**####**

Pharmacy Management System

**Interim Report**

**ICT2233 - Software Engineering**

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**Submission Date:** 2023/09/29

Bachelor of Information and Communication Technology

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**Declaration**

“We certify that this project does not incorporate without acknowledgment, any material previously submitted for an assignment in any institution, and to the best of my knowledge and belief, it does not contain any material previously published or written by another person or myself except where due reference is made in the text. I also hereby give consent for my dissertation, if accepted, to be made available for photocopying and for interlibrary loans, and for the title and summary to be made available to outside organizations”.

Name Index No Signature

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**Abstract**

The Pharmacy Shop Management Application proposed in this project aims to solve pressing problems faced by small and medium-sized pharmacies. Designed to cater to both small and large pharmacies, this application provides a comprehensive solution for streamlining pharmacy operations.

The primary objectives of this project are as managing personnel information, managing customers, managing inventory, managing financials, report generating, formal communication, and remote pharmaceutical distribution.

By addressing these core aspects of pharmacy management, our Pharmacy Shop Management Application intends to provide an accessible, user-friendly, and efficient solution that empowers pharmacies to enhance their operational workflows and deliver superior customer service. This application promises to bridge the gap between manual processes and modern, streamlined pharmacy management practices, ultimately improving overall business efficiency and financial stability.

**Acknowledgement**

We would like to express our gratitude to all those who have contributed to the successful completion of this endeavor. Their unwavering support, guidance, and encouragement have been invaluable throughout this journey.

First and foremost, we extend our deepest appreciation to our head of the department for their guidance and constant supervision of Ms. Chanduni Gamage, whose expertise, patience, and dedication have been instrumental in shaping this project.

We wish to extend our thanks to all colleagues and friends who have been a constant source of motivation and camaraderie. Your discussions, brainstorming sessions, and moral support have been integral to this undertaking.

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**Chapter 1: Introduction**

We propose to design and build a thorough pharmacy shop management application that will streamline business processes and ensure effective staff management, customer engagement, medication inventory control, precise financial tracking, formal communication facilities (email), remote medication distribution, and strong reporting capabilities. The app will target both small and large pharmacies and be user-friendly and accessible.

* 1. **Statement of the problem**

Due to manual processes, many small- and medium-sized pharmacies find it difficult to operate their business effectively, which causes mistakes in the management of inventory, customers, and finances.

Inefficiencies and significant revenue losses result from the lack of a centralized system for managing the inventory of medicines, customer information, and employee data.

* 1. **Aims and Objectives**

The project's goal is to provide a user-friendly, effective Pharmacy Shop Management Application that improves the workflow of pharmacy operations as a whole. The precise goals consist of:

1. Managing personnel Information: Create a module that makes it simple to handle personnel details such identities, responsibilities, and schedules.

2. Managing Customers: Create a customer management module that simplifies order history, communication, and customer registration.

3. Managing Medicine: Develop a module to check stock levels, expiration dates, and enable reordering alerts for medicines.

4. Managing Financials: Create a module for accounting and invoicing so that revenues, expenses, and client bills can all be tracked accurately.

5. Reporting: Create a reporting module that offers details on sales patterns, inventory turnover, profit margins, and other important performance metrics.

6. Formal Communication: Create a module that enables communication with clients and vendors.

7. Remote pharmaceutical Distribution: Create a pharmaceutical distribution module that offers consumers precise and efficient service.

* 1. **Scope of project**

1.Planning the project (Week 1):

- Specify the project's goals, objectives, and needs.

- Divide up team members' roles and tasks.

- Create lines of communication to facilitate productive teamwork.

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Duration (Days)** | **Start** | **End** |
| Planning the project | 07 | 19/08/2023 | 25/08/2023 |

2.Designing UI/UX (Week 2):

- Produce mockups and wireframes for the user interface of the program.

- Collect suggestions and improve the design for the best user experience.

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Duration (Days)** | **Start** | **End** |
| Designing UI | 07 | 26/08/2023 | 31/08/2023 |

3. Database design (Week 3):

- Create a database schema to contain information about the personnel, customers, medications, and finances.

- Ensure scalability and data integrity.

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Duration (Days)** | **Start** | **End** |
| Database Design | 07 | 26/08/2023 | 31/08/2023 |

4.Development on the front end (Week 4):

- Create user interfaces for different modules utilizing cutting-edge JavaFX technologies.

Develop a responsive design strategy.

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Duration (Days)** | **Start** | **End** |
| Development on the front end | 07 | 01/09/2023 | 07/09/2023 |

5.Development on the back end (Week 5):

- Create the essential logic and features of the program.

- Connect the front end to the back-end services and database.

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Duration (Days)** | **Start** | **End** |
| Development on the back end | 07 | 08/09/2023 | 14/09/2023 |

6. Quality assurance and testing (Week 6):

- Carry out exhaustive testing to find and address any flaws or problems.

- Ensure system stability and data security.

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Duration (Days)** | **Start** | **End** |
| Quality assurance and testing | 07 | 15/09/2023 | 21/09/2023 |

7.Documentation (Week 7):

- Produce thorough documentation for installation, upkeep, and user instructions.

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Duration (Days)** | **Start** | **End** |
| Documentation | 01 | 22/09/2023 | 29/09/2023 |

8.Deployment and Training (Week 8):

- Install the application on a client machine or hosting platform.

- Teach pharmacy personnel how to use the system efficiently.

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Duration (Days)** | **Start** | **End** |
| Select a client | 07 | 30/09/3023 | 06/10/2023 |

9.Finalisation and Presentation (Week 9):

- Check the application one last time to make sure all requirements have been completed.

- Create a presentation that highlights the features and functionality of the program.

