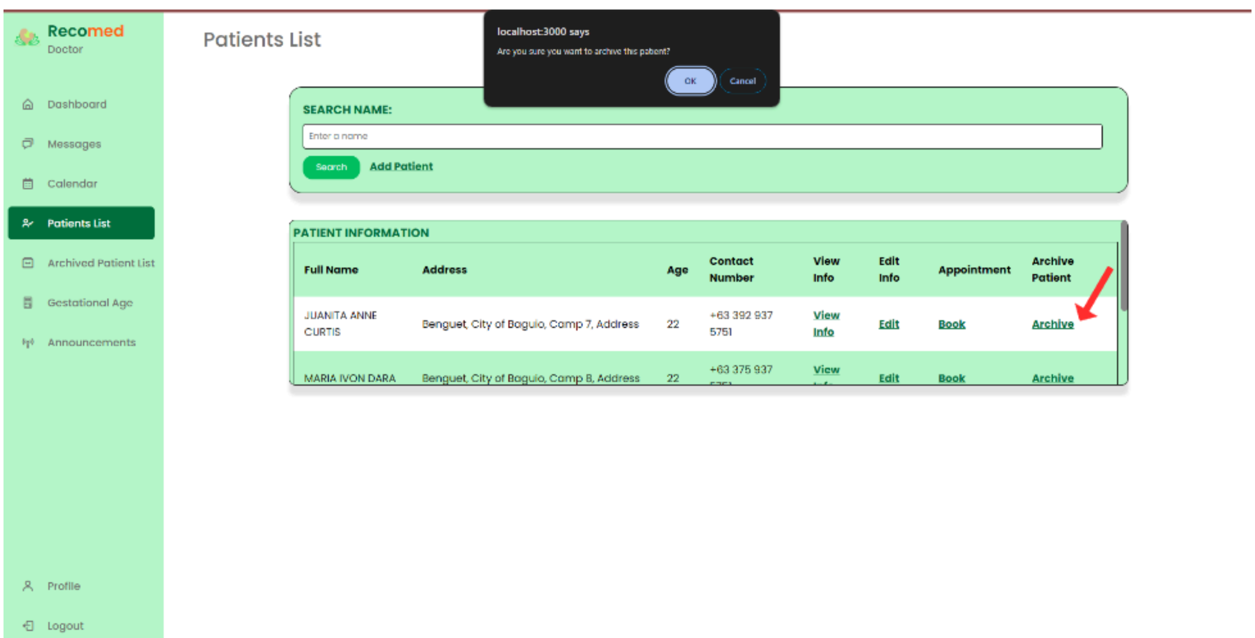

Figure 57. Doctor Patient Archive Button

Figure 57 offers the doctor the capability to archive a patient when the patient is no longer active (i.e., not having any appointments with the doctor) or hasn't visited the clinic for at least a specified number of years.

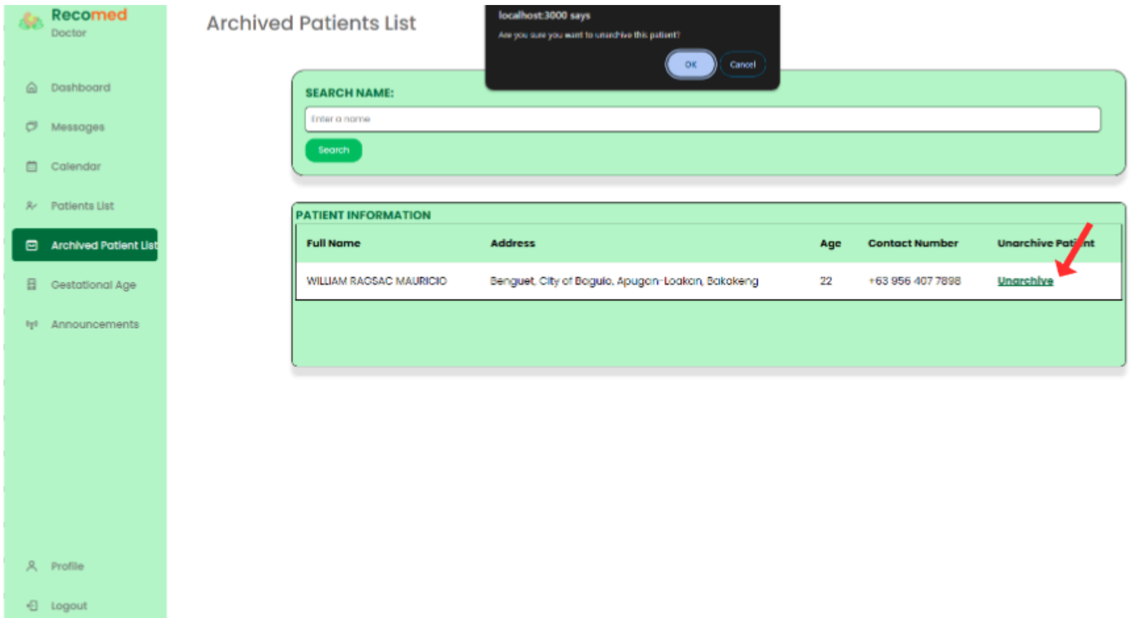

Figure 58. Doctor UnArchived Patient Button

Figure 58 shows that the doctor can unarchive a patient when it is deemed necessary.

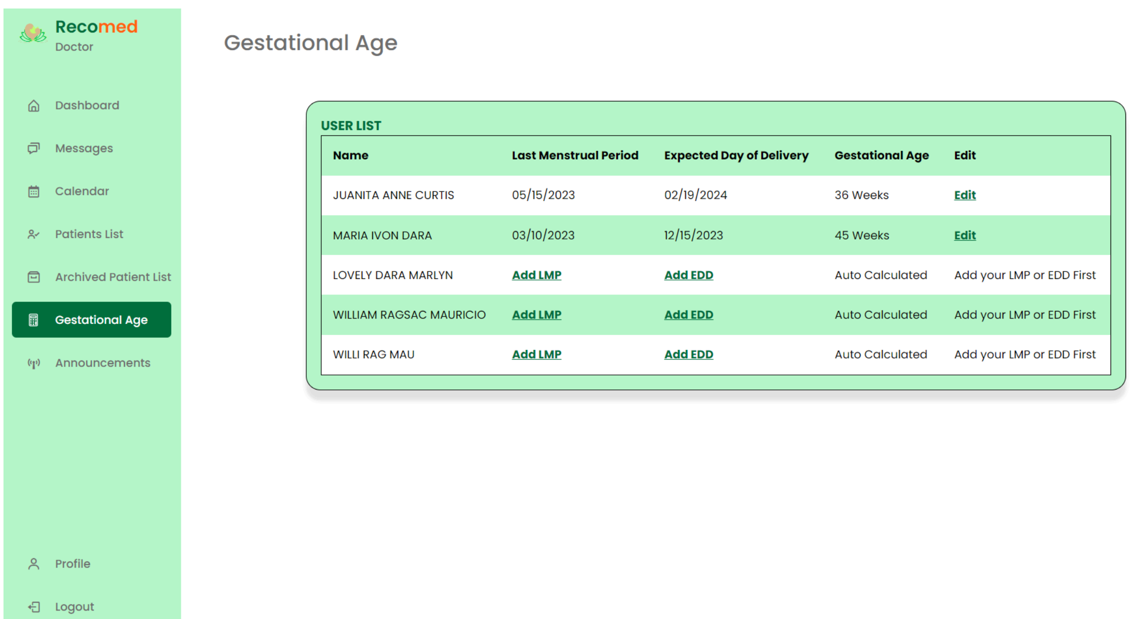

Figure 59. Doctor Gestational Age

Figure 59 shows the Gestational Age page, where the doctor can view the patient's full name, last menstrual period (LMP), expected day of delivery (EDD), gestation age, and an 'Edit' hyperlink. Additionally, the doctor can supplement the LMP and EDD for a specific patient using the 'Add LMP' and 'Add EDD' options, where only date inputs are required.

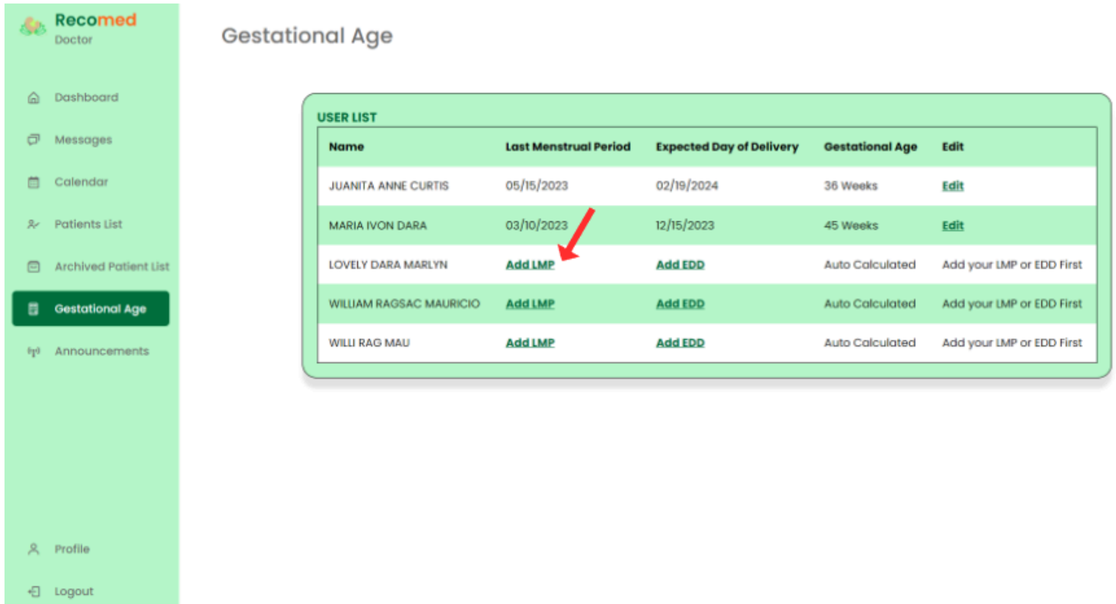

Figure 60. Doctor Add LMP(Last Menstrual Period) Button

Figure 60 is where the Doctor Gestational Age(Add LMP) Button is located that the doctor can click to be redirected to the next figure.

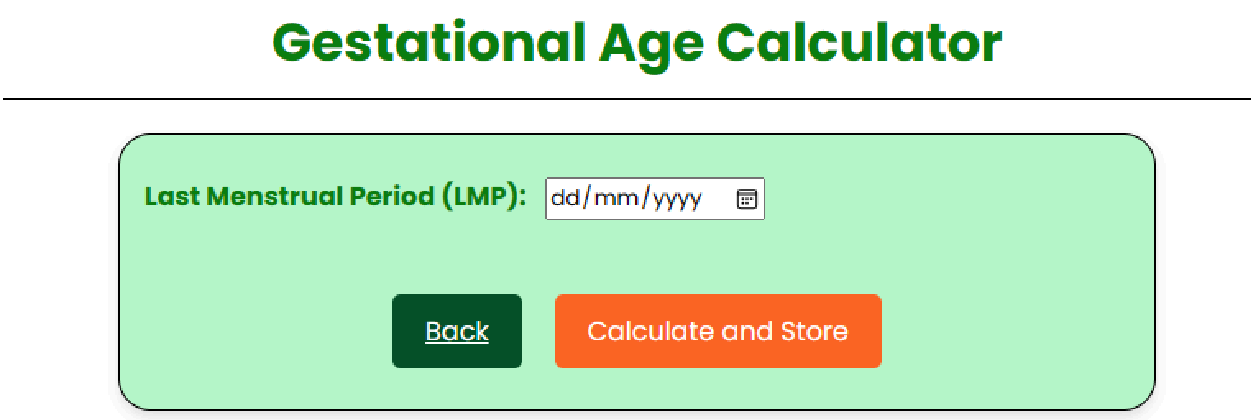

Figure 61. Doctor Add LMP

Figure 61 shows the Gestational Age page for adding the Last Menstrual Period (LMP) in order to calculate the gestational age which will be stored in the system for the doctor to view the information of the patient later on.

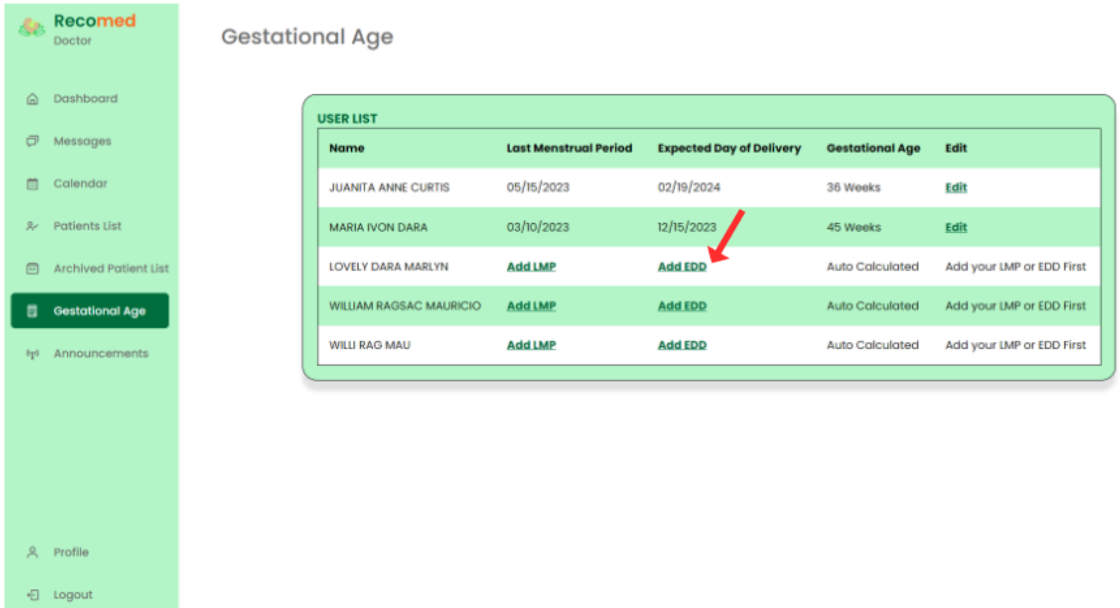

Figure 62. Doctor Add EDD(Estimated Date of Delivery) Button

Figure 62 is where the Doctor Gestational Age(Add EDD) Button is located that the doctor can click to be redirected to the next figure.

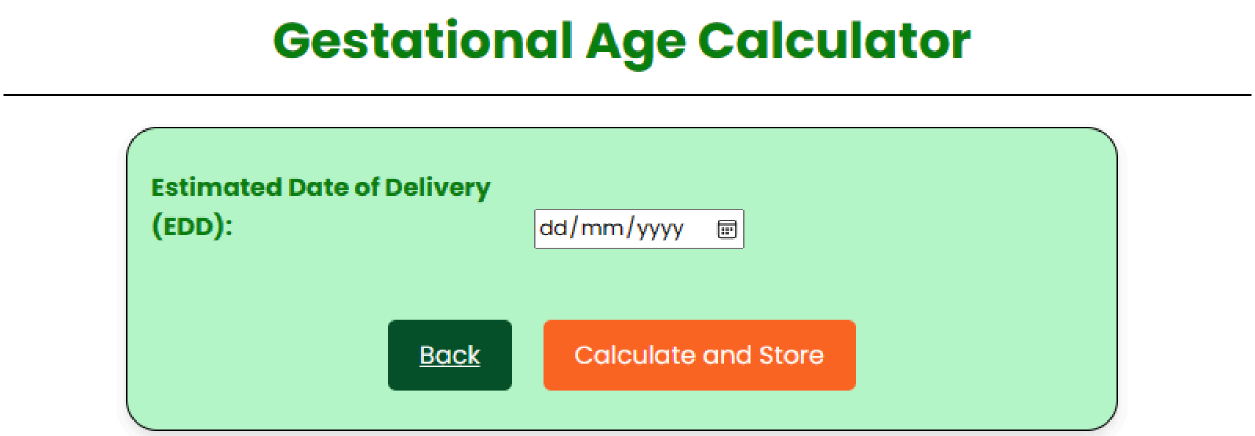

Figure 63. Doctor Add EDD

Figure 63 shows the Gestational Age page for the Estimated Date of Delivery (EDD), this is where the doctor can add a patient's EDD which will be computed and stored in the system for the doctor to view the information of the patient later on.

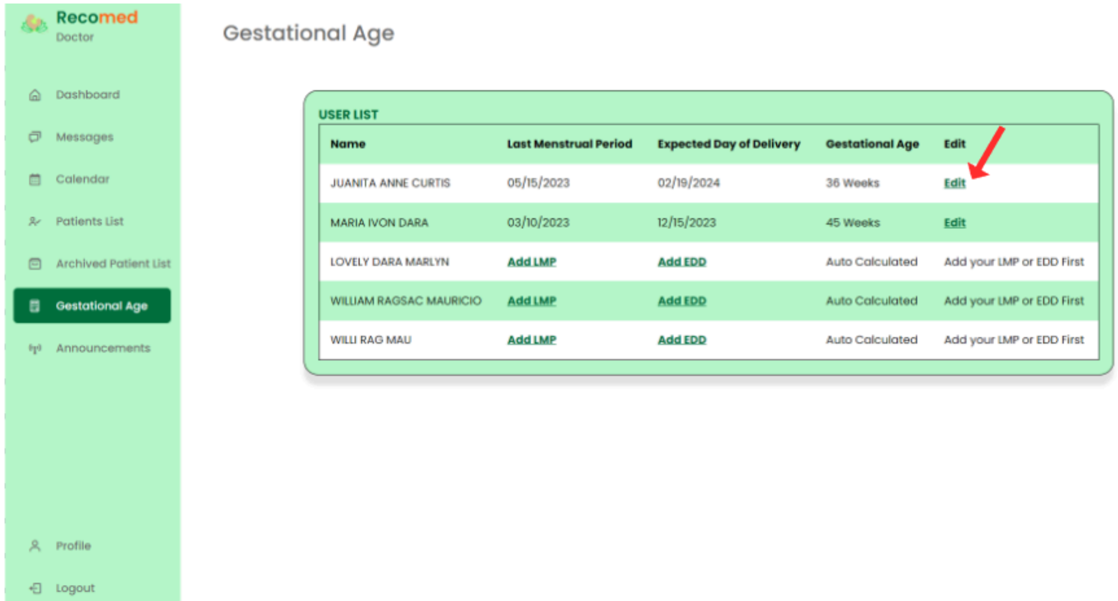

Figure 64. Doctor Edit Gestational Age Button

Figure 64 is where the Doctor Gestational Age(Edit LMP and EDD) Button is located that the doctor can click to be redirected to the next figure.

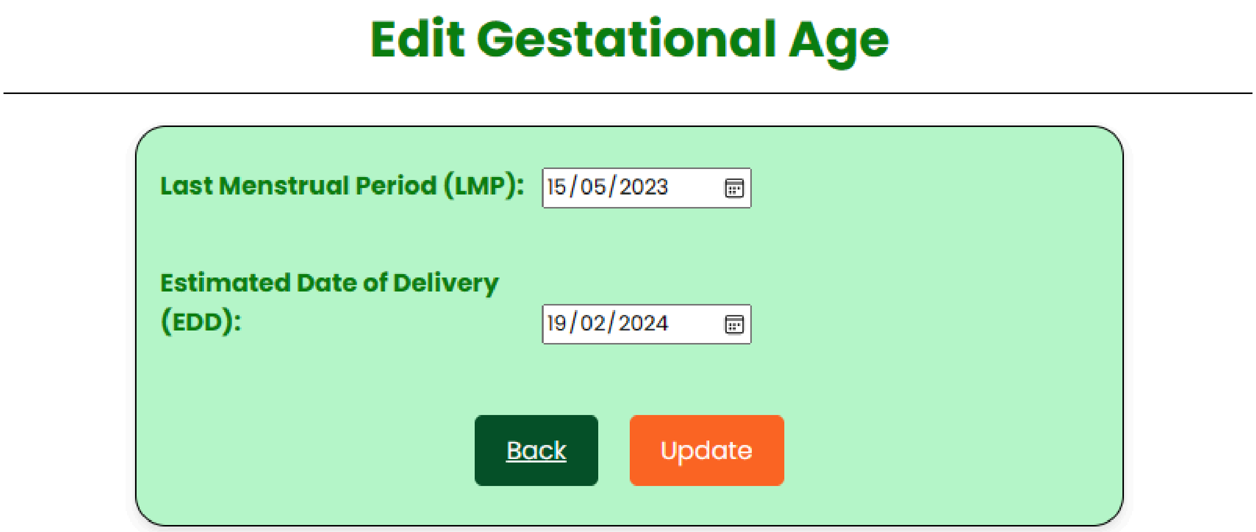

Figure 65. Doctor Edit Gestational Age

Figure 65 shows the Gestational Age page, this is where the doctor can update both the LMP and the EDD of the patient in order to compute their updated Gestational Age.

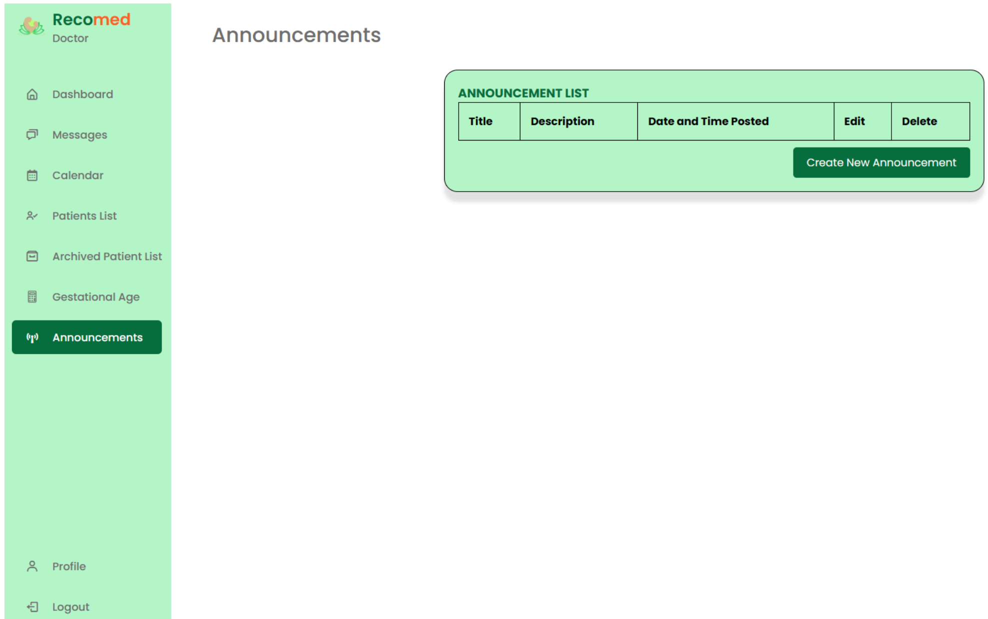

Figure 66. Doctor Announcements(Blank)

Figure 66 depicts the interface when there are no created announcements yet, either from the doctor or from the assistant themselves.

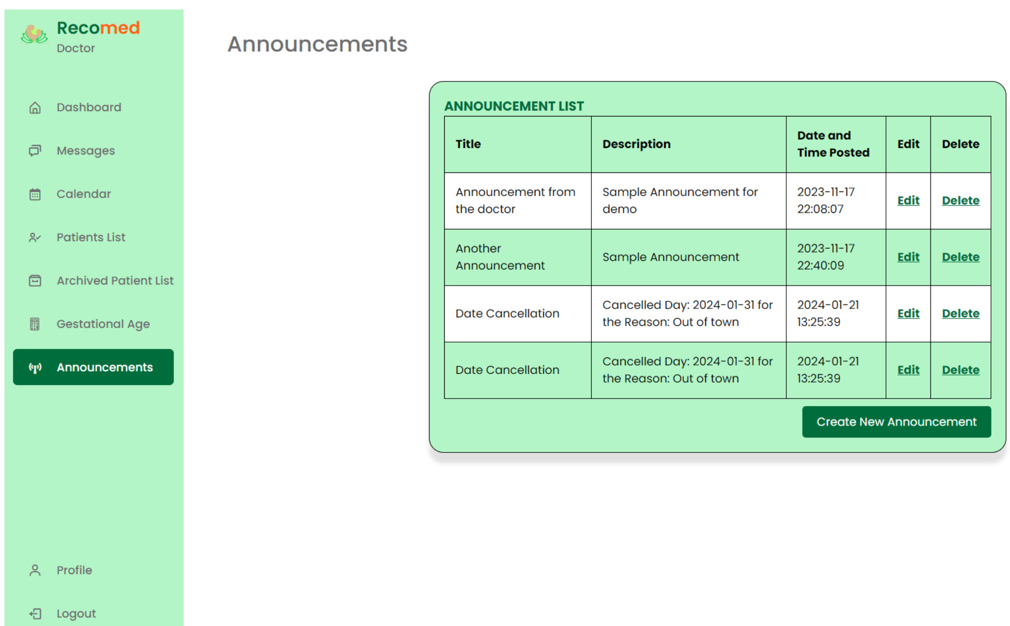

Figure 67. Doctor Announcements(with announcements)

Figure 67 shows the announcement page where it displays the title, description, date, and time of each announcement. The page allows the doctor to create new announcements to be posted on the list, edit existing announcements which are already shown on the list, and delete existing announcements.

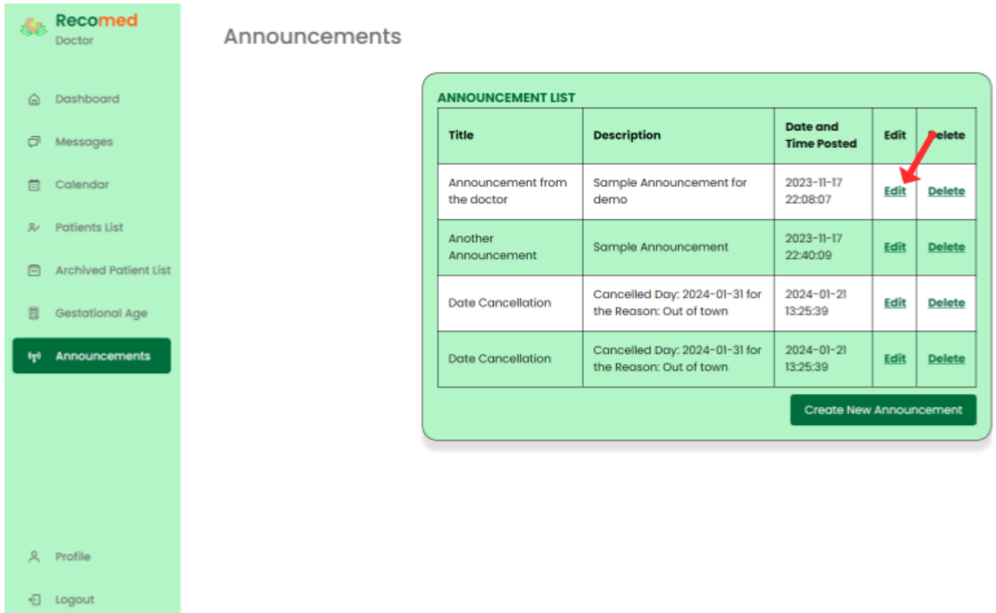

Figure 68. Doctor Edit Announcements Button

Figure 68 is where the Doctor Announcements(Edit the Announcement) Button is located that the doctor can click to be redirected to the next figure.

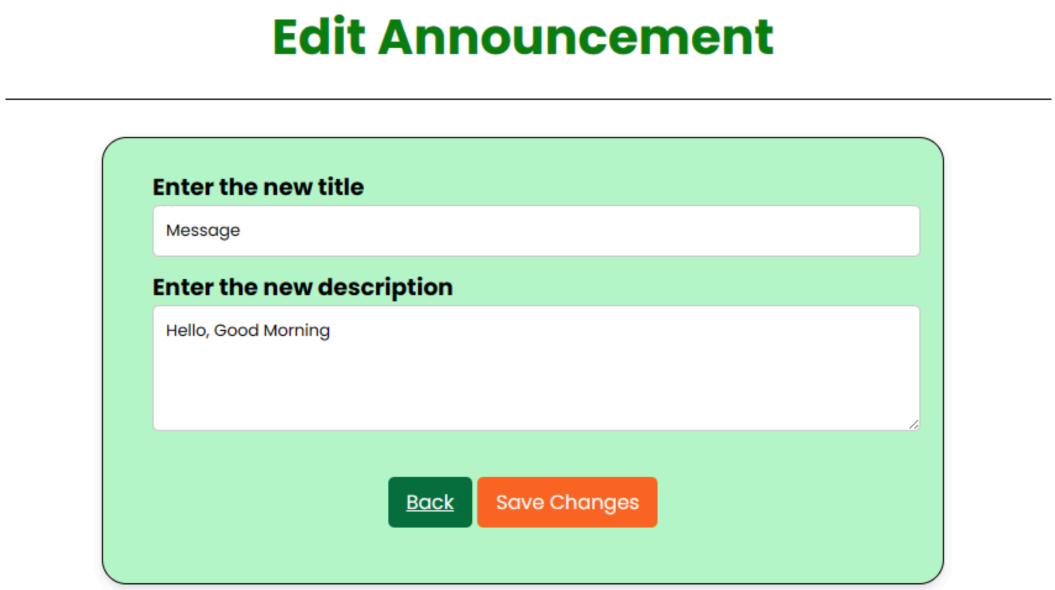

Figure 69. Doctor Edit Announcements

Figure 69 shows the page where the doctor can edit an existing announcement. The doctor is to enter a new title by editing the current title. Then, the doctor can also edit the description of the announcement. After updating the information of the announcement the doctor is editing, they can click the Save

Changes button in order to confirm the edits made on the announcement. The new edited announcement is then posted on the announcement list in the dashboard.

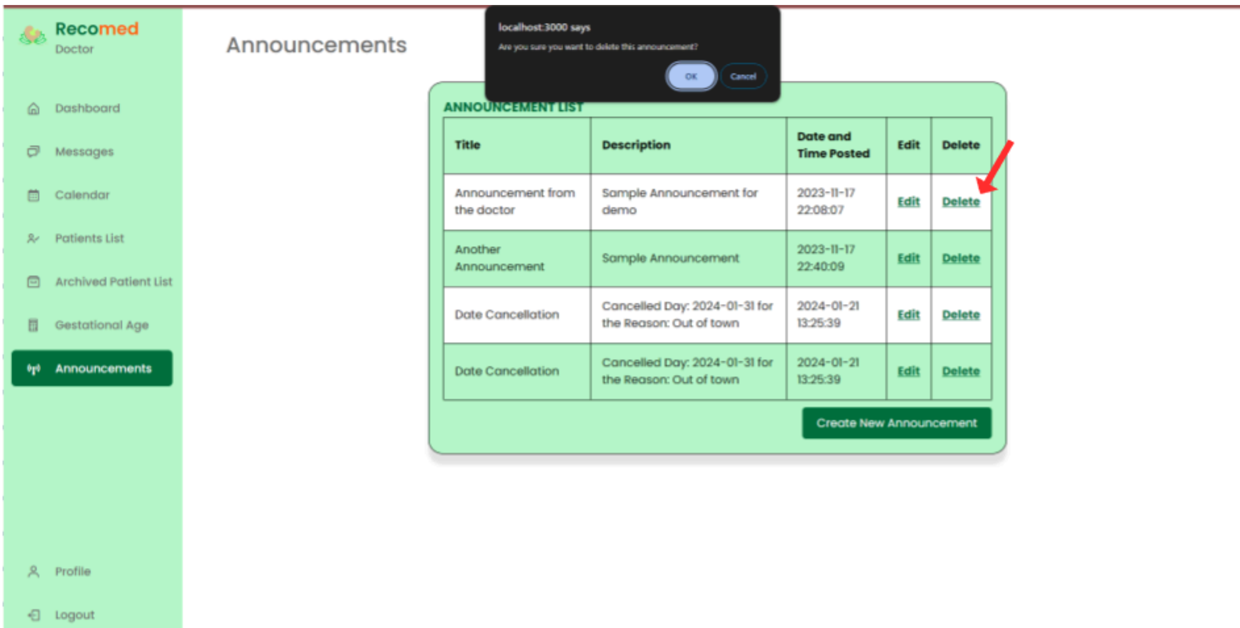

Figure 70. Doctor Delete Announcements Button

Figure 70 shows the page where the doctor can delete an existing announcement when deemed necessary.

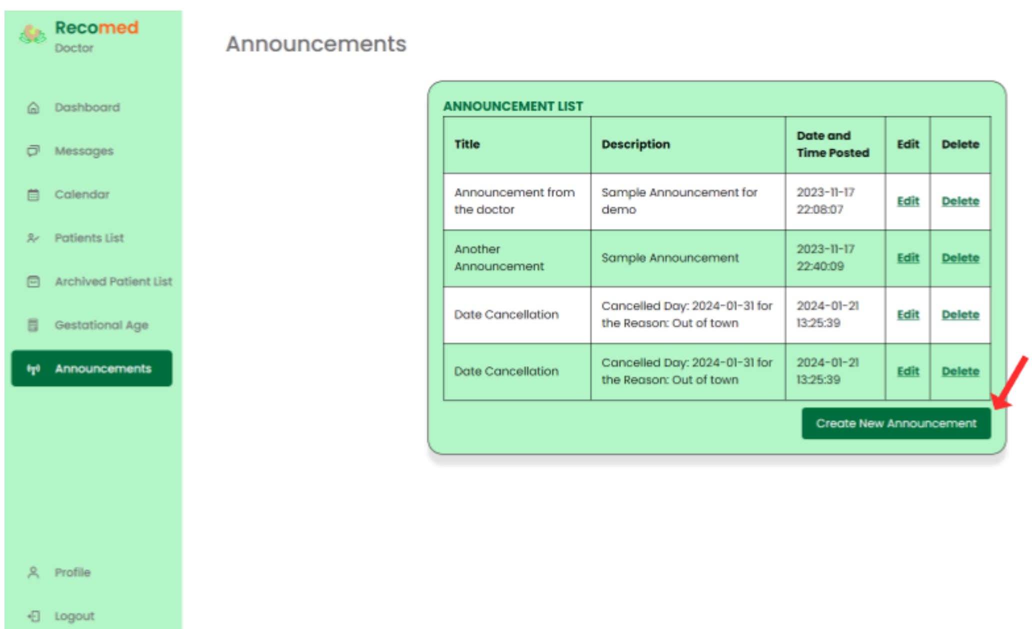

Figure 71. Doctor Create New Announcements Button

Figure 71 is where the Doctor Announcements(Create the Announcement) Button is located that the doctor can click to be redirected to the next figure.

