



Sri Lanka Institute
of Information
Technology

ROYAL PHARMACY MANAGEMENT SYSTEM

Information Technology Project – ITP2080

ITP_WD_B02_11

Final Report

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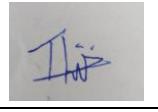
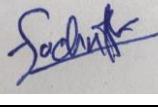
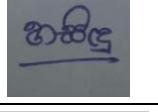
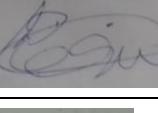
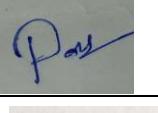
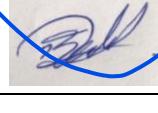
Declaration

We declare that this project report or part of it was not a copy of a document done by any organization, university any other institute or a previous student project group at SLIIT and was not copied from the Internet or other sources.

Project Details

Project Title	Royal pharmacy management system
Project ID	ITP_WD_B02_11

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Abstract

At present, majority of the tasks in a Pharmacy such as admitting Customers, managing Pharmacy staff, and maintaining Pharmacy finance details are done manually. A large amount of paperwork and documents are used in these activities, which makes the process tedious and inefficient.

The objective of this project is to build a web application that makes managing tasks in a Pharmacy easier and more efficient. The web application is to be used by the Pharmacy staff. As majority of the processes such as calculations and data validations are automated users can easily perform the relevant activities with minimal errors.

Information required to build this system was collected by doing research on how tasks are managed in a Pharmacy.

'ROYAL Pharmacy' is a Pharmacy Management System that automates duties such as customer management, pharmacy staff management, pharmacy finance management, and many other management activities in a pharmacy.

This is also created with MERN stack technology.

Acknowledgement

We would want to offer our heartfelt appreciation to everyone who helped and guided us in making our endeavor a success.

A special thank you goes out to the lecturer in charge of the Information Technology Project (ITP), Mr. Harshanath for taking his valuable time to clarify our doubts regarding the project. We would also like to thank Mr.Harshanath, the project supervisor of our group for supporting and guiding us throughout the entire semester.

In addition, we would like to take his opportunity to thank all our friends and family, as well as our fellow batch mates and senior students for helping and supporting us with their ideas and advice.

Finally, a big thank you goes out to all the group members of WD_B02_ITP_11 who gave their maximum effort and commitment to complete the project successfully.

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1. Introduction

1.1 Problem Statement

Activities in a pharmacy should be done quickly and efficiently to provide excellent service to the customers. Therefore, the management system used in pharmacies should be able to function rapidly and process data without any delay. In addition, the methods used in pharmacies must be reliable and produce accurate results. Pharmacies deal with sensitive data such as customer test results, and inaccurate details may lead to dangerous consequences.

Currently, most pharmacy management systems perform most of their management tasks manually. Large amounts of documents and prescriptions are handled each day. As a result, processes are delayed, and searching for data can be tedious. Moreover, there is a higher possibility of errors in calculations and data processing in manual systems, which reduces the reliability of the data.

As the current management system used in pharmacies lacks efficiency and reliability, it is necessary to develop a plan that makes the work in a pharmacy much faster, more reliable, and more efficient.

1.2 Product Scope

'Royal Pharmacy management System' is a computerized Pharmacy Management System that automates the management tasks within a pharmacy. Using '*The Royal Pharmacy Management System*', data entering, processing and calculations can be done faster and more accurately. The management system uses a cloud database for data storage which reduces the physical storage space required for storing pharmacy data and minimizes the amount of paperwork handled. Customer records and details can be retrieved faster than a manual system. Thus increased, sing the pharmacy's efficiency.

The '*Royal Pharmacy management System*' users can be any team member working in the pharmacy.

The functions handled by the system are,

1. Customer Management

- Adding, updating, and deleting customers' personal information the pharmacy has accepted.
- Obtain a report of customer information at the end of the month.
- Obtaining customer feedback.

2. Staff Management

- The Main user is the HR manager of the pharmacy.
- Tasks include registering new staff, managing details of existing pharmacy staff, calculating team member salaries, and generating a Salary Report at the end of each month, which shows the salary received by employees who worked in the pharmacy during the month.

3. Delivery Management

- Add delivery details and update the order.
- Search orders to deliver to customers and delete delivery orders after proof.
- Make delivery details report at the end of the month of pharmacy.

4. Inventory Management

- Add all types of inventory item details to the system and make expiry alerts to each item.
- Search for required items in inventory.
- Delete or Update inventory details from time to time.
- Generate inventory report at the end of the month

5. Order Management

- Add the orders by customers.
- Update the added order by the customer and, after processing, delete them.
- Generate the customer report by the system already handled by the admin.
- Search the customer details by admin.

6. Supplier Management

- The Main user is the supplier Manager of the pharmacy
- Tasks include adding new suppliers, updating supplier details, and searching supplier details.
- Manager maintains and records supplier details, then stores them in the database.
- Supplier manager can generate the supplier report at the end of the month

7. Finances Management

- The Main user is the Finance Manager of the pharmacy.
- Tasks include adding, updating, and deleting payment details of the pharmacy.
- Generating the bill and calculating the profit/loss of the pharmacy at the end of the month based on income and expense details.
- Generating a Finance Report showing the financial details for the month.

8. Sales Management

- The Main user is the Sales Manager of the pharmacy
- Tasks include adding sales, deleting sales, and updating sales details of the pharmacy.
- Manager can search and update sales details.
- Generating the Sales Report showing the sales details for the month.

1.3 Project Report Structure

Chapter 1 – Requirements and Analysis

Discusses the requirements and the scope of the system through the use of diagrams. The functions performed by each user and the steps followed under each part can be understood by studying the charts.

Chapter 2 – Design

Depicts the design details of the system. Gives a brief idea about the processing in the system under each function through sequence diagrams and state chart diagrams.

Snapshots of interfaces are included to familiarize the user interface reader.

Chapter 3 – Implementation

Discuss the choice of technology used for the project and the reasons for selecting them. It also states the advantages of using the technologies chosen for both the development team and the users.

Chapter 4 – Testing

Includes test cases for the primary functions to ensure the system functions correctly.

Chapter 5 – Conclusion

States the conclusion reached by the development team at the end of the project. Discusses both positive and negative points in the developed system and the benefits of the system to the client.