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Duration (Days)** | **Start** | **End** |
| Select a client | 07 | 07/10/2023 | 13/10/2023 |

* 1. **Gantt Chart**

A graph with blue rectangular objects

Description automatically generated with medium confidence

Figure 1 - Gantt Chart

**Chapter 2: System Analysis and Design**

**2.1 Use case diagram**

A diagram of a software server

Description automatically generated

Figure 2 – Use case diagram

**2.2 Use case narratives**

**2.3 Activity diagrams**

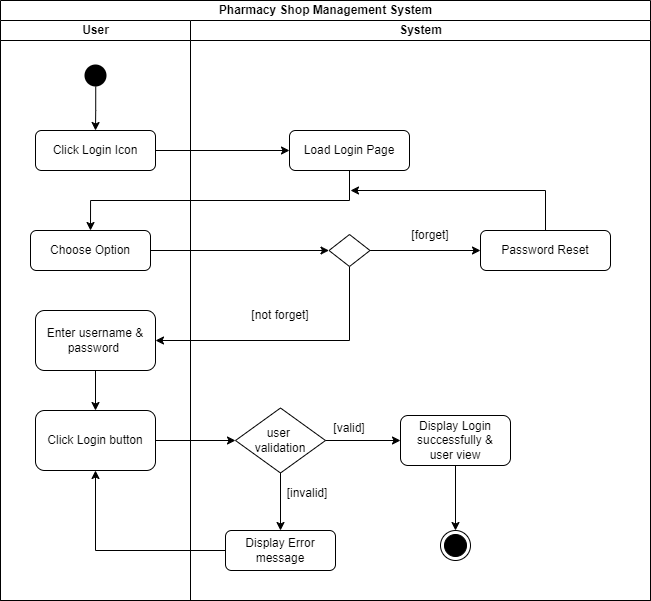
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Figure 3 – Log In Activity Diagram

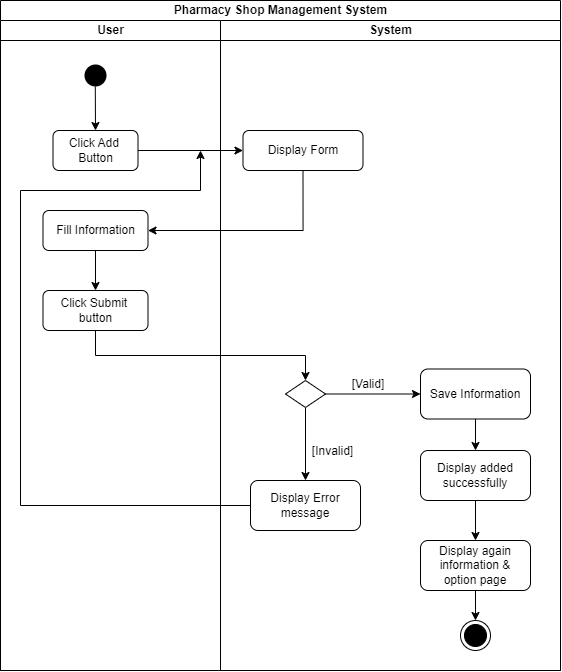
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Figure 4- Add information Activity Diagram

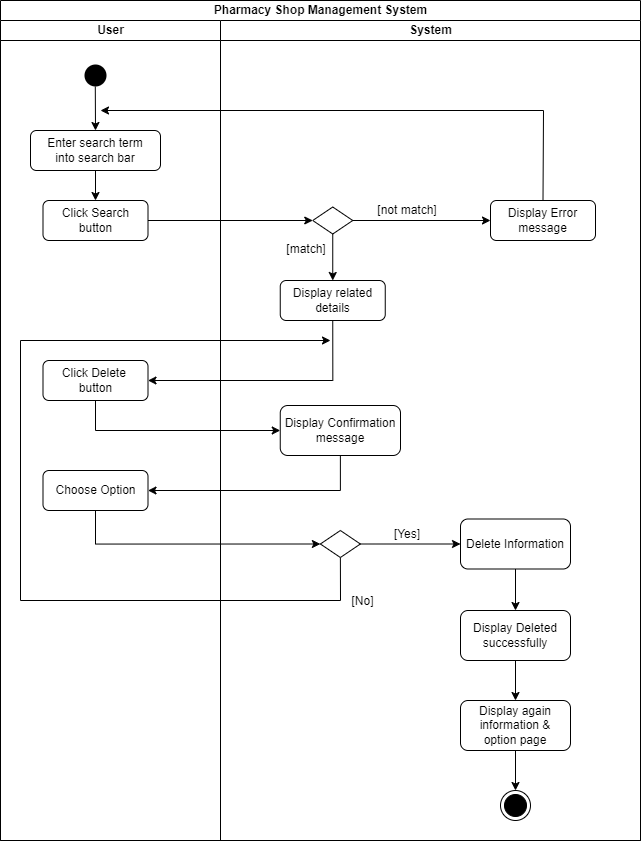
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Figure 5 – Delete Information Activity Diagram

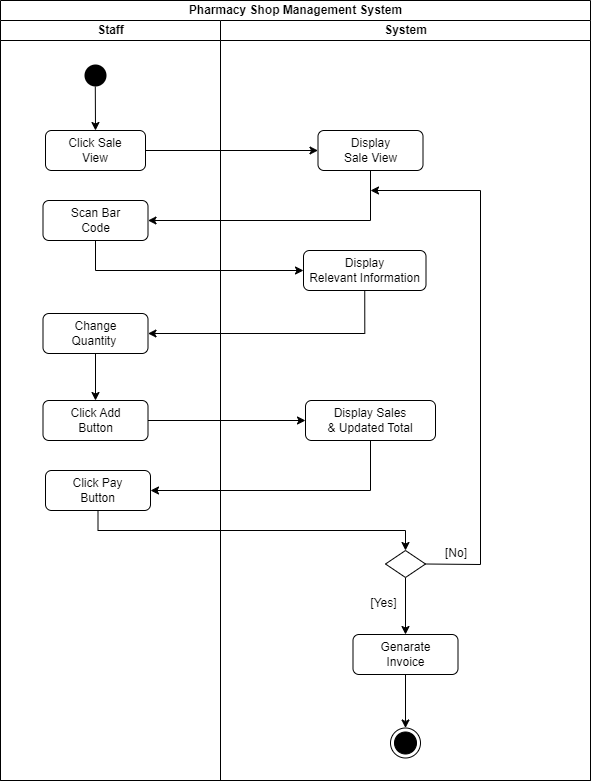
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Figure 6 – Direct Customer Management Activity Diagram