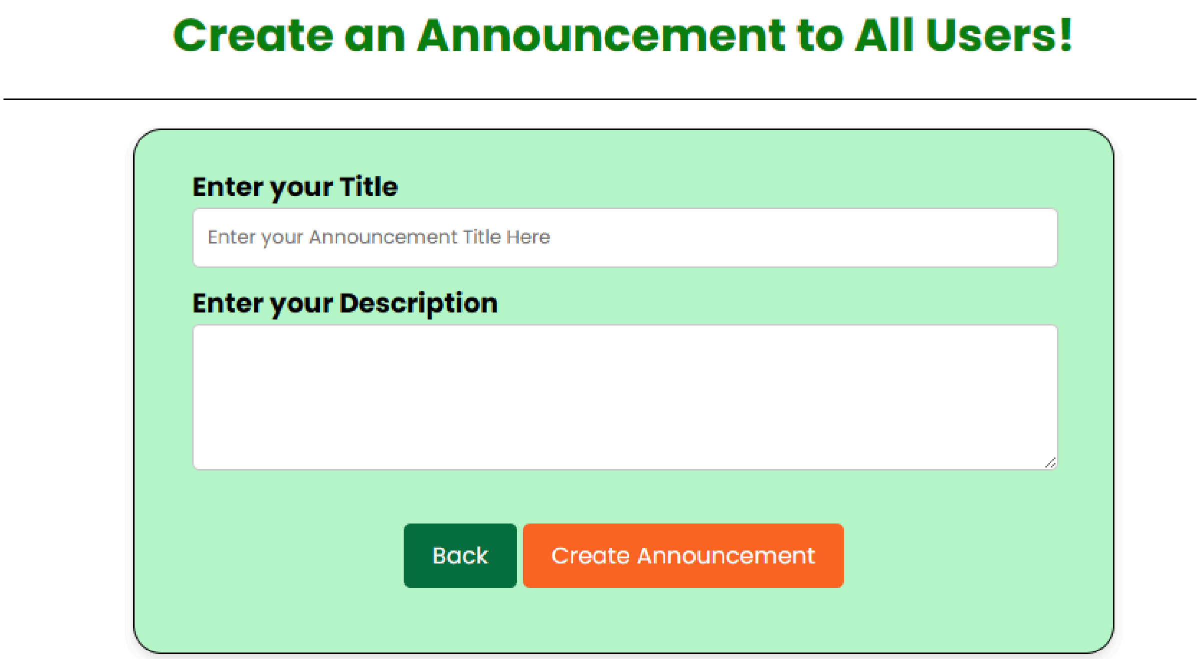

Figure 72. Doctor Create New Announcements

Figure 72 shows the page where the doctor can create an announcement which will be displayed to all users in the system. The doctor must first enter the title, then the description of the announcement to be posted. After they have entered both the title and description, the doctor would now click on the button which would create the announcement and post it on the announcements table in the dashboard.

3.3.5.3 Assistant Module

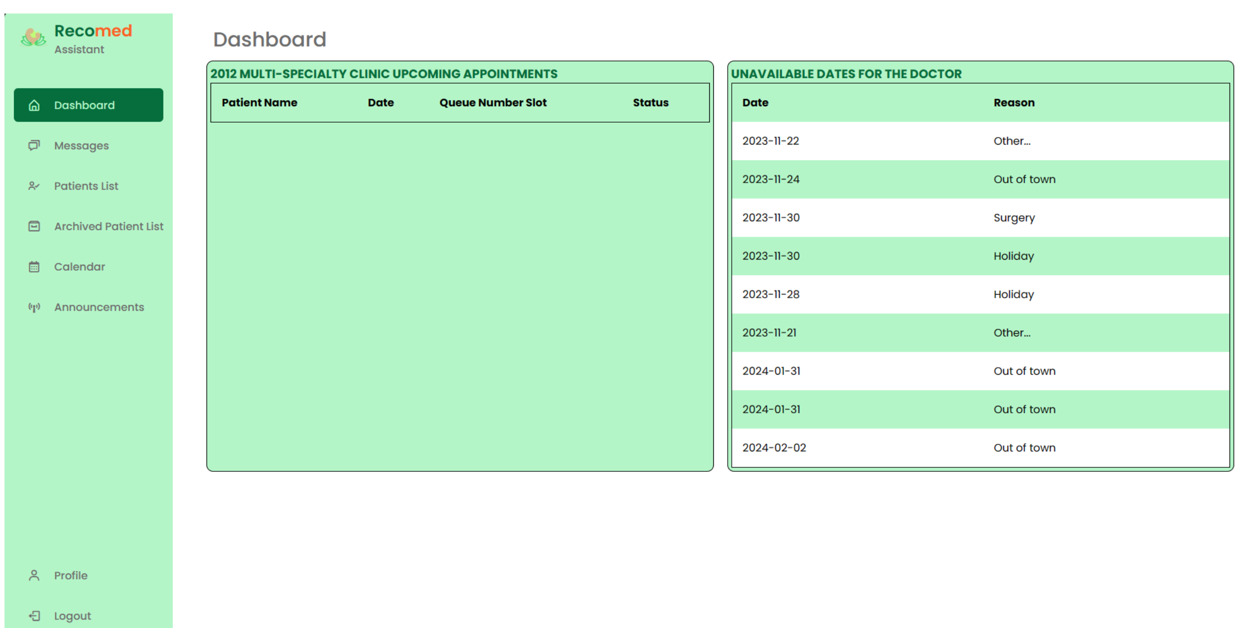

Figure 73. Assistant Dashboard

Figure 73 illustrates the Assistant Dashboard, featuring two tables. The first table, "List of Upcoming Appointments," is specific to the assigned clinic (2012 Multi-Specialty Clinic or QA Multi-Specialty Clinic). It presents patient names along with their appointment status. The second table displays the "Unavailable Dates of the Doctor," showcasing dates on which the doctor is unavailable for appointments, along with the reasons for this unavailability. The dashboard is also designed to be scrollable when its content exceeds the visible area of the screen. This allows users to navigate through additional content that extends beyond the initial viewable space of the dashboard.

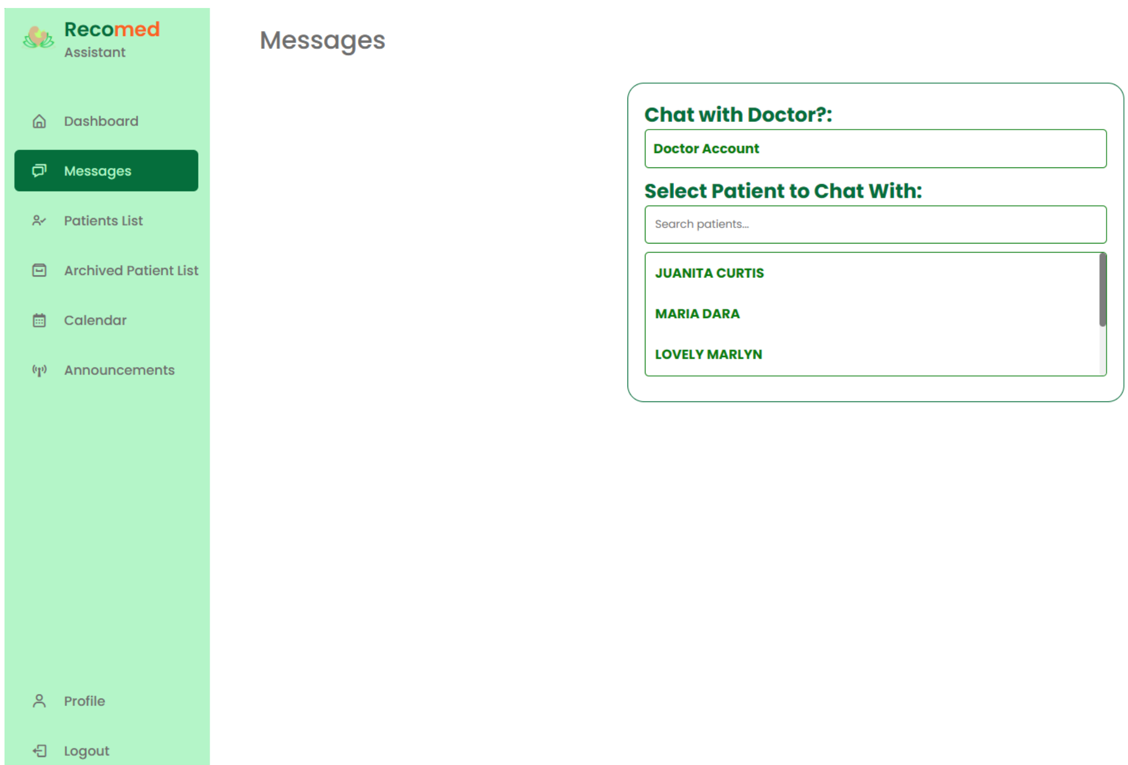

Figure 74. Assistant Message

Figure 74 shows the messages page where the assistant can send messages to the doctor or a specific patient by searching the name or by scrolling through the list below the search input. The assistant can use this feature to relay important information, discuss upcoming appointments, seek clarification on patient details, or address any queries that require prompt communication.

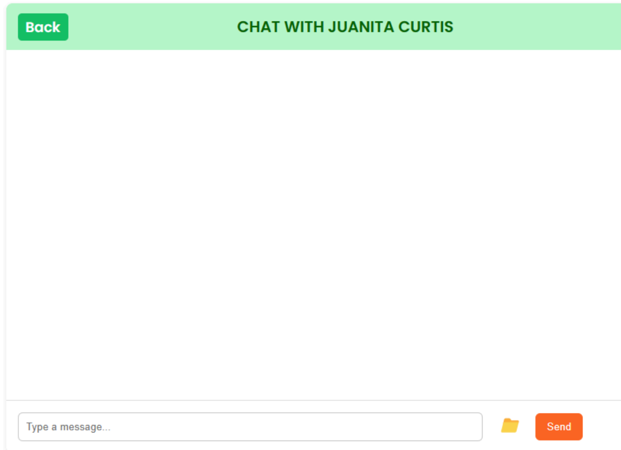

Figure 75. Assistant Message

Figure 75 will be displayed after the assistant has chosen which person to chat with (Doctor or Patient).

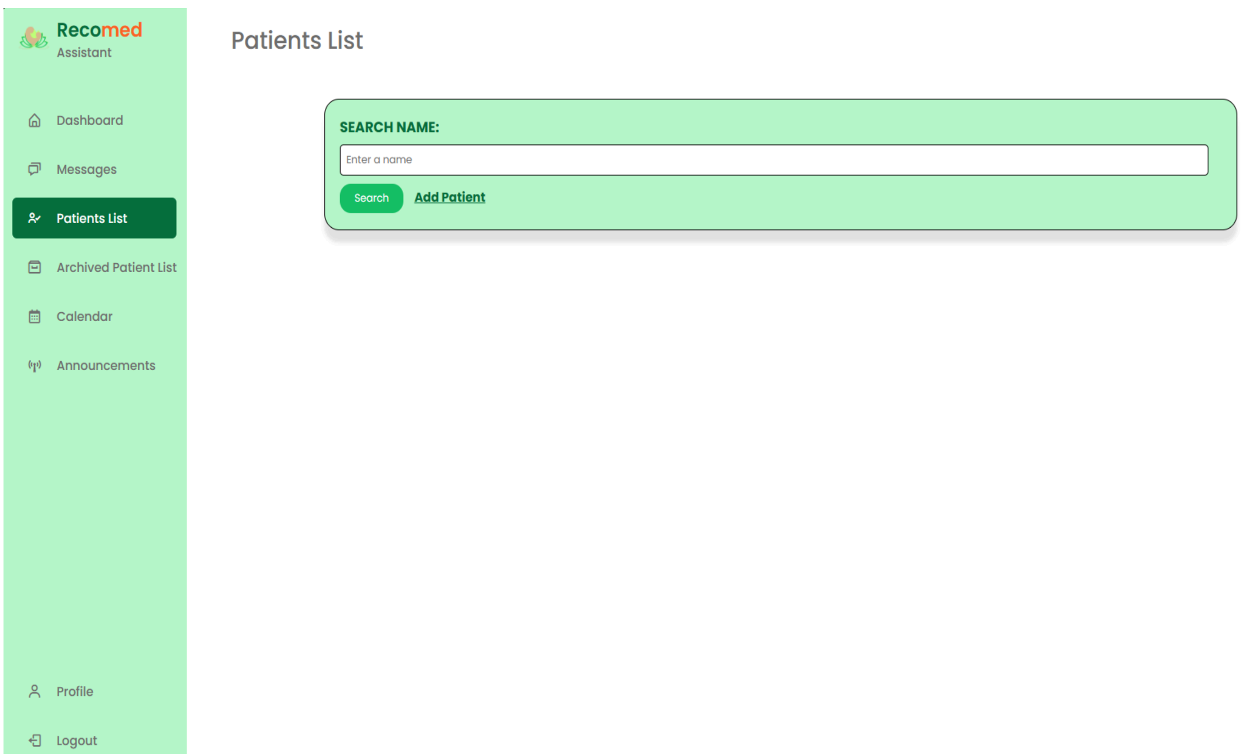

Figure 76. Assistant Patient List

Figure 76 displays the Patients List page, providing assistants with the ability to search for a patient's name. Upon clicking the search button, a patient list container emerges, as depicted in the subsequent image (Figure 77). This search patient container is designed to enable assistants to explore patient information across both clinics, promoting a comprehensive search functionality. Unlike the doctor's interface, the patient list container is initially hidden at the bottom. This intentional concealment ensures that assistants do not have unrestricted access to patient information. Instead, they can only view patients from the other clinic until a specific search is initiated. This approach is particularly vital when patients visit both clinics, as it allows for distinct data sets for each clinic, ensuring data privacy and compliance.

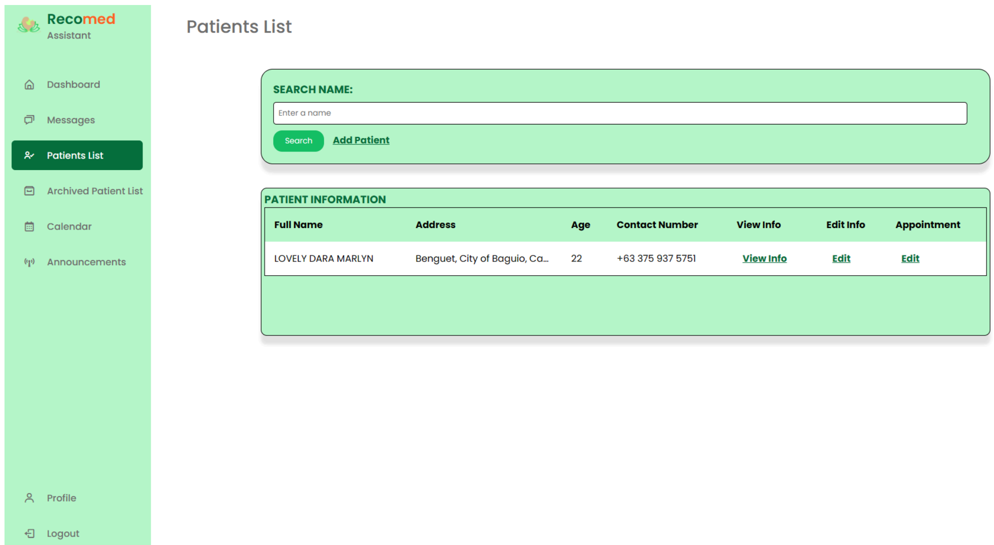

Figure 77. Assistant Search Function

Figure 77 shows that upon searching a name in the search container, this will display the patient's information which are the following: full name, address, age, view information. The table provides additional functionalities for the assistant, allowing them to edit the patient's information, schedule a new appointment, or modify an existing booked appointment.

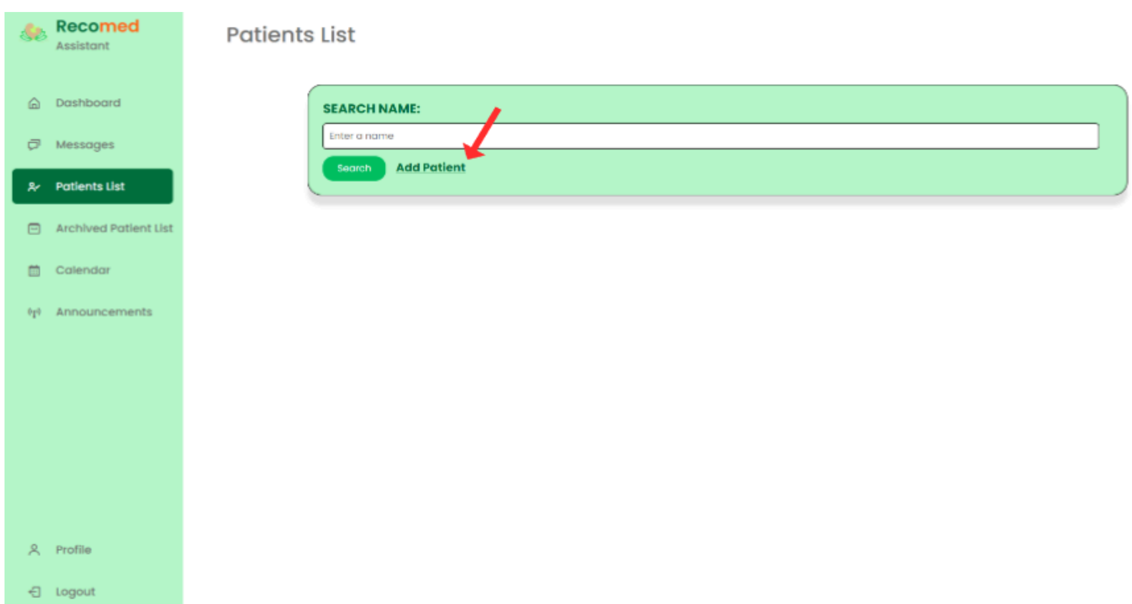

Figure 78. Assistant Add Patient Button

Figure 78 shows where the 'Add Patient' positioned just below the search tab. Clicking on this button allows the assistant to add a new patient, directing them to the subsequent figure for further actions.

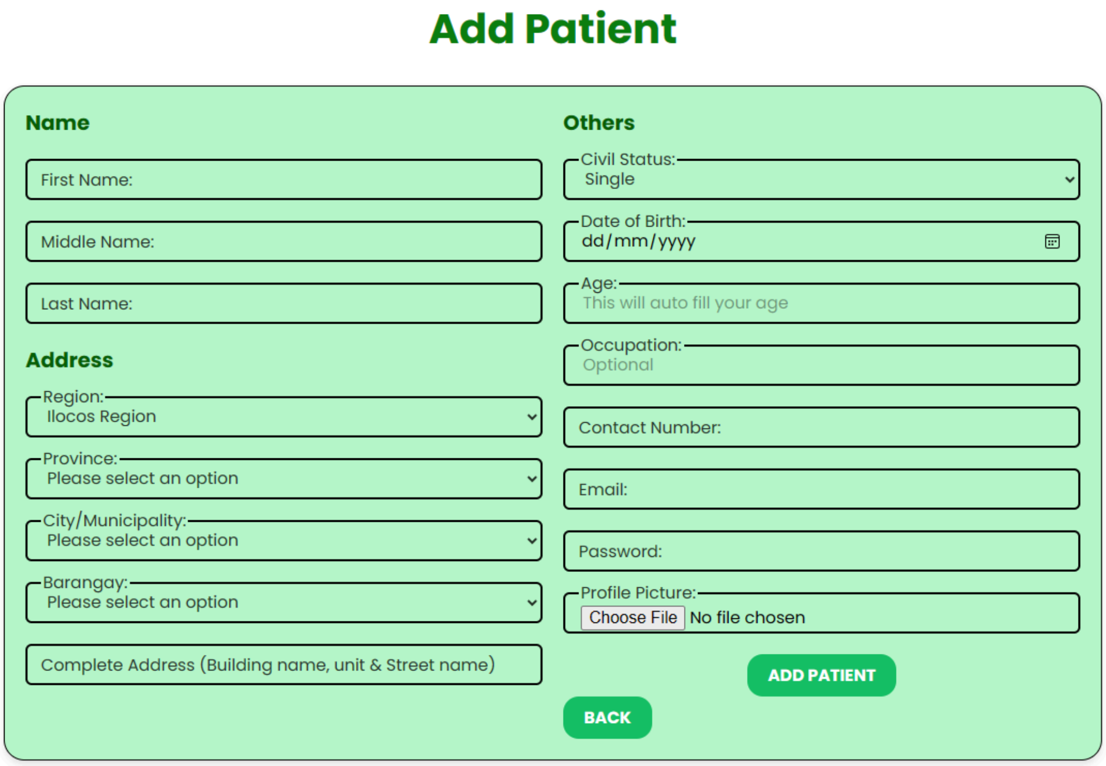

Figure 79. Assistant Add Patient

Figure 79 will show upon clicking the 'Add Patient' button at the bottom right of the search container *(from the image above)*. This page resembles the signup page, providing a dedicated space for the assistant to effortlessly add a new patient.

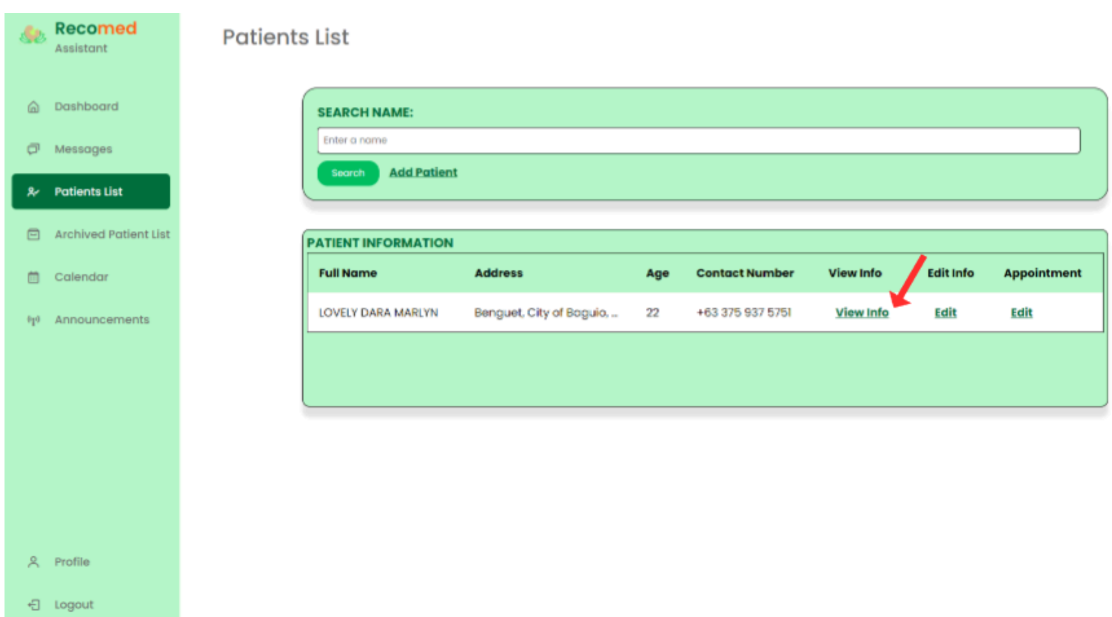

Figure 80. Assistant View Patient Information Button

Figure 80 is where the View Patient Information Button is located that the assistant can click to be redirected to the next figure.

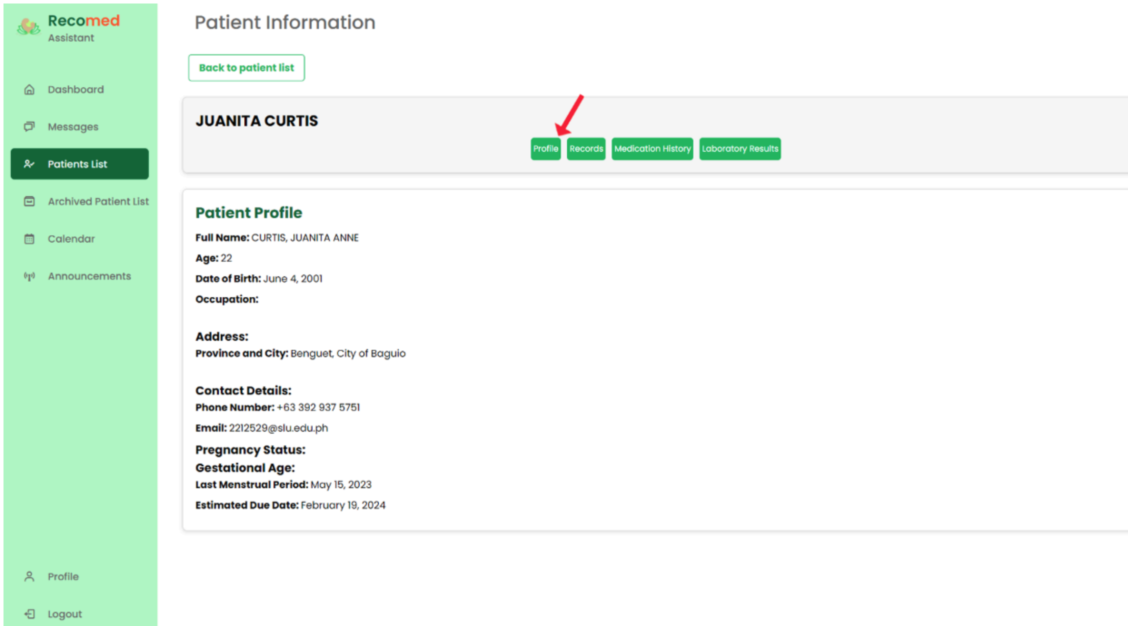

Figure 81. Assistant View Patient Information

Figure 81 shows that after clicking the "View Info" hyperlink from the Figure 84 (above), the assistant is redirected to a page which shows the patient's personal information. The patient's comprehensive details are presented, including their full name, age, date of birth, occupation, address, and contact details encompassing phone number and email. Alongside the patient profile details, Figure 81 also introduces additional actionable buttons: 'Record', 'Medical History', and 'Laboratory Results.'

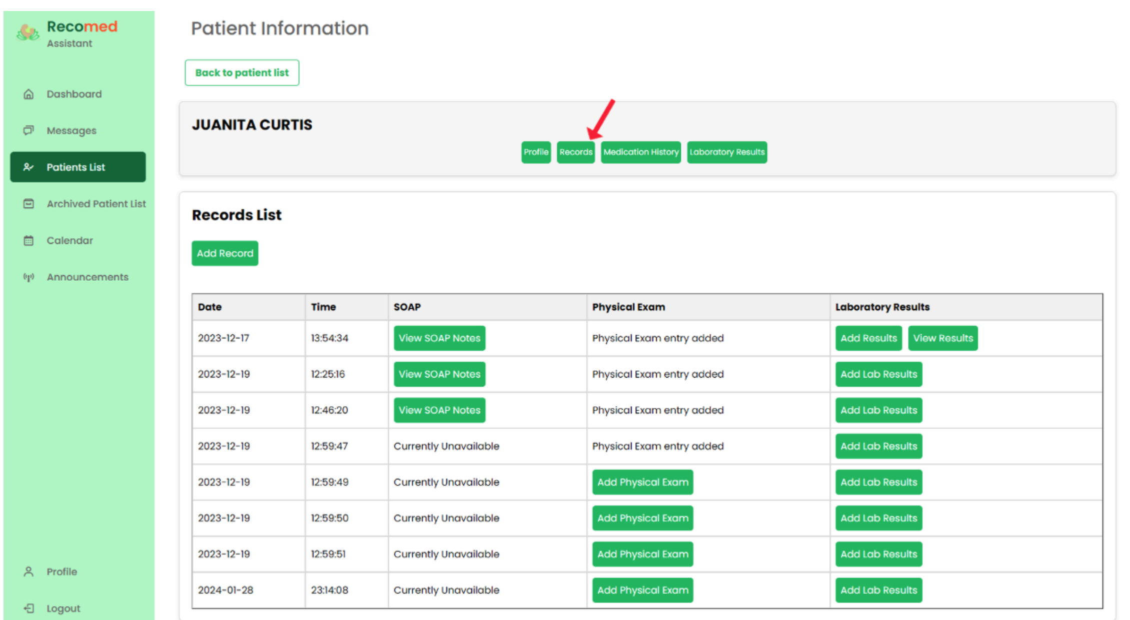

Figure 82. Assistant Patient Records Button

Figure 82 will be displayed once the doctor clicks the ‘Record’ button from the previous image. The Record page enables the doctor to access and review the patient's health Records and Physical Examination Records, with the flexibility to sort them from newest to oldest (This has the same functionality as the ones in the doctor patients list ‘View Profile’ side.

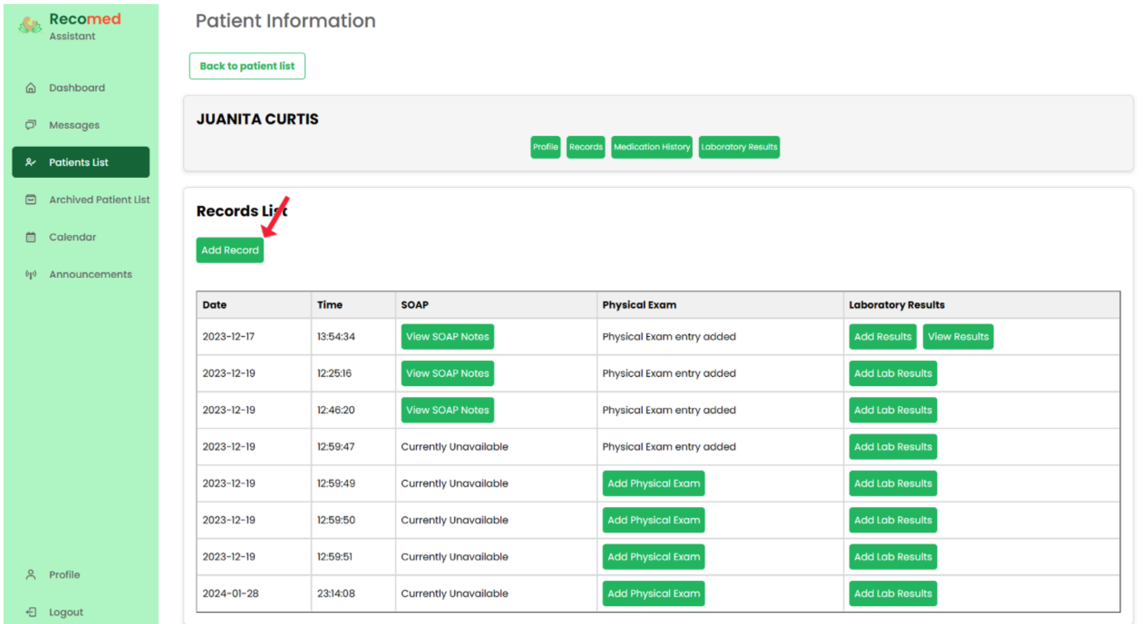

Figure 83. Assistant Patient Add Record Button

Figure 83 shows the ‘Add Record’ button that allows the assistant to add another row of records.

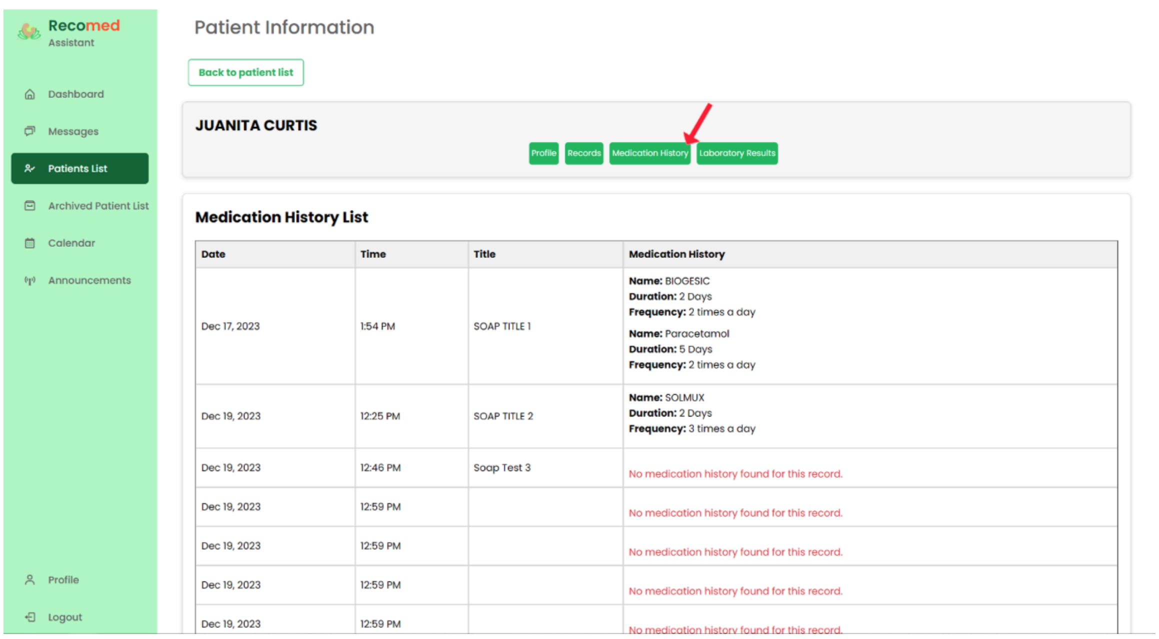

Figure 84. Assistant Patient Medical History Button

Figure 84 shows all the medications that were prescribed by the doctor including the date of prescription, time of when the medication was prescribed, title and medication history.