2. Methodology

2.1 Requirements and Analysis

2.1.1 Use case Diagrams

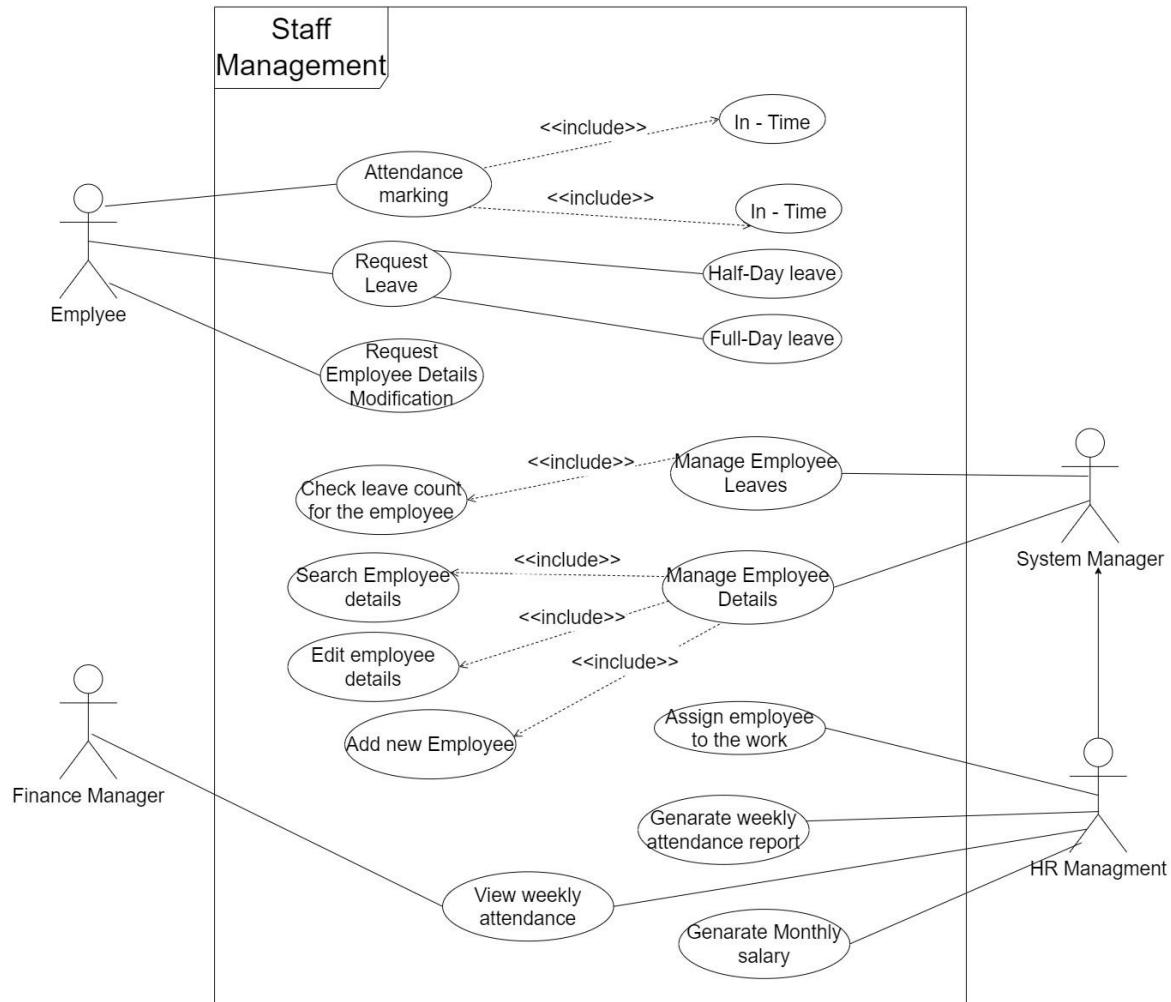


Figure 2.1.1-1 Use Case Diagram - Pharmacy Staff Management

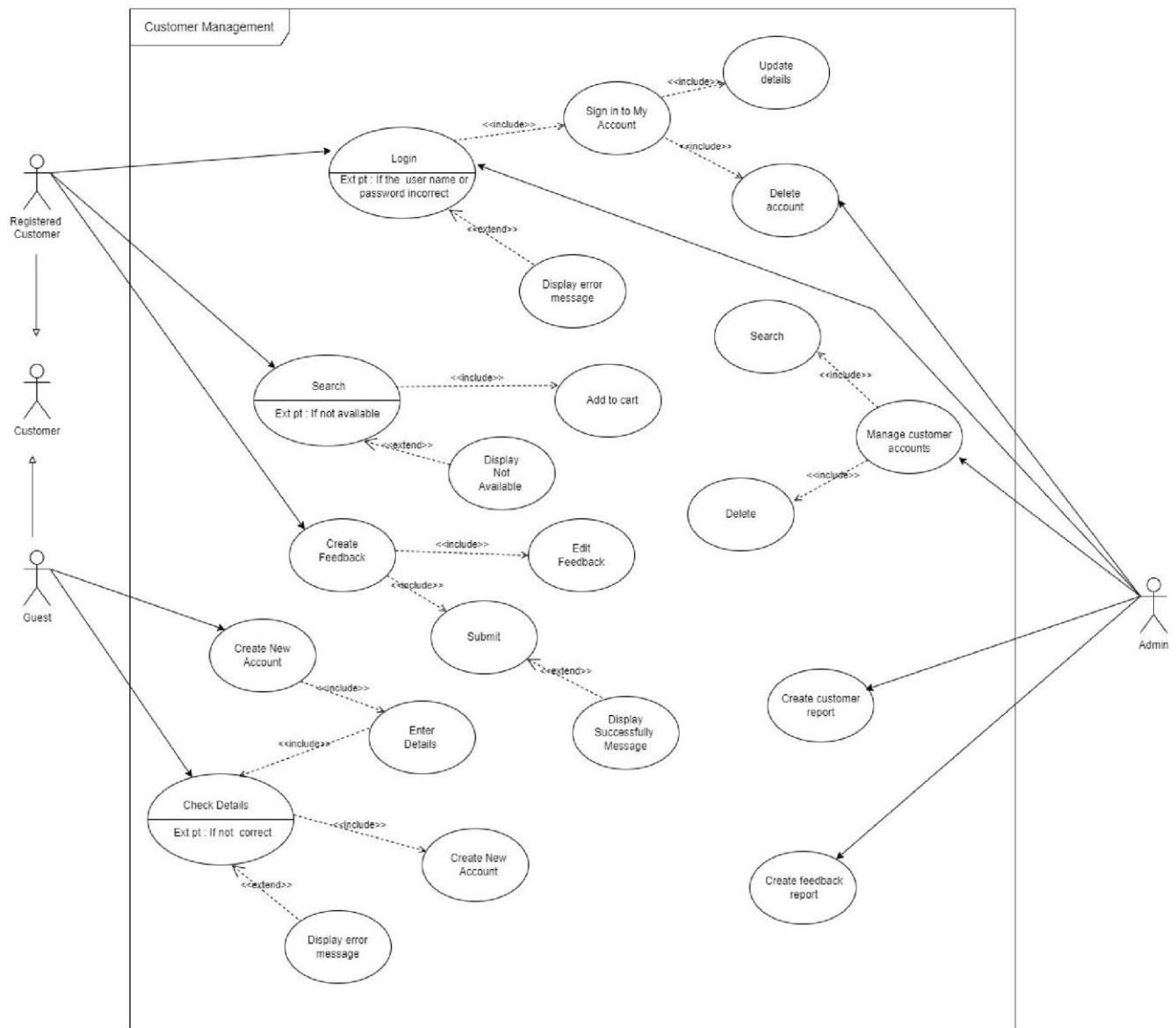


Figure 2.1.1-2 Use Case Diagram – Customer Management