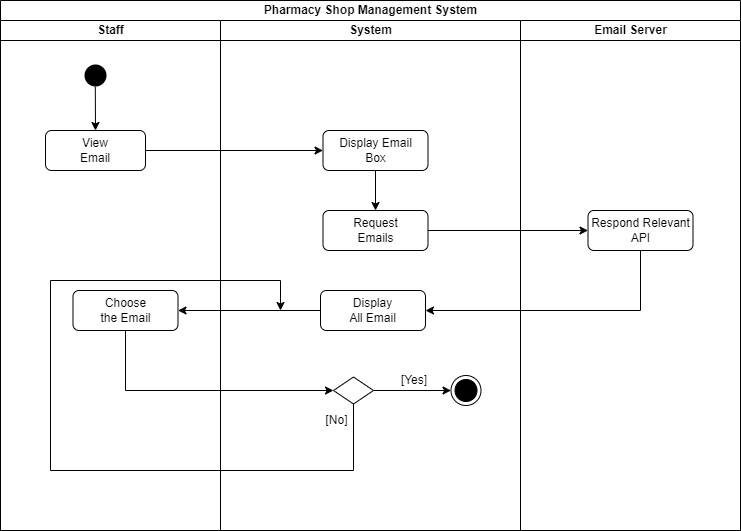
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Figure 7 – Formal Communication Activity Diagram

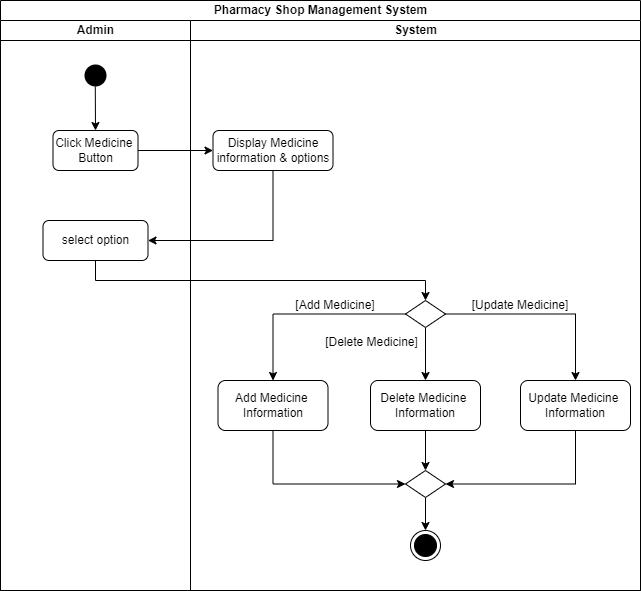
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Figure 8 – Medicine Management Activity Diagram

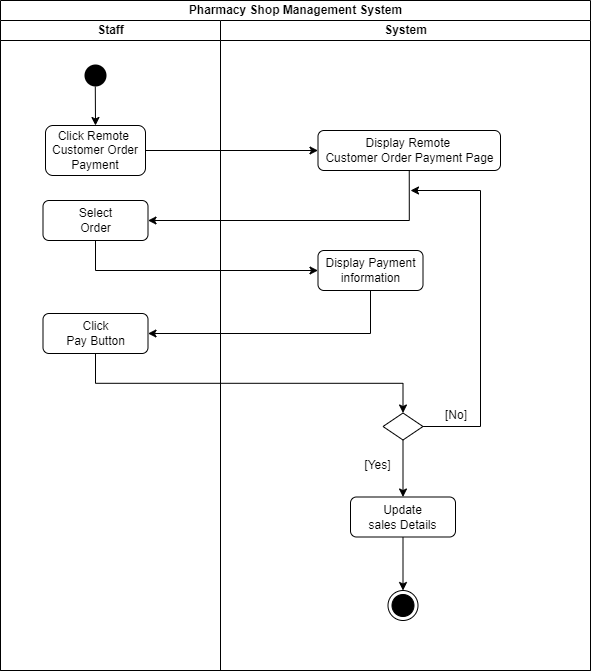
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Figure 9 – Remote Payment Activity Diagram

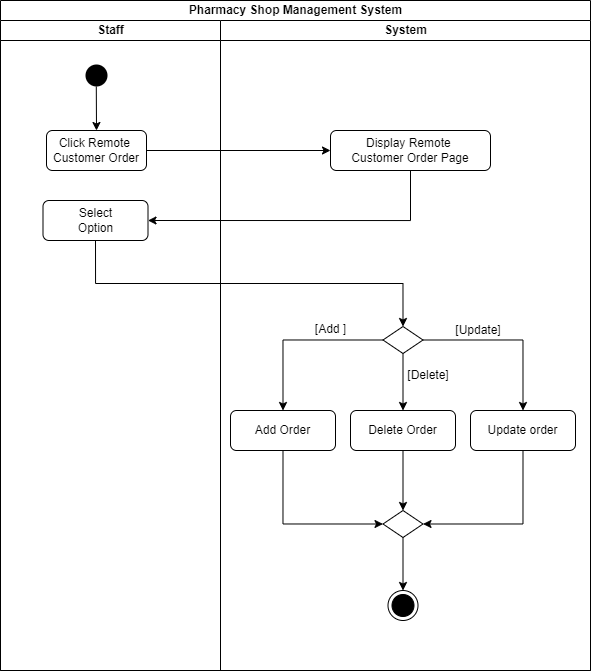
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Figure 10 - Remote Order Activity Diagram

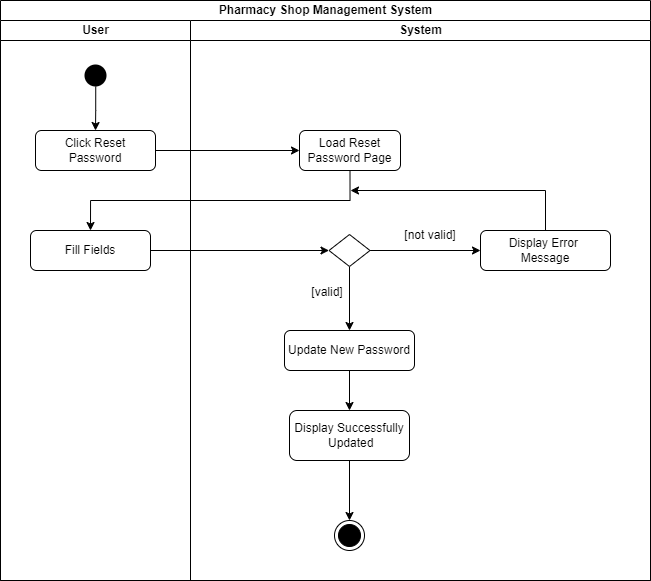
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Figure 11 – Reset Password Activity Diagram