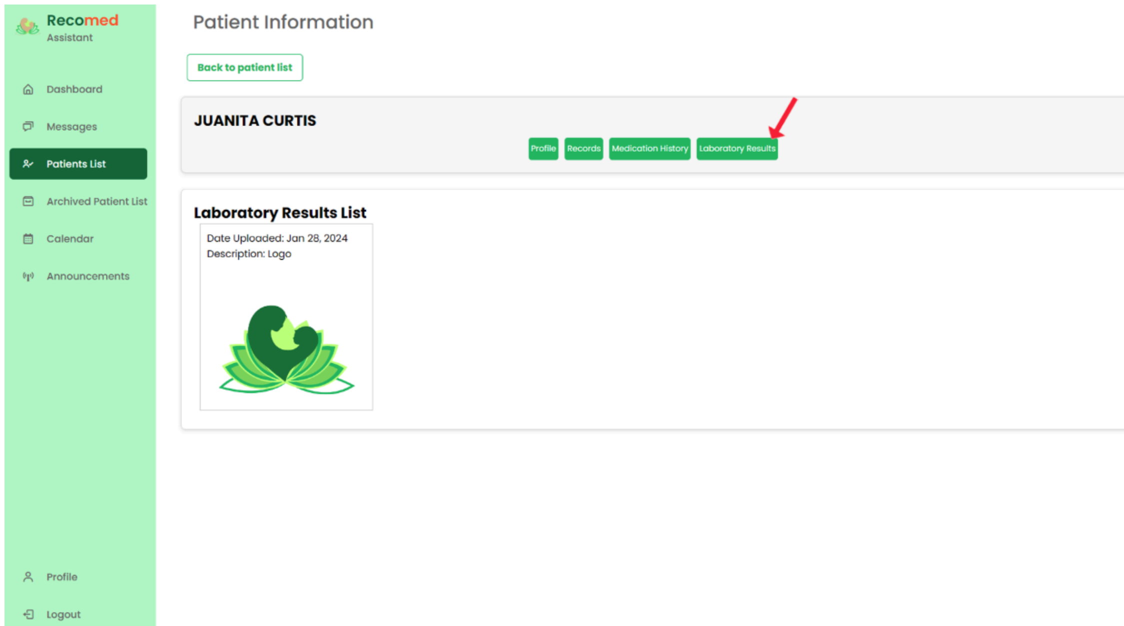

Figure 85. Assistant Patient Laboratory Results Button

Figure 85 allows the assistant to have the capability to enhance patient records by adding lab results pictures, such as ultrasound reports, particularly beneficial when sourced from third parties. This feature proves particularly valuable for the 2012 Multi-Specialty Clinic, which lacks clinical laboratory facilities. The interface encourages a seamless integration of external lab results, enhancing the clinic's diagnostic capabilities. To utilize this feature, the assistant must choose an image for submission and provide an image description. This additional context ensures a comprehensive and organized patient record, empowering healthcare professionals to make informed decisions based on a holistic view of the patient's medical history and diagnostic information.

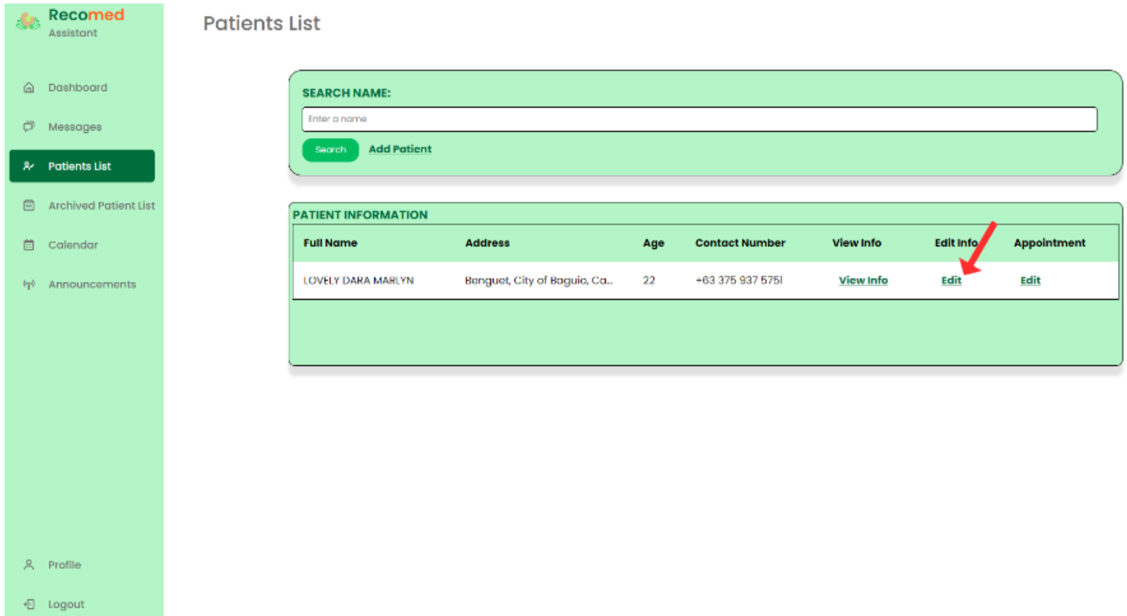

Figure 86. Assistant Edit Patient Information Button

Figure 86 is where the Edit Patient Information Button is located that the assistant can click to be redirected to the next figure.

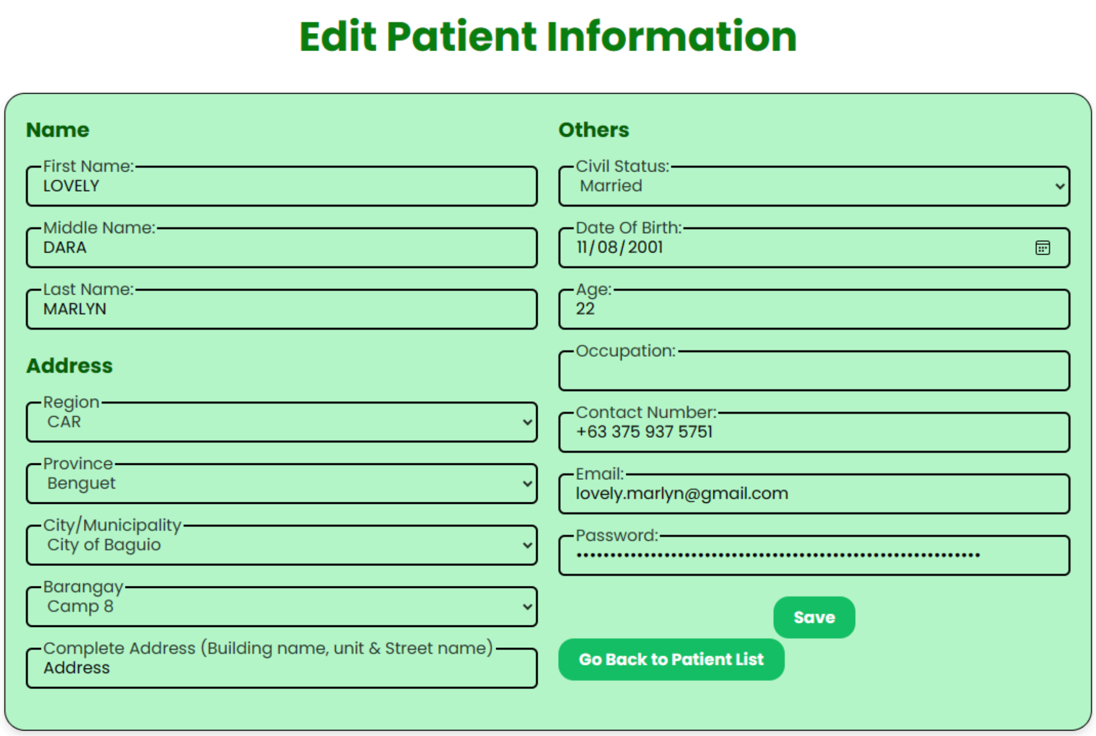

Figure 87. Assistant Edit Patient Information

Figure 87 shows the Edit Patient information page which will prompt after clicking the ‘Edit’ in Figure 86 where the assistant can edit the patient’s information. Specifically the patient’s first name, middle name, last name, address, date of birth, contact number, email and password. For the Appointment (Either 'Edit' will appear if the Patient already booked an Appointment or 'Book' if not). This feature becomes especially valuable in cases where the assistant observes discrepancies or if a patient inadvertently enters incorrect information during a consultation. The primary goal is to provide patients with the means to ensure their records remain accurate and up-to-date.

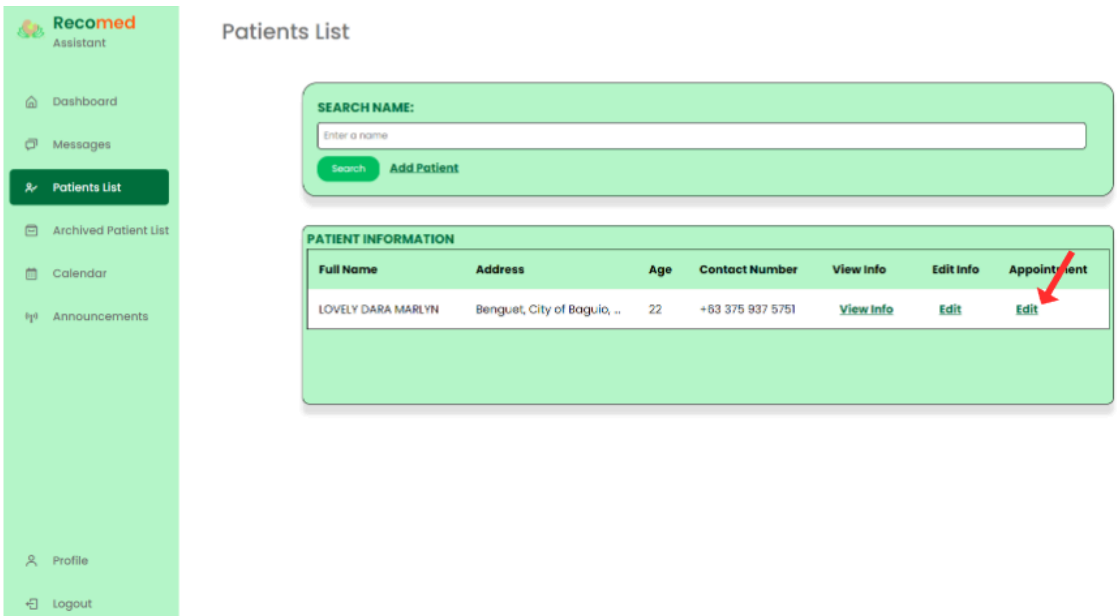

Figure 88. Assistant Edit Patient Appointment Button

Figure 88 is where the Edit Patient Appointment Button is located that the assistant can click to be redirected to the next figure.

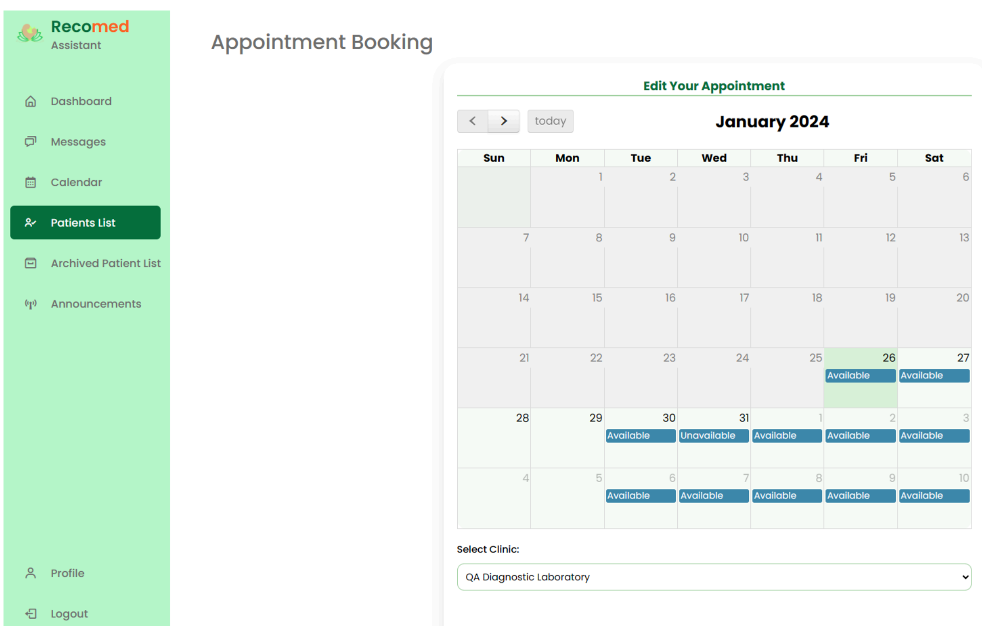

Figure 89. Edit Patient Appointment(Top Part)

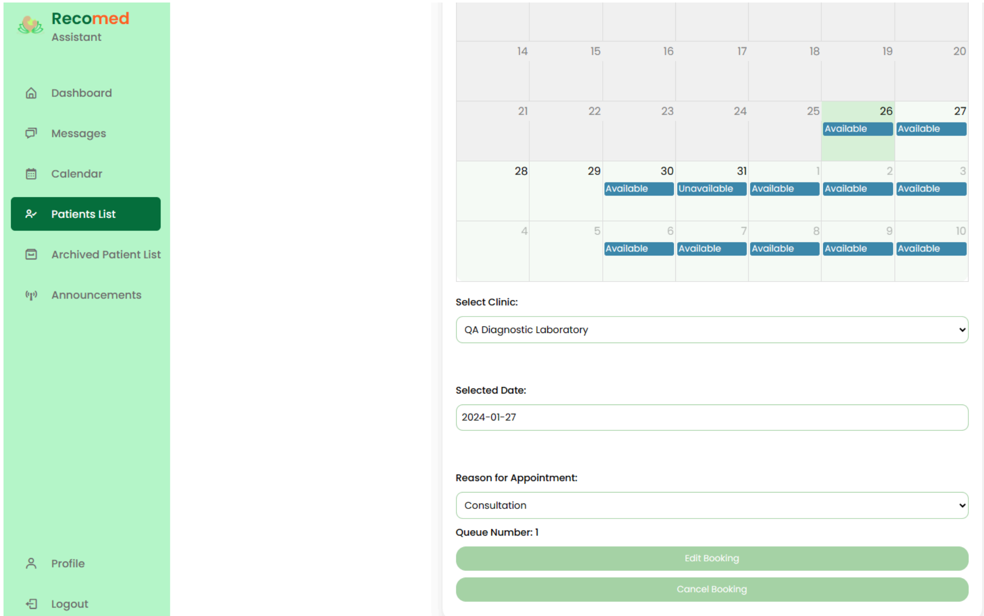

Figure 89. Assistant Edit Patient Appointment(Bottom Part)

Figure 89 shows the feature which allows the assistant to edit a specific patient's booked appointment in order to aid the patient in rebooking and rescheduling their appointment *(same functionality with the appointment page in the doctor side)*. The assistant can help the patient in editing the appointment details, such as the Selected Clinic, the date, the time, and the reason for appointment. The assistant also has the option to cancel the booking of the patient.

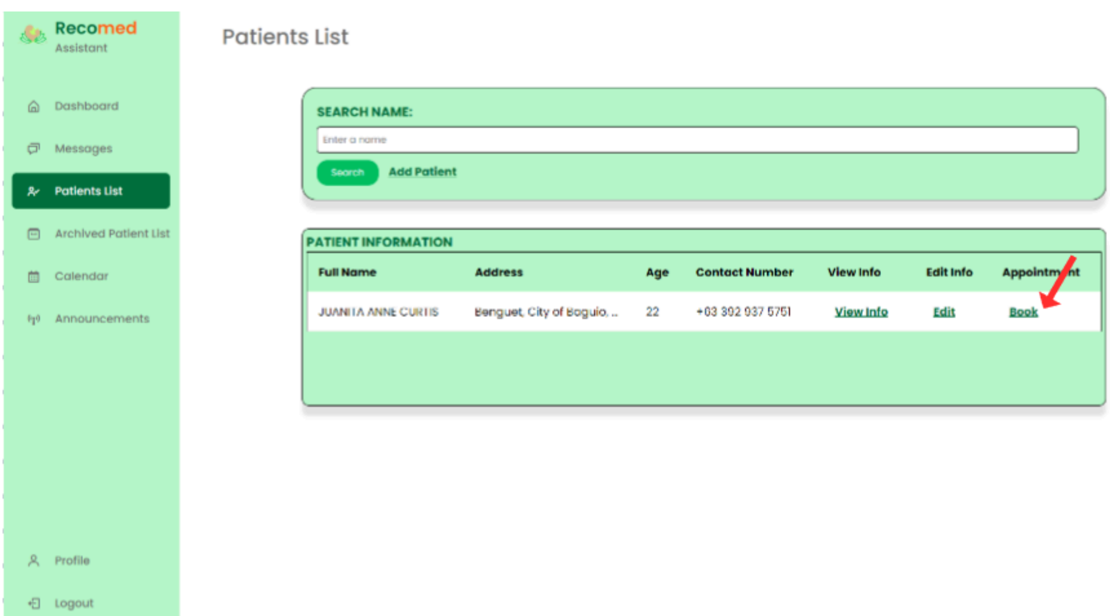

Figure 90. Assistant Book Patient Appointment Button

Figure 90 is where the Book Patient Appointment Button is located that the assistant can click to be redirected to the next figure.

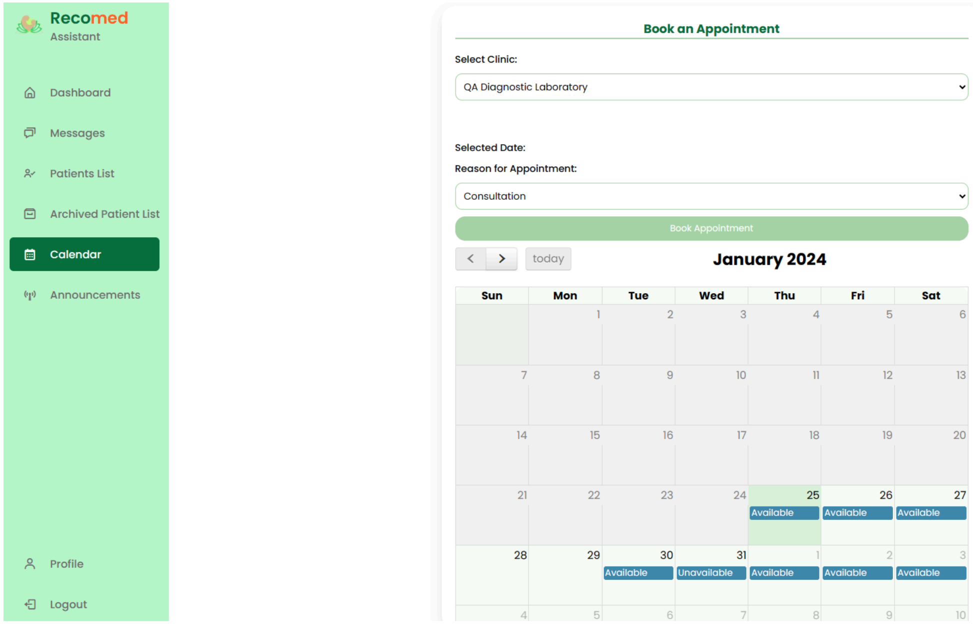

Figure 91. Assistant Book Patient Appointment (Top Part)

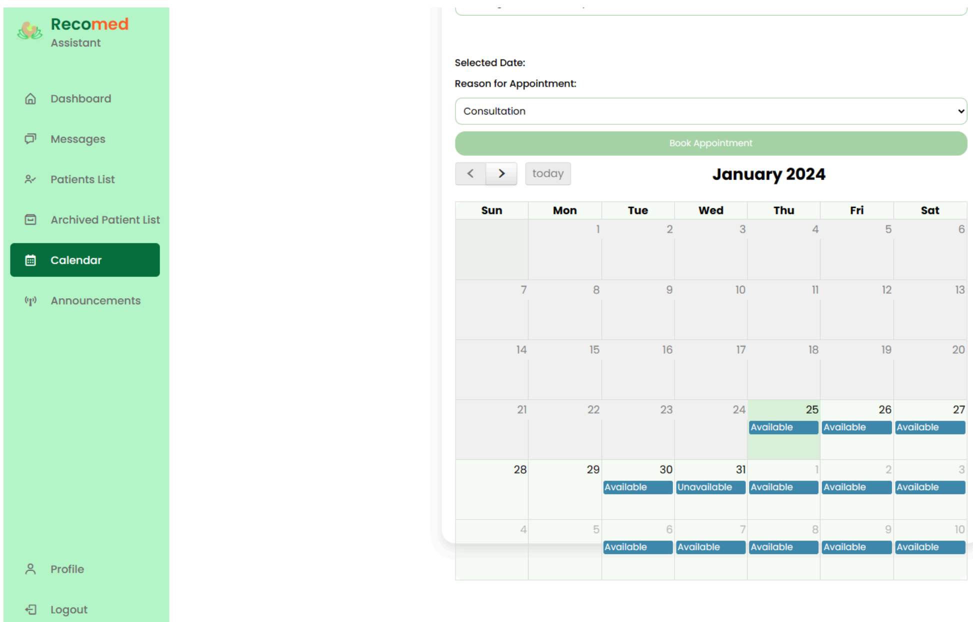

Figure 91. Assistant Book Patient Appointment (Bottom Part)

Figure 91 shows the Appointment Booking Page where the assistant can book an appointment *(same functionality with the appointment page in the doctor side)*. Despite assistants being affiliated with a specific clinic (regardless of which one), they have the flexibility to choose between two clinics—2012 Multi-Specialty Clinic and QA Diagnostic Laboratory Clinic. The booking process includes selecting a clinic, specifying a preferred date, choosing a timeslot, and providing the reason for the appointment. This intuitive system empowers assistants to let the patients easily customize their appointments according to their preferences and needs.

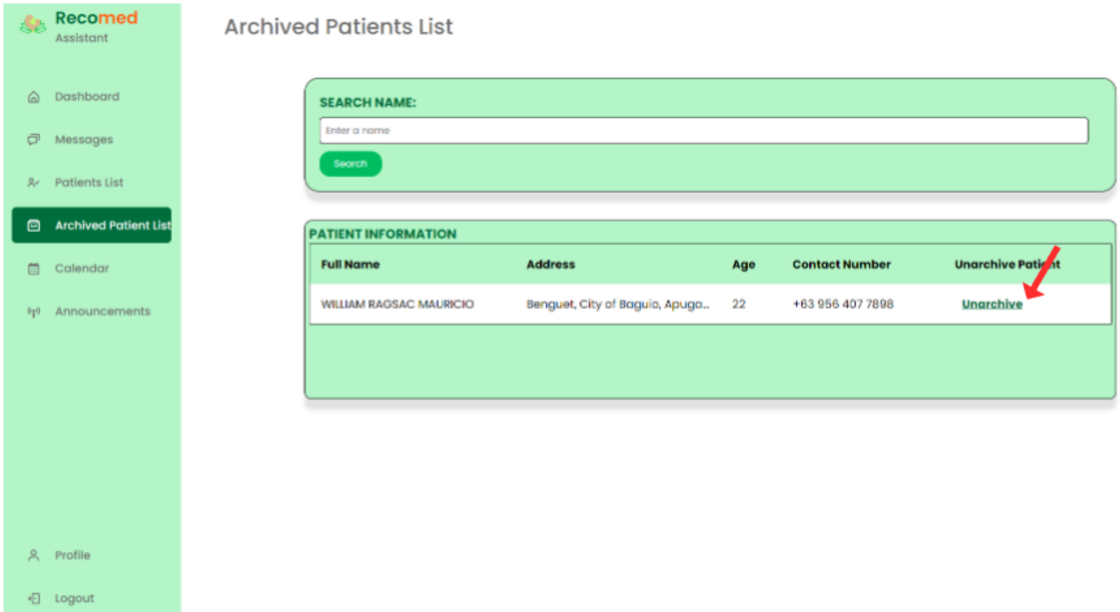

Figure 92. Archived Patient List

Figure 92 shows that the assistant can unarchive a patient when it is deemed necessary.

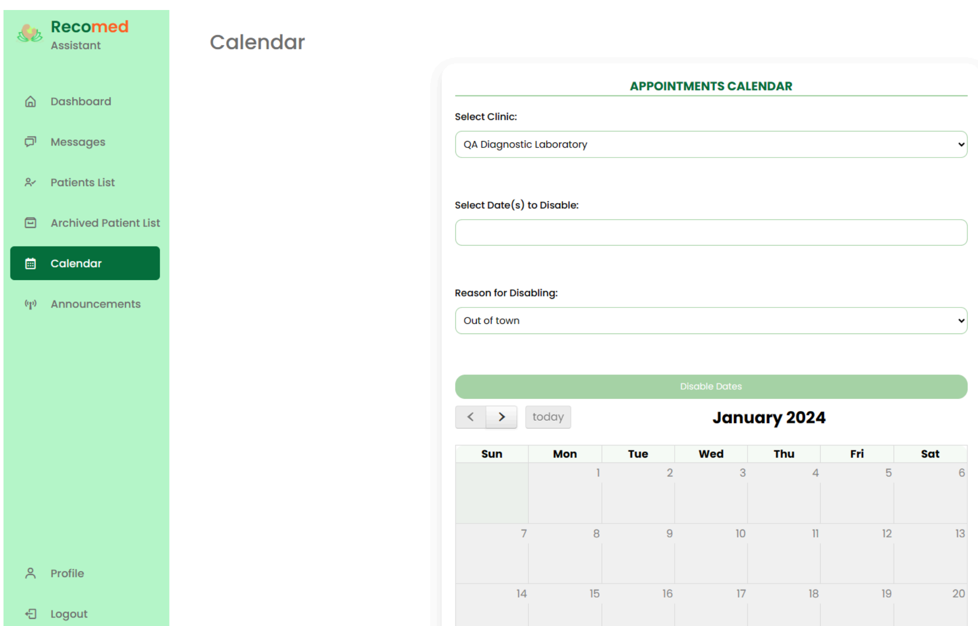

Figure 93. Assistant Calendar(Top Part)

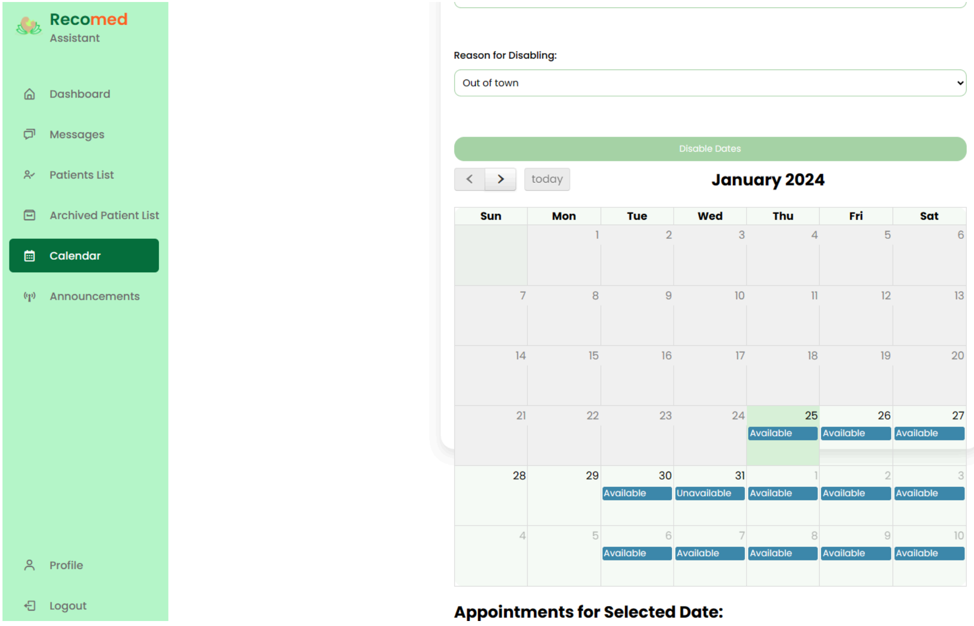

Figure 93. Assistant Calendar(Bottom Part)

Figure 93 shows the calendar wherein the assistant can disable a specific clinic's date and provide the reason why the date will be marked as unavailable, this is typically done in cases of emergencies or when the doctor is not accessible on those dates *(same functionality with the appointment page in the doctor side)*. Additionally, before marking a date as unavailable, the assistant must have a message from the doctor. This feature informs patients of dates wherein appointments will not be catered and booked appointments on the affected dates will be canceled.

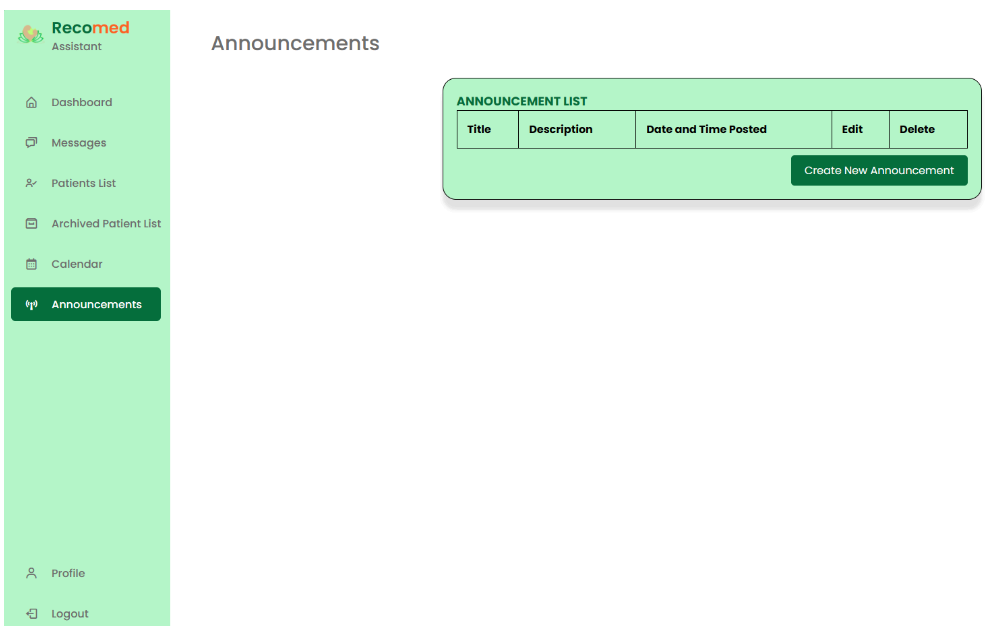

Figure 94. Announcement Section(Blank)

Figure 94 depicts the interface when there are no created announcements yet, either from the doctor or from the assistant themselves.

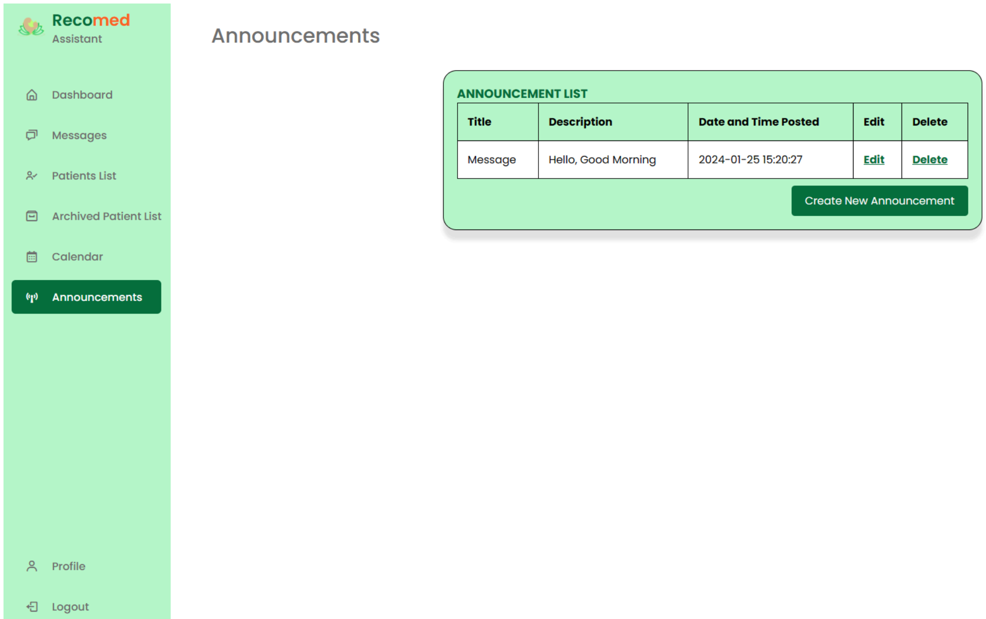

Figure 95. Announcement Section(With Existing Announcement)

Figure 95 shows the announcement page, where the title, description, date, and time of the announcement is displayed *(Figure 94 shows a blank table if no announcement was posted)*. The assistant is able to edit the contents of an existing announcement, and delete announcements already posted. This page serves as the means for the assistant to communicate and relay important information, updates, or notices to both the doctor and patients efficiently.

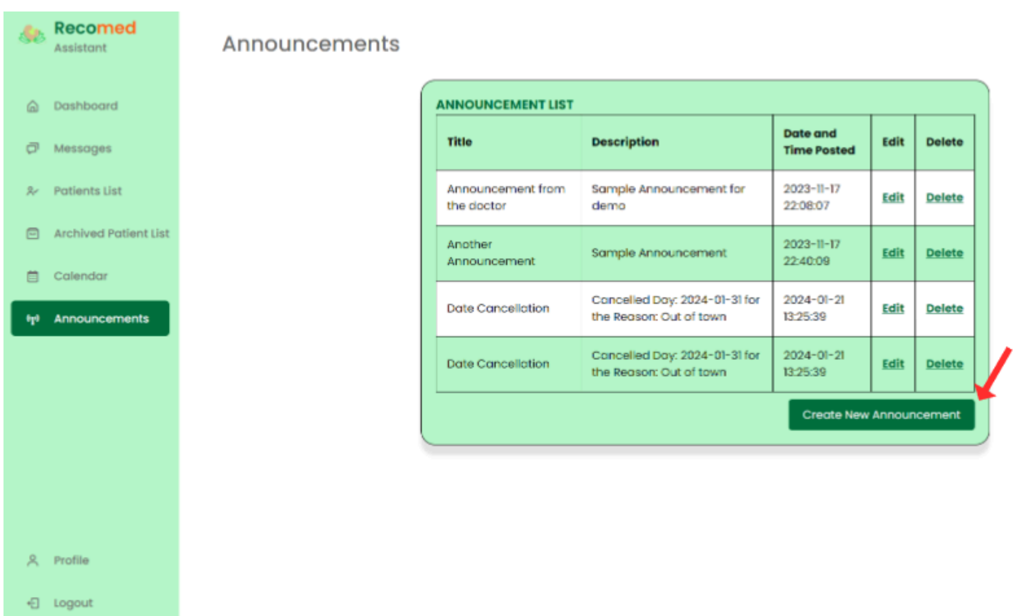

Figure 96. Assistant Create the Announcement Button

Figure 96 is where the Create the Announcement Button is located that the assistant can click to be redirected to the next figure.