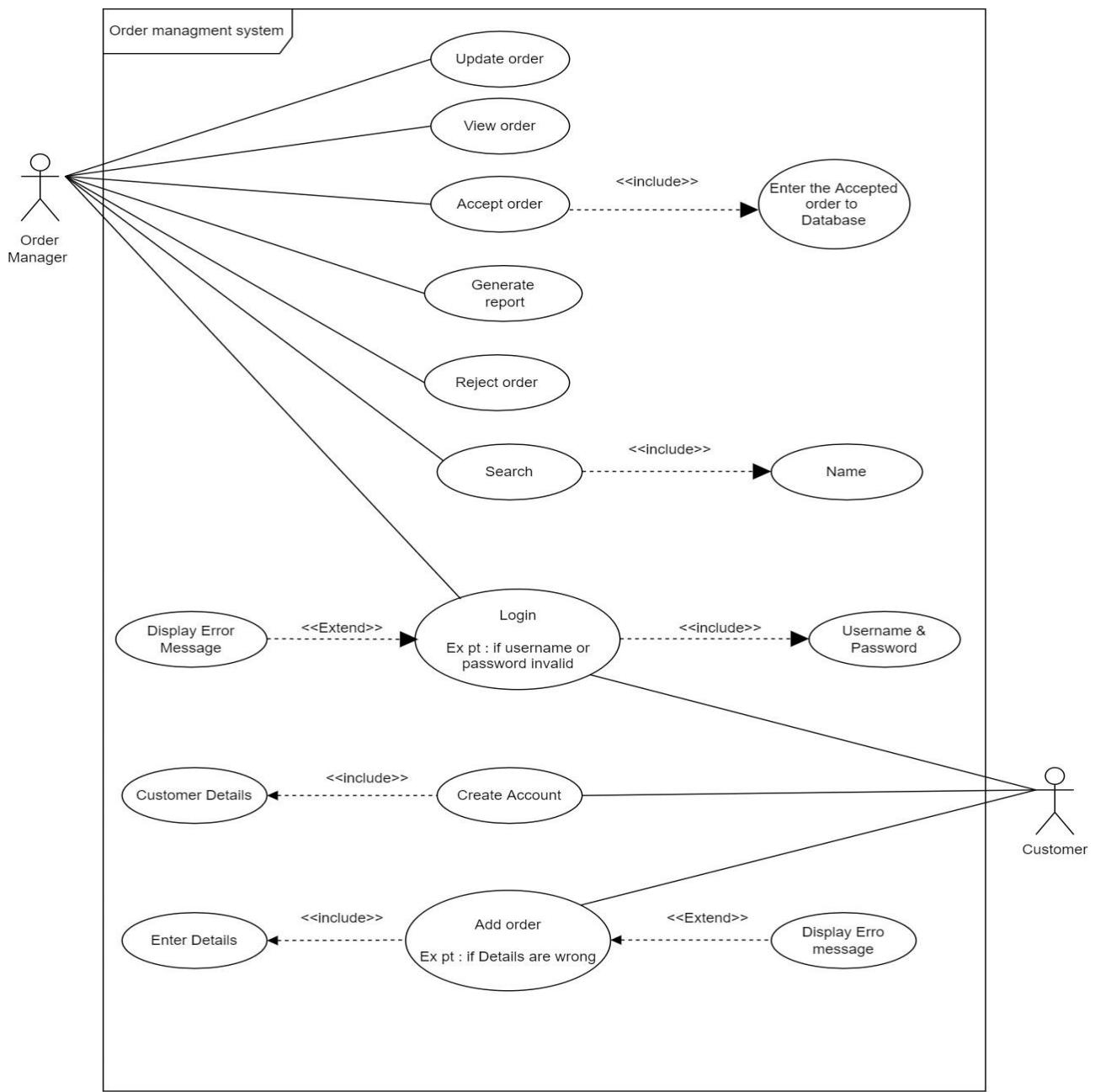


Figure 2.1.1-3 Use Case Diagram – Order Management



Figure 2.1.1-4 Use Case Diagram – Sales Management

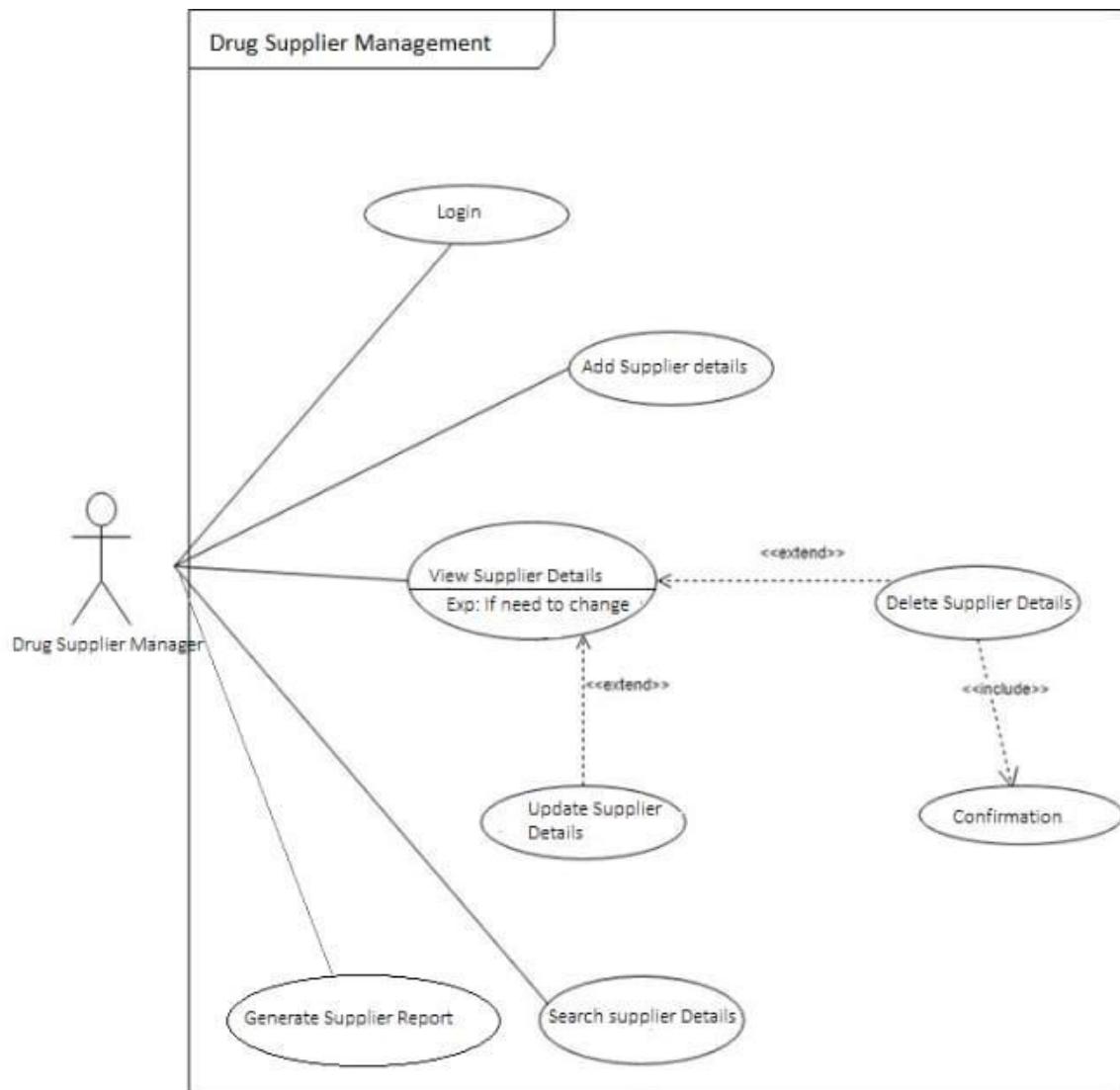


Figure 2.1.1-5 Use Case Diagram – Supplier Management

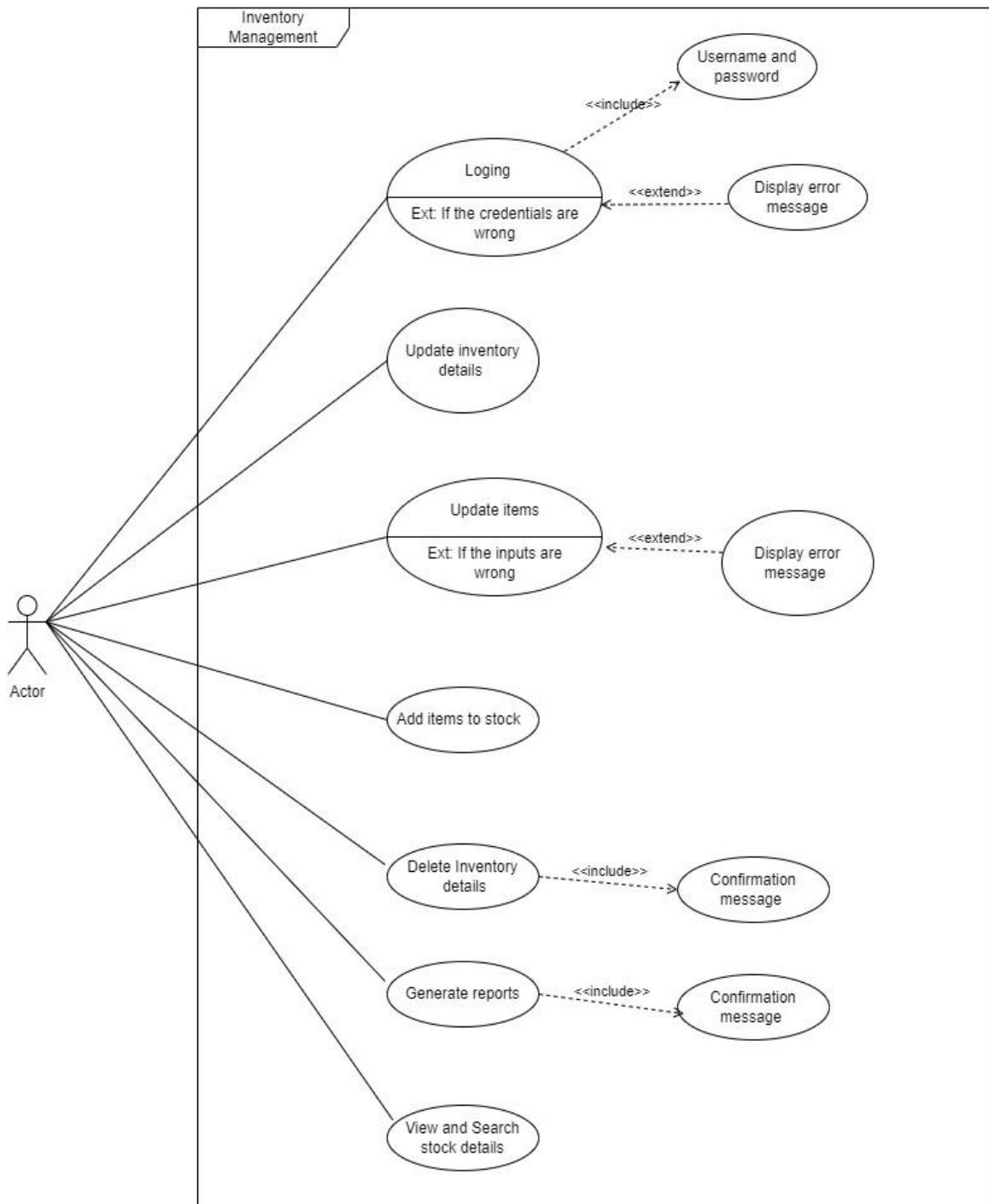