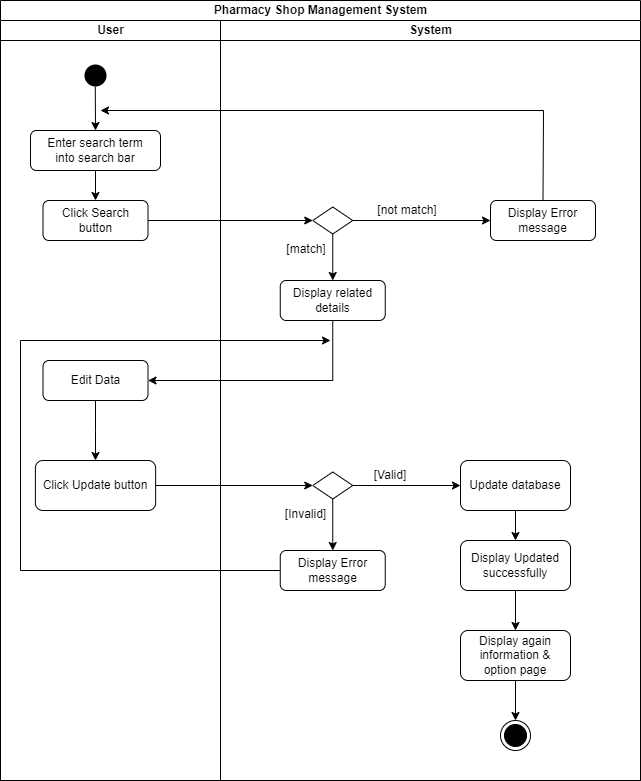
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Figure 12 – Update Information Activity Diagram

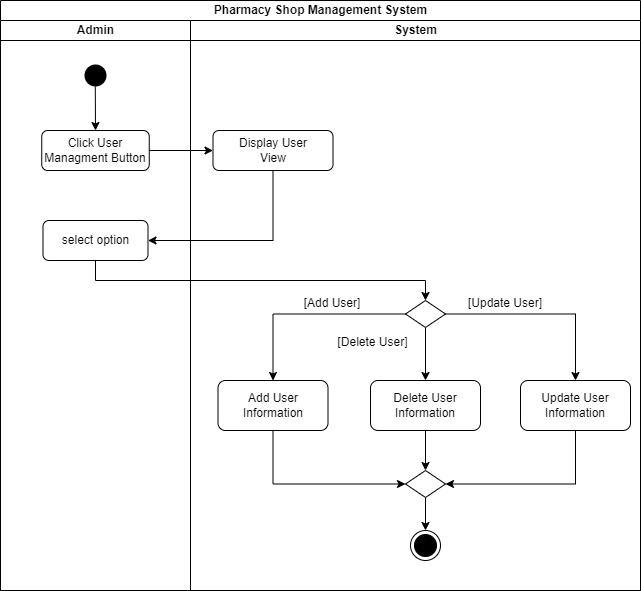
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Figure 13 – User Management Activity Diagram

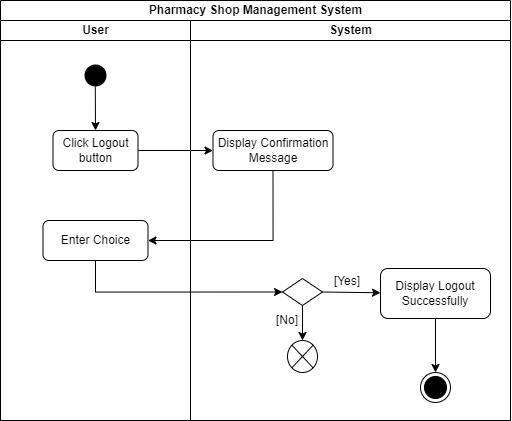
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Figure 14 Log Out Activity Diagram

**2.4 Sequence Diagrams**

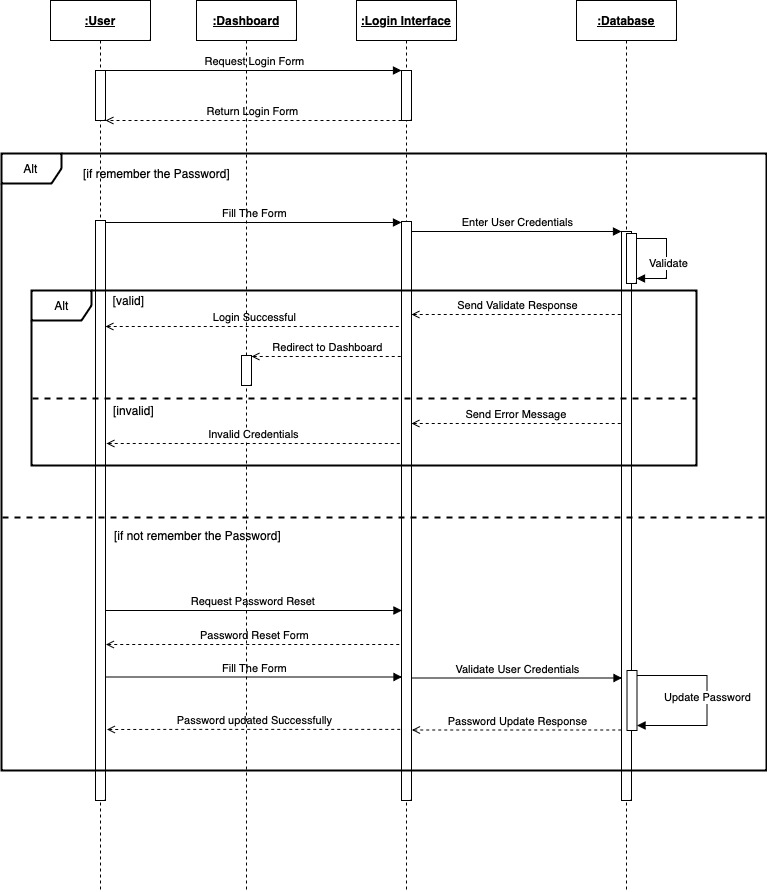
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Figure 15 – Log In Sequence Diagram