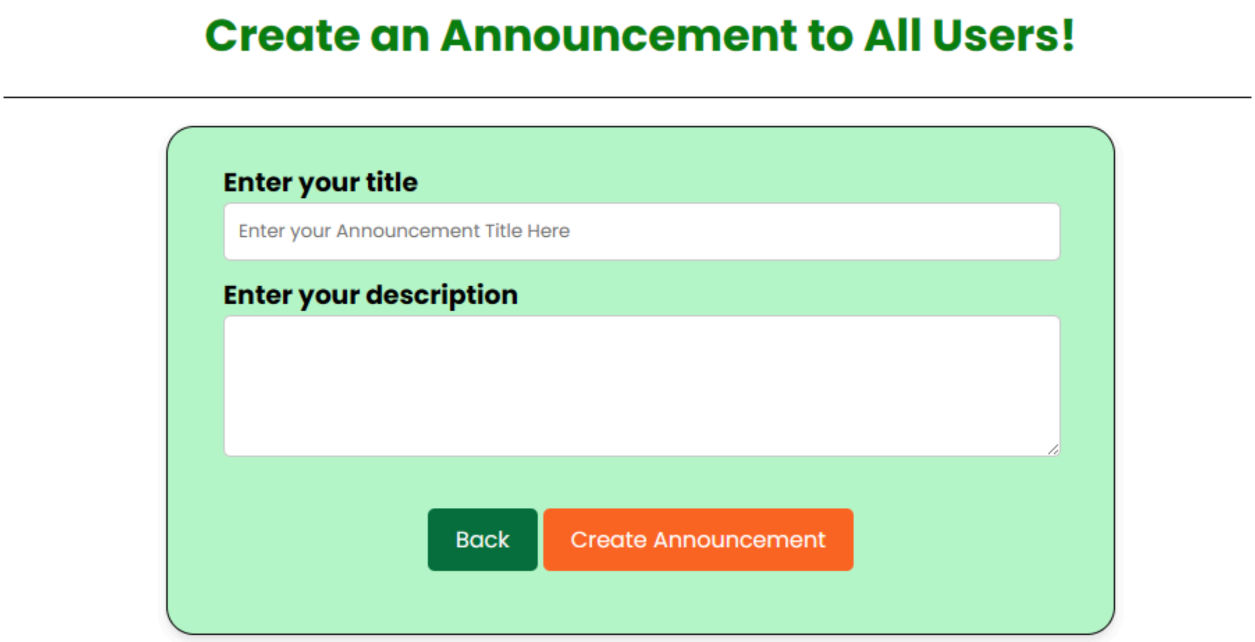

Figure 97. Assistant Create the Announcement Section

Figure 97 shows the page where the assistant can create an announcement. The assistant must first enter the title, then the description of the announcement to be posted. Subsequently, upon entering both the title and description, the assistant can click on the 'Create Announcement' button to create the announcement. This announcement will then be posted on the announcements table visible in the dashboards of assistants, patients, as well as doctors.

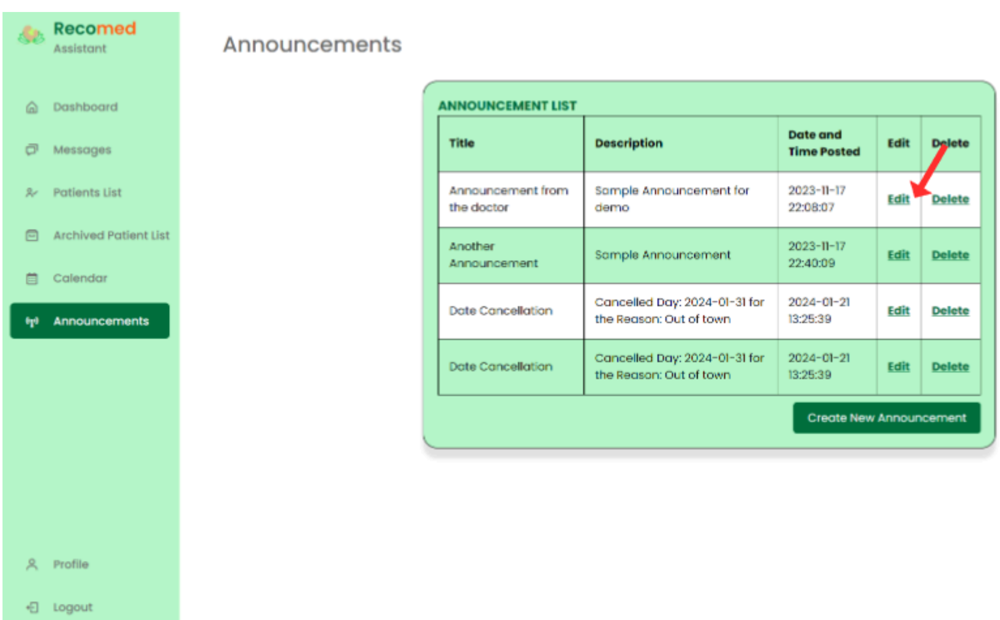

Figure 98. Assistant Edit the Announcement Button

Figure 98 is where the Assistant Edit the Announcement Button is located that the assistant can click to be redirected to the next figure.

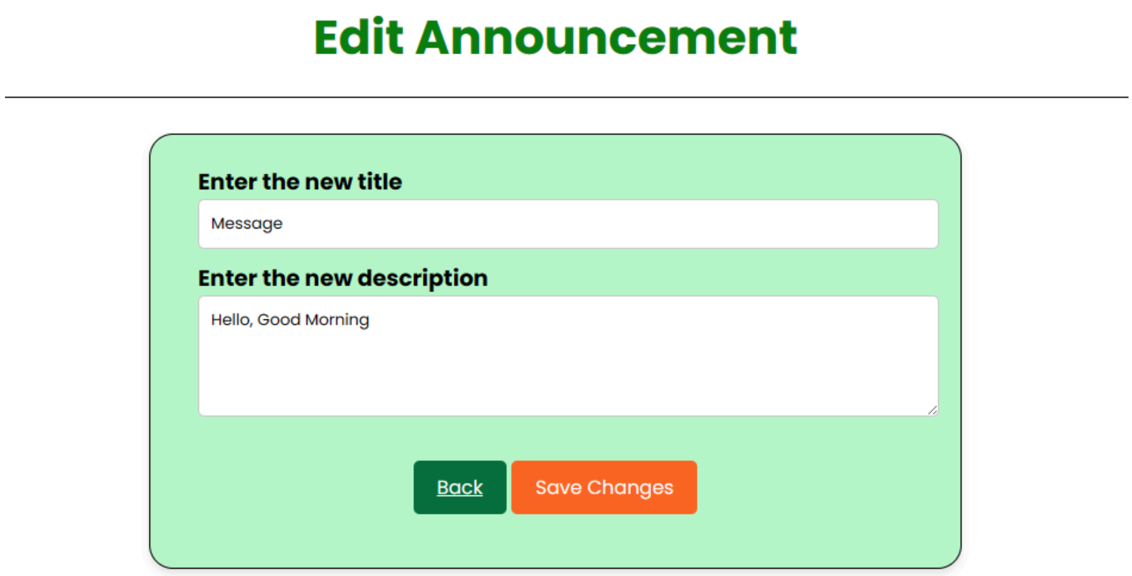

Figure 99. Assistant Announcements(Edit the Announcement)

Figure 99 shows the page where the assistant can edit an existing announcement. The assistant is to enter a new title by editing the current title, if desired. Then, the patient can also edit the description of the announcement. Upon clicking save, the new edited announcement is then posted on the announcement list in the dashboard of the patients, doctor and assistants.

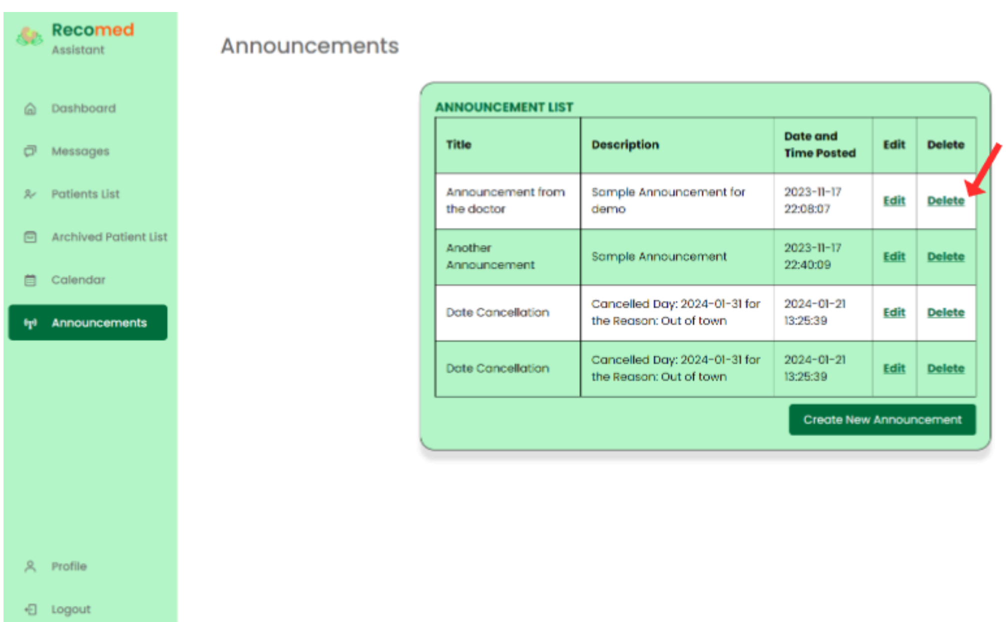

Figure 100. Assistant Announcements(Delete the Announcement)

Figure 100 shows the page where the assistant can delete an existing announcement.

3.3.5.4 Patient Module

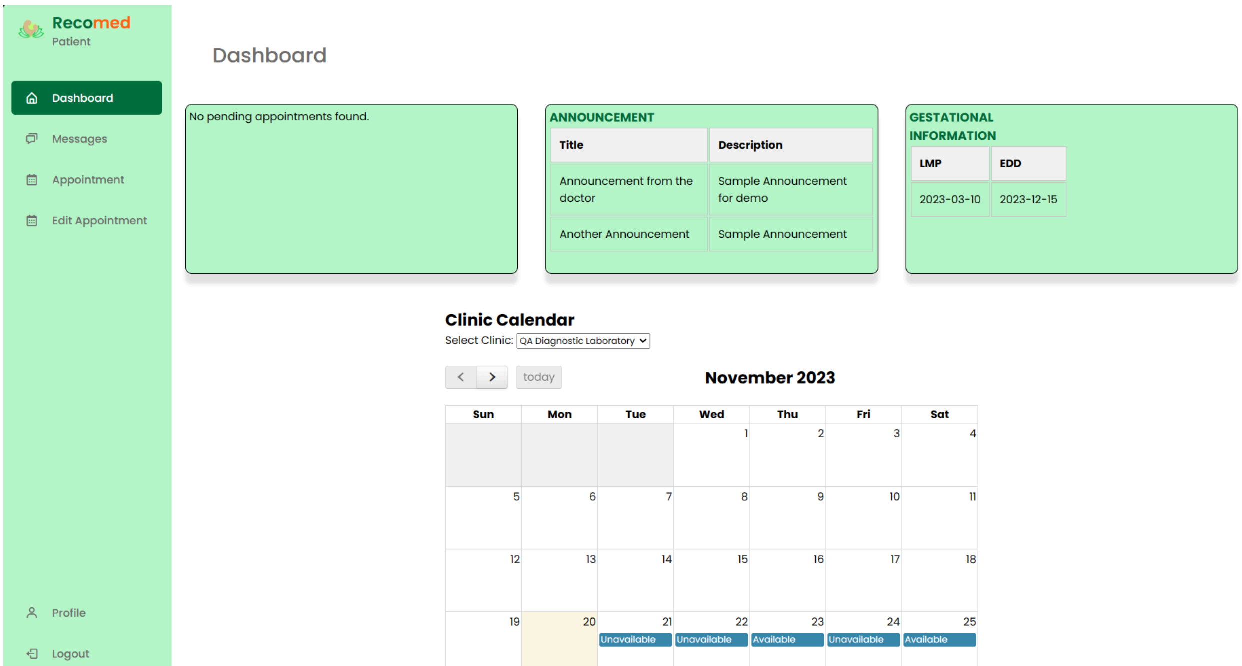

Figure 101. Patient Dashboard (Upper Part)

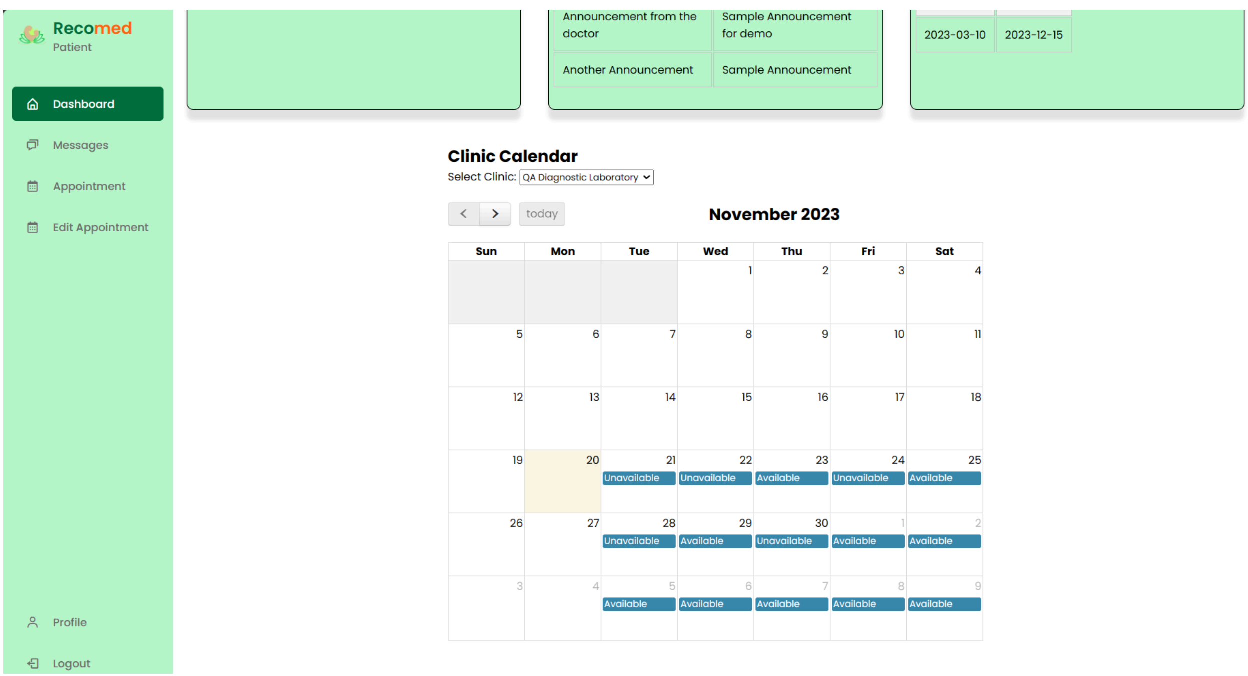

Figure 101. Patient Dashboard (Bottom Part)

Figure 101 shows the patient dashboard where it provides a comprehensive view of the patient's medical engagements. The dashboard is organized into four key sections: the upcoming appointments, announcement, gestational age and a calendar.

The upcoming appointments table highlights clinic name, date, time, reason, and status, ensuring patients stay informed about their imminent healthcare commitments.

The announcement table enables patients to access important messages from both doctor and assistants, complete with titles and detailed descriptions.

The Gestational Age table presents information on the dates of the Last Menstrual Period (LMP) and Estimated Due Date (EDD) of the patient, providing crucial insights, especially concerning her upcoming due date for giving birth. If the patient is not pregnant, this section will remain blank.

The calendar feature serves as a visual representation of the schedule, distinguishing between Available and Unavailable slots for future appointments. This intuitive layout enhances the patient's ability to manage and plan their healthcare effectively.

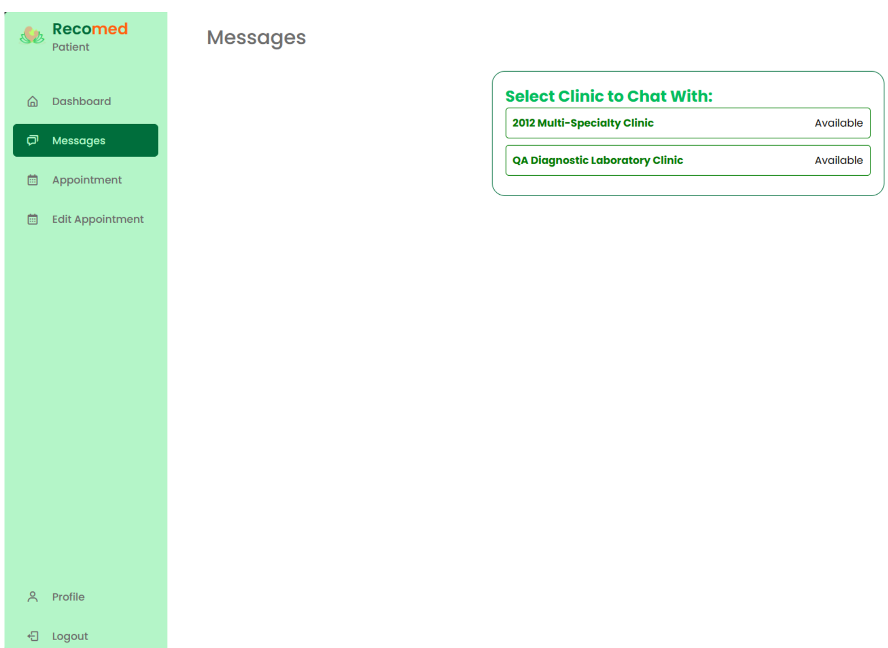

Figure 102. Patient Message Page

Figure 102 shows the messaging page for the patient, featuring communication options within the two clinics: 2012 Multi-Specialty Clinic and QA Diagnostic Laboratory Clinic. This allows the patient to select the specific clinic she wishes to message. Notably, messages sent here are visible not only to the clinic's assistant but also to the doctor, fostering collaborative communication between patients and healthcare professionals.

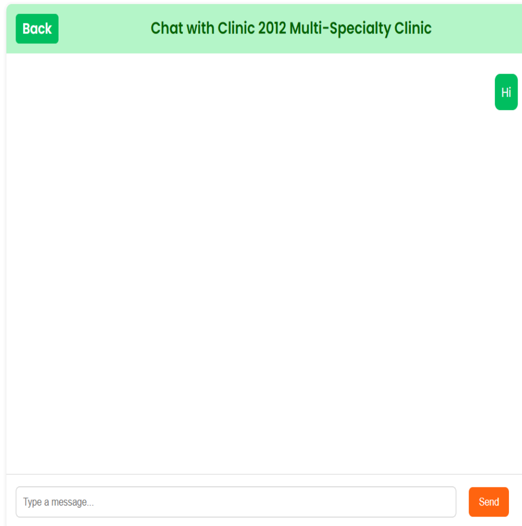

Figure 103. Patient Chat Page

Figure 103 will be displayed after the patient has chosen which clinic to chat with. Similar to a messenger application, this interface enables the patient to type a message. Upon clicking the send button, the message will be directly sent to the designated recipient—the respective clinic's assistant and also to the doctor as mentioned earlier.

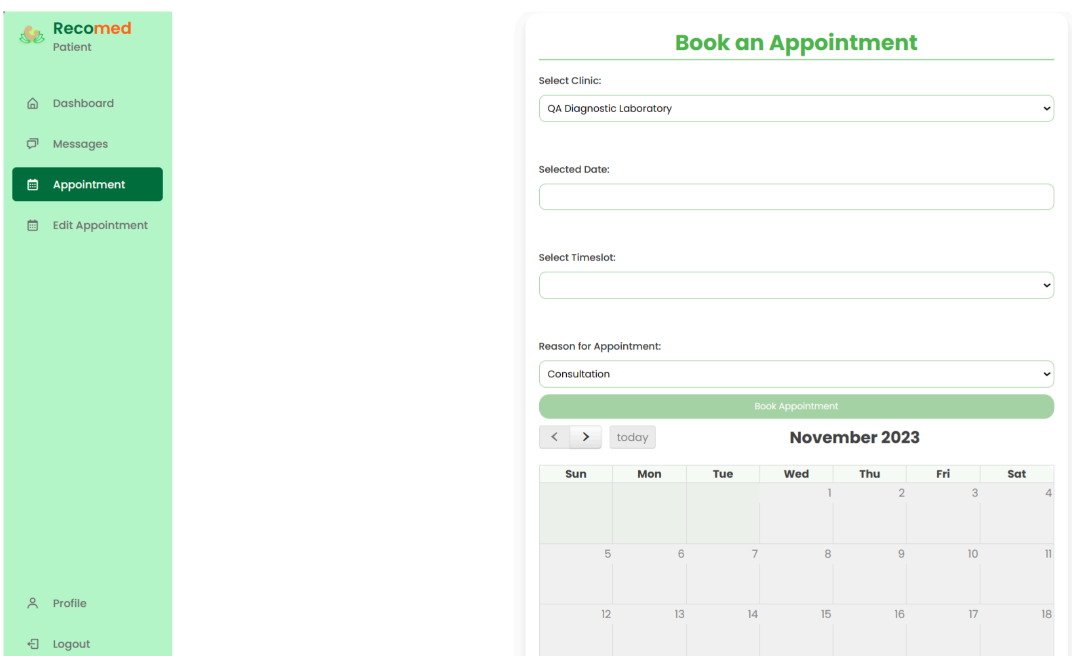

Figure 104. Patient Appointment Booking Page

Figure 104 shows the Appointment Booking Page where the patient can book an appointment. Patients have the option to choose between two clinics—2012 Multi-Specialty Clinic and QA Diagnostic Laboratory Clinic. The booking process involves selecting a preferred date, choosing a timeslot, and specifying the reason for the appointment. This intuitive system empowers patients to easily customize their appointments according to their preferences and needs.

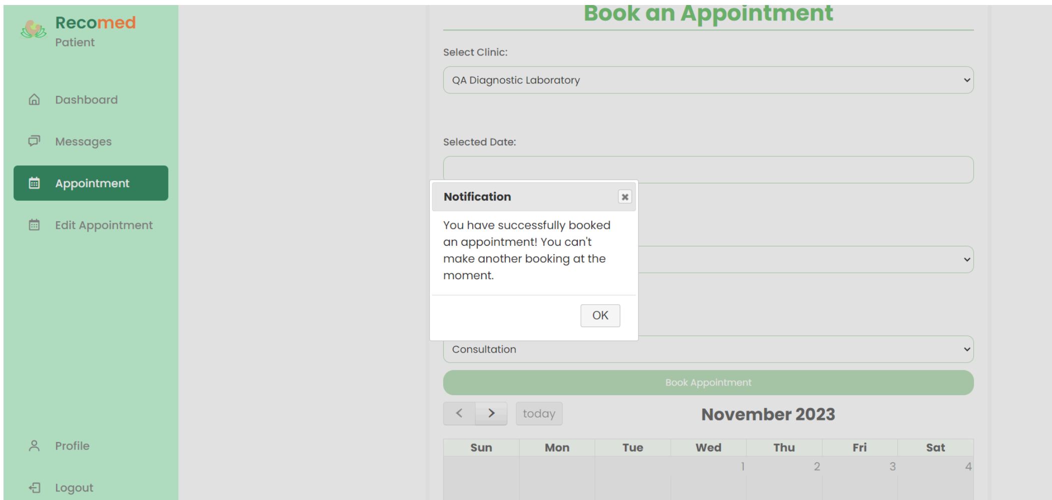

Figure 105. Patient Appointment Booking Page(Patient have existing Appointment)

Figure 105 will be prompt if a patient does have an existing appointment, as each patient is limited to booking one appointment at a time. The option to book a new appointment becomes available only after the day has passed from the existing appointment, or if the appointment has been canceled or updated, specifically in terms of the date.

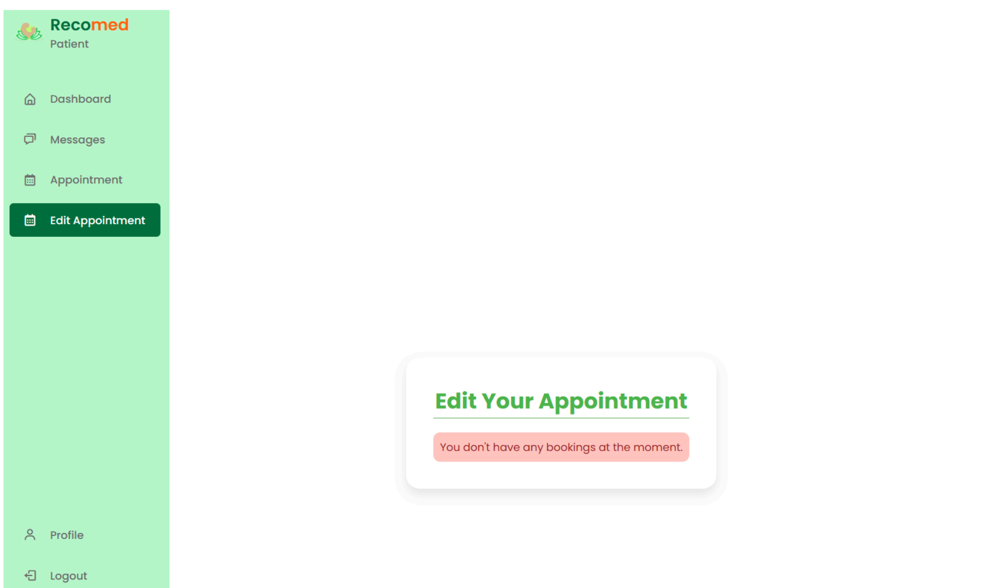

Figure 106. Patient Edit Appointment Page(Displayed for users who haven't booked an appointment yet.)

Figure 106 shows the contents of the View Appointment Page if the patient has no bookings currently made. This lets the patient know that they have not yet booked their appointment and in order to view their appointment, they must first book one.

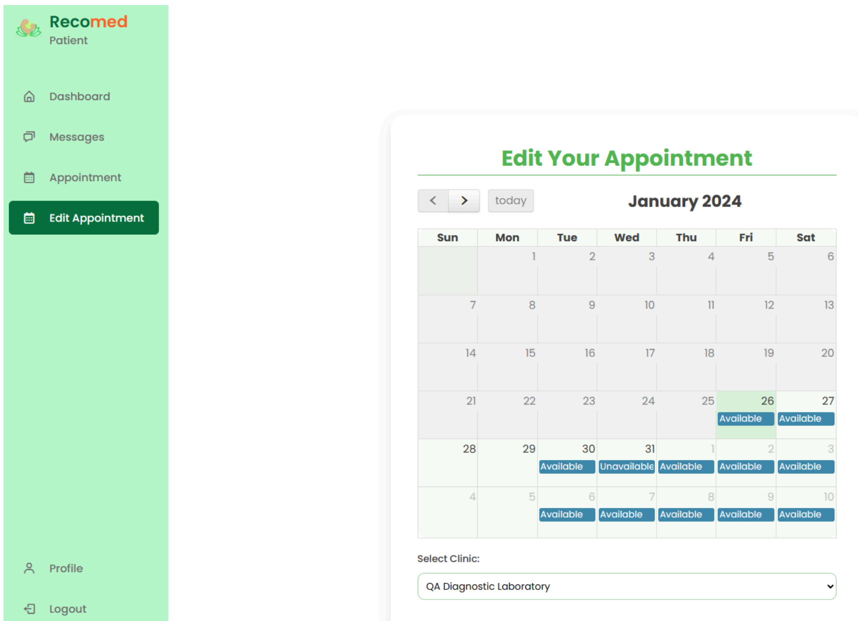

Figure 107. Edit Appointment Page(Top Part)

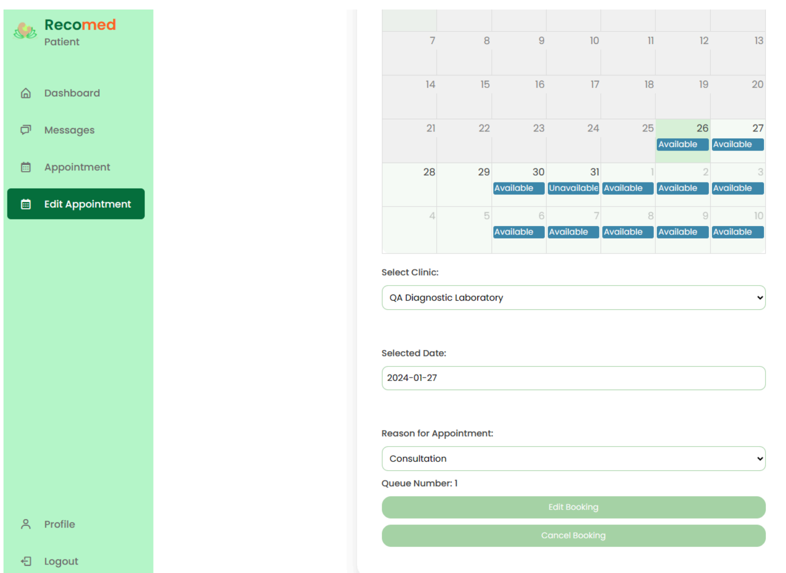

Figure 107. Patient Edit Appointment Page(Bottom Part)

Figure 107 shows the Edit Appointment Page where the patient can edit her appointment. Depending on whether the patient has already booked appointments or not, the interface dynamically switches between Figure 106 and Figure 107. In Figure 107, patients can effortlessly reselect the clinic, adjust the date, and update the reason for their appointment. Additionally, the option to cancel the booking is available, providing patients with convenient control over their appointment details.

3.3.5.5 EDIT PROFILE

DOCTOR

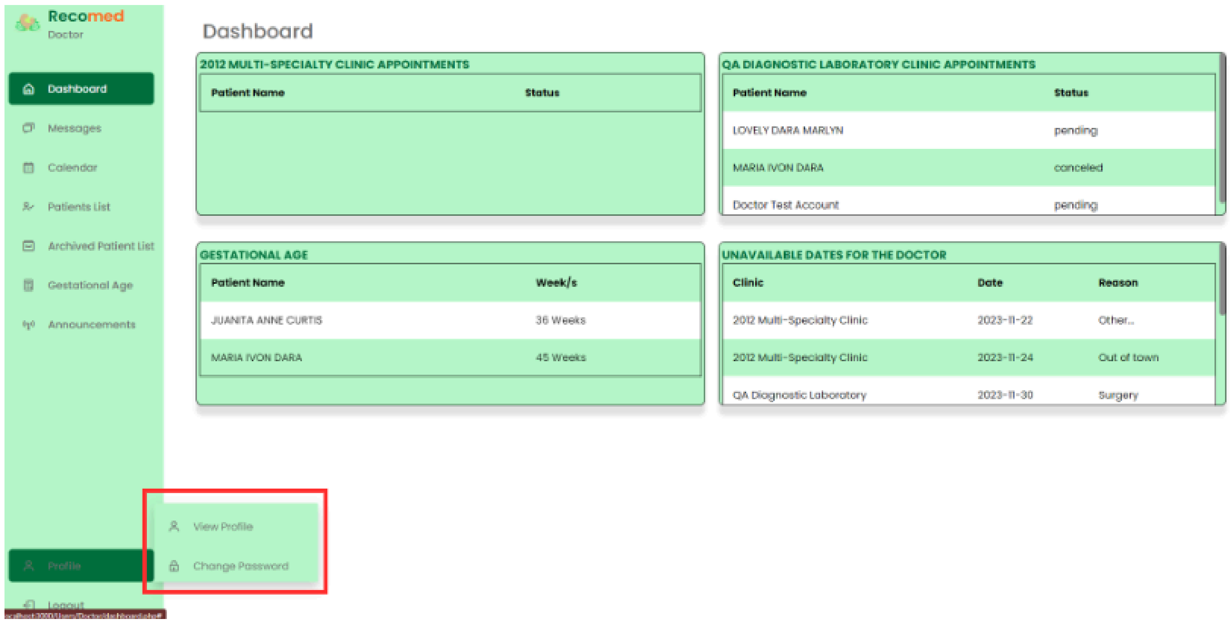

Figure 108. Doctor Profile

Figure 108 illustrates the menu in the profile at the bottom part. Upon hovering over it, a list of actions that the doctor can perform for the profile is revealed. This includes View Profile, and Change Password. The 'View Profile' feature enables users to access and review their profile information and the 'Change Password' option allows users to modify their password for enhanced security.