Figure 2.1.1-6 Use Case Diagram – Inventory Management

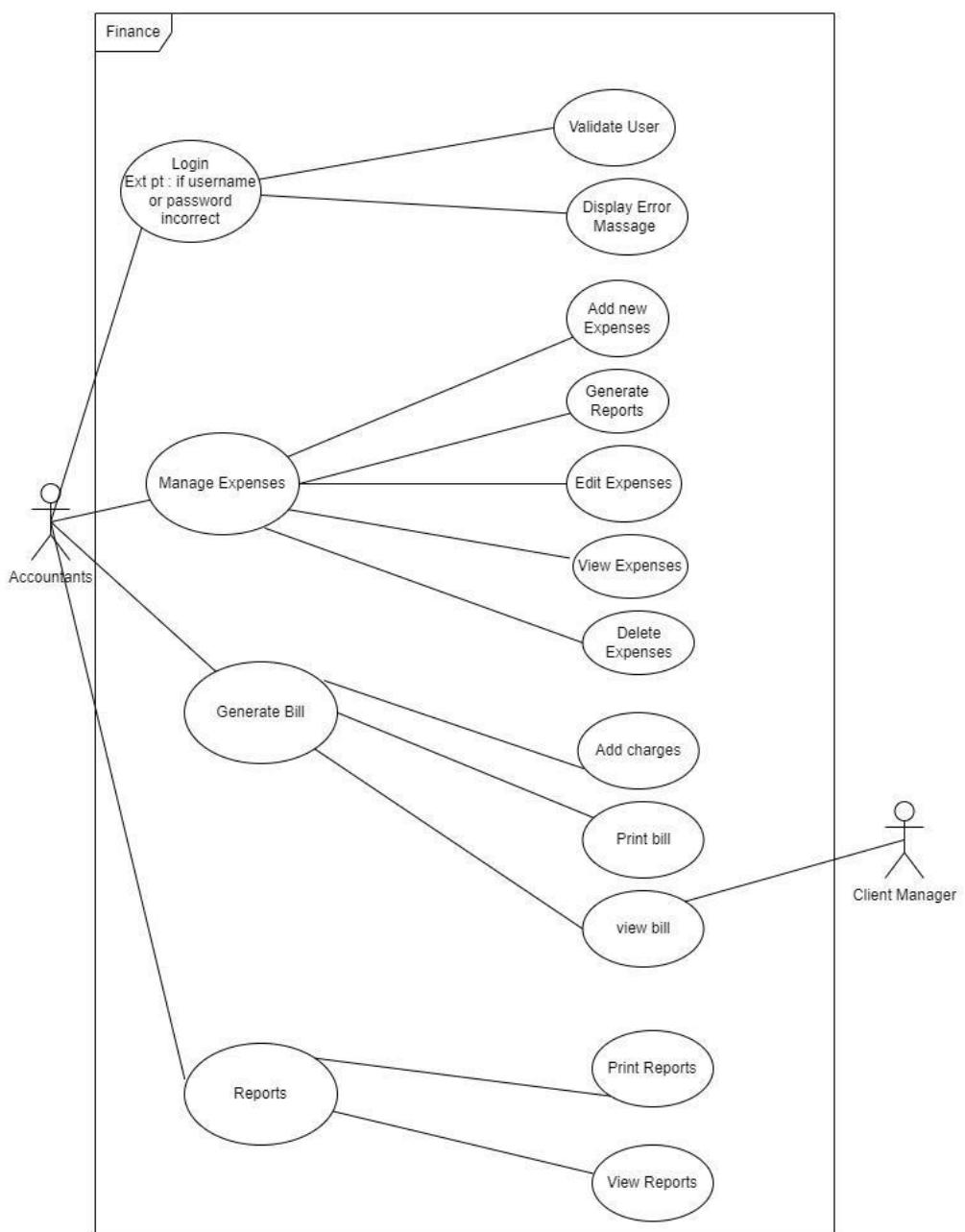


Figure 2.1.1-7 Use Case Diagram – Finances Management

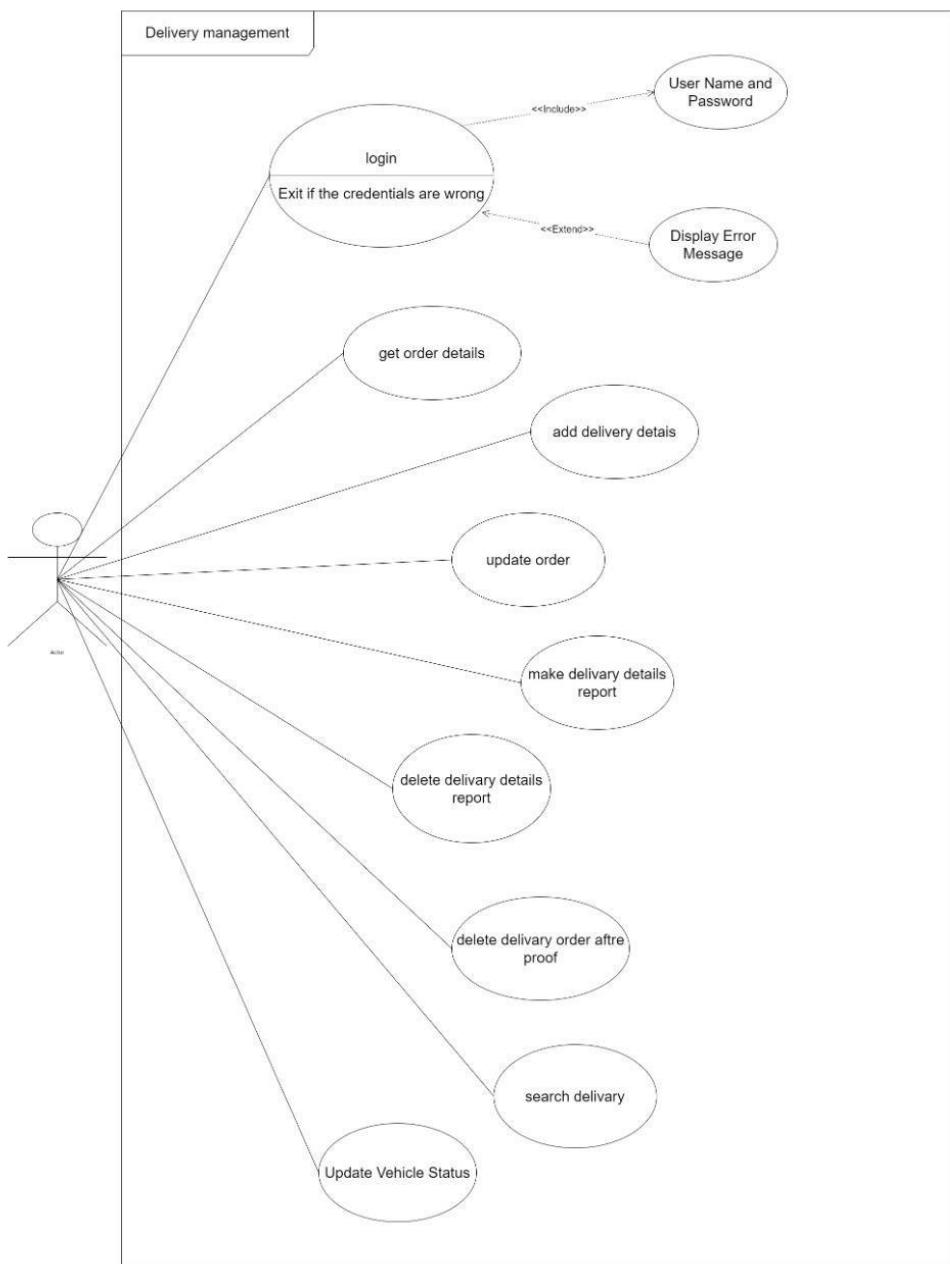


Figure 2.1.1-8 Use Case Diagram – Delivery Management

2.1.2 Activity Diagrams