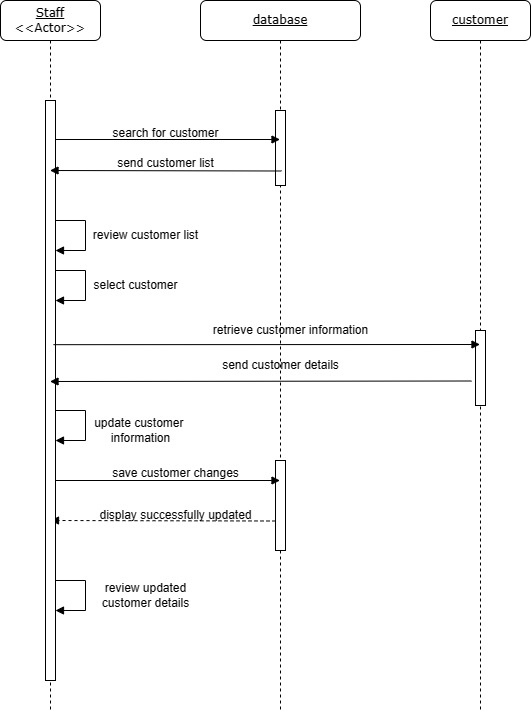
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Figure 16 - Manage Customer Sequence Diagram

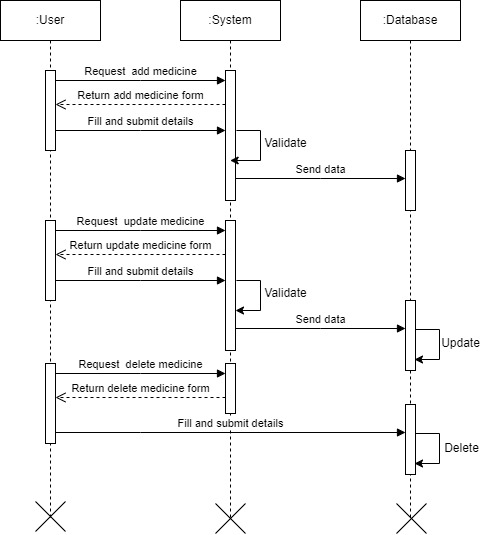
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Figure 17 – Medicine Management Sequence Diagram

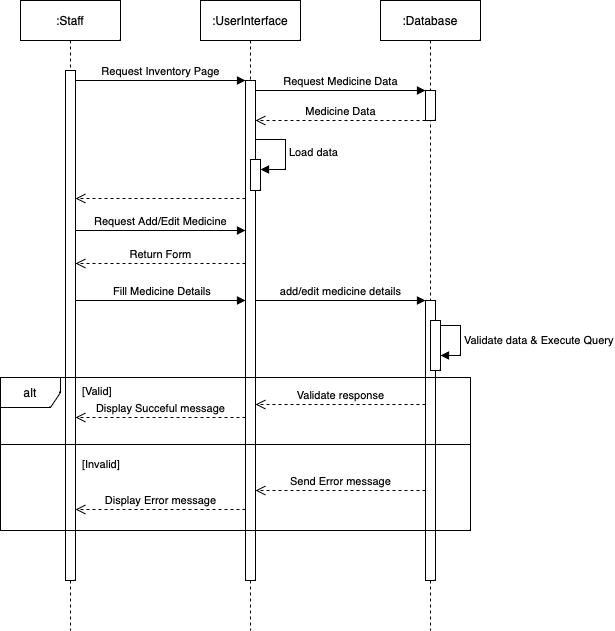
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Figure 18 - Inventory Management Sequence Diagram

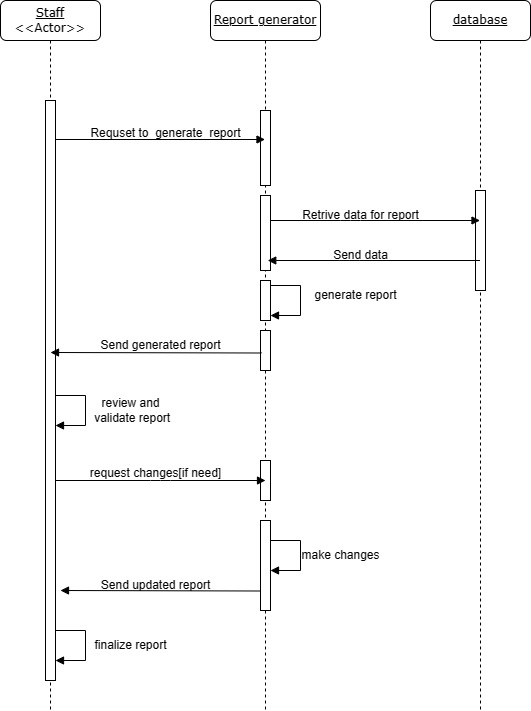
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Figure 19 – Report generating Sequence Diagram

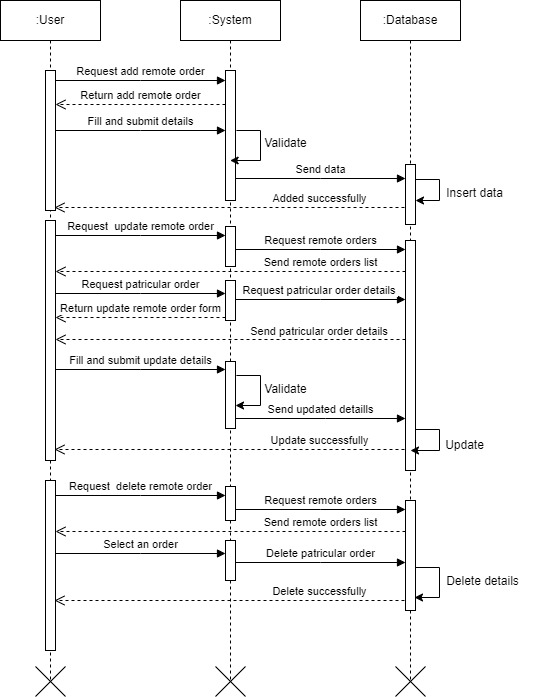
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Figure 20 – Remote Order Sequence Diagram