ASSISTANT

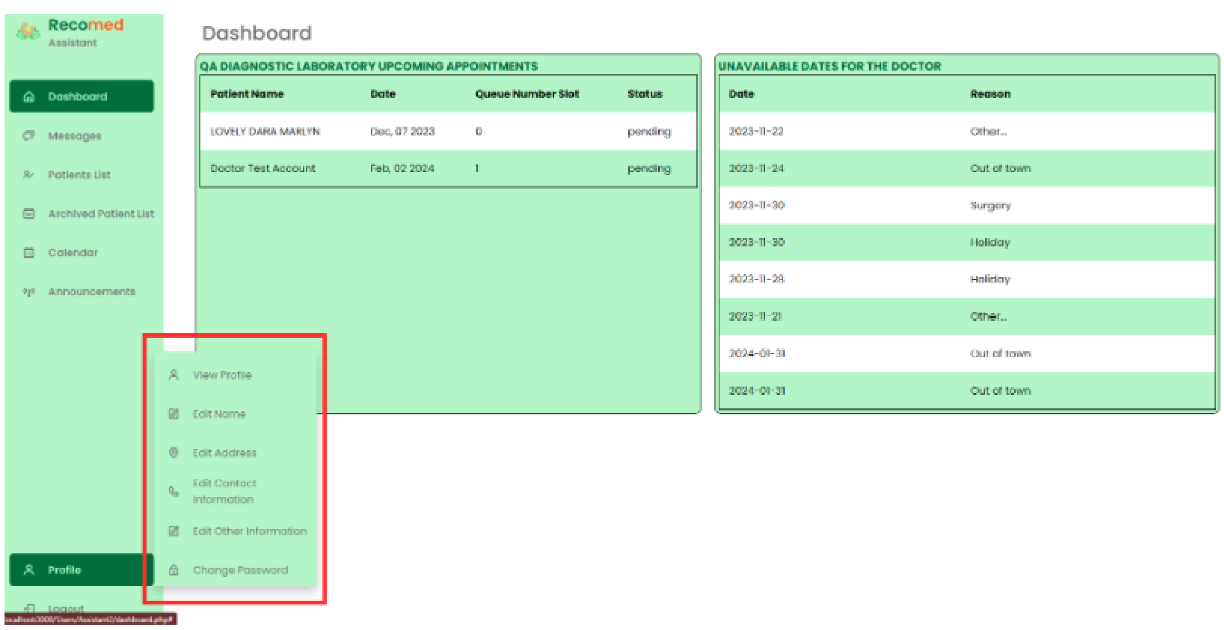

Figure 109. Assistant Profile

Figure 109 illustrates the menu in the profile at the bottom part. Upon hovering over it, a list of actions that the assistant can perform for the profile is revealed. This includes View Profile, Edit name, Edit Address, Edit Contact Information, Edit Other Information and Change Password. The 'View Profile' feature enables users to access and review their profile information. With the 'Edit Name' option, users can modify and update their name, while the 'Edit Address' feature allows changes to the registered address. Managing contact details is made simple through the 'Edit Contact Information' option. Additionally, the 'Edit Other Information' feature enables users to modify additional profile details, including civil status, birthday, age, and occupation. Lastly, the 'Change Password' option allows users to modify their password for enhanced security.

PATIENT

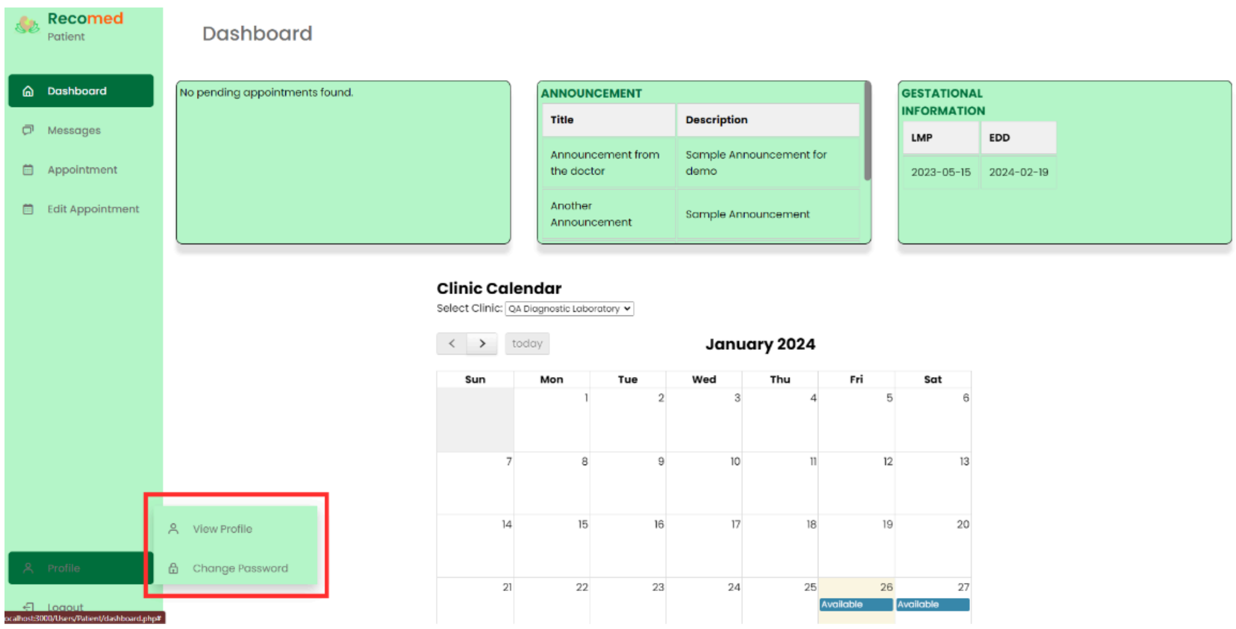

Figure 110. Patient Profile

Figure 110 illustrates the menu in the profile at the bottom part. Upon hovering over it, a list of actions that the patient can perform for the profile is revealed. This includes View Profile and Change Password. The 'View Profile' feature enables users to access and review their profile information and the 'Change Password' option allows users to modify their password for enhanced security.

3.4 Developing and Testing the System

This section presents the tools that the project team utilizes in developing the web application. Section 3.4.1 presents the technologies used that are needed for the project. Section 3.4.2 also presents the testing results.

3.4.1 Development of the System

This section is divided into two sections. Section 3.4.4.1 discusses the selected tools and technologies that the team utilized in developing the system and Section 3.4.4.2 discusses the plans that were utilized to develop the system.

3.4.1.1 Tools and Technologies Used

Table 4 Programming languages to be used

Name of Technology	Brief Description
HTML	HTML (HyperText Markup Language) is the computer language that makes it easy to create websites. The language is comparatively simple to understand and grows more powerful in what it allows someone to produce over time. It features code terms and syntax just like other languages (Hayes, 2022).
CSS	CSS (Cascading Style Sheets) is utilized to stylize items expressed in a markup language like HTML. It divides the website's visual design from its content (Artūras, 2023).
JavaScript	Javascript is a lightweight programming language frequently employed by web developers when designing web pages, applications, and servers to generate more dynamic interactions (Jordana, 2023).

PHP	Many developers use PHP (Hypertext Preprocessor), an open-source server-side programming language, to create websites. Graphical User Interfaces (GUI) can be created using this general-purpose language (Chris, 2021).

The team also used different development tools. The development tools listed below are tools that allow for the usage of the programming languages that were used in the development of the system.

Table 5 Development tools to be used

Name of Tool	**Description**
Visual Studio Code	Visual Studio Code (VS Code) is a free open source text editor by Microsoft. Linux, macOS, and Windows all support VS Code. VS Code has recently become one of the most widely used development environment tools, despite the editor's relatively modest weight and robust functionality. You can add new extensions to VS Code, such as code linting tools, debuggers, and support for cloud and web development (Mustafeez, n.d.).
WAMP	WAMP is an acronym that stands for Windows, Apache, MySQL, and PHP. It has the ability to act as a virtual server on a person's computer. It is great for testing and customizing since the website was localized on the machine and was not yet connected to the web immediately.

The group used phpMyAdmin and MySQL. MySQL was used because it is a free, quick, and dependable database management system that enables users to import, export, update, change, and drop databases. In addition, phpMyAdmin is a well-liked, open-source program that can be used to manage MySQL from a web browser.

Table 6. Database Management Tools to be used

Name of Tool	**Description**
MySQL	The relational database management system MySQL is free and open-source. MySQL stores information in tables made up of rows and columns, just as other relational databases. Structured Query Language, or SQL as it is more frequently known, allows users to define, modify, control, and query data. The most widely used open-source database system worldwide is MySQL. It's used to store and retrieve data in many well-known apps, websites, and services as part of the widely used LAMP technology stack, which consists of a Linux-based operating system, the Apache web server, a MySQL database, and PHP for processing.
phpMyAdmin	Popular open source software called phpMyAdmin may be used to manage MySQL from a web browser. The user interface is used to carry out common operations including managing databases, tables, indexes, permissions, and so on. Additionally, administrators can run any SQL statement directly through phpMyAdmin.

3.4.1.2 Developing the System

In the first iteration, the team provided the proponent with the overall prototype of the project's basic looks and functionalities. The proponent provided feedback and suggestions regarding the color, such as the possibility to have a main theme centered on the color green. The proponent also proposed additional features in the appointment booking such that the appointment process would show the specific time that each clinic is open, as well as in the SOAP process wherein the team was to follow the format the proponent uses for the SOAP process. The second iteration consisted of the same process of showing the proponent the current state of the system, but it already included the feedback which was given in the first iteration. The team also provided a quick rundown of the system's basic functions; shown were the login and sign-up where the user can create an account for access to the system, appointment booking which uses a calendar for the user to select a date to book an appointment, the SOAP process which is conducted in each appointment, the patient list which shows the list of patients, and patient records which show the information of each patient in the system. The proponent then gave a new set of feedback and suggestions for the new state of the project. The concern of the proponent was the security of creating a user account, worrying about how the system can verify users who would use the system. With this concern, the team suggested a security measure to verify the created user account, an OTP feature.

The third iteration consisted of a discussion where the team demonstrated the suggested improvements to the system such as the implementation of the OTP, improvement to the overall look of the system, and the new version of booking system which applies the respective schedules of each clinic. The team also demonstrated the newly developed and implemented feature where users can chat via the Chat Application in the system. After each demonstration, the proponent gave thoughts and suggestions which were mostly regarding the colors, logo, and overall look of the system. The proponent suggested a different shade of green, a different layout for the dashboard, and chose the top designs of suggested logos which the team provided. The team also raised the concern of instances where the proponent will not be able to cater to any appointment on a specific day. The proponent responded by suggesting a feature to disable or set specific dates as 'Unavailable'.

In the fourth and final iteration, the team gave the final rundown of the whole system which consists of the sign-up and login with the implemented OTP for verification of accounts, dashboard with the adjusted layout and color scheme, appointment booking which implements the respective schedule of each clinic, setting of disabled or unavailable dates which sets specific dates as 'Unavailable' in cases the proponent cannot cater to appointments, patient list which shows the list of patients and allows the user to search for a specific patient, patient records which shows the important information of a specific patient, SOAP process which tailored to the format that the proponent uses, and the overall looks of the system which follows the color scheme, layout, and final chosen logo.

3.4.2 Testing the system

The team has run a number of test cases during the testing phase to make sure the web-based application is fully functioning and prepared for deployment. Manual testing was used to create and run the test cases. For the purpose of ensuring that the system adhered to the specifications and was accurate and comprehensive, the team thoroughly carried out the testing and validation.

Table 7. General Function Test Cases

GENERAL FUNCTION TEST CASES				
Scenario: Account Registration				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The User attempts to register an account with valid and complete input.	1. Go to site 2. Click on Sign Up button 3. Fill out the necessary information in the form for account registration 4. Click Sign Up	User should be able to register their account and will proceed to OTP verification	The actual result is what was expected	**PASSED**
The User attempts to register an account with invalid and incomplete input	1. Go to site 2. Click on Sign Up button 3. Fill out the account registration form incompletely 4. Click Sign Up	User should be not be able to register their account and an error prompt will be shown	The actual result is what was expected	**PASSED**
The User proceeds with the OTP verification by entering the correct pin within four minutes	1. Check Email 2. Enter the correct pin 3. Click Enter OTP	The User will have their account verified and are now allowed to login and is redirected to the login page	The actual result is what was expected	**PASSED**

The User proceeds with the OTP verification by entering the correct pin after four minutes	1. Check Email 2. Enter the correct pin 3. Click Enter OTP	An error prompt would pop up stating that the OTP has expired and the user will be asked to request a new OTP	The error prompt only states that the OTP is incorrect	**FAILED**
The User proceeds with the OTP verification by entering the incorrect pin	1. Enter incorrect pin 2. Click Enter OTP	An error prompt will be shown to the User stating that they have entered the wrong pin and will be asked to re enter the correct one	The actual result is what was expected	**PASSED**
Scenario: Account LogIn				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
A verified user tries to login with the correct credentials	1. Go to Log In page 2. Input correct credentials 3. Click Log In	The user will be logged into the website and will have access to its features depending on their user role	The actual result is what was expected	**PASSED**
A verified user tries to login with the incorrect credentials	1. Go to Log In page 2. Input correct credentials 3. Click Log In	The user will not be logged into the website and will be shown an error stating that they have entered the incorrect email or password	The actual result is what was expected	**PASSED**
An unverified user tries to login with the correct credentials	1. Go to Log In page 2. Input correct credentials 3. Click Log In	The user will be notified that they need to verify their account before they can log in and will be redirected to the Verify OTP page	The actual result is what was expected	**PASSED**
An unverified user tries to login with the incorrect credentials	1. Go to Log In page 2. Input correct credentials 3. Click Log In	The user will be notified that they need to verify their account before they can log in and will be redirected to the Verify OTP page	The actual result is what was expected	**PASSED**
Scenario: The User forgot their password				

Test Case Description	Test Steps	Expected Results	Actual Results	PASS/FAIL
The user provides an email that exists in the database and inputs the correct OTP emailed to them and enters matching valid passwords	1. Click on Forgot Password 2. Provide correct Email 3. Check Email for OTP 4. Enter Correct OTP 5. Enter new valid password 6. Confirm new valid password 7. Click button	The User will be asked their email, the OTP they were sent and then they will redirected to the password reset page wherein they will be asked to input and confirm their desired new password	The actual result is what was expected	**PASSED**
The User does not provide an email that exists in the database	1. Click on Forgot Password 2. Provide incorrect Email	The User will see an error prompt stating that the Email does not exist and that they should re enter their email	The actual result is what was expected	**PASSED**
The User provides an email that exists in the database but inputs the incorrect OTP	1. Click on Forgot Password 2. Provide incorrect Email 3. Input the incorrect OTP	The User will see an error prompt stating that they have put the incorrect OTP	The actual result is what was expected	**PASSED**
The User provides an email that exists in the database and inputs the correct expired OTP	1. Click on Forgot Password 2. Provide incorrect Email 3. Input the correct OTP after validity period	The User will see an error prompt stating that they have put the incorrect OTP	The actual result is what was expected	**PASSED**
The User provides an email that exists in the database and inputs the correct OTP but inputs an invalid password	1. Click on Forgot Password 2. Provide incorrect Email 3. Input the correct OTP within the validity period 4. Input password with an invalid password format	The User will see an error prompt stating that they have put an invalid password	The actual result is what was expected	**PASSED**
The User provides an email that exists in the database, inputs the correct OTP, inputs a valid password but the new password and the confirmation of the passwords don't match	1. Click on Forgot Password 2. Provide incorrect Email 3. Input the correct OTP within the validity period 4. Input valid password 5. Input different password for the	The User will see an error prompt stating that their passwords do not match	The actual result is what was expected	**PASSED**

	confirmation			

Table 8. Doctor Module Test Cases

DOCTOR MODULE				
Scenario: The Doctor sends a message through the Chat feature				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor sends a message to the assistant of one of the clinics	1. Click on Messages on the nav bar 2. Click on the assistant of one the clinics' name 3. Type message and hit enter	The Doctor should be able to send a message to the assistant of one of the clinics	The actual result is what was expected	**PASSED**
The doctor sends a message to a patient by clicking on their name	1. Click on Messages on the nav bar 2. Click on the patient's name 3. Type message and hit enter	The Doctor should be able to send a message to the patient	The actual result is what was expected	**PASSED**
The Doctor sends a message to a patient by searching for them by inputting the correct details	1. Click on Messages on the nav bar 2. Type patient's name correctly on the search bar 3. Type message and hit enter	The Doctor should see the patient's name and message them	The actual result is what was expected	**PASSED**
The Doctor attempts to send a message to a specific patient by searching for them but inputs the incorrect details	1. Click on Messages on the nav bar 2. Type patient's name incorrectly on the search bar	Nothing will be displayed below the search bar since the patient does not exist	The actual result is what was expected	**PASSED**
Scenario: The Doctor disables a specific day in the calendar.				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor disables an 'Available' day.	1. Click on the clinic drop down box then click a clinic to see the schedule via the calendar. 2. Click a day on the calendar that has a status of	The calendar will display a status that the disabled date by the Doctor is already 'Unavailable'.	The actual result is what was expected	**PASSED**

	'Available' to be disabled. 3. Click the drop down box to choose a reason for disabling the said date. 4. Finally, click the disable date button.			
Scenario: The Doctor searches for a patient's name				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor inputs the existing first name or the existing last name on the search field.	1. Click the search field. 2. Input the existing first name or the existing last name of the patient. 3. Finally, click the search button.	The system will output the patients with the matched first name or last name.	The actual result is what was expected	**PASSED**
The Doctor inputs the non existing first name or the existing last name on the search field.	1. Click the search field. 2. Input the non existing first name or the non existing last name of the patient. 3. Finally, click the search button.	The system will not output any patients.	The actual result is what was expected	**PASSED**
Scenario: The Doctor adds/registers a patient				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor attempts to add/register a patient account with valid and complete input.	1. Click on the Add Patient hyperlink 2. Fill out the necessary information in the form for account registration 3. Click the Add Patient button	Doctor should be able to register the Patient.	The actual result is what was expected	**PASSED**
The Doctor attempts to register an account with invalid and incomplete input	1. Click on the Add Patient hyperlink 2. Fill out the necessary information in the form for account registration incompletely and invalidly 3. Click the Add	The Doctor should be not be able to register the patient's account and an error prompt will be shown	The actual result is what was expected	**PASSED**

	Patient Button			
Scenario: The Doctor edits a patient's information				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor attempts to edit a patient's account with valid and complete input.	1. Click on the Edit Patient hyperlink 2. Edit out the necessary information about the fields that need to be edited. 3. Finally, click the save button.	The information is successfully edited and the page will be redirected to the patient list page.	The actual result is what was expected	**PASSED**
The Doctor attempts to edit a patient's account with invalid and incomplete input.	1. Click on the Edit Patient hyperlink 2. Edit out the necessary information with invalid and incomplete inputs about the fields that need to be edited. 3. Finally, click the save button.	The invalid and incomplete information wasn't accepted by the system.	The actual result is what was expected	**PASSED**
Scenario: The Doctor archives a patient.				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor attempts to archive the patient.	1. Click on the Archive hyperlink. 2. Click 'Okay' from the alert message..	The patient will be archived and removed from the Patient List.	The actual result is what was expected	**PASSED**
Scenario: The Doctor unarchives a patient.				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor attempts to unarchive a patient.	1. Archived Patient tab. 2. Click on the Unarchived hyperlink. 3. Click 'Okay' from the alert	The patient will be archived again and will be seen in the patient list.	The actual result is what was expected	**PASSED**
Scenario: The Doctor views the information of a patient				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**

The Doctor will view the info of the patient.	1. Click on the View Info hyperlink of the specific patient. 2. Click the Profile button.	The Doctor will be redirected to the patient's profile.	The actual result is what was expected	PASSED
Scenario: The Doctor views the records of the patient				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor views the record of the patient.	1. Click on the Record button of the specific patient.	The Doctor will be redirected to the patient's records.	The actual result is what was expected	PASSED
Scenario: The Doctor adds a record of a patient				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor adds a record of a patient	1. Click on the Record button of the specific patient. 2. Click on the Add Record button of the specific patient.	A record will be added.	The actual result is what was expected	PASSED
Scenario: The Doctor add a patient health record				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor attempts to add a patient health record with valid and correct information.	1. Click on the Patient List tab from the nav bar. 2. Click on the Records button. 3. Click the Add Record button. 4. Click the Add SOAP Notes button. 5. Input the correct and valid information. 6. Click the Submit button.	The Doctor successfully adds a patient health record.	The actual result is what was expected	PASSED

The Doctor attempts to add a patient health record without inputting data in the title field..	1. Click on the Patient List tab from the nav bar. 2. Click on the Records button. 3. Click the Add Record button. 4. Click the Add SOAP Notes button. 5. Leave the title field blank. 6. Click the submit button without inputting any information.	Every clear field will have an error message "This field is empty".	The actual result is what was expected	**PASSED**
The Doctor attempts to add a patient health record without choosing a clinic from the dropdown box.	1. Click on the Patient List tab from the nav bar. 2. Click on the Records button. 3. Click the Add Record button. 4. Click the Add SOAP Notes button. 5. Leave the drop down box blank. 6. Click the submit button without inputting any information.	Every clear field will have an error message "Please select an item in the list".	The actual result is what was expected	**PASSED**
The Doctor attempts to add a patient health record without inputting data in the Subjective field.	1. Click on the Patient List tab from the nav bar. 2. Click on the Records button. 3. Click the Add Record button. 4. Click the Add SOAP Notes button. 5. Leave the Subjective field blank. 6. Click the submit button without inputting any information.	Every clear field will have an error message "This field is empty".	The actual result is what was expected	**PASSED**

The Doctor attempts to add a patient health record without inputting data in the Objective field.	1. Click on the Patient List tab from the nav bar. 2. Click on the Records button. 3. Click the Add Record button. 4. Click the Add SOAP Notes button. 5. Leave the Objective field blank. 6. Click the submit button without inputting any information.	Every clear field will have an error message "This field is empty".	The actual result is what was expected	**PASSED**
The Doctor attempts to add a patient health record without inputting data in the Assessment field.	1. Click on the Patient List tab from the nav bar. 2. Click on the Records button. 3. Click the Add Record button. 4. Click the Add SOAP Notes button. 5. Leave the Assessment field blank. 6. Click the submit button without inputting any information.	Every clear field will have an error message "This field is empty".	The actual result is what was expected	**PASSED**
The Doctor attempts to add a patient health record without inputting data in the Plan field.	1. Click on the Patient List tab from the nav bar. 2. Click on the Records button. 3. Click the Add Record button. 4. Click the Add SOAP Notes button. 5. Leave the Plan field blank. 6. Click the submit button without inputting any information.	Every clear field will have an error message "This field is empty".	The actual result is what was expected	**PASSED**

The Doctor attempts to add a patient health record without inputting data in the Medication Name field..	1. Click on the Patient List tab from the nav bar. 2. Click on the Records button. 3. Click the Add Record button. 4. Click the Add SOAP Notes button. 5. Leave the Medication Name field blank. 6. Click the submit button without inputting any information.	Every clear field will have an error message “This field is empty”.	The actual result is what was expected	PASSED
Scenario: The Doctor views patient health record				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor views patient SOAP notes.	1. Click on the Records button 2. Click on the View SOAP Notes button	The Doctor can view the patient's health record.	The actual result is what was expected	PASSED
Scenario: The Doctor adds a Physical Exam for the patient.				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor adds a Physical Exam with correct input for the patient	1. Click on the Records button 2. Click on the Physical Exam button 3. The Doctor will input the correct values in the field. 4. Click the Submit button.	The Physical Exam will be recorded.	The actual result is what was expected	PASSED
The Doctor adds a Physical Exam without inputting data in the fields.	1. Click on the Records button 2. Click on the Physical Exam button 3. The Doctor will not be inputting any values in the field. 4. Click the Submit button.	The system will prompt an error message that there was no value inputted by the user.	The actual result is what was expected	PASSED
Scenario: The Doctor views the Subjective list of the Patient.				

Test Case Description	Test Steps	Expected Results	Actual Results	PASS/FAIL
The Doctor views the Subject list of the Patient.	1. Click on the Subjective button.	The Subjective List will be viewed by the Doctor.	The actual result is what was expected	PASSED
Scenario: The Doctor views the Objective list of the Patient.				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor views the Objective list of the Patient.	1. Click on the Objective button.	The Objective List will be viewed by the Doctor.	The actual result is what was expected	PASSED
Scenario: The Doctor views the Assessment list of the Patient.				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor views the Assessment list of the Patient.	1. Click on the Assessment button.	The AssessmentList will be viewed by the Doctor.	The actual result is what was expected	PASSED
Scenario: The Doctor views the Plan list of the Patient.				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor views the Plan list of the Patient.	1. Click on the Plan button.	The Plan List will be viewed by the Doctor.	The actual result is what was expected	PASSED
Scenario: The Doctor adds a lab results on a patient's record				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor chooses a file to upload and inputs a description	1. Click on the Add Lab Results button. 2. Click Choose File 3. Select File to upload 4. Input Image Description 5. Click Submit	The Lab Result will be uploaded into the patient's record	The actual result is what was expected	PASSED
The Doctor chooses a file to upload and does not input a description	1. Click on the Add Lab Results button. 2. Click Choose File 3. Select File to upload 4. Leave Image Description blank 5. Click Submit	An error prompt would show up stating that the image description is empty and the submission wouldn't be accepted	The Lab Result is uploaded without an image description	FAILED

Scenario: The Doctor views the Laboratory Results list of the Patient.				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor views the Laboratory Results list of the Patient.	1. Click on the Laboratory Results button.	The Laboratory Results List will be viewed by the Doctor.	The actual result is what was expected	**PASSED**
Scenario: The Doctor adds to the Medication History on a patient's record				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor inputs details on medication name, duration, and frequency	1. Click on the Add Medication button. 2. Input Medication Name 3. Input duration 4. Input frequency 5. Click Submit	The submission will be added to the patient's medication history	The actual result is what was expected	**PASSED**
The Doctor does not provide an input for medication name	1. Click on the Add Medication button. 2. Input duration 3. Input frequency 4. Click Submit	An error prompt would show up stating that the medication name is empty and the submission wouldn't be accepted	The Medication Result is uploaded with the Medication name as null	**FAILED**
The Doctor does not provide an input for duration	1. Click on the Add Medication button. 2. Input Medication Name 3. Input frequency 4. Click Submit	An error prompt would show up stating that the duration is empty and the submission wouldn't be accepted	The Medication Result is uploaded with the duration as null	**FAILED**
The Doctor does not provide an input for frequency	1. Click on the Add Medication button. 2. Input Medication Name 3. Input duration 4. Click Submit	An error prompt would show up stating that the frequency is empty and the submission wouldn't be accepted	The Medication Result is uploaded with the frequency as null	**FAILED**
Scenario: The Doctor views the Medication History list of the Patient.				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor views the Medication History list of the Patient.	1. Click on the Medication History button.	The Medication History List will be viewed by the Doctor.	The actual result is what was expected	**PASSED**
Scenario: The Doctor prints a Medical Certificate				

Test Case Description	Test Steps	Expected Results	Actual Results	PASS/FAIL
The Doctor prints the Medical Certificate of the patient.	2. Click on the Medical Certificate button. 3. Put an input on the impression and remarks. 4. Click the Print button.	The Doctor will be able to print the medical certificate.	The actual result is what was expected	PASSED
Scenario: The Doctor edits the LMP and EDD of a Patient.				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor edits the LMP and EDD of a Patient.	1. Click on the Edit hyperlink 2. The Doctor can choose what to edit between the LMP and EDD. Then inputs a date. 3. Finally, click the Calculate and Store button	The Doctor successfully edits the chosen date.	The actual result is what was expected	PASSED
Scenario: The Doctor adds an Announcement				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor adds Announcement	1. Click on the Create New Announcement button. 2. Input the title and description of the Announcement. 3. Click the Create Announcement button.	The Announcement will be successfully added and the page will be redirected to the Announcement page.	The actual result is what was expected	PASSED
Scenario: The Doctor edits an Announcement				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor edits an Announcement	1. Click on the Edit hyperlink. 2. Input the new title and new description of the Announcement. 3. Click the Save Changes button.	The Announcement will be successfully edited and will redirect to the Announcement page.	The actual result is what was expected	PASSED

The Doctor edits an Announcement without inputting a title and description in the field.	1. Click on the Edit hyperlink. 2. Click the Save Changes button.	There should be no changes if there was no input in the field.	It changes the title to "Announcement from the doctor" and the description to "Sample announcement for demo"	**FAILED**
Scenario: The Doctor deletes an Announcement				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor deletes an Announcement	1. Click on the Delete hyperlink of the specific Announcement to be deleted. 2. Click yes on the alert message.	The Announcement will be successfully deleted.	The actual result is what was expected	**PASSED**

Table 9. Assistant Module Test Cases

ASSISTANT MODULE				
Scenario: The Assistant sends a message through the Chat feature				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Assistant sends a message to the Doctor	1. Click on Messages on the nav bar 2. Click on the name of the Doctor 3. Type message and hit enter	The Assistant should be able to send a message to the Doctor	The actual result is what was expected	**PASSED**
The Assistant sends a message to a patient by clicking on their name	1. Click on Messages on the nav bar 2. Click on the patient's name 3. Type message and hit enter	The Assistant should be able to send a message to the patient	The actual result is what was expected	**PASSED**
The Assistant sends a message to a patient by searching for them by inputting the correct details	1. Click on Messages on the nav bar 2. Type patient's name correctly on the search bar 3. Type message and hit enter	The Assistant should see the patient's name, click on it and message them	The actual result is what was expected	

The Assistant attempts to send a message to a specific patient by searching for them but inputs the incorrect details	1. Click on Messages on the nav bar 2. Type patient's name incorrectly on the search bar and hit enter	Nothing will be displayed below the search bar since the patient does not exist	The actual result is what was expected	**PASSED**
Scenario: The Assistant searches for a patient's record				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Assistant inputs the correct first name or last name of the patient	1. Click the search field. 2. Input the existing first name or the existing last name of the patient. 3. Finally, click the search button or hit enter.	The system will output the patients with the matched first name or last name.	The actual result is what was expected	**PASSED**
The Assistant inputs the incorrect first name and last name	1. Click the search field. 2. Input non-existing first name or non-existing last name of patient. 3. Finally, click the search button or hit enter.	The system will output "No Users Found"	The actual result is what was expected	**PASSED**
The Assistant inputs a name that is a partial match	1. Click the search field. 2. Input first name or last name that are partial matches of a first name or last name of a patient 3. Finally, click the search button or hit enter.	The system will output the patients with the partial match of the input	The actual result is what was expected	**PASSED**
Scenario: The Assistant adds/registers a patient				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Assistant attempts to add/register a patient account with valid and complete input.	1. Click on the Add Patient hyperlink 2. Fill out the necessary information in the form for account registration 3. Click the Add Patient button	Assistant should be able to register the Patient.	The actual result is what was expected	**PASSED**

The Assistant attempts to register an account with invalid and incomplete input	1. Click on the Add Patient hyperlink 2. Fill out the necessary information in the form for account registration incompletely and invalidly 3. Click the Add Patient Button	The Assistant should be not be able to register the patient's account and an error prompt will be shown	The actual result is what was expected	**PASSED**
Scenario: The Assistant edits patient's information				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Assistant edits the patient's account with valid and complete input.	1. Click on the Edit hyperlink 2. Replace the information to be edited 3. Click the Save button	Assistant should be able to edit the patient's account.	The actual result is what was expected	**PASSED**
The Assistant attempts to edit patient's account with invalid and incomplete input	1. Click on the Edit hyperlink 2. Replace the information to be edited 3. Click the Save button	The Assistant should be not be able to edit the patient's account and an error prompt will be shown	The actual result is what was expected	**PASSED**
Scenario: The Doctor adds a record of a patient				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Assistant adds a record of a patient	1. Click on the Record button of the specific patient. 2. Click on the Add Record button of the specific patient.	A record will be added.	The actual result is what was expected	**PASSED**
Scenario: The Assistant views patient SOAP				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Assistant views patient SOAP notes.	1. Click on the Records button 2. Click on the View SOAP Notes button	The Assistant can view the patient's health record.	The actual result is what was expected	**PASSED**
Scenario: The Assistant adds a Physical Exam for the patient.				

Test Case Description	Test Steps	Expected Results	Actual Results	PASS/FAIL
The Assistant adds a Physical Exam with correct input for the patient	1. Click on the Records button 2. Click on the Physical Exam button 3. The Doctor will input the correct values in the field. 4. Click the Submit button.	The Physical Exam will be recorded.	The actual result is what was expected	PASSED
The Assistant adds a Physical Exam without inputting data in the fields.	1. Click on the Records button 2. Click on the Physical Exam button 3. The Doctor will not be inputting any values in the field. 4. Click the Submit button.	The system will prompt an error message that there was no value inputted by the user.	The actual result is what was expected	PASSED
Scenario: The Assistant views the Subjective list of the Patient.				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Assistant views the Subject list of the Patient.	1. Click on the Subjective button.	The Subjective List will be viewed by the Assistant.	The actual result is what was expected	PASSED
Scenario: The Assistant views the Objective list of the Patient.				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Doctor views the Objective list of the Patient.	1. Click on the Objective button.	The Objective List will be viewed by the Doctor.	The actual result is what was expected	PASSED
Scenario: The Assistant views the Assessment list of the Patient.				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Assistant views the Assessment list of the Patient.	1. Click on the Assessment button.	The Assessment List will be viewed by the Assistant.	The actual result is what was expected	PASSED
Scenario: The Assistant views the Plan list of the Patient.				

Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Assistant views the Plan list of the Patient.	1. Click on the Plan button.	The Plan List will be viewed by the Assistant.	The actual result is what was expected	**PASSED**
Scenario: The Assistant views the Medication History list of the Patient.				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Assistant views the Medication History list of the Patient.	1. Click on the Medication History button.	The Medication History List will be viewed by the Assistant.	The actual result is what was expected	**PASSED**
Scenario: The Assistant adds a lab results on a patient's record				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Assistant chooses a file to upload and inputs a description	1. Click on the Add Lab Results button. 2. Click Choose File 3. Select File to upload 4. Input Image Description 5. Click Submit	The Lab Result will be uploaded into the patient's record	The actual result is what was expected	**PASSED**
The Assistant chooses a file to upload and does not input a description	1. Click on the Add Lab Results button. 2. Click Choose File 3. Select File to upload 4. Leave Image Description blank 5. Click Submit	An error prompt would show up stating that the image description is empty and the submission wouldn't be accepted	The Lab Result is uploaded without an image description	**FAILED**
Scenario: The Assistant views the Laboratory Results list of the Patient.				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Assistant views the Laboratory Results list of the Patient.	1. Click on the Laboratory Results button.	The Laboratory Results List will be viewed by the Assistant.	The actual result is what was expected	**PASSED**

Table 10. Patient Module Test Cases

PATIENT MODULE				
Scenario: The Patient sends a message through the Chat feature				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Patient sends a message to one of the clinics	1. Click on Messages on the nav bar 2. Click on one of the clinics 3. Type message and hit enter	The Patient should be able to send a message to either of the clinics	The actual result is what was expected	**PASSED**
Scenario: The Patient books an appointment				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Patient selects a clinic from the dropdown, selects an available date, selects the reason for appointment	1. Click Appointment on the nav bar 2. Select clinic from dropdown menu 3. Click on an available date 4. Select the reason from the dropdown menu 5. Click Book Appointment button	The patient will be booked for an appointment and will see a prompt stating that their booking is successful and they will not be able to book another appointment until their current one is finished	The actual result is what was expected	**PASSED**
The Patient selects a clinic from the dropdown and selects an unavailable date	1. Click Appointment on the nav bar 2. Select clinic from dropdown menu 3. Click on an unavailable date	The Patient will see a prompt message that the date they selected is unavailable and will be asked to select an available date instead	The actual result is what was expected	**PASSED**
The Patient attempts to book another appointment despite having one already	1. Click Appointment on the nav bar	The Patient will see a prompt message that would state that they already have a booking which they can close making them stay on the page they previously are	The actual result is what was expected	**PASSED**
Scenario: The Patient edits details about their booked appointment				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**

The patient edits their booked appointment by changing the details selecting a (different) clinic, a (different) available date, a (different) reason for the appointment	1. Click on Edit Appointment on the nav bar 2. Select clinic from the dropdown menu 3. Click on an available date 4. Select reason for appointment from dropdown menu	The Patient's appointment booking details will be updated	The actual result is what was expected	**PASSED**
The patient attempts to edit a booked appointment even though they don't have one	1. Click Edit Appointment on the nav bar	A message will appear saying that they do not have an appointment booked yet	The actual result is what was expected	**PASSED**
The patient edits their booked appointment by changing the details selecting a (different) clinic, an unavailable date	1. Click on Edit Appointment on the nav bar 2. Select Clinic from dropdown menu 3. Click on unavailable date	An error prompt will show up stating that the date they are trying to select is unavailable and they will be asked to select an available date instead	The actual result is what was expected	**PASSED**
Scenario: The Patient wants to change their password				
Test Case Description	**Test Steps**	**Expected Results**	**Actual Results**	**PASS/FAIL**
The Patient inputs a valid password and re-enters it in the confirm password form	1. Hover on Profile 2. Click Change Password 3. Input Valid Password 4. Re-enter the same password on the confirm password form	The Patient must be able to change their password	The actual result is what was expected	**PASSED**
The patient inputs an invalid password	1. Hover on Profile 2. Click Change Password 3. Input invalid Password	An error prompt will show that the their password input is invalid	The actual result is what was expected	**PASSED**
The Patient inputs a valid password but enters a different password in the confirm password form	1. Hover on Profile 2. Click Change Password 3. Input Valid Password 4. Enter a different password on the confirm password form	An error prompt will show stating that their passwords do not match	The actual result is what was expected	**PASSED**

3.5 Deploying the System

This section discusses the deployment of the system. Section 3.5.1 discusses the identified hardware and software requirements. Section 3.5.2 discusses the implementation and manual. Section 3.5.3 discusses the hosting services for the application.

3.5.1 Hardware and Software Requirements

The hardware and software requirements are not necessary for accessing Recomed as it will be accessed through the web by using any devices. However, we encourage users to utilize the latest browser, maintain a stable internet connection, and ensure their device specifications are sufficient to handle the application's features.

3.5.2 Hosting Services

During the deployment phase, the team looked into different web hosting providers namely, Hostinger, GoDaddy, and Sitegrounds. After careful deliberation, the team chose Hostinger as the web hosting provider after thorough discussions with other web hosting platforms and receiving approval from the proponent. Hostinger provides various hosting solutions, including shared hosting, VPS hosting, and cloud hosting. Additionally, Hostinger is known for its competitive pricing compared to GoDaddy and Sitegrounds, as highlighted by Levanduski (2024) and Stewart (2024). Furthermore, Hostinger offers security features and tools as part of its hosting packages, such as SSL certificates, DDoS protection, and regular backups.

3.5.3 User Manual

The user manual is designed to facilitate a comprehensive understanding for patients, assistants, and the doctor regarding the access and installation processes of the web-based application. It provides detailed instructions on navigating the features of the web-based application specifically on the records management and appointment queueing. The user manual is located in Appendix I for ease of reference and clarity.

Chapter 4

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents the key findings and insights derived from the development of the implemented system and is divided into 3 sections. Section 4.1 provides an overview of the main findings and insights gathered during the project implementation. Section 4.2 summarizes the key findings and insights related to the objectives mentioned previously in Chapter 1. Section 4.3 offers recommendations for additional enhancements and improvements to be integrated into the created system.

4.1 Summary

Throughout the project, the team researched the challenges of the old-school paper-based medical record systems. They closely examined the struggles faced by Dra. Carolina Balangay in handling patient records and appointments at her clinics, pinpointing issues like unreadable handwriting, limited storage, and difficulty accessing information during emergencies.

Realizing the need for a more effective and modern solution, the study recommended a shift towards electronic health records (EHR) and electronic medical records (EMR) systems. The advantages of this move were underscored, including better accessibility, clearer medical data, and more streamlined data management processes. The study also pointed out three specific EHR systems known for their solid security measures and adherence to industry best practices.

The creation of Recomed, an automated patient record management system, followed an iterative model with a focus on flexibility throughout the software development life cycle (SDLC). The approach involved gathering functional and non-functional requirements through interviews, designing the system using various diagram techniques, and implementing it through rigorous testing and deployment phases.

The team identified detailed functional requirements for each user role (patient, assistant, doctor), covering key aspects like registration, login/logout, profile management, appointment queueing, messaging, and record creation and viewing. Non-functional requirements, surrounding attributes such as availability, performance, reliability, scalability, security, and usability, were also outlined.

Recomed was designed with separate modules for doctors, assistants, and patients, tailoring specific functionalities to each role. The system architecture, depicted through diagrams, showcased the relationships and technologies involved. Use case diagrams illustrated user interactions, while data flow diagrams provided insights into information flow within the system and entity relationships diagram for a reference in creation of the database.

The following sections of this chapter will explore the conclusions drawn from the findings and experiences in this project, along with recommendations for further enhancements and implementations. The insights gained from developing and deploying Recomed are expected to play a crucial role in shaping the future of patient record management in healthcare clinics.

4.2 Conclusion

The project aimed to elevate healthcare services with the introduction of Recomed, an online patient record management system. The five specified objectives were focused on enhancing the efficiency of handling patient information, automating medical certificate generation, establishing a robust appointment system, enabling secure messaging, and providing a scalable solution for seamless data exchange. Recomed, designed to be accessible through web browser-enabled devices such as laptops and personal computers, was envisioned to reform clinic operations.

The foundation of the project was laid upon a comprehensive understanding of the intricacies of the clinics' daily operations, acquired through extensive interviews with the doctor. These insights played a crucial role in shaping the project, leading to the creation of essential tools like the Entity Relationship Diagram and Data Flow Diagrams. These visual aids ensured a seamless alignment of the development process with the clinics' workflow, features, and module outlines.

The first objective is the efficiency of handling patient information. The core objective of enhancing the efficiency of handling patient information was successfully addressed through the implementation of Recomed. The project meticulously tackled the intricacies of managing extensive patient records, ensuring accuracy, accessibility, and efficient organization. By understanding the daily operations of clinics and incorporating essential tools like the Entity Relationship Diagram and Data Flow Diagrams, Recomed seamlessly aligned with clinic workflows, features, and module outlines.

Secondly, automating medical certificate generation. Recomed played a pivotal role in automating the generation of medical certificates, streamlining the process and reducing the burden on healthcare providers. Through a comprehensive understanding of clinic operations and the identification of challenges, the system was crafted to provide a systematic response to the complexities involved in certificate generation. The tangible impact of Recomed is evident in its ability to simplify intricate tasks, ensuring accuracy and reliability.

Thirdly, establishing a robust appointment system. The integrated scheduling system within Recomed successfully addressed the challenges of appointment management, fostering improved coordination between healthcare providers and patients. The insights gained from extensive interviews with doctors and the subsequent creation of visual aids ensured that the appointment system seamlessly aligned with clinic workflows. Recomed's deployment guide further empowers end-users, facilitating the smooth adoption and utilization of the system.

Fourthly, enabling secure messaging. The objective of enabling secure messaging was met through Recomed's implementation. The system not only enhances communication between healthcare providers and patients but also ensures the security and confidentiality of sensitive medical information. By understanding the challenges faced by clinics and crafting a solution that responds systematically, Recomed sets a new standard for secure and efficient messaging in healthcare.

Lastly, providing a scalable solution for seamless data exchange. Recomed was designed as a scalable solution for seamless data exchange, laying the foundation for the future of patient record management in healthcare. The insights gained from both the development and deployment phases set the stage for ongoing improvements. This project signifies the initiation of a transformative journey towards the modernization of healthcare information management, ensuring that Recomed's impact transcends the present and continues to evolve with the changing landscape of healthcare.

In its implementation, Recomed emerges as a tangible and effective solution to the identified challenges in the clinics' business processes. It simplifies the intricate task of managing patient records, ensuring accuracy, accessibility, and efficient organization. The integrated scheduling system tackles the challenges of appointment management, fostering improved coordination between healthcare providers and patients. The deployment guide empowers end-users with essential resources for the smooth adoption and utilization of the system.

As Recomed takes its place in the clinics, its impact is poised to transcend the present, laying the background for the future of patient record management in healthcare. The insights gained from the development and deployment phases set the stage for ongoing improvements. This project signifies the initiation of a transformative journey towards the modernization of healthcare information management.

4.3 Recommendations

a. User FeedBack mechanism

   Encourage the incorporation of a user feedback mechanism within the system to continuously gather insights from the proponent, assistant, and patients. Regular feedback loops will aid in identifying areas for improvement and adapting the system to evolving user needs.

b. Artificial Intelligence Integration

   Explore the integration of artificial intelligence (AI) capabilities, such as predictive analytics to anticipate potential health risks during pregnancy and gynecological conditions. The system can analyze patient data to identify patterns, providing healthcare providers with early insights into complications or preventive measures.

c. Automated Notifications, Alarms and Responses

   Enable the system to automatically notify the proponent, assistants, and patients about upcoming appointments, incoming surgeries, and medication adherence. Additionally, implement automated responses for patient messages, reassuring them with messages like "I will get back to you as soon as possible."

d. Mode of Payment

   Consider implementing a secure and user-friendly online payment system to streamline financial transactions within the clinics. This addition can enhance the overall user experience, providing convenience for both the proponent and patients. Integrating diverse payment methods and ensuring robust security measures will contribute to the efficiency of clinic operations.

e. Application Based System

   Explore the development of a dedicated mobile application complementing the website. This expansion allows users, including the proponent, assistants, and patients, to access Recomed seamlessly from their smartphones or tablets. The application should mirror the functionalities of the website, ensuring a consistent and user-friendly experience across different platforms. This transition to a mobile application can enhance accessibility and improve user engagement.

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APPENDICES

APPENDIX A. 1ST INTERVIEW SUMMARY

The initial interview took place at the first clinic located at La Azotea Building on March 5, 2022 from 10:00 AM to 11:00 AM. Follow-up questions were asked periodically through phone calls and Messenger chats to ensure that the system design aligned with the requirements.

Interviewer How many clinics do you have?

Proponent So eto yung isa, sa 2nd floor ng La azotea bldg., May isa pa akong clinic, sa kayang street naman.

Interviewer What does a patient do when they enter the clinic?

Proponent So normally, kung hindi masyadong busy yung clinic, since shared clinic dito (Azotea Clinic) and sa kabila (Kayang Clinic), they go to the secretary, sasabihin yung complaint, unless previous patient, kung previous (patient) kasi may file na, meron na siyang record, tas yun nalang ilalabas and ibibigay saakin. Pero kapag first time ng patient, isusulat ni secretary yung details like yung name, birthday, address ganon, before informing me na may patient ako. Tapos yun na yung check up ng patient na ilalagay ko sa record niya. Pero if busy yung clinic, madaming patients, binibigay na ni secretary yung form kay patient para siya na mag fill up ng details habang inaasikaso niya yung other patients. After ng check up pupunta nalang sa secretary para ihandle yung payment or if may gamot na bibilhin.

Interviewer Same po ba yung process for the other clinic?

Proponent Oo same din, may nurse sa labas, which is uh, halimbawa papasok yung patient, sasabihin niya kung anong complaint, unless previous patient, kung previous (patient) kasi may file na, meron na siyang record, tas yun nalang ilalabas, may number kasi siya after maging first patient. Pero wala dito sa record yung diagnosis ko or other details, parang basic information lang ng patient and yung date and time ng visits para may record yung clinic.

Interviewer How do you access patient information?

Proponent So wala akong information na dala dala, like for example may patient, tapos di ko na maalala kung ano yung kaso niya, di ko siya mareretrieve, kailangan kong pumunta dun (clinic). Kaya maganda sana yung naka online na para nandun na sana yung details ng patient, since di naman namememorize ng doctor ng lahat ng information ni patient. Example may patient ako 3 years ago, tapos may complaint siya ngayon, kahit na sabihin niya yung name niya, hindi mo alam yung diagnosis niya 3 years ago.

Proponent Paiba iba kasi, siguro dito, per week? Mga 10 ganon? Dun sa kabila, siguro mga 15 to 20 per week, yun na yung average. Dito (azotea clinic) mga 5 to 10, doon sa kabila mga 15 to 20, mas madami akong client sa kabila (Kayang).

Interviewer How are appointments made?

Proponent Actually yung ibang patients, directly na nag memessage saamin, pero parang Messenger, pm, ganon. Kasi usually ang ginagawa ko is, halimbawa naging patient ko na, and alam kong frequent ang magkakaroon ng follow up (check up), I give my personal messenger, where I communicate with them. Before (pre pandemic) nung mas marami kami dito (Azotea Clinic), we created a page, tapos doon sila nag iinquire. Halimbawa eto yung mga available, tapos may mga patients duon na mag papa appointment ng OB, doon namin titignan. But since yung mga kasama namin umalis na, they created another page, naiwan na kami, hindi na naming nagagawa yung ganon na process.

Interviewer What do you do with the lab results of the patients?

Proponent So I do not get the lab results of my patients, kasi unang una, personal property nila yun. What I do is I write the significant findings, if the finding is normal, then it's normal, di ko na cocopyahin, isusulat ko nalang na normal ang result niya.

Interviewer What are the contents of the patient records?

Proponent Subjective, Objective, Assessment, Plan ganon. So subjective will be the complaint of the patient, so ano nararamdaman niya. And then the objective is kung anong findings ko, nandun na sa objective yung mga ultrasound findings, kung may pinalab test ka sakaniya. Ang assessment naman, is yung initial impression, kung ano yung diagnosis based sa sinabi niya, yung history taking na ginawa ko, at sa objective findings. Yung plan is yung treatment, if they need medical treatment, or surgical.

Interviewer How do you create medical certificates?

Proponent Dun sa kabila (kayang clinic), may printer and computer, so ang gagawin ng nurse doon is isusulat ko kung anong ilalagay na details. Ittype nila yung med cert, and then ipprint yung med cert, bago ibibigay saakin to sign, before ibibigay sa patient.

APPENDIX B. 2ND INTERVIEW SUMMARY

Another Interview took place at the first clinic located at 2012 Multi-Specialty Clinic for follow-up questions on August 18, 2023 from 3:00 PM to 5:00 PM.

Before the interview started, the group showed the prototype to the proponent.

Interviewer Meron po ba kayong specific schedule dito (2012 Multi-Specialty Clinic)?

Proponent Oo, dito MWF ng 2:30 pm to 4:00 pm

Interviewer Gaano po katagal ang check-up for each patient?

Proponent It depends din with the halimbawa: Ano yung problem(ng patient) and kung maraming questions ang pasyente

Interviewer Parang ung maximum po(for each patient)?

Proponent Maximum would be around, sabihin na natin na 45 minutes. Tapos yung shortest naman can be as short as 5 minutes to 10 minutes.
(*What sometimes happen during the 5 to 10 minutes consultation
Proponent:Hi
Patient:Hello
Proponent:Etu yung result mo
End)

Interviewer Paano po pala doc ung pag merge po ng files, like, ano po ung process or procedures nyu kung halimbawa may nagpacheck up sa Kayang(QA Diagnostic Laboratory) and nagpacheck up rin po siya dito(2012 Multi-Specialty Clinic)?

Proponent Meron siyang details dito tapos may details sya sa kabila pero separate yun kasi yung chart, I will not bring it naman dito(2012 Multi-Specialty Clinic) and vice versa

Interviewer So kung ano lang po yung andun sa kabilang clinic, yun lang po yung pwede mong makita doc sa clinic na yun and vice versa ?

Proponent Oo, unless na kunware pumunta ako sa kabilang clinic to check her chart or epapa picture ko sa assistant so that I can remember kasi syempre I will not be able to remember everything

Interviewer Pero technically doc, ano po ba yung gusto niyung mangyari doc(sa website na gagawin), gusto niyo po bang makita yung dalawang chart nung patient(sa website)?

Proponent Yes, like even if I dont go to both clinics, like kunware nasa labas ako, gusto ko pa rin sanang makita ung sinabi ko dito(2012 Multi-Specialty Clinic) and anong sinabi ko doon(QA Diagnostic Laboratory), para itutuloy ko na lang sana

Interviewer Pero doc, nangyayari naman po talaga yun noh doc(ung pagvisit ng patient to both of proponent's clinic)?

Proponent Yes, kasi minsan sasabihin nila na doc, hindi po kita naabutan sa Kayang clinic mo, puntahan na lang kita dyan sa afternoon clinic mo sa La Azotea' and I will say Okay.

Interviewer	Ano na rin po pala yung schedule nyu po sa kabilang clinic(QA Diagnostic Laboratory)?
Proponent	MWF 11:00 am to 1:00 pm pero syempre it depends pa rin kasi kung halimbawa marami pa ring patients ng 1:00 pm, kailangan ko pa ring e cater that patients until I finish. Kaya parang ngayon, nalate ako dito kasi I have to extend their(QA Diagnostic Laboratory)
Interviewer	So far po ba doc, okay lang po ba yung prototype na ipinakita po namin?
Proponent	Oo, okay siya pero magiging user-friendly ba sya in the end kumbaga? Kaya ko bang puntahan yung gusto kung puntahan na detail? Kaya ko ba siyang hanapin?
Interviewer	Siguro doc, since gagawin pa lang po namin, yung una pa po naming gagawin doc is yung for the patient side pa po sana which is yung mangyayari is meron po yung login and register and from there po pwede na po nila e edit yung profile nila doc and appointment pa po pala doc, ganun pa po sana yung gagawin namin doc. Yung appointment po pala is similar sya sa pagkuha ng passport, meron po ung pag scheduled dates ganun po.
Proponent	So parang eba block niya yung dates?
Interviewer	Kapag kumpleto na po doc or tapos na po ung date.
Proponent	Parang ano rin ba yun, syempre ayaw rin nung patient nang masyadong mahaba, halimbawa kung pwedeng name niya lang and contact number and yun lang(ung ilagay sa register) or date ng follow up.
Interviewer	Ganto na lang doc, ano po yung hinihingi niyo kapag walkin ung patient and bago lang sya doc(name, address, date of birth etc)?
Proponent	Actually, wala naman ng date of birth mga ganun ganun. So pangalan, address and contact number lang pwede na. Pwede nyang sabihin yung chief complaint pero not necessarily mandatory kasi minsan hindi niya gustong sabihin for example yung issue niya is dealing with vaginal discharge, so for me ayoko naman sinusulat na ko yun sa site, sasabihin na ko na lang sa doctor ganun. Pwedeng ako na rin mismo yung magtatanong ng work niya kasi part of my interview na rin yun
Interviewer	Pero gusto niyu pa rin po bang maglagay pa rin kami ng field kung saan pwede nyang ilagay yung occupation nya??
Proponent	Pero kahit blank sana, magproceed pa rin, wag sana gawing mandatory kasi what if wala siyang work or student siya ganun tapos meron rin yung mga hindi ganun ka techie ganun
Interviewer	Pwede po yun doc.
Proponent	Kahit yung name and contact number lang, okay na sa akin.
Interviewer	So parang maglalagay na lang kami ng skip doon doc?
Proponent	Pwede, kasi yung patient pwedeng sabihin na ‘Hmp, ang hirap naman, ayoko na, sa iba na lang ako papa check up’.

Interviewer Tapos po pala sa pag schedule po ng appointment, since nakabase po pala kami sa DFA, pag cater po ng per person is 30 mins, gusto nyu rin po ba ng ganun doc na kapag wala po yung patient sa inindicate niya na time sa appointment, proceed na po ba sa next?

Proponent Pwede rin naman although sana hindi siya ganun strict kasi halimbawa dumating yung patient and naka schedule siya ng 2:30 pm tapos yung sinundan niyang patient is natapos ng maaga like 2:10 pm, dapat pwede nang mag proceed yung patient kahit hindi pa 2:30 para hindi na niya kailangan hintayin yung oras at tsaka tendency kasi kapag naglalagay tayo ng specific time, doon lang sila pupunta kaya gusto ko talaga is as they come tapos first come first serve na lang. They will be reserved for that day but first come, first serve.

Interviewer So yung gagawin na lang natin doc is magdidisplay na lang ng message na sasabihin na ‘You can come in an earlier time’ pero may scheduled time pa rin doc and may additional message na ‘You can be catered earlier than your scheduled time if patient before you is finished early’.

Proponent Sige, pwedeng ganun. So diba inask niyu noon yung longest(45min) and the shortest(15min) average per patient consultation, so we will go sa average like not too long and not too short.

Interviewer Sa assistant pala doc, ano po yung pwede nilang makita doc?

Proponent Actually, pwede nilang makita yung details and pwede rin silang kumuha ng BP. So what they do kasi like kapag dumating yung patient, they take the BP, they take the weight like a physical exam na madali lang, pwede rin nilang kunin yung oxygenation and the heart rate and that's it.

Interviewer Pwede po bang humingi ng physical copy of the form?(the group had one which was attached in appendix B in the first manuscript but it was a picture and not an actual copy).

Proponent Sige(gives an actual physical copy). Etu yung normally na sinasagutan ng patient kapag pupunta sila dito, ilalagay agad ni assistant yung date dito(sa form) ng first checkup niya and kunwari hindi alam ng patient yung weight nya, epapa weight muna ni assistant yung patient and then esusulat nya. Kung may follow up check up, date na lang yung elalagay and hindi na siya(patient) mag fifill up ulit ng form.

Interviewer Pero pwede niyo pa ring e edit yan doc(pertaining to the patient health record that was previously written)?

Proponent Actually, ideally hindi na kasi tapos na yun. Kasi halimbawa, na resolve na yung past condition ni patient na halimbawa pregnant and 12 weeks siya nung date na yun, siyempre sa susunod hindi na so dapat hindi ko na siya naeedit.

Interviewer So doc, yung SOAP niyu po is pwedeng yung parang description box lang po siya?

Proponent Yeah, actually pag pregnant very small(description) lang yun. Yung height ng tiyan, yung fht ng baby, that's an already enough objective for the pregnant unless may sabihin siyang may bleeding ako or something then that's the time na mapapahaba talaga siya pero kung halimbawa normal checkup lang talaga siya, prenatal ganun lang and plan is just to continue vitamins.

Interviewer Meron po ba palang priority patients po? like kunware mahaba po yung pila and may chance po ba na may magpapa priority?

Proponent Oo naman syempre, halimbawa makikita mo yung patient na in distress na talaga like hirap na huminga and maglalabor na talaga, pwede mo naman siyang e una and explain na lang sa mga nakapila na urgent.

Interviewer Yung mga assistant po pala doc, pwede po ba silang magsulat dito(pertaining to the lower bottom of the form).

Proponent Yeah, pero pwede lang silang magsulat ng vital signs and yung chief complaints niya(patient) and yun lang, ako na the rest.

Interviewer Pero doc, pwede nila makita yung diagnosis?

Proponent Pwede naman tsaka tatanggapin rin lang naman nila yung form after the consultation and siya(assistant) yung magfa file so makikita niya lahat lahat.

Interviewer For the chat application po doc, okay lang po ba doc na its either ikaw or yung assistant ang magrespond or ikaw lang po mismo nakakarespond(sa patient)?

Proponent Pwede namang mag respond yung assistant kasi halimbawa hindi ako nakarespond agad, pwedeng mag respond yung assistant para mareassure yung patient na napansin yung message niya, kasi paano kung urgent pala yung query ng patient and wala man lang nagrerespond for example, nagoopera ako and walang nagmemesage, pwedeng e chat ni assistant na 'Nagoopera po as of the moment si doc and she'll get in touch with you as soon as possible'.

Interviewer Yung gagawin na lang po namin pala doc is separate po yung chat per clinic.

Proponent Basta sana iisa lang yung chat namin kahit nagpapa checkup siya in both clinic para tuloy tuloy na siya para hindi na ako napapaisip ng 'sino na nga ba etu?' 'ano yung last ko na ginawa?'

Interviewer Once po pala doc ma madeploy na yung website, there would be a cost po doc for maintenance.

Proponent Mga magkano?

Interviewer Hindi po namin actually sure pero sisiguraduhin naman po namin doc na hindi siya ganun kalaki.

Proponent Oo naman, sana. Kasi okay lang naman na may cost basta sana hindi siya so much expensive.

After the interview, we then received positive reviews for the prototype from the proponent.

APPENDIX C. 3RD INTERVIEW SUMMARY

Interviewer Meron po ba kayong logo for the clinic?

Proponent Wala akong logo.

Interviewer May specific po ba kayong gusto ilagay sa logo?

Proponent Wala naman, kayo na lang bahala.

Interviewer How about yung name po ng application? Like yung domain name po, may specific po ba kayong gusto? Pag e sesearch po sa google.

Proponent Parang OBGYN ganon.

Interviewer Basta may OBGYN po siya sa name?

Proponent Oo sana, halimbawa magssearch sila ng OB or GYN doctor ganon.

Interviewer Doc, maglalagay po kasi kami ng About Me na page. Ang specialty niyo po is OBGYN diba? Bale ilang years na po?

Proponent Since 2018 ako nag graduate so, 5 years. Tapos yung gusto nilang tatanungin diyan is yung board certified diba?

Interviewer Opo, doc.

Proponent Board Certified, Fellow of the Philippine Obstetrics and Gynecology Society. Yung POGS. Fellow ng POGS, ganiyan.

Interviewer Ano po bang iba pang description na gusto niyo for the website? Other than sa namention niyo po. Ano pang info gusto niyo makita ng mga tao pag vinisit nila yung about me.

Proponent Specializes in maternal care, female gynecological diseases, performs female-related surgeries. I-assignment mo nga yan sakin. Para ittry kong iformulate tas ibigay sayo.

Interviewer Sige po, doc. Magsesend na lang po kami ng mga makikita namin na example. Tapos doc yung exact address po ng both clinics sana.

Proponent So, Room 302 La Azotea Building, Session Road. Yung sa Kayang is, QA Diagnostic Laboratory and Medical Clinic, Corner 2nd floor Dane's Building, Chugum Street, Kayang Street, Baguio City.

Interviewer May gusto po ba kayong color scheme?

Proponent Wala naman basta touch of green may touch of green, ganon. Green na light green.

Interviewer Para po bang yung pinakita ko pa sa inyo (Prototype)? Okay po ba yon?

Proponent Oo, okay naman.

Interviewer	Pwede po ba naming picturean yung clinics sa loob? Para lang mashowcase yung itsura ng clinic. Para po pag first time, makita nila (patients) na tama yung napuntahan nilang clinic.
Proponent	Ah, okay. Sige, pwede. Baka pwedeng isearch yung sa QA naman, meron silang page eh so we can get from there.
Interviewer	Regarding the physical exam per patient, pag nakuha ko na po yung weight, height, BMI, may iba pa po bang categories na ginagawa yung assistant?
Proponent	Yung assistant, wala na kasi the rest would be from me naman na. So, yun lang yung general na kailangan niyang gawin. Ako na yung bahala dun sa iba.
Interviewer	Ano po yung tests usually na ginagawa sa Kayang po?
Proponent	Meron na silang ultrasound doon tas meron sila nung mga common laboratory tests. Lahat ng common laboratory tests na available andoon.
Interviewer	Dito po, for consultation lang po talaga?
Proponent	Oo, consultation lang wala siyang special services.
Interviewer	Okay na po siya doc, nag sstart na po kasi kami sa development kaya kailangan po namin ng details.
Proponent	Sige, tapos isend mo yung assignment ko.
Interviewer	Sige po doc, tapos magdedesign po ako ng mga logo para pagpilian niyo na lang po or pag nakita niyo na rin po yung design kung may gusto po kayong iimprove or changes sa design.

APPENDIX D. 4TH INTERVIEW SUMMARY

Interviewer *(Showing the initial logo to the proponent with having lotus as a main design)*

Proponent Pwede din naman na Lotus. Diba may ibig sabihin si Lotus, para siyang fertility.

Interviewer Opo kaya gumawa ako ng Lotus na design.

Proponent Tapos ang ginawa mo sana mas maganda na may mother and child.

Interviewer Integrate ko po sa Lotus?

Proponent Tapos ang ginawa mo sana mas maganda na may mother and child.

Interviewer Integrate ko po sa Lotus?

Proponent Yes.

Interviewer May naiisip na po ba pala kayu doc na name po ng website? E susuggest po sana namin yung ObKaSe, yung Ka po for your Kayang clinic and Se po for you Session clinic po.

Proponent Kapag halimbawa kasi may patient na nalaman niya yang website name and nagsearch siya ng something related sa OB, magpropromt ba yang name na yan?

Interviewer May naiisip na po ba pla kayu doc na name po ng website? E susuggest po sana namin yung ObKaSe, yung Ka po for your Kayang clinic and Se po for you Session clinic po.

Proponent Kapag halimbawa kasi may patient na nalaman niya yang website name and nagsearch siya ng something related sa OB, magpropromt ba yang name na yan?

Interviewer Doc will look into that po pero ang alam po namin is sa may deployment phase na po siya(pwede po nating integrate yung keyword na Ob-gyn sa name po ng system).

Proponent Tsaka naiisip ko rin pala, yung name sana na catchy. Baka kasi kapag sinabi kong OBKaSe, sabihin nila jinojoketime ko sila lalo na kung first time nila marinig yung name and hindi nila alam yung meaning behind it.

Interviewer Sige po doc. May dalawa po pala kaming ginawang initial landing page
(proceeds to present the landing pages)
(discussed the contents of the landing page)

Proponent Gusto ko yung background nung isang landing page and mas bet ko yung contents naman nung isa.

Interviewer E combine na lang po namin doc.

Proponent Yes and then I want a background na merong doctor and patient na naguusap. And then since nakasulat diyan sa landing page is ‘women’s health’, I also want something siguro pictures ng mga types of women (adult, buntis, matanda, bata etc), parang naka stand lang sila to represent the walks of females.

Interviewer Understand po doc, thats it po pala for the landing page.

Interviewer Move na po pala tayo doc naman sa signup/login. So sa signup po doc, ito po yung mga inputs na hihingin po sa patient *(Shows the signup page)*. Meron po siya doc na First Name, Middle Name, Last Name for the name po. For the address naman po, may region, province, city, barangay and then address 1 and address 2 po.

Para naman po sa credentials ng assistant and para po sa inyo, kami na po gagawa kaya kapag e aaccess niyo na po yung website kapag tapos na po, deretsong login na po kayu(wala na pong signup).

Proponent Pero bakit Address 1 and Address 2? Pwede naman na sigurong Address Line 1 lang.

Interviewer Tanggalin na lang po namin yung Address 2 po.

Proponent Oo kasi what if na annoy yung patient na andami daming e input.

Interviewer Tapos sa civil status ng patient doc, tama lang po ba yung mga options?

Proponent Yes.

Interviewer Tapos sa date of birth po doc, ano yung age na earliest po?

Proponent Kasi pwedeng 90 years old to as young as a baby.

Interviewer So okay lang po na 1 po doc?

Proponent Pwede ang 1 kasi halimbawa yung mommy niya magsasabi na may bleeding yung baby ko and yung mommy yung mag register.

Interviewer Tapos pala dito doc sa may signup, pag magiinput po ng birthday yung patient, mag a auto calculate po siya ng age and then sa occupation, optional lang po siya, and then meron rin pong contact number and lastly the email and password.

Proponent Hindi ba pwedeng yung full name and address na lang and okay na? And skip na rin pala yung email and contact number?

Interviewer Hindi po pwede doc, kasi doon po kasi papasok yung ‘forget password’ and ‘OTP’ na feature. Kailangan po kasi ng email para po in case nakalimutan po nang patient yung password niya, pwede niya pa ring maretrieve yung account niya po and for the otp po para maverify po yung patient. For the contact number naman po, in case you have an emergency and you need to notify the patient, pwede niyo pong e message thru the app and message the patient thru the contact number(just in case hindi chinecheck yung patient sa website).

Proponent On my end ba, for example sabi ni assistant sa akin na “Doctora, yung patient mo po, nakalimutan niya yung password niya and hindi po siya makapag login”, may pwede ba akong maetulong doon?

Interviewer Pwede mo po ireset yung password doc through the “Edit Patient Profile’ na ikaw muna mag set ng password and ibigay niyo po sa patient. Pwede rin po pala na si assistant ang mag change.

Interviewer Hihingi rin po pala ng profile picture yung signup po doc pero hindi po siya requirement, in case wala pong inupload yung patient, may ma se setup po na initial picture*(silhouette of a person).*

Sa may login page po pala doc, the email and password po yung hihingin. May option rin po pala yung patient to edit their profile once they successfully login.

Doc sa may design po pala(sigunp/login page), okay lang ba yung kulay po sa inyo (blue)?

Proponent Green nalang siguro.

Interviewer Pastel green ngay po doc?

Proponent Yes.

Interviewer *(Proceeds to show the other features once the user successfully logs in)* Doc, pwede niyo rin po pa pala makita as well as ni assistant yung patient information po ng patient.

Kung may epapayos po pala si patient(like mali yung contact number niya), pwede niyo rin pong edit as well as the assistant through sa ‘Edit Patient Profile’.

And kung may walk in po, may option si assistant na e register po sila sa website.

Interviewer *(Proceeds to show the other features once the user successfully logs in)* Doc, pwede niyo rin po pa pala makita as well as ni assistant yung patient information po ng patient.

Kung may epapayos po pala si patient(like mali yung contact number niya), pwede niyo rin pong edit as well as the assistant through sa ‘Edit Patient Profile’.

And kung may walk in po, may option si assistant na e register po sila sa website.

