

# **Sayora web application for Ayurvedic wellness center**

## **Project Report**



Sri Lanka Institute of Information Technology  
IT2080 Information Technology Project

Group ITP\_WD\_B1\_01

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## Declaration

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This project report is our original work, and the content is not plagiarized from any other resource. References for all the content taken from external resources are correctly cited. To the best of our knowledge, this report does not contain any material published or written by third parties, except as acknowledged in the text.

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## **Abstract**

Utilizing the cutting-edge MERN stack, Sayora Ayurvedic Wellness Center presents a sophisticated and intuitive platform designed to revolutionize clinical management. Our primary focus remains steadfast: enhancing doctor-patient interaction and optimizing appointment scheduling through a secure online interface. Leveraging MongoDB for robust database management, we ensure the secure storage of long-term patient records, facilitating seamless tracking of progress and treatment history.

This dynamic framework extends beyond mere record-keeping, empowering patients to autonomously manage their medical data and monitor their wellness journey. Moreover, streamlined appointment bookings, service management, and comprehensive treatment tracking simplify operations for clinicians, enabling them to devote more time to patient care.

Central to our ethos is the commitment to convenience and accessibility. Through integrated product delivery and a user-friendly reordering facility, patients can effortlessly access essential wellness products from the comfort of their homes. Our meticulous inventory management system ensures the efficient utilization of resources, maintaining optimal levels of inventory items at all times.

By harnessing the collaborative power of GitHub for version control, we ensure seamless collaboration and code management, guaranteeing the continuous improvement and refinement of our platform. In summary, Sayora Ayurvedic Wellness Center offers stakeholders an advanced and comprehensive clinical management system, poised to elevate their daily operations, and redefine the standards of holistic healthcare delivery.

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## List of Abbreviations

| <b>Abbreviation</b> | <b>Description</b>                   |
|---------------------|--------------------------------------|
| MERN                | MongoDB, Express, React Js, Node Js  |
| ER                  | Entity Relationship Diagram          |
| DBMS                | Database management System           |
| ERP                 | Enterprise Resource Planning         |
| SD                  | Sequence Diagram                     |
| SDLC                | Software Development Life Cycle      |
| Agile               | Agile Development Method             |
| IDE                 | Integrated Development Environment   |
| GUI                 | Graphical User Interface             |
| API                 | Application Programming Interfaces   |
| PDF                 | Portable Document Format             |
| SQL                 | Structured Query Language            |
| SMPT                | Simple Mail Transfer Protocol        |
| CRM                 | Customer Relationship Management     |
| WCAG                | Web Content Accessibility Guidelines |
| OTP                 | One-Time Password                    |
| NIC                 | National Identity Card               |

# **Chapter 01 – Introduction**

## **Background**

Our client, Dr. Sachini Aththanayaka, is an esteemed practitioner in the field of Ayurveda with extensive experience and holds a BAMS (Hons) Degree from the University of Colombo, complemented by a Fellowship in Aesthetic Medicine from India. Dr. Aththanayaka possesses specialized knowledge in Wellness, Cosmetology, and Ayurvedic Beauty Culture. She operates the Sayora Ayurvedic Wellness Center [1], located on High-level Road in Maharagama, which is committed to promoting wellness and nurturing good health through a holistic approach. The clinic's primary objective is to assist individuals in reestablishing their connection with health and well-being by offering essential information and products encompassing mental, physical, and emotional aspects. Notably, the clinic caters to a diverse clientele, including both local and international patients seeking Ayurvedic treatments.

In response to identified deficiencies in the existing web application, our team has undertaken the development of a customized system tailored to meet the specific requirements of Dr. Aththanayaka's practice. The primary objective of this system is to enhance doctor-patient interaction and optimize the appointment scheduling process through a secure online platform. Furthermore, the system incorporates a robust database designed to securely store the records of long-term patients, facilitating efficient tracking of patient progress. These features will streamline the management of examinations and treatment processes for doctors, while also empowering patients to independently manage their medical data and track their progress. Additionally, it will facilitate the efficient management of the wellness center's operations. These functionalities are meticulously tailored within the dynamic framework of the system.

Additionally, our client operates a product store where various items are available for sale. As part of our system, we are implementing a feature that enables patients to have products delivered directly to their doorstep. This includes the provision of a user-friendly reordering facility for added convenience. Importantly, it should be emphasized that the system will not handle financial transactions, as the clinic already utilizes a separate system for managing financial matters, aligning with their preferred operational convenience.

## **Problem & Motivation**

### **Problems**

#### **1. Manual Staff and Appointment Handling:**

- The current operational method involves manual staff and appointment management, leading to inefficiencies and potential errors in scheduling.

#### **2. Difficulty in Accessing Patient Information:**

- Misplacement of reports and records requires staff to revisit patient treatment histories, resulting in time-consuming processes and potential inconvenience for patients.

#### **3. Limited Patient-Appointment Interaction:**

- Presently, patients lack a direct interface with appointment scheduling, requiring them to go through receptionists, hindering seamless and immediate interaction.

#### **4. Inefficient Patient Progress Tracking:**

- Tracking patient progress is currently a time-intensive process, involving a thorough review of reports. This may lead to delays in providing timely and informed care.

#### **5. Lack of Patient Engagement and Access to Medical Records:**

- Patients currently lack the means to interact with their healthcare processes and do not have access to their medical records within the system. This absence of patient engagement limits their involvement in their own healthcare journey and inhibits their ability to actively participate in decision-making regarding their treatment plans.

#### **6. Other services (Awareness sessions) Reservation Process:**

- Clients are obligated to contact the complex for facility reservations, introducing a potential bottleneck. If receptionists are unavailable, it may impact communication and jeopardize client satisfaction.

#### **7. Inability to order Ayurvedic Products through the system:**

- Patients do not have the option to order products directly to them through the system, thus restricting their convenience and potentially impacting product availability and overall satisfaction.

#### **8. Inventory Control Challenges**

- Wellness Center currently faces issues related to manual inventory management, leading to inefficiencies in tracking clinic supplies, delays in procurement, and the risk of stock outs or overstocking.

## **Motivation**

### **1. Efficiency Enhancement through Automated Staff and Appointment Handling**

- Streamlining staff management and appointment scheduling processes through an automated system.

### **2. Optimized Information Retrieval and Patient Interaction**

- Implementation of a centralized database to prevent misplacement of reports and treatment history records, facilitating seamless access to patient information during consultations. This ensures a more informed and efficient interaction between healthcare providers and patients.

### **3. Client-focused reservation System for treatments and Sessions**

- Introducing an online reservation system for clients to book treatments and sessions, reducing reliance on manual communication through receptionists. This not only enhances client convenience but also mitigates the risk of poor communication due to missed calls, ensuring a smoother client experience.

### **4. Enhanced Patient Progress Tracking**

- Implementing a systematic approach to track patient progress by digitizing and organizing reports. This reduces the time required to review patient history and promotes a more efficient assessment of treatment outcomes.

### **5. Improved Patient Engagement and easy Access to Medical Records**

- Patients currently have ample opportunities to engage with their healthcare processes and have full access to their medical records within the system. This active involvement enhances their ability to participate in their healthcare journey and empowers them to make informed decisions regarding their treatment plans.

### **6. Improved Product Ordering Experience**

- Customers now have the option to deliver products through the system. This enhancement caters to customer preferences and contributes to an overall enhanced service experience.

### **7. Enhance Overall Operational Efficiency**

- Reduces errors in order placement, ensuring timely receipt of the right quantity of supplies, but also minimizes costs related to stock outs, overstocking, and manual procurement errors, ensuring a seamless flow of essential supplies, thereby contributing to enhanced patient care and satisfaction

## **Literature Review**

Before moving to the implementation of the project we examined some already existing similar websites to uniquely identify the features of the given functionalities and the scope of each functionality. Analyzing similar websites grants us the opportunity to identify the industry-level expectations and the areas where you need to pay crucial attention before commencing the implementations. Sidhalepa Ayurveda [7], Adhithya Ayurveda [8], Winsetha Ayurveda [9], Athreya Ayurveda, Suwasara Ayurveda and Sri Lankan Ayurvedic Drug Corporation [10] are the most well-known Ayurvedha treatment providers. After conducting a careful analytic examination, we understood that Sri Lankan Ayurvedic Drug Cooperation and Sidhalepa are the two providers that facilitate the patient to maintain a user account with the relevant authentication which serves as the main function in our proposed system. Sidhalepa Ayurveda, Adhithya Ayurveda, and Suwasara Ayurveda are the only three providers who have implemented an appointment management system to facilitate their patients.

Even though most of these ayurvedic medicine providers have been well known for decades they have no proper portal to enhance product distribution among the patients. Athreya Ayurveda, Sri Lankan Ayurvedic Drug Cooperation and Sidhalepa are engaged in proper product management. Sidhalepa, Athreya Ayurveda, and Suwasara Ayurveda are the three websites that provide the platform to indicate the treatments for some of the given sicknesses, but we have also noticed that none of the above systems offer the opportunity to maintain productive treatment management procedures. When it comes to session management, we notice that many Ayurvedic doctors are willing to offer their service and they possess a vast range of innovative ideas to serve the community. Unfortunately, only Athreya provides the facilities to make schedules for the session arrangement.

Continuous monitoring of the patient report plays a crucial task in seeking the treatment's success much quicker. Suwasara Ayurveda is the only website that has granted the opportunity to upload reports to the relevant doctors. Sidhalepa Ayurveda, Athreya Ayurveda, and Suwasara Ayurveda are the websites that engage in article management, and we noticed that Suwasara Ayurveda has done quite an impressive job in article management.

In conclusion, our analysis of existing Ayurvedic treatment providers' websites has provided valuable insights into the industry's standards and functional expectations. We identified key features such as user account management, appointment scheduling, product distribution, treatment indication, session arrangement, patient report monitoring across various platforms. While some providers excel in certain functionalities there remains a notable gap in some areas. Our proposed system aims to bridge these gaps by integrating essential features and optimizing user experience to meet industry-level expectations and enhance patient care in the realm of Ayurvedic treatment.

## Comparison Chart

*Table 1 - Comparison chart*

| Functions                         | Sayora<br>Ayurvedic<br>Wellness<br>Center | Sidhalepa<br>Ayurveda | Adhithya<br>Ayurveda | Winsetha<br>Ayurveda | Suwasara<br>Ayurveda | Ayurvedic<br>Drug<br>Corporation |
|-----------------------------------|---|-----------------------|----------------------|----------------------|----------------------|----------------------------------|
| User & Staff management           |   |                       |                      |                      |                      |                                  |
| Appointment management            |   |                       |                      |                      |                      |                                  |
| Product management                |   |                       |                      |                      |                      |                                  |
| Session management                |   |                       |                      |                      |                      |                                  |
| Treatment & Invoice<br>management |   |                       |                      |                      |                      |                                  |
| Patient status management         |   |                       |                      |                      |                      |                                  |
| Doctor Management                 |   |                       |                      |                      |                      |                                  |
| Inventory Management              |   |                       |                      |                      |                      |                                  |

## **Aim & Objectives**

### **1. Efficient management of doctor process.**

- The doctor process management system Enhance the treatment and overall processes of the wellness center by providing doctors with efficient tools for managing appointments, conducting examinations, and maintaining patient records.

**Objective** – Through a separate portal, show doctors an overview of upcoming appointments and appointment history.

Facilitate seamless examination workflow equipped with comprehensive view of medical records and reports of the patient, requisition management, prescription management, and management of treatment records.

Empower doctors with report generation facilities to get in touch with clinical outcomes.

### **2. Effective management of the patient process.**

- To support the management of the personal data of the patient ensuring confidentiality and privacy.

**Objective** - Facilitate the patient to actively engage in treatment by enhancing the facilities to upload and viewthe reports, prescriptions, treatment history and recommended ayurvedic products conveniently.

### **3. Optimization of appointment management**

- Prioritize the personal preference and comfort of the patient. Optimizing client-centric management to increase overall customer satisfaction.

**Objective** - Facilitate the patients with a user-friendly appointment scheduling process, and scheduling adjustments conveniently. Simultaneously facilitate the administrative staff to delete, update or manage new appointments without impacting the patient.

### **4. Efficient management of the treatments**

- Arrange a proper platform to make the community aware of the significance of Ayurvedic medicine and encourage the community to experience the essence of Ayurvedic treatments.

**Objective** - Facilitate the user in getting touch with a clear view of the treatments available by providing convenient user interfaces, providing the opportunity to make appointments based on the given treatment procedures and the treatment managers should get the opportunity to make any change in the system easily.

## **5. Efficient Product management**

- Implementation of a system to ensure timely access to the ayurvedic products to accelerate the success of the treatment.

**Objective -** Facilitate the user with a comfortable product purchasing process by enhancing the smoothness in placing orders, checking availability, and exploring the recommendations based on the treatment.

## **6. Efficient Inventory Management Implementation:**

- Automating procurement processes, enabling real-time inventory tracking, fostering data-driven decision-making through comprehensive purchase history reports, facilitating seamless communication with external suppliers, and conducting user training programs for successful system integration into daily operations.

**Objective -** Facilitate the inventory manager to streamline procurement processes, enhance real-time inventory control, enable data-driven decision-making, improve supplier collaboration, and ensure user-friendly integration, all with the overarching goal of optimizing clinic operations and ensuring a seamless flow of essential supplies.

## **7. Proper management of other services (Awareness sessions)**

- Implementation of a system which supports both the organization and the community to arrange and properly manage awareness sessions to enhance public interaction with the unique aspects of Ayurvedic medicine.

**Objective -** Implement a system for organizing and managing awareness sessions on Ayurvedic medicine, enhancing public engagement, and promoting understanding and participation in healthcare practices. This will streamline coordination, provide resources, and improve holistic well-being and healthcare outcomes.

## **8. Educate the community through treatment & invoice management.**

- A platform is needed for organizing and managing awareness sessions about Ayurvedic medicine. This centralized hub will streamline the process, including scheduling tools, resource allocation, and attendee management. It will also integrate billing and invoicing for transparent transactions. The goal is to enhance public interaction, promote community engagement, and streamline healthcare-related activities.

**Objective -** A community education program on treatment and invoice management aims to enhance healthcare awareness, financial responsibilities, and patient understanding. This initiative promotes informed decision-making, reduces misunderstandings, and fosters collaboration between healthcare providers and the community.

## **Solution Overview**

1. Provide an online interface for the patients to make the appointments.
  - The application provides the opportunity for both the registered and guest patients to schedule appointments concerning their preferences. The email notifications will inform the patients about the approval and the cancellation of the appointment conveniently.
2. Provide an online interface for the convenient management of inventory items.
  - The application provides the opportunity to monitor the daily usage of the items and the remaining inventory items conveniently. Then the inventory manager can directly communicate with the relevant suppliers to purchase the insufficient items without undergoing any delay in purchasing inventory.

Analytical demonstration tools provided in the web application ensure to provide real-time updates and insights, ensuring accurate and up-to-date inventory information for efficient decision-making and operations.
3. Enable the online platform for the users to purchase Ayurvedic products.
  - This function allows users to browse through a selection of Ayurvedic products and make purchases directly through the platform. By providing a user-friendly interface, customers can easily explore different products, view detailed descriptions, and make purchase orders, enhancing accessibility to Ayurvedic remedies and wellness solutions.
4. Provide an online interface for the patient to add medical reports.
  - The patients can easily upload their medical reports and there is no need to carry the reports physically. It also provides accessibility for the doctors to view and add other necessary reports to the relevant patients' portal. This feature reduces the risk of losing essential medical reports and enhances timely access to the reports.
5. Provide an online interface opportunity for the users to schedule sessions.
  - The users can make appointments to meet the doctor through the session management function without physically meeting the doctor. The application enables the facility to make schedules for the session through the email portal resulting in maximum comfort for both the users and doctors in arranging sessions.
6. Offer a secure online portal for various users to access the application.
  - The application ensures the maximum security of the sensitive data of various users by providing secure login portals with appropriate authentic measures.
7. Provide an online portal to manage the staff efficiently.
  - The application optimizes staff activities by providing features to enhance attendance management, salary management and leave management. Through the web application, errors in these areas are minimized, while efficiency and effectiveness are maximized.

8. Offers an online platform to monitor the daily medical status of the patient.
  - The web application offers the opportunity for the patient to update health details, medical issues, and current medical status daily. The web application offers a summary view of the patient's medical treatment records enabling both patients and medical professionals to review the past progress and make informed decisions about ongoing care.
9. Offer an online portal for the doctors to facilitate the examination and diagnosis process.
  - No need to worry about making prescriptions and other relevant medical notes on paper, the doctors can keep notes on the treatment process and doctors can overview the notes at any time.
10. Provides an online platform for doctors to monitor daily schedules.
  - The doctors can filter and view the appointments daily so that the doctor can efficiently manage their time and can make relevant cancellations beforehand without making the patients uncomfortable.
11. The opportunity to generate first reports considering the appointment routings.
  - The doctors are facilitated to make the finance reports to monitor their finances based on the appointment schedules.

## **Methodology**

### **Agile Development Method -**

We will use agile development method [11] to analyze the requirements and develop the system based on client needs. The agile development method facilitates continuous collaboration, adaptability, and client involvement, ensuring that the System evolves in response to changing requirements and user needs.

- 1. User Stories and Client Collaboration:** We will begin with the identification of user stories, captured client expectations, and needs then collaborate closely with the client through regular meetings and interviews to ensure their goals of the system.
- 2. Iterative Planning and Development:** Adopt an iterative and incremental development approach to prioritize and implement essential features after breaks down the project into smaller, manageable iterations to deliver value incrementally.
- 3. User-Centric Design and Prototyping:** Focus on user-centric design, will create prototypes and design mockups for client review and feedback and gather insights from doctors and medical staff to understand the practical challenges they face in examining patients.
- 4. Continuous Integration and Testing:** Implement continuous integration practices [12] to ensure that new features integrate seamlessly into the existing system. Conduct regular testing, including user acceptance testing, to identify and address issues early in the development process.
- 5. Adaptability to Changing Requirements:** Embrace changes in requirements by maintaining a flexible mindset throughout the development process. Regularly review and reassess project priorities based on feedback from clients and end-users.
- 6. Feedback from Medical Staff:** We will establish frequent feedback loops with doctors and medical staff to address challenges and gather insights into the difficulties they face during patient examinations. It will be utilized to refine and enhance the system continuously.
- 7. Questionnaire Integration for Patient Information:** Incorporate a questionnaire feature based on insights gathering from patient when they see the doctor. It will allow for flexibility in adjusting the questionnaire based on ongoing feedback from both medical staff and patients.
- 8. Regular Sprint Reviews:** Conduct regular sprint reviews with the client to showcase the implemented features and gather feedback. And will use these reviews to ensure that the system aligns with the client's expectations and meets the needs of the medical center.

## **The Structure of the Report**

### **Section 1: Problem Statement and Deliverables**

An outline of the difficulties with the existing manual system is given in this section. It explains the necessity of a new system as well as the demands and expectations of the users of the system. This part lays the groundwork for the succeeding phases of analysis and development by emphasizing the shortcomings of the current system and the intended results of the new system.

### **Section 2: Requirement Analysis, Design, Implementation, and Testing**

The report's core part provides a thorough account of the whole process of designing the new system. Use case and activity diagrams are used to study user interactions and system functionality during the first step, requirement analysis. After that, the system architecture, ER diagrams, and system overview are included in the Design phase, which serves as a blueprint for the system's composition and operation. To give a thorough knowledge of the system's design and implementation, additional diagrams such as flowcharts, use case scenarios, class diagrams, sequence diagrams, component diagrams, and GUI mockups are given. The testing step, which describes test cases and module structures to make sure the system satisfies the requirements and performs as intended, rounds off the section.

### **Section 3: References**

References consulted throughout the development of the project report are included in the report's final section. The information and research sources that helped with the creation and documentation of the new system are acknowledged in this section.

## **Git Repo Link**

[https://github.com/ushan-rx/Sayora\\_web\\_application](https://github.com/ushan-rx/Sayora_web_application)

# Chapter 02 – Requirements

## Requirement Stakeholder Analysis

### 01. Stakeholders' Onion Diagram

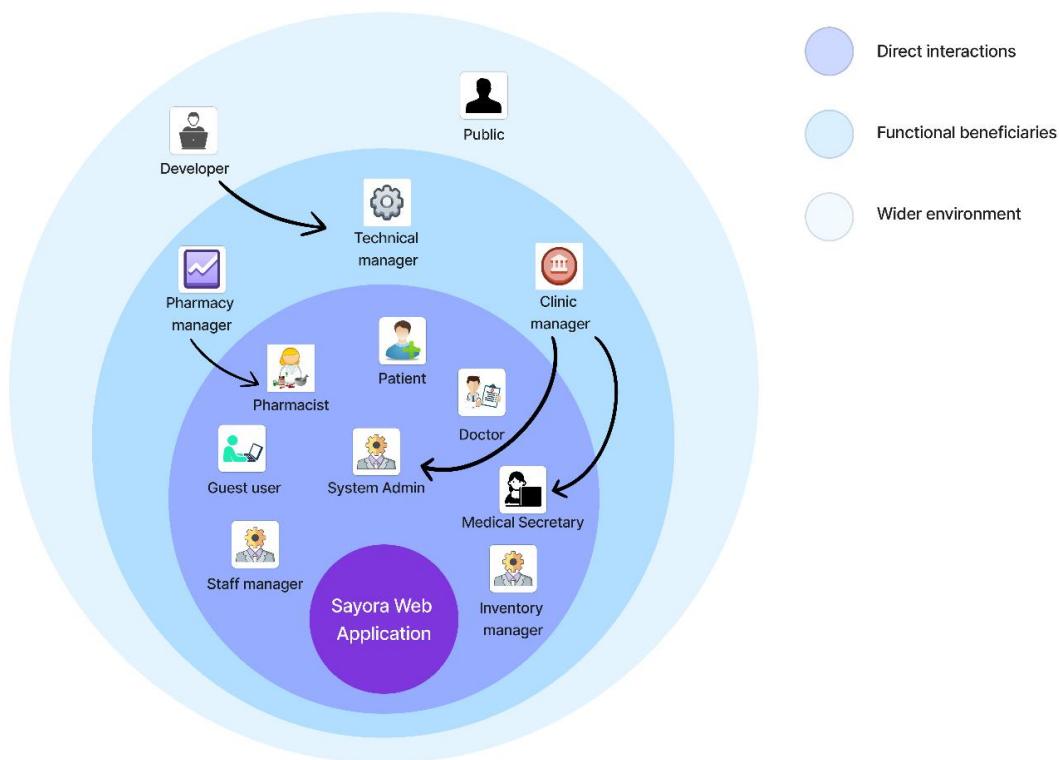


Figure 3. 1 - Stakeholders' Onion Diagram

The Sayora Ayurvedic Clinic System involves several stakeholders with distinct interests in its success. The primary stakeholders encompass the system administrators, tasked with operating the clinic system. Their objective is to streamline operations and enhance efficiency within the clinic. Additionally, doctors play a crucial role in efficiently managing patient details and optimizing healthcare activities.

Patients themselves benefit from seamless access to their medical records, appointment scheduling, and product purchases. Guest patients, too, have a stake as they interact with the system for appointments and sessions. The clinic staff, comprising inventory managers, pharmacists, cashiers, and receptionists, are integral stakeholders who rely on the system daily for smooth operations.

Suppliers, another key stakeholder group, benefit from improved order and inventory tracking, which fosters stronger relationships with the clinic. Each stakeholder's involvement is pivotal for the effective functioning and prosperity of the Sayora Ayurvedic Clinic System.

## **Requirement Analysis**

### **Doctor Process Management**

- Examination process Management.
- Manage doctor's profile.
- View currently monitoring/regular patients.
- View patients' medical records.
- Add/update medical records.
- Write and print prescriptions.
- Generate reports regarding patients and their recovery rates.

### **Patient Process Management**

- View and manage patient profile.
- Manage prescriptions.
- Download and share prescriptions.
- Record, edit and update daily medical status.
- Schedule a new appointment and manage scheduled appointments.
- View, update and delete test reports.
- View treatments and give feedback to treatments.
- View billing history

### **Appointment Management**

- Scheduling new appointments
- Notifications for the confirmation of appointment
- Notifications and other reminders
- Cancellation of the appointments
- Add new appointment categories.
- Delete/update existing appointment schedules.
- Access to the appointment details
- Generate reports.

### **User and Staff Management**

- Patient Management by Medical Secretary
- Staff and Patient Account Setup and Authentication
- Chatbot Service for Guests and Patients
- Staff Role Based Access Control
- Staff Details Management
- Staff Attendance and Salary Management
- Report Generation

### **Inventory Management**

- Manage Inventory Management.
- Add/ Update Inventory Items.
- Remove Inventory Items from the inventory.
- Add/ Update Suppliers.
- Remove Suppliers from the system.
- Add/ Update Orders of items.
- Remove Orders from the system.
- Track inventory item usage.
- Notify the suppliers by email.
- Report Generation.
- Generate invoice.

### **Product Management**

- Order Management
- Display of products.
- Order Modification and History.
- Product Inventory Management.
- Repurchase and cancelation.
- Report Generation.

### **Service Management**

- Awareness Session Booking

- Details Confirmation in Bookings
- Booking Confirmation Communication (Email interface)
- Reporting and Analytics for Bookings
- Send notifications and Reminders.
- Doctor Home visits bookings
- Home visits confirmation

### **Treatment & Invoice Management**

- User's/Patient's-side interface for view treatments
- Add new treatments to the system.
- Preview display for treatment details.
- Delete/ Update treatments.
- View treatments details if needed.
- Generate invoice.

## Requirement Modeling

### 01. Usecase Diagram of the System

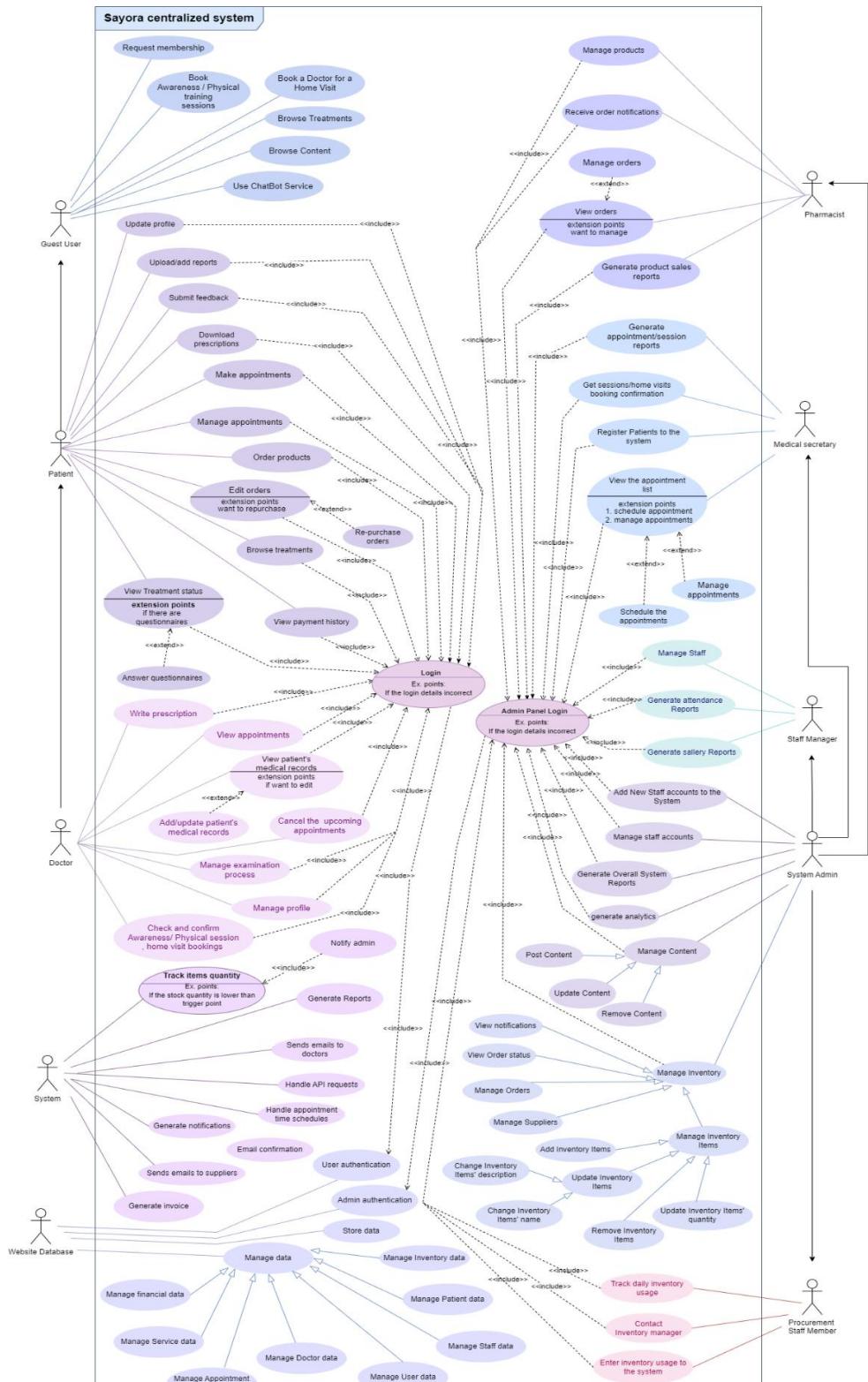


Figure 3. 2 - Usecase Diagram

## **Doctor Process Management**

*Table 2 - Usecase Scenario of Doctor Process Management System*

| <b>Name</b>              | Doctor's Channeling process.  |   |
|--------------------------|---|---|
| <b>Summary</b>           | View patient's medical records, recommend treatments, writes prescription.                    |   |
| <b>Priority</b>          | 04  |   |
| <b>Pre-conditions</b>    | Doctor must be logged in to the system Through Web App in channeling hours.                   |   |
| <b>Post-conditions</b>   | Treatments are recommended, prescription is printed, and information is stored in the system. |   |
| <b>Primary Actors(s)</b> | Doctor  |   |
| <b>Trigger</b>           | Doctor wants to manage medical examination, Treatments.                                       |   |
| <b>Main Scenario</b>     | <b>Step</b>   | <b>Action</b>   |
|                          | 1   | Doctor logs in to the doctor portal.                    |
|                          | 2   | Directed to the Dashboard.                              |
|                          | 3   | Clicks the Ongoing 'Appointments' section.              |
|                          | 4   | Available appointments list is automatically displayed. |
|                          | 5   | Choose the patient and open 'Examination' section.      |
|                          | 6   | View patient's medical history.                         |
|                          | 7   | Navigates to the reports section.                       |
|                          | 8   | View Patient's test reports.                            |
|                          | 9   | Navigates to diagnosis section.                         |
|                          | 10  | Conduct examination and take notes                      |
|                          | 11  | Navigates to prescription section.                      |
|                          | 12  | Decides the illness/ condition and inputs it.           |
|                          | 13  | Provides treatments and record them.                    |
|                          | 14  | Writes the prescription and save.                       |
|                          | 15  | Presses print option.                                   |
|                          | 16  | Marks appointment as completed                          |
|                          | 17  | Heads to the next patient.                              |
| <b>Extensions</b>        | <b>Step</b>   | <b>Action</b>   |

|  |     |   |
|--|-----|---|
|  | 5a  | If the patient is not registered conduct the examination manually and press complete button to mark the appointment as completed. |
|  | 7a  | Updates existing health records.  |
|  | 8a  | Uploads reports if needed.  |
|  | 10a | View previous notes if needed.  |
|  | 10b | Request for additional reports if needed.   |
|  | 14a | Schedule treatments.  |

## 01. Class Diagram

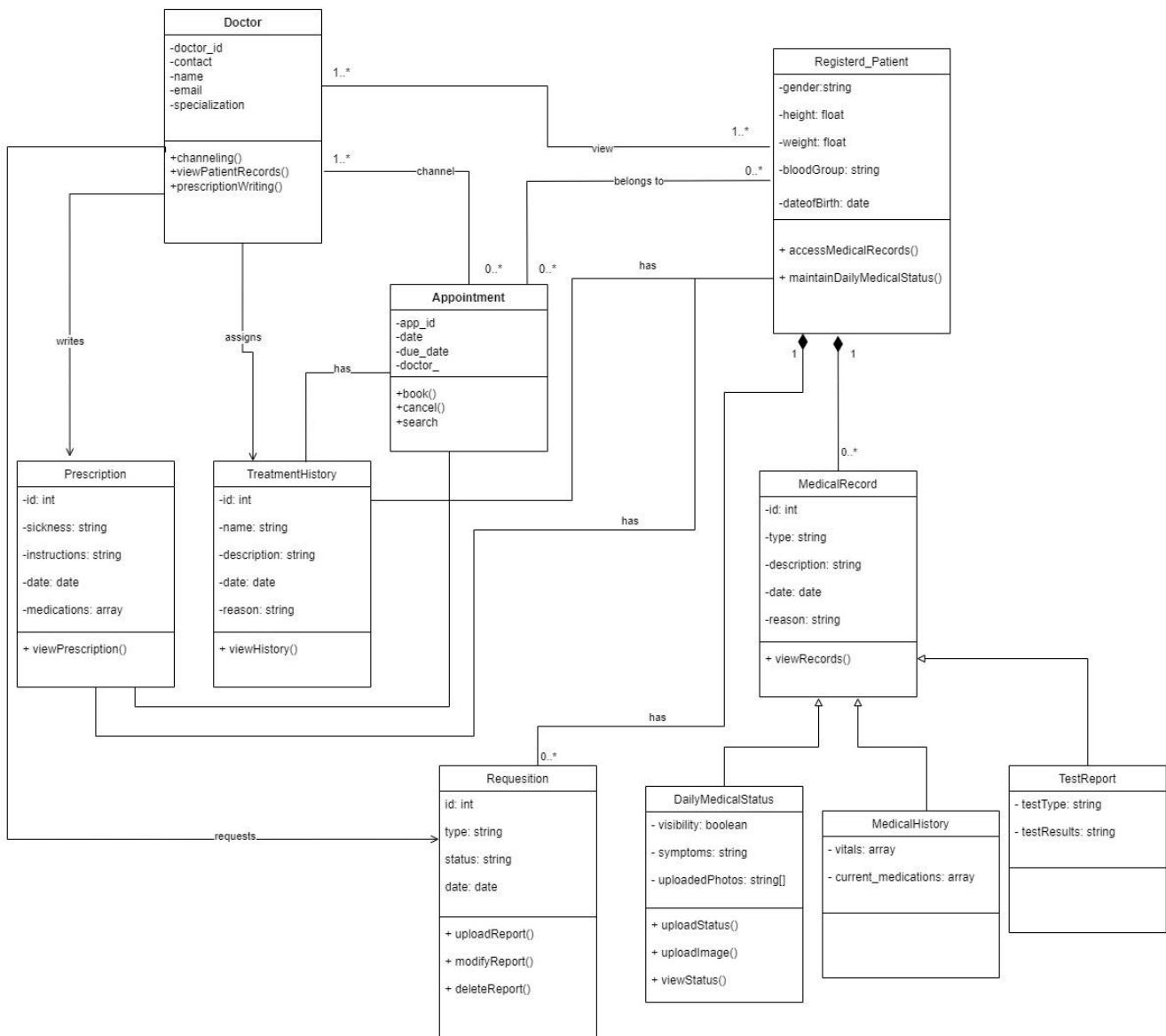


Figure 3. 3 - Class Diagram of Doctor Process Management System

## 02. Activity Diagram

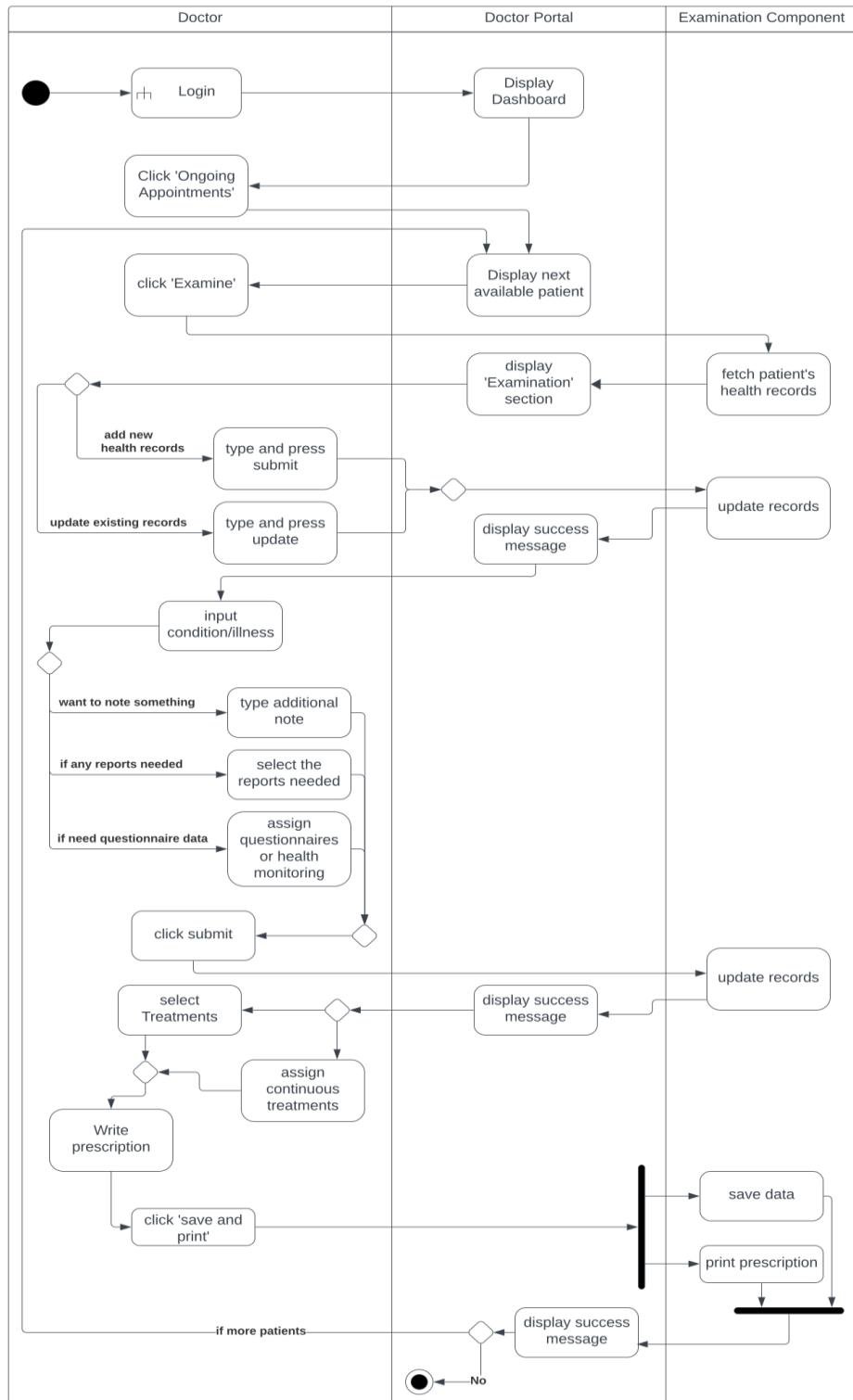


Figure 3. 4 -Activity Diagram of Doctor Process Management System

### 03. Sequence Diagram

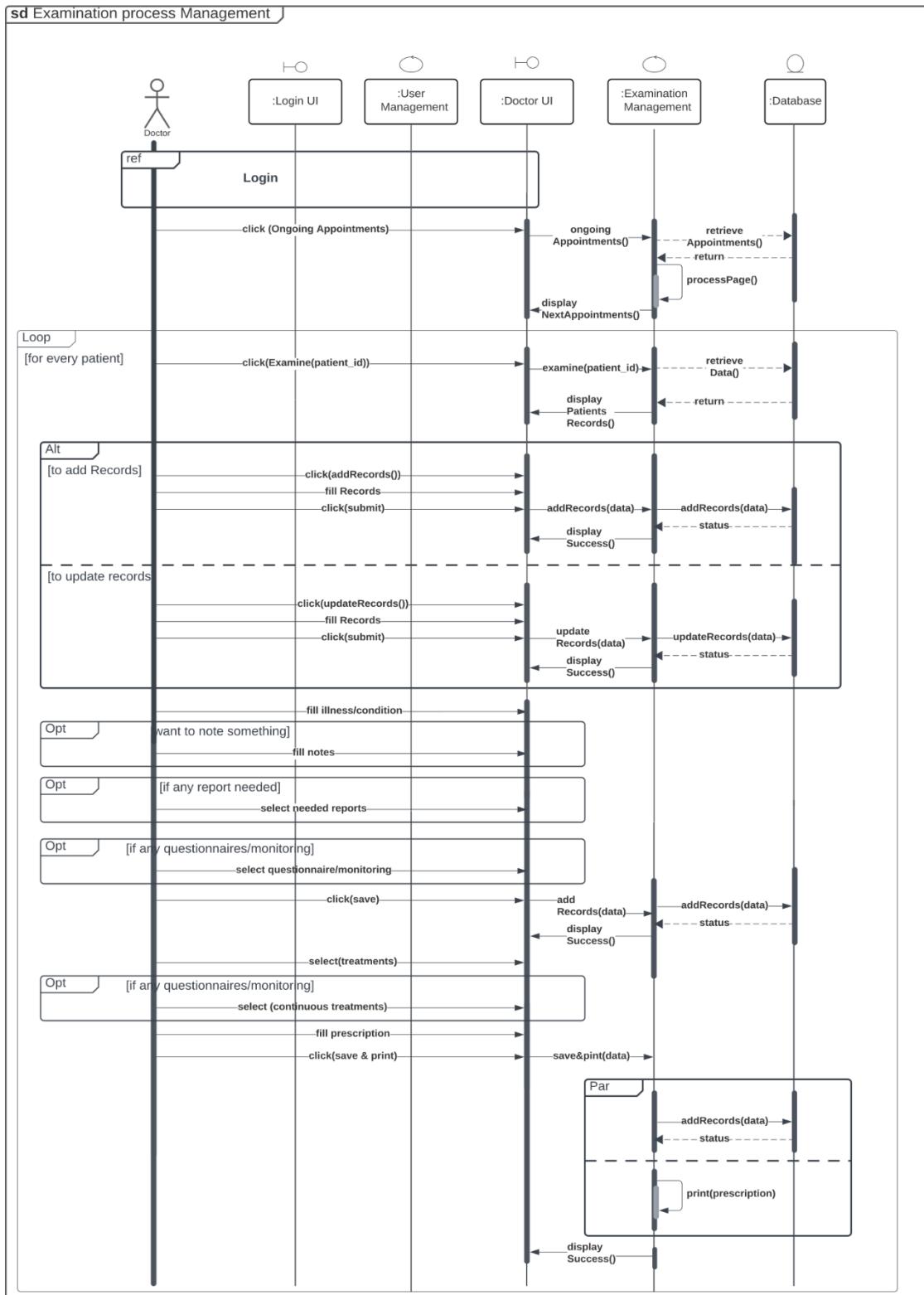


Figure 3. 5 - Sequence Diagram of Doctor Process Management System

## **Patient Process Management**

*Table 3 - Usecase Scenario of Patient Process Management System*

|                        |   |   |
|------------------------|---|---|
| <b>Number</b>          | SWC02   |   |
| <b>Name</b>            | Patients manage his records within patient process                              |   |
| <b>Summary</b>         | Patient access to his every medical detail and handle them.                     |   |
| <b>Priority</b>        | 01  |   |
| <b>Pre-Condition</b>   | Patient is logged into the system.  |   |
| <b>Post-Condition</b>  | The customer receives the notification for the confirmation of the appointment. |   |
| <b>Primary actor</b>   | The patient   |   |
| <b>Secondary Actor</b> | System Administrator, Doctor  |   |
| <b>Trigger</b>         | The patient decides to view his medical records.                                |   |
| <b>Main scenario</b>   | <b>Step</b>   | <b>Branching Action</b>   |
|                        | 1.  | The patient accesses his dashboard which shows his summary of medical records.  |
|                        | 2.  | Patient navigates to the Prescription section by clicking on "Prescriptions" button.  |
|                        | 3.  | The system displays a list of doctor-uploaded prescriptions and patients can view each of them.   |
|                        | 4.  | Patient seamlessly shares, downloads prescriptions by viewing them.   |
|                        | 5.  | Patient upload test reports for doctor requested prescriptions such as blood/ ECG reports.  |
|                        | 6.  | Patient accesses the Treatments section by clicking on "Treatments" button.   |
|                        | 7.  | The system displays a comprehensive view of treatment records and a Schedule date for treatments. Patient actively completes the daily questionnaire tailored for specific treatment types. |
|                        | 8.  | Patients enroll for new treatments by clicking "New Treatment" button.  |
|                        | 9.  | the system prompts the patient to provide real-time feedback.   |
|                        | 10.   | Patient shares insights through submitting his feedback with a star rating system.  |
|                        | 11.   | Patient has the option to edit or delete feedback based on preferences before doctor views them.  |
|                        | 12.   | The system will notify when feedback submitted.   |
|                        | 13.   | Patients maintain his daily medical status by record them using daily status form.  |

|                   |              |   |
|-------------------|--------------|---|
|                   | 14.          | Enter description for his daily medical status and upload pictures according to his preference.                             |
|                   | 15.          | Patient navigates to the health report section by clicking on “My reports” tab.   |
|                   | 16.          | Then the system will display what are the results of treatments, reports of tests and patient can access them individually. |
|                   | 17.          | Patient clicks on “see my progress” button to see his medical progress.   |
|                   | 18.          | System shows his progress report which automatically generated by system.   |
|                   | 19.          | Patient download and share his medical reports.   |
| <b>Extensions</b> | <b>Steps</b> | <b>Branching Actions</b>  |
|                   | 5a.          | If the doctors requested for upload to reports which are getting from external party only system, ask to upload.            |
|                   | 8a.          | If patient have done treatments without giving feedback system automatically prompt and ask.                                |
|                   | 10a.         | If the submitted feedback are viewed by doctors, system does not allow to edit or delete them.                              |