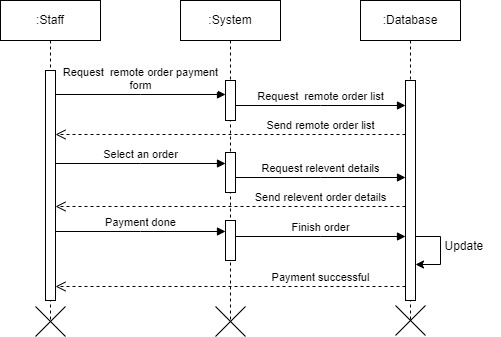
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Figure 21 – Remote payment Sequence Diagram

**2.5 ER Diagram**

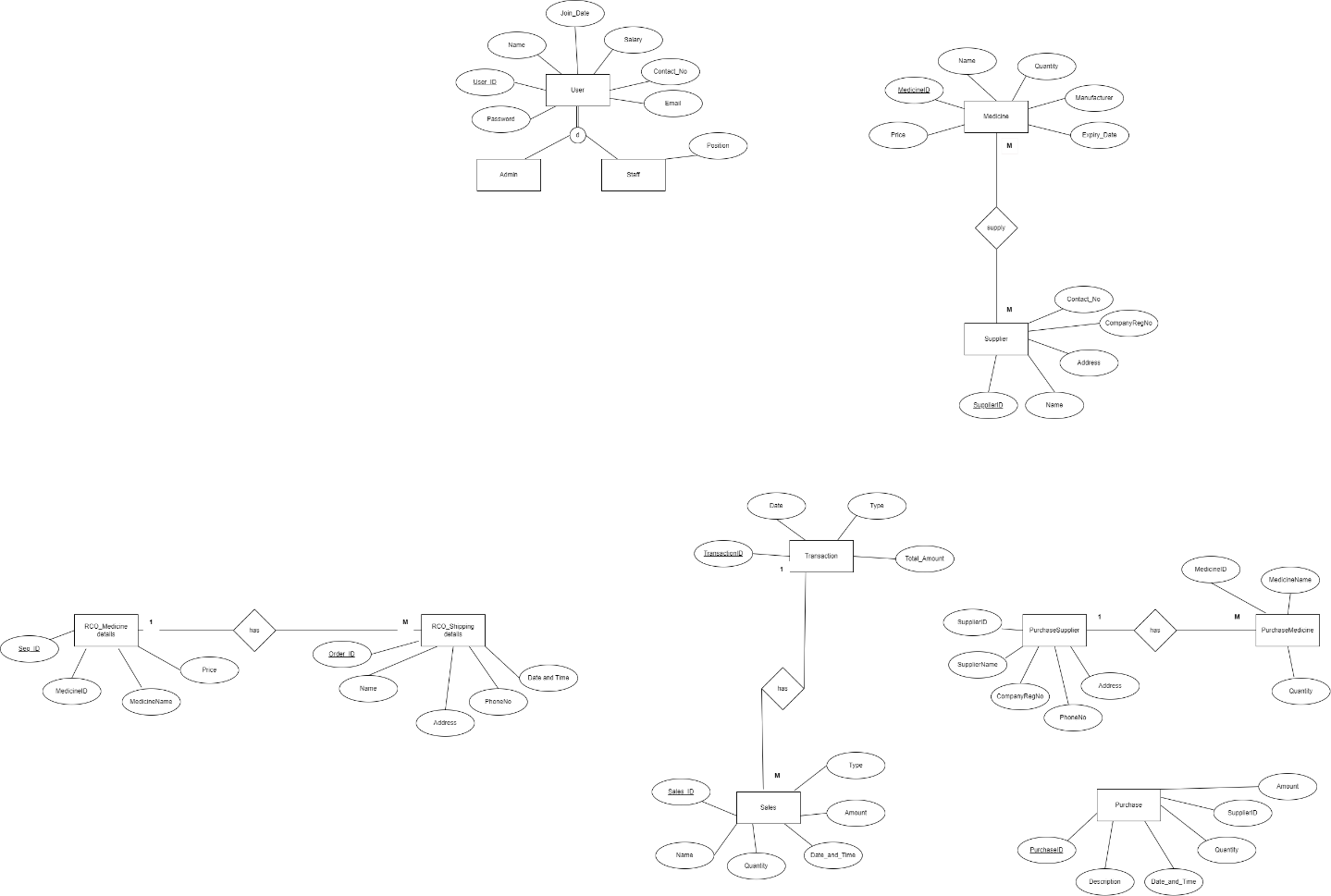
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Figure 22 – ER Diagram

**2.6 Software Requirement Specification**

**Functional requirements**

A Functional Requirement is a document that describes the essential technical requirements of a system or feature, including the procedures by which it can be determined that requirements have been met. The following points represent the functional requirements of pharmacy management system.

|  |  |
| --- | --- |
| **ID** | **Description** |
| **Admin** | |
| 1 | Shall be able to log in to the system. |
| 2 | shall be able to create, view, update, delete, customers. |
| 3 | Shall be able to create, view, update, delete staff. |
| 4 | Shall be able to manage user accounts. |
| 5 | Shall be able to generate and manage reports. |
| 6 | Shall be able to add, delete, update, and view medicine. |
| 7 | Shall be able to manage customer orders. |
| 8 | Shall be able to manage payments. |
| 9 | Shall be able to view available medicine stock. |
| **Staff** | |
| 1 | Shall be able to log in to the system. |
| 2 | Shall be able to view customer orders. |
| 3 | Shall be able to manage payments. |
| **Customer** | |
| 1 | Shall be able to log in to the system. |
| 2 | Shall be able to place orders. |
| 3 | Shall be able to make payments. |

**Non-functional requirements**

Non-functional requirements are the requirements that are not directly affect to the system. [1]

* Performance and scalability. How fast does the system return results? How much will this performance change with higher workloads?
* Portability and compatibility. Which hardware, operating systems, and browsers, along with their versions does the software run on? Does it conflict with other applications and processes within these environments?
* Reliability, maintainability, availability. How often does the system experience critical failures? How much time does it take to fix the issue when it arises? And how is user availability time compared to downtime?
* Security. How well are the system and its data protected against attacks?
* Localization. Is the system compatible with local specifics?
* Usability. How easy is it for a customer to use the system?