(Discuss how the SOAP process works in the doctor side in the website while the proponent gives her feedback if she didn't liked/liked something)

(Discuss how the Booking Appointment process works in the doctor side in the website while the proponent gives her feedback if she didn't liked/liked something)

(Discuss how the Chat process works in the doctor side in the website while the proponent gives her feedback if she didn't liked/liked something)

APPENDIX E. 5TH INTERVIEW SUMMARY

Interviewer (*Shows the created initial logo).*

Proponent Okay lang naman siya pero, green ba lahat?

Interviewer Edit na lang po namin ulit doc.

Interviewer May issue po pala doc sa landing page, this is the background picture po and do you have any further opinions po for this one*(landing page)*?

Proponent Hanap ka pa ng ibang picture and then bawasan na rin sana yung texts since minsan, hindi naman na natin binabasa pag mahabang mahaba.

Interviewer Sige po doc, edit na lang po namin yung logo as well as the landing page(background picture and text) and then follow up po namin ulit.

Interviewer Epapacheck na rin po pala namin doc ung appointment side, so etu doc yung appointment side sa may QA Diagnostic Laboratory (showing the appointment gui of QA Diagnostic Laboratory to the proponent)

Proponent Wala tayong x-ray pala ah, so palitan niyo na lang etu ng prenatal check-up(epalit sa x-ray). So consult, pre-natal, follow-up na lang yung final, huwag na ring nating ilagay yung ultrasound.

Interviewer and yung pong medical certificate?

Proponent yes, add that also.

Interviewer *..(continues to demonstrate how the appointment for the client/patient works)*

Interviewer Doc, clarify lang po, since separate clinics po, makikita po ba ulit ni assistant from the first clinic yung mga patients sa second clinic?

Proponent Oo sana.

Interviewer So doc, pag esesearch na lang po ng assistant yung name ng patient, doon na lang po magpapakita. Tapos sa side nyu po (proponents side), makikita pa rin po yung lahat ng patients. Tapos po pala doc, dapat whole name rin po sana yung required na esesearch ng assistant for security purposes na rin po.

Interviewer Another question po doc is, diba po may instances po kayo na hindi po kayo available in certain dates, so yung iniisip po namin is may option po kayo na mag disable ng dates pero yung main concern po kasi namin doc is paano po kung may emergency ka bigla(the day na dapat papasok ka na po and biglang nagka emergency), iniisip po namin na may option rin po sana yung mga assistant(doesn't matter who) na pwedeng mag resched/cancel for the patient na nakapag booked na.

Proponent Oo, pwede naman pero kasi minsan, may sinesend rin naman kaming ibang doctor na pumalit sa amin pero sige, pwede rin naman yung sinabi niyu(just in case nga wala). Mag nonotify rin ba yun at the end of the patient?

Interviewer Yes po doc.

Interviewer Sa chat po ba pala doc, nagsesend rin po kayo ng pictures to the patient?

Proponent Yes rin, for example, nanganak siya kahapon and pinicturan ko sa cellphone ko and hinihingi niya, syempre esesend ko.

Interviewer Doc, may e aadd po ba pala kayong any additional sa dashboard side? (proceeds to show the dashboard gui)

Proponent Ano na nga pala ulit yung nakikita dito?

Interviewer Pag maglologin po kayo doc, etu po yung una niyung makikita and parang short overview po ng patients po from both clinic and upcoming appointments from patients na nakapag booked na.

Proponent I think okay lang.

Interviewer May pinapadagdag rin po pala yung IT adviser namin doc, gusto po niyang iinclude po yung expected delivery date po ng patient. Parang kukunin po niya yung last day of menstruation which is kayo po doc ang mag iinput and then cacalculate niya po yung expected date of delivery (shows the calculator gui) and baka gusto niyo na rin po palang epadagdag sa dashboard and then btw po doc, dipa po 280 days po?

Proponent Basta ano, 40 weeks. Basta kapag epapasok ko yung last day of menstruation, cocomputin na niya para sa akin yung ‘age of gestation’, pag nakita ko na yung age of gestation, alam ko na kung kailan manganganak yung patient.

Interviewer Paano yun doc, weeks and days na lang po doc?

Proponent Ang estimated delivery like I said is always 40 weeks. Tsaka kung makakaya niyu rin sana kung halimbawa yung patient, irregular yung menstruation and hindi niya alam kung kailan siya last dinatnan pero nagultrasound siya and naepakita doon na expected delivery niya is halimbawa december 13, pag pinasok ko yung date, mag papakita rin sa akin kung anong edad na nung baby.

Interviewer Ahh so parang opposite rin doc, kinkumpyute niya yung expected delivery as well as the age of the baby(kung ilang weeks na po)?

Proponent Yes, kung ilang weeks na siya ganun.

Interviewer Ano po pala doc, ano yung mas gusto niyo pong term, weeks po ba or days?

Proponent Weeks and days like for example, 30 weeks and 2 days. Btw, minsan rin pala kapag mag iinput ka ng last date of menstruation (since I’m using an app for computing), magkaiba siya sa date from the ultrasound.

Interviewer So doc, ilagay na lang namin na pwede po e input yung dalawa(last date of menstruation and ultrasound date)?

Proponent Pwede naman, kasi kung nakita mong hindi sila tugma ng date or masyadong malaki yung difference nila sa date, sinusundan ko yung ultrasound. Pwede rin na ilagay ng assistant yung expected date from the ultrasound and pwede kung e recheck if ever mali. Yung terms pala kung kailan manganganak yung patient is Expected Date of Confinement or Expected Date of Delivery.

Interviewer Regarding po pala sa payment doc, may gusto po ba kayung epadagdag na method of payment or wala na po doc? Kasi what if, gusto daw ng patient magbayad po agad (in regards from our IT Adviser)?

Proponent Pwede bang after niyang maconsult? Kasi parang kung halimbawa, nagpay siya beforehand and hindi siya naka punta pero bayad na or ako yung hindi nakapunta kasi nagka emergency ako, baka maging source pa yan ng complaint. Kaya mas maganda na within the clinic na lang.

Interviewer Kasi rin po pala doc, yung basis po ninyo for your prices is yung daloy po nang consultation po ninyo?

Proponent Oo, kasi halimbawa, what if the patient may additional injection besides from her consultation. Tsaka kung magbook man siya ng appointment within the app tapos walang payment and hindi siya dumating, wala siyang responsibility sa akin and wala rin akong responsibility sa kanya.

Interviewer Pero doc, tumatanggap po ba kayo ng online payments like Gcash or maya?

Proponent Yes pero after na. Pero yung magbabayad sila agad agad ng hindi pa nagaganap yung consultation, nagbook pa lang sila, magiging issue siya.

Interviewer May another concern rin po pala kami sa appointments doc. What if may gumawa ng account and nag add lang siya ng nag add ng appointment to the point na punong puno na po yung calendar and Gusto niyo rin po ba pala doc na kapag kailangan po nung patient ng followup check up, kayu na lang po magbook po para sa kanya.

jasjbd

Proponent Yes, pwede naman. Sasabihin ko na lang sa patient na 'Follow up ka sa akin this date ah and ilagay na lang kita dito' and magnonotify na rin sa kanila. Pero, most of the time, hindi rin kasi sila sumisipot kasi nga sometimes may emergency.

Interviewer So, may option na lang rin po silang e edit po yung appointment and magnonotify rin po sa inyu?

Proponent Yes, pwede.

Interviewer So, doc pala, edagdag na rin po namin sa dashboard yung mga expected na magdedeliver po for the week.

Proponent Yes, okay naman. Yung magpapakita sana yung mga 37 to 40 weeks na so hindi na kailangan na exact 40 weeks siya kasi pwede na siyang manganak kapag 37 weeks na siya.

Interviewer Okay po doc.

Proponent Yung maganda pa sana dito sa dashboard is, halimbawa, yung patient nagschedule ng surgery, nakikita ko rin yung mga ooperahan ngayong linggo.

Interviewer So may surgery rin po sa appointment doc?

Proponent Ay hindi, yung ako na sana magiinput sa calendar since ako yung mag e schedule ng operation date.
(proponent and interviewer proceeds to make a draft/draw of what the dashboard page should look like)

Interviewer So doc, kayo na rin po magsesend ng information po like kung sinong patient, anong date and reason for operation. Bale manonotify rin po pala yung patient?

Proponent Yes.

Interviewer So doc, may any additional pa po ba kayung gusto pong e add or palitan??

Proponent Wala naman na. I think mas maganda rin na simple lang siya just incase rin mapalitan yung assistant, hindi siya mangapa ngapa.

APPENDIX F. 5TH INTERVIEW SUMMARY

(Interview after the first defense…)
(Proceeds to demonstrate the website with recommendations from panels…)

Interviewer Doc, okay lang po ba na mapicturan po pala yung clinics for our landing page po?

Proponent Yes, pwede.

Interviewer During our defense po pala doc, one of our panels discusses that instead of the patient choosing a designated time for their appointment, palitan na lang daw po namin ng queueing system since hindi po practical yung pagpili ng time lalo na po na iba iba po ung consultation time ng per patients.

Proponent Yeah, I think mas maganda rin yun.

Interviewer Let's start po sa doctor side po. Sa dashboard po pala doc, makikita niyo rin po yung mga kailangan niyong gawin base po sa types(operation, consultation etc) and kung anong oras po. Ginagawa pa lang po namin pero makikita na rin po pala doc sa may dashboard ng doctor yung names po ng mga ka queue that day along with their numbers.

Proponent Okay.

Interviewer Na e add na rin po pala namin doc yung gestational age where you can input the EDD and LMD and edit it na rin po incase may mali. Kita rin po sa may dashboard yung malapit nang mga anak or 37-40 weeks na po sila

Proponent Okay.

Interviewer Sa may message tab po pala doc, you can see po the assistant per clinic para hindi ka na po mahirap hanapin yung names nila pag echachat mo po sila, and may separate chat page naman po yung message ta if incase you want to message rin po yung patients.

Proponent Okay.

Interviewer Dito naman po doc sa appointment tab, pwede po kayung magdisable ng date/s para wala pong pwedeng makapag appointment and pwede rin po kayung maglagay ng reason kung bakit cancelled yung date na yun. In case man may nakapag appointment na po during that day, may magnonotif po sa user na cancelled po yung date para po aware rin po agad sila.

Proponent Okay.

Interviewer Makikita mo rin pala doc kung sino yung mga naka appointment sa araw in that particular day.

Proponent Okay.

Interviewer Dito naman po sa may patientlist, diba dati po siyang parang SOAP lang po yung main buttons and parang sa loob na lang po pwedeng makita yung lab results, medications, uploaded pictures etc. Ngayon po doc separate buttons na lang, para pagka click niyu ng view info button ng patient, makikita niyo po agad lahat lahat imbes na na yung SOAP lang po. May search function na rin po pala para madaling niyo pong mahanap yung mga kailangan niyong hanapin.

Proponent Paano pala kung nasa phone ng patient yung lab results, paano ko yun e upload?

Interviewer On going pa po doc pero yung balak namin po is may option na po yung messenger na pwede pong mag receive or send ng pictures po(or any files).

Proponent Okay.

Interviewer Tapos sa may Announcements tab, pwede po kayong mag create ng announcement na makikita po both ng assistants and patients po ninyo sa dashboard po nila and pwede rin po ninyong e delete or edit yung announcement.

Proponent Okay.

Interviewer May idadagdag rin po pala kaming bagong function where you can state na pregnant po yung patient, for consultation na lang siya or cleared na po siya doc.

Proponent Okay.

Interviewer May tanong rin po pala yung panels namin doc. Paano daw po pala kayo nagdidispose ng records doc?

Proponent Itatapon siya after 20 years.

Interviewer Archive na lang po namin doc sa system yung mga after 20 years po yung records.

Proponent Okay.

Interviewer Proceed na po tayo doc sa may assistant side. Ginagawa pa lang po namin pero makikita na rin po pala doc sa may dashboard rin ng assistant yung names po ng mga ka queue that day along with their numbers.

Proponent Okay.

Interviewer Sa may message tab po, similar lang po sila ng doctor pero hindi po nachachat ng assistant ng isang clinic yung isang clinic po and vice versa.

Proponent Okay.

Interviewer Proceed na po tayo doc sa may assistant side. Ginagawa pa lang po namin pero makikita na rin po pala doc sa may dashboard rin ng assistant yung names po ng mga ka queue that day along with their numbers.

Proponent Okay.

Interviewer Sa may patient list tab po, may option po yung assistant na mag edit ng patient profile(like the doctor) and see their appointments.

Proponent Okay.

Interviewer Sa may appointments and announcements tab po, same lang po sila ng functionality from the doctor rin po. Yung wala lang po siguro sa may assistant is yung gestational tab.

Proponent Okay.

Interviewer Okay lang po ba yun so far po?

Proponent Yes.

Interviewer So lastly po, epapakita naman po namin yung patient side. Sa may dashboard po nang patient, magpapakita po yung announcements, current appointments and yung gestational information(kung pregnant po sila). Makikita rin po yung available ng dates po in both clinic niyo po.

Pero sa may gestational age, sabi niyo po noon na usually 40 weeks yung max, ano po yung gusto niyong elagay po doon in case lumagpas?

Proponent Okay lang naman na po 41 weeks pero kung nanganak na siya, delivered or something yung pwedeng ipalit.

Interviewer Okay po.

Interviewer Sa may appointments tab naman doc, besides from booking, pwede rin po niyang e edit yung appointment po niya and sinuggest rin po pala ng adviser namin sa edit info na change password lang po yung kaya niyang palitan kasi baka you need po the original patient info(pero pwede pa rin naman niyang epabago yung other infor po niya either to you po or the assistants).

Proponent Okay.

Interviewer So that's all po pala yung buong system po doc, do yo have any further questions po?

Proponent Wala naman na pero mas maganda sana kung etra try na natin yung system para makita talaga kung paano and kung may need pa akong epa improve.

Interviewer Sa hosting na po pala yun doc and we are already looking na po for po hosting platforms with competitive prices.

Proponent How much kaya yun?

Interviewer So far po doc, yung pinakamura is around 10 to 15 dollars a month pero libre na po yung domain.

Proponent Okay.

Interviewer Kung may nahanap na po kami doc na final, we will inform na lang po you.

Proponent Kailangan ko na bang mag advance payment?

Interviewer Hindi pa naman po doc since we still need po yung go signal ng adviser po namin. Pero para sa first month po, sa amin na lang po yung bayad, kung nagustuhan niyo po, pwede niyo na pong etuloy and kung if ever may naanap po tayong mas magandang deal sa ibang hosting platform, pwede rin po naming ilipat.

Proponent Okay.

Interviewer Doc, did you decide na po ba pala on what to call the website para yun na po yung gamitin natin kapag e hohost na po yung website? We are looking po kasi sa internet and nakuha na po pala yung current name po nang website(which is Recomed).

Proponent I want something kasi na ano, na kapag nakita nang possible patients, alam na nila agad na pang obgyne yung website.

(Interviewer and Doctor brainstorms for a name…)

Proponent Womens Wellness, maganda yun. Pwede yan.

Interviewer Meyo haba po siya doc.

Proponent Sige iba na lang kasi baka tamarin sila mag type. 'Ayoko na, sa iba nalang' baka ganun isipin ng patients. ObgynMe.connect na lang?

Interviewer Or how about Obgynelink na lang po doc?

Proponent Sige.

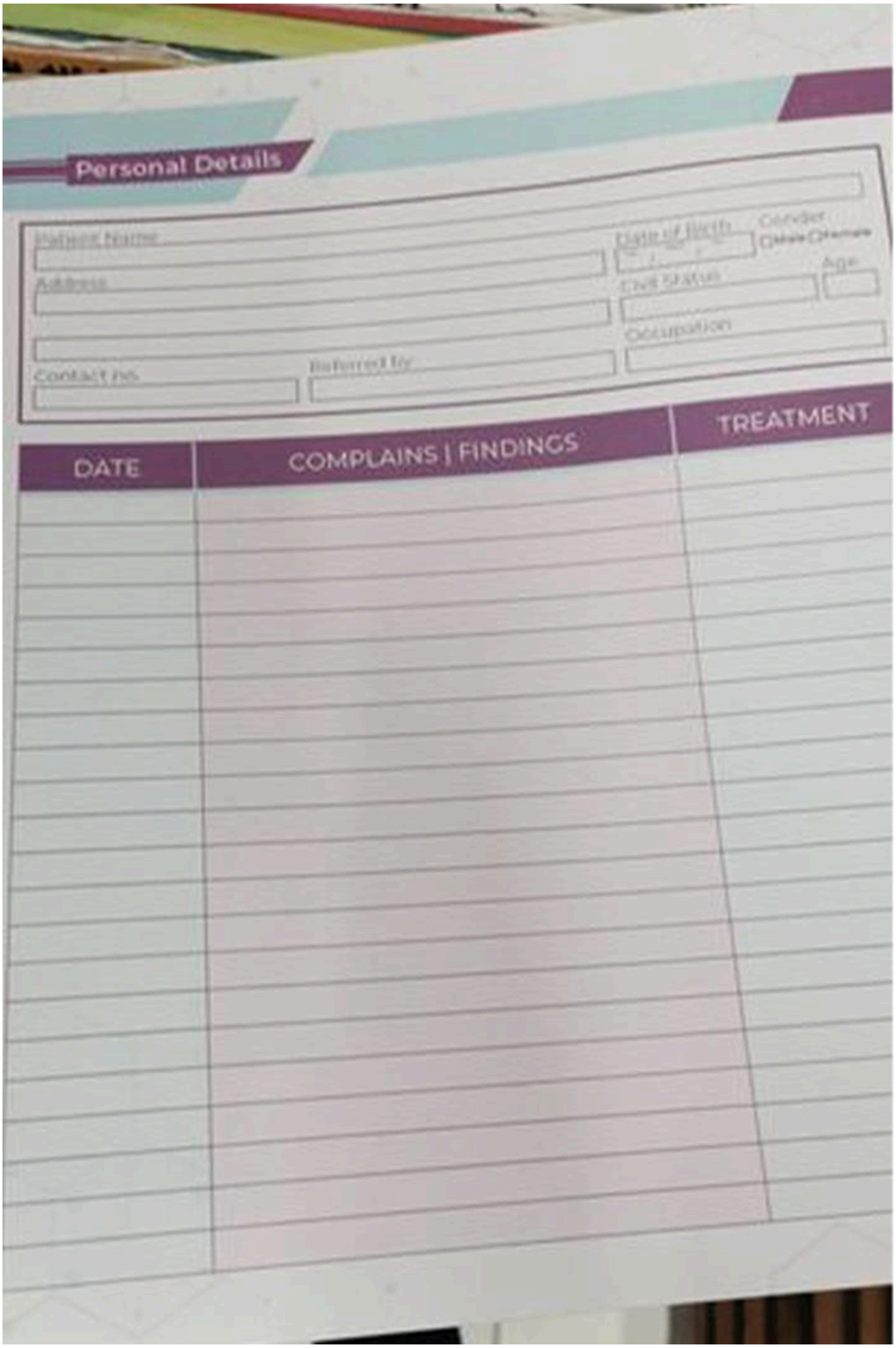
Interviewer Sure na po ba doc? Kasi once na host na po siya, hindi na po pwedeng palitan.

Proponent Pero nasesearch ba yan kasi what if gusto lang maghanap ng patient ng obgyne, magpapakita ba yan?

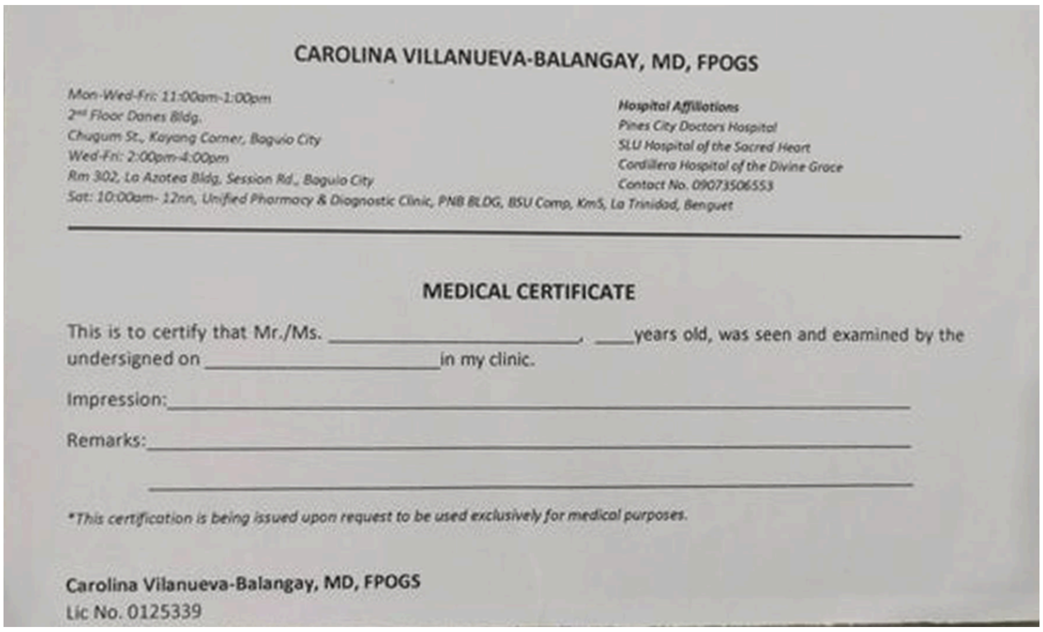
Interviewer Yung naiisip po namin doc para magpakita po agad is maglagay po ng tags so kung may ilalagay po yung nag search about obygne around baguio, magpapakita po etu.

Proponent Okay.

APPENDIX G. SAMPLE PATIENT HEALTH RECORD FORM



APPENDIX H. SAMPLE MEDICAL CERTIFICATE



CAROLINA VILLANUEVA-BALANGAY, MD, FPOGS

Mon-Wed-Fri: 11:00am-1:00pm
2nd Floor Danes Bldg.
Chugum St., Kayang Corner, Baguio City
Wed-Fri: 2:00pm-4:00pm
Rm 302, La Azotea Bldg, Session Rd., Baguio City
Sat: 10:00am- 12nn, Unified Pharmacy & Diagnostic Clinic, PNB BLDG, BSU Comp, Km5, La Trinidad, Benguet

Hospital Affiliations
Pines City Doctors Hospital
SLU Hospital of the Sacred Heart
Cordillera Hospital of the Divine Grace
Contact No. 09073506553

MEDICAL CERTIFICATE

This is to certify that Mr./Ms. ______________________, ____years old, was seen and examined by the undersigned on ____________________in my clinic.

Impression:____

Remarks:____

____

**This certification is being issued upon request to be used exclusively for medical purposes.*

Carolina Vilanueva-Balangay, MD, FPOGS
Lic No. 0125339

APPENDIX I. USER MANUAL

USER MANUAL GUIDE:

Login and Sign Up

1.1 Sign Up

Step 1: Go to the Landing Page

Open the website and find the "Sign Up" option on the landing page.

Step 2: Click "Sign Up"

Click on the "Sign Up" option to proceed to the signup page.

Step 3: Enter Information

Fill in your Name, Address, Civil Status, Birthday, Contact Number, and choose a password.

Step 4: Submit

Click "Submit" or "Next" after entering your details.

Step 5: Verification Page

You'll be redirected to a verification page.

Step 6: Check Email for OTP

Check your email for a 6-digit OTP sent by the platform.

Step 7: Enter OTP:

Enter the OTP on the verification page.

Step 8: Complete Signup

Submit the OTP to finish signing up

1.2 Login

Step 1: Access the Landing Paghindi rin po ninyo alam kung pupunta ba siya talaga or hindi, kaya sana kung may bayad siya, at least alam po namin na pupunta po talaga siya. Kaya tig isang appointment lang po doc for patient and pwede na ulit siya mag book ng appointment kapag tapos na po yung date ng una po niyang binook.

e

Open the website and locate the "Login" option on the landing page.

Step 2: Click "Login"

Click on the "Login" option to go to the login page.

Step 3: Enter Email and Password:

On the login page, enter your registered email address and password.

Step 4: Submit

Click "Submit" or "Login" to proceed.

Step 5: Verification Redirect (If Account Not Verified):

If your account is not yet verified, you'll be redirected to the verification page.

Step 6: Verify Email

Follow the instructions to verify your email address.

Step 7: Receive OTP

Similar to the signup process, an OTP will be sent to your email.

Step 8: Enter OTP

Retrieve the OTP from your email and enter it on the verification page.

Step 9: Successful Verification

Once the correct OTP is entered, you are now successfully verified.

Step 10: Login Again

After verification, you may need to log in again to access your account.

2. Doctor Side

2.1 Chat Application

Step 1: Access the Dashboard

Log in to your account and access the dashboard.

Step 2: Navigate to "Messages"

On the left side of the dashboard, locate and click on the option labeled "Messages." In the "Messages" section, you can choose a clinic assistant to chat with or search and select a specific patient.

Step 4: Choose a Person to Chat

Click on the name of the clinic assistant or patient you want to message. You will be redirected to the chat box for the selected person. In the chat box, type your message, and click the "Send" button to send it.

Step 7: Select Image

To select an image, click on the "📂" (folder) icon. Choose the image you want to send from your device. Then confirm and send the selected image.

Step 9: Continue Chatting

You can continue the conversation by typing and sending messages as needed.

2.2 Disable Dates

Step 1: Navigate to the Navigation Bar

Look for the navigation bar on the webpage. Locate the 'Calendar' tab in the navigation bar. Once you've found the 'Calendar' tab, click on it. This action will redirect you to the page where you can manage disabled dates.

Step 2: Select the Clinic

On the calendar page, there should be an option to select the clinic. Select the specific clinic for which you want to disable certain dates.

Step 3: Click on the Date in the Calendar

Navigate to the calendar and click on the date you want to disable.

Step 4: Choose the Reason for Disabling

After selecting the date, select a reason why the selected date will be disabled.

Step 5: Click the 'Disable Date' Button

After selecting the clinic, date, and reason, look for a button that says 'Disable Date.'Click on this button to confirm and save your changes. The data will automatically be placed in the *Dashboard* as an announcement to notify the patients and the assistants regarding the disabled dates.

2.3 Patient List (View and Edit Patient Information)

Step 1: Access the Navigation Bar

Log in to your account and find the navigation bar. In the navigation bar, click on the option labeled "Patients List." You will be redirected to the Patients List, which displays a list of patients.

Step 2: Search and View Patient

Optionally, you may use the search function to find a specific patient by name. To view a patient's information, click on the option "View Info" next to their contact number.

Step 3: Edit Patient Information

If you need to edit the patient's information, click on the "Edit" option next to "View Info." You will be redirected to the page where you can edit the patient's information. Update the necessary fields with the new information. After editing, click the "Save" button to save the changes.

Step 4: Book Appointment

If needed, you can also book or edit the patient's appointment details from the Patients List.

Step 5: Continue Navigating

Use the navigation bar or buttons provided to go back to the Patients List or perform other actions.

2.4 Creating Patient Record

Step 1: Navigate to the Records Tab:

Locate and click on the "Records" tab in the application's interface. This is typically where you manage and view various records.

Step 2: Find and click the "Add Record":

Look for the "Add Record" within the Records tab. Once you've identified the "Add Record" click on it. This action initiates the process of adding a new entry or row to the records.

Step 3: New Row Creation:

After clicking the "Add Button," a new row will be created at the top of the table. This row serves as a container for the details you want to add.

2.5 Viewing Patient Record

Step 1: Access the Reports Section:

Within the application, navigate to the section where different reports are managed. This is typically the area where you input or view detailed information.

Step 2: Review the Different Tabs:

Identify the tabs labeled "Subjective," "Objective," "Assessment," "Plan," "Medication," and "Laboratory Results." Each of these tabs corresponds to a specific aspect of the reports.

Step 3: Click on the "Subjective" Tab:

If you want to summarize the subjective information, click on the "Subjective" tab. This is the section where subjective details are displayed. If there is data entered, a summary of the subjective information will be displayed. If no data is entered yet, a row with the date and time of the record creation will appear, accompanied by a message such as "Data has not been entered yet."

Step 4: Repeat for Other Tabs:

Repeat the process for the other tabs ("Objective," "Assessment," "Plan," "Medication," and "Laboratory Results"). Click on each tab and observe the summary or the "Data has not been entered yet" message.

Step 5: Navigate Back to Records:

After reviewing each tab, navigate back to the Records section to get an overview of the reports.

Step 6: Verify and Update as Needed:

Check the summarized information for accuracy. If needed, you can update or enter additional details directly from the Records tab.

2.6 Adding of Physical Exam

Step 1: Go to the Records Tab

Navigate to the "Records" section. Look for the list/table of patient records. Within the patient's record, find the section labeled “Physical Exam.”

Step 2: Click on Add Physical Exam Button

Inside the Physical Exam column, look for an "Add Physical Exam" button. Click on this button to start adding physical exam details.

Step 3: Enter Medication Details

Enter the following details for the physical examination:

Height (in centimeters), Weight (in kilograms), Systolic Blood Pressure, Diastolic Blood Pressure, Pulse

Provide accurate measurements for each parameter.

Step 4: Click Submit

At the bottom is a "Submit" button. After ensuring that the data being entered is accurate, click on "Submit" to save the physical exam details.

2.7 Adding of Laboratory Results of Patient

Step 1: Access the Reports Section:

Navigate to the "Records" section. Look for the list/table of patient records. Within the patient's record, find the section labeled "Laboratory Results."

Step 2: Click on Add Lab Results Button

Within the Laboratory Results section, look for an "Add Lab Results" button. Click on this button to initiate the process.

Step 3: Choose Image to Upload

An image upload interface will appear. Select the image file containing the laboratory results and provide a brief description or comment about the uploaded image.

Step 4: Click Submit

Once the image is uploaded and the description is entered, look for a "Submit" button. Click on "Submit" to save the laboratory results.

2.8 Adding of Medication of Patient

Step 1: Go to the Records Tab

Navigate to the "Records" section. Look for the list/table of patient records. Within the patient's record, find the section labeled "Medication."

Step 2: Click on Add Lab Medication Button

Inside the Medication column, look for a "Add Lab Medication" button specific to that record. Click on this button to start adding medication details.

Step 3: Enter Medication Details

Provide the Medication Name, followed by the Duration (How many days), and then Frequency (How many Times in a day should the medicine be taken).

Step 4: Click Submit

Look for a "Submit" button. After ensuring that the data being entered is accurate, click on "Submit" to save the medication details.

2.9 Generating Medical Certificate

Step 1: Go to the Medical Certificate Tab

Navigate to the "Medical Certificate" tab. Once inside the Medical Certificate tab, the patient's Name, Age, and the current Date should be automatically generated.

Step 2: Enter Impression and Remarks

Look for the "Impression:" section and input the medical impression. In the "Remarks" section, provide any additional remarks. Ensure that the automatically generated patient information, as well as the manually entered impression and remarks, are accurate.

Step 3: Click the Print Button

Locate the "Print" button on the interface. Click on the "Print" button to initiate the printing process. After clicking the print button, a print settings window should appear. Select the desired printer and configure other print settings as needed.

Step 4: Final Print

Review the print settings to ensure they are accurate. Click the "Print" button in the print settings window to generate and print the medical certificate.

2.10 Booking an Appointment for a Patient

Step 1: Navigate to the Navigation Bar

Look for the navigation bar on the webpage. Locate the 'Patients List' tab in the navigation bar.

Step 2: Click on the 'Patients List' Tab

Once you've found the 'Patients List' tab, click on it. This action will redirect you to the list of patients. Navigate through the list of patients to find the one for whom you want to book an appointment.

Step 4: Go to the 'Appointment' Tab

After selecting the patient, look for a tab on the right side of the page labeled 'Appointment.' Under the 'Appointment' tab, find a button labeled 'Book.' Click on the 'Book' button, you will then be redirected to the booking page to proceed with the appointment booking.

Step 6: Select the Clinic

On the booking page, first select the clinic for the appointment. Choose the clinic where the appointment will take place.

Step 7: Choose an Available Date

Navigate to the calendar section on the booking page. Select one of the available dates for the appointment.

Step 8: Select the Reason for Booking

Next, there is a dropdown list where you can specify the reason for booking the appointment. Choose the appropriate reason from the options provided.

Step 9: Click 'Book Appointment'

After selecting the clinic, date, and reason, find a button that says 'Book Appointment.' Click on this button to confirm the appointment and save the data for the selected patient.

2.11 Edit Appointment of a Patient

Step 1: Navigate to the Navigation Bar

Look for the navigation bar on the webpage. Locate the 'Patients List' tab in the navigation bar.

Step 2: Click on the 'Patients List' Tab

Once you've found the 'Patients List' tab, click on it. This will redirect you to the list of patients. Navigate through the list of patients to find the one for whom you want to edit an appointment.

Step 3: Go to the 'Appointment' Tab

After selecting the patient, look for a tab on the right side of the page labeled 'Appointment.' If the patient already has an appointment scheduled, a button labeled 'Edit' should be visible.

Step 4: Check for 'Edit' Button

If the 'Edit' button is visible, click on it to proceed with editing the appointment. Clicking the 'Edit' button should redirect you to the appointment editing page. If the patient doesn't have an appointment, follow the steps for booking an appointment mentioned previously.

Step 5: Review Current Information

On the appointment editing page, review the current information of the booked appointment.

Step 6: Edit Clinic, Date, or Reason

Edit the appointment by selecting a new clinic from the dropdown list. Choose a new date by clicking on the available dates on the calendar. Select a new reason for booking an appointment from the dropdown list. Once you've made the necessary changes, find a button that says 'Edit Appointment.' Click on this button to confirm the new and edited appointment.

Step 7: Cancel Appointment (Optional)

If you want to completely cancel the appointment, look for a separate button labeled 'Cancel Appointment' at the very bottom of the page.

Click on this button to cancel the appointment without making any changes.

Note: Once an appointment has been edited, the patient will be given a new *Queue Number* relevant to the number of appointments already booked on the selected date.

2.12 Updating the Gestational Age of Patient

Step 1: Access the Navigation Bar

Log in to your account and find the navigation bar. In the navigation bar, click on the option labeled "Gestational Age." You will be redirected to the Gestational Age page, displaying a list of patients with their Last Menstrual Period and Expected Day of Delivery.

Step 3: Add Gestational Age

If a patient doesn't have gestational age information yet, you can add it by selecting the "Add" option.