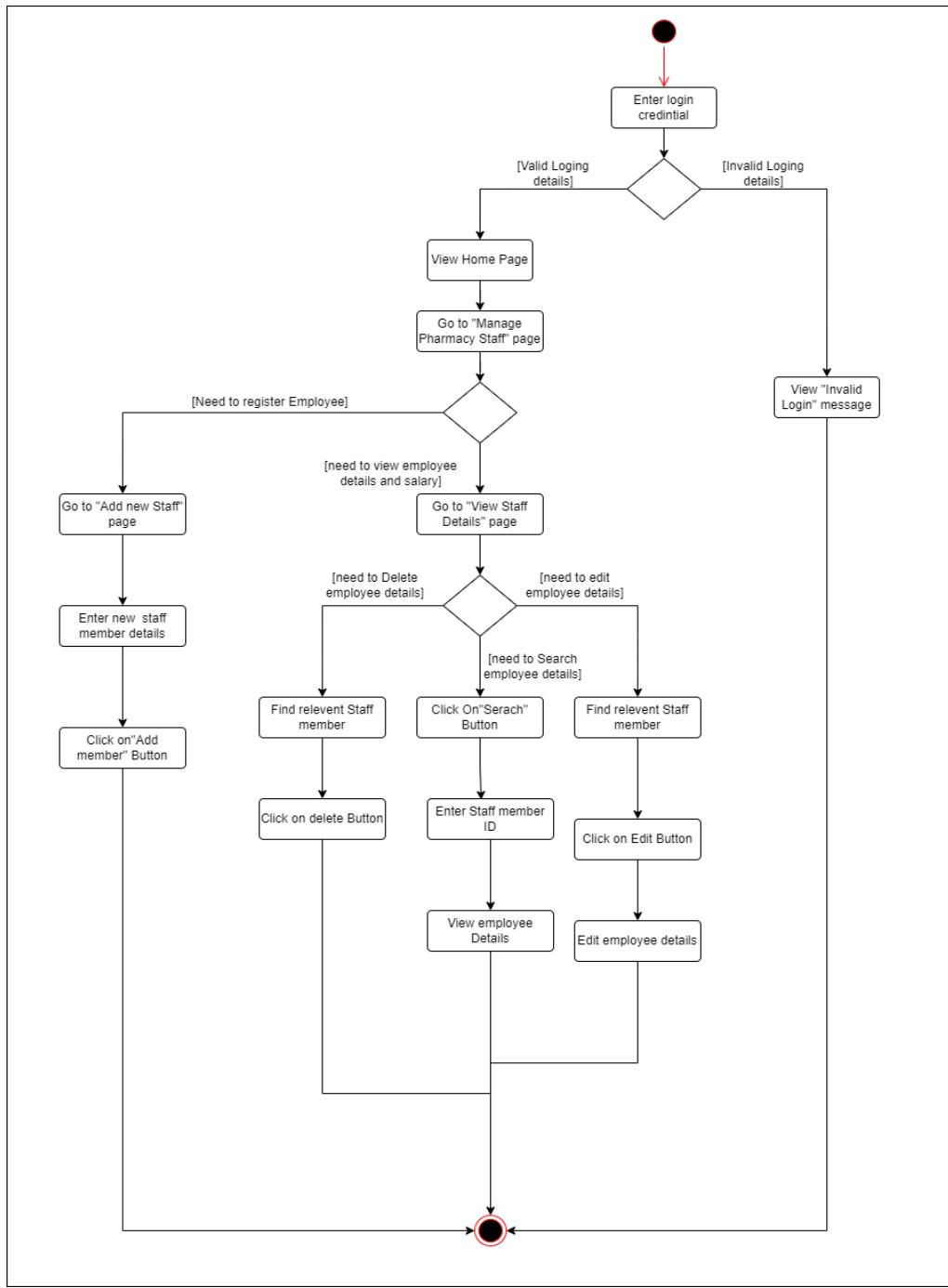


Figure 2.1.2-1 Activity Diagram – Staff Management

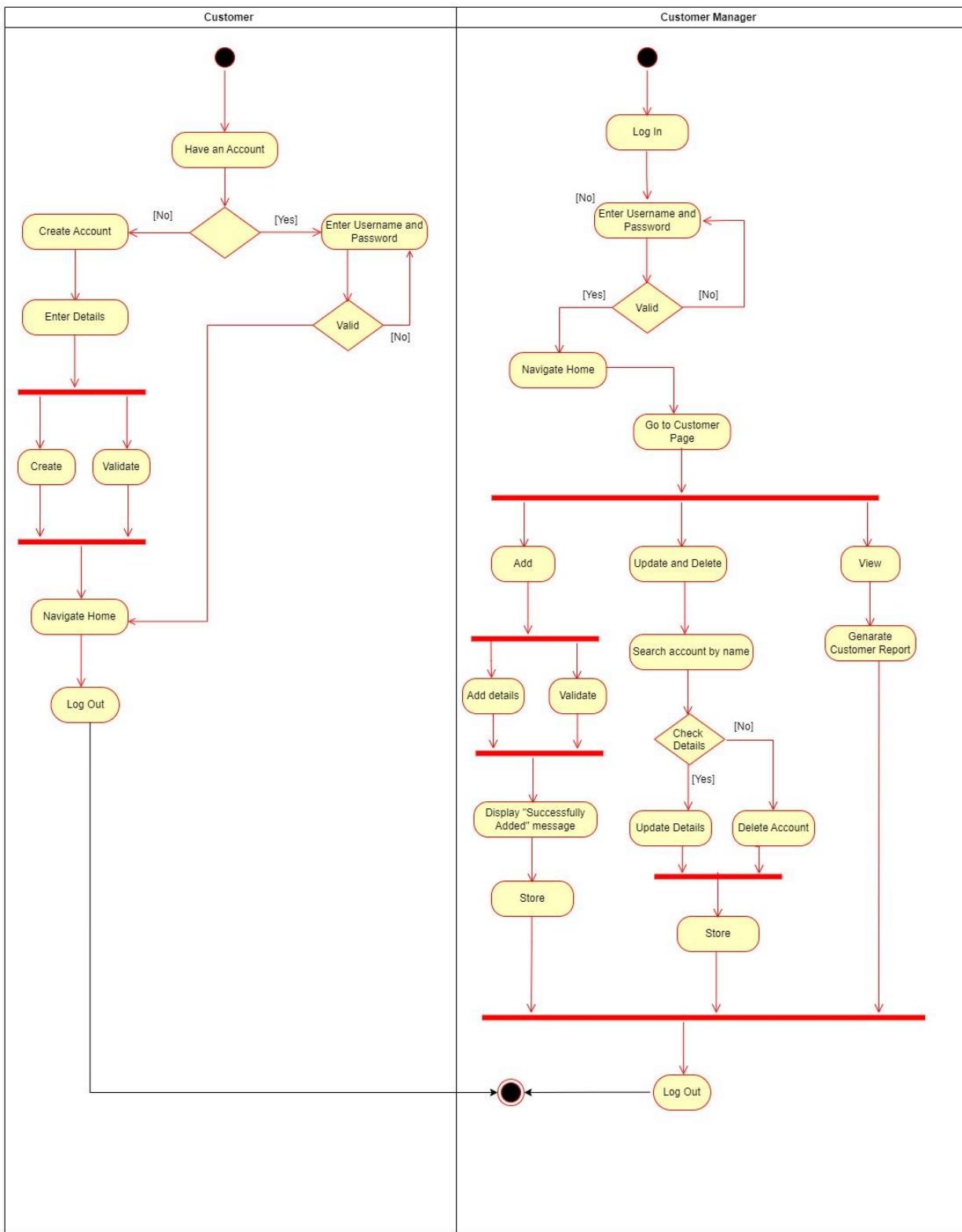


Figure 2.1.2-2 Activity Diagram – Customer Management

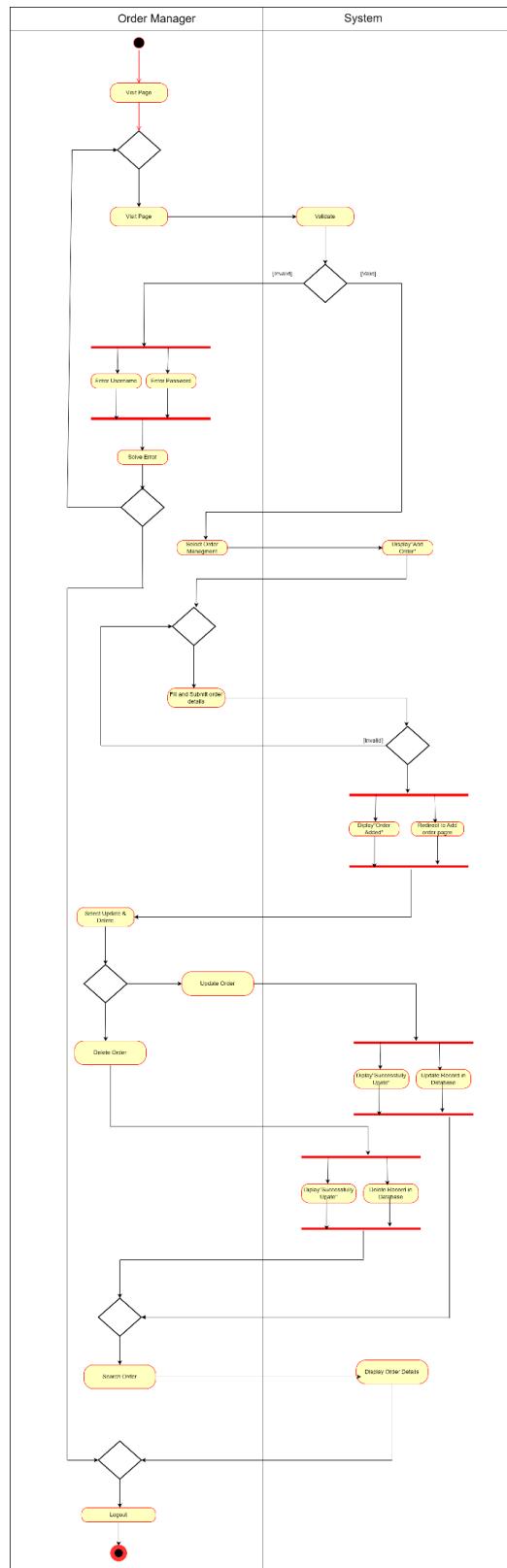


Figure 2.1.2-3 Activity Diagram – Order Management