## 01. Class Diagram

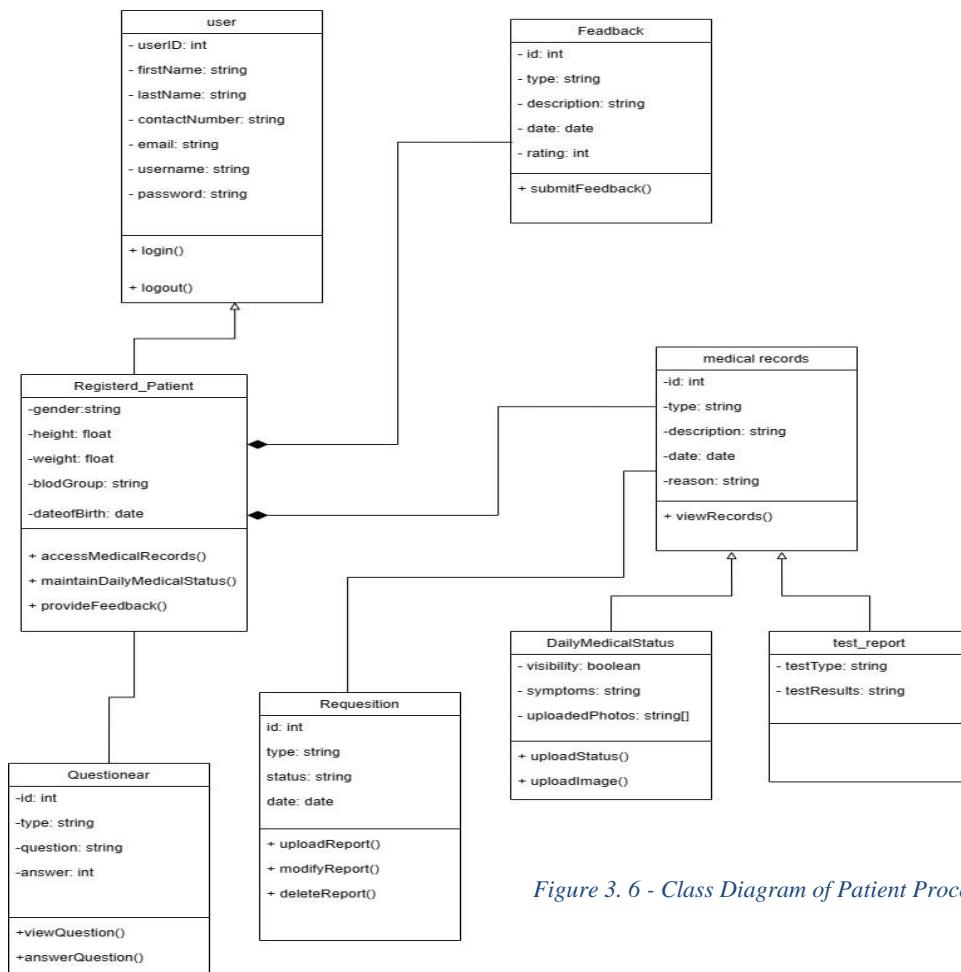


Figure 3. 6 - Class Diagram of Patient Process Management System

## 02. Activity Diagram

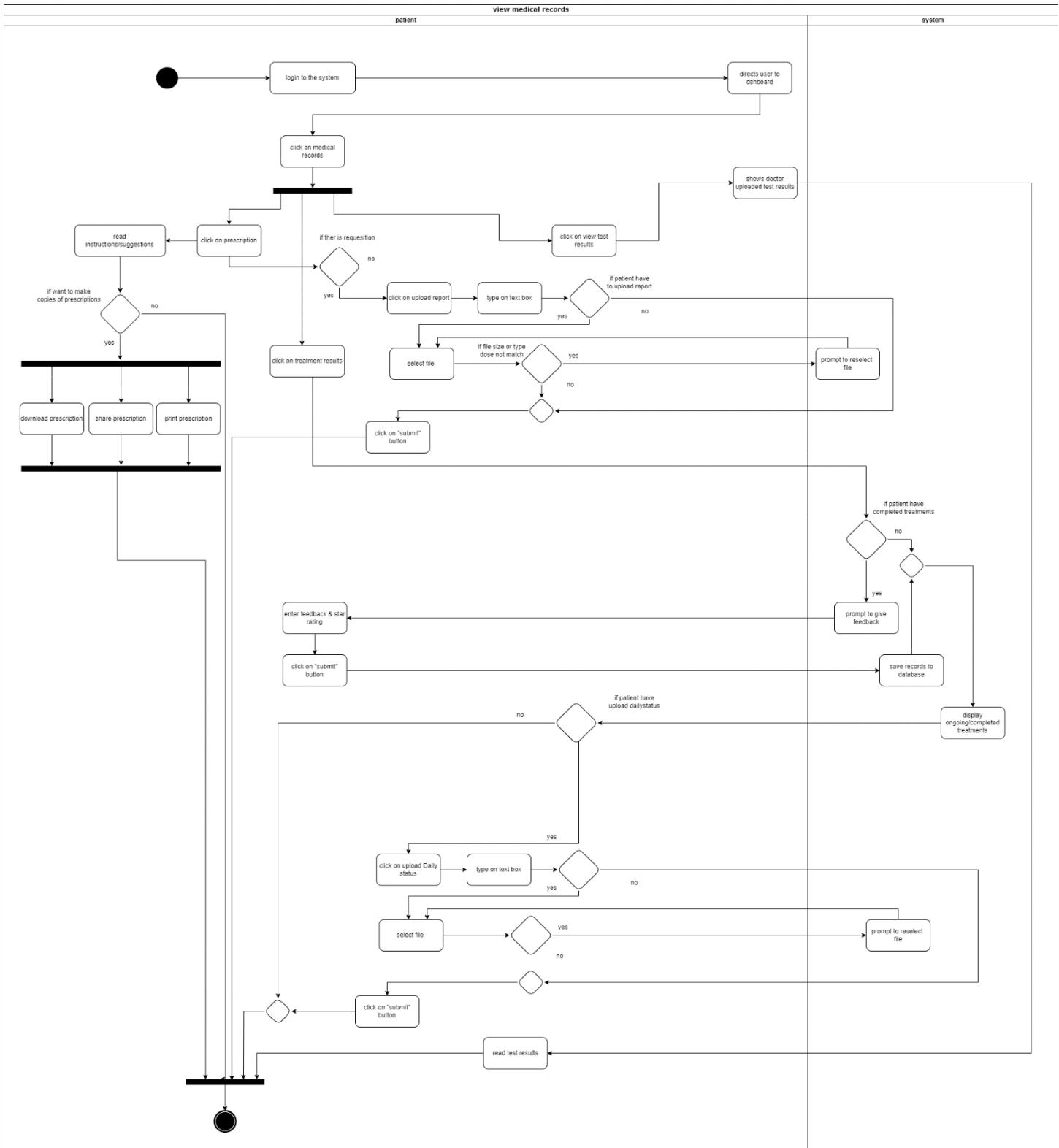


Figure 3. 7 - Activity Diagram of Patient Process Management System

### 03. Sequence Diagram

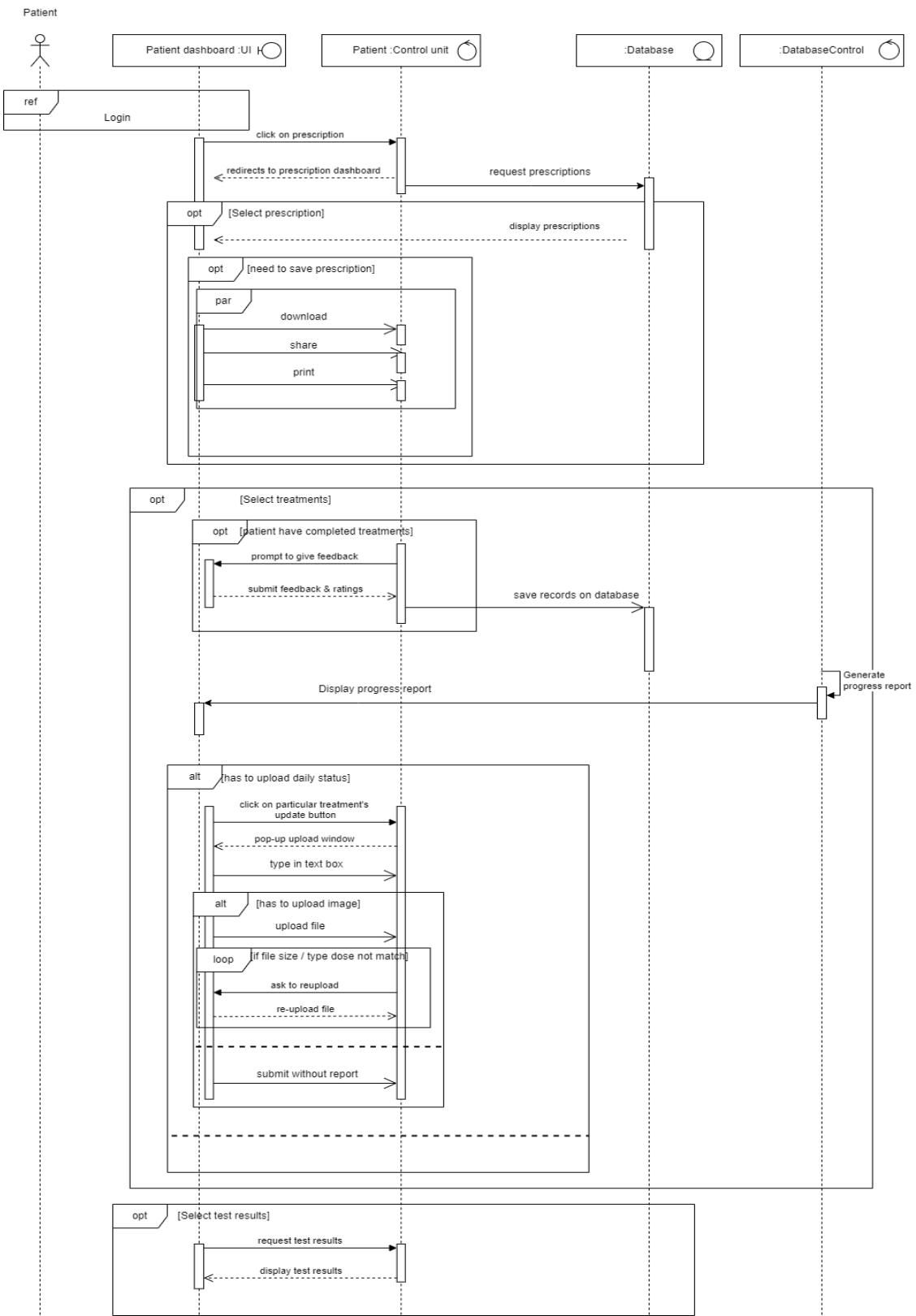


Figure 3. 8 - Sequence Diagram of Patient Process Management System

## Appointment Management

Table 4 - Usecase Scenario of Appointment Management System

|                        |  |   |
|------------------------|--|---|
| <b>Number</b>          | SWC03  |   |
| <b>Name</b>            | Making an appointment with the relevant doctor   |   |
| <b>Summary</b>         | A customer makes an appointment with the doctor based on the sickness and the treatment that must be done. |   |
| <b>Priority</b>        | 07   |   |
| <b>Pre-Condition</b>   | The patient has access to the hospital website.  |   |
| <b>Post-Condition</b>  | The customer receives the notification for the confirmation of the appointment.                            |   |
| <b>Primary actor</b>   | The patient  |   |
| <b>Secondary Actor</b> | System Administrator   |   |
| <b>Trigger</b>         | The patient decides to make an appointment.  |   |
| <b>Main scenarios</b>  | Step   | Branching Action  |
|                        | 1.   | The patient accesses the home page of the site which allows for the direct appointment gateway.   |
|                        | 2.   | Patients can quickly access the appointment page with the appointment gateway “New Appointment” given on the landing page.  |
|                        | 3.   | The system directs the user to the appointment page and prompts the user to enter the specialization of the doctor and the date.  |
|                        | 4.   | The user enters the specialization and if the user decides to get the appointment after checking out the treatments of the hospital (treatment management), the specialization of the doctor will get auto filled by the system. The patient needs to choose a date only. |
|                        | 5.   | The user needs to select the preferred date for the appointment.  |
|                        | 6.   | Once the specialization and the required date are selected, the patient needs to click on the “search” button to filter the available doctor list that suits the patient's requirements.  |
|                        | 7.   | Once the selection is done the system will direct the patient to the doctors' list.   |
|                        | 8.   | The patient will get the chance to choose their preferred doctor from the filtered list of doctors.   |
|                        | 9.   | After choosing the doctor, the patient confirms the selection by clicking on the “Make Appointment” button.   |
|                        | 10.  | The system will direct the user to the appointment page of the given doctor which prompts the user about the time allocation of the appointment.  |
|                        | 11.  | The user can confirm the appointment.   |
|                        | 12.  | Then the system will re-direct the patient to the appointment detail page where a user is asked to submit the personal details.   |
|                        | 13.  | Users can submit their details including name, age, gender, nationality, NIC/passport number email, and phone number.   |
|                        | 14.  | The patient needs to confirm the given details by clicking on the “confirm” button.   |

|            | 15.   | The system will direct the user to the page for Mobile number authentication and send the OTP number to the contact number mentioned above.                               |
|------------|-------|---|
|            | 16.   | The user can enter the OTP number correctly.  |
|            | 17.   | The system will conduct OTP authentication.   |
|            | 18.   | Then the system will notify the appointment is successful.  |
|            | 19.   | The system directs the user to the page with the appointment summary.   |
|            | 20.   | The patient can view the appointment details.   |
|            | 21.   | The system will also send the appointment details to the patient as an email including the reference number of the appointment.   |
|            | 22.   | The user can view all the appointments by clicking on the “My Appointment” button.  |
|            | 23.   | The system will direct the user to the “My Appointment” page and prompt them to enter the reference number and the contact number to search for the relevant appointment. |
|            | 24.   | The user enters the required reference number and the contact number and clicks on “search”.  |
|            | 25.   | The system displays the summary of the appointment.   |
| Extensions | Steps | Branching Actions   |
|            | 7a.   | If the doctors are unavailable on the given date the system will notify them to choose another date.  |
|            | 13a.  | If the submitted mobile number contains an insufficient number of digits the system will notify you to re-enter the mobile number.  |
|            | 13b.  | If the submitted email address is not present in the standard way it will notify the user to re-enter.  |
|            | 13c.  | If the user makes an incomplete submission the system will notify them to complete all the details.   |
|            | 17a.  | If the OTP authentication is unsuccessful system will provide the option to re-send the OTP.  |
|            | 24a.  | The user may submit the wrong reference number or contact number and the system needs to inform the user to re-check the submitted details.                               |

## 01. Class Diagram

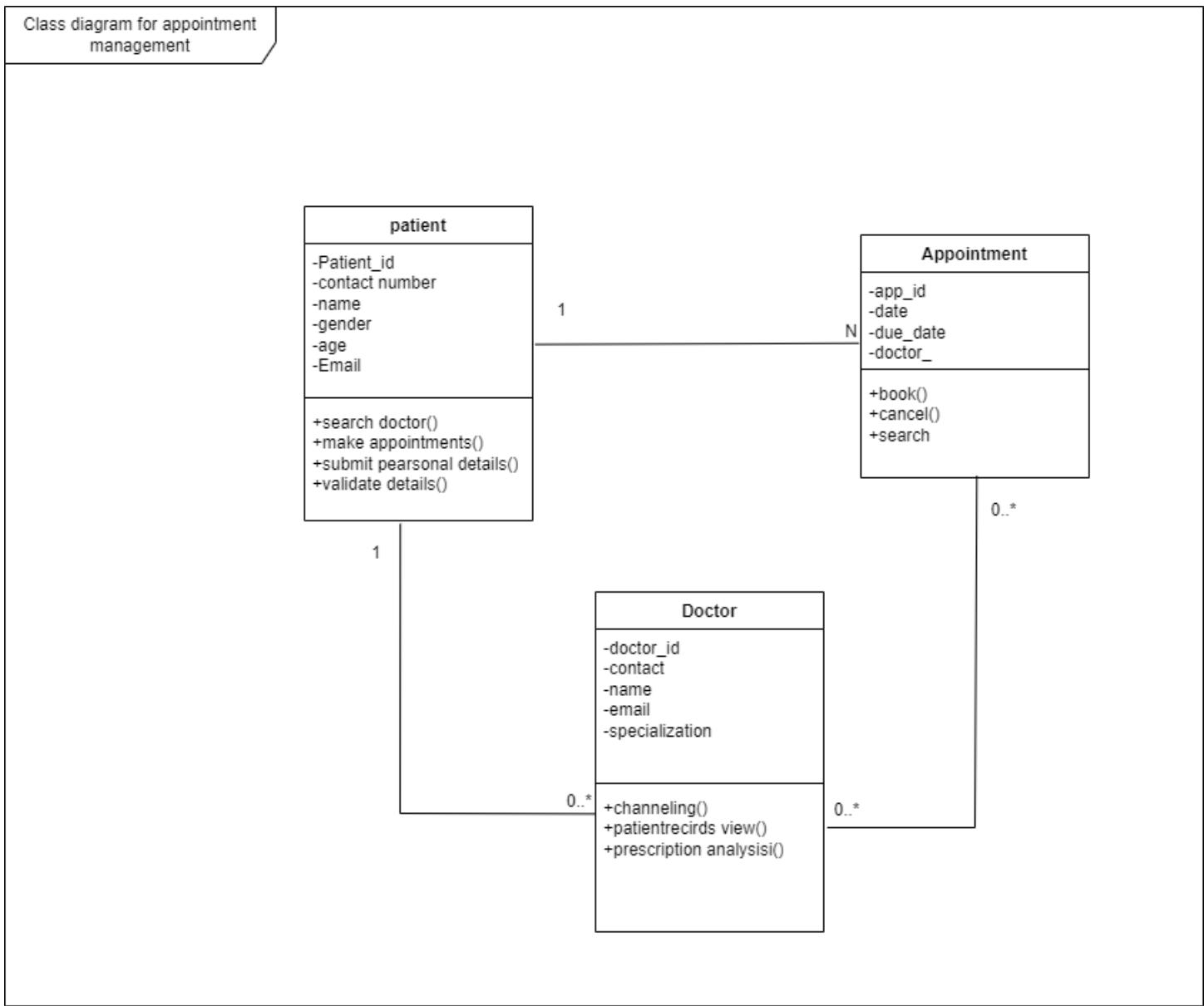


Figure 3. 9 - Class Diagram of Appointment Management System

## 02. Activity Diagram

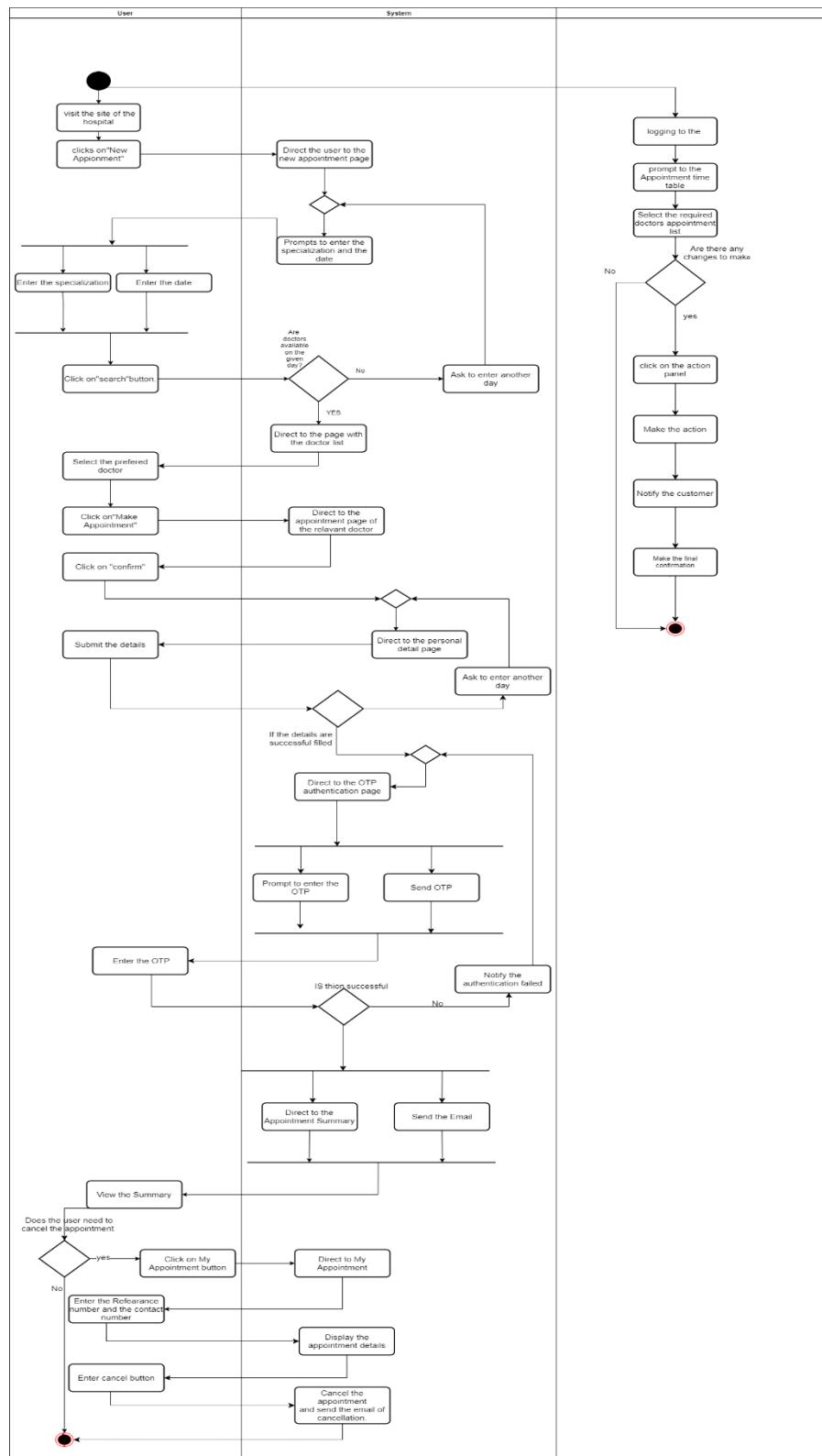


Figure 3. 10 - Activity diagram of Appointment Management System

### 03. Sequence Diagram

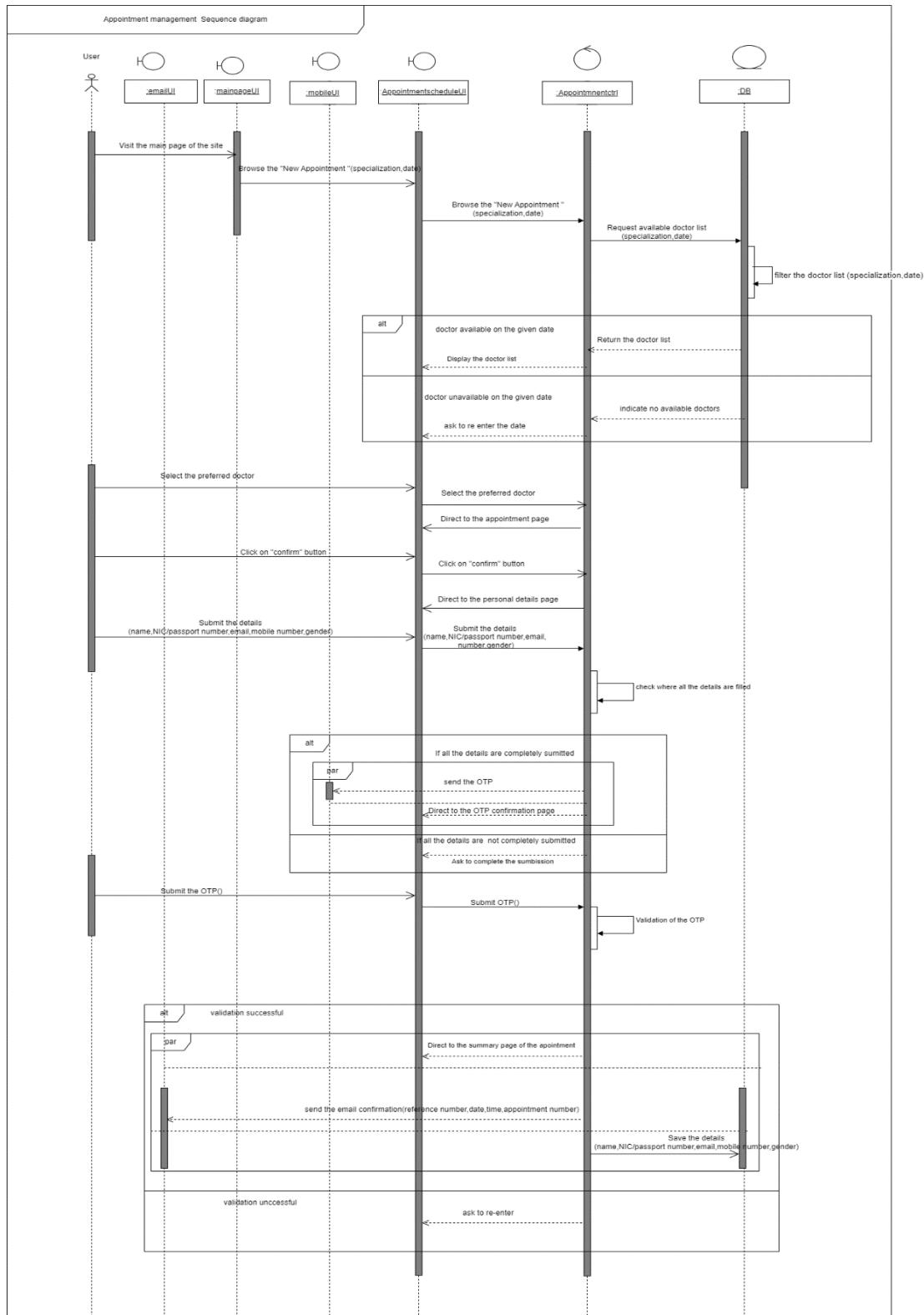


Figure 3. 11 - Sequence Diagram of Appointment Management System

## User and Staff Management

Table 5 - Usecase Scenario of Use & Staff Management System 01

| <b>Number</b>         | SWC04   |   |
|-----------------------|---|---|
| <b>Name</b>           | Add Staff to System                                 |   |
| <b>Summary</b>        | Add new staff member to the system                  |   |
| <b>Pre-condition</b>  | Must have system admin role accesses                |   |
| <b>Post-condition</b> | Add new staff member to the system                  |   |
| <b>Primary actor</b>  | System Admin  |   |
| <b>Trigger</b>        | Admin chosen the staff and added them to the system |   |
| Main scenario         | Step  | Action  |
|                       | 1.  | Include:: (Staff Login)   |
|                       | 2.  | Use case starts when admin accesses the admin panel                           |
|                       | 3.  | Admin access the manage staff members page                                    |
|                       | 4.  | Admin Access to Add New Staff member page                                     |
|                       | 5.  | System provides staff role selection method                                   |
|                       | 6   | Admins choose staff role and continue   |
|                       | 7.  | According to the role, system display relevant form                           |
|                       | 8.  | Admin Fill the details of new staff member                                    |
|                       | 9.  | Admin confirm data and submit form  |
|                       | 10.   | System validates the data entered by admin                                    |
|                       | 11.   | System shows success message to admin   |
|                       | 12.   | System saves the details in database  |
|                       | 13.   | System Send confirmation email and login credentials to the new staff member  |
|                       | 14.   | Admin redirect to manage staff page   |
| Extensions            | Step  | Branching Action  |
|                       | 3.a   | If the staff member does not have an admin role. system shows warning message |
|                       | 3.b   | System redirects staff member to his relevant page                            |
|                       | 10.a  | If there are any errors in filled details system highlight those errors       |
|                       | 10.b  | System suggest admin to what field need to be fixed                           |

*Table 6 - Usecase Scenario of Use & Staff Management System 02*

| <b>Number</b>         | SWC05   |   |
|-----------------------|---|---|
| <b>Name</b>           | Staff Salary Management   |   |
| <b>Summary</b>        | Manage Staff Salary   |   |
| <b>Pre-condition</b>  | Must have system admin role accesses  |   |
| <b>Post-condition</b> | The Salary Manager is authenticated and authorized to access the salary management system. Staff data, Staff salaries are updated and managed efficiently, reports are generated, and staff members can view their pay slips. |   |
| <b>Primary actor</b>  | Staff Manager, Staff Member   |   |
| <b>Trigger</b>        | Staff Manger accesses the Salary Management section of staff dashboard  |   |
| Main scenario         | Step  | Action  |
|                       | 1.  | Include:: (Staff Login)   |
|                       | 2.  | System validates credentials and grants access.   |
|                       | 2.  | Use case starts when Staff Manger accesses the Salary Management section of staff dashboard |
|                       | 3.  | Staff Manager Views the list of staff with salary details.                                  |
|                       | 4.  | System retrieves and shows all staff salary records.  |
|                       | 5.  | Staff Manager Selects a staff member from the list.   |
|                       | 6   | System displays selected staff member's detailed salary information.                        |
|                       | 7.  | Staff Manager Modifies salary details if necessary.   |
|                       | 8.  | System updates the salary details in the database.  |
|                       | 9.  | Staff Manager Initiates the calculation of monthly salaries.                                |
|                       | 10.   | System calculates the salaries for all staff.   |
|                       | 11.   | Staff Manager Reviews and authorizes salary payments.                                       |
|                       | 12.   | Staff Manager Generates salary reports.   |
|                       | 13.   | System creates and displays the reports for review.   |
|                       | 14.   | Staff Member Logs into the system and System validates credentials and grants access.       |
|                       | 16  | Staff Member Navigates to the salary section and Views and/or downloads the pay slip.       |

|            | 17   | System provides the pay slip for viewing or downloading.  |
|------------|------|---|
| Extensions | Step | Branching Action  |
|            | 2.a  | <b>Invalid Login:</b> If the login is invalid at any step where login is required, the system displays an error message and allows the actor to retry.            |
|            | 8.a  | <b>Failed Salary Update:</b> If the salary details cannot be updated (e.g., due to a database error), the system informs the Staff Manager and suggests retrying. |
|            | 12.a | If the system fails to generate reports, it notifies the Staff Manager and offers an option to retry.   |

## 01. Class Diagram

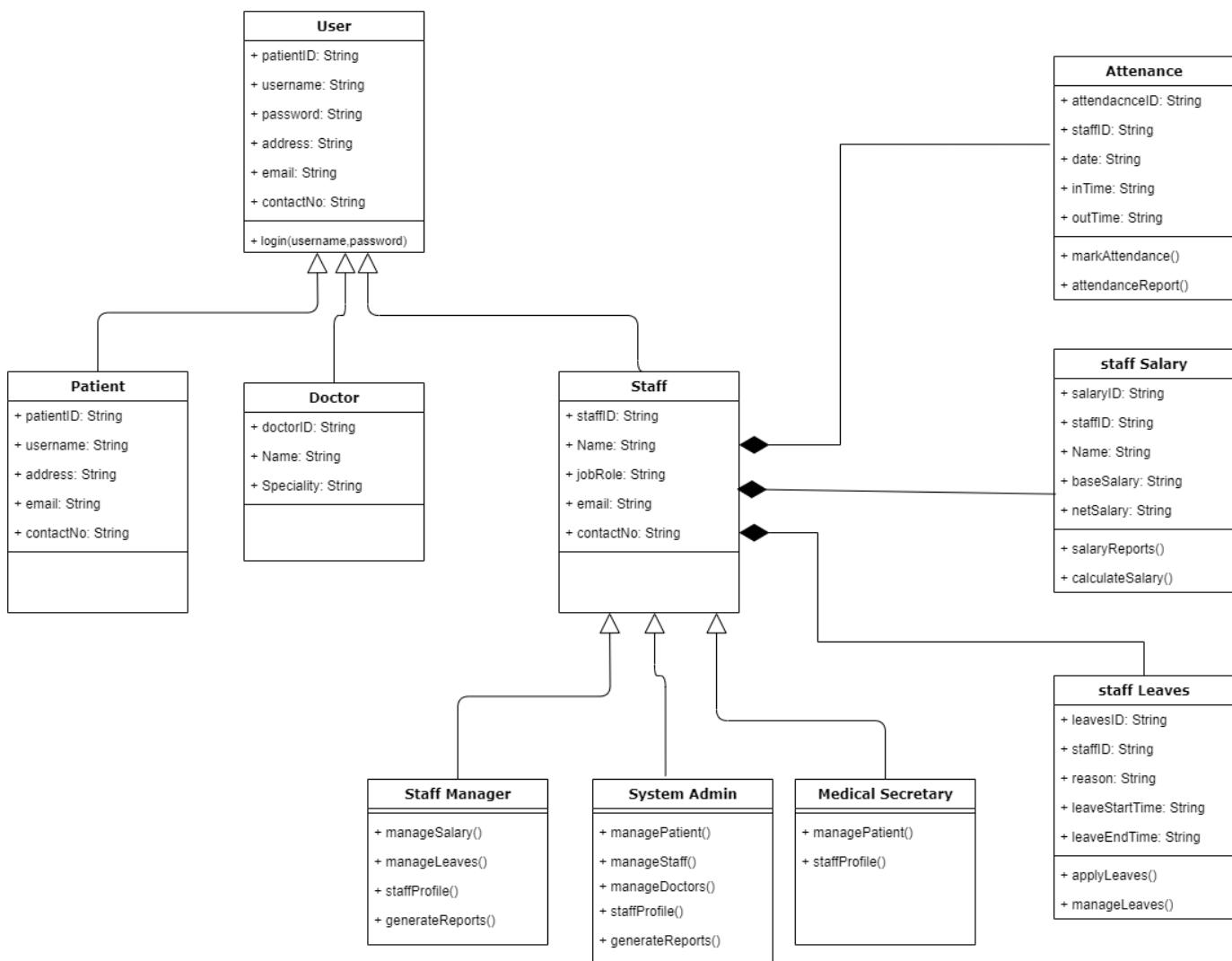


Figure 3. 12 - Class Diagram of User & Staff Management System

## 02. Activity Diagram

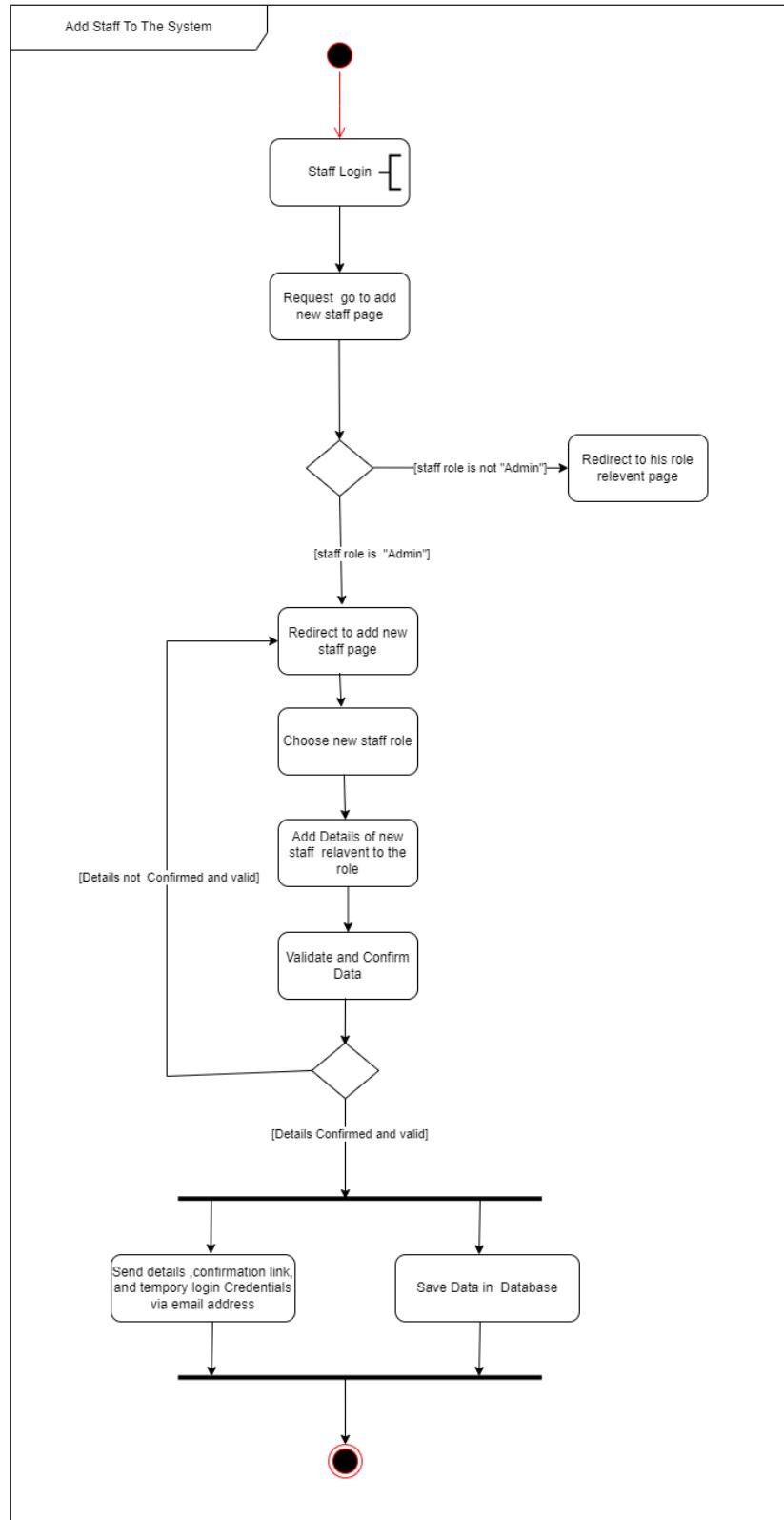


Figure 3. 13 - Activity diagram 01 of User and Staff Management (Add New Staff)

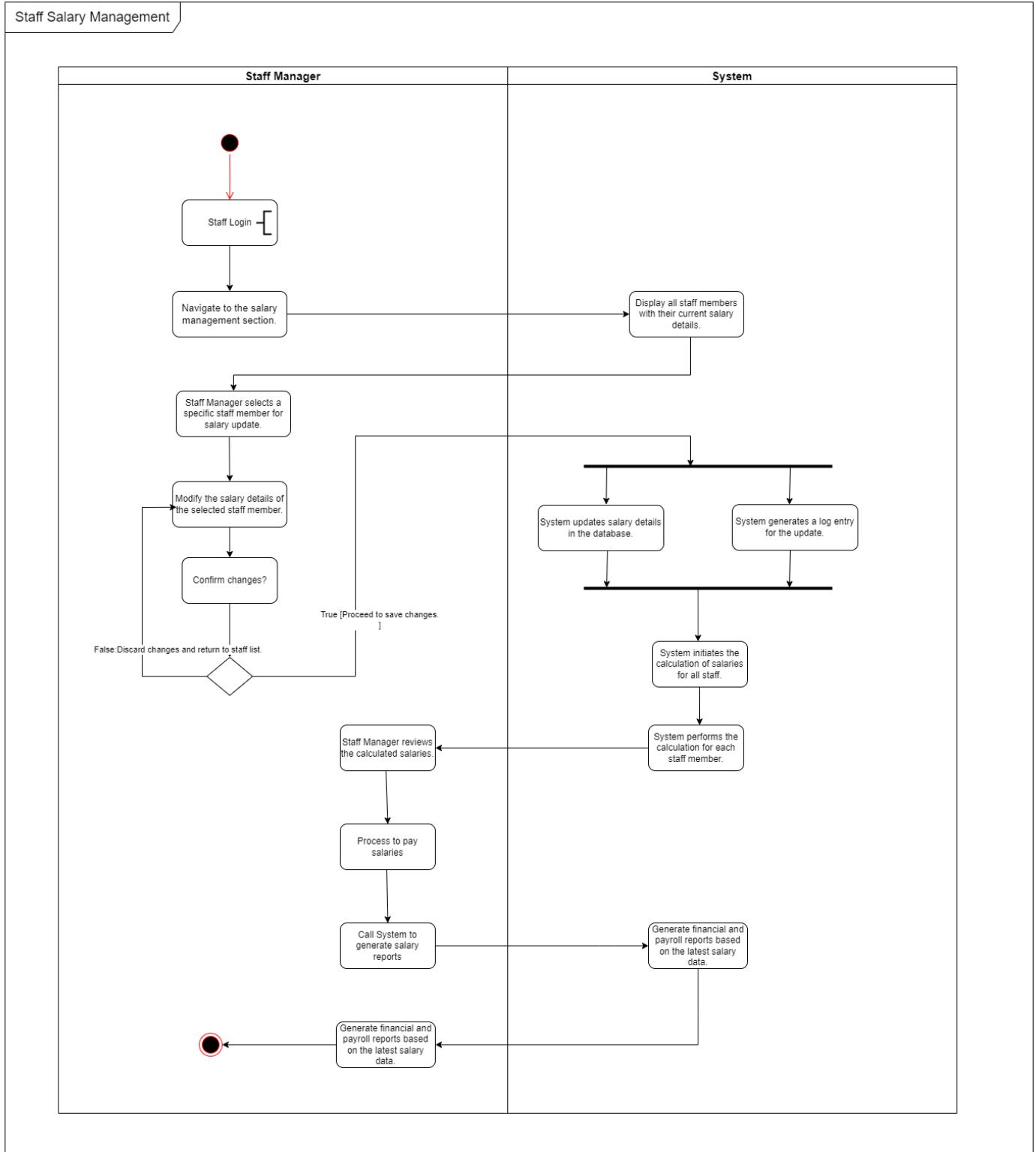


Figure 3. 14 - Activity diagram 02 of User and Staff Management (Staff Salary Management)

### 03. Sequence Diagram

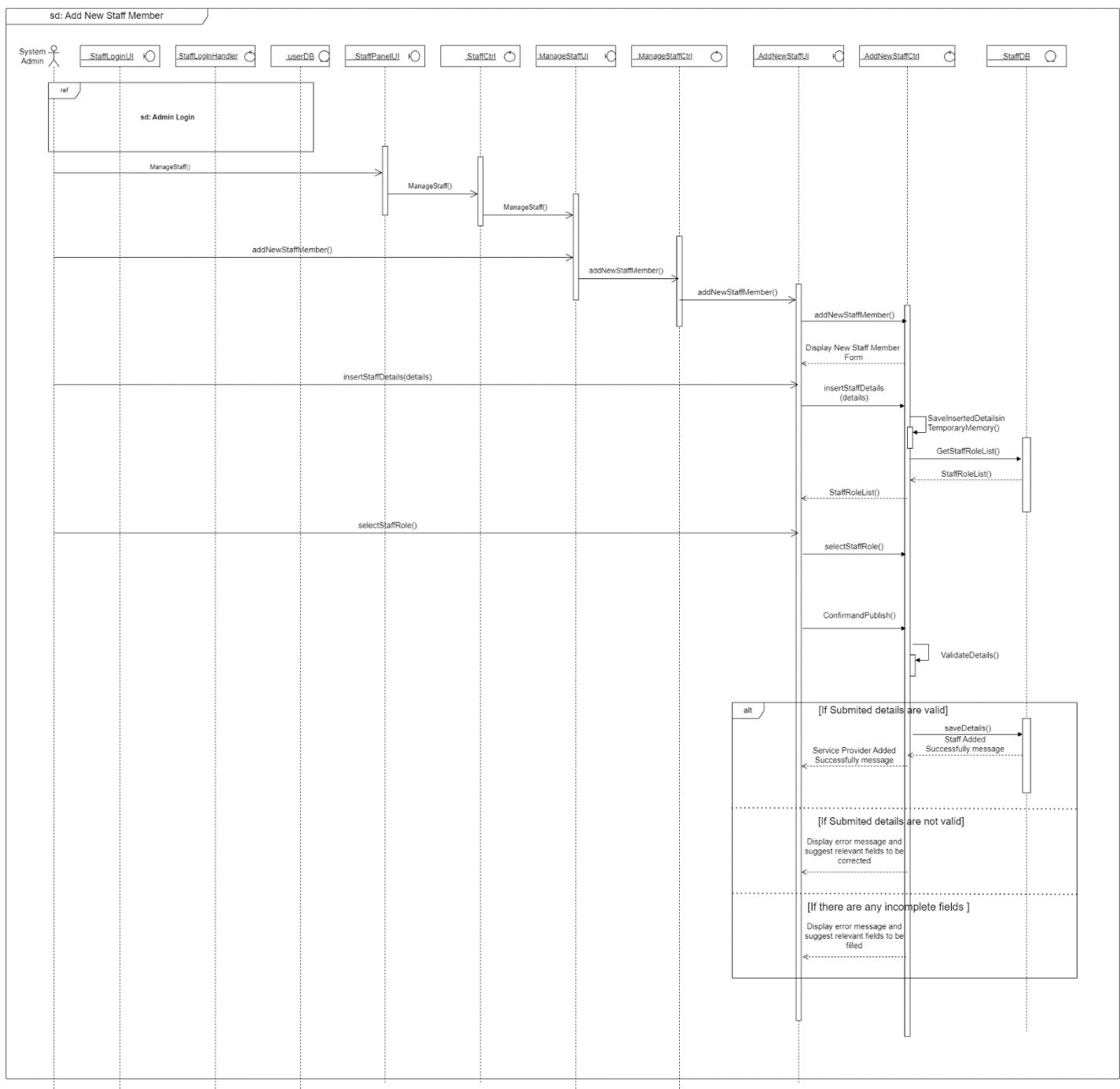


Figure 3. 15 - Sequence Diagram 01 of User and Staff Management (Add New Staff)

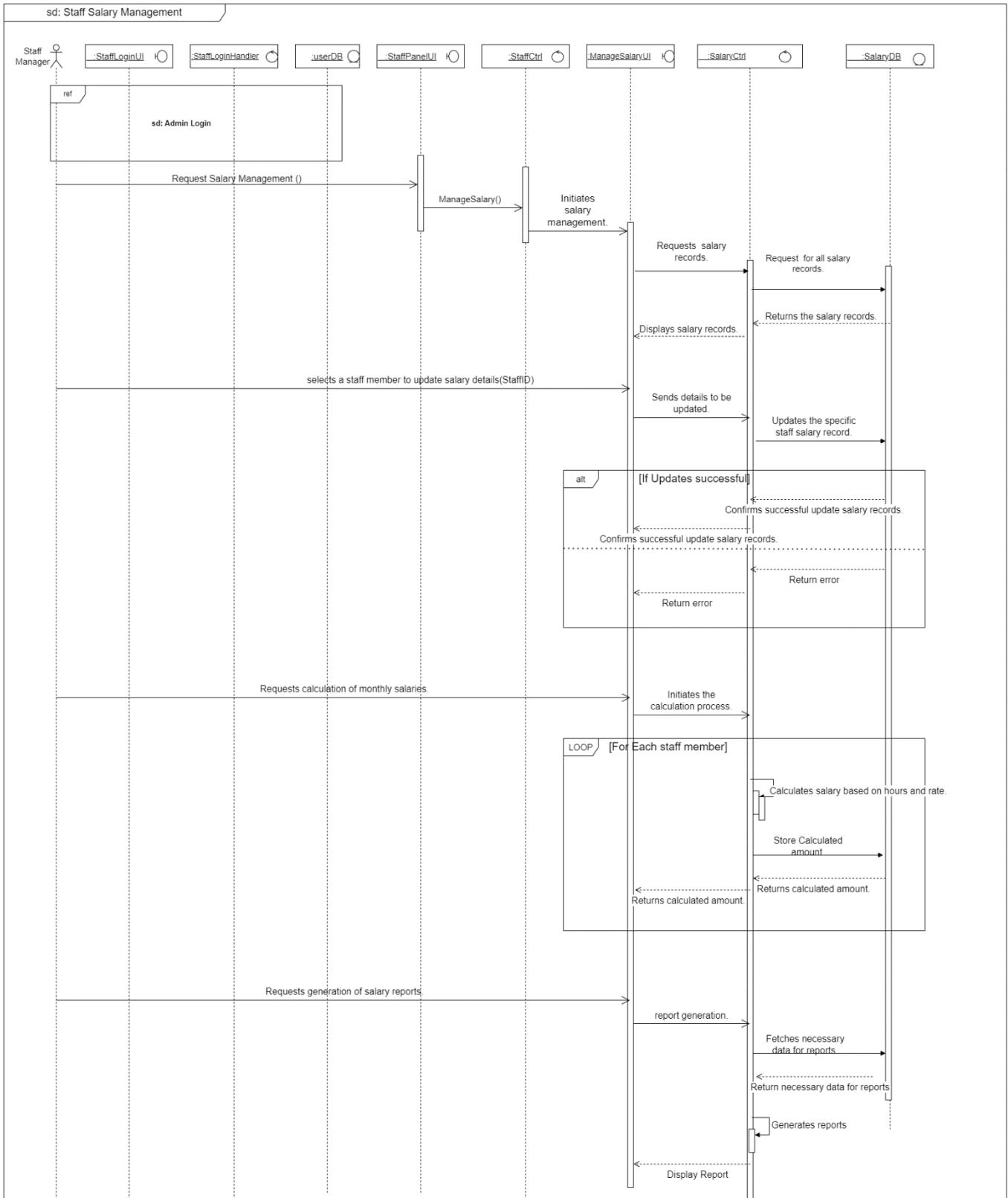


Figure 3. 16 - Sequence Diagram 02 of User and Staff Management (Staff Salary Management)

## **Inventory Management**

*Table 7 - Usecase Scenario of Inventory Management System*

|                       |  |   |
|-----------------------|--|---|
| <b>Number</b>         | SWC06  |   |
| <b>Name</b>           | Add Order  |   |
| <b>Summary</b>        | Add new order to the system  |   |
| <b>Priority</b>       | 06   |   |
| <b>Pre-condition</b>  | Must have admin panel accesses                                     |   |
| <b>Post-condition</b> | Add new order to treatment management system                       |   |
| <b>Primary actor</b>  | Admin  |   |
| <b>Trigger</b>        | Admin chosen to add a new order & photo of the order to the system |   |
| <b>Main scenario</b>  | <b>Step</b>  | <b>Action</b>   |
|                       | 1.   | Include:: (Admin Login)   |
|                       | 2.   | The use case starts when admin accesses the admin panel and adds a new order to the system.                               |
|                       | 3.   | System shows “Manage Orders” button to the admin.   |
|                       | 4.   | Admin clicks “Manage Orders” button.  |
|                       | 5.   | System prompts admin to the “Manage orders” page.   |
|                       | 6.   | System shows “Place New Order” button to the admin.   |
|                       | 7.   | Admin clicks “Place New Order” button.  |
|                       | 8.   | Admin access to Place new orders page successfully.   |
|                       | 9.   | System shows “Place New Order” form to the admin.   |
|                       | 10.  | System shows “Select Supplier” dropdown list to the admin.  |
|                       | 11.  | Admin selects a supplier.   |
|                       | 12.  | Admins choose the inventory item from the dropdown list that provides from the system.                                    |
|                       | 13.  | Admin add amount of the relevant item.  |
|                       | 14.  | Admin clicks “Place the Order” button.  |
|                       | 15.  | System will display a preview of the order.   |
|                       | 16.  | Admin can view the preview of the order.  |
|                       | 17.  | Admin can select the “Confirm the order” button.  |
|                       | 18.  | The system saves the orders’ details to the database.   |
|                       | 19.  | The system generates invoice of the order.  |
|                       | 20.  | System shows “New Order Added Successfully” message and confirms the order has been published successfully to the system. |
|                       | 21.  | System displays newly added order on order’s page.  |
| <b>Extensions</b>     | <b>Step</b>  | <b>Branching Action</b>   |
|                       | 13.a   | The system will display an error message if the character count of the description is exceeded.                           |
|                       | 16.a   | File size & the type will be validated by the system.   |
|                       | 18.c.1   | If there are any incomplete places in the forms, the system will display an error message.                                |
|                       | 18.c.2   | System prompts to add new order form page again.  |
|                       | 18.c.3   | In there shows what are the relevant places that needed to be filled.   |

|  |          |   |
|--|----------|---|
|  | 18.d.1   | Form can be clear by clicking the “Reset” button.                       |
|  | 18.d.2   | The form will be cleared by the system and will display a new form.     |
|  | 19.a     | System sends a copy of the invoice to the supplier via email.           |
|  | 20.b.2.a | Admin can select the “Edit” button.                                     |
|  | 20.b.2.b | System will redirect to the form and admin can do the changes in there. |

## 01. Class Diagram

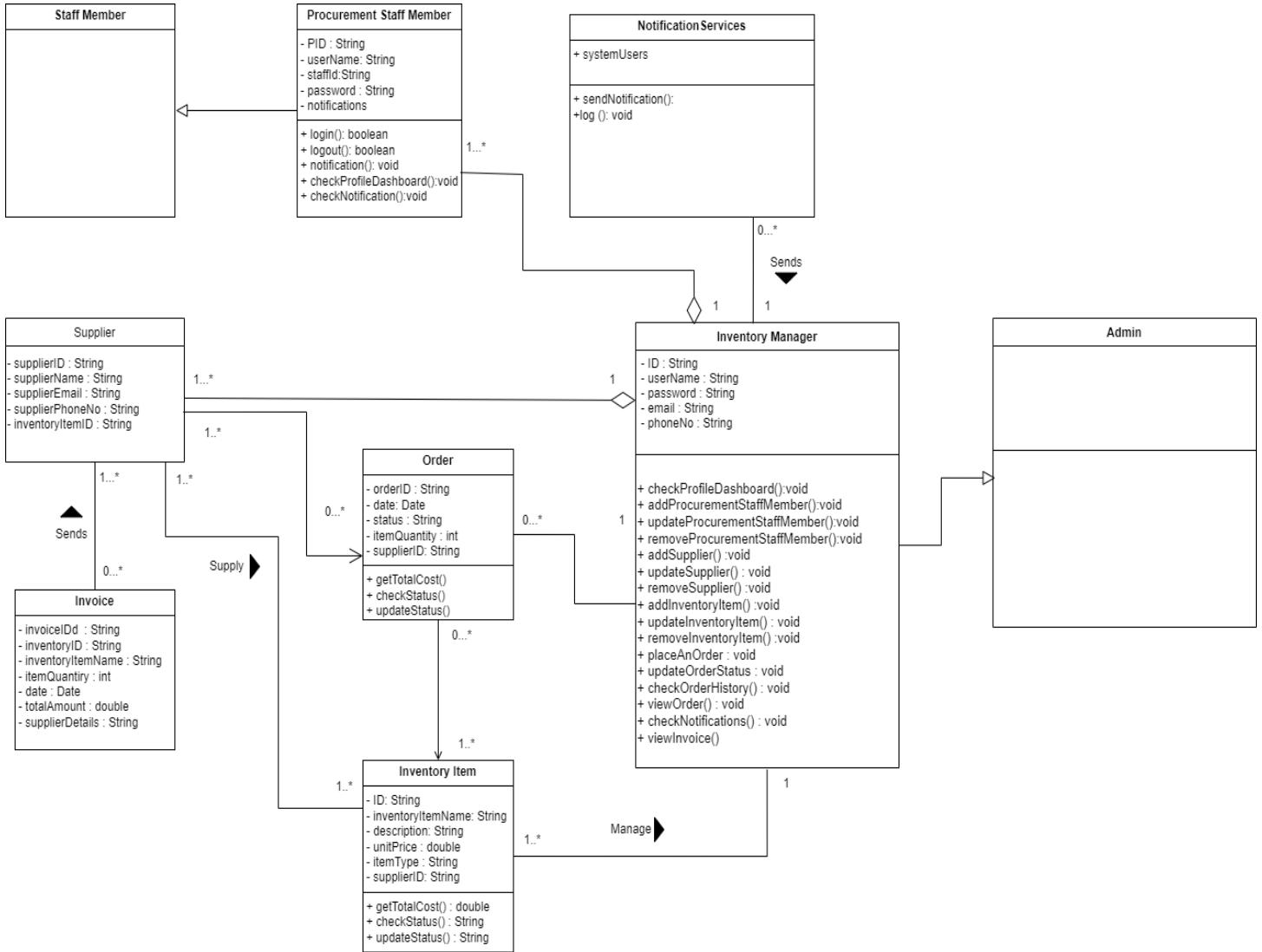


Figure 3. 17 - Class Diagram of Inventory Management System

## 02. Activity Diagram

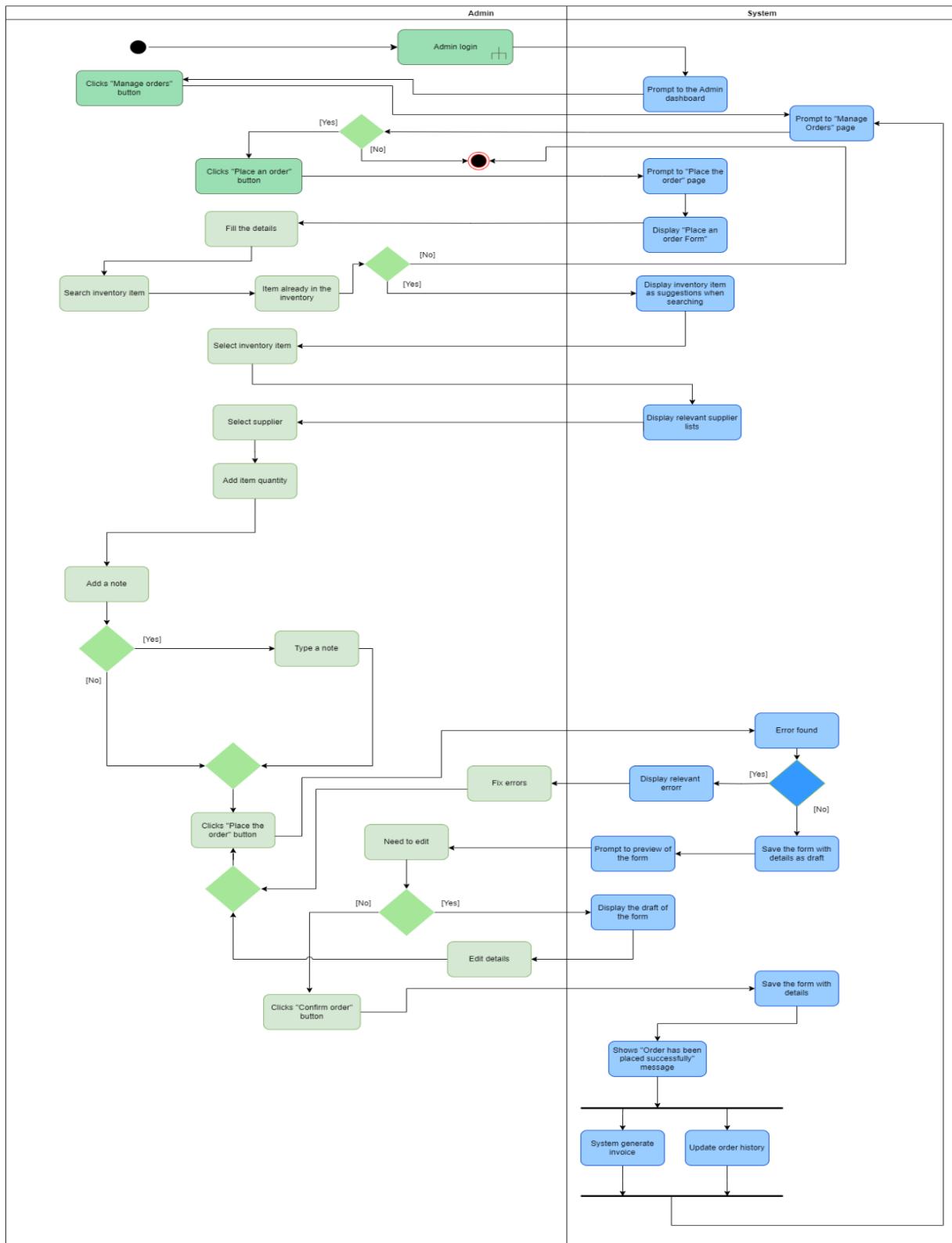


Figure 3. 18 - Activity Diagram of Inventory Management System

### 03. Sequence Diagram

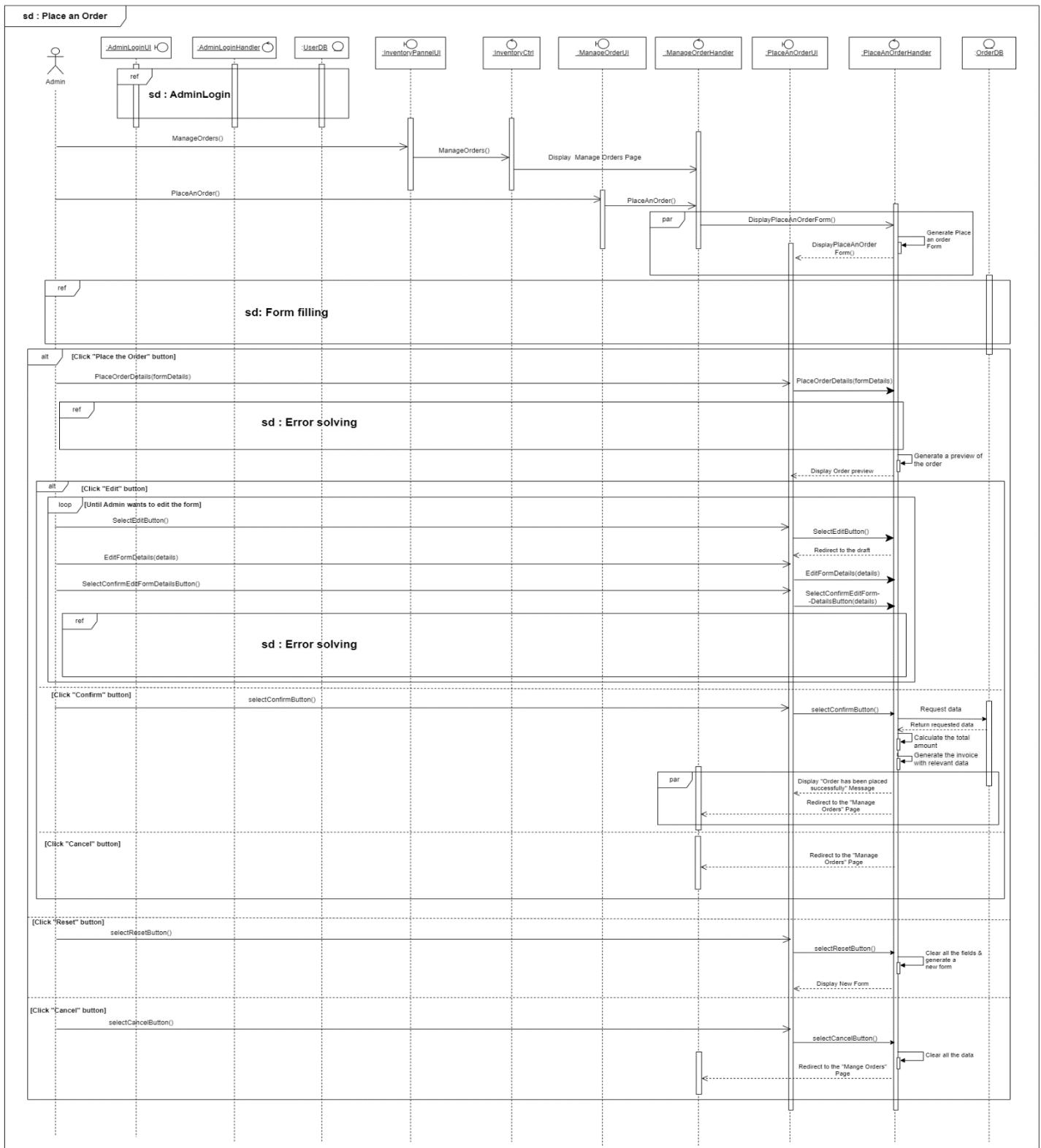


Figure 3. 19 - Sequence Diagram 01 of Inventory Management System (Place an order)

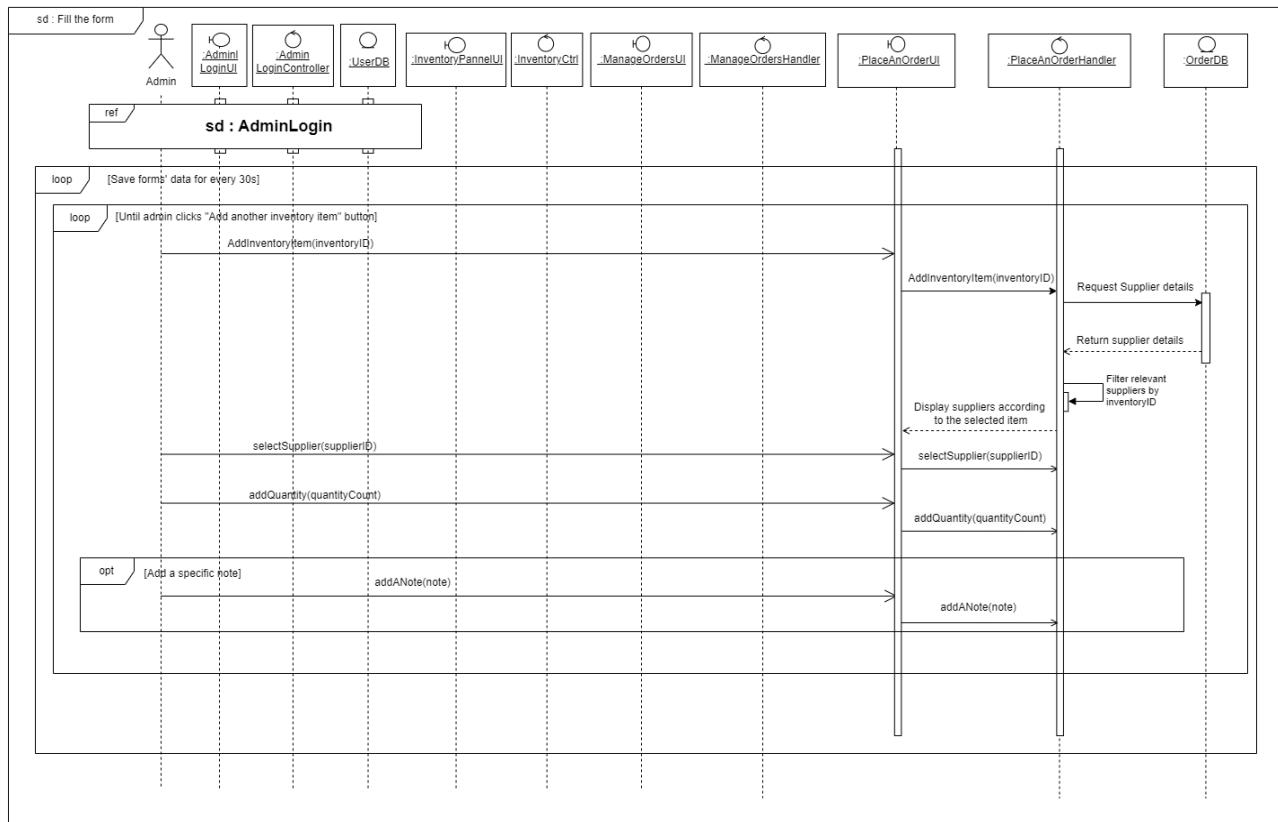


Figure 3. 20 - Sequence Diagram 02 of Inventory Management System (Place an order Form filling)

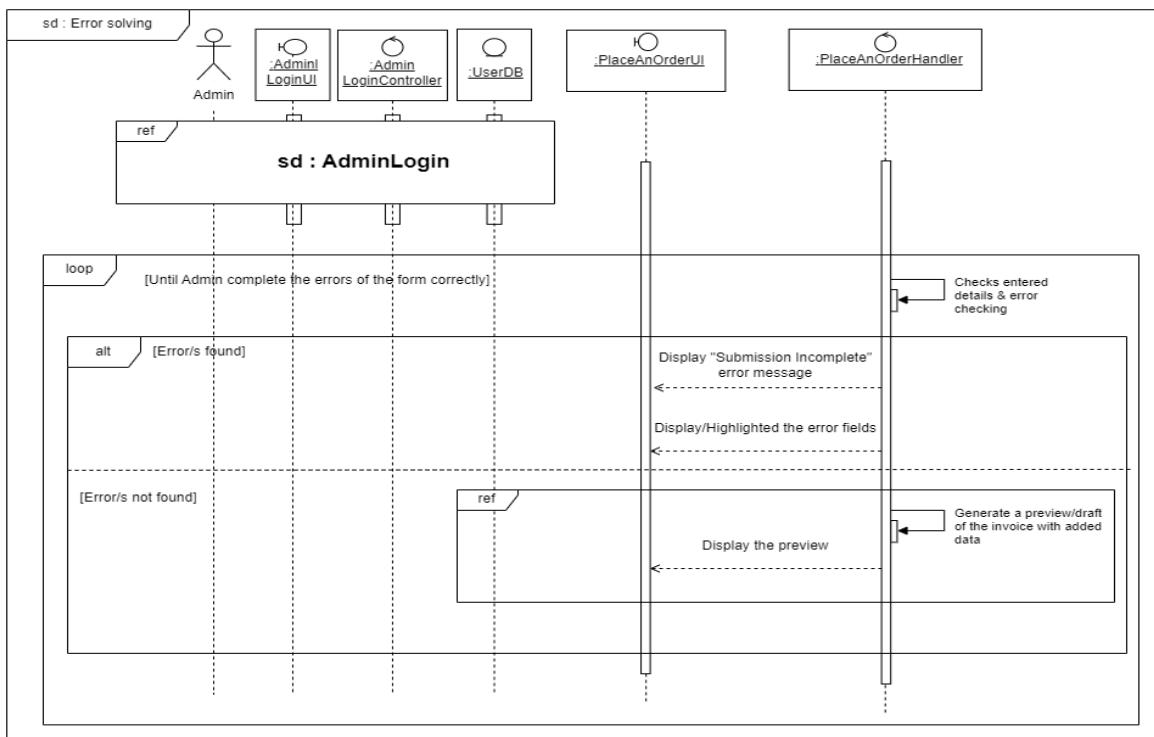


Figure 3. 21 - Sequence Diagram 03 of Inventory Management System (Place an order Form filling)

## Product Management

Table 8 - Usecase Scenario of Product Management System

| <b>Number</b>          | SWC07  |   |
|------------------------|--|---|
| <b>Name</b>            | Product delivery.  |   |
| <b>Summary</b>         | The placed orders are delivered to the patients.   |   |
| <b>Priority</b>        | 8  |   |
| <b>Pre-condition</b>   | The patient must be a registered user.   |   |
| <b>Post-condition</b>  | An email will be sent to notify the patient of the placed orders and ordered products are handed over. |   |
| <b>Primary actor</b>   | Patient.   |   |
| <b>Secondary actor</b> | Pharmacist.  |   |
| <b>Trigger</b>         | The patient decides to buy products.   |   |
| Main scenario          | Step   | Action  |
|                        | 1  | The patient visits the website.   |
|                        | 2  | The patient enters the credentials.   |
|                        | 3  | Successfully logs into the system.  |
|                        | 4  | The patient navigates to the product page and explores the products.  |
|                        | 5  | The patient selects the necessary products and adds them to their cart by specifying the required quantity.                                 |
|                        | 6  | The patient clicks on the cart option to place an order.  |
|                        | 7  | After that, a form appears, asking for their name, phone number, email, and address. Further The total amount of the order is displayed.    |
|                        | 8  | The patient fills in the details and places the order.  |
|                        | 9  | The placed order will be displaced in the patient's account under pending orders.   |
|                        | 10   | Meanwhile the system stores order details in the database along with an order id.   |
|                        | 11   | The pharmacist logs in to the system using credentials.   |
|                        | 12   | The pharmacist has been notified about the placed orders.   |
|                        | 13   | The pharmacist updates the order status   |
|                        | 14   | Finally, the pharmacist generates reports on product sales data and modifies the product stocks.  |
| Extensions             | Step   | Branching Action  |
|                        | 3a   | If credentials are invalid an 'invalid authentication' message will pop up.   |
|                        | 5a   | If a patient tries to add a product to their cart that is already in the cart, a message will appear saying "the product is already there". |
|                        | 8a   | If a patient enters invalid details the system will display a warning message and ask them to re-enter the information.                     |
|                        | 11a  | If credentials are invalid an 'invalid authentication' message will pop up.   |

## 01. Class Diagram

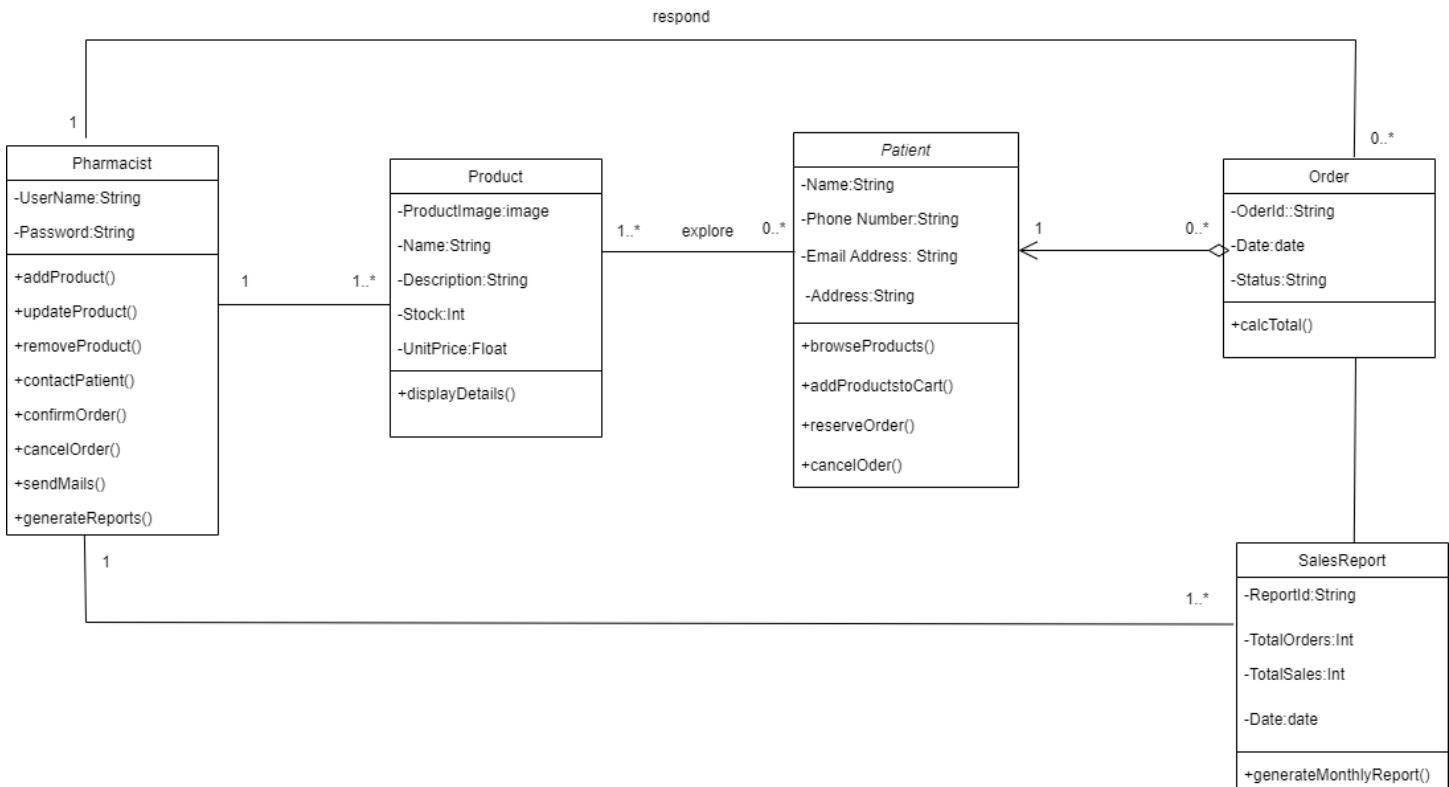


Figure 3. 22 - Class Diagram of Product Management System

## 02. Activity Diagram

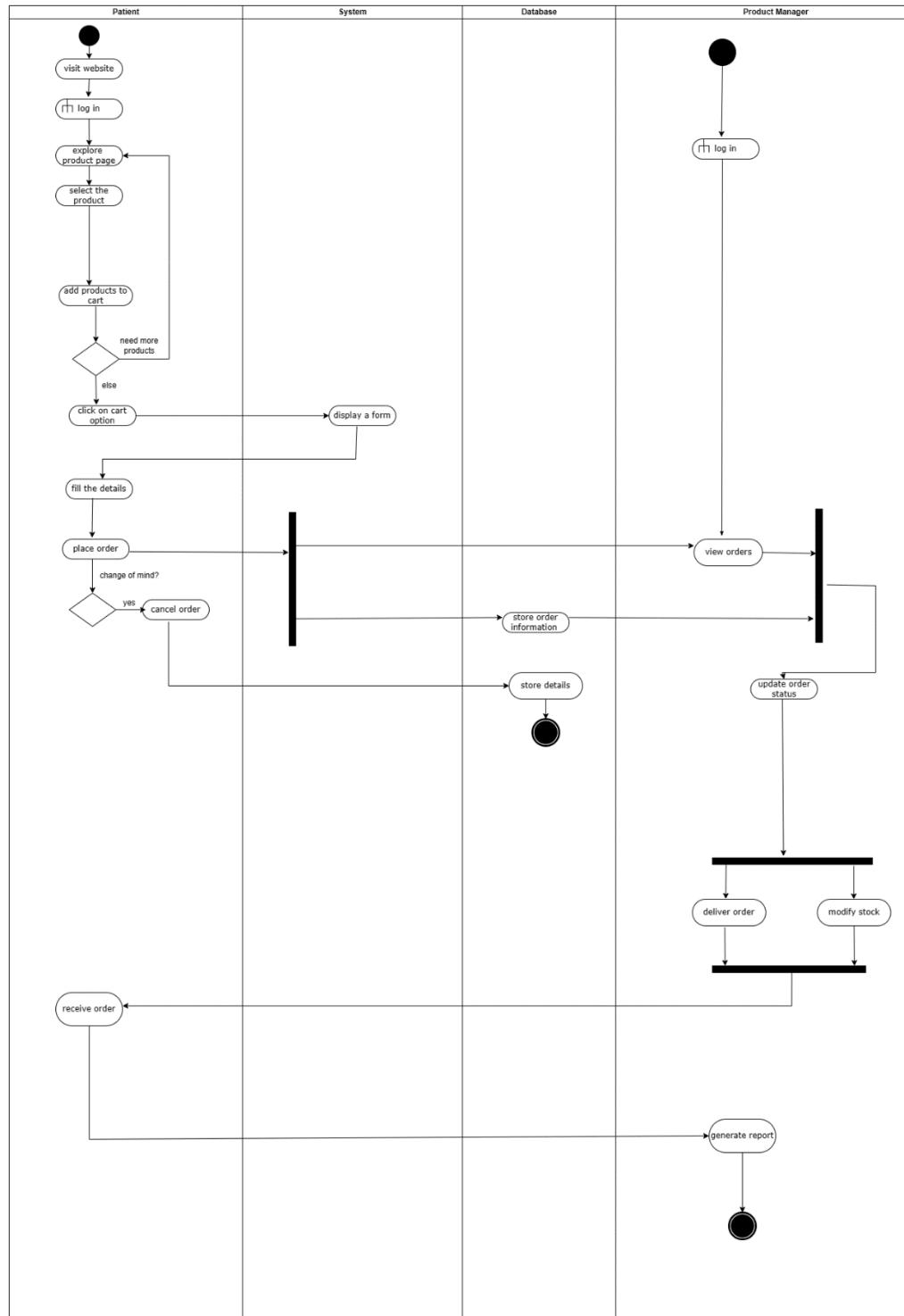


Figure 3. 23 - Activity Diagram of Product Management System

### 03. Sequence Diagram

2.

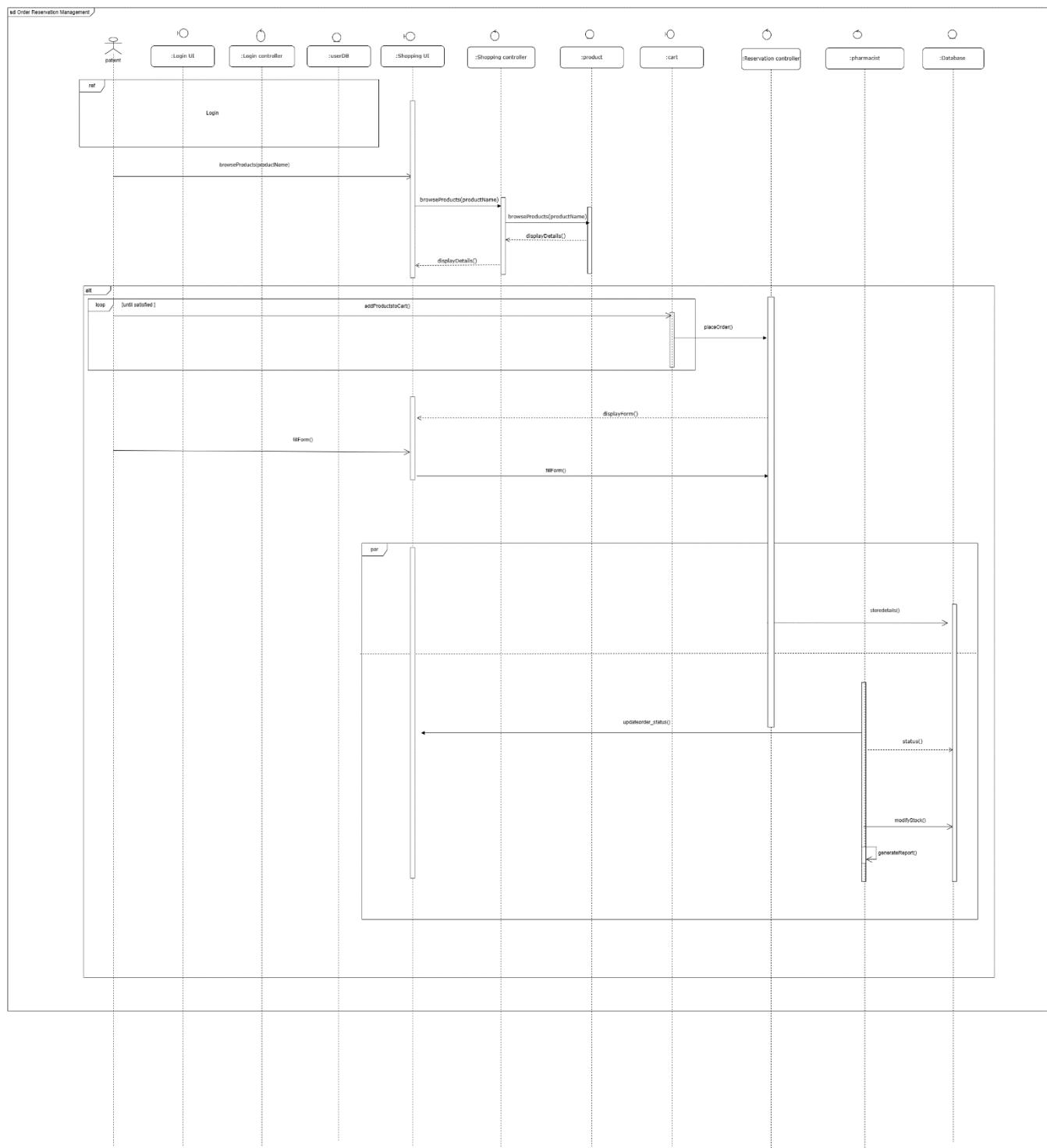


Figure 3. 24 - Sequence Diagram of Product Management System

## Service Management

*Table 9 - Usecase Scenario of Service Management System*

|                        |  |  |
|------------------------|--|--|
| <b>Number</b>          | SWC08  |  |
| <b>Name</b>            | Awareness/Physical Sessions and Home visits Booking and Managing Sessions and Home visits Booking and Managing   |  |
| <b>Summary</b>         | A customer can make booking for an awareness session for a community/organization or a group etc. or book doctor for home visits make booking for an awareness session for a community/organization or a group etc. or book doctor for home visits |  |
| <b>Priority</b>        | 7  |  |
| <b>Pre-Condition</b>   | The guest user has access to the hospital web site. access to the hospital web site.   |  |
| <b>Post-Condition</b>  | The client(user) and doctor receive the notification for the confirmation of the Booking.  |  |
| <b>Primary actor</b>   | The guest user   |  |
| <b>Secondary Actor</b> | Event Handler  |  |
| <b>Trigger</b>         | The patient decides to make a booking for the service. for the service.  |  |
| <b>Main scenario</b>   | <b>Step</b>  | <b>Branching Action</b>  |
|                        | 1.   | The user lands on the website's homepage.  |
|                        | 2.   | The user clicks on the "Sessions" button, navigating to the sessions page.   |
|                        | 3.   | On the sessions page, the user views details added by doctors, providing a comprehensive overview.   |
|                        | 4.   | The user reads each session, gaining insights and understanding the content.   |
|                        | 5.   | Deciding to participate, the user clicks the "Book Session" button.  |
|                        | 6.   | The user is directed to a form, entering necessary details for booking.  |
|                        | 7.   | Users fill the form with necessary details and click "Submit" button.  |
|                        | 8.   | The submitted form is verified by the medical center.<br>If details are incorrect, the medical center requests corrections via email and a reminder phone call.  |
|                        | 9.   | Upon receiving corrected details, the medical center forwards the booking information to the respective doctor.  |
|                        | 10.  | The doctor reviews the booking details, specifically the date and time.<br>If the doctor disagrees and proposes a new date/time, feedback is sent to the medical center by clicking "Feedback button". |
|                        | 11.  | Medical center contacts the users and acknowledges their booking.  |
|                        | 12.  | If the user agrees with the new date/time, the medical center proceeds with finalizing the booking.  |
|                        | 13.  | If the user disagrees, a discussion is arranged between the user and the doctor for mutual agreement.  |
|                        | 14.  | Once an agreement is reached, the booking details are added to the database.   |
|                        | 15.  | Notifications are sent to both the user and the doctor.<br>The system updates the schedule to reflect the finalized booking.   |
| <b>Extensions</b>      | <b>Steps</b>   | <b>Branching Actions</b>   |
|                        | 7a.  | If the user submits incomplete or invalid information: The system prompts corrections before proceeding.   |
|                        | 7b.  | If the chosen time slot is already booked: The system suggests alternative available slots.  |

|  |      |  |
|--|------|--|
|  | 10a. | If the doctor disagrees with the given date and time: The system notifies the user of the proposed changes and waits for their response.                     |
|  | 13a. | If an agreement is not reached during the discussion: Notifications are sent to the user and the doctor about the failure to reach an agreement.             |
|  | 15a. | The user wishes to make any changes after confirmation: Contact the medical center directly by phone call or send an email a week before the scheduled date. |

## 01. Class Diagram

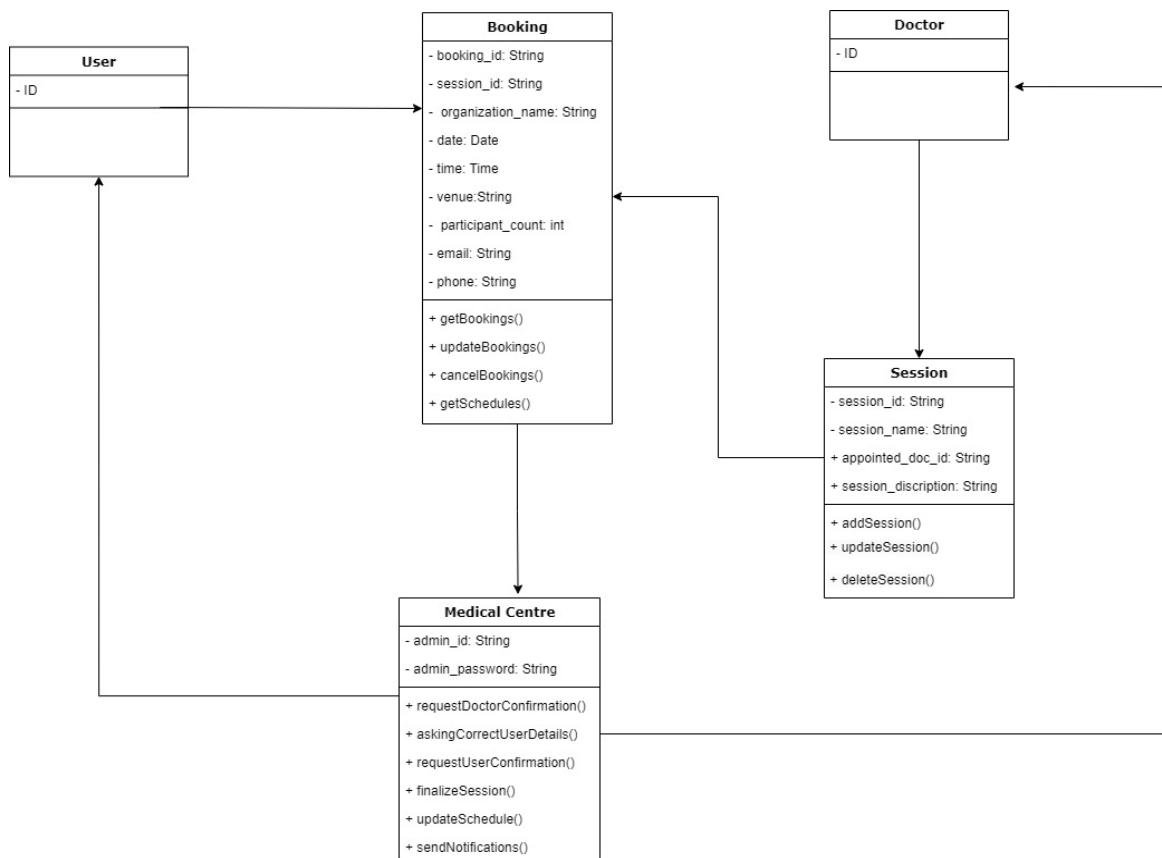


Figure 3. 25 - Class Diagram of Service Management System

## 02. Activity Diagram

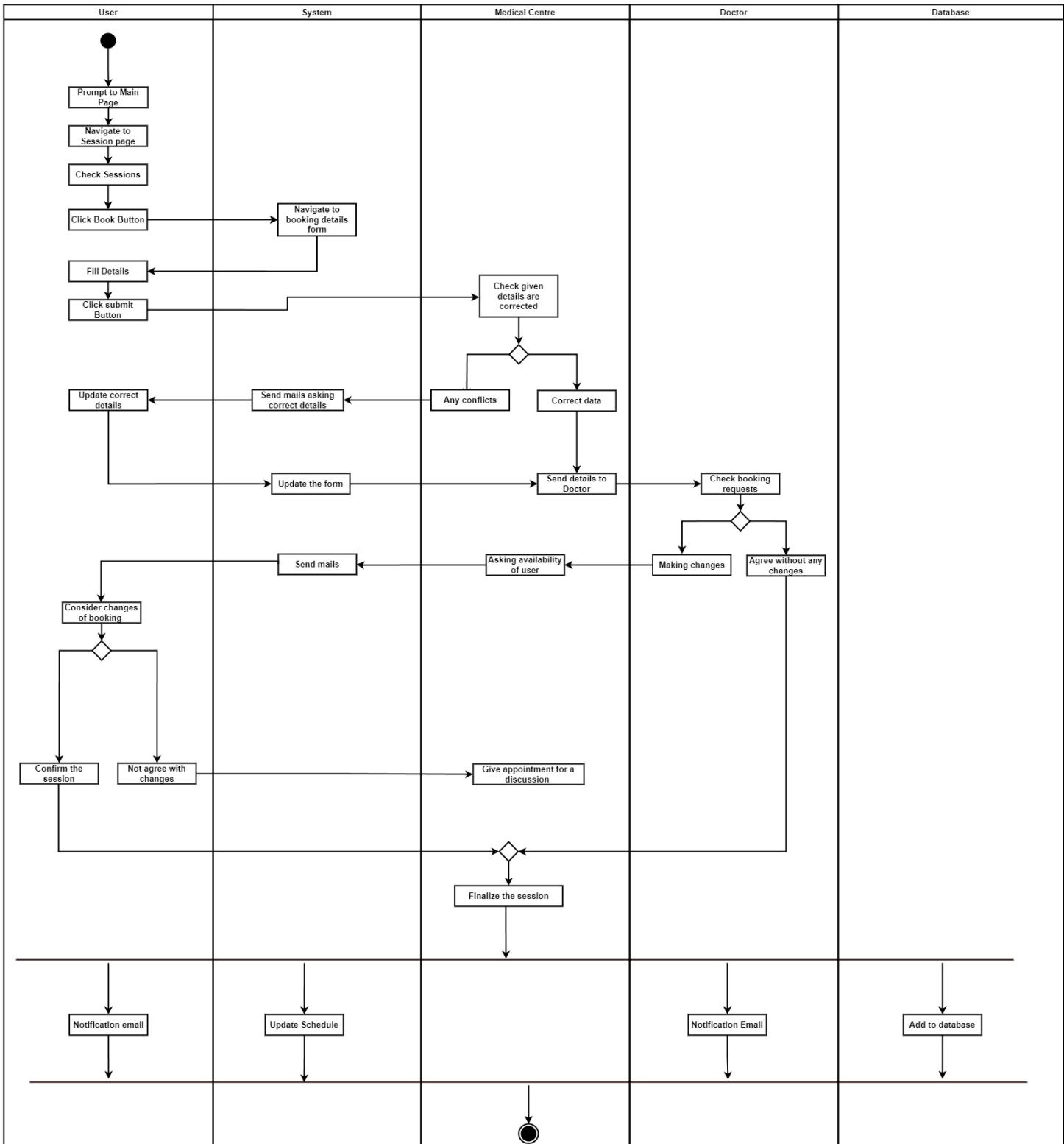


Figure 3. 26 - Activity Diagram of Service Management System

### 03. Sequence Diagram

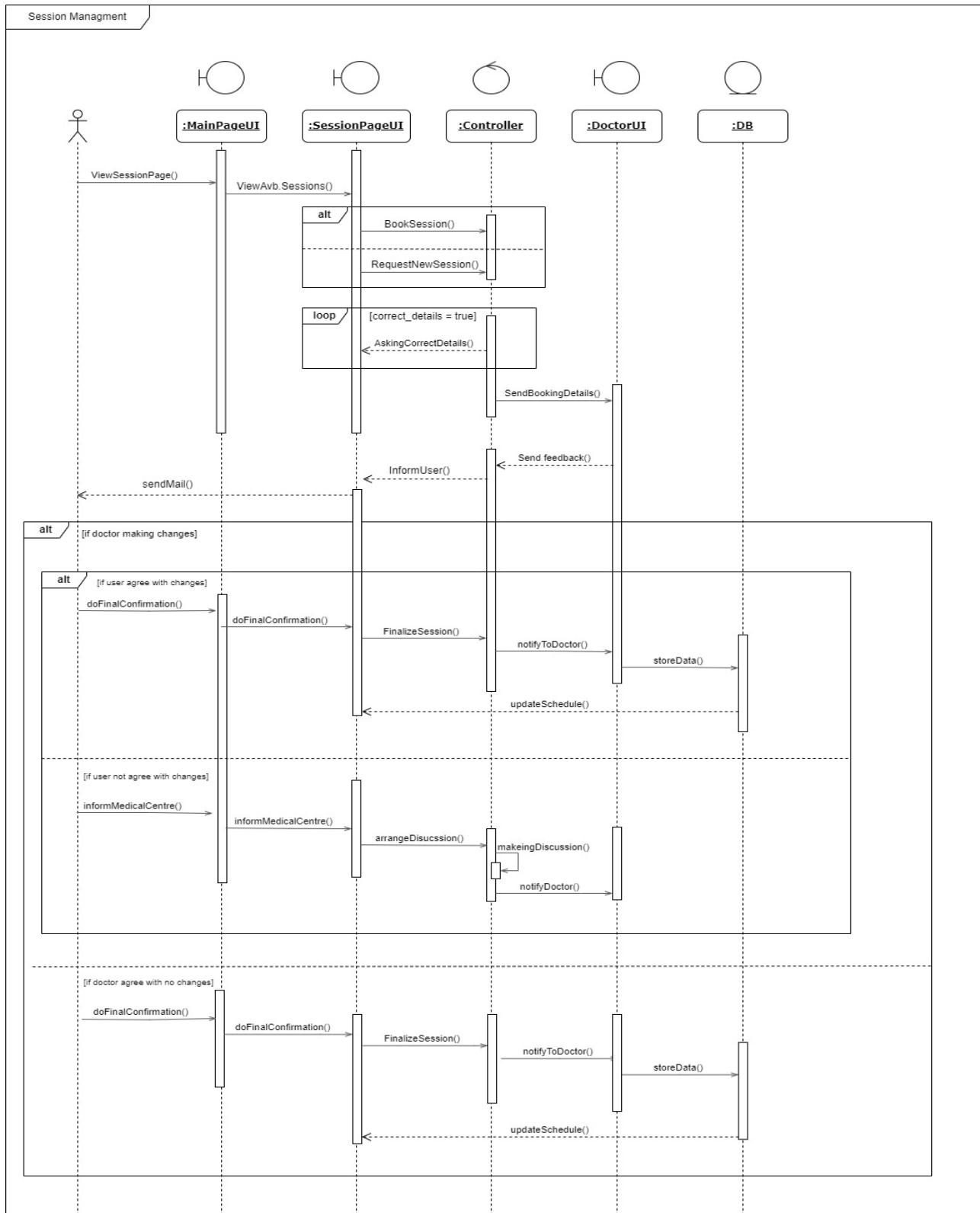


Figure 3. 27 - Sequence Diagram of Service Management System

## Treatment and financial Management

*Table 10 - Usecase Scenario of Treatment & Invoice Management System*

| <b>Number</b>         | SWC09  |   |
|-----------------------|--|---|
| <b>Name</b>           | Add treatment  |   |
| <b>Summary</b>        | Add new treatment to the system  |   |
| <b>Pre-condition</b>  | Must have admin panel accesses   |   |
| <b>Post-condition</b> | Add new treatment to treatment management system                           |   |
| <b>Priority</b>       | 07   |   |
| <b>Primary actor</b>  | Admin  |   |
| <b>Trigger</b>        | Admin chosen to add a new treatment & photo of the treatment to the system |   |
| Main scenario         | Step   | Action  |
|                       | 1.   | Include:: (Admin Login)   |
|                       | 2.   | System shows "Manage Treatments" button to the admin.   |
|                       | 3.   | Admin clicks "Manage Treatments" button.  |
|                       | 4.   | System prompts admin to the "Manage treatments" page.   |
|                       | 5.   | System shows "Add New Treatment" button to the admin.   |
|                       | 6.   | Admin clicks "Add New Treatment" button.  |
|                       | 7.   | Admin access to add new treatments page successfully.   |
|                       | 8.   | System shows "Add New Treatment" form to the admin.   |
|                       | 9.   | System shows "Title of the treatment" text box to the admin.  |
|                       | 10.  | Admin add new treatment's title.  |
|                       | 11.  | Admins choose the category from the dropdown list that provides from the system.  |
|                       | 12.  | Admin add treatment's description to the given text box from the system.  |
|                       | 13.  | Admins choose relevant doctors of the treatment from a dropdown list.   |
|                       | 14.  | Admin add price of the relevant treatment.  |
|                       | 15.  | System shows "Upload Treatment Image" button to the admin.  |
|                       | 16.  | Admin add treatment's images where the upload can be done.  |
|                       | 17.  | Admin clicks "Submit Treatment."  |
|                       | 18.  | System will display a preview of the newly added treatment.   |
|                       | 19.  | Admin can view the preview of the newly added treatment.  |
|                       | 20.  | Admin can select the "Publish treatment" button.  |
|                       | 21.  | System saves the newly added treatments' details to the database.   |
|                       | 22   | System shows "New Treatment Added Successfully" message and confirms the treatment has been published successfully to the system. |
|                       | 23.  | System displays newly added treatment on treatment's page.  |
| Extensions            | Step   | Branching Action  |
|                       | 13.a   | The system will display an error message if the character count of the description is exceeded.                                   |
|                       | 16.a   | File size & the type will be validated by the system.   |
|                       | 18.c.1   | If there are any incomplete places in the forms, the system will display an error message.  |
|                       | 18.c.2   | System prompts to add new treatment form page again.  |
|                       | 18.c.3   | In there shows what are the relevant places that needed to be filled.   |
|                       | 18.d.1   | Form can be clear by clicking the "Reset" button.   |
|                       | 18.d.2   | The form will be cleared by the system and will display a new form.   |
|                       | 21.b.2.a   | Admin can select the "Edit" button.   |
|                       | 21.b.2.b   | System will redirect to the form and admin can do the changes in there.   |

## 01. Class Diagram

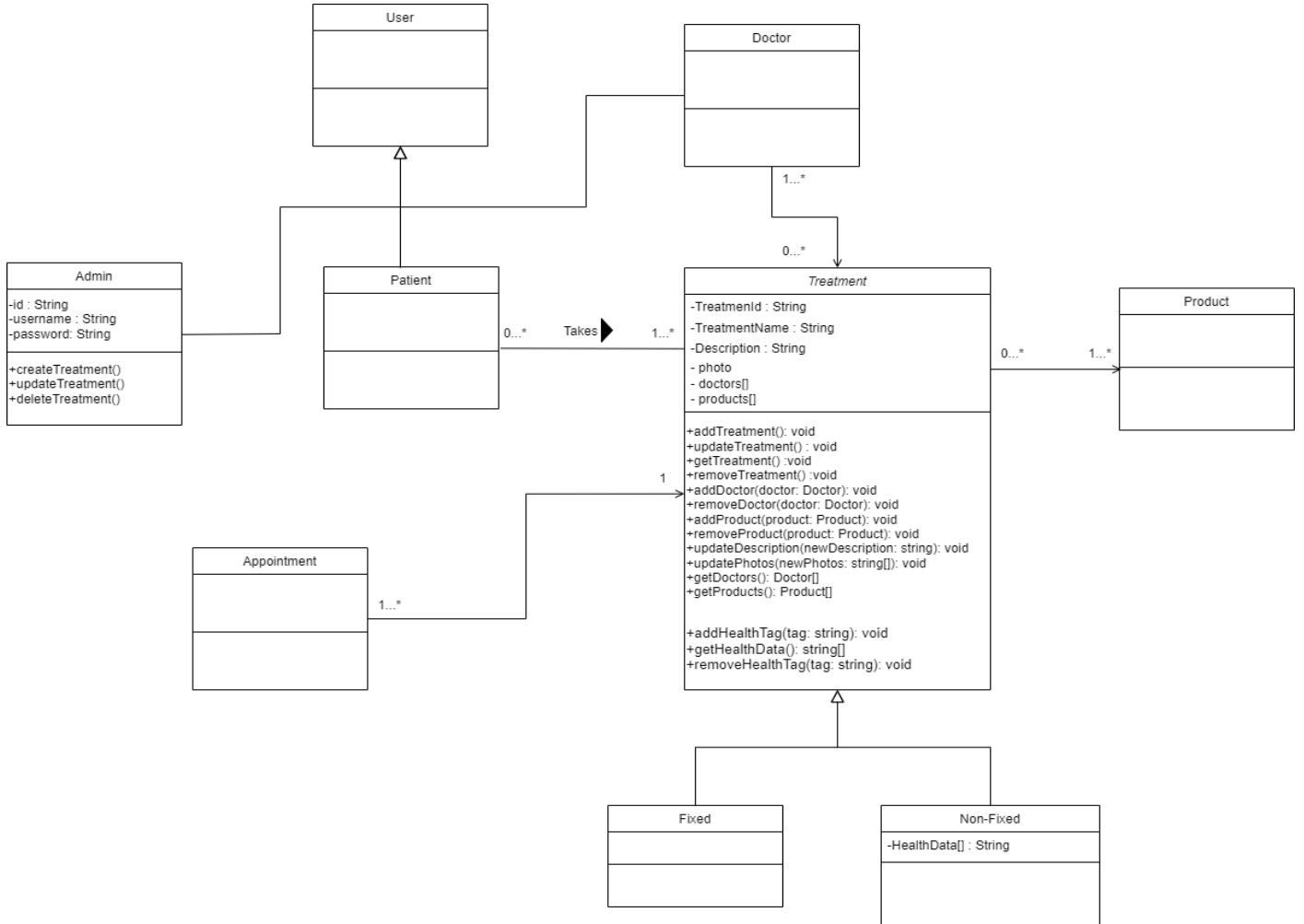


Figure 3.28 - Class Diagram of Treatment & Invoice Management System

## 02. Activity Diagram

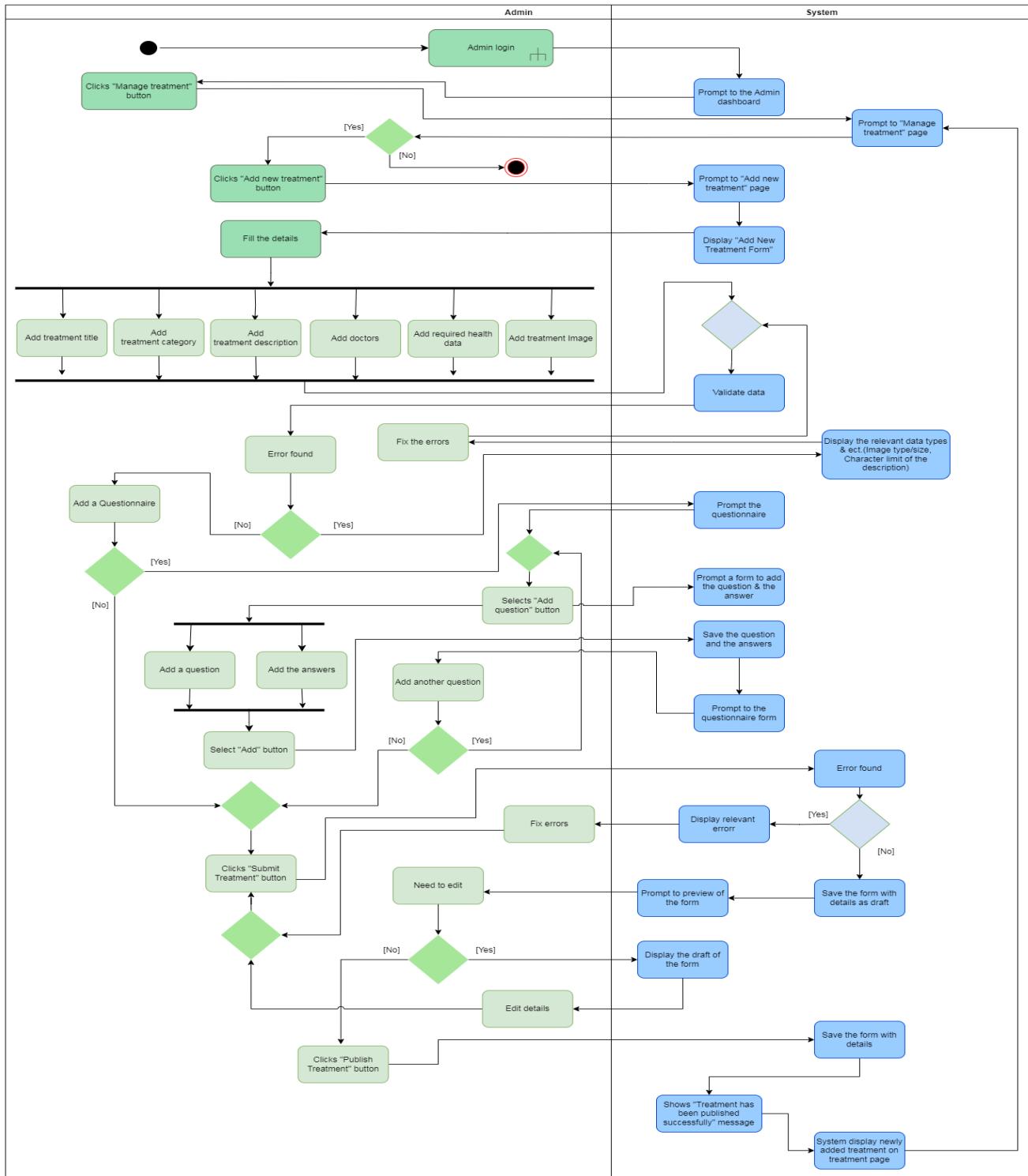


Figure 3. 29 - Activity Diagram of Treatment & Invoice Management System

### 03. Sequence Diagram

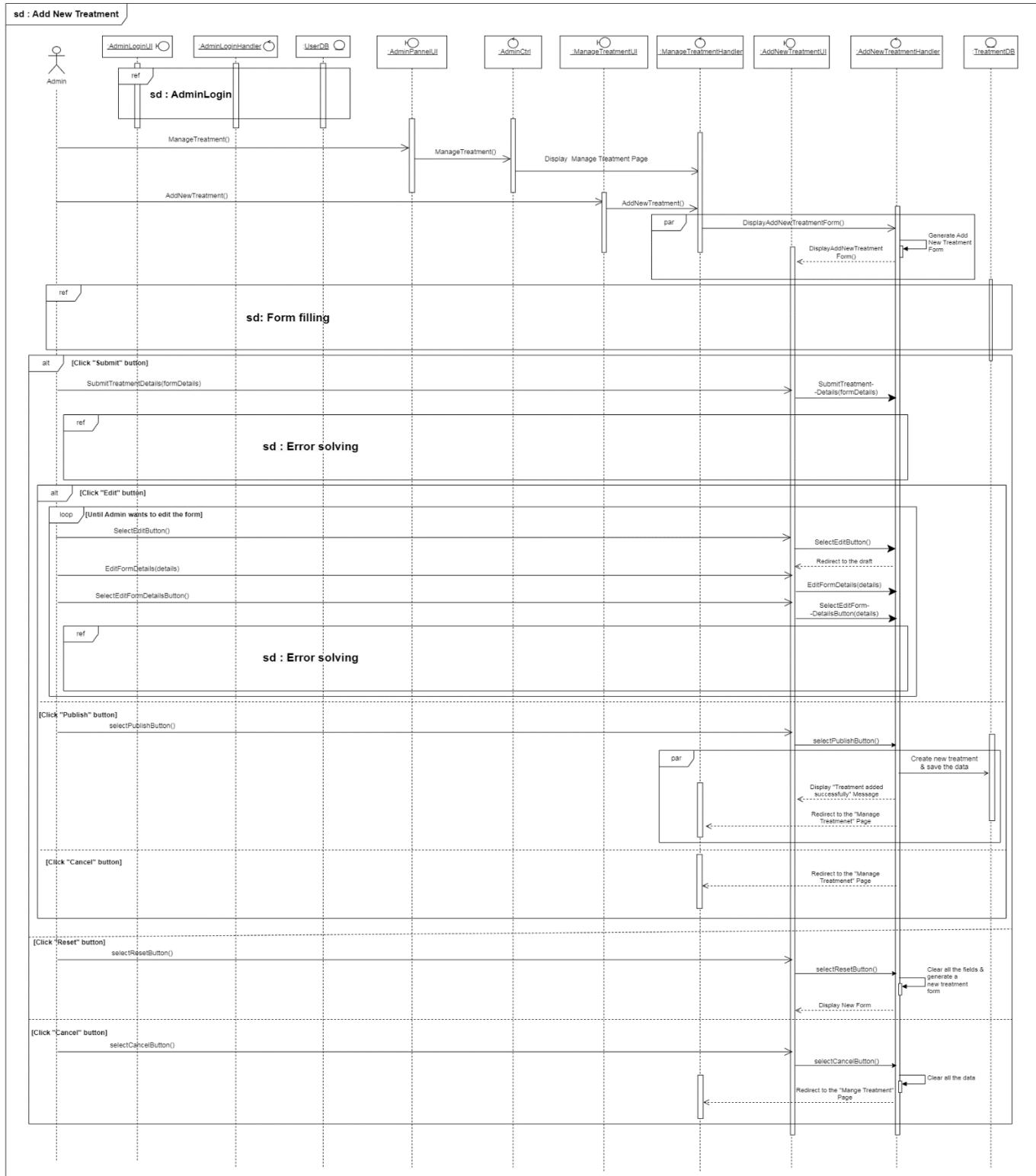


Figure 3. 30 - Sequence Diagram 01 of Treatment & Invoice Management System (Add new treatment)

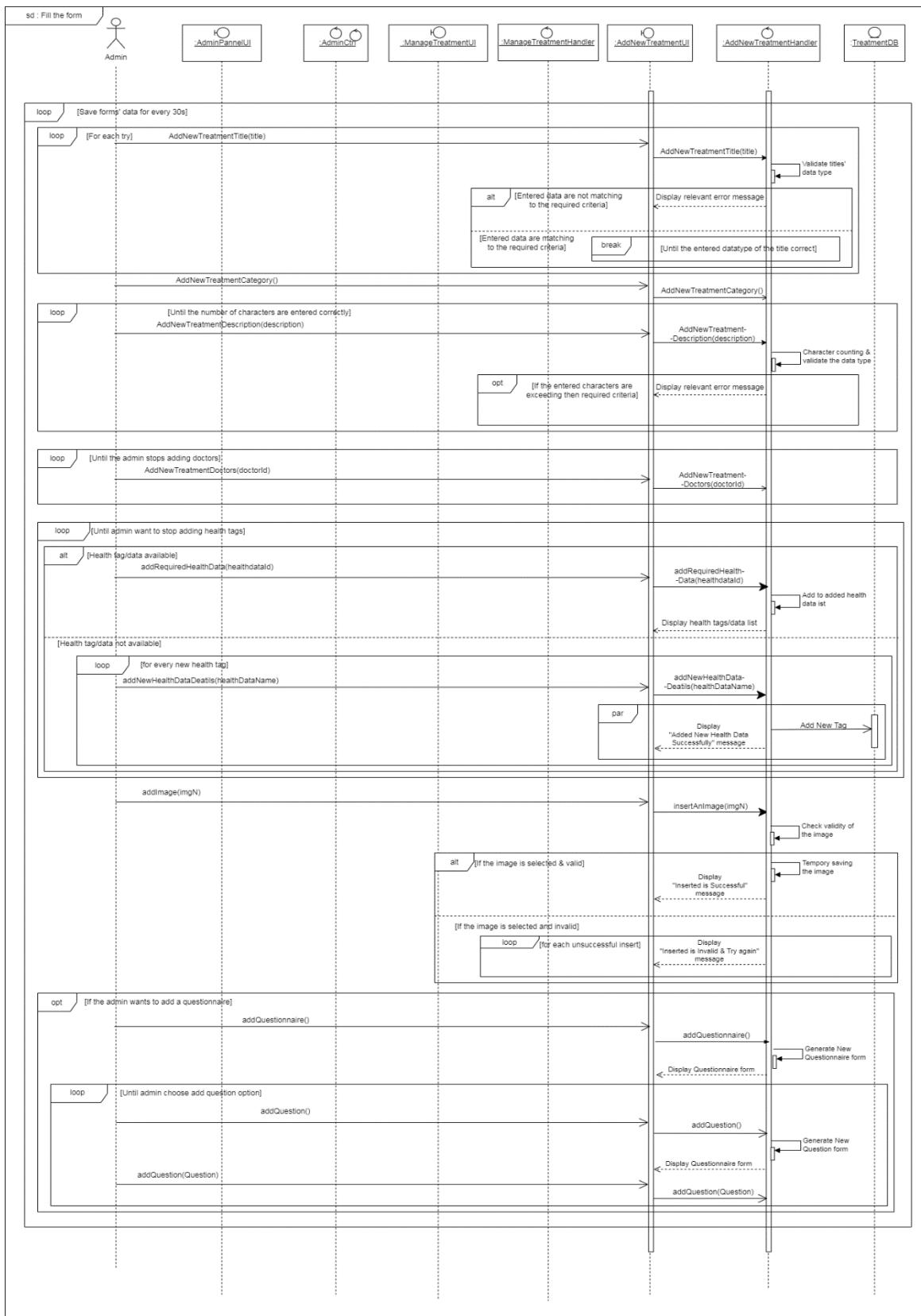


Figure 3. 31 - Sequence Diagram 02 of Treatment & Invoice Management System (Form fill)

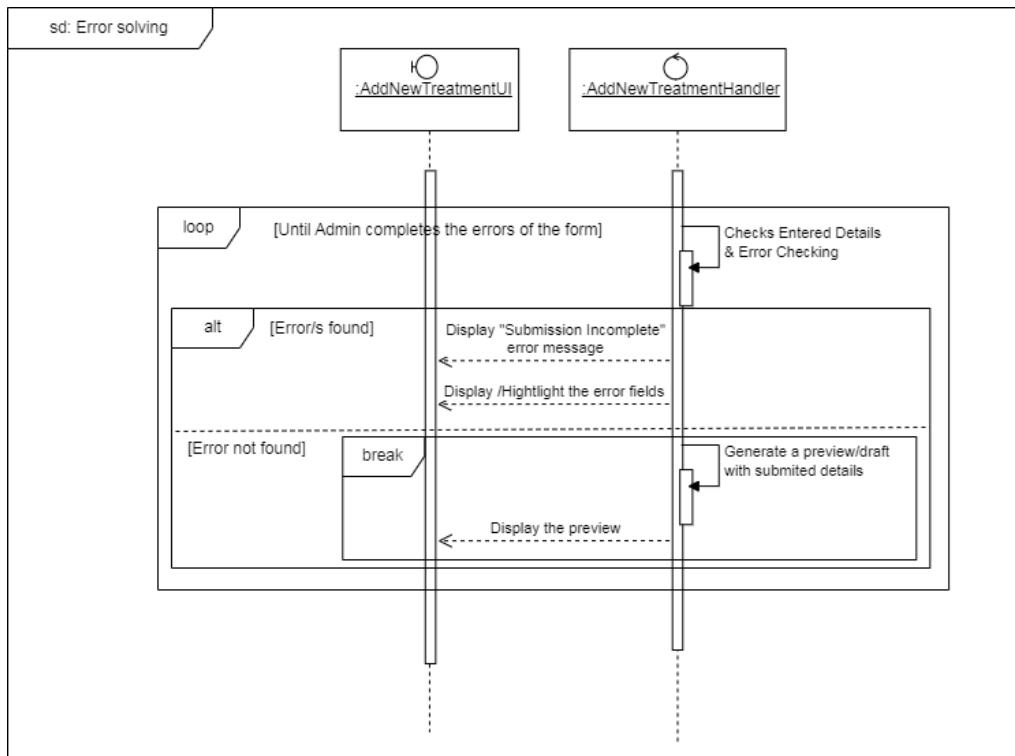


Figure 3. 32 - Sequence Diagram 03 of Treatment & Invoice Management System (Error Handling)

## **Non-Functional Requirements**

### **User-Friendly and Modern UI:**

Create an intuitive and familiar interface suitable for both technical and non-technical users.

### **Responsive Design:**

The system accommodates both desktop and mobile views through responsive design. This approach ensures a user-friendly experience, regardless of whether users access the system from a desktop or a mobile device.

### **Accessibility:**

The application should adhere to accessibility standards (WCAG) [2], ensuring that users with disabilities can access and use the system without barriers.

### **Availability:**

Users should have the flexibility to access the system anytime and from anywhere. The emphasis is on providing functions that allow users to work seamlessly, ensuring availability is a top priority.

### **Reliability:**

Design the system to handle real-time interactions with a large user base, emphasizing reliable performance.

### **Security and Privacy:**

The application should implement robust security measures to protect sensitive user data, ensuring security and privacy against third-party access.

### **Well documented and structured code base:**

The codebase should be well-structured and documented, facilitating easy maintenance, updates, and future enhancements by developers.

## Chapter 03 – Design & Development

### System Overview Diagram

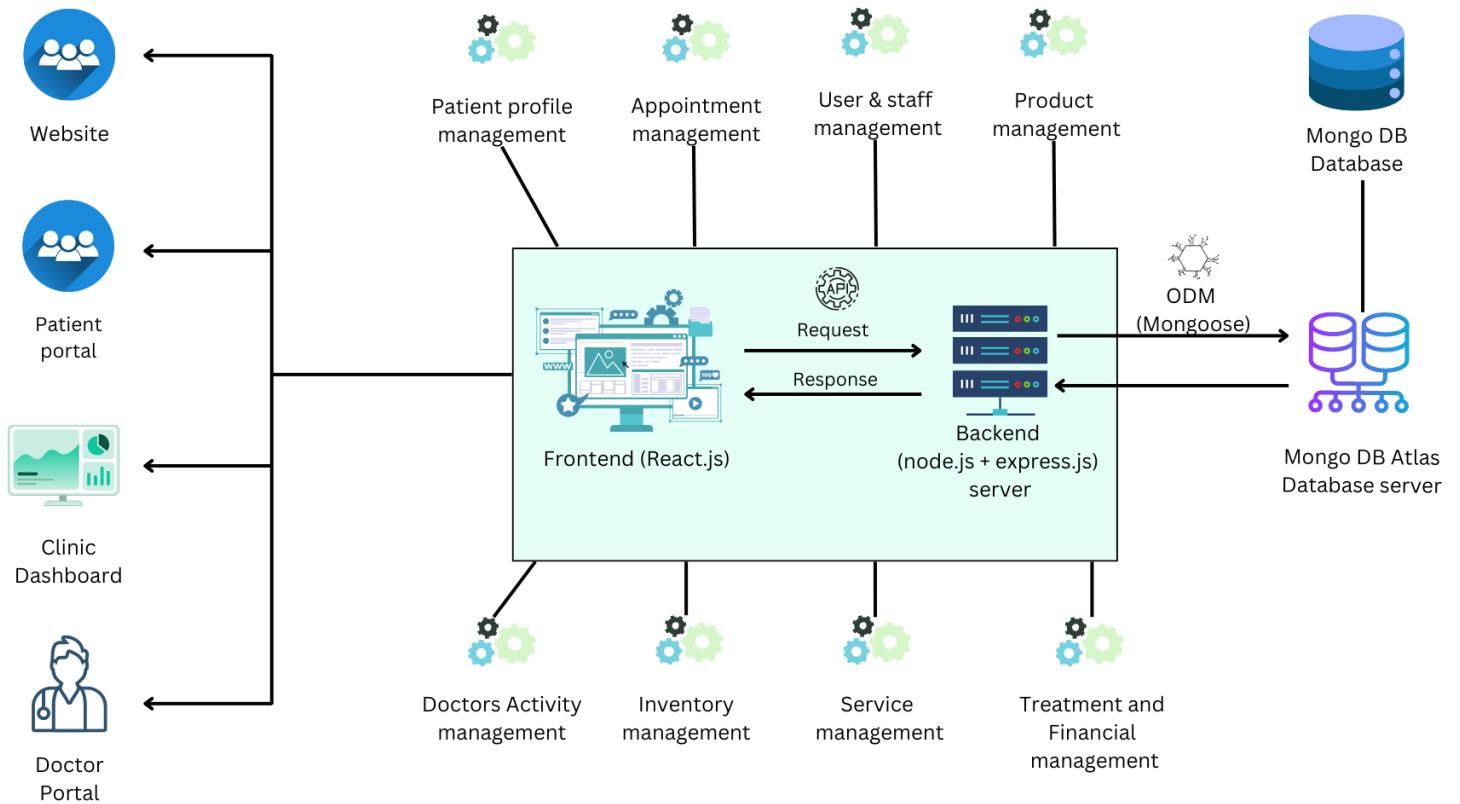


Figure 3. 33 - System Overview

## System Architecture

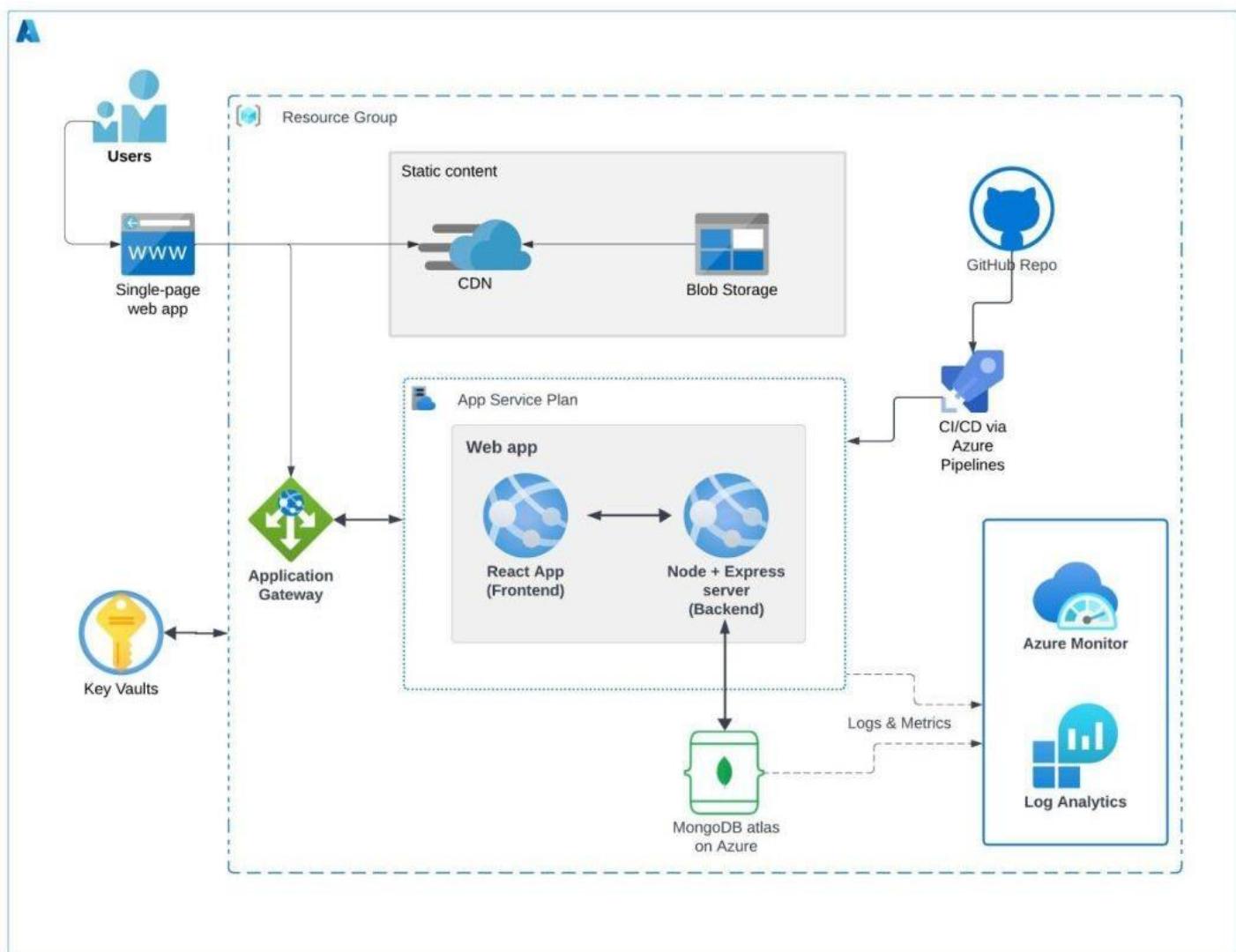


Figure 3. 34 - System Architecture

## ER Diagram Overview

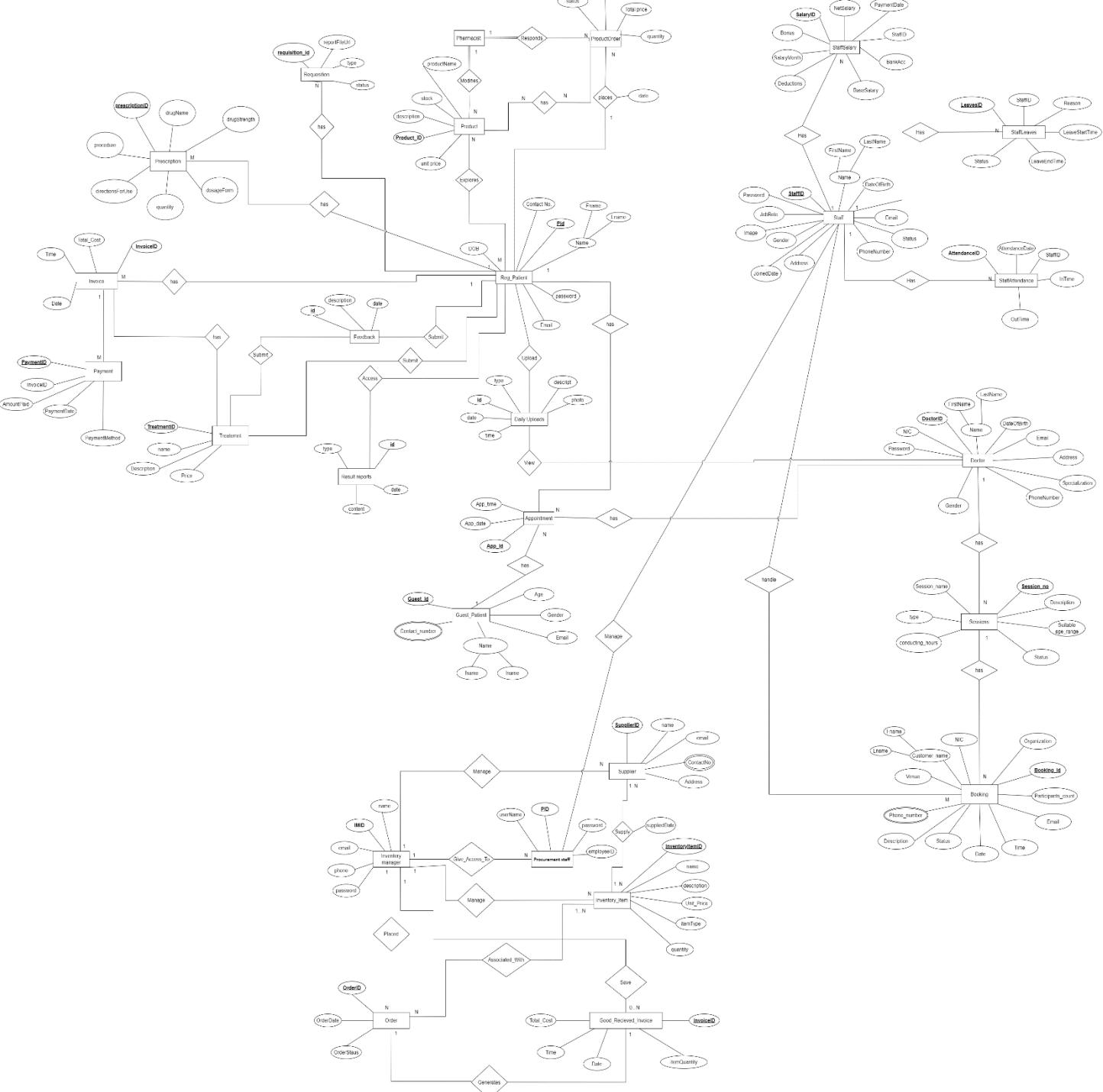
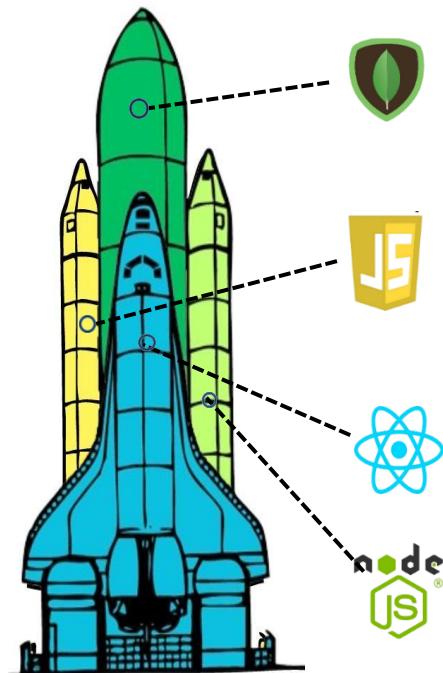


Figure 3. 35 - ER Diagram

## Tools and Technologies

Opting for the MERN [13] (MongoDB, Express.js, React, Node.js) stack for our web app was driven by its cohesive integration and efficiency. MongoDB's flexibility suits the diverse medical data structures, while Express.js simplifies backend development. React ensures a dynamic user interface, and Node.js facilitates seamless server-client integration. By considering these benefits, the MERN stack aligns perfectly with the goals of our project.



**MERN MongoDB** - Modern database that supports transactional, search, analytics, and mobile use cases with a flexible documentdata model and a unified query interface.

**MERN Express js** - A small framework that works on top of Node web serverfunctionality to simplify its APIs and add helpful new features. It makes it easier to organize your application'sfunctionality with middleware and routing. It adds helpfulutilities to Node HTTP objects and facilitates the rendering of dynamic HTTP objects.

**MERN React js** - A free and open-source front-end JavaScript library forbuilding user interfaces based on components.

**MERN Node js** - An open-source server environment that allows you torun JavaScript on the server.



### **Visual Studio Code –**

We've chosen Visual Studio Code as our IDE for the project because its versatility, coupled with a wide range of extensions, makes it a practical and effective tool for the development.



### **GITHUB –**

We'll be leveraging GitHub for version control and collaboration, ensuring efficient codemanagement and seamless teamwork throughout the project.



### **Microsoft Azure –**

For deployment, we've chosen Azure, leveraging its robust cloud services. Azure provides a scalable and reliable platform for hosting our Web application.



### **POSTMAN –**

We've chosen Postman to test the backend APIs.



### **JIRA –**

As a project management tool, we will use JIRA.

## 01. MongoDB Classes

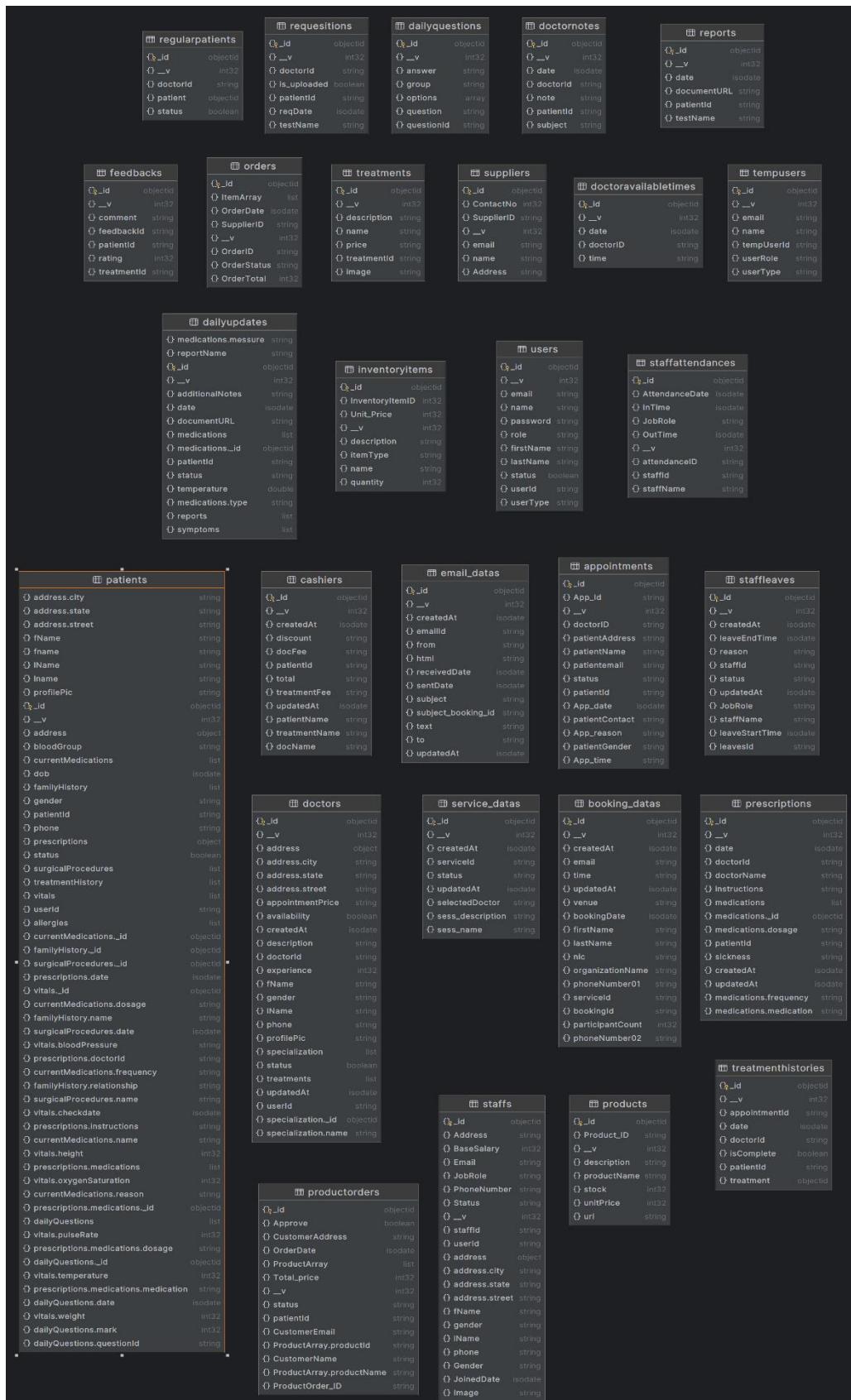


Figure 3. 36 - MongoDB Classes

## Design

### **Doctor Process Management System - IT22362858**

The Doctor Process Management component is specifically designed to enhance the experience and efficiency of doctors within the wellness center. It provides a dedicated interface where doctors can manage appointments seamlessly, access patient medical records, conduct examinations and manage their other healthcare activities. By using pre-stored data of patients, doctors can make informed decisions during examinations. Additionally, the system allows doctors to add personalized notes to patient records, generate reports of clinical outcomes and generate printable prescriptions. Overall, this component prioritizes the well-being of both patients and doctors by maintaining critical processes.

## **02. Workflow Diagram**

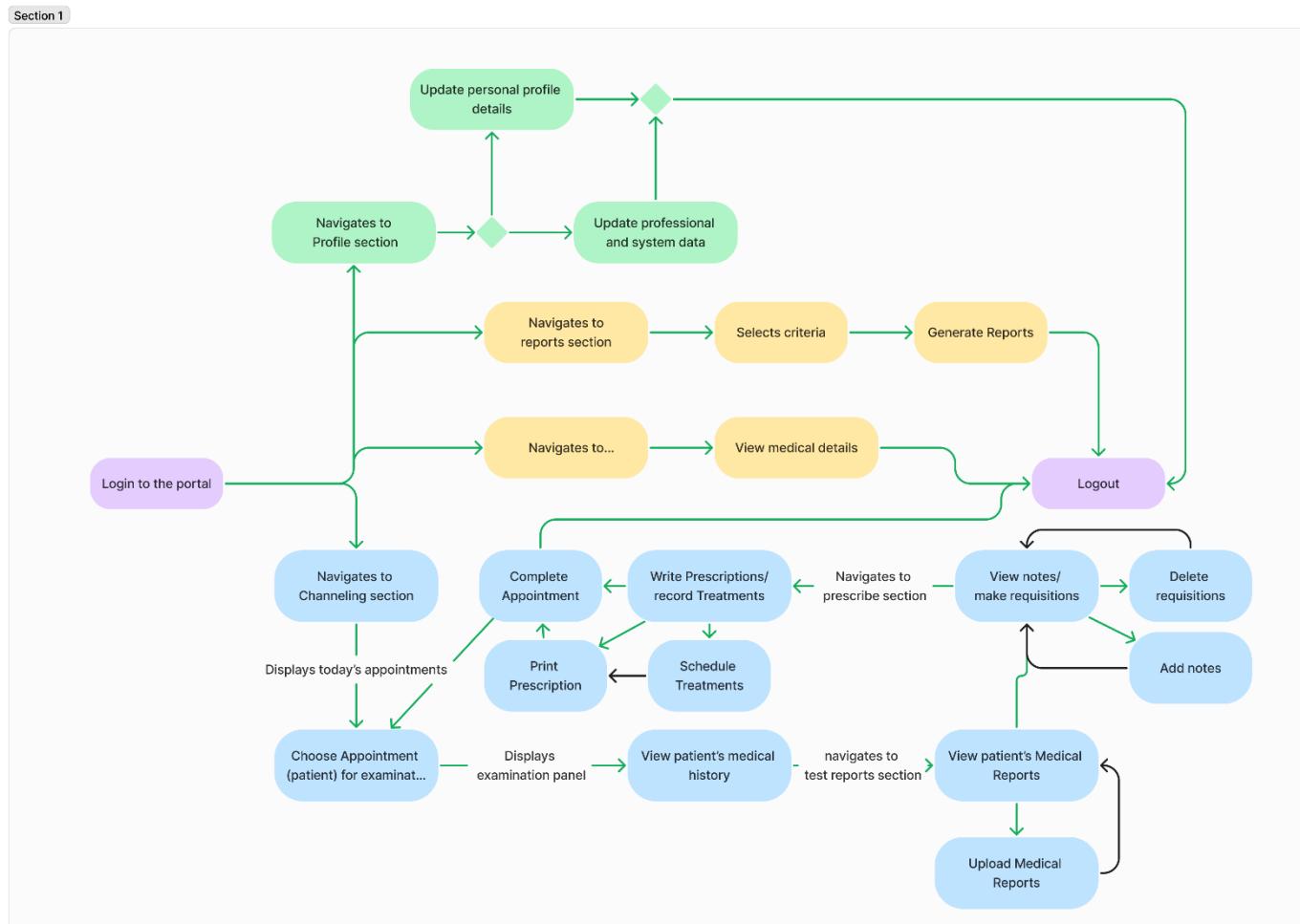
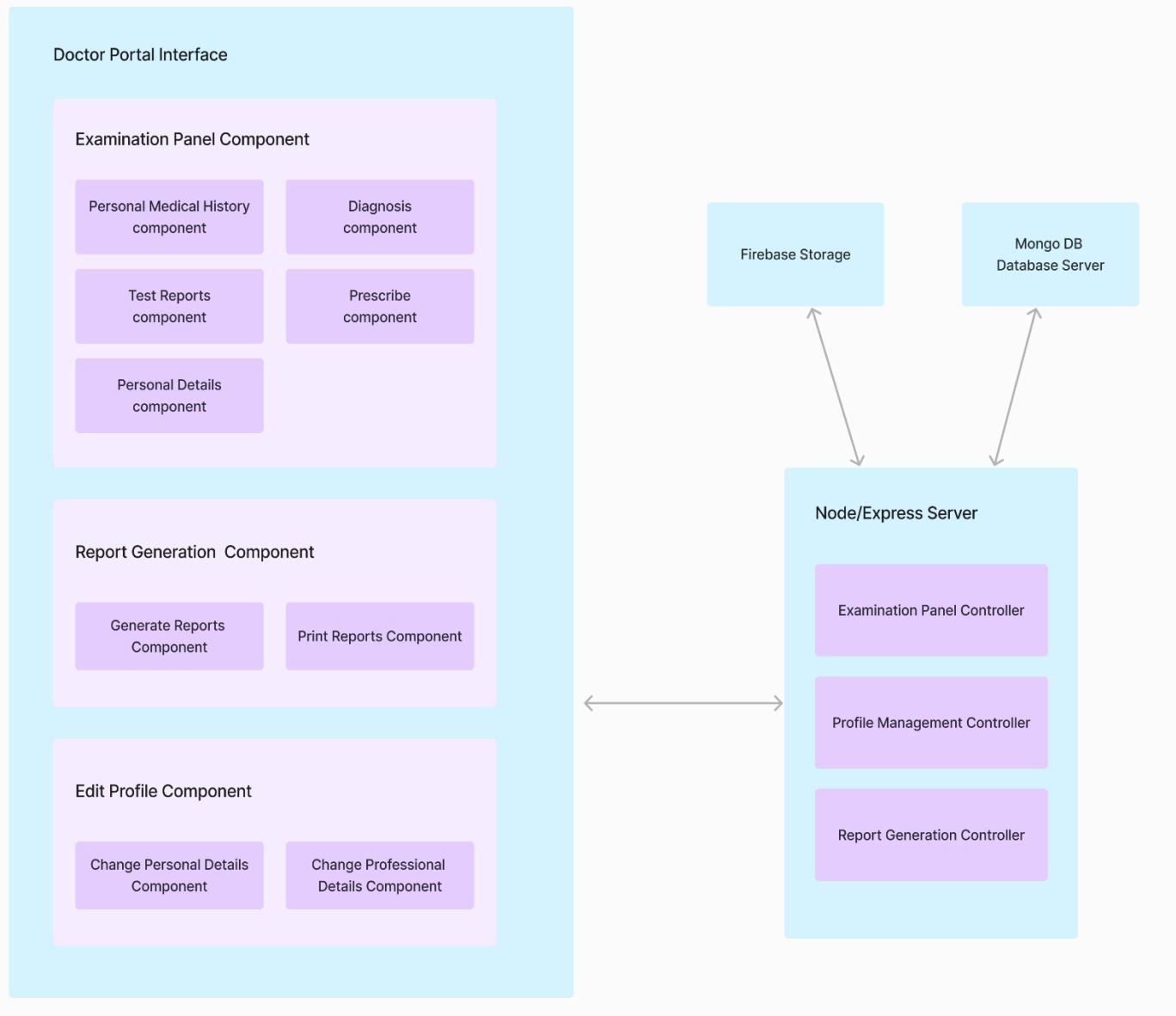


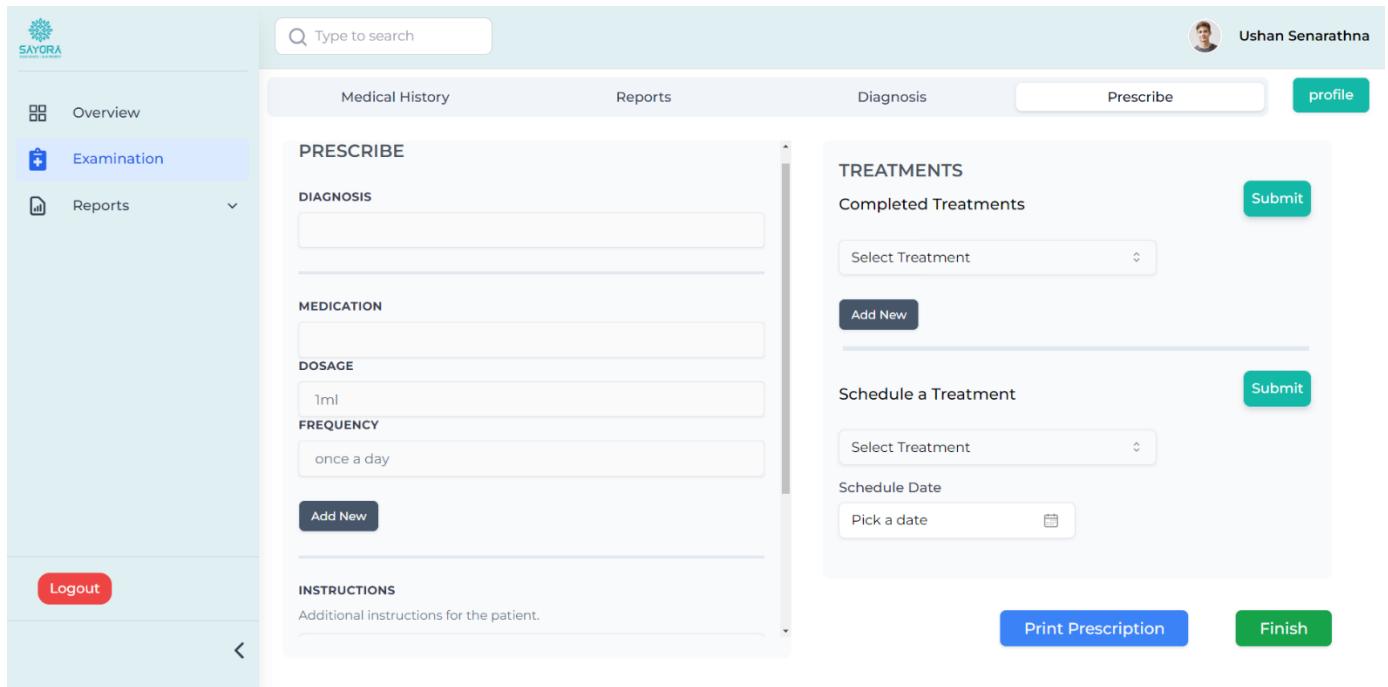
Figure 3. 37 - Workflow of the Doctor Process

### **03. Component Diagram**



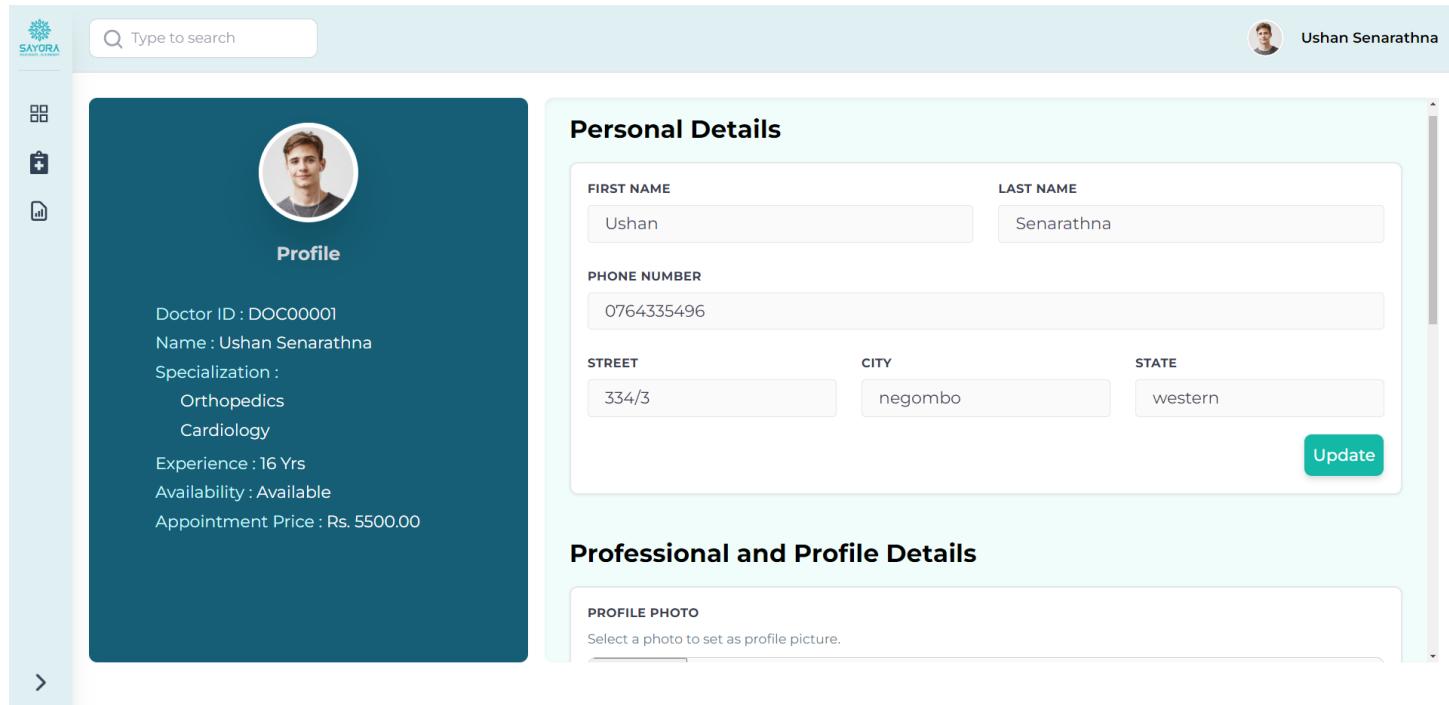
*Figure 3. 38 - Component diagram of the Doctor process Management System*

## 04. UI



The screenshot shows the Prescription screen (UI 01) of the SAYORA application. At the top, there is a navigation bar with icons for Overview, Examination (highlighted in blue), and Reports. A search bar says "Type to search". On the right, a profile picture of Ushan Senarathna is shown. Below the navigation, there are tabs for Medical History, Reports, Diagnosis, Prescribe (disabled), and profile (disabled). The main area is divided into sections: PRESCRIBE (with fields for Diagnosis, Medication, Dosage, Frequency, and an Add New button), TREATMENTS (Completed Treatments and Schedule a Treatment sections), and a bottom row with Print Prescription and Finish buttons.

Figure 3. 39 - UI 01 of Prescription Screen



The screenshot shows the Doctor Profile screen (UI 02) of the SAYORA application. On the left, there is a sidebar with icons for Overview, Examination, and Reports. The main content area has a dark teal sidebar on the left containing a profile picture, the word "Profile", and doctor details: Doctor ID: DOC00001, Name: Ushan Senarathna, Specialization: Orthopedics, Cardiology, Experience: 16 Yrs, Availability: Available, and Appointment Price: Rs. 5500.00. The main body is divided into two sections: "Personal Details" (with fields for First Name, Last Name, Phone Number, Street, City, State, and an Update button) and "Professional and Profile Details" (with a Profile Photo section). At the bottom, there is a "Logout" button.

Figure 3. 40 - UI 02 of Doctor Profile

The screenshot shows a medical history application interface. At the top, there is a header bar with the SAYORA logo, a search bar, and a user profile for "Ushan Senarathna". Below the header, there are tabs for "Medical History", "Reports", "Diagnosis", and "Prescribe", with "Medical History" being the active tab. On the left side, there is a vertical sidebar with icons for "Surgery", "Family History", "Current Medications", and "Treatments History".

**Surgical Procedures History**

| Surgery      | Date      |
|--------------|-----------|
| Appendectomy | 7/20/2010 |
| Knee Surgery | 3/10/2015 |

**Family History**

| Condition     | Relationship |
|---------------|--------------|
| Heart Disease | Father       |
| Diabetes      | Grandmother  |

**Current Medications**

| Medicine   | Dosage | Frequency   |
|------------|--------|-------------|
| Aspirin    | 20mg   | Once daily  |
| Lisinopril | 10mg   | Twice daily |

**Treatments History**

| Treatment                        | Doctor ID | Date      |
|----------------------------------|-----------|-----------|
| ORTHOPAEDIC DISEASES             | DOC00001  | 4/22/2024 |
| ORTHOPAEDIC DISEASES             | DOC00001  | 4/22/2024 |
| AYURVEDIC CARDIAC REHABILITATION | DOC00001  | 4/25/2024 |

Figure 3. 41 - UI 03 of Medical History

## Patient Process Management System - IT22337726

The Ayurvedic Clinic Patient Management System is designed to revolutionize patient care by offering a comprehensive suite of features that empower patients to actively engage in their wellness journey. Patients can seamlessly access and oversee their medical records, encompassing prescriptions, test reports, and treatment results. Typically, ayurvedic treatments take several months, during which the doctor spends a significant amount of time observing the patient to gain insight into their condition. So, we have implemented a feature that allows us to maintain the daily medical status of patients.

### 01. Workflow Diagram

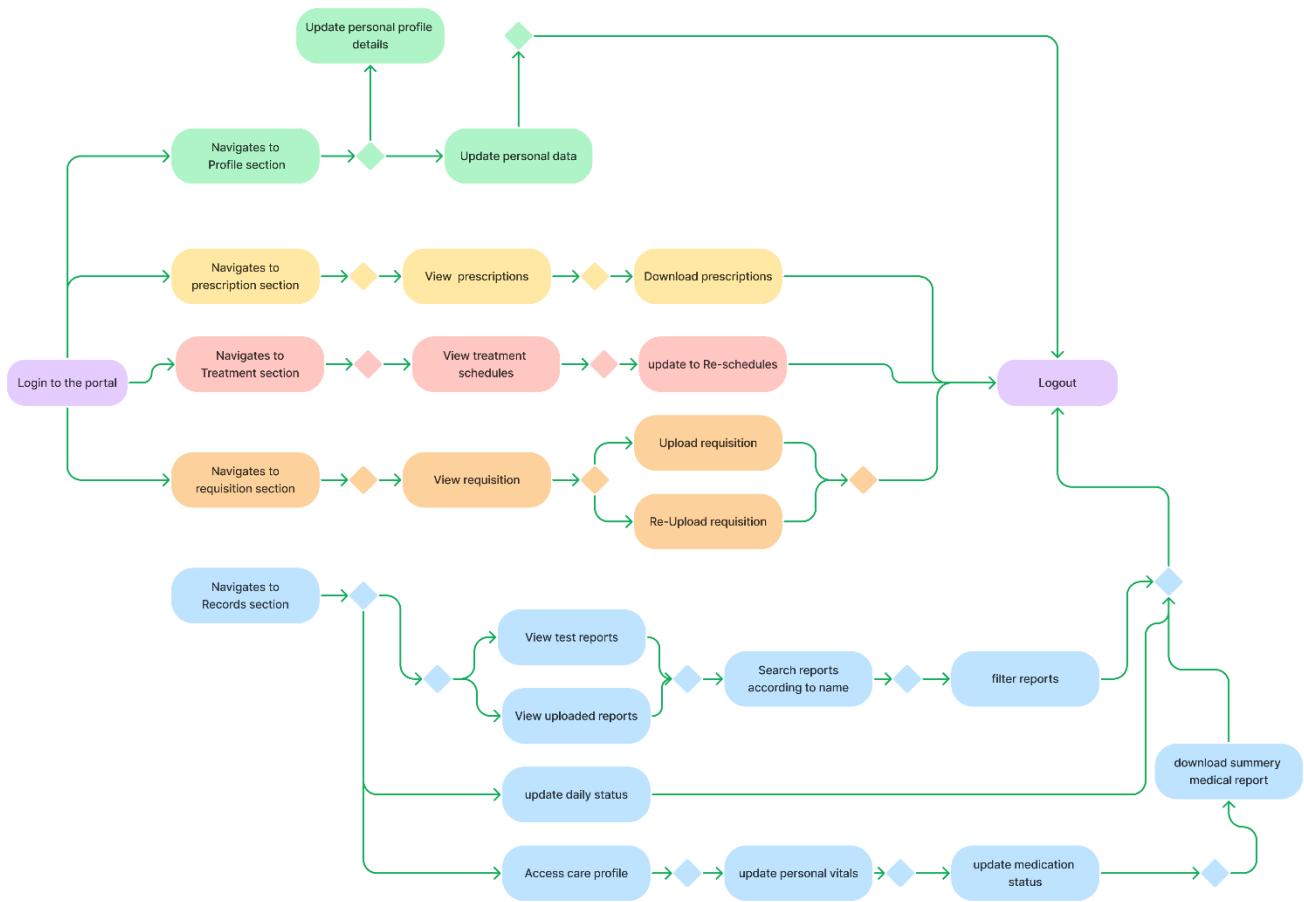


Figure 3. 42 - Workflow of the Patient Process

## 02. Component Diagram

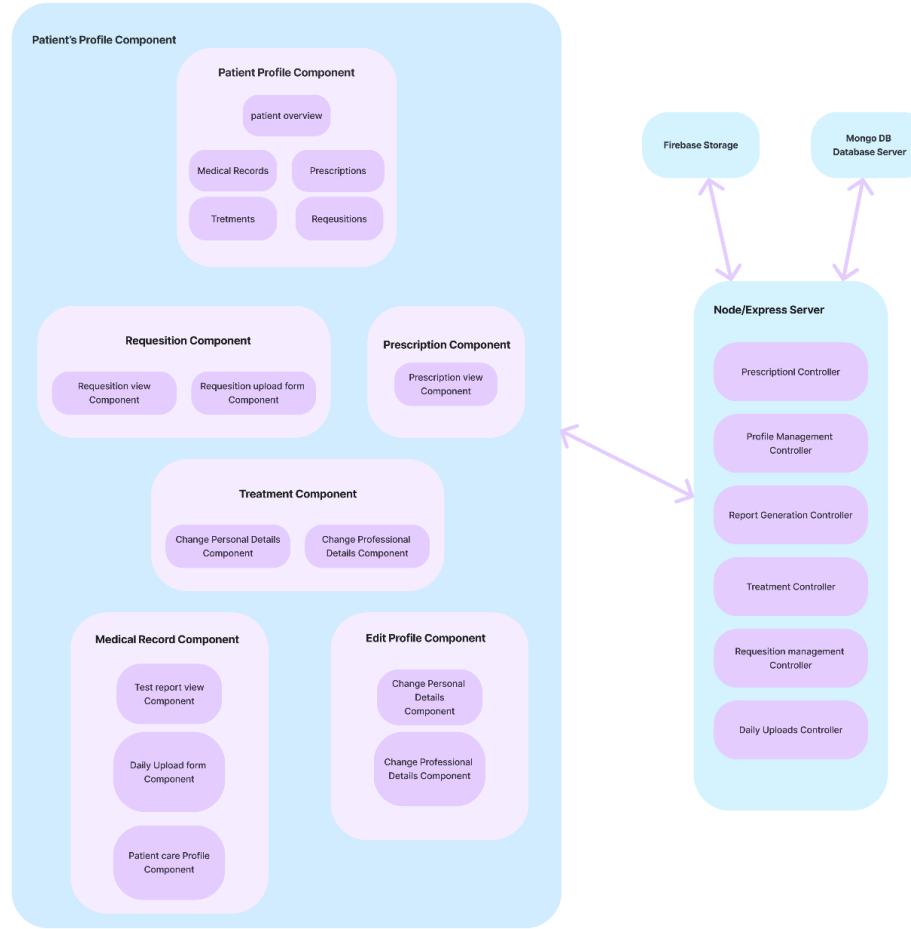


Figure 3. 43 - Component diagram of Patient Process Management

## 03. UI

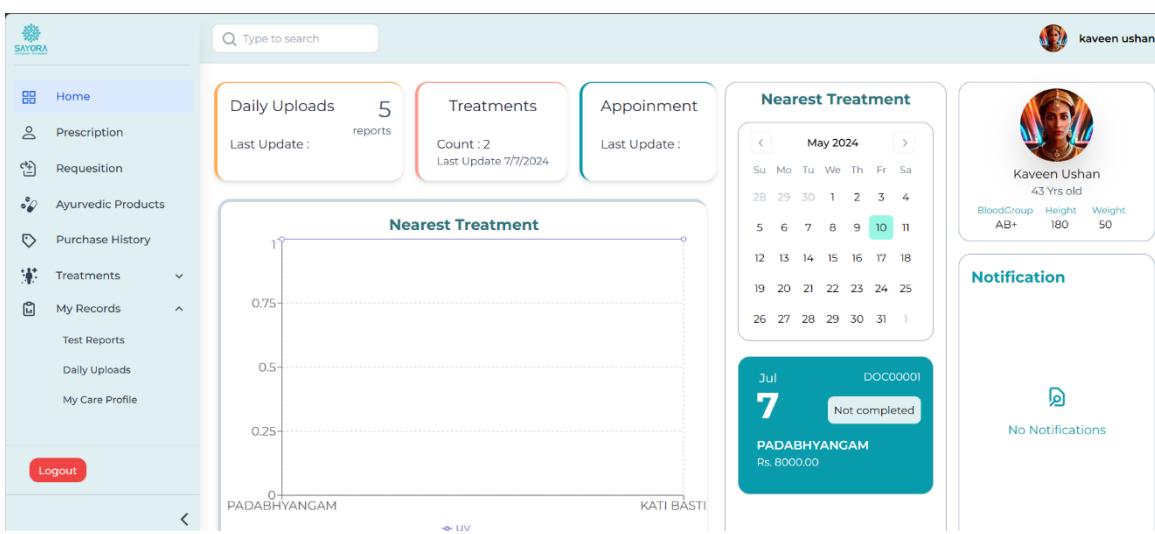


Figure 3. 44 - UI 01 of Patient Process Dashboard

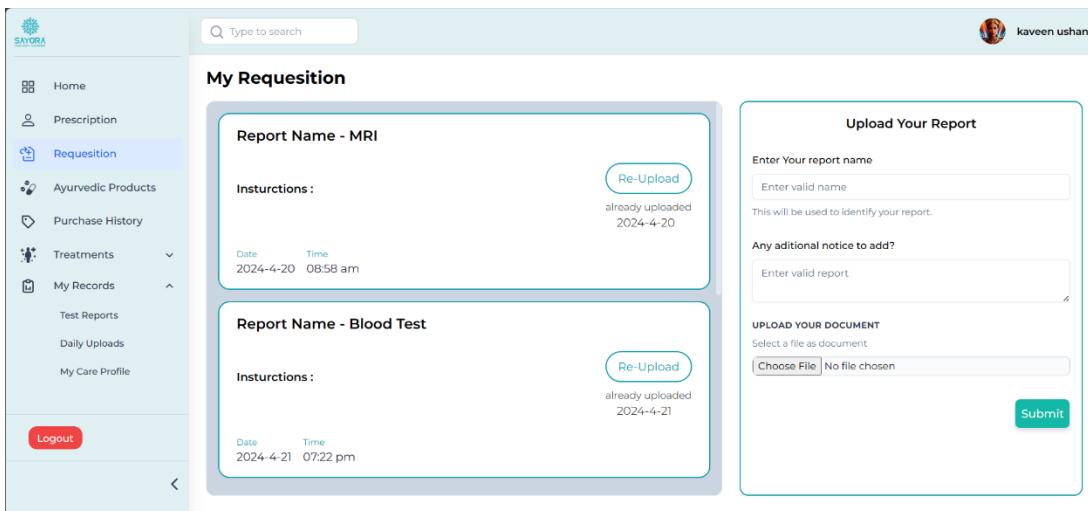


Figure 3. 45 - UI 02 of Prescription View of the Patient

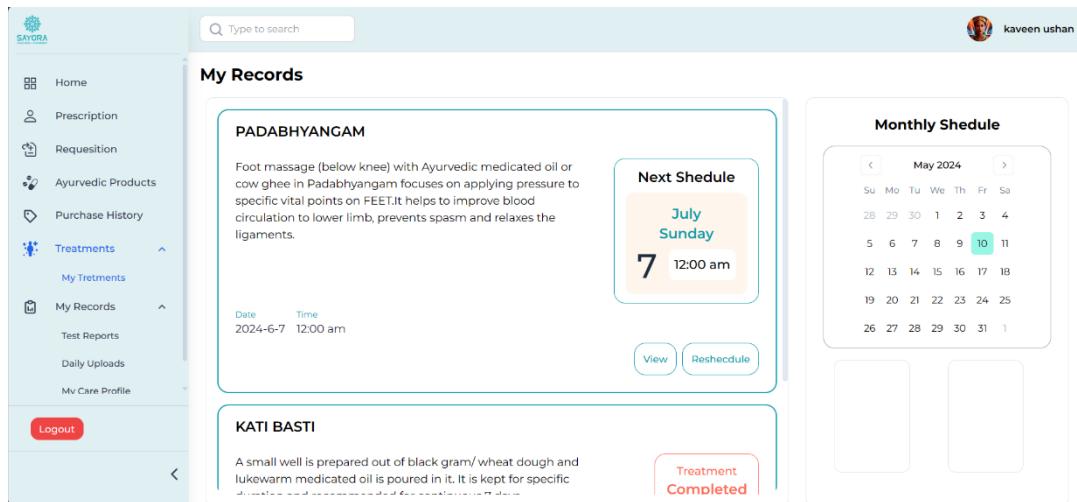


Figure 3. 46 - UI 03 of Record of the Treatments

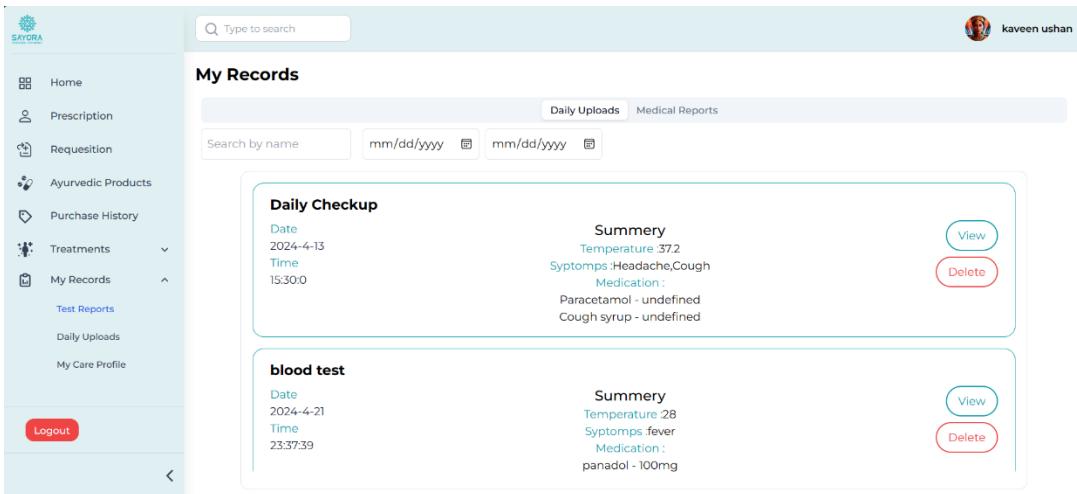


Figure 3. 47 - UI 04 of Daily Records Uploads

Figure 3. 48 - UI 05 of Medical Reports View

Figure 3. 49 - UI 06 of Update Medical Status

Figure 3. 50 - UI 07 of My Care Profile

## **Appointment Management System - IT22890696**

The proposed system offers appointment scheduling for both registered and unregistered patients. Patients can search for doctors based on their specialization and preferred date. After selecting a doctor, they are directed to the appointment confirmation page. The appointment manager manages the backend functions, scheduling, allocating medical staff, arranging new appointments, and canceling appointments. The system also provides convenient modes for patients to cancel appointments.

### **01. Workflow Diagram**

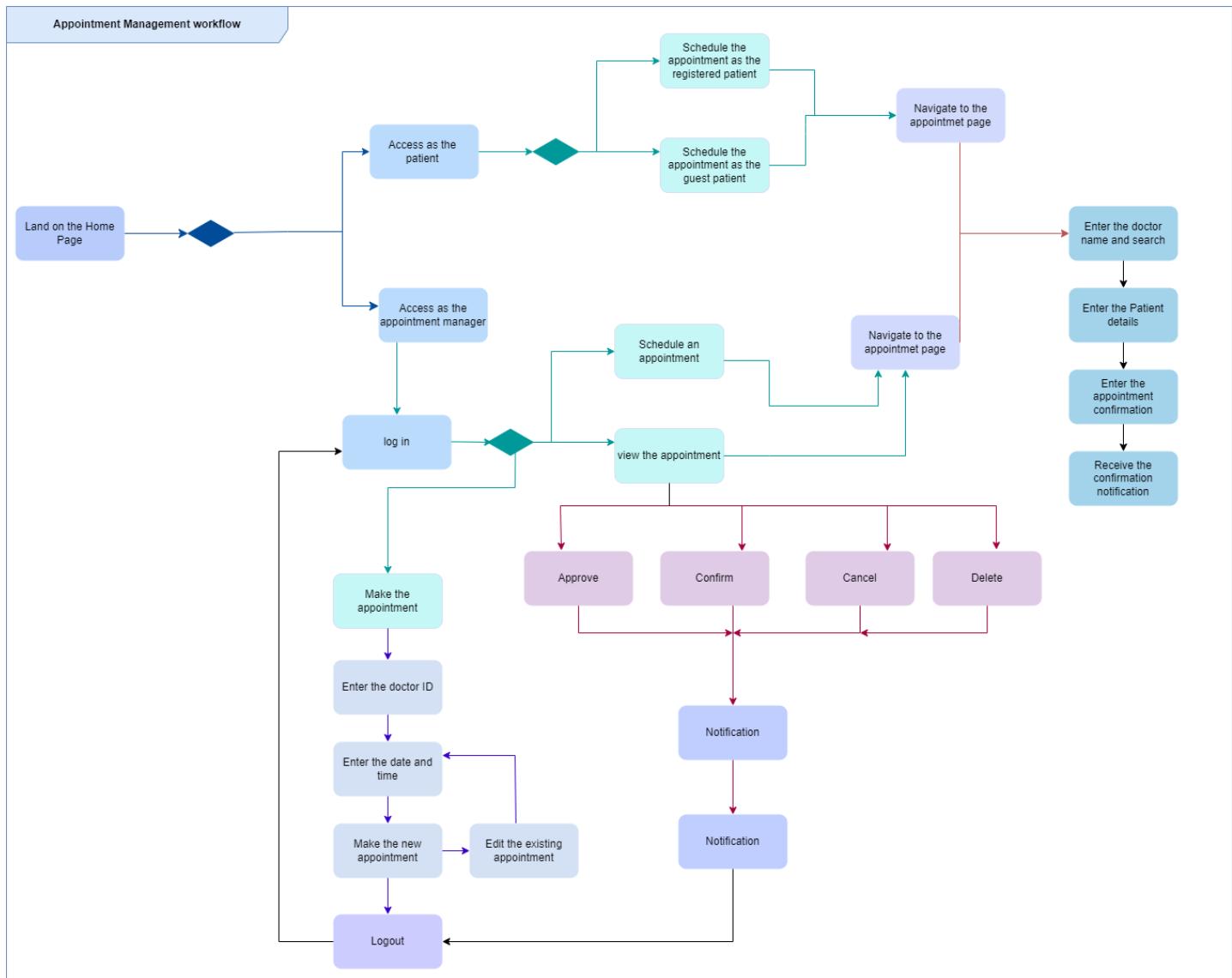


Figure 3. 51 - Workflow of Appointment Management System

## 02. Component Diagram

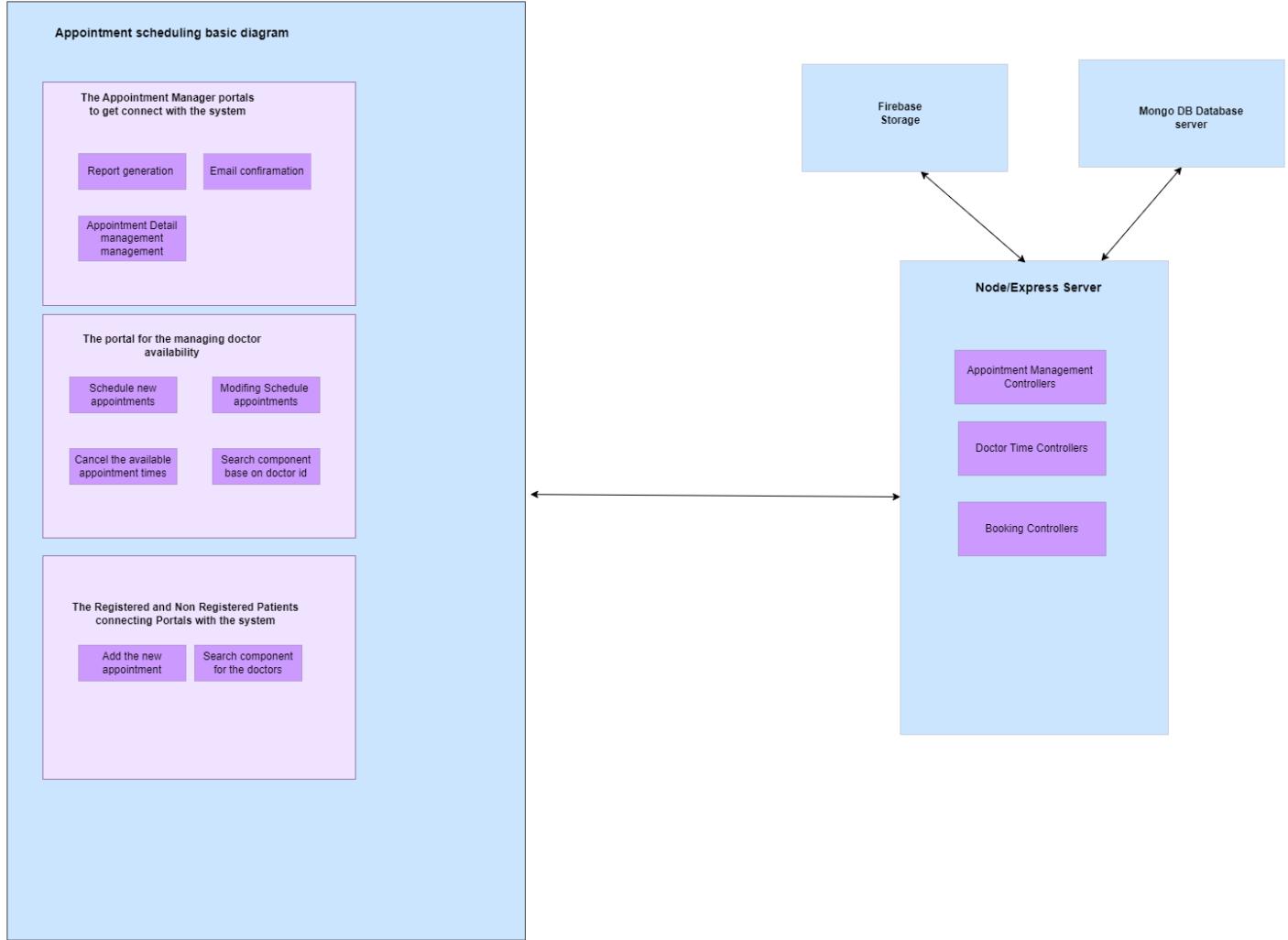


Figure 3. 52 - Component Diagram of Appointment Management System

### 03. UI

The screenshot shows a user interface for managing doctor availability. On the left is a vertical sidebar menu with options like Manage Attendance, Manage Leaves, Treatment, Service, Cashier, Manage Inventory, Product, Appointments, Staff Profile, and Logout. The main area has a search bar at the top right. A central modal window titled "Manage Doctor Availability" contains fields for "Doctor ID" (with placeholder "Enter Doctor ID"), "Date" (with placeholder "mm/dd/yyyy"), and "Time" (with placeholder "..."). It also features "Add Availability" and "Cancel" buttons.

Figure 3. 53 - UI 01 of Manage Availability

The screenshot shows a user interface for viewing appointments. The left sidebar includes the same menu as Figure 3.53. The main area features a search bar with "Search Doctor ID" and a "Search" button. Below is a table with columns: Doctor ID, Patient Name, Date, Time, Reason, Status, Actions, and Delete. Two rows of data are shown:

| Doctor ID | Patient Name   | Date      | Time  | Reason     | Status   | Actions                                      | Delete   |
|-----------|----------------|-----------|-------|------------|----------|--|--|
| DOC00001  | Samadhi cooray | 5/22/2024 | 20:55 | Headache   | Approved | Pending<br>Approved<br>Canceled<br>Completed | <span style="background-color: red; color: white; padding: 2px;">Delete</span> |
| DOC00001  | Kamal Cooray   | 5/9/2024  | 03:22 | Stomaaache | Approved | Pending<br>Approved<br>Canceled<br>Completed | <span style="background-color: red; color: white; padding: 2px;">Delete</span> |

Figure 3. 54 - UI 02 of View Appointments

The screenshot shows a user interface for managing doctor appointment times. On the left is a sidebar with various menu items: Manage Attendance, Manage Leaves, Treatment, Service, Cashier, Manage Inventory, Product, Appointments (with sub-options Add Schedule Time, View Appointments, and Appointment Times), Staff Profile, and Logout. The main area has a search bar at the top right with placeholder text "Type to search". Below it is a table titled "Enter Doctor ID" with columns: Doctor ID, Date, Time, and Actions (Update, Delete). The table contains 15 rows of data. A "Search" button is located at the top right of the table header.

| Doctor ID | Date      | Time  | Actions   |
|-----------|-----------|-------|---|
| DOC00002  | 4/22/2024 | 01:06 | <button>Update</button> <button>Delete</button> |
| DOC00002  | 5/9/2024  | 03:22 | <button>Update</button> <button>Delete</button> |
| Doc00003  | 5/7/2024  | 02:14 | <button>Update</button> <button>Delete</button> |
| DOC00003  | 5/4/2024  | 17:03 | <button>Update</button> <button>Delete</button> |
| DOC00002  | 5/14/2024 | 18:42 | <button>Update</button> <button>Delete</button> |
| DOC00001  | 5/14/2024 | 18:42 | <button>Update</button> <button>Delete</button> |
| DOC001    | 5/22/2024 | 20:55 | <button>Update</button> <button>Delete</button> |
| DOC00001  | 5/22/2024 | 20:55 | <button>Update</button> <button>Delete</button> |
| DOC00002  | 5/22/2024 | 20:55 | <button>Update</button> <button>Delete</button> |
| DOC00004  | 5/22/2024 | 20:55 | <button>Update</button> <button>Delete</button> |
| DOC00002  | 5/29/2024 | 23:53 | <button>Update</button> <button>Delete</button> |
| DOC00001  | 5/5/2024  | 19:15 | <button>Update</button> <button>Delete</button> |

Figure 3. 55 - UI 03 of Appointment Times

The screenshot shows a user interface for updating doctor availability. On the left is a sidebar with the same menu items as Figure 3.55. The main area has a search bar at the top right. A modal dialog box is centered, titled "Update Doctor Availability". It contains three input fields: "Doctor ID" (set to "DOC00002"), "Date" (set to "04/22/2024"), and "Time" (set to "01:06 AM"). At the bottom of the dialog are two buttons: "Update Availability" (blue) and "Cancel" (red).

Figure 3. 56 - UI 04 of Update Doctor Availability

## User & Staff Management System - IT22595294

User management ensures secure access to the system through permissions, logins, and verifications. Staff management caters to various roles, including pharmacists, staff managers, medical secretaries, doctors, and system admins. System admins add and manage staff members, while medical secretaries add patients and manage their details. Staff managers track attendance, calculate salaries, approve, or decline leave requests, and generate performance reports. Staff members can manage their profiles and request early leave.

### **01. Workflow Diagram**

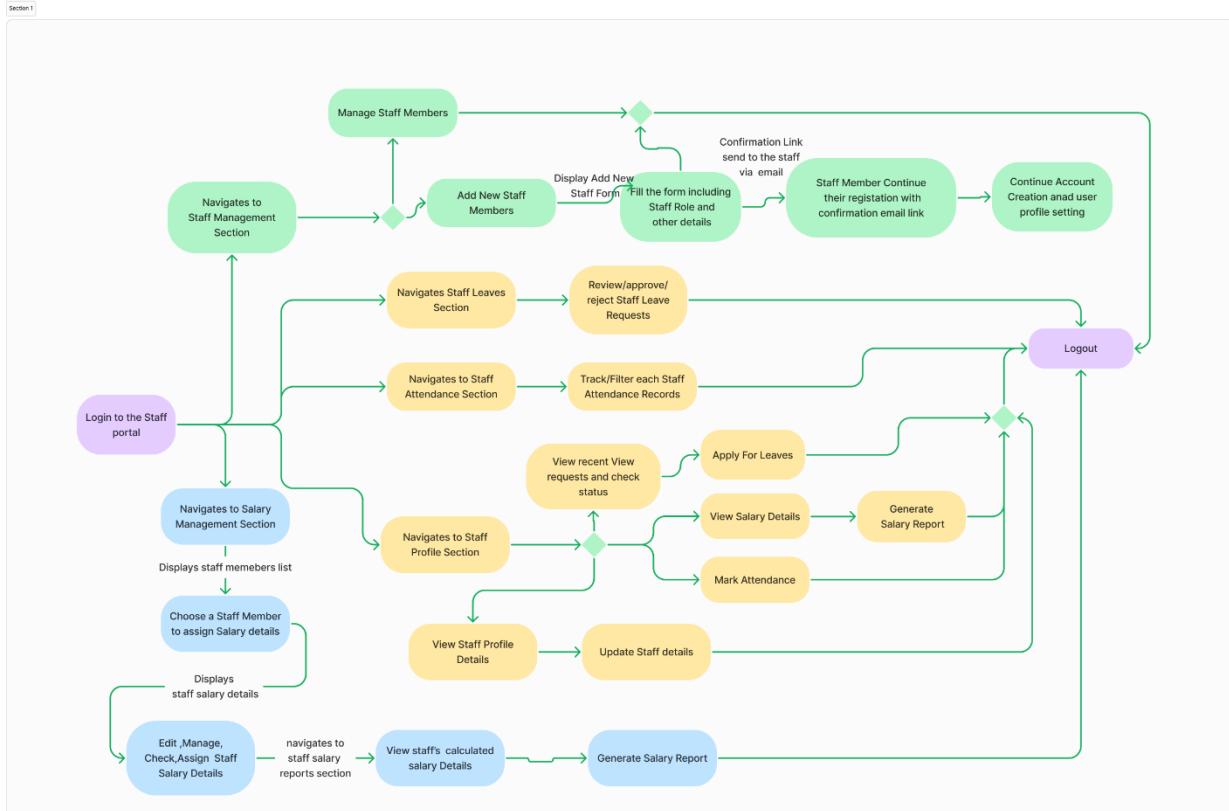


Figure 3. 57 - Workflow of User & Staff Member

## 02. Component Diagram

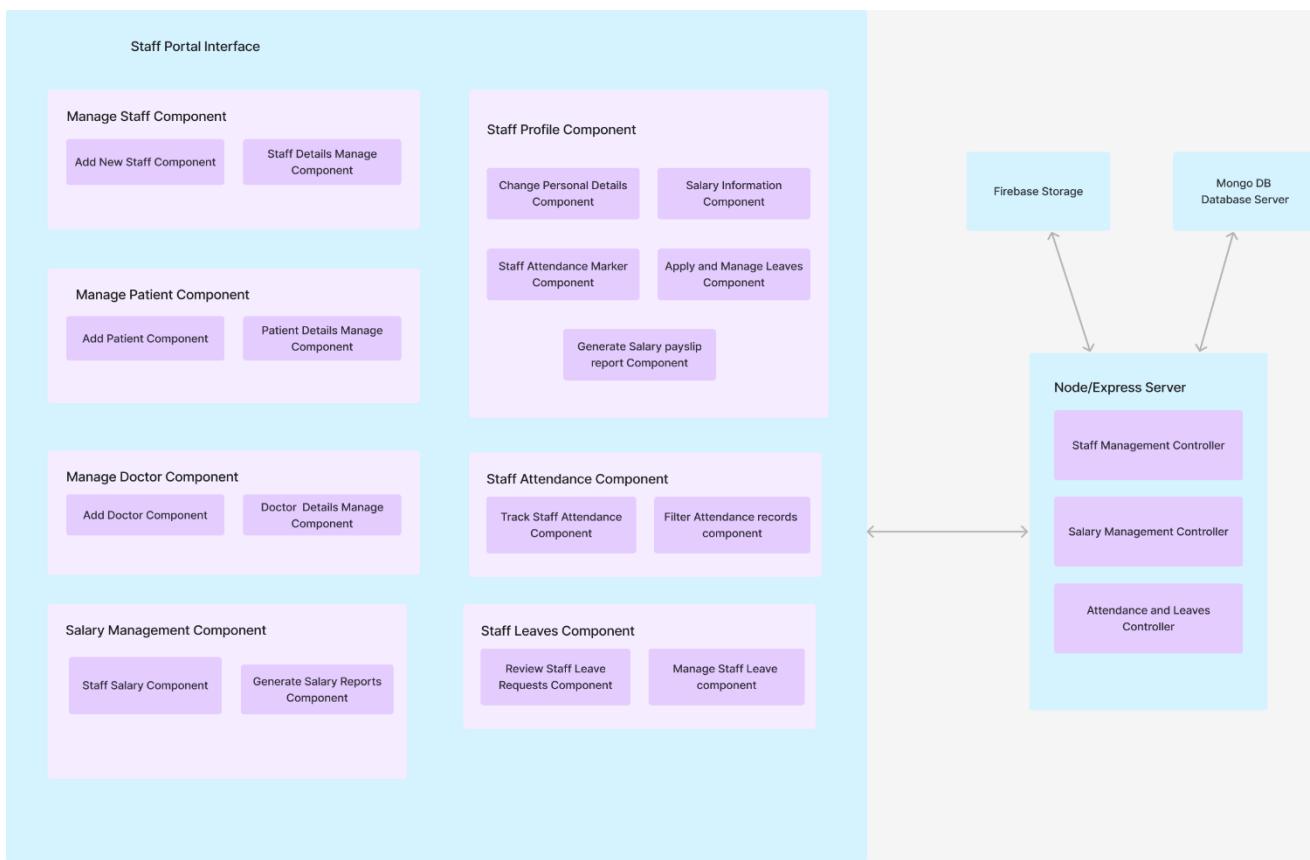


Figure 3. 58 - Component Diagram of User & Staff Member

## 03. UI

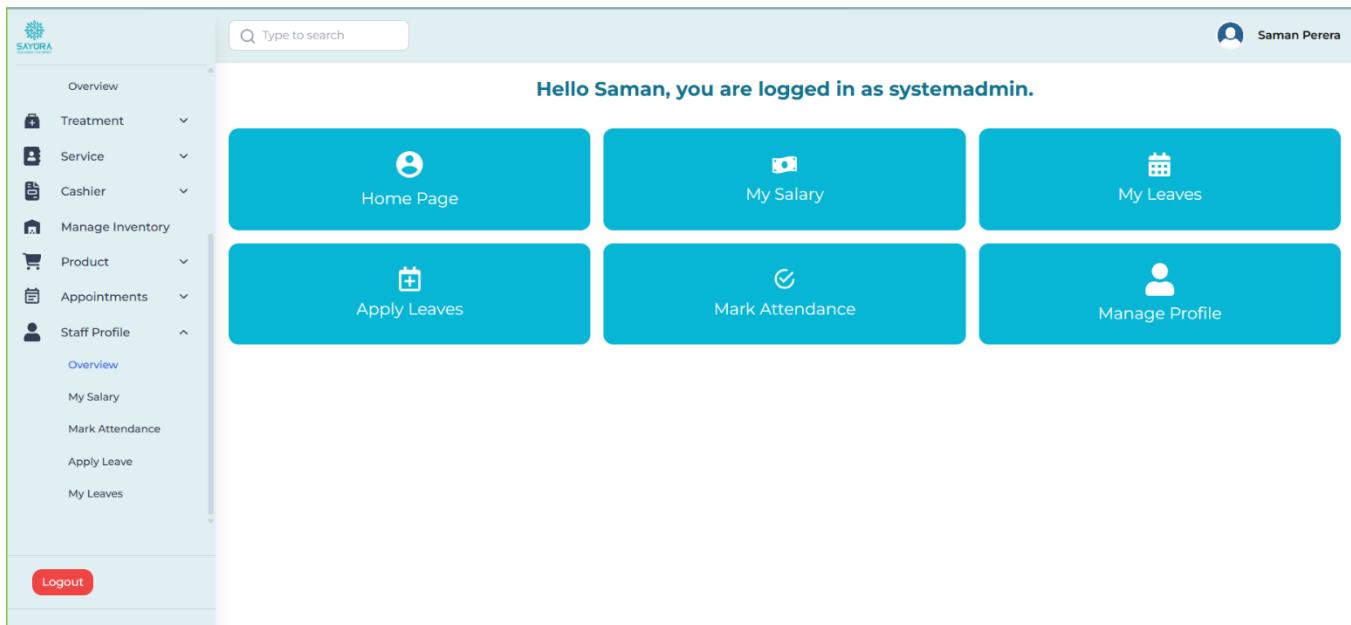


Figure 3. 59 - UI 01 of Staff Profile

**Add Staff**

**Staff Role**  
Staff Manager

**Name**  
Enter name

**Email**  
Enter email

I confirm that the details are correct

**Add Staff**

Figure 3. 60 - UI 02 of Add Staff

**Salary Data For Staff ID: STF0**

Filter by Salary ID Filter by S

| Salary ID | Staff Name           |
|-----------|----------------------|
| SAL00040  | Aroshana Dissanayake |

**Salary Payslip**  
Sanya Staff Management

Month: May 2024  
SalaryID: SAL00040  
Assigned Date: 2024-05-06T06:43:26.058Z

| Deductions | Bonus | Net Salary | Actions             |
|------------|-------|------------|---------------------|
| 00         | 2000  | 21500      | <b>View Details</b> |

**Staff Details**

|               |                      |
|---------------|----------------------|
| Staff Name:   | Aroshana Dissanayake |
| Staff ID:     | STF00025             |
| Bank Account: | 123456789            |

**Calculation LKR**

|                    |              |
|--------------------|--------------|
| Base Salary:       | +20000       |
| Bonus:             | +2000        |
| Deductions:        | -500         |
| <b>Net Salary:</b> | <b>21500</b> |

**Close** **Print Report**

Figure 3. 61 - UI 03 of Manage Salary

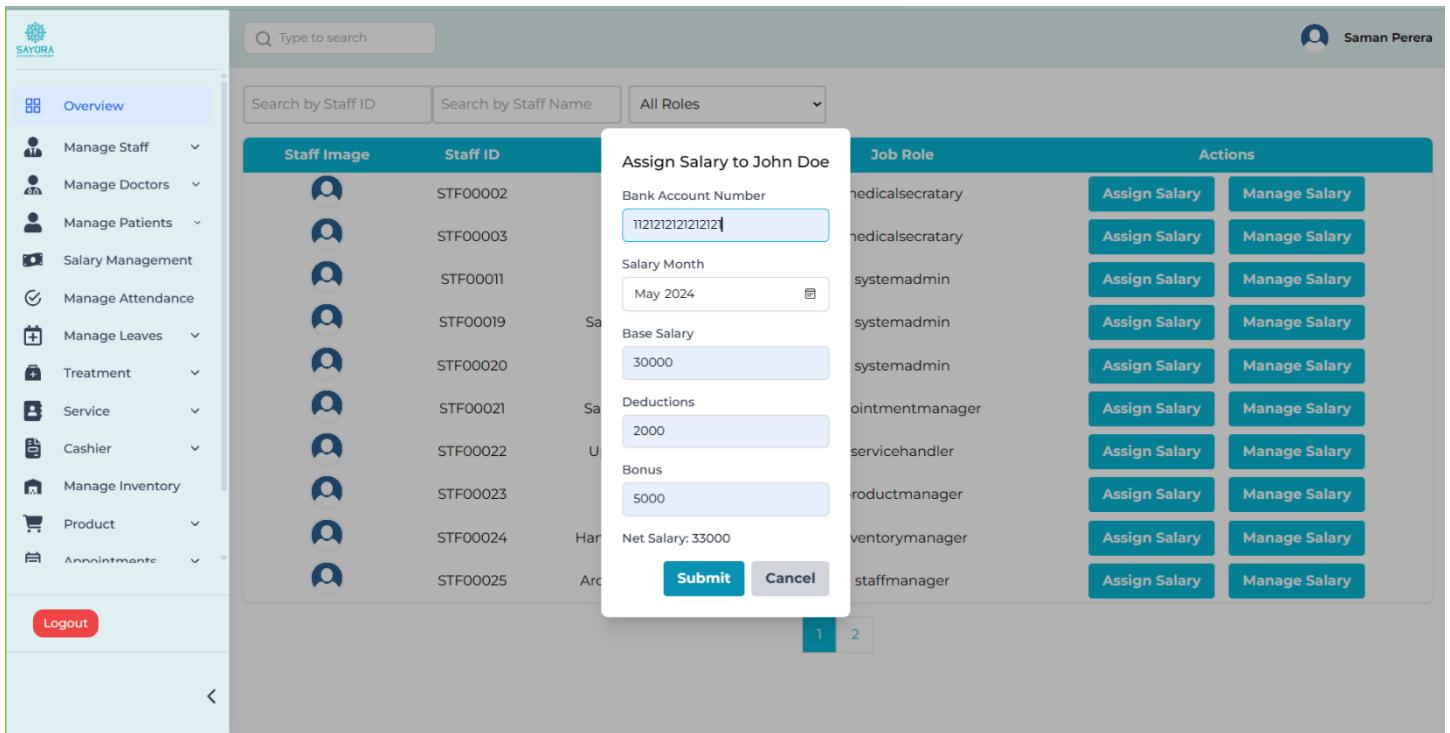


Figure 3. 62 - UI 04 of Assign Salary

| Staff Leaves Table |          |          |             |                  |          |            |           |            |                               |
|--------------------|----------|----------|-------------|------------------|----------|------------|-----------|------------|-------------------------------|
|                    | Leave ID | Staff ID | Name        | Job Role         | Status   | Start Time | End Time  | No of Days | Actions                       |
|                    | LEA00015 | STF00024 | Hansamalee  | inventorymanager | rejected | 5/8/2024   | 5/10/2024 | 2          | <button>View Details</button> |
|                    | LEA00014 | STF00020 | Sayora      | systemadmin      | pending  | 4/1/2024   | 4/24/2024 | 23         | <button>View Details</button> |
|                    | LEA00012 | STF00011 | Kamal Silva | Staff            | rejected | 4/1/2024   | 4/8/2024  | 7          | <button>View Details</button> |
|                    | LEA00009 | STF00011 | Kamal Silva | Staff            | rejected | 4/3/2024   | 4/30/2024 | 27         | <button>View Details</button> |

Figure 3. 63 - UI 05 of Manage Staff Leaves

SAYORA

Type to search

Saman Perera

**Overview**

Manage Staff

- Overview
- Add Staff

Manage Doctors

Manage Patients

Salary Management

Manage Attendance

Manage Leaves

Treatment

Service

Cashier

Manage Inventory

Logout

Search by Staff ID or Name

All Roles

| Staff Image | Staff ID | User ID  | Name                 | Status | Role               | Phone        | Actions               |                         |
|-------------|----------|----------|----------------------|--------|--------------------|--------------|-----------------------|-------------------------|
|             | STF00002 | USR00006 | kamal Amal           | Active | medicalsecretary   | 0812989789   | <button>Edit</button> | <button>Delete</button> |
|             | STF00003 | USR00090 | John Doe             | Active | medicalsecretary   | 7890009008   | <button>Edit</button> | <button>Delete</button> |
|             | STF00011 | USR00023 | Kalpa Perera         | Active | systemadmin        | 333333333333 | <button>Edit</button> | <button>Delete</button> |
|             | STF00019 | USR00009 | Sasanka dissanayake  | Active | systemadmin        | 0705356643   | <button>Edit</button> | <button>Delete</button> |
|             | STF00020 | USR00010 | Saman Perera         | Active | systemadmin        | 0981223111   | <button>Edit</button> | <button>Delete</button> |
|             | STF00021 | USR00102 | Samadhi Rathnayake   | Active | appointmentmanager | 0701234567   | <button>Edit</button> | <button>Delete</button> |
|             | STF00022 | USR00103 | Upendra Nayanajith   | Active | servicehandler     | 0918971231   | <button>Edit</button> | <button>Delete</button> |
|             | STF00023 | USR00104 | Mihili Sanjula       | Active | productmanager     | 1231231234   | <button>Edit</button> | <button>Delete</button> |
|             | STF00024 | USR00105 | Hansamalee Ekanayake | Active | inventorymanager   | 1234567890   | <button>Edit</button> | <button>Delete</button> |
|             | STF00025 | USR00106 | Aroshana Dissanayake | Active | staffmanager       | 0705356643   | <button>Edit</button> | <button>Delete</button> |

1 2

Figure 3. 64 - UI 06 of Manage Staff

SAYORA

Type to search

Saman Perera

**Overview**

Manage Staff

Manage Doctors

Manage Patients

Salary Management

Manage Attendance

- Overview

Manage Leaves

Treatment

Service

Cashier

Manage Inventory

Product

Logout

mm/dd/yyyy

Staff ID

Staff Name

Apply Filters

| Date     | Staff ID | Staff Name    | Start Time  | End Time    | Duration   | Remarks |
|----------|----------|---------------|-------------|-------------|------------|---------|
| 5/2/2024 | STF00020 | Sayora        | 1:44:27 PM  | 1:44:29 PM  | 0.00 hours |         |
| 3/1/2024 | STF0100  | John Doe      | 1:30:00 PM  | 10:30:00 PM | 9.00 hours |         |
| 2/2/2024 | STF0101  | Jane Smith    | 1:30:00 PM  | 10:30:00 PM | 9.00 hours |         |
| 4/3/2024 | STF0102  | Alice Johnson | 1:30:00 PM  | 10:30:00 PM | 9.00 hours |         |
| 3/4/2024 | STF0103  | Bob Brown     | 1:30:00 PM  | 10:30:00 PM | 9.00 hours |         |
| 1/5/2024 | STF0104  | Charlie Davis | 1:30:00 PM  | 10:30:00 PM | 9.00 hours |         |
| 2/1/2024 | STF0105  | Diane Evans   | 1:30:00 PM  | 10:30:00 PM | 9.00 hours |         |
| 5/2/2024 | STF0106  | Edward Fox    | 1:30:00 PM  | 10:30:00 PM | 9.00 hours |         |
| 5/3/2024 | STF0107  | Fiona Green   | 1:30:00 PM  | 10:30:00 PM | 9.00 hours |         |
| 5/3/2024 | STF00020 | Sayora        | 12:29:29 AM | N/A         | N/A        |         |

Figure 3. 65 - UI 07 of Attendance Track

## Inventory Management System – IT22592774

Sayora Wellness Centers has implemented an Inventory Management System to streamline and optimize the management of external supplies, including essential items like trays, injections, and needles. The system aims to reduce manual errors, improve procurement efficiency, and ensure seamless flow of supplies to clinics. This will help maintain optimal stock levels, improve order accuracy, and enhance overall operational efficiency.

### **01. Workflow Diagram**

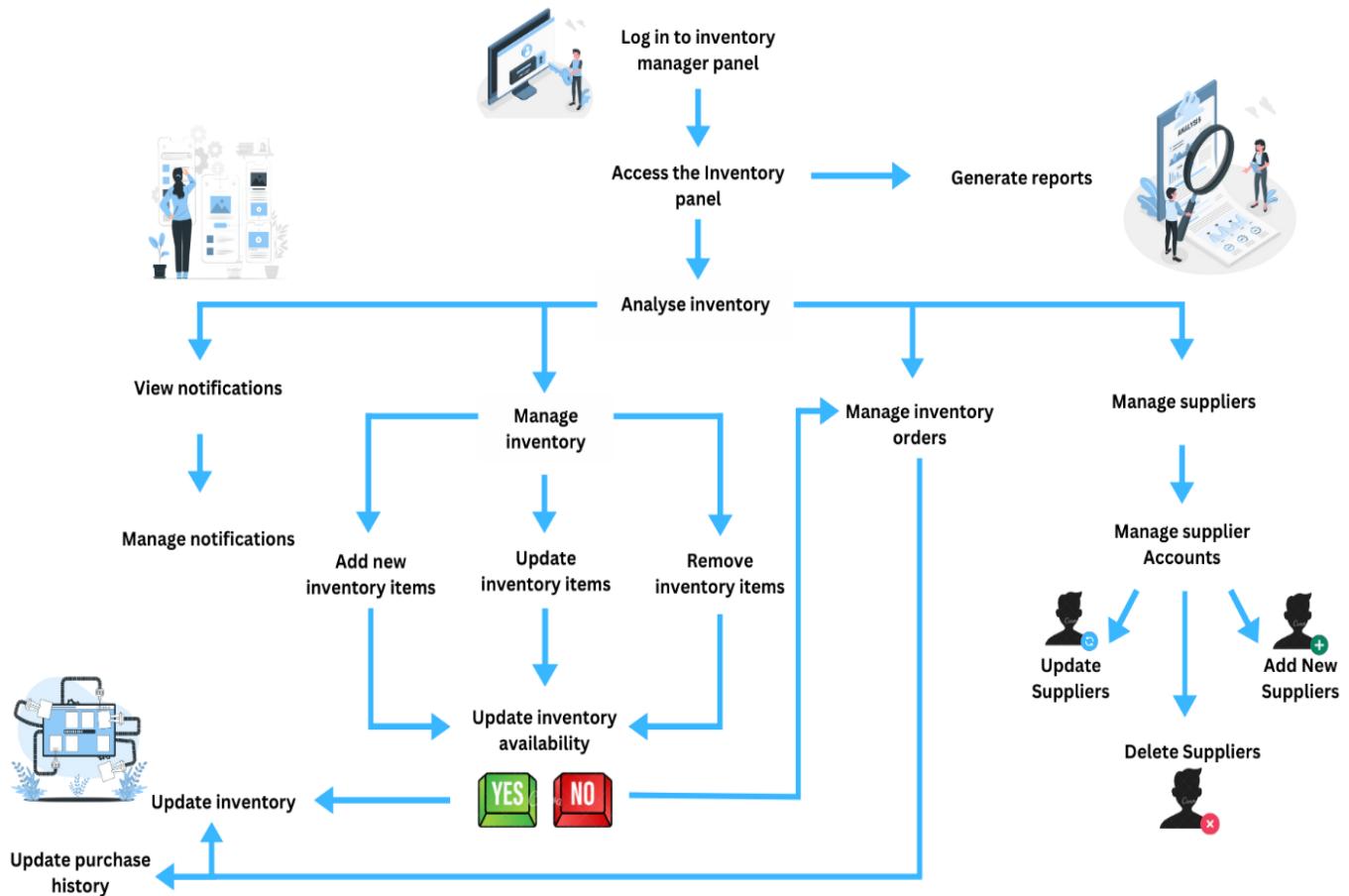


Figure 3. 66 - Workflow of Inventory Manage

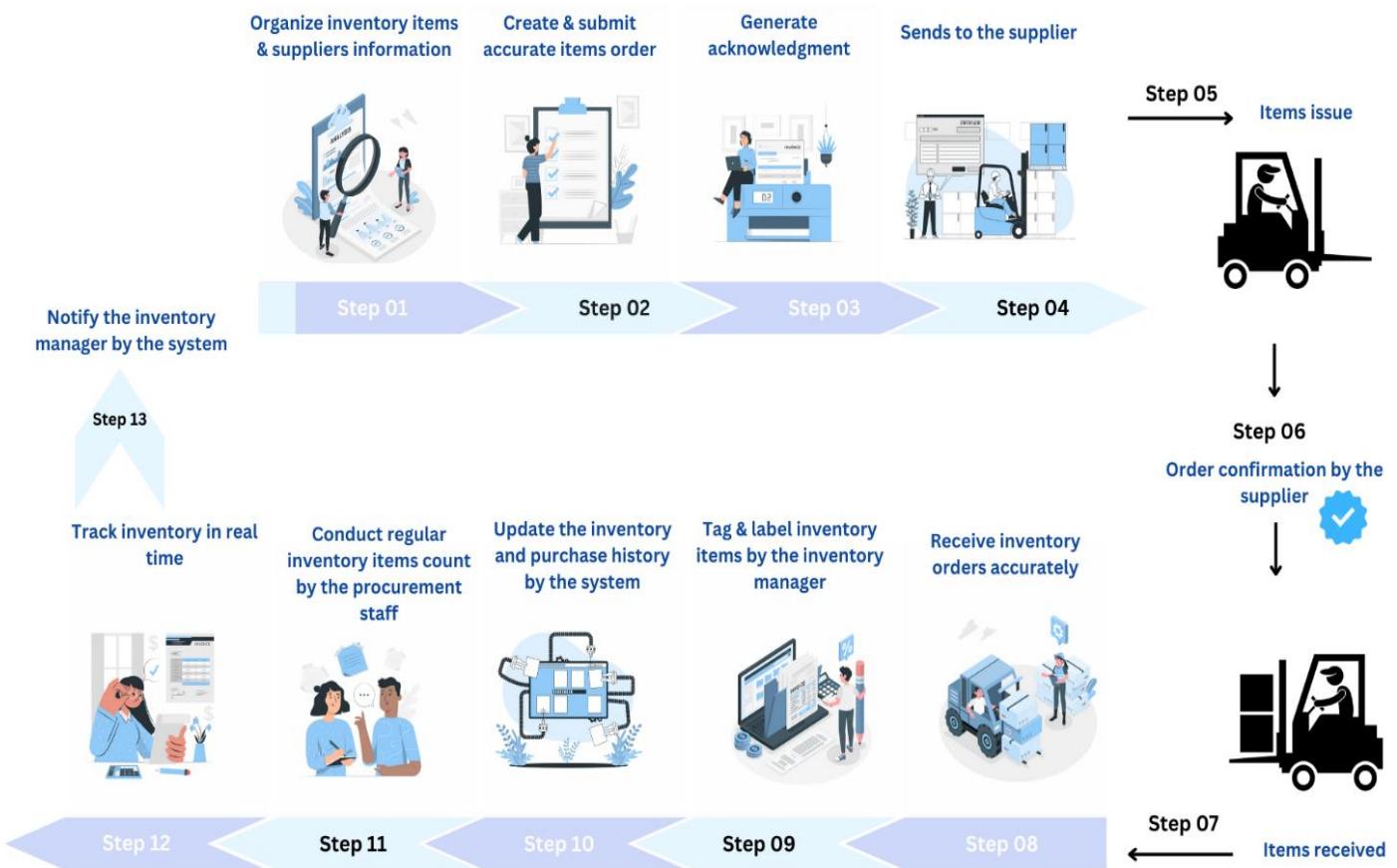


Figure 3. 67 - Workflow of Inventory Manager

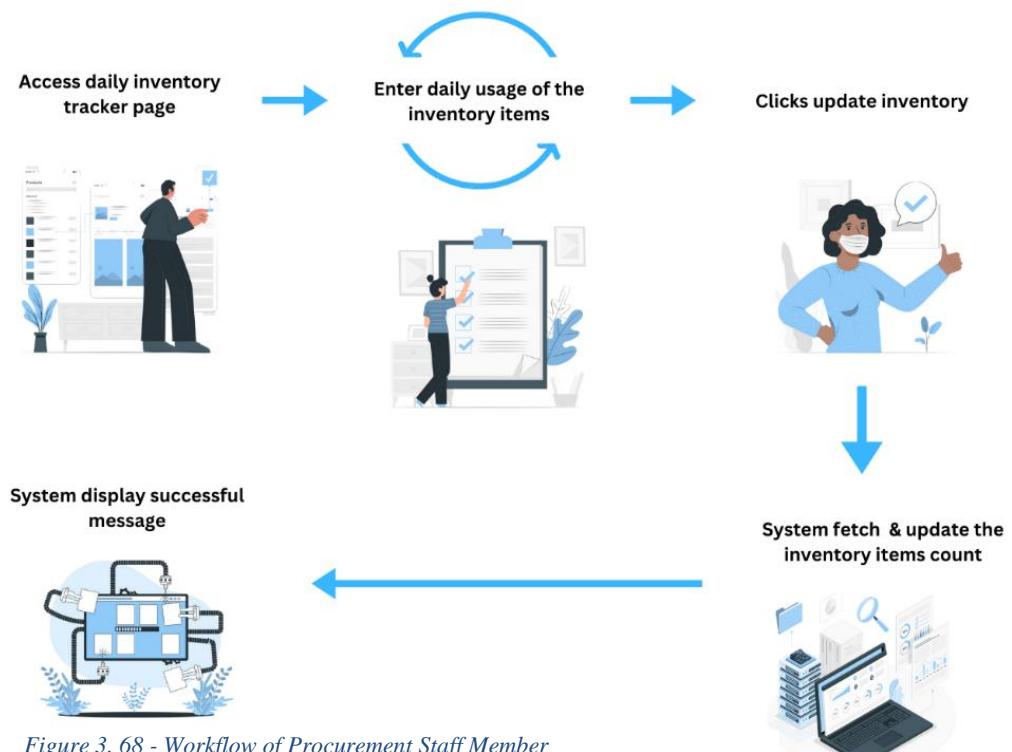


Figure 3. 68 - Workflow of Procurement Staff Member

## 02. Component Diagram

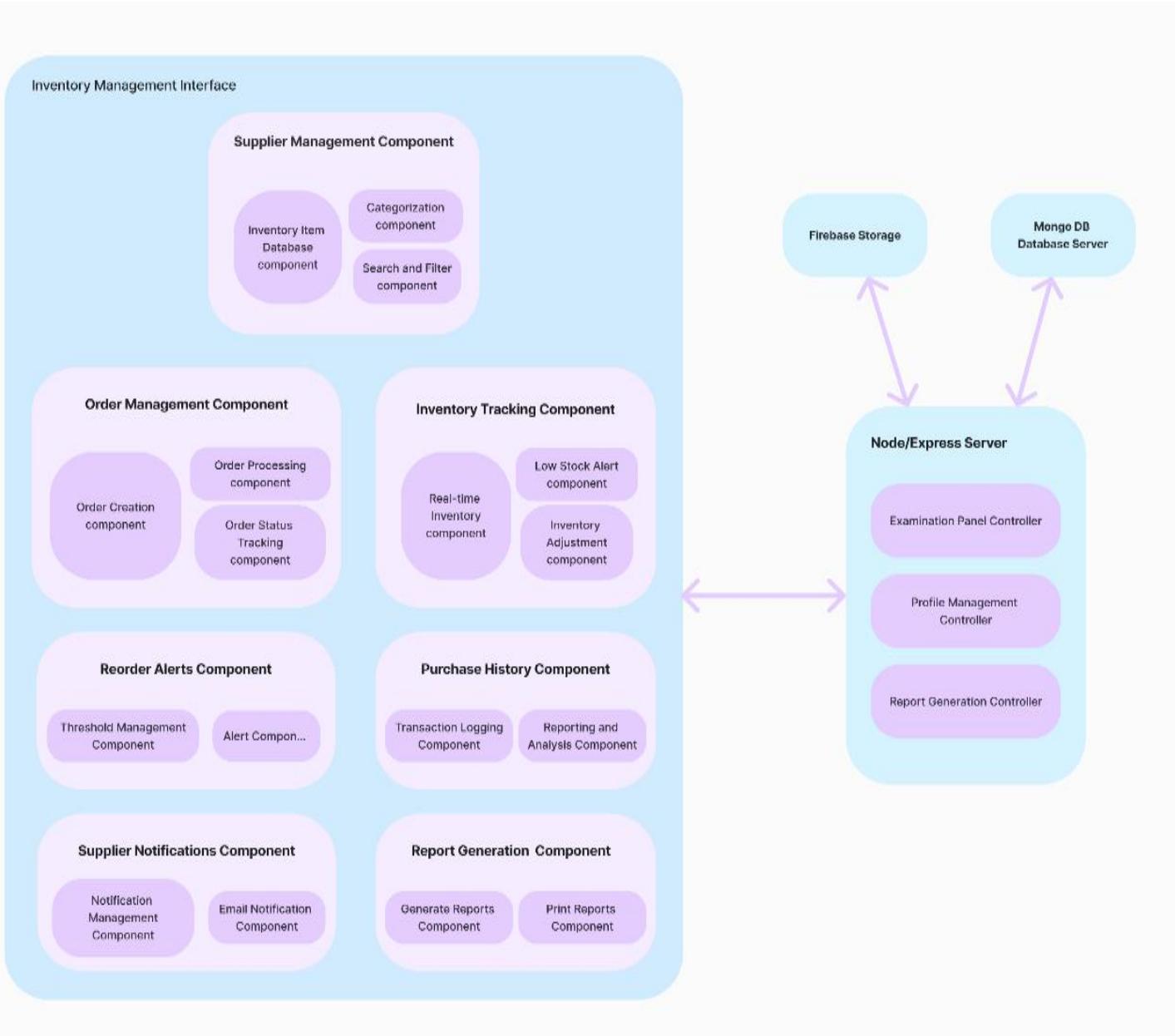


Figure 3. 69 - Component Diagram of Inventory Management System

### 03. UI

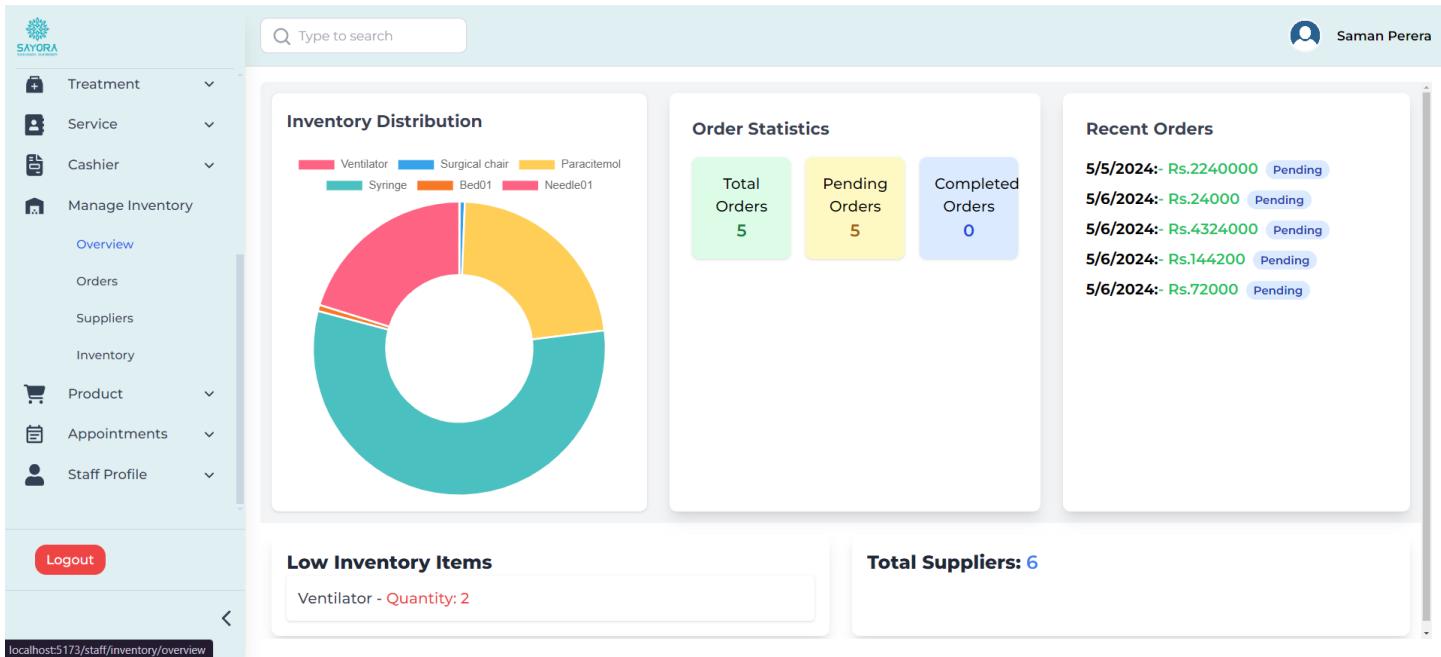


Figure 3. 70 - UI 01 of Inventory Management Overview

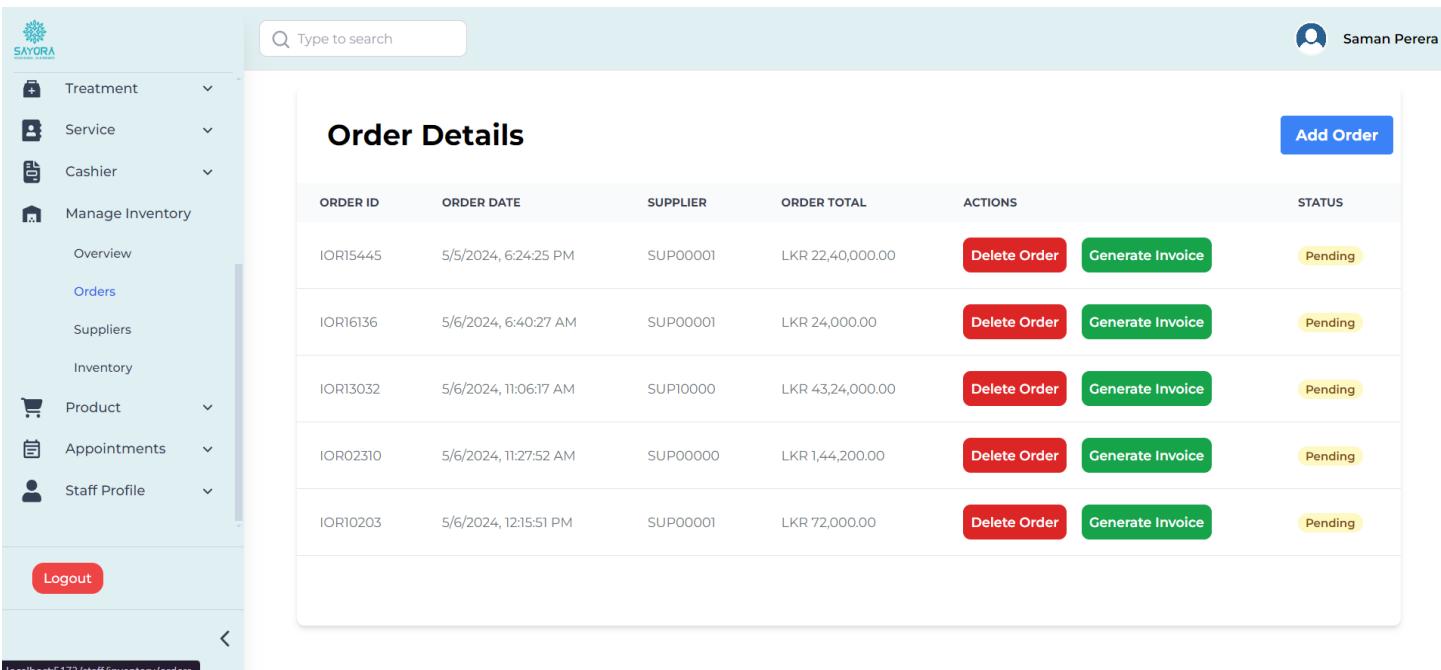


Figure 3. 71 - UI 02 of Inventory Orders' Overview

## Add New Order

### Select Supplier

Select...

Search Item Name

Ventilator - 12000.00

Add to Order

Surgical chair - 125000.00

Add to Order

Paracetamol - 50.00

Add to Order

Syringe - 24.00

Add to Order

Bed01 - 52000.00

Add to Order

Needle01 - 14.00

Add to Order

Create Order

Figure 3. 72 - UI 03 of Add New Order form

The screenshot shows the Sayora application's navigation bar on the left with options like Treatment, Service, Cashier, Manage Inventory (with Overview and Orders), Suppliers, Inventory, Product, Appointments, and Staff Profile. A Logout button is also present. The main content area has a search bar at the top right with placeholder 'Type to search' and a user profile for Saman Perera. Below the search bar is a green button labeled 'Add Supplier'. The central part of the screen displays a table titled 'Suppliers' with columns: Supplier ID, Name, Email, Contact No, Address, and Actions (Update and Delete). Six supplier entries are listed:

| SUPPLIER ID | NAME              | EMAIL                       | CONTACT NO | ADDRESS                           | ACTIONS                                       |
|-------------|-------------------|-----------------------------|------------|-----------------------------------|---|
| SUP00100    | Harshi Ranawea    | harshaRanaweera@gmail.com   | 741596574  | 23/50A, Uplands, Aruppola, Kandy. | <a href="#">Update</a> <a href="#">Delete</a> |
| SUP00001    | Uthpala Jayalath  | uthpalaJayalath@gmail.com   | 115248764  | 1/1902, carlton rd, Colombo 01.   | <a href="#">Update</a> <a href="#">Delete</a> |
| SUP10000    | Deshan Priyantha  | deshanPriyantha89@gmail.com | 786656545  | 34/45, Poojapitiya, Kandy         | <a href="#">Update</a> <a href="#">Delete</a> |
| SUP10100    | Sam Karune        | samkarune@gmail.com         | 118549652  | 45F, Galle rd, Gale               | <a href="#">Update</a> <a href="#">Delete</a> |
| SUP01000    | Farah Ali         | farahelali@gmail.com        | 112584695  | 78, Kachchaathiw, Ampara          | <a href="#">Update</a> <a href="#">Delete</a> |
| SUP01010    | Mahinda Ekanayake | mahindaEkanayake@gmail.com  | 758426314  | 23A/50, Uplands, Aruppola, Kandy. | <a href="#">Update</a> <a href="#">Delete</a> |

Figure 3. 73 - UI 04 of Inventory Suppliers' Overview

## Add Supplier

Name

Email

Contact Number

Address

**Add Supplier**

Figure 3. 74 - UI 05 of Supplier add form

The screenshot shows the SAYORA application interface. On the left is a sidebar with navigation links: Treatment, Service, Cashier, Manage Inventory (selected), Overview, Orders, Suppliers, Inventory (selected), Product, Appointments, Staff Profile, and Logout. The main content area has a header with a search bar and a user profile for Saman Perera. Below the header is a section titled "Inventory Items Section". It features a blue button labeled "Inventory Items (6)", a red box labeled "Low Stock: 1", and a blue button labeled "Add New Item". A search bar says "Search inventory...". A table lists inventory items with columns: NAME, DESCRIPTION, UNIT PRICE, QUANTITY, and ACTIONS (Delete). The table data is as follows:

| NAME           | DESCRIPTION                         | UNIT PRICE | QUANTITY | ACTIONS       |
|----------------|-------------------------------------|------------|----------|---------------|
| Ventilator     | Ventilators                         | Rs.12,000  | 2        | <b>Delete</b> |
| Surgical chair | Using for surgical theaters.        | Rs.125,000 | 25       | <b>Delete</b> |
| Paracetamol    | Pain killer.                        | Rs.50      | 1000     | <b>Delete</b> |
| Syringe        | Using for surgeries.                | Rs.24      | 2500     | <b>Delete</b> |
| Bed01          | For wards.                          | Rs.52,000  | 30       | <b>Delete</b> |
| Needle01       | Type 01 needles for minor surgeries | Rs.14      | 900      | <b>Delete</b> |

Figure 3. 75 - UI 06 of Inventory Items' Overview

## Add Inventory Item

**Name**

**Description**

**Unit Price**

**Item Type**

**Quantity**

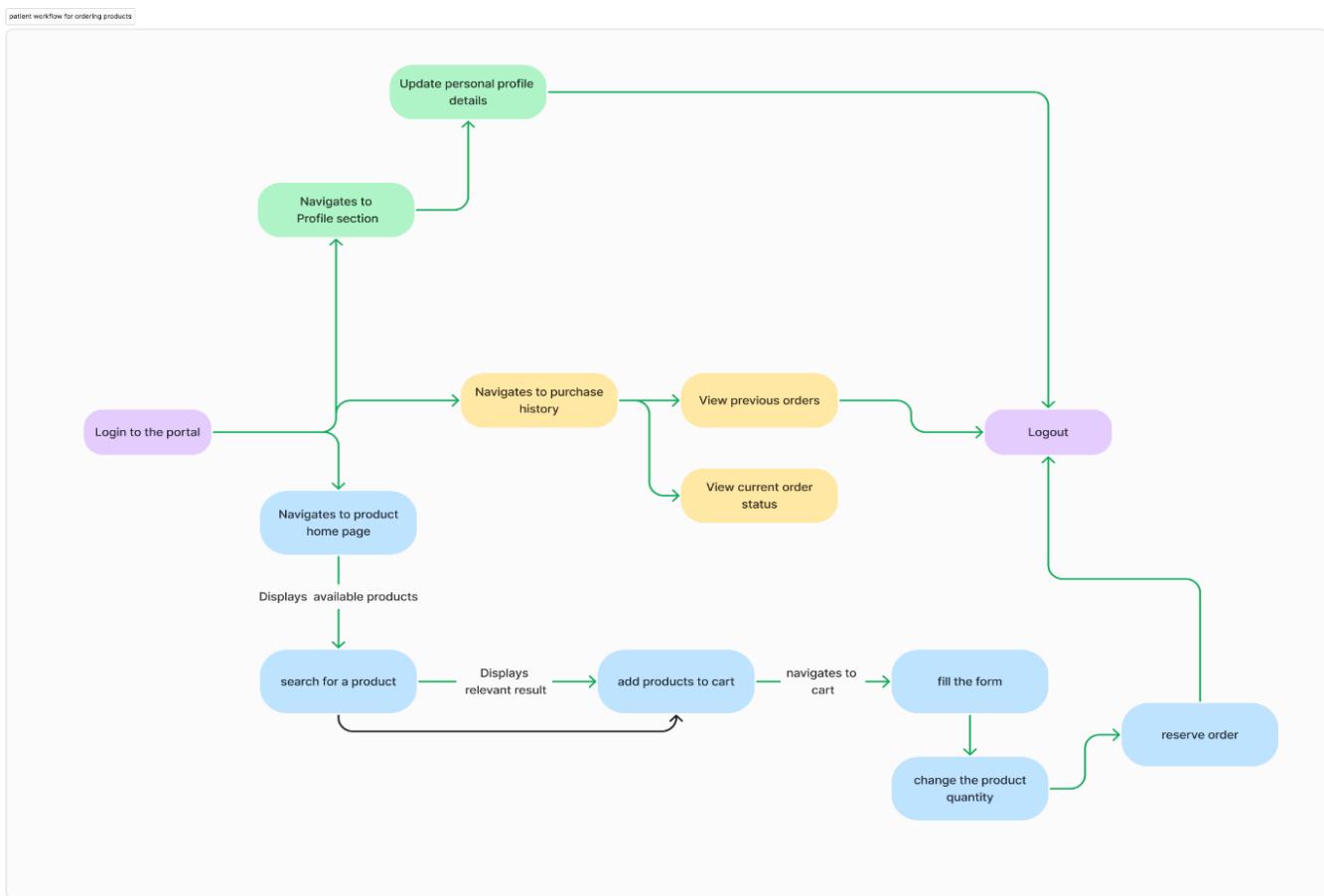
**Add Item**

Figure 3. 76 - UI 07 of Add new Inventory Item form

## **Product Management System - IT22364838**

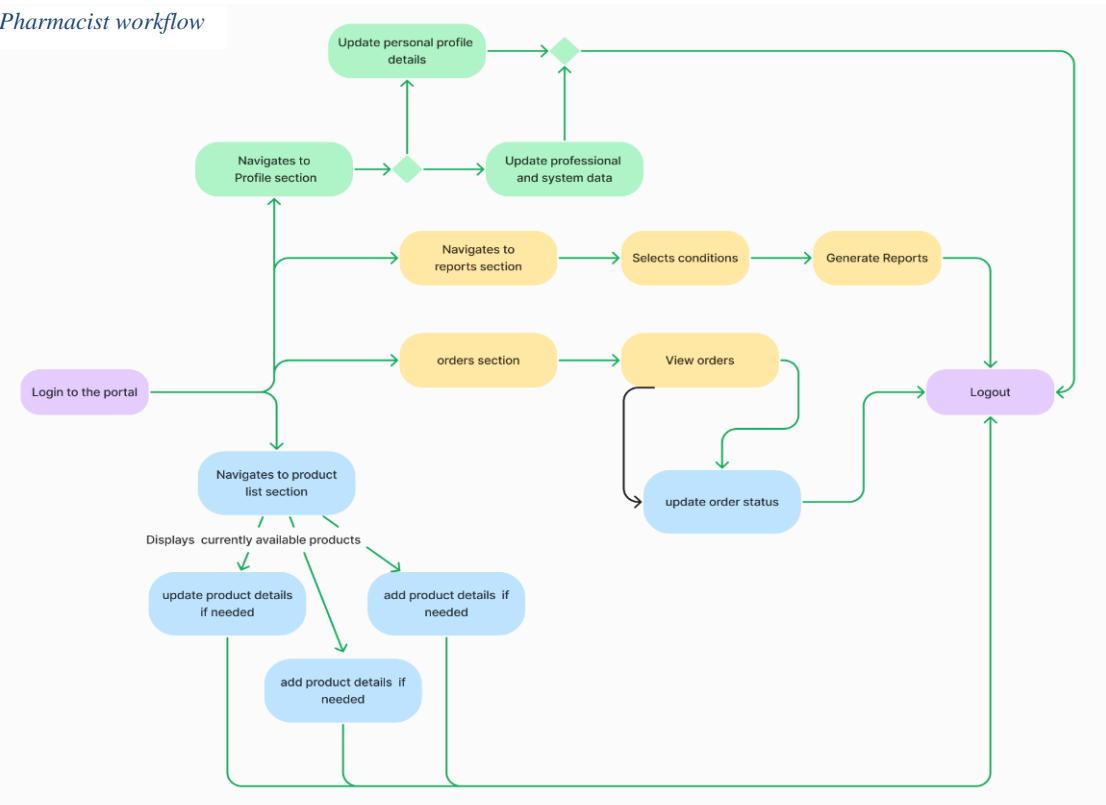
Our Wellness Center offers a personalized product ordering system for registered patients, ensuring a consistent supply of essential items. The system allows patients to easily place orders, manage their orders, and track their status. Patients can also manage their orders, including cancellations within 24 hours, and access their purchase history for easy repurchasing. A dedicated pharmacist at the center receives notifications about the order and ensures timely delivery, enhancing the overall patient experience.

### **01. Workflow Diagram**



*Figure 3. 77 - Patient workflow for ordering products*

Figure 3. 79 - Pharmacist workflow



## 02. Component Diagram

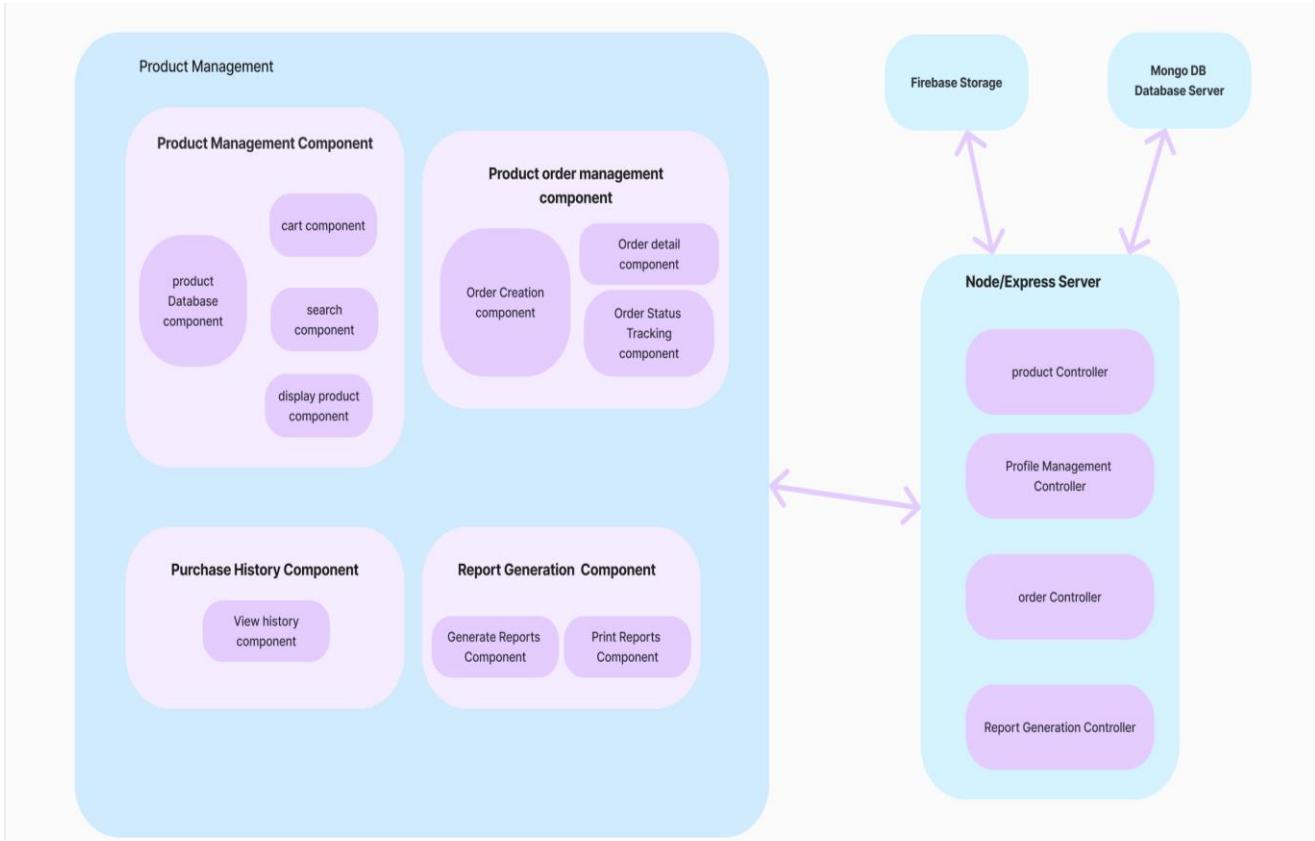


Figure 3. 78 - Component diagram of the Product management

### 03. UI

The screenshot shows a product management interface. On the left is a sidebar with icons for Overview, Manage Staff, Manage Doctor, Manage Patients, Manage Leaves, Staff Profile, Treatment, Cashier, and Product (with 'Product List' and 'Orders' sub-options). A 'Logout' button is also present. The main area has a search bar at the top right. Below it is a 'Product List' title and an 'Add Product' button. A table lists four products: EssentialOil (\$20, 50 stock), Green Tea (\$100, 10 stock), Shampoo (\$30, 100 stock), and Cream (\$90, 10 stock). Each row includes a product image, name, price, stock level, and 'Update' (green) and 'Delete' (red) buttons.

| Product      | Price | Stock | Actions   |
|--------------|-------|-------|---|
| EssentialOil | \$20  | 50    | <button>Update</button> <button>Delete</button> |
| Green Tea    | \$100 | 10    | <button>Update</button> <button>Delete</button> |
| Shampoo      | \$30  | 100   | <button>Update</button> <button>Delete</button> |
| Cream        | \$90  | 10    | <button>Update</button> <button>Delete</button> |

Figure 3. 80 - UI 01 of Product Management System

This screenshot shows the Ayurvedic Products section. The sidebar includes Home, Prescription, Appointments, Requisition, Ayurvedic Products (selected), Purchase History, Treatments, and My Records. A 'Logout' button is also present. The main area features a search bar and a 'Cart' button. Two products are displayed in cards: 'EssentialOil' (with a description about supplying and exporting high-quality Indian herbs, Spices, and Skincare products) and 'Green Tea'. Each card includes an 'Add to Cart' button.

**EssentialOil**  
We at Ayurveda Distributor, focus on supplying and exporting high-quality Indian herbs, Ayurveda Ingredients, Spices, and Skincare products.

**Green Tea**

Figure 3. 81 - UI 02 of Product Management System

| ORDER ID | DATE     | ORDERED PRODUCTS   | QUANTITY                   | TOTAL | STATUS     | ACTIONS                  |
|----------|----------|--------------------|----------------------------|-------|------------|--------------------------|
| PO33531  | 5/6/2024 | EssentialOil       | EssentialOil (5)           | \$100 | Pending    | <button>Details</button> |
| PO42444  | 5/6/2024 | Shampoo            | Shampoo (4)                | \$120 | Canceled   | <button>Details</button> |
| PO14163  | 5/6/2024 | EssentialOil       | EssentialOil (7)           | \$140 | Processing | <button>Details</button> |
| PO46632  | 5/6/2024 | Face wash, Saffron | Face wash (2), Saffron (2) | \$42  | Shipped    | <button>Details</button> |

Figure 3. 82 - UI 03 of Product Management System

| ORDER ID | DATE     | ORDERED PRODUCTS | TOTAL | STATUS     |
|----------|----------|------------------|-------|------------|
| PO41243  | 5/2/2024 | EssentialOil     | \$20  | Pending    |
| PO14315  | 5/2/2024 | EssentialOil     | \$20  | Pending    |
| PO53464  | 5/2/2024 | EssentialOil     | \$20  | Pending    |
| PO54632  | 5/2/2024 | EssentialOil     | \$20  | Pending    |
| PO24256  | 5/2/2024 | EssentialOil     | \$20  | Processing |
| PO51614  | 5/2/2024 | EssentialOil     | \$20  | Pending    |
| PO41153  | 5/2/2024 | EssentialOil     | \$20  | Pending    |
| PO21153  | 5/2/2024 | EssentialOil     | \$20  | Pending    |
| PO51563  | 5/2/2024 | EssentialOil     | \$20  | Pending    |
| PO46341  | 5/2/2024 | EssentialOil     | \$20  | Pending    |

Figure 3. 83 - UI 04 of Product Management System

## Service Management System - IT22362926

The wellness center provides sessions to prevent unnecessary medications, awareness, and physical training. It offers practical training in Yoga, Reflexology, and Sujok therapy. The service management streamlines scheduling, with the admin managing bookings and doctor communication. Doctor home visits are tailored for patients with disabilities, with communication via email and phone. The system ensures professional care at the patient's residence.

### **01. Workflow Diagram**

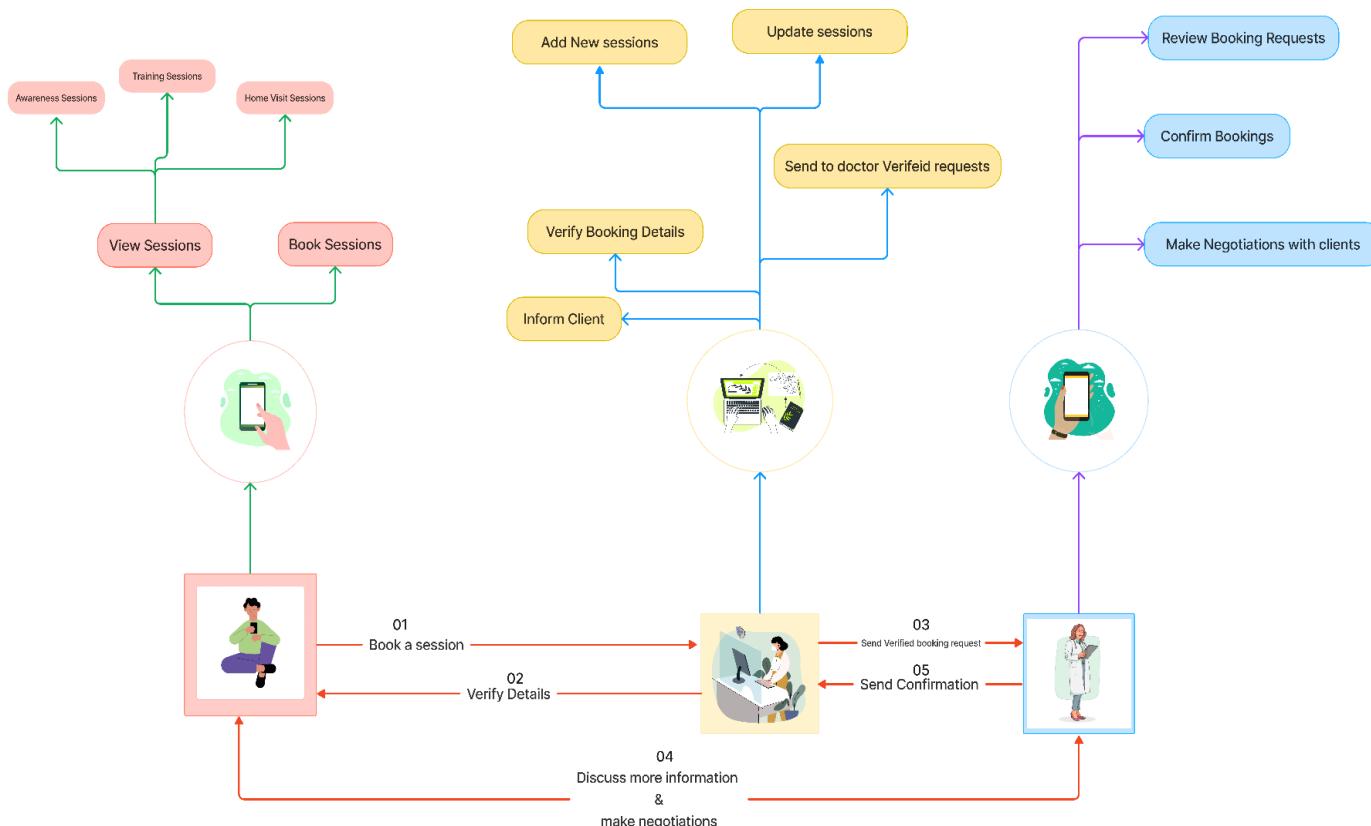


Figure 3. 84 - Workflow of the Service Management System

## 02. Component Diagram

Section 1

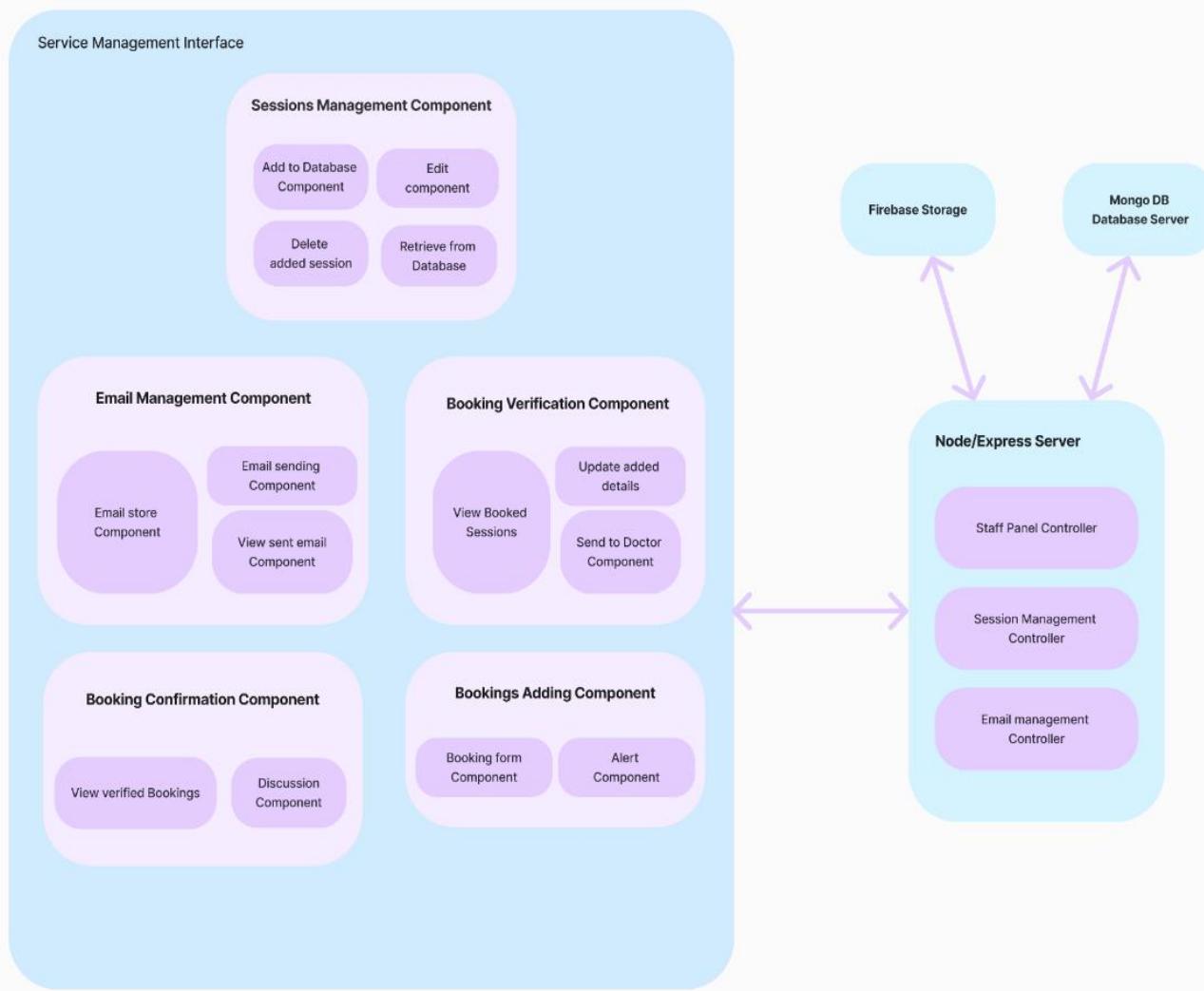


Figure 3. 85 - Component Diagram of the Service Management System

### 03. UI

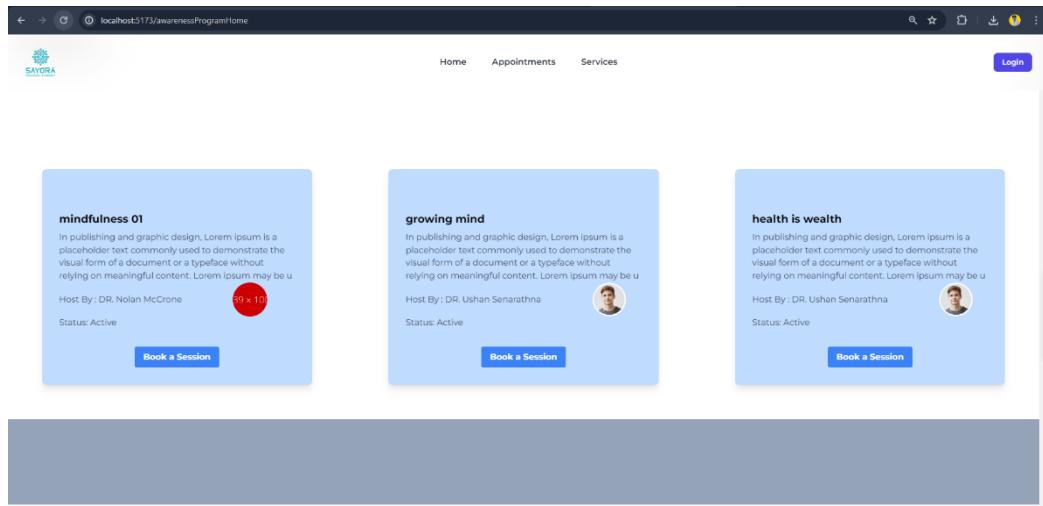


Figure 3. 86 - UI 01 of Service Management System

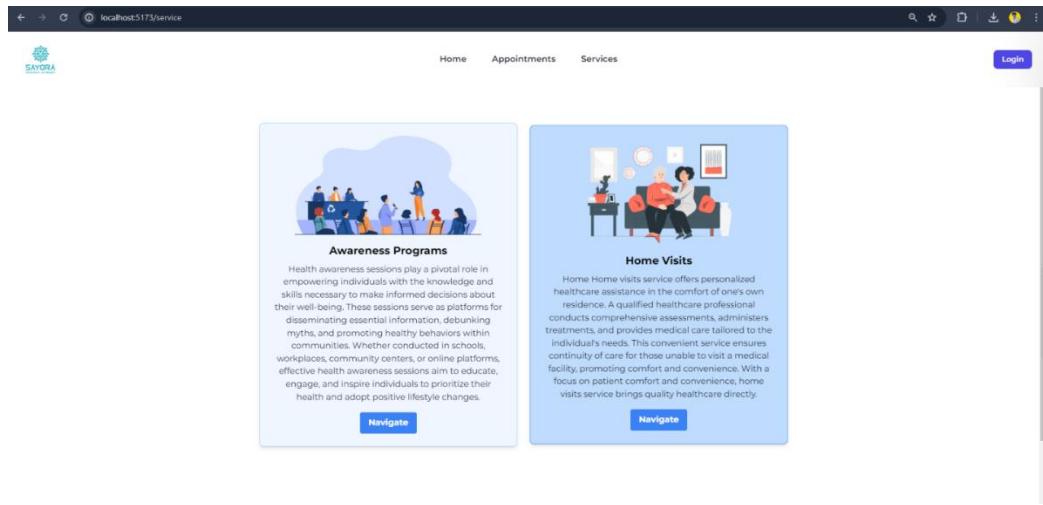


Figure 3. 87 - UI 02 of Service Management System

**- Awareness Program**

**Personal Details**

|                      |                      |
|----------------------|----------------------|
| First Name           | Last Name            |
| <input type="text"/> | <input type="text"/> |

|                      |                      |
|----------------------|----------------------|
| NIC                  | Email                |
| <input type="text"/> | <input type="text"/> |

|                      |                      |
|----------------------|----------------------|
| Phone Number 01      | Phone Number 02      |
| <input type="text"/> | <input type="text"/> |

**Booking Details**

|                                 |                      |
|---------------------------------|----------------------|
| Booking Date                    | Time                 |
| <input type="text"/> mm/dd/yyyy | <input type="text"/> |

|  |                            |
|--|----------------------------|
| Organization Name                      | Venue                      |
| <input type="text"/> Organization Name | <input type="text"/> Venue |

|  |
|--|
| Participant Count                      |
| <input type="text"/> Participant Count |

**Book Now**

Figure 3. 88 - UI 03 of Service Management System

The screenshot shows a web-based service management system. On the left is a sidebar menu with the following items: Overview, ManageStaff, ManageDoctor, ManagePatients, ManageLeaves, StaffProfile, Treatment, Cashier, and Service (which is expanded to show View). At the top right is a user profile for 'Ushan Senarathna'. The main content area is titled 'Bookings Data' and contains a table with two rows of booking information. The columns are: Booking ID, First Name, Last Name, NIC, Email, Phone Number 01, Phone Number 02, Booking Date, Time, Organization Name, Venue, Participant Count, and Actions (with 'Update' and 'Delete' buttons). The data in the table is as follows:

| Booking ID | First Name | Last Name | NIC          | Email                         | Phone Number 01 | Phone Number 02 | Booking Date | Time  | Organization Name | Venue    | Participant Count | Actions   |
|------------|------------|-----------|--------------|-------------------------------|-----------------|-----------------|--------------|-------|-------------------|----------|-------------------|---|
| Boo006     | jayalath   | Nayanjith | 20031039432V | upendranayanajithup@gmail.com | 0716330972      | 0716330972      | 2024.4.17    | 20:18 | aurora            | homagama | 45                | <button>Update</button> <button>Delete</button> |
| Boo007     | Gahan      | Dias      | 200112902567 | gahan@gmail.com               | 0783785467      | 0332903467      | 2024.5.11    | 02:30 | Fritz Co.         | Kandy    | 20                | <button>Update</button> <button>Delete</button> |

Figure 3. 89 - UI 04 of Service Management System

The screenshot shows a 'Add a Service' form. The sidebar menu is identical to Figure 3.89. The main form has a title 'Add a Service' and is divided into two sections: 'Service Details' and 'Session Description'. In 'Service Details', there is a 'Session Name' input field containing 'Session Name' and a 'Session Description' input field containing 'Session Description' with a character limit of 0/200. In 'Session Description', there is a 'Host Doctor' section with a 'Select Doctor' dropdown and a 'Status' section with a 'Select Status' dropdown. A blue 'Add Service' button is at the bottom.

Figure 3. 90 - UI 05 of Service Management System

The screenshot shows a 'Bookings Data' table with a search bar at the top. The table has columns: Booking ID, First Name, Last Name, NIC, Email, Phone Number 01, Phone Number 02, Booking Date, Time, Organization Name, Venue, Participant Count, and Actions. One row from the table is selected, and a detailed view of its data is overlaid on the right side. The detailed view includes the same 13 columns as the table, with the data corresponding to the selected row. The participant count '45' is also highlighted in the list on the right.

Figure 3. 91 - UI 06 of Service Management System

## **Treatment & Invoice Management System - IT22346940**

Treatment planning, patient care, and progress monitoring are all integrated into our Ayurvedic Clinic's comprehensive treatment management system.

The invoice production system streamlines the process of automatically producing comprehensive invoices for patients based on their treatments, while the treatment management section gives staff members the ability to add, alter, and remove treatments. Together, these elements guarantee correct billing and simplify clinic operations.

### **01. Workflow**

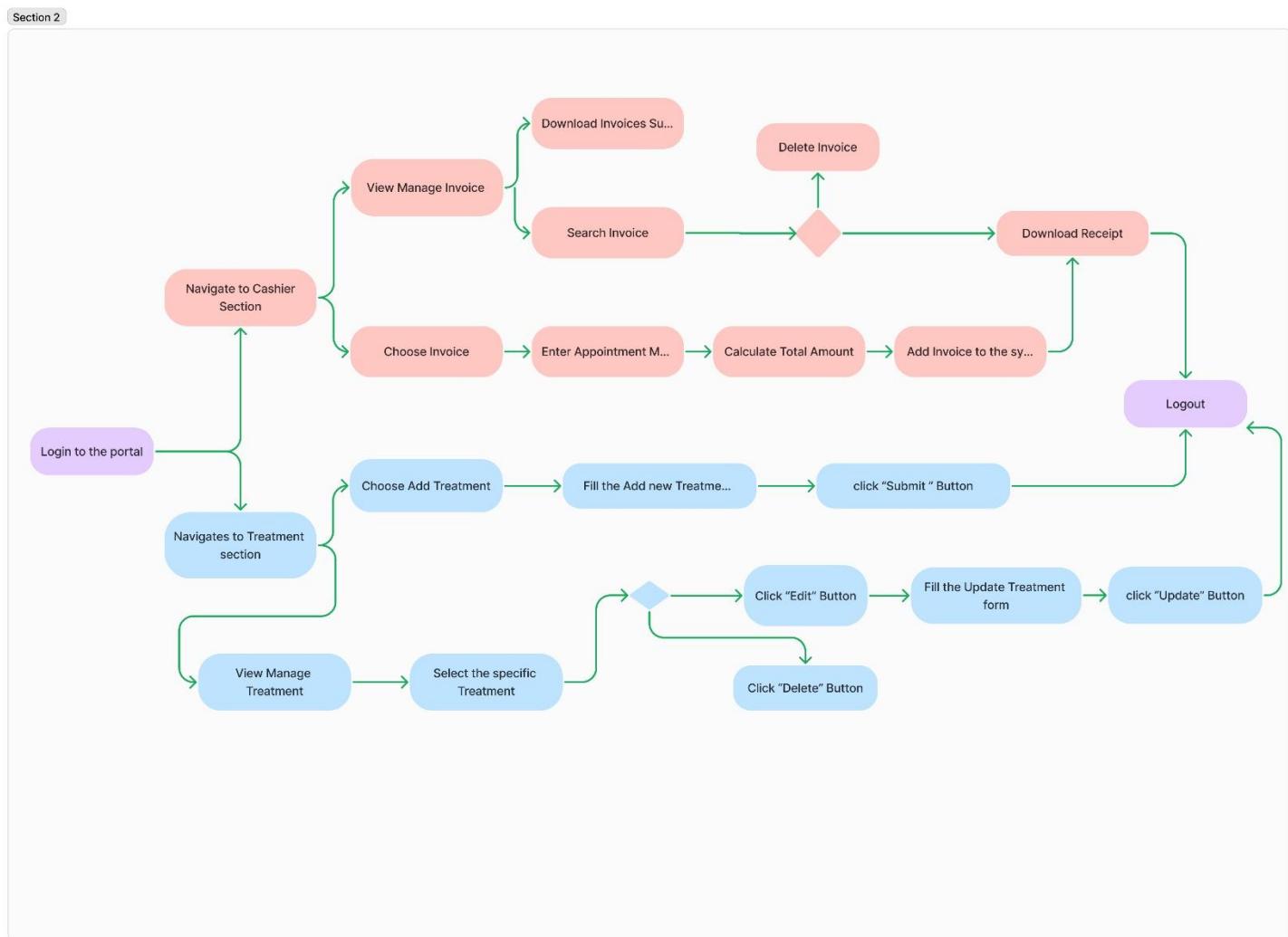


Figure 3. 92 - Workflow of the Treatment Management

## 02. Component

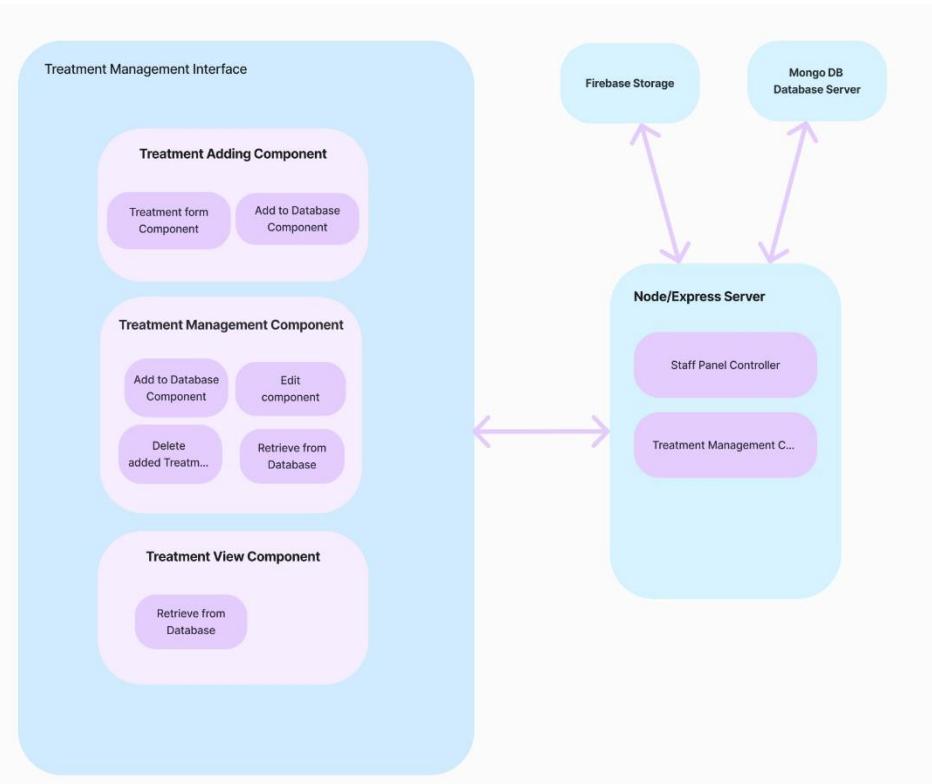


Figure 3. 93 - Component Diagram of Treatment Management

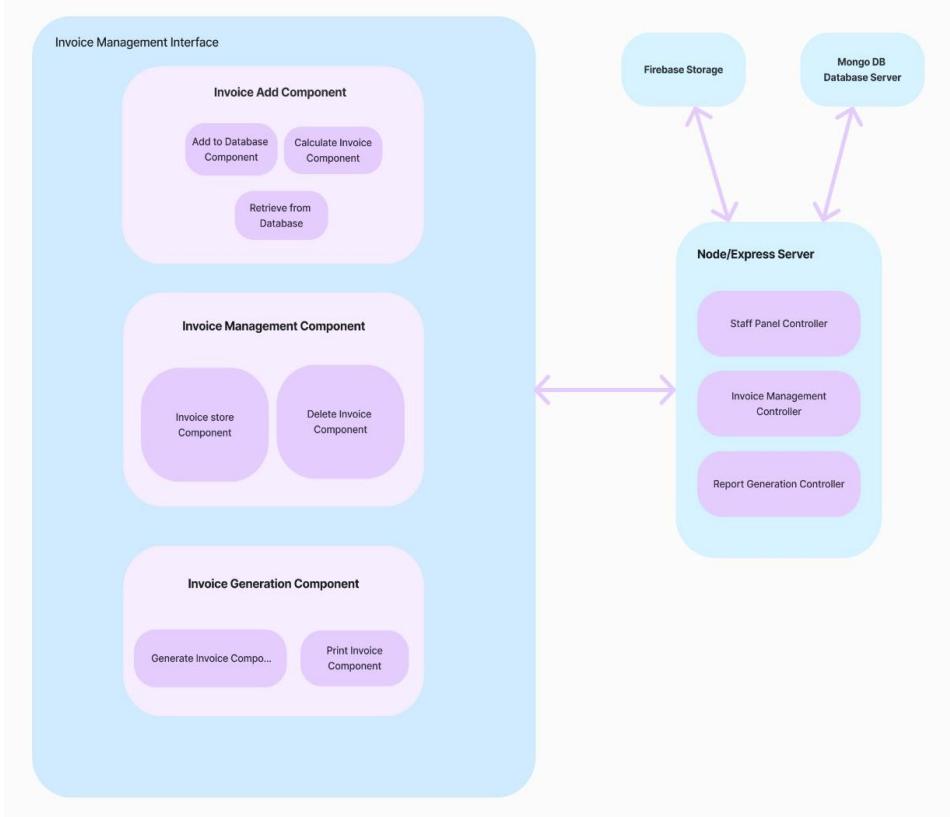


Figure 3. 94 - Component Diagram of Invoice Management

### 03. UI

**Add New Treatment**

Name

Price

Description

Image  
 No file chosen

**Upload**

**Submit** **Clear**

Figure 3. 95 - UI 01 of Add Treatment

**Update Treatment**

Name  
LEECH THERAPY

Price  
8000.00

Description  
The application of leeches to suck the impure blood locally from a body part is called as Jalaukavacharan in Ayurved. It is a type of blood-letting technique performed under all aseptic precautions. The area is cleaned and leech applied. After specific time the leech gets detached and wound is compressed. It helps to let impure blood and remove toxins within. It helps to reduce inflammation and pain at the site  
87 characters remaining

**Update** **Cancel**

Figure 3. 96 - UI 02 of Update Treatment

**All Treatments**

| Treatment ID | Name            | Description  | Price    | Actions                   |
|--------------|-----------------|--|----------|---------------------------|
| TRE00026     | ANUVASANA BASTI | are given to complete the procedure.<br>Administration of oil or ghee in the form of enema is called as Sneha Basti. Initially abdomen and back is massaged and steam is given. The oil enema stays in and gets expelled after certain duration according to the condition and quantity. It helps to let impure blood and remove toxins within. It helps to reduce inflammation and pain at the site | 7000.00  | <b>Edit</b> <b>Delete</b> |
| TRE00027     | ABHYANGAM       | Abhyangam is the whole body massage done with Ayurvedic medicated oils. It is done classically with long flowing strokes. Number and pressure of strokes as well as selection of oil varies, based on your Prakruti / body constitution and health conditions.<br>In Nasam, medicated oils and ghee, herbs etc   | 10000.00 | <b>Edit</b> <b>Delete</b> |

Figure 3. 97 - UI 03 of Treatment Management

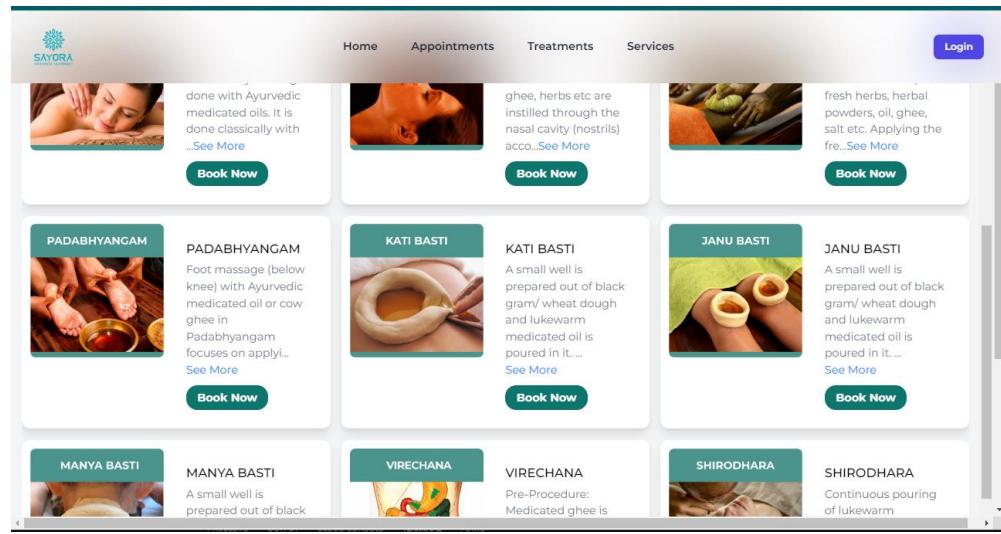


Figure 3. 98 – UI 04 of Treatment View (Home Page)

This screenshot shows the Sayora Wellness Center's invoice form. On the left is a sidebar with navigation links: Manage Attendance, Manage Leaves, Treatment (with sub-links Add Treatment, Manage Treatment), Service, Cashier (with sub-links Invoice, Manage Invoice), Manage Inventory, Product, and Logout. The main area has a search bar at the top right. A central modal window titled 'Sayora Wellness Center' contains fields for Patient Mobile Num, Patient Name, Doctor Fee, Treatment Fee, Discount (set to 0%), and a 'Calculate Total' button.

Figure 3. 99 - UI 05 of Invoice Form

This screenshot shows the Sayora Wellness Center's invoice management page. The sidebar includes the same navigation links as Figure 3.99. The main area features a search bar and a table of invoices. The table columns are: Patient Id, Patient Name, Doctor Name, Doctor Fee, Treatment Name, Treatment Fee, Discount, Total, and Action. The table data is as follows:

| Patient Id | Patient Name        | Doctor Name      | Doctor Fee | Treatment Name   | Treatment Fee | Discount | Total    | Action  |
|------------|---------------------|------------------|------------|------------------|---------------|----------|----------|---|
| PAT0003    | Aroshana            | Thilina          | 5500.00    | CARDIAC DISEASES | 5000.00       | 0        | 10500.00 | <a href="#">Delete</a> <a href="#">Download Receipt</a> |
| PAT0001    | hansumalei          | Ushan Senarathna | 5500.00    | SPIRITUAL BLISS  | 7000.00       | 10       | 12490.00 | <a href="#">Delete</a> <a href="#">Download Receipt</a> |
| PAT0008    | sasanka dissanayake | Ushan Senarathna | 5500.00    | VIRECHANA        | 7500.00       | 15       | 12985.00 | <a href="#">Delete</a> <a href="#">Download Receipt</a> |

Figure 3. 100 - UI 06 of Invoice Management

## Chapter 04 – Testing

### Test cases and results.

#### Doctor Process Management System - IT22362858

*Table 11 - Test case for prescription writing of the Doctor Process Management*

|  |  |
|--|--|
| <b>Project ID:</b> ITP_WD_B1_01  |  |
| <b>Project Name:</b> Sayora Ayurvedic Wellness Center Management System  |  |
| <b>Testing Function:</b> Doctor's process management – Prescription writing  |  |
| <b>Test ID:</b> Test_ 001  | <b>Test case designed and executed by:</b><br><b>Reg No. –</b> IT22362858<br><b>Name –</b> Senarathna G.S.R.U. R |
| <b>Test Priority</b>   | Medium   |
| <b>Test Description:</b><br>During channeling process, doctor visits examination panel in the doctor's portal, fill the details in prescribe section and submit and print the prescription.  |  |
| <b>Pre-Conditions:</b> <ul style="list-style-type: none"><li>• The Doctor must be a registered doctor in the system.</li><li>• Doctor should have the correct credentials to log in to his/her account.</li><li>• There must be appointments scheduled for that day.</li></ul>   |  |
| <b>Test Steps:</b><br>Step 1: Doctor navigates to the website and press login button to access login page.<br>Step 2: Fill in the correct credentials and log in to the doctor portal.<br>Step 3: Press 'Examination' section in sidebar.<br>Step 4: Select the appointment for examination process.<br>Step 5: Navigates to prescribe tab.<br>Step 6: Fill in the details of the prescription form correctly.<br>Step 7: Press the submit button.<br>Step 8: Press the print prescription button to print the prescription. |  |
| <b>Pass-Conditions</b> <ul style="list-style-type: none"><li>• Display submission successful message.</li><li>• Prescription properly prints out.</li></ul>  |  |

Table 12 - Test case results for prescription writing of the Doctor Process Management

| Test ID   | Test Inputs  | Expected Outputs   | Actual Output  | Result (Pass/Fail) | Comment                            |
|-----------|--|--|--|--------------------|------------------------------------|
| Test_001a | <b>Login credentials:</b><br>Email: <a href="mailto:doctor@sayora.lk">doctor@sayora.lk</a><br><br>Password: doctor<br><br><b>Prescribe Form:</b><br><br><b>Diagnosis:</b> Dengue<br><br><b>Medication:</b> Acetaminophen<br><b>Frequency:</b> Twice daily<br><b>Dosage:</b> 500 mg<br><br><b>Instructions:</b><br>- Take with food<br>- Avoid alcohol<br>- If any adverse effects occur, discontinue use, and consult a physician. | <ul style="list-style-type: none"> <li>The doctor successfully logs in to the portal.</li> <li>Display successful submit message.</li> <li>Prescription prints properly with the details.</li> </ul> | <ul style="list-style-type: none"> <li>Doctor successfully logged in to the portal.</li> <li>Received submit successful message.</li> <li>Patient gets properly printed prescription.</li> </ul> | Pass               |                                    |
| Test_001b | <b>1. Login credentials:</b><br>Email: <a href="mailto:doctor@sayora.lk">doctor@sayora.lk</a><br>Password: doctor<br><br><b>2. Prescribe Form:</b><br><br><b>Diagnosis:</b><br><br><b>Medication:</b> Acetaminophen<br><b>Frequency:</b> Twice daily<br><b>Dosage:</b> 500 mg<br><br><b>Instructions:</b><br>- Take with food<br>- Avoid alcohol<br>- If any adverse effects occur, discontinue use, and consult a physician.      | <ul style="list-style-type: none"> <li>Display 'Diagnosis' is required message.</li> <li>Form will not be submitted.</li> <li>Pressing print button gives empty prescription.</li> </ul>             | <ul style="list-style-type: none"> <li>Received 'Diagnosis' is required message.</li> <li>Form did not submit.</li> <li>Can not print prescription with filled details.</li> </ul>               | Pass               | Form validation works as intended. |

*Table 13 - Test case 02 for Point of care documentation of the Doctor Process Management*

|  |   |
|--|---|
| <b>Project ID:</b> ITP_WD_B1_01  |   |
| <b>Project Name:</b> Sayora Ayurvedic Wellness Center Management System  |   |
| <b>Testing Function:</b> Doctor's process management – Point of care documentation   |   |
| <b>Test ID:</b> Test_ 002  | <b>Test case designed and executed by:</b><br><b>Reg No.</b> – IT22362858<br><b>Name</b> – Senarathna G.S.R.U.R |
| <b>Test Priority</b>   | Medium  |
| <b>Test Description:</b><br><br>During channeling process, doctor visits examination panel in the doctor's portal, add point of care documentation (Take notes about examination findings).  |   |
| <b>Pre-Conditions:</b> <ul style="list-style-type: none"> <li>The Doctor must be a registered doctor in the system.</li> <li>Doctor should have the correct credentials to log in to his/her account.</li> <li>There must be appointments scheduled for that day.</li> <li>The appointment's patient must be a registered patient.</li> </ul>  |   |
| <b>Test Steps:</b><br><br>Step 1: Doctor navigates to the website and press login button to access login page.<br>Step 2: Fill in the correct credentials and log in to the doctor portal.<br>Step 3: Press 'Examination' section in sidebar.<br>Step 4: Select the appointment for examination process.<br>Step 5: Navigates to Diagnosis tab.<br>Step 6: Fill in the details of the Notes form correctly.<br>Step 7: Press the add button. |   |
| <b>Pass-Conditions</b> <ul style="list-style-type: none"> <li>Display submission successful message.</li> <li>Notes list will be updated, and new notes will be added.</li> </ul>  |   |

Table 14 - Test case 02 results for Point of care documentation of the Doctor Process Management

| Test ID   | Test Inputs  | Expected Outputs  | Actual Output  | Result (Pass/Fail) | Comment                                   |
|-----------|--|---|--|--------------------|---|
| Test_002a | <p><b>1. Login credentials:</b><br/>Email: <a href="mailto:doctor@sayora.lk">doctor@sayora.lk</a><br/>Password: doctor</p> <p><b>2. Notes Form:</b><br/><b>Subject:</b> Dengue<br/><b>Note body:</b><br/>Examination Findings:<br/>- Blood pressure: 130/80 mmHg<br/>- Heart rate: 78 bpm<br/><br/>Assessment:<br/>- Suspected tension-type headache<br/>- Rule out secondary causes</p> | <ul style="list-style-type: none"> <li>The doctor successfully logs in to the portal.</li> <li>Display successful submit message.</li> <li>Notes list will be updated with new note.</li> </ul> | <ul style="list-style-type: none"> <li>Doctor successfully logged in to the portal.</li> <li>Received submit successful message.</li> <li>Notes list updated with newly added note.</li> </ul> | <b>Passed</b>      |   |
| Test_002b | <p><b>Login credentials:</b><br/>Email: <a href="mailto:doctor@sayora.lk">doctor@sayora.lk</a><br/>Password: doctor</p> <p><b>Notes Form:</b><br/><b>Subject:</b> Dengue<br/><b>Note body:</b><br/>Examination Findings:<br/>- Blood pressure: 130/80 mmHg<br/>- Heart rate: 78 bpm</p>  | <ul style="list-style-type: none"> <li>Display ‘subject name already exists’ message.</li> <li>Form will not be submitted.</li> <li>Notes list will not be updated.</li> </ul>                  | <ul style="list-style-type: none"> <li>Received ‘subject name already exists’ message.</li> <li>Form did not submit.</li> <li>Notes list did not update.</li> </ul>                            | <b>Passed</b>      | Repeating subject names validation works. |

## **Patient Process Management System - IT22337726**

*Table 15 - Test case 01 for Patient Management*

|  |   |
|--|---|
| <b>Project ID:</b> ITP_WD_B1_01  |   |
| <b>Project Name:</b> Sayora Ayurvedic Wellness Center Management System  |   |
| <b>Testing function:</b> Patient Management System   |   |
| <b>Test case ID:</b> Test_003  | <b>Test case designed and executed by:</b><br><b>Reg. No -</b> IT22337726<br><b>Name-</b> Samarasekara T.L. |
| <b>Test Priority (High/Medium/Low):</b>  | High  |
| <b>Test description:</b><br>A registered patient accesses the Sayora Wellness Center Patient Management System and updates their daily medical status. The patient fills in various fields with dummy values, ensuring proper validation and functionality of the form.  |   |
| <b>Preconditions:</b> <ul style="list-style-type: none"><li>• The Sayora Wellness Center Patient Management System is installed and accessible.</li><li>• The patient is a registered user.</li></ul>  |   |
| <b>Test Steps:</b><br><b>Patient logs into the Sayora Wellness Center Patient Management System.</b> <ol style="list-style-type: none"><li>1. Patient logs into the Sayora Wellness Center Patient Management System.</li><li>2. Patient navigates to the "Daily Medical Status" section.</li><li>3. Patient clicks on the "Update Medical Status" button.</li><li>4. Patient fills in the required fields with dummy values:<ul style="list-style-type: none"><li>• Report Name: "Daily Health Report"</li><li>• Temperature: 36.5 (valid temperature)</li><li>• Additional Notes: "Patient is feeling better than yesterday."</li><li>• Current Medication:<ul style="list-style-type: none"><li>◦ Medicine Name: "Aspirin"</li><li>◦ Dosage: "1 tablet"</li></ul></li><li>• Symptoms: "Headache, Fatigue"</li></ul></li><li>5. Patient clicks on the "Submit" button.</li></ol> |   |
| <b>Pass-conditions:</b> <ul style="list-style-type: none"><li>• The patient's daily medical status is successfully updated in the system.</li><li>• The system validates all fields and accepts the update if all fields are filled correctly.</li><li>• Upon successful submission, the patient receives a confirmation message.</li></ul>  |   |

Table 16 - Test case 01 results of Patient Management System

| Test ID  | Test Inputs  | Expected Outputs  | Actual Output  | Result (Pass/Fail) | Comment   |
|----------|--|---|--|--------------------|---|
| Test_03a | Report Name: "Daily Health Report"<br><br>Temperature: 36.5 (valid temperature)<br><br>Additional Notes: "Patient is feeling better than yesterday."<br><br>Current Medication:<br>Medicine Name: <ul style="list-style-type: none"><li>• Aspirin</li></ul> Dosage: <ul style="list-style-type: none"><li>• 1 tablet</li></ul><br>Symptoms: <ul style="list-style-type: none"><li>• Headache</li><li>• Fatigue</li></ul> | Successful submission of daily medical status   | Daily medical status updated successfully              | Pass               | No errors encountered during submission                         |
| Test_03b | Report Name:<br><br>Temperature: 160 (invalid temperature)<br><br>Additional Notes: "Patient is feeling better than yesterday."<br><br>Current Medication:<br>Medicine Name: <ul style="list-style-type: none"><li>• Aspirin</li></ul> Dosage:<br>1 tablet<br><br>Symptoms: <ul style="list-style-type: none"><li>• Headache</li><li>• Fatigue</li></ul>   | Error message indicating required field missing<br><br>Error message indicating invalid temperature | Error message displayed<br><br>Error message displayed | Fail<br><br>Fail   | Required field not filled<br><br>Temperature out of valid range |

*Table 17 - Test case 02 of Patient Management System*

|  |  |
|--|--|
| <b>Project ID:</b> ITP_WD_B1_01  |  |
| <b>Project Name:</b> Sayora Ayurvedic Wellness Center Management System  |  |
| <b>Testing Function:</b> Upload Requisitions   |  |
| <b>Test ID:</b> Test_004   | Test case designed and executed by:<br>Reg No. -<br>Name – |
| Test Priority - High   | Medium   |
| <b>Test Description:</b><br>A patient accesses the Sayora Wellness Center Patient Management System to upload medical reports in response to a request made by a doctor. The patient fills in various fields with valid values and verifies the functionality of the upload process, including reuploading.  |  |
| <b>Pre-Conditions:</b> <ul style="list-style-type: none"> <li>• The Sayora Wellness Center Patient Management System is installed and accessible.</li> <li>• The patient is a registered user.</li> <li>• A doctor has made a request for medical reports from the patient.</li> </ul>   |  |
| <b>Test Steps:</b> <ol style="list-style-type: none"> <li>1. Patient logs into the Sayora Wellness Center Patient Management System.</li> <li>2. Patient navigates to the "Upload Requisitions" section.</li> <li>3. Patient locates the request made by the doctor.</li> <li>4. Patient clicks on the request to open it.</li> <li>5. Patient fills in the required fields with valid values:           <ul style="list-style-type: none"> <li>• Report Name: ECG Report for leach treatment.</li> <li>• Treatment Identification: Leach Treatment</li> <li>• Report Date: 22/03/2024.</li> </ul> </li> <li>6. Patient uploads the medical report file.</li> <li>7. Patient clicks on the "Upload" button.</li> </ol> |  |
| <b>Pass-Conditions:</b> <ul style="list-style-type: none"> <li>• The patient's medical report is successfully uploaded in response to the doctor's request.</li> <li>• The system validates all fields and accepts the upload if all fields are filled correctly.</li> <li>• Upon successful submission, the patient receives a confirmation message.</li> <li>• The uploaded report is associated with the specific request and treatment in the system.</li> </ul>   |  |

*Table 18 - Test case 02 results of Patient Management System*

| <b>Test ID</b> | <b>Test Inputs</b>  | <b>Expected Outputs</b>  | <b>Actual Output</b>  | <b>Result (Pass/Fail)</b>    | <b>Comment</b>   |
|----------------|---|--|---|------------------------------|--|
| Test_04a       | Report Name: ECG Report for leach treatment<br><br>Treatment Identification: Leach Treatment<br><br>Report Date: 22/03/2024<br><br>Upload File: [Valid medical report file] | Successful upload of medical report  | Medical report uploaded   | Pass                         | No errors encountered during upload  |
| Test_04b       | Report Name: Treatment Identification: Leach Treatment<br><br>Report Date: [Invalid date selected]<br><br>Upload File: [No file uploaded]                                   | Error message indicating required field missing<br><br>Error message indicating invalid date format<br><br>Error message indicating file upload required | Error message displayed<br><br>Error message displayed<br><br>Error message displayed | Fail<br><br>Fail<br><br>Fail | Required field not filled<br><br>Invalid date format<br><br>No file uploaded |

## **Appointment Management System - IT22890696**

*Table 19 - Test case for Schedule a New Appointment of Appointment Management System*

|   |   |
|---|---|
| <b>Project ID:</b> ITP_WD_B1_01   |   |
| <b>Project Name:</b> Sayora Ayurvedic Wellness Center Management System   |   |
| <b>Testing Function:</b> Schedule a New Appointment   |   |
| <b>Test ID:</b> Test_004  | <b>Test case designed and executed by:</b><br><b>Reg No.</b> – IT22890696<br><b>Name</b> – Cooray N.S.A |
| <b>Test Priority</b>  | Medium  |
| <b>Test Description:</b><br>Schedule a new appointment for the relevant doctor as the appointment manager.  |   |
| <b>Pre-Conditions:</b><br>Appointment manager must be a registered person at the Sayora Ayurvedic Center Posses with relevant authentication to access the appointment handling dashboards.   |   |
| <b>Test Steps:</b><br>Step 1: Access the Sayora web application home page.<br>Step 2: login to the System.<br>Step 3: Access the doctor availability scheduling page.<br>Step 4: Enter the relevant doctor's ID.<br>Step 5: Enter the relevant doctor's new date.<br>Step 6: Enter the relevant doctor required new time.<br>Step 7: Make the new appointment scheduling time.<br>Step 8: Navigate to the doctor time availability dashboard.<br>Step 9: View the relevant new scheduling of the doctor's time.<br>Step 10: Delete of the time is not applicable.<br>Step 11: Make necessary schedule updates to the new schedule time according to the requirements. |   |
| <b>Pass-Conditions:</b><br>New schedule appointment time must be available when you search by the doctor's name.  |   |

*Table 20 - Test case results for Appointment Management System*

| Test ID   | Test Inputs  | Expected Outputs   | Actual Output  | Result (Pass/Fail) | Comment  |
|-----------|--|--|--|--------------------|--|
| Test_004a | The doctor's name and the relevant specialization can be entered when the patient searches for a doctor to make a new appointment.<br><br>Inputs: -<br>Doctor name:<br>Nicole<br>Specialization:<br>Cardiology | The newly appointed time slot has to be filtered and appear once you search by the relevant doctor's name. | The newly adds appointment can be seen and the already available time slots are available without changes. | Pass               | The scheduling of the new time slot for a specifically selected doctor by the doctor Id is successful. |

## **User & Staff Management System - IT22595294**

*Table 21 - Test case 01 for add new staff member of the User & Staff Management*

|   |  |
|---|--|
| <b>Project ID:</b> ITP_WD_B1_01   |  |
| <b>Project Name:</b> Sayora Ayurvedic Wellness Center Management System   |  |
| <b>Testing Function:</b> Add new Staff Member   |  |
| <b>Test ID:</b> Test_ 005   | <b>Test case designed and executed by:</b> Reg No. – IT22595294<br><b>Name</b> – Dissanayake D.M.S.A.B |
| <b>Test Priority</b>  | Medium   |
| <b>Test Description:</b><br>Add New staff member to the system according to his staff role  |  |
| <b>Pre-Conditions:</b><br>The System Admin must log in to the system and have details of the new staff member.  |  |
| <b>Test Steps:</b><br>Step 1: System Admin logs in to the staff dashboard.<br>Step 2: System Admin navigates to the Manage Staff section.<br>Step 3: System Admin chooses the Add New Staff option.<br>Step 4: System Admin chooses the Staff Job role.<br>Step 5: System Admin fills in the details of the new staff member.<br>Step 6: System Admin checks the checkbox to confirm that the data is correct.<br>Step 7: System sends an email including a registration link for the new staff member.<br>Step 8: New staff member clicks the confirmation and registration link.<br>Step 9: New staff member navigates to the staff registration page.<br>Step 10: New Staff Member fills out the registration form and continues registration.<br>Step 11: After successful registration, the new staff member navigates to the staff login page.<br>Step 12: New staff member logs in to the system and continues staff profile setup and relevant tasks. |  |
| <b>Pass-Conditions:</b><br>All the fields are required for add/register Staff Member to the system.<br>Display error/success message based on the situation.<br>The one email can be used only for once.  |  |

Table 22 - Test case 01 results Of add new staff member of the User & Staff Management

| Test ID    | Test Inputs  | Expected Outputs   | Actual Output   | Result (Pass/Fail) | Comment  |
|------------|--|--|---|--------------------|--|
| Test_ 005a | <b>Add New Staff member.</b><br>Staff Role: System Admin<br>Name: Aroshana Dissanayake<br>Email: aroshana6@gmail.com<br><br>Email sent and new staff member open link via email,<br><br><b>First Name:</b> Aroshana<br><b>Last Name:</b> Dissanayake<br>Password: aroshana<br><b>Confirm Password:</b> aroshana<br><b>Phone:</b> 0705356643<br><b>Address:</b> no89, Kandy<br><b>Gender:</b> Male                        | New staff member successfully added, and display staff details on staff dashboard.<br><br>Permission has been granted to access relevant parts.<br><br>Database was updated according to the details | New staff member successfully added,<br><br>“Show message “Registration successful.” Redirecting to login... And show staff records in staff dashboard. | Pass               | Staff Adding/Registration works without any errors                       |
| Test_ 005b | <b>Add New Staff member.</b><br><br><b>Staff Role:</b> System Admin<br><b>Name:</b> Aroshana Dissanayake<br><b>Email:</b> aroshana6@gmail.com<br><br>Email sent and new staff member open link via email,<br><br><b>First Name:</b> Sasanka<br><b>Last Name:</b> Dissanayake<br>Password: aroshana<br><b>ConfirmPassword:</b> aroshana<br><b>Phone:</b> 0705356653<br><b>Address:</b> no89, Kandy<br><b>Gender:</b> Male | staff account should not be created as one already exists.<br><br>Do not send confirmation email.  | Display “Failed to add user. Please try again”.<br><br>Confirmation Email has not been sent.<br><br>Dashboard and database not updated                  | Pass               | Ensure that staff accounts are not created with the same email addresses |

*Table 23 - Test case 02 Of add new staff member of the User & Staff Management*

|  |   |
|--|---|
| <b>Project ID:</b> ITP_WD_B1_01  |   |
| <b>Project Name:</b> Sayora Ayurvedic Wellness Center Management System  |   |
| <b>Testing Function:</b> Staff Apply Leave and Leave Management  |   |
| <b>Test ID:</b> Test_ 006  | Test case designed and executed by:<br>Reg No. – IT22595294<br>Name – Dissanayake D.M.S.A.B |
| Test Priority  | Medium  |
| <p><b>Test Description:</b><br/>Staff Can apply for leaves and Staff Manager can review and get action</p> <p><b>Pre-Conditions:</b><br/>The Staff Manager and Staff member must log in to the system.</p>   |   |
| <p><b>Test Steps:</b></p> <p>Step 1: Staff member logs in to the staff dashboard.<br/>     Step 2: Staff member navigates to the Staff Profile section.<br/>     Step 3: Staff member chooses the apply for leaves option.<br/>     Step 4: Staff members enter the reason for leave on apply leave form.<br/>     Step 5: Staff member chooses the start date time.<br/>     Step 6: Staff member chooses the end date time.<br/>     Step 7: Staff member checks the checkbox to confirm that the data is correct and apply.<br/>     Step 8: Staff manager logs in to the staff dashboard with staff manager role permission.<br/>     Step 9: Staff manager navigates to the Leave Management section.<br/>     Step 10: Staff manager checks staff leave request list and click view details button.<br/>     Step 11: Staff manager review leave request details and act (approve/reject)<br/>     Step 12: Staff members navigate to the my leave section and check leave request status.</p> |   |
| <p><b>Pass-Conditions:</b><br/>All the fields are required for applying leave.<br/>The reason must have at least 10 letters.<br/>Display error/success message based on the situation.</p>   |   |

Table 24 - Test case 02 results Of add new staff member of the User & Staff Management

| Test ID    | Test Inputs   | Expected Outputs   | Actual Output   | Result (Pass/Fail) | Comment  |
|------------|---|--|---|--------------------|--|
| Test_ 006a | Apply For Leave<br><br>Reason: Attend to Personal event<br>Start Time: 2024/05/20<br>End Time: 2024/05/30 | Should Display "Leave request submitted successfully!" message.<br><br>My leave section should update with newly applied leave request.<br><br>Display leave request in Leave Management Section under Staff Manager access.<br><br>Database should update according to the details. | Display "Leave request submitted successfully!" message.<br><br>My leave section updated with newly applied leave request.<br><br>Display leave request in Leave Management Section under Staff Manager access.<br><br>The database was updated according to the details. | Pass               | Staff Apply leave request sent without any errors  |
| Test_ 006b | Apply Leaves with short reason.<br><br>Reason: vacation<br>Start Time: 2024/05/20<br>End Time: 2024/05/30 | Should Display "Reason must be at least 10 characters long." Message under the reason field<br><br>My leave section and Staff Manager's leave management section and database should not be updated.   | Display "Reason must be at least 10 characters long" message under the reason field.<br><br>My leave section, Staff Manager's leave management section and database not updated.<br><br>Dashboard and database not updated  | Pass               | Ensure that when applying for leave, there should be a valid reason with a better explanation. |

## Inventory Management System – IT22592774

*Table 25 - Test case for add new supplier of the Inventory Management*

|  |   |
|--|---|
| <b>Project ID:</b> ITP_WD_B1_01  |   |
| <b>Project Name:</b> Sayora Ayurvedic Wellness Center Management System  |   |
| <b>Testing Function:</b> Add a new supplier to the system - Inventory Management   |   |
| <b>Test ID:</b> Test_005   | <b>Test case designed and executed by:</b><br><b>Reg No.</b> - IT22592774<br><b>Name</b> – Ekanayake E.M.C.H. |
| <b>Test Priority</b>   | Medium  |
| <b>Test Description:</b><br>An efficient supplier management is to manage all the work related to suppliers of the wellness system.  |   |
| <b>Pre-Conditions:</b><br>Inventory manager must login to the system.  |   |
| <b>Test Steps:</b><br>Step 1: Login to the system and navigate to the Manage Inventory page.<br>Step 2: Visit the Manage suppliers' page.<br>Step 3: Clicks add new supplier button.<br>Step 2: Fill all fields in the add new supplier page and complete all relevant validations.<br>Step 3: Click on “Add Supplier” button. |   |
| <b>Pass-Conditions:</b><br>All the fields in the form are required to create a new supplier.   |   |

*Table 26 - Test case results for add new supplier of the Inventory Management*

| Test ID   | Test Inputs  | Expected Outputs  | Actual Output  | Result (Pass/Fail) | Comment   |
|-----------|--|---|--|--------------------|---|
| Test_005a | Supplier details<br><br>Inputs: -<br><br>Supplier name – Uthpala<br>Address - 1/1902,<br>Yakgahpitiya.<br>Phone number – 0115248764<br>Email - uthpala@gmail.com | System must save the supplier details to the database and displays a success message indicating the supplier has been added successfully. | System saves the supplier details to the database and displays a success message indicating the supplier has been added successfully | Pass               | The system successfully saved the supplier details and displayed a success message. |

|           |  |   |   |      |   |
|-----------|--|---|---|------|---|
| Test_005b | <p>Supplier details</p> <p>Inputs: -</p> <p>Supplier name – Dew</p> <p>Address - 45, Havelock Rd, Kandy</p> <p>Phone number – 011254879</p> <p>Email - dew@gmail.com</p> | <p>System must display an unsuccessful message indicating the required field must fill.</p> | <p>System displays an unsuccessful message indicating the required field must fill.</p> | Pass | <p>The system displays error message successfully .</p> |
|-----------|--|---|---|------|---|

## **Product Management System - IT22364838**

*Table 27 - Test case for Product Management System*

|   |   |
|---|---|
| <b>Project ID:</b> ITP_WD_B1_01   |   |
| <b>Project Name:</b> Sayora Ayurvedic Wellness Center Management System   |   |
| <b>Testing Function:</b> Product Management   |   |
| <b>Test ID:</b> Test_007  | <b>Test case designed and executed by:</b><br>Reg No. – IT22364838<br>Name – Upendra M.M.S. |
| <b>Test Priority:</b>   | High  |
| <b>Test Description:</b> Verify product management functionality in system.<br>- Patient must have the facility to order products   |   |
| <b>Pre-Conditions:</b> patients must log into the system.   |   |
| <b>Test Steps:</b><br>1.patient must log into the system<br>2.navigate to product page and search products<br>3.add products to cart and navigate to cart page.<br>4.fill the form<br>5.click on reserve button |   |
| <b>Pass-Conditions:</b><br>System prompt order successfully placed message.   |   |

| <b>Test ID</b> | <b>Test Inputs</b>                                   | <b>Expected Outputs</b>  | <b>Actual Output</b>  | <b>Result (Pass/Fail)</b> | <b>Comment</b>  |
|----------------|--|--|---|---------------------------|---|
| Test_007a      | Search for existing product name:<br>“Essential oil” | The system displays selected results for the entered keyword.  | The system displays multiple selected results for " Essential oil."   | <b>Pass</b>               | The selected functionality successfully retrieves relevant results based on the user's input. |
| Test_007b      | Add products to cart                                 | The system displays products added to cart successfully.<br><br>If the cart is empty patient should not be able to | The system added products to the cart and displays the products added to cart successfully message.<br><br>Clicking on empty cart redirect to the | <b>Pass</b>               | Expectations are met.<br>. .  |

|           |  |   |   |             |  |
|-----------|--|---|---|-------------|--|
|           |  | <p>navigate to the cart</p> <p>If the product is already in the cart a message saying the product is already added message will display</p>   | <p>product home page</p> <p>product is already in the cart a message displayed when trying to insert the same product twice</p>   |             |  |
| Test_007c | Fill the form by giving patient's name, address and email address and increment the product quantity and click on reserve button | <p>Total price should be calculated.</p> <p>The system displays order successfully placed message.</p> <p>If the fields for name, address and email are empty 'please fill out the fields. message must display.'</p> | <p>Total price is calculated according to the product quantity increments.</p> <p>The system displays 'order successfully placed message.'</p> <p>Cannot reserve the order without filling the fields</p> | <b>Pass</b> | <p>Test case passed with proper logical implementation.</p> <p>The record is inserted into the database successfully</p> |

*Table 28 - Test case results for Product Management System*

## **Service Management System - IT22362926**

*Table 29 - Test case of Service Management System*

|  |   |
|--|---|
| <b>Project ID:</b> ITP_WD_B1_01  |   |
| <b>Project Name:</b> Sayora Ayurvedic Wellness Center Management System  |   |
| <b>Testing Function:</b> Service Management  |   |
| <b>Test ID:</b> Test_ 008  | <b>Test case designed and executed by:</b> Reg No. – IT22362926<br><b>Name –</b> Jayalath J P U N |
| <b>Test Priority:</b>  | Medium  |
| <b>Test Description:</b><br>Verify Service Management functionality in the Sayora Ayurvedic Wellness Center Management System  |   |
| <b>Pre-Conditions:</b><br>The user must be provided correct details  |   |
| <b>Test Steps:</b><br>Step 1: The user searches for the relevant session booking form in the system.<br>Step 2: User fills in correct details in the booking form.<br>Step 3: Staff member verifies the details by phone call.<br>Step 4: If any changes are required, staff members update the booking form with correct details.<br>Step 5: User is informed that the details have been corrected. |   |
| <b>Pass-Conditions:</b> <ul style="list-style-type: none"> <li>• User finds the correct booking form for the relevant session.</li> <li>• User provides correct details in the booking form.</li> <li>• Staff members verify and update the details if necessary.</li> <li>• User is informed about the corrected details.</li> </ul>  |   |

*Table 30 - Test case results of Service Management System*

| <b>Test ID</b> | <b>Test Inputs</b>                         | <b>Expected Outputs</b>              | <b>Actual Output</b>   | <b>Result (Pass/Fail)</b> | <b>Comment</b>   |
|----------------|--|--------------------------------------|--|---------------------------|--|
| Test_008a      | 1. User searches for session booking form. | User finds the correct booking form. | User successfully finds the booking form for the relevant session. | Pass                      | User successfully navigated to the correct booking form. |
|                | 2. User fills in correct details.          | User provides correct details.       | User accurately fills in the required details in the booking form. | Pass                      | User provided accurate details in the booking form.      |

|  |  |   |  |      |   |
|--|--|---|--|------|---|
|  | 3. Staff member verifies details by phone.         | Staff member verifies and updates if necessary. | Staff member verifies the details provided by the user via phone call and updates the form if necessary. | Pass | Staff member successfully verified and updated details as required. |
|  | 4. Staff member updates booking form if necessary. | User is informed about corrected details.       | User is promptly informed about any corrections made to the details in the booking form.                 | Pass | User was promptly informed about the corrected details.             |

### **Treatment & Invoice Management System - IT22346940**

*Table 31 - Test case 01 of Treatment & Invoice Management System*

|  |   |
|--|---|
| <b>Project ID:</b> ITP_WD_B1_01  |   |
| <b>Project Name:</b> Sayora Ayurvedic Wellness Center Management System  |   |
| <b>Testing Function:</b> Generate Report Function  |   |
| <b>Test ID:</b> Test_009   | <b>Test case designed and executed by:</b> Reg No. – IT 22346940<br><b>Name –</b> Samarakoon NKRK |
| <b>Test Priority</b>   | Medium  |
| <b>Test Description:</b><br>Download Patient Invoice   |   |
| <b>Pre-Conditions:</b><br>Patient payment details should be added to the system by Cashier   |   |
| <b>Test Steps:</b><br>Step 1: Login As Cashier<br>Step 2: Navigate to Manage Invoice Section under cashier.<br>Step 3: Search invoice by patient name or patient ID.<br>Step 4: Select one record and click “Download Receipt” button. |   |

*Table 32 - Test case 01 results of Treatment & Invoice Management System*

| Test ID   | Test Inputs                      | Expected Outputs                      | Actual Output                        | Result (Pass/Fail) | Comment   |
|-----------|----------------------------------|---------------------------------------|--------------------------------------|--------------------|---|
| Test_009a | Click “Download Receipt” button. | Receipt is generated and download ed. | Receipt is generated and downloaded. | Pass               | Report Generation function is working properly. |

*Table 33 - Test case 02 of Treatment & Invoice Management System*

|  |  |
|--|--|
| <b>Project ID:</b> ITP_WD_B1_01  |  |
| <b>Project Name:</b> Sayora Ayurvedic Wellness Center Management System  |  |
| <b>Testing Function:</b> Add new Treatment   |  |
| <b>Test ID:</b> Test_010   | <b>Test case designed and executed by:</b> Reg No. – IT 22346940<br>Name – Samarakoon NKRK |
| <b>Test Priority</b>   | Medium   |
| Test Description:<br>Add new treatment details to the system   |  |
| <b>Pre-Conditions:</b><br>The system admin must be signed in to the system.  |  |
| <b>Test Steps:</b><br>Step 1: Log in to the system and navigate to the add new treatment adding page.<br>Step 2: Fill all the fields in the Add New Treatment page and complete all relevant validations.<br>Step 3: Click on the “Submit “Button.<br>Step 4: System prompts “Treatment Added Successfully” message. |  |
| <b>Pass-Conditions:</b><br>All the fields in the form are required to add new treatment.   |  |

Table 34 - Test case 02 results of Treatment & Invoice Management System

| Test ID   | Test Inputs  | Expected Outputs  | Actual Output   | Result (Pass/Fail) | Comment   |
|-----------|--|---|---|--------------------|---|
| Test_010a | Treatment Name-Cardiac<br>Price-5000<br>Treatment description-To address specific cardiac issues, the Doctor will recommend a combination of Ayurvedic treatments such as Sarvang Abhyanga upload treatment image- | Added Treatment Details to the system. System display notification “Successful” | Added Treatment Details to the system. System display notification “Successful” | Pass               | Every field must be filled correctly.<br><br>Fill the booking form using necessary validations. |
| Test_010b | Treatment Name-Cardiac<br>Price-5000<br>Treatment description-To address specific cardiac issues, the Doctor will recommend a combination of Ayurvedic treatments such as Sarvang Abhyanga upload treatment image- | Error message showing ‘Please upload e image’                                   | Error message showing ‘Please upload e image’                                   | Pass               | Needs to upload an image.   |

Table 35 - Test case 03 of Treatment & Invoice Management System

|   |  |
|---|--|
| <b>Project ID:</b> ITP_WD_B1_01   |  |
| <b>Project Name:</b> Sayora Ayurvedic Wellness Center Management System   |  |
| <b>Testing Function:</b> Add Patient Invoice  |  |
| <b>Test ID:</b> Test_011  | <b>Test case designed and executed by:</b> Reg No. – IT 22346940<br>Name – Samarakoon NKRK |
| <b>Test Priority</b>  | Medium   |
| <b>Test Description:</b><br>Add Patient Invoice to the system   |  |
| Pre-Conditions:<br>Login to the system as a cashier   |  |
| <b>Test Steps:</b><br>Step 1: Login As Cashier<br>Step 2: Navigate to Invoice Section under cashier.<br>Step 3: Enter the Patient Appointment Mobile number.<br>Step 4: Click “Calculate Total”<br>Step 5: Click on the “Add” button. |  |

Table 36 - Test case 03 results of Treatment & Invoice Management System

| <b>Test ID</b> | <b>Test Inputs</b>  | <b>Expected Outputs</b>   | <b>Actual Output</b>   | <b>Result (Pass/Fail)</b> | <b>Comment</b>  |
|----------------|---|---|--|---------------------------|---|
| Test_011a      | Appointment<br>Mobile number-<br>0716574111   | Fetch the Patient details to other fields (patient name, Doctor fee, Treatment fee).<br><br>Calculated Total Amount<br><br>Successful message.<br><br>Store Data Record | Fetch the Patient details to other fields (patient name, Doctor fee, Treatment fee).<br><br>Calculated Total Amount<br><br>Successful message.<br><br>Store Data Record. | Pass                      | Mobile number validation is displaying successfully.<br><br>Record retrieved from the database successfully.<br><br>Record inserted to the database successfully. |
| Test_011b      | Appointment<br>Mobile number-<br>0716574000<br><br>(This mobile number does not have appointment) | Error message showing “No Appointment Found”  | Error message showing “No Appointment Found”   | Pass                      | Mobile number should have appointment.  |
| Test_011c      | Appointment<br>Mobile number-<br>0712345  | Error message showing “Mobile number must be valid”.  | Error message showing “Mobile number must be valid”.   | pass                      | Mobile number should have 10 digits.  |

# **Chapter 05 – Evaluation & Conclusion**

## **Evaluation**

### **Doctor Process Management System**

The doctor's process management sub-component successfully passed all unit tests. After integration this function works as intended according to the requirements and test results. Implemented features, such as displaying medical records, treatment history, and dynamic appointment views during examinations, functioned flawlessly, meeting clients' expectations.

However, the evaluation process also revealed limitations and areas for improvement. A key limitation identified was the lack of integration with external labs. This integration would eliminate the need for manual data entry and allow for the direct import of diagnostic reports into the system. This enhancement would significantly improve efficiency by streamlining access to crucial diagnostic information and ultimately improve the overall workflow for doctors.

Client's feedback further highlighted the need for more robust reporting functionalities that could generate detailed insights into clinical outcomes. Such enhancements would empower the wellness center to effectively track performance metrics and identify areas where quality improvement initiatives could be implemented.

In conclusion, while the system has demonstrably improved doctor's process management and overall efficiency, there are significant opportunities to further optimize its functionalities and better meet the evolving needs of its users. Addressing limitations such as external lab integration and incorporating AI-powered prescription suggestions would contribute significantly to the system's overall effectiveness and user satisfaction.

### **Patient Process Management System**

The Appointment Management system has been proven to be effective in facilitating doctor-patient interaction, optimizing customer satisfaction and comfort in scheduling and rescheduling appointments. Major components include appointment scheduling for the appointment manager, appointment selection concerning the relevant doctor for the patients, viewing appointment details to confirm and notify the patient, analytical diagrams, and the search function.

However, feedback and evaluations have revealed areas for improvement. Consumer feedback also reveals that there are specific modifications and improvements needed for the better functioning of the project. Enhancement opportunities include advancing modifications in analytical demonstrations and reporting, integrating with telemedicine, automating the waiting list of patients, facilitating multichannel appointment booking, and providing real-time updates and trackers for appointments.

The patient profile management system was carefully evaluated to empower patients to actively participate in their wellness journey. Following integration, the system successfully met the requirements and performed as expected. The intuitively designed dashboard, featuring simplified cards and a user-friendly notification system, ensures that patients can easily access and understand their medical information. The process of accessing medical records, such as prescriptions, test results, and treatment outcomes, is uncomplicated and effective. The central storage system allows doctors to upload prescriptions, along with

detailed medical instructions and dietary recommendations, making it easier for doctors and patients to communicate.

The treatments section offers patients a comprehensive view of their treatment records, including results and reports. The daily Ayurvedic questionnaire tailored to specific disabilities enables active management of patients' daily medical status, fostering continuous monitoring and personalized care. Test report upload and management functionality allows patients to view recorded test results or reports, upload personal health reports, and modify them before the doctor's review, respecting patients' privacy preferences. Progress reports generated using daily medical status data provide patients with a continuous view of their health journey and progress between clinic visits. The feature to maintain daily medical status, including symptoms and overall well-being, is robust and user-friendly. Patients can easily document their status, upload photos and detailed descriptions, and view progress graphs, motivating them throughout their health journey. Addressing these areas would further optimize the system's effectiveness and user satisfaction.

### **Appointment Management System**

The Appointment Management system has proven effective in facilitating doctor-patient interaction, optimizing customer satisfaction and comfort in scheduling and rescheduling appointments. Major components include appointment scheduling for the appointment manager, appointment selection for the relevant doctor, viewing appointment details to confirm and notify patients, analytical diagrams, and search functions.

However, feedback and evaluations have revealed areas for improvement. Consumer feedback reveals specific modifications and improvements needed for the better functioning of the project. Enhancement opportunities include advancing modifications in analytical demonstrations and reporting, integrating with telemedicine platforms, automating the waiting list of patients, facilitating multichannel appointment booking, and providing real-time updates and trackers for appointments.

Proper monitoring and decision-making can significantly improve scheduling processes and allocate resources more effectively. Integrating the appointment management system with telemedicine platforms would allow for seamless scheduling and management of virtual appointments. Automating the waiting list can help patients manage waitlists and fill cancellations or no-show slots efficiently, reducing wasted time and maximizing appointment availability. In conclusion, the latest technological implementations can lead to the production of a quality product that benefits all stakeholders.

### **User & Staff Management System**

The User and Staff Management function developed for Sayora Wellness Center efficiently manages various user roles including doctors, patients, and staff members. This system provides a structured approach to handle staff functionalities, enabling the addition and management of users across different categories. Each staff member is given access to specific functionalities based on their role, such as system administrators having unrestricted access while other roles like staff managers and medical secretaries have limited access relevant to their responsibilities. This role-based access control is crucial for maintaining security and streamlining clinic operations.

Key functionalities of the system include managing salaries, where staff salaries are assigned and calculated with considerations for bonuses, base pay, and deductions. Each staff member can also generate their salary slip directly from their staff profile. Additionally, the system offers attendance tracking, leave management that allows staff managers to review, approve, or reject leave requests, and a profile management feature where staff can update their details and apply for leave. The implementation and testing phases of these features have been successfully completed, ensuring that the system operates efficiently and securely.

### **Inventory Management System**

The Sayora Wellness Centers' Inventory Management System has undergone thorough evaluation to assess its functionality and effectiveness in meeting operational needs. The system successfully fulfills its core objectives of streamlining procurement processes, minimizing manual errors, and ensuring a seamless flow of essential supplies. Supplier management features allow for efficient maintenance of external supplier databases, while the detailed inventory items catalog facilitates easy tracking and categorization of clinic supplies. The order management module enables authorized users to place orders with specified details, contributing to enhanced order accuracy. Real-time inventory tracking capabilities ensure timely updates and alerts for low stock levels, improving overall stock management efficiency. Automatic reorder alerts further streamline the replenishment process, ensuring continuous availability of supplies. The system's ability to maintain comprehensive purchase history records enables effective analysis and auditing. Supplier notifications enhance communication and coordination, contributing to smoother procurement processes.

In short, Sayora Wellness Centers' Inventory Management System is a reliable tool for streamlining the administration of outside goods. Even while the system effectively improves efficiency and meets important operational needs, there is still room for development. Streamlining procurement procedures and improving data synchronization would be achieved by integration with outside vendors. Furthermore, adding enhanced reporting features can offer more thorough insights into performance indicators and inventory movements, facilitating improved decision-making and quality improvement projects. By addressing these areas for improvement, the system may adapt more to Sayora Wellness Centers' changing requirements, which will eventually lead to increased operational effectiveness and user happiness.

### **Product Management System**

The product management module has undergone rigorous testing, exhibiting seamless performance in both unit and integration environments. Core functionalities such as product display, ordering, and inventory management have met client expectations impeccably.

However, an evaluation has unveiled notable limitations necessitating enhancements for optimal performance. A notable absence is the automation of ordering status updates, which would eradicate manual data entry errors, thereby enhancing efficiency. Additionally, there's a need for a feedback mechanism for product reviews.

While the current system has undoubtedly bolstered product management and operational efficiency, these identified areas for improvement present compelling opportunities to elevate functionality and better cater to user needs.

## **Service Management System**

The service management component within the system has undergone rigorous evaluation, incorporating insights from unit tests and integration assessments. Following integration, this function has demonstrated its efficacy in facilitating service provision outside the wellness center, particularly in arranging awareness sessions and doctor home visits via the website interface.

Key features, including the ability to search for relevant sessions, input correct booking details, and facilitate communication between users and staff members for verification and updates, have functioned reliably. These functionalities align with the specific requirements outlined for service management, ensuring seamless user experiences and meeting client expectations.

However, certain limitations and opportunities for enhancement have been identified. Notably, there is a lack of integration with external service providers, which could streamline processes and improve efficiency by automating data entry tasks. Additionally, there is a need for more robust reporting functionalities to generate detailed insights into service outcomes, empowering the wellness center to track performance metrics and implement quality improvement initiatives effectively.

In conclusion, while the service management component has effectively facilitated the arrangement of sessions and visits, there are opportunities for further optimization. Addressing limitations such as external service integration and enhancing reporting functionalities would enhance the system's overall effectiveness and better align it with the evolving needs of its users.

## **Treatment & Invoice Management System**

The Treatment Management function is a crucial part of our Ayurvedic Clinic, ensuring patients receive top-notch care. It provides staff with a centralized repository of detailed treatment information, allowing them to recommend treatments based on individual patient needs. This transparency fosters trust and engagement, driving conversions and bookings, contributing to our success. The system also allows staff to update treatment details, maintain data integrity, and delete outdated treatments.

The Invoice Management function streamlines the billing process and maintains accurate financial records. Cashiers can generate invoices for patients, capturing essential details like treatment costs and additional charges. This function is integrated with the Treatment Management system, eliminating the need for manual data entry and minimizing errors. This enhances operational efficiency and ensures billing accuracy, contributing to a positive patient experience.

The centralized storage of invoice data allows staff to access comprehensive summary reports, providing insights into the center's financial performance. This data empowers decision-makers to make informed strategic decisions, optimizing financial operations and driving profitability. Overall, the Treatment Management and Invoice Management functions are essential components of our Ayurvedic wellness center.

## **Conclusion**

Through this evaluation, we aim to provide an insightful overview of the system's performance, its impact on clinic operations, and the overarching benefits it has delivered to our organization.

The Clinic Management System encompasses a comprehensive suite of features tailored to address the diverse needs of our facility. From member and staff registration to separate portals for doctor-patient interactions, the system efficiently manages a multitude of tasks. Notably, its capability to track patient progress, manage inventory and products, oversee treatments and services, and generate reports exemplifies its versatility and efficacy.

One of the system's key strengths lies in its robust functionality paired with a user-friendly interface. This amalgamation ensures ease of use for staff members, enabling them to navigate the system effortlessly while focusing on delivering quality services to our patients. Additionally, the system's reliability and seamless integration contribute significantly to enhanced operational efficiency, streamlining various aspects of clinic management.

In conclusion, the Clinic Management System has yielded tangible improvements in efficiency and effectiveness within our wellness facility. Its implementation has facilitated smoother operations, empowered staff members to deliver superior services, and ultimately enhanced the overall experience for our patients. As we continue to leverage the system's capabilities, we are confident in its ability to further optimize our clinic's performance and contribute to our ongoing success.

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## Appendix A

### Workload

|            |                       |   |
|------------|-----------------------|---|
| IT22362858 | Senarathna G.S.R.U.R. | <ul style="list-style-type: none"><li>○ Website Landing page</li><li>○ Centralized Notification Center using web - sockets.</li></ul> <p><b>Doctor Process Management</b></p> <ul style="list-style-type: none"><li>○ Doctor's dashboard</li><li>○ Manage doctor's profile.</li><li>○ Manage long term &amp; regular patients.</li><li>○ Electronic health records system</li><li>○ Point-of-Care Documentation</li><li>○ Order diagnostic tests.</li><li>○ Prescription writing tools with automatic suggestions.</li><li>○ Generating reports on key practice metrics</li><li>○ Clinical Alerts and Notifications</li></ul> |
| IT22337726 | Samarasekara T.L.     | <p><b>Patient Process Management</b></p> <ul style="list-style-type: none"><li>○ Login to the system.</li><li>○ View and manage patient profile.</li><li>○ Manage prescriptions.</li><li>○ Download and share prescriptions.</li><li>○ Record, edit and update daily medical status.</li><li>○ Document their daily medical status by uploading photos and detailed descriptions.</li><li>○ View, update and delete test reports.</li><li>○ View treatments and give feedback to treatments.</li><li>○ View billing history</li></ul>   |
| IT22890696 | Cooray N.S.A.         | <p><b>Appointment Management</b></p> <ul style="list-style-type: none"><li>○ Scheduling new appointments</li><li>○ Notifications for the confirmation of appointment</li><li>○ Notifications and other reminders</li><li>○ Cancellation of the appointments</li><li>○ Add new appointment categories.</li><li>○ Delete/update existing appointment schedules.</li><li>○ Access to the appointment details</li><li>○ Generate reports</li></ul>  |

|            |                        |  |
|------------|------------------------|--|
| IT22595294 | Dissanayake D.M.S.A.B. | <b>User and Staff Management</b> <ul style="list-style-type: none"> <li>○ User Management</li> <li>○ Patient Registration and Management:</li> <li>○ Add and manage staff.</li> <li>○ Manage Staff Attendance</li> <li>○ Salary Management</li> <li>○ Generate Staff Reports</li> </ul>  |
| IT22592774 | Ekanayake E.M.C.H.     | <b>Inventory Management</b> <ul style="list-style-type: none"> <li>○ Supplier Management</li> <li>○ Inventory items Catalog.</li> <li>○ Inventory Order Management</li> <li>○ Inventory Tracking</li> <li>○ Reorder Alerts</li> <li>○ Purchase History</li> <li>○ Supplier Notifications</li> <li>○ Report Generation</li> </ul>   |
| IT22364838 | Upendra M.M.S.         | <b>Product Management</b> <ul style="list-style-type: none"> <li>○ Order Management</li> <li>○ Order cancelation and re-purchasing.</li> <li>○ Return Management</li> <li>○ Inventory Management</li> <li>○ Notification and Communication</li> <li>○ Report Generation</li> </ul>   |
| IT22362926 | Jayalath J.P.U.N.      | <b>Service Management</b> <ul style="list-style-type: none"> <li>○ Awareness/Training/Home visits Sessions Booking</li> <li>○ Details Confirmation in Bookings</li> <li>○ Booking Confirmation Communication (Email/Phone)</li> <li>○ Reporting and Analytics for Bookings</li> <li>○ Booking Reminders for Individuals</li> <li>○ Notifications and Reminders System</li> </ul> |
| IT22346940 | Samarakoon N.K.R.K     | <b>Treatment &amp; Invoice Management</b> <ul style="list-style-type: none"> <li>○ Treatment View Page</li> <li>○ Add and Management Treatment</li> <li>○ Calculate Patient Treatment Total Amount</li> <li>○ Add And management Invoice.</li> <li>○ Generate System invoices summary report.</li> <li>○ Generate patient Invoice.</li> </ul>                                    |

## Appendix B

### Contribution of the members

Throughout the report, the team collectively contributed to the 'Requirements', 'Design and Development', 'Testing', and 'Evaluation and Conclusion' chapters, each member providing necessary details of their functions. In addition to their individual contributions, Samadhi Cooray, Mihili Sanjula and Hansamalee Ekanayake played pivotal roles in streamlining the report's content and ensuring its professional presentation.

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## Appendix C

Table 1 – Comparison Chart

A crucial part of a study or project that offers a thorough examination of a collection of information already known about a certain subject.

Figure 3.1 – System Overview

A system's numerous components and their interactions shown graphically. Various components, including inputs, processes, outputs, feedback, and control mechanisms, are usually included in the system diagram. The information or materials delivered into the system are known as inputs, while the outcomes or goods the system produces are known as outputs.

Figure 6.2 - Gantt Chart