Step 4: Enter Last Menstrual Period or Expected Day of Delivery

Enter either the Last Menstrual Period or the Expected Day of Delivery. The system will automatically calculate the gestational age. After entering the information, save it, and the gestational age details will be added.

Step 5: Edit Gestational Age

To edit the gestational age, select the "Edit" option next to the patient's information. You will be redirected to the edit gestational page where you can modify either the Expected Day of Delivery or the Last Menstrual Period.

Step 6: Edit Information

Make the necessary edits to the gestational age information.

Step 7: Save Changes

After editing, click the "Save" button. The system will recalculate and update the gestational age.

2.13 Creating Announcements

Step 1: Access the Navigation Bar

Log in to your account and find the navigation bar. In the navigation bar, click on the tab labeled "Announcements."

Step 2: Redirect to Announcement List Page

You will be redirected to the Announcement List page, displaying titles, descriptions, and date/time of posted announcements. From the Announcement List, you can view details such as the announcement title, description, and date/time posted.

Step 3: Edit Announcement

To edit an announcement, click on the "Edit" button next to the announcement you want to modify. You will be redirected to the page where you can edit the announcement title, description, or other details. Edit the title or description as needed.

Step 4: Save Changes

After editing, click the "Save" button to save the changes to the announcement.

Step 5: Delete Announcement

To delete an announcement, click on the "Delete" button next to the announcement you want to remove.

Step 6: Confirmation Alert

A confirmation alert will appear, asking if you are sure you want to delete the announcement. Confirm the deletion, and the announcement will be removed.

Step 7: Create New Announcement

To create a new announcement, click on the "Create New Announcement" button. It would then redirect to the create announcement page, where the title and description for the new announcement details would be entered. After entering the details, save the new announcement.

Step 8: Continue Navigating

Use the navigation bar or buttons provided to go back to the Announcement List or perform other actions.

2.14 Archiving Patients

Step 1: Access Patient Lists

Navigate to the patient lists section.

Step 2: Select Patient

Look for the patient you want to archive in the list.

Step 3: Choose Archive Option

Next to the patient's appointment column or in a dedicated "Archive Patient" column, find and select the "Archive" option.

Step 4: Verification Prompt

A verification prompt will appear to confirm if you want to archive the selected patient.

Step 5: Confirm Archiving

If you're sure, select "Yes" to proceed with archiving the patient.

Step 6: Move to Archived Patient List

After confirmation, the patient will be moved to the "Archived Patient List" page.

2.15 Unarchive Patients

Step 1: Access Archived Patient List:

Navigate to the "Archived Patient List" page where the archived patients are stored.

Step 2: Select Patient to Unarchive:

Identify and select the patient you want to unarchive from the archived list.

Step 3: Choose Unarchive Option:

Look for the "Unarchive" option either beside the patient's name or in a dedicated "Unarchive Patient" column.

Step 3: Verification Prompt:

A verification prompt will appear to confirm if you want to unarchive the selected patient.

Step 4: Confirm Unarchiving:

If you're sure, select "Yes" to proceed with unarchiving the patient.

Step 5: Move Back to Patient List:

After confirmation, the patient will be moved back to the regular patient list.

3. Assistant Side

3.1 Chat Application

Step 1: Access the Dashboard

Log in to your account and access the dashboard.

Step 2: Navigate to "Messages"

On the left side of the dashboard, locate and click on the option labeled "Messages." In the "Messages" section, you can choose a clinic assistant to chat with or search and select a specific patient.

Step 4: Choose a Person to Chat

Click on the name of the clinic assistant or patient you want to message. You will be redirected to the chat box for the selected person. In the chat box, type your message, and click the "Send" button to send it.

Step 7: Select Image

To select an image, click on the "📂" (folder) icon. Choose the image you want to send from your device. Then confirm and send the selected image.

Step 9: Continue Chatting

You can continue the conversation by typing and sending messages as needed.

3.2 Disable Dates

Step 1: Navigate to the Navigation Bar

Look for the navigation bar on the webpage. Locate the 'Calendar' tab in the navigation bar. Once you've found the 'Calendar' tab, click on it. This action will redirect you to the page where you can manage disabled dates.

Step 2: Select the Clinic

On the calendar page, there should be an option to select the clinic. Select the specific clinic for which you want to disable certain dates.

Step 3: Click on the Date in the Calendar

Navigate to the calendar and click on the date you want to disable.

Step 4: Choose the Reason for Disabling

After selecting the date, select a reason why the selected date will be disabled.

Step 5: Click the 'Disable Date' Button

After selecting the clinic, date, and reason, look for a button that says 'Disable Date.'Click on this button to confirm and save your changes. The data will automatically be placed in the *Dashboard* as an announcement to notify the patients and the assistants regarding the disabled dates.

3.3 Patient List (View and Edit Patient Information)

Step 1: Access the Navigation Bar

Log in to your account and find the navigation bar. In the navigation bar, click on the option labeled "Patients List." You will be redirected to the Patients List, which displays a list of patients.

Step 2: Search and View Patient

Optionally, you may use the search function to find a specific patient by name. To view a patient's information, click on the option "View Info" next to their contact number.

Step 3: Edit Patient Information

If you need to edit the patient's information, click on the "Edit" option next to "View Info." You will be redirected to the page where you can edit the patient's information. Update the necessary fields with the new information. After editing, click the "Save" button to save the changes.

Step 4: Book Appointment

If needed, you can also book or edit the patient's appointment details from the Patients List.

Step 5: Continue Navigating

Use the navigation bar or buttons provided to go back to the Patients List or perform other actions.

3.4 Creating Patient Record

Step 1: Navigate to the Records Tab:

Locate and click on the "Records" tab in the application's interface. This is typically where you manage and view various records.

Step 2: Find and click the "Add Record":

Look for the "Add Record" within the Records tab. Once you've identified the "Add Record" click on it. This action initiates the process of adding a new entry or row to the records.

Step 3: New Row Creation:

After clicking the "Add Button," a new row will be created at the top of the table. This row serves as a container for the details you want to add.

3.4 Viewing Patient Record

Step 1: Access the Records Section:

Within the application, navigate to the section where different records are managed. This is typically the area where you input or view detailed information.

Step 2: Review the Different Tabs:

Identify the tabs labeled "Subjective," "Objective," "Assessment," "Plan," "Medication," and "Laboratory Results." Each of these tabs corresponds to a specific aspect of the reports.

Step 3: Click on the "Subjective" Tab:

If you want to summarize the subjective information, click on the "Subjective" tab. This is the section where subjective details are displayed. If there is data entered, a summary of the subjective information will be displayed. If no data is entered yet, a row with the date and time of the record creation will appear, accompanied by a message such as "Data has not been entered yet."

Step 4: Repeat for Other Tabs:

Repeat the process for the other tabs ("Objective," "Assessment," "Plan," "Medication," and "Laboratory Results"). Click on each tab and observe the summary or the "Data has not been entered yet" message.

Step 5: Navigate Back to Records:

After reviewing each tab, navigate back to the Records section to get an overview of the reports.

Step 6: Verify and Update as Needed:

Check the summarized information for accuracy. If needed, you can enter additional details directly from the Records tab.

3.5 Adding of Laboratory Results of Patient

Step 1: Access the Reports Section:

Navigate to the "Records" section. Look for the list/table of patient records. Within the patient's record, find the section labeled "Laboratory Results."

Step 2: Click on Add Lab Results Button

Within the Laboratory Results section, look for an "Add Lab Results" button. Click on this button to initiate the process.

Step 3: Choose Image to Upload

An image upload interface will appear. Select the image file containing the laboratory results and provide a brief description or comment about the uploaded image.

Step 4: Click Submit

Once the image is uploaded and the description is entered, look for a "Submit" button. Click on "Submit" to save the laboratory results.

3.6 Adding of Physical Exam

Step 1: Go to the Records Tab

Navigate to the "Records" section. Look for the list/table of patient records. Within the patient's record, find the section labeled "Physical Exam."

Step 2: Click on Add Physical Exam Button

Inside the Physical Exam column, look for an "Add Physical Exam" button. Click on this button to start adding physical exam details.

Step 3: Enter Medication Details

Enter the following details for the physical examination:

Height (in centimeters), Weight (in kilograms), Systolic Blood Pressure, Diastolic Blood Pressure, Pulse

Provide accurate measurements for each parameter.

Step 4: Click Submit

At the bottom is a "Submit" button. After ensuring that the data being entered is accurate, click on "Submit" to save the physical exam details.

3.7 Booking an Appointment for a Patient

Step 1: Navigate to the Navigation Bar

Look for the navigation bar on the webpage. Locate the 'Patients List' tab in the navigation bar.

Step 2: Click on the 'Patients List' Tab

Once you've found the 'Patients List' tab, click on it. This action will redirect you to the list of patients. Navigate through the list of patients to find the one for whom you want to book an appointment.

Step 4: Go to the 'Appointment' Tab

After selecting the patient, look for a tab on the right side of the page labeled 'Appointment.' Under the 'Appointment' tab, find a button labeled 'Book.' Click on the 'Book' button, you will then be redirected to the booking page to proceed with the appointment booking.

Step 6: Select the Clinic

On the booking page, first select the clinic for the appointment. Choose the clinic where the appointment will take place.

Step 7: Choose an Available Date

Navigate to the calendar section on the booking page. Select one of the available dates for the appointment.

Step 8: Select the Reason for Booking

Next, there is a dropdown list where you can specify the reason for booking the appointment. Choose the appropriate reason from the options provided.

Step 9: Click 'Book Appointment'

After selecting the clinic, date, and reason, find a button that says 'Book Appointment.' Click on this button to confirm the appointment and save the data for the selected patient.

3.7 Edit Appointment of a Patient

Step 1: Navigate to the Navigation Bar

Look for the navigation bar on the webpage. Locate the 'Patients List' tab in the navigation bar.

Step 2: Click on the 'Patients List' Tab

Once you've found the 'Patients List' tab, click on it. This will redirect you to the list of patients. Navigate through the list of patients to find the one for whom you want to edit an appointment.

Step 3: Go to the 'Appointment' Tab

After selecting the patient, look for a tab on the right side of the page labeled 'Appointment.' If the patient already has an appointment scheduled, a button labeled 'Edit' should be visible.

Step 4: Check for 'Edit' Button

If the 'Edit' button is visible, click on it to proceed with editing the appointment. Clicking the 'Edit' button should redirect you to the appointment editing page. If the patient doesn't have an appointment, follow the steps for booking an appointment mentioned previously.

Step 5: Review Current Information

On the appointment editing page, review the current information of the booked appointment.

Step 6: Edit Clinic, Date, or Reason

Edit the appointment by selecting a new clinic from the dropdown list. Choose a new date by clicking on the available dates on the calendar. Select a new reason for booking an appointment from the dropdown list. Once you've made the necessary changes, find a button that says 'Edit Appointment.' Click on this button to confirm the new and edited appointment.

Step 7: Cancel Appointment (Optional)

If you want to completely cancel the appointment, look for a separate button labeled 'Cancel Appointment' at the very bottom of the page.

Click on this button to cancel the appointment without making any changes.

Note: Once an appointment has been edited, the patient will be given a new *Queue Number* relevant to the number of appointments already booked on the selected date.

3.8 Creating Announcements

Step 1: Access the Navigation Bar

Log in to your account and find the navigation bar. In the navigation bar, click on the tab labeled "Announcements."

Step 2: Redirect to Announcement List Page

You will be redirected to the Announcement List page, displaying titles, descriptions, and date/time of posted announcements.

Step 3: View Announcement Details

From the Announcement List, you can view details such as the announcement title, description, and date/time posted.

Step 4: Edit Announcement

To edit an announcement, click on the "Edit" button next to the announcement you want to modify.

Step 5: Redirect to Edit Announcement Page

You will be redirected to the page where you can edit the announcement title, description, or other details.

Step 6: Make Edits

Edit the title or description as needed.

Step 7: Save Changes

After editing, click the "Save" button to save the changes to the announcement.

Step 8: Delete Announcement

To delete an announcement, click on the "Delete" button next to the announcement you want to remove.

Step 9: Confirmation Alert

A confirmation alert will appear, asking if you are sure you want to delete the announcement.

Step 10: Confirm Deletion

Confirm the deletion, and the announcement will be removed.

Step 11: Create New Announcement

To create a new announcement, click on the "Create New Announcement" button.

Step 12: Enter Title and Description

On the create announcement page, enter the title and description for the new announcement.

Step 13: Save New Announcement

After entering the details, save the new announcement.

Step 14: Continue Navigating

Use the navigation bar or buttons provided to go back to the Announcement List or perform other actions.

3.9 Unarchive Patients

Step 1: Access Archived Patient List:

Navigate to the "Archived Patient List" page where the archived patients are stored.

Step 2: Select Patient to Unarchive:

Identify and select the patient you want to unarchive from the archived list.

Step 3: Choose Unarchive Option:

Look for the "Unarchive" option either beside the patient's name or in a dedicated "Unarchive Patient" column.

Step 3: Verification Prompt:

A verification prompt will appear to confirm if you want to unarchive the selected patient.

Step 4: Confirm Unarchiving:

If you're sure, select "Yes" to proceed with unarchiving the patient. After confirmation the archived patient will return to a regular patient.

4. Patient Side

4.1 Booking of Appointment

Step 1: Navigate to 'Book Appointment' Tab

In the navigation bar, click on the tab labeled 'Book Appointment.' Once clicked, this tab redirects you to the Appointment Booking Page.

Step 2: Select Clinic

On the Appointment Booking page, there is a dropdown list where you can choose the clinic you wish to book an appointment to.

Click on the dropdown menu and select the desired clinic from the available options.

Step 3: Choose Appointment Date

Below, there is a calendar with the available schedule of the chosen clinic.

Click on the date you prefer to book your appointment.

Step 4: Select Reason for Appointment:

After selecting the date, there is a dropdown list where you can choose the reason for your appointment. Click on the dropdown and select the appropriate reason for your appointment.

Step 5: Book Appointment:

Once you have confirmed that all the information is correct, locate the 'Book Appointment' button on the bottom of the page.

Click on the 'Book Appointment' button to confirm and proceed with booking your appointment.

Step 6: Confirmation:

After clicking the 'Book Appointment' button, a confirmation message will appear stating that the appointment was successfully booked and for you to take a screenshot or picture of the appointment, especially your queue number. Review the confirmation details to ensure your appointment has been successfully booked.

Note: The user can only book an appointment **once**. The user can reschedule, edit appointment details, or cancel the appointment.

4.2 Editing of Appointment

Step 1: Navigate to the Edit Appointment tab

In the navigation bar, there is a tab labeled as 'Edit Appointment' and click on it. Clicking the 'Edit Appointment' tab should redirect you to the appointment editing page. If the user doesn't have an appointment, follow the steps for booking an appointment mentioned previously.

Step 2: Review Current Information

On the appointment editing page, review the current information of the booked appointment.

Step 3: Edit Clinic, Date, or Reason

Edit the appointment by selecting a new clinic from the dropdown list. Choose a new date by clicking on the available dates on the calendar. Select a new reason for booking an appointment from the dropdown list.

Step 4: Click 'Edit Appointment'

Once you've made the necessary changes, find a button that says 'Edit Appointment.' Click on this button to confirm the new and edited appointment.

Step 5: Cancel Appointment (Optional)

If you want to completely cancel the appointment, look for a separate button labeled 'Cancel Appointment' at the very bottom of the page.

Click on this button to cancel the appointment without making any changes.

Note: Once an appointment has been edited, the user will be given a new *Queue Number* relevant to the number of appointments already booked on the selected date. The user is only given **3** chances to cancel their appointment. If the limit of cancellations is met, the user cannot book nor cancel the appointment within 24 hour

CURRICULUM VITAE

RAINIER DOHN O. DELIRIO

Front End Developer
Quality Assurance Tester

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TECHNICAL SKILLS

Programming Languages:
Java, Python

Web Development Languages:
HTML5, CSS3, JavaScript

Database Management:
MySQL, PostgreSQL, phpMyAdmin

Productivity Tools:
MS Suite, Google Suite, Canva, Lucidchart

SOFT SKILLS

- Communication
- Interpersonal skills
- Presentation skills
- Leadership
- Public speaking
- Teamwork

EDUCATION

SAINT LOUIS UNIVERSITY 2019 - 2024
Bachelor of Science in Information Technology

UNIVERSITY OF THE CORDILLERAS 2018-2019
Science, Technology, Engineering, and Mathematics Strand

OUR LADY OF MOUNT CARMEL MONTESSORI 2017-2018
Science, Technology, Engineering, and Mathematics Strand

OUR LADY OF MOUNT CARMEL MONTESSORI 2015-2017
Junior High School

SERANGOON GARDEN SECONDARY SCHOOL 2013-2015
Junior High School

ACHIEVEMENTS

MTAP Competition Bronze Medalist 2016
Consistent Honor Student 2013-2019
Consistent Dean's Lister 2019-2023

WORK EXPERIENCE

Online Commerce Business 2013-Present

LANGUAGES

Filipino (native)
English (fluent)

REFERENCES

Available upon request

VINCE KARLO DULAY

Front End Developer

Aspiring IT professional with a strong web development background, eager to contribute and learn for your company's projects.

CONTACT

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TOOLS & TECHNOLOGIES

- **Visual Studio Code**
- **JetBrains IntelliJ**
- **JetBrains PyCharm**
- **Git**
- **Microsoft Office Suite**
- **Google Workspace**
- **Trello**
- **Jupyter Notebook**
- **Figma**
- **Canva**
- **Wamp Server**

SOFT SKILLS

- Communication
- Adaptability
- Time Management
- Active Listener
- Team Work

TECHNICAL SKILLS

HTML5, CSS3, JavaScript, Java, Python, PHP, SQL (MySQL), CMS (WordPress), UI/UX Design, Wireframing, Prototyping, Data Analytics, Data Mining, Layout & Graphic Design

EDUCATION

BACHELORS OF SCIENCE IN INFORMATION TECHNOLOGY 2019 - PRESENT

Dean's List
- First Semester, 2019-2020
- Second Semester, 2019-2020
- Second Semester, 2020-2021
- First Semester, 2021-2022
- First Semester, 2022-2023

Relevant Coursework: Web Technologies, Application Development, Network Fundamentals, Java Programming, Data Structures, Data Analytics, Data Mining, System Administration and Maintenance

SENIOR HIGH SCHOOL (STEM STRAND) 2017 - 2019

Relevant Coursework: ICT (Basic Productivity Tools, Computer Programming)

BAGUIO PATRIOTIC HIGH SCHOOL 2013 - 2017

SEMINARS AND WORKSHOPS

- ENTERPRISE SECURITY ESSENTIALS - TREND MICRO
  MAY 31, 2022
- TRENDS ON SOFTWARE DEVELOPMENT - CODE & THEORY
  MAY 13, 2022
- EMBEDDED SYSTEMDS AND EMERGING TECHNOLOGIES - AWS
  MAY 13, 2022
- SOFTWARE DEVELOPMENT - INFOR
  MAY 11, 2022
- SOFTWARE TESTING - INFOR
  MAY 11, 2022
- SLU CAMPUS TALK: GAME DEVELOPMENT - ACCENTURE
  APRIL 29, 2022

WILLIAM MAURICIO

Full Stack Developer

I am passionate about full stack development and leadership, this journey blends a love for technology with effective teamwork skills. Open to new ideas, listening, and creativity are at the core, alongside a solid understanding of IT tools, languages, and methods. Eager to apply this mix of technical knowledge and collaborative spirit to tackle challenges and build innovative solutions.

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SOFT SKILLS

- Managing
- Leading
- Team-oriented
- Active Listener
- Open-minded
- Creativity
- Adaptability
- Detail-oriented

SKILLS

Web Development

Database

Application Development

Data Analytics

Machine Learning

Research

TECHNICAL SKILLS

PROGRAMMING LANGUAGES:
JAVA, C#, C++, PYTHON, R

DATABASE MANAGEMENT:
SQL, MySQL, PostgreSQL, PhpMyAdmin

WEB FRONTEND LANGUAGES:
HTML, CSS, JAVASCRIPT, BOOTSTRAP, REACT

WEB BACKEND LANGUAGES:
DJANGO, NODE.JS, PHP

EDUCATION

BACHELORS OF SCIENCE IN INFORMATION TECHNOLOGY 2020- CURRENT

SAINT LOUIS UNIVERSITY

- I am currently studying different tools, technologies, frameworks and methodologies in the IT world.

OFFICERSHIP ROLES:

- 2022-2023: SPORTS COMMITTEE HEAD
- 2021-2022: PUBLIC RELATION OFFICER (PRO)
- 2020-2021: IT FIRST YEAR REPRESENTATIVE

DEANS LISTER:

- BSIT 1 FIRST SEMESTER: 2020-2021
- BSIT 1 SECOND SEMESTER: 2022
- BSIT 2 FIRST SEMESTER: 2022-2023
- BSIT 2 SECOND SEMESTER: 2023

SCIENCE TECHNOLOGY ENGINEERING MATHEMATICS 2018 - 2020

UNIVERSITY OF THE CORDILLERAS

- Graduated with Honors

OFFICERSHIP ROLES:

- 2019 - 2020: GRADE 12 CLASSROOM PRESIDENT
- 2018 - 2019: GRADE 11 CLASSROOM PRESIDENT

HONOR LIST:

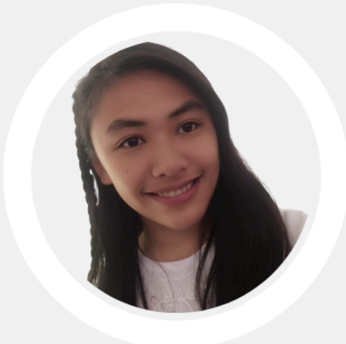
- GRADE 12: WITH HONORS

JUNIOR HIGH SCHOOL 2014 - 2018

BAGUIO PATRIOTIC HIGH SCHOOL

OFFICERSHIP ROLES:

- 2017 - 2018: PRESIDENT OF THE COMPUTER CLUB
- 2016 - 2017: PUBLIC RELATION OFFICER (PRO) OF THE COMPUTER CLUB
- 2015 - 2016: MATHEMATICS - SCIENCE GRADE 8 REPRESENTATIVE
- 2014 - 2015: CLASSROOM PUBLIC RELATION OFFICER (PRO)



LOVELY OSNGAL

Front End Developer

Seeking a challenging front-end developer position where I can leverage my strong proficiency in HTML, CSS, and JavaScript to create engaging and user-friendly web applications.

CONTACT

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TECHNICAL SKILLS

Programming Language:
Java, Php, Python

Database Management:
MySql, PhpMyAdmin

MarkUp Languages:
HTML, Bootstrap CSS

Productivity Tools:
MS Office, Canva, LucidChart, Github, Gitlab, Google Drive

SOFT SKILLS

- Communication
- Adaptability
- Time Management
- Active Listener
- Team Work

EDUCATION

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY 2019 - 2024
SAINT LOUIS UNIVERSITY

Dean's List
- First Semester, 2019-2020
- First Semester, 2020-2021
- Second Semester, 2020-2021
- First Semester, 2021-2022
- First Semester, 2022-2023

STEM, TECHNOLOGY, ENGINEERING AND MATHEMATICS 2017 - 2019
SAINT LOUIS SCHOOL OF PACDAL, INC.

- With Honors
- Best in Innovation
- Loyalty Awardee

JUNIOR HIGH SCHOOL 2013 - 2017
SAINT LOUIS SCHOOL OF PACDAL, INC.

- Loyalty Awardee
- Editor in School Paper

SEMINARS AND WORKSHOPS

AWS SEMINAR ON EMBEDDED SYSTEMS AND EMERGING TECHNOLOGIES	MAY 2022
AZURE – CONTINUOUS INTEGRATION TECHNICAL WORKSHOP	FEBRUARY 2021
CODE & THEORY SEMINAR ON TRENDS ON SOFTWARE DEVELOPMENT	MAY 2022
INFOR SEMINAR ON SOFTWARE DEVELOPMENT	MAY 2022
JUMPSTARTING A START-UP BUSINESS: THE BUSINESS MODEL CANVASS AND VALIDATIONB BOARD	MAY 2022
PABIDA TEKNOKOMERSIYO: A FIRESIDE CHAT	APRIL 2022
SLU CAMPUS TALK: GAME DEVELOPMENT	APRIL 2022
SOFTWARE QUALITY ASSURANCE TECHNOLOGIES AT CODE AND THEORY	APRIL 2022

REFERENCES

Available upon Request

PAUL JOSHUA PISO

Quality Assurance Tester
Backend Developer

CONTACT

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TECHNICAL SKILLS

PROGRAMMING LANGUAGES:
JAVA, C++, PYTHON

DATABASE MANAGEMENT:
SQL, MySQL

WEB DEVELOPMENT LANGUAGES
HTML, CSS, JavaScript, React, PHP, Node.js

SOFT SKILLS

- Communication
- Strong Intrapersonal Skills
- Adaptability
- Detail-oriented
- Critical-thinking
- Active Listener

EDUCATION

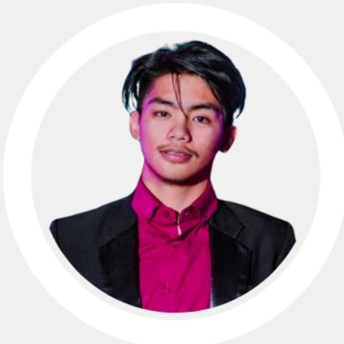
Bachelors of Science Information Technology
Saint Louis University
Aug. 2019 - Present
Dean's List
- First Semester, 2019-2020
- Second Semester, 2019-2020
- First Semester, 2020-2021
- Second Semester, 2020-2021
- First Semester, 2021-2022
- Second Semester, 2021-2022
- First Semester, 2022-2023

Science Technology Engineering Mathematics
University of the Cordilleras
2017 - 2019
- Graduated with Honors
- Grade 11 Academic Excellence Achiever

Junior High School
Urdaneta City National High School
Special Science Class
2013 - 2017
- Graduated with Honors
- National level TugSayAwit 3rd place

SEMINARS AND WORKSHOPS

- AZURE: CONTINUOUS INTEGRATION TECHNICAL WORKSHOP
- INFOR: SOFTWARE DEVELOPMENT SEMINAR
- INFOR: SOFTWARE TESTING SEMINAR
- CODE AND THEORY: SOFTWARE QUALITY ASSURANCE TECHNOLOGY SEMINAR
- CODE AND THEORY: TRENDS ON SOFTWARE DEVELOPMENT SEMINAR
- AWS: EMBEDDED SYSTEMS AND EMERGING TECHNOLOGIES SEMINAR
- AI AND LARGE LANGUAGE MODELS SEMINAR (APRIGF)
- AI IN ASIA-PACIFIC: CHARTING A PATH FOR RESPONSIBLE INNOVATION (APRIGF)
- POLICY DEVELOPMENT ON GENERATIVE AI BASED ON BIOMETRICS AND WEAPONIZING INFORMATION BUBBLES (APRIGF)
- BREAKING SECURITY FOR 'ONLINE SAFETY': WHAT'S AT STAKE FOR ASIA-PACIFIC (APRIGF)
- TO PROTECT OF HARM? WHAT THE TENSIONS BETWEEN PRIVACY AND CIVIC FREEDOMS IN PERSONAL DATA PROTECTION LAWS MEAN FOR CIVIL SOCIETY (APRIGF)
- IS FRAGMENTATION THE FUTURE OF THE INTERNET AND HOW CAN WE RESIST? (APRIGF)
- EVOLVING INTERNET GOVERNANCE FOR THE NEXT PHASE OF THE INTERNET (APRIGF)



PRINCE TAGUILING

Project Lead
Full Stack Developer

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www.linkedin.com/in/princetaguiling
https://github.com/PrawnsJas

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TECHNICAL SKILLS

PROGRAMMING LANGUAGES:
JAVA, C#, PYTHON, GO LANG

DATABASE MANAGEMENT:
SQL, MySQL, PhpMyAdmin

WEB BACKEND LANGUAGES:
PHP

WEB FRONTEND LANGUAGES:
HTML, CSS, JAVASCRIPT, BOOTSTRAP

ORGANIZATIONS

Integrated Confederacy
Saint Louis University
2019 - 2023

- President
  2021-2023
- 2nd Year IT Representative
  2020-2021

EDUCATION

Bachelors of Science Information Technology
Saint Louis University
Aug. 2019 - Present
Dean's List
First Semester, 2019-2020

Science Technology Engineering Mathematics
Saint Louis University Senior High School
Aug. 2017 - May 2019

Junior High School
Saint Louis University Junior High School
Aug. 2013 - May 2017

TRAININGS AND SEMINARS

AI in Asia-Pacific: Charting a Path for Responsible Innovation
(August 29, 2023) Saint Louis University

AI and Large Language Models
(August 29, 2023) Saint Louis University

Breaking Security for 'Online Safety': What's at Stake for Asia-Pacific
(August 29, 2023) Saint Louis University

Policy Development on Generative AI Based on Biometrics and Weaponizing Information Bubbles
(August 29, 2023) Saint Louis University

Is Fragmentation the Future of the Internet and How Can We Resist?
(August 31, 2023) Saint Louis University

Is Evolving Internet Governance for the Next Phase of the Internet
(August 31, 2023) Saint Louis University

To Protect or Harm? What the Tensions Between Privacy and Civic Freedoms in Personal Data Protection Laws Mean for Civil Society
(August 31, 2023) Saint Louis University

Hour of Code (Massive Open Online Course (MOOC) Camp Program of the United States Department of State)
(May, 2019) Saint Louis University (Provided by Khan Academy)

SOFT SKILLS

- TEAM-ORIENTED
- ACTIVE LISTENER
- OPEN-MINDED
- ADAPTABILITY
- DETAIL-ORIENTED
- ACCOUNTABILITY
- CREATIVITY

JUAN CARLOS UGALE

Backend Developer

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EDUCATION

Saint Louis University Junior Highschool
2013-2016

Saint Louis University Senior Highschool
2017-2019

Saint Louis University
2019-2024

SKILLS

- Initiative
- Innovative
- Graphic Design
- Detail Oriented
- Marketing
- Programming

WORK EXPERIENCE

ONLINE BUY AND SELL 2016 - Present
SELF-EMPLOYED

SALESPERSON 2023 - 2024
NADUMA ENTERPRISES

SEMINARS AND WORKSHOPS

- MASSIVE OPEN ONLINE COURSE: HOUR OF CODE
- ICON SEMINARS AND WORKSHOPS
- AZURE: CONTINUOUS INTEGRATION TECHNICAL WORKSHOP
- INFOR: SOFTWARE DEVELOPMENT SEMINAR
- INFOR: SOFTWARE TESTING SEMINAR
- CODE AND THEORY: SOFTWARE QUALITY ASSURANCE TECHNOLOGY SEMINAR
- CODE AND THEORY: TRENDS ON SOFTWARE DEVELOPMENT SEMINAR
- AWS: EMBEDDED SYSTEMS AND EMERGING TECHNOLOGIES SEMINAR
- AI AND LARGE LANGUAGE MODELS SEMINAR (APRIGF)
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- POLICY DEVELOPMENT ON GENERATIVE AI BASED ON BIOMETRICS AND WEAPONIZING INFORMATION BUBBLES (APRIGF)
- BREAKING SECURITY FOR 'ONLINE SAFETY': WHAT'S AT STAKE FOR ASIA-PACIFIC (APRIGF)
- TO PROTECT OF HARM? WHAT THE TENSIONS BETWEEN PRIVACY AND CIVIC FREEDOMS IN PERSONAL DATA PROTECTION LAWS MEAN FOR CIVIL SOCIETY (APRIGF)
- IS FRAGMENTATION THE FUTURE OF THE INTERNET AND HOW CAN WE RESIST? (APRIGF)
- EVOLVING INTERNET GOVERNANCE FOR THE NEXT PHASE OF THE INTERNET (APRIGF)

REFERENCES

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Saint Louis University / Professor
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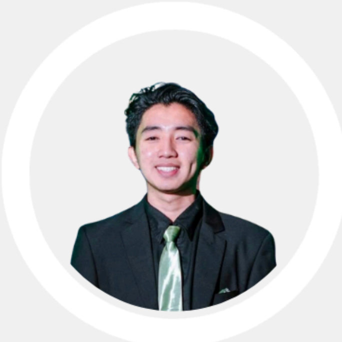

CONTACT

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211 Lower Brookside, Imelda Village, Baguio City

EDUCATION

Saint Louis University Laboratory Highschool
2013-2016

Saint Louis University Senior Highschool
2017-2019

BS of Information Technology
Saint Louis University
SAMCIS
2019-2024

SKILLS

- Web Design
- Programming
- Communication
- Typing
- Graphic Design
- Editing

ERROL YABUT

Database Administrator

TECHNICAL SKILLS

PROGRAMMING LANGUAGES:
JAVA, PYTHON, SWIFT

DATABASE MANAGEMENT:
SQL, MySQL, PhpMyAdmin

WEB FRONTEND LANGUAGES:
HTML, CSS, JAVASCRIPT, BOOTSTRAP

WEB BACKEND LANGUAGES:
JS, PHP

WORK EXPERIENCE

SALESPERSON (PART TIME) 2023 - 2024
NADUMA MAY 2023 - JANUARY 2024

WEBINARS 2022

- **AZURE - CONTINUOUS INTEGRATION**
- **CODE AND THEORY ON TRENDS ON SOFTWARE DEV.**
- **AWS SEIMNAR ON EMBEDDED SYSTEMS AND EMERGING TECH**
- **INFOR SEMINAR FO SOFTWARE DEVELOPMENT**
- **AZURE - CONTINUOUS INTEGRATION**
- **SLU CAMPUS TALK: GAME DEV**
- **JUMPSTARTING A START-UP BUSINESS: BUSINESS MODEL**
- **CANVAS AND VALIDATION BOARD**
- **PABIDA TEKNOKOMERSIYO: A FIRESIDE CHAT**
- **SOFTWARE QA TECHNOLOGIES AT CODE AND THEORY**
- **IS FRAGMENTATION THE FUTURE OF THE INTERNET**
- **INFOR SEMINAR FO SOFTWARE DEVELOPMENT**
- **BREAKING SECURITY FOR ONLINE SAFETY.**
- **POLICY DEVELOPMENT ON GENERATIVE AI BASED ON BIOMETRICS AND WEAPONIZING INFORMATION BUBBLES.**
- **AI IN ASIA-PACIFIC CHARTING A PATH FOR RESPONSIBLE INNOVATION.**