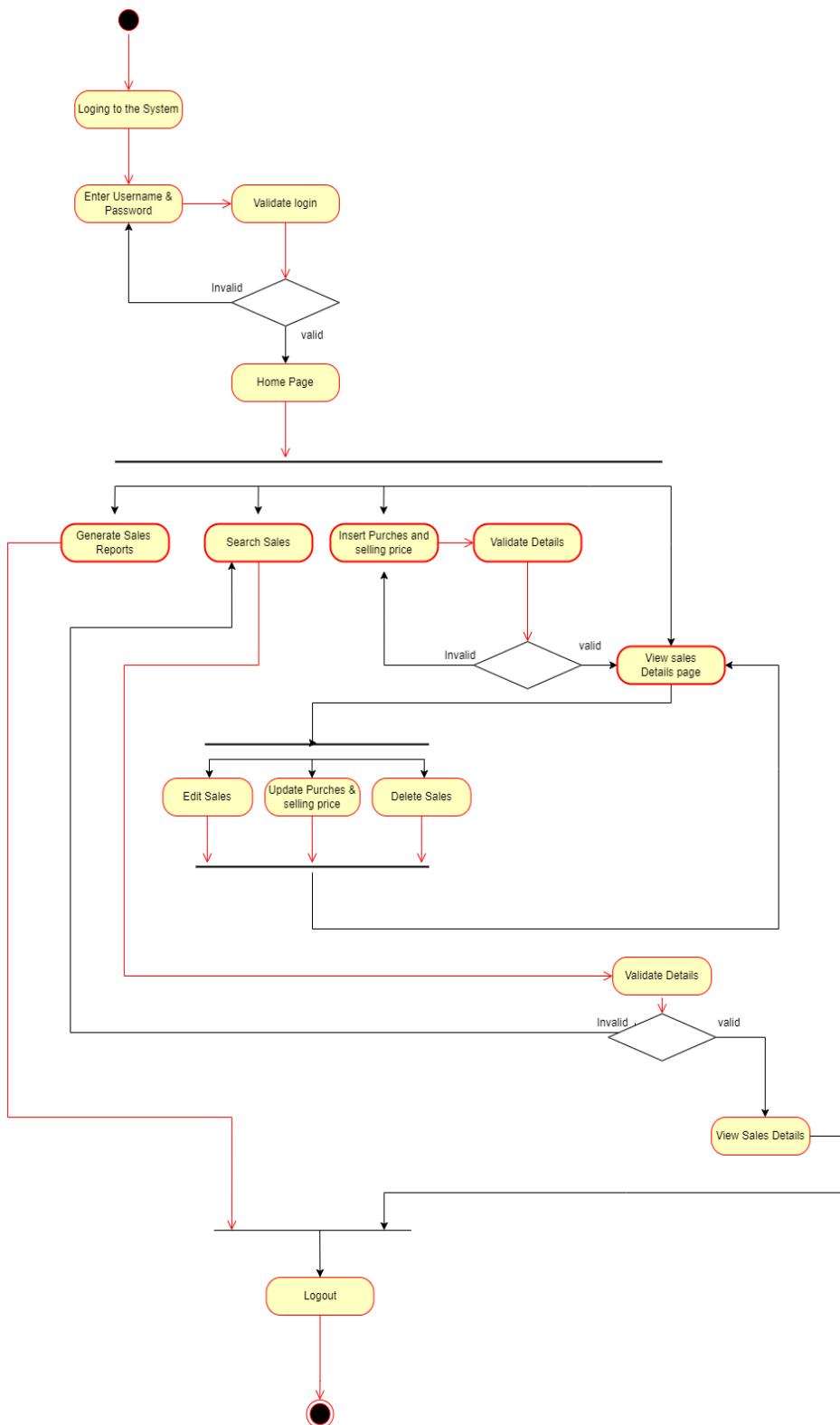


Figure 2.1.2-4 Activity Diagram – Sales Management

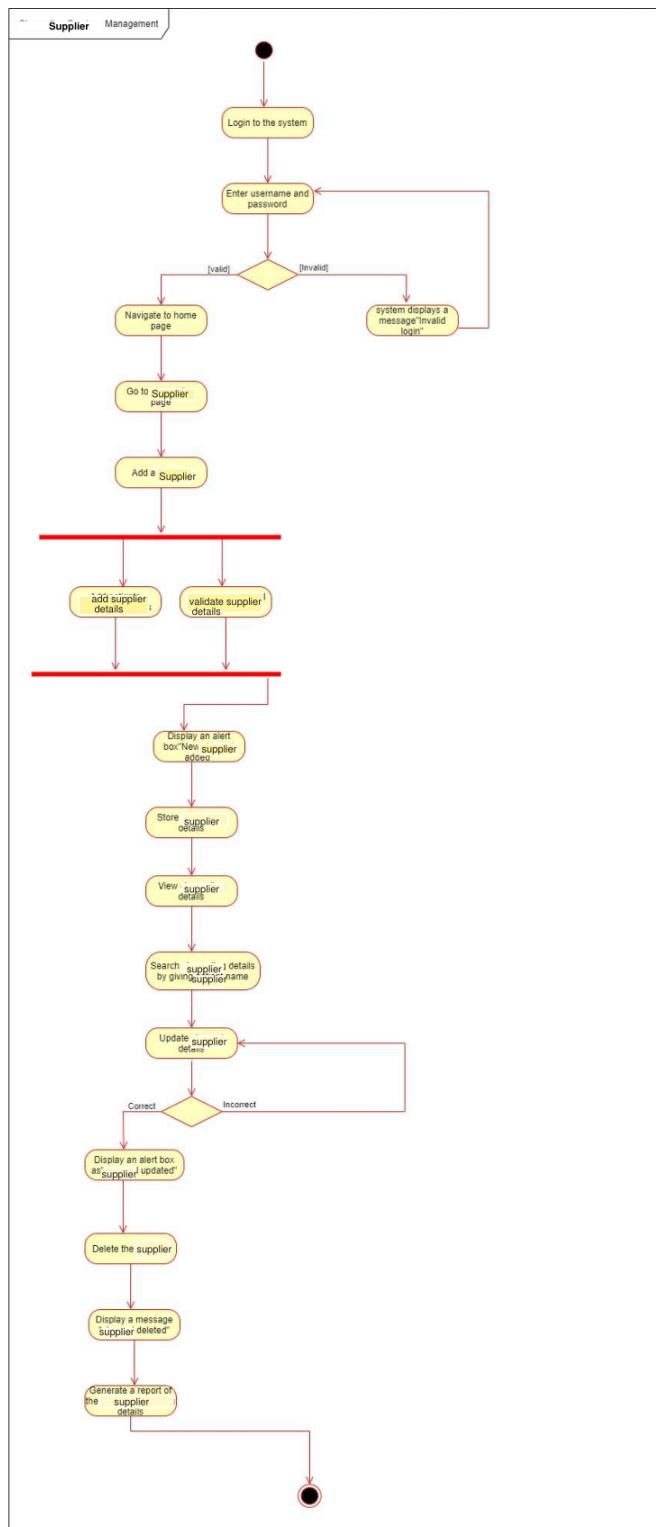


Figure 2.1.2-5 Activity Diagram – Supplier Management

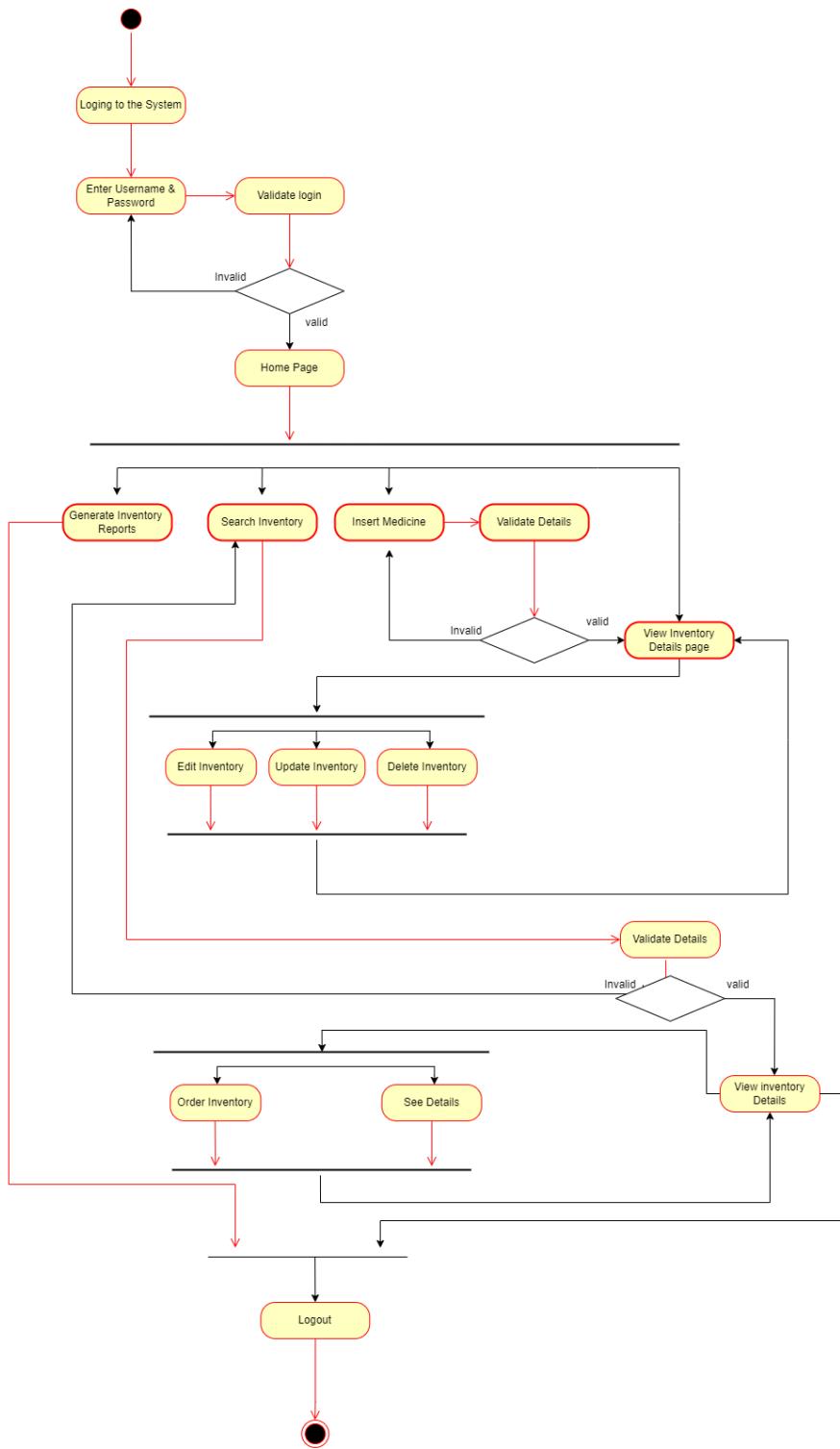


Figure 2.1.2-6 Activity Diagram – Inventory Management

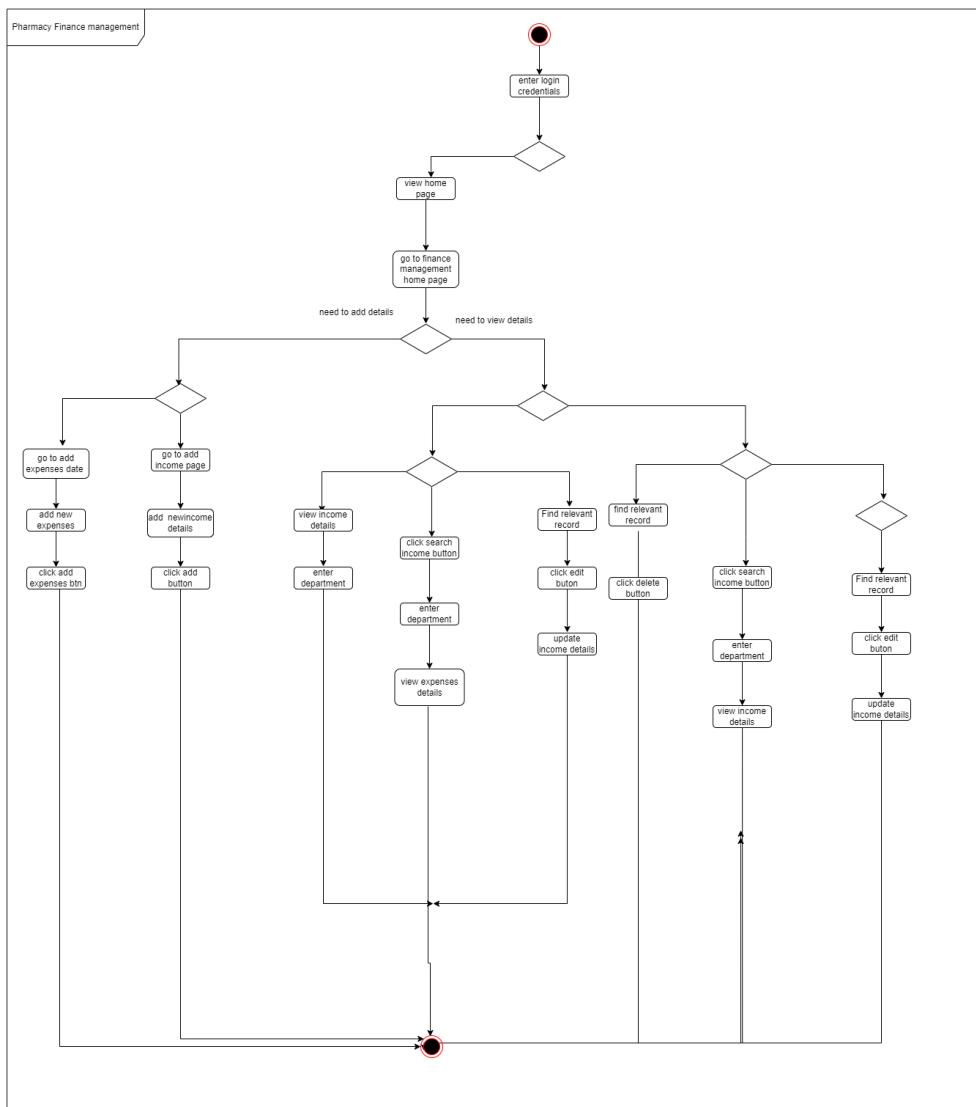


Figure 2.1.2-7 Activity Diagram – Finance Management

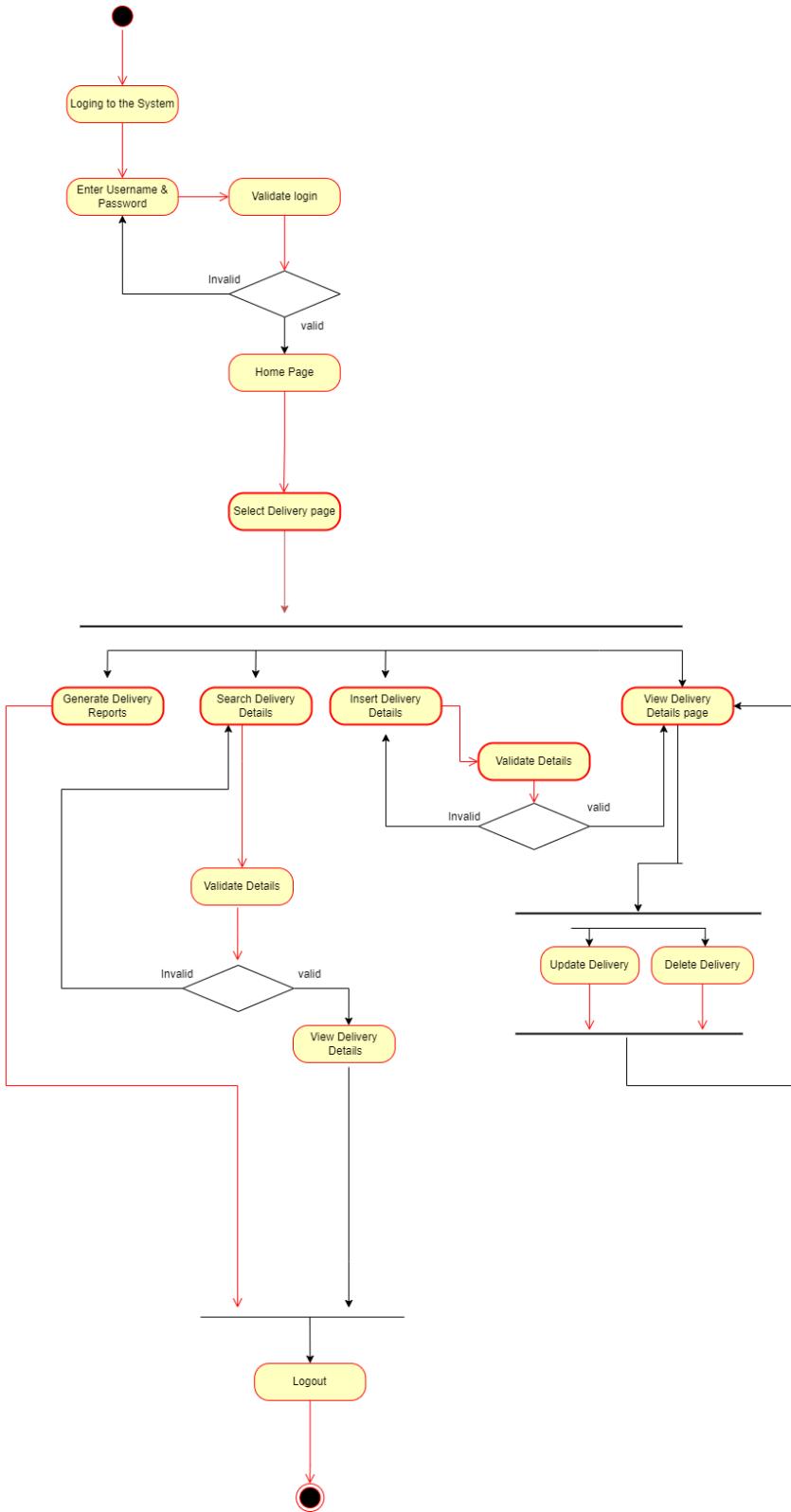


Figure 2.1.2-8 Activity Diagram – Delivery Management

2.2 Design

2.2.1 High Level Architecture Diagram

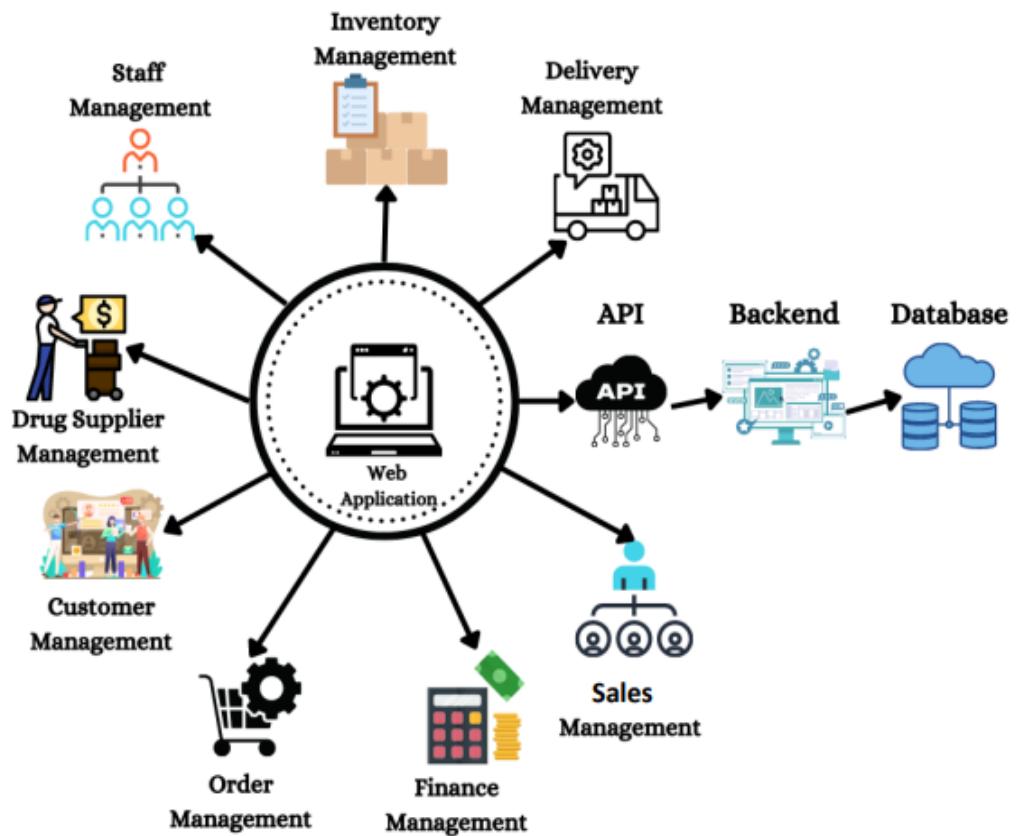


Figure 2.2.1 - High Level Architecture Diagram

2.2.2 ER Diagram

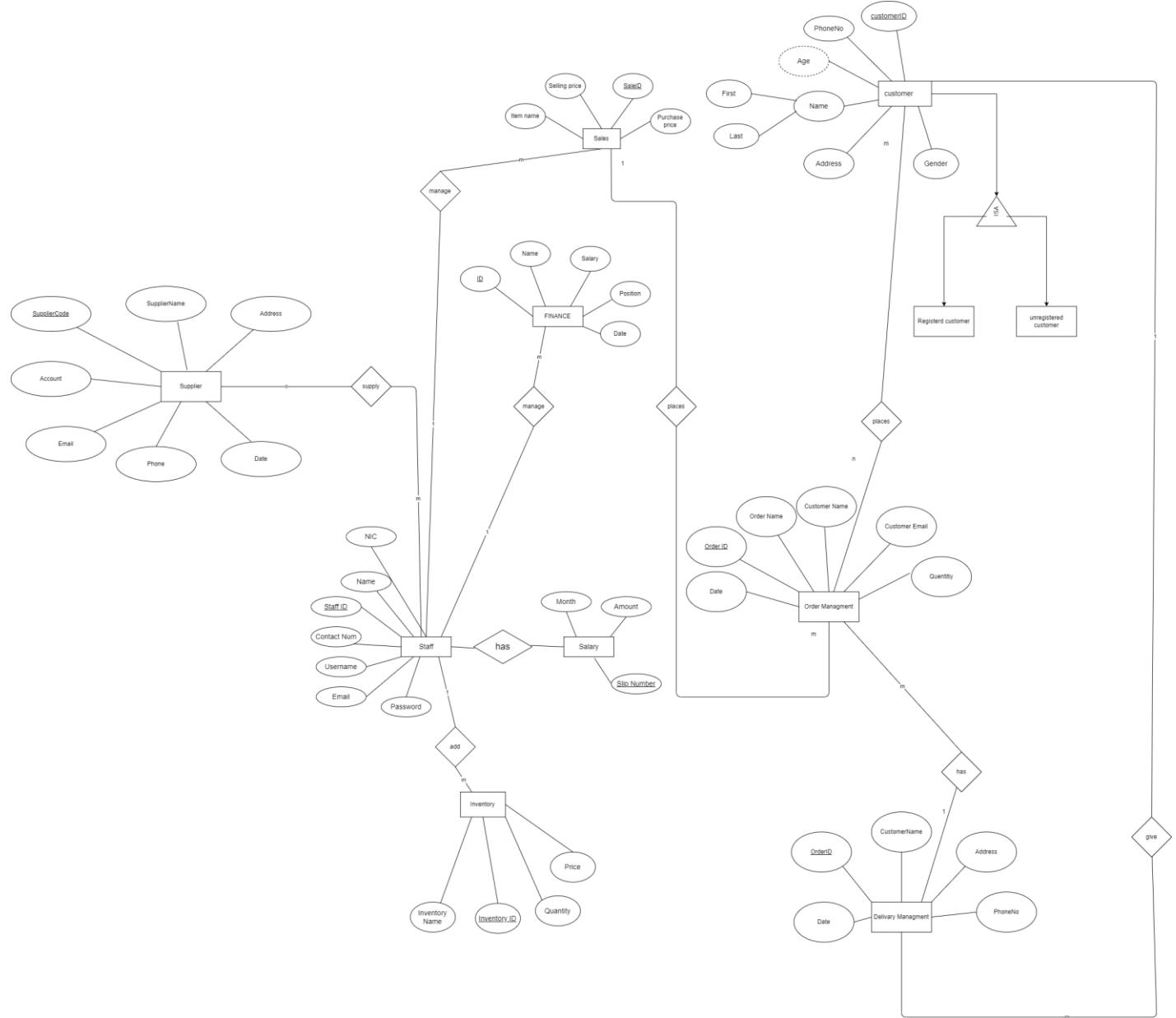


Figure 2.2.2 - ER Diagram

2.2.3 Class Diagram

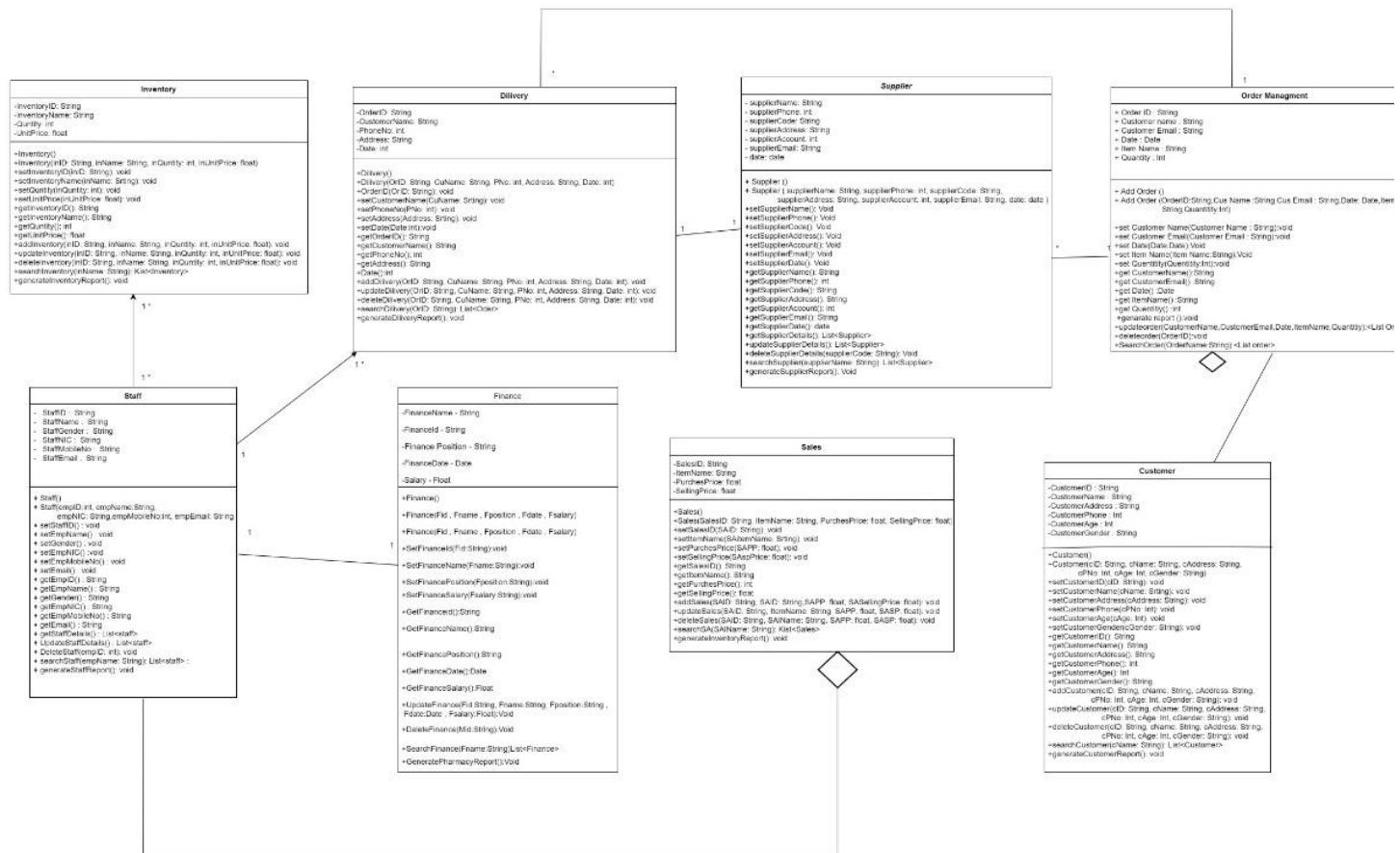


Figure 2.2.3 - Class Diagram

2.2.4 Sequence Diagrams