**Chapter 3: Proposed System Design**

**3.1 Architecture Design**

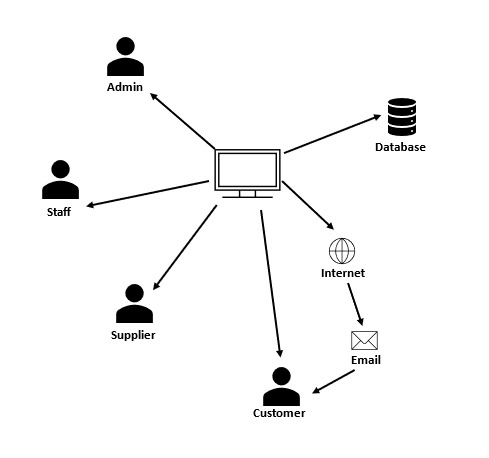


Figure 23 - Architectural Design

**3.2 Proposed System Interfaces**

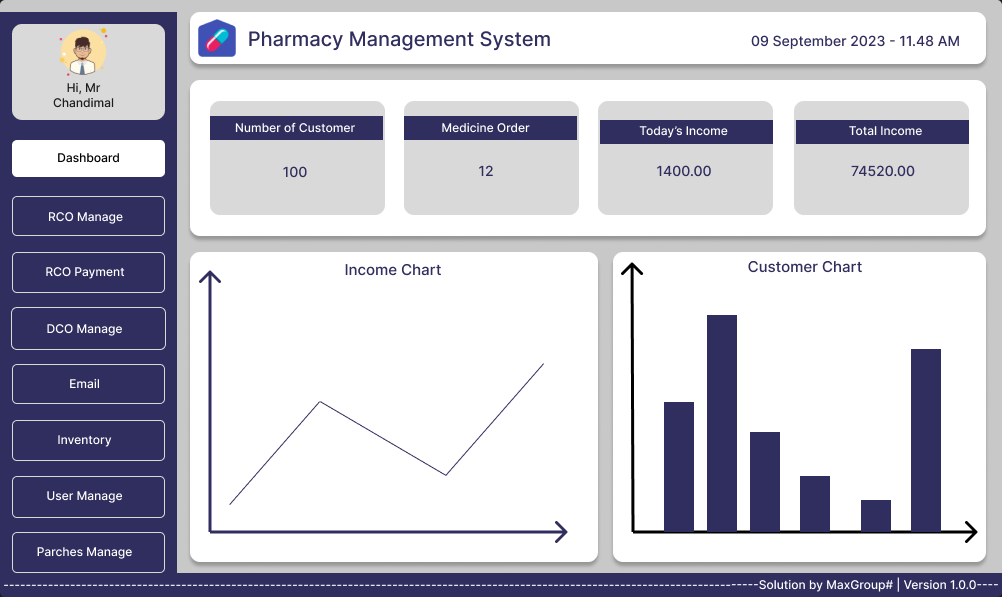


Figure 24 - Dashboard

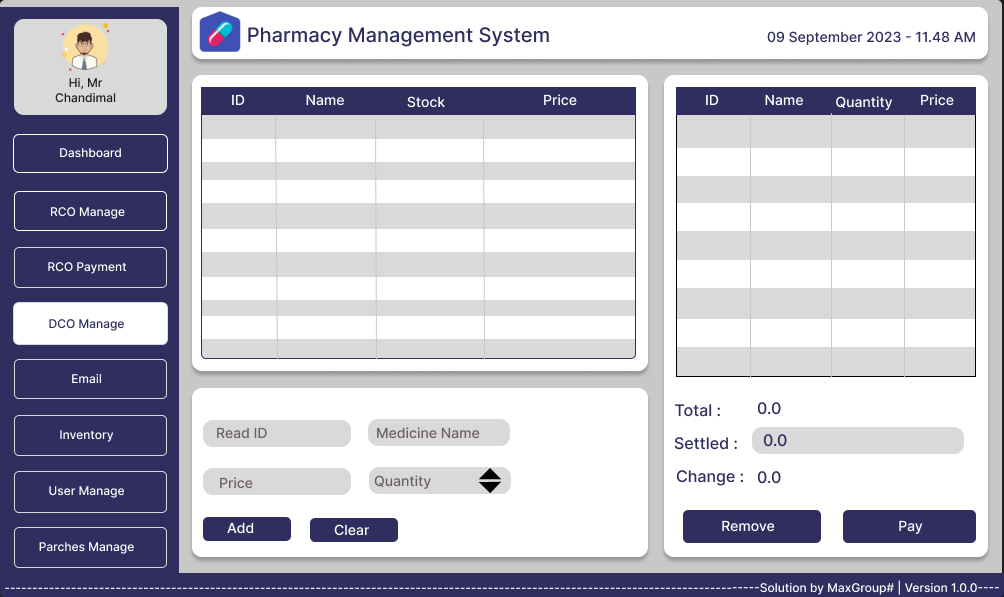


Figure 25 - Direct Customer Order Interface

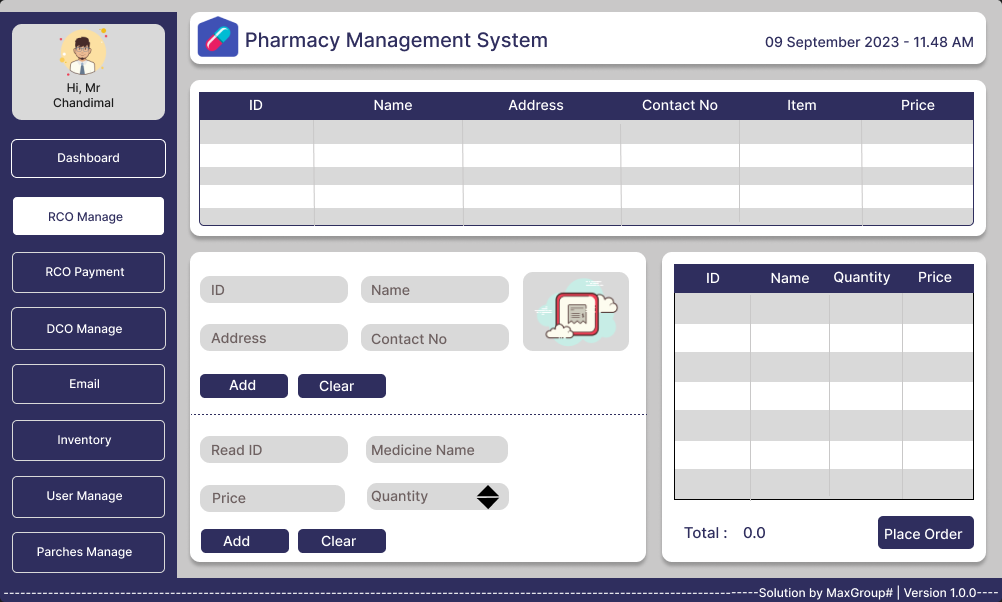


Figure 26 - Remote Customer Order Interface

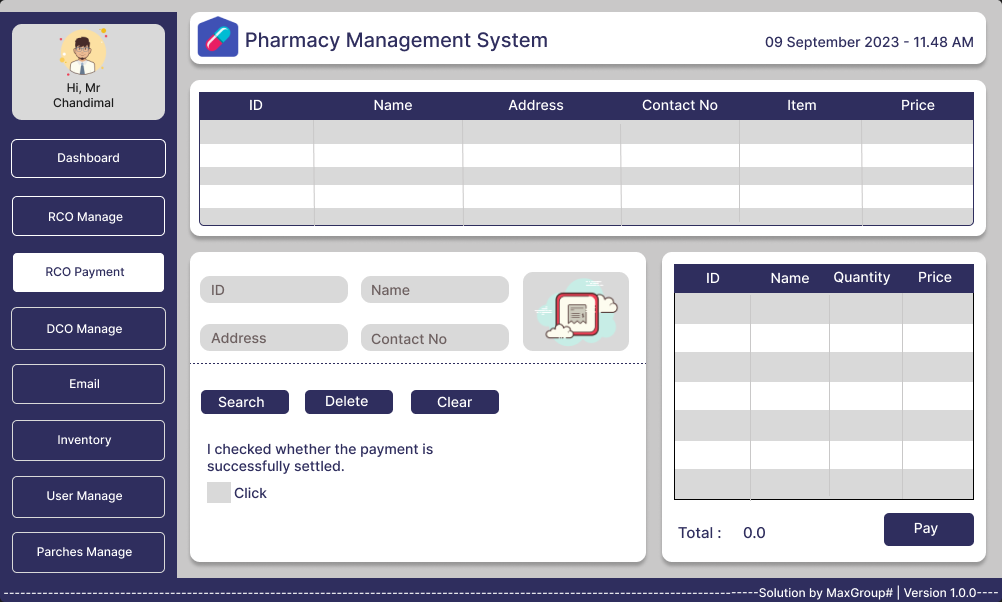


Figure 27 - Remote Customer Payment Interface

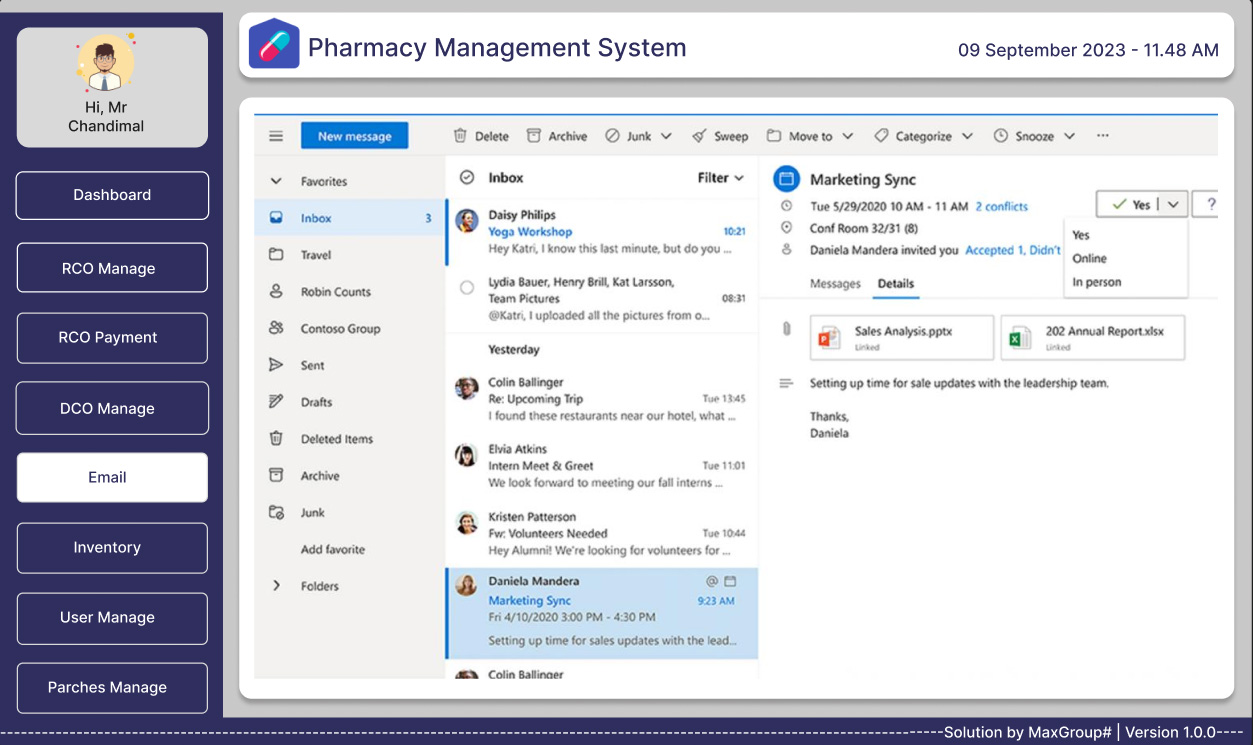


Figure 28 - Email Interface

**3.3 Report Design**

**3.4 Test plan for the system**

**3.5 Proposed Software Engineering Methodologies**

**Conclusion**

**References**

[1] <https://www.altexsoft.com/blog/non-functional-requirements/#:~:text=Non%2Dfunctional%20requirements%20or%20NFRs,reliability%2C%20data%20integrity%2C%20etc>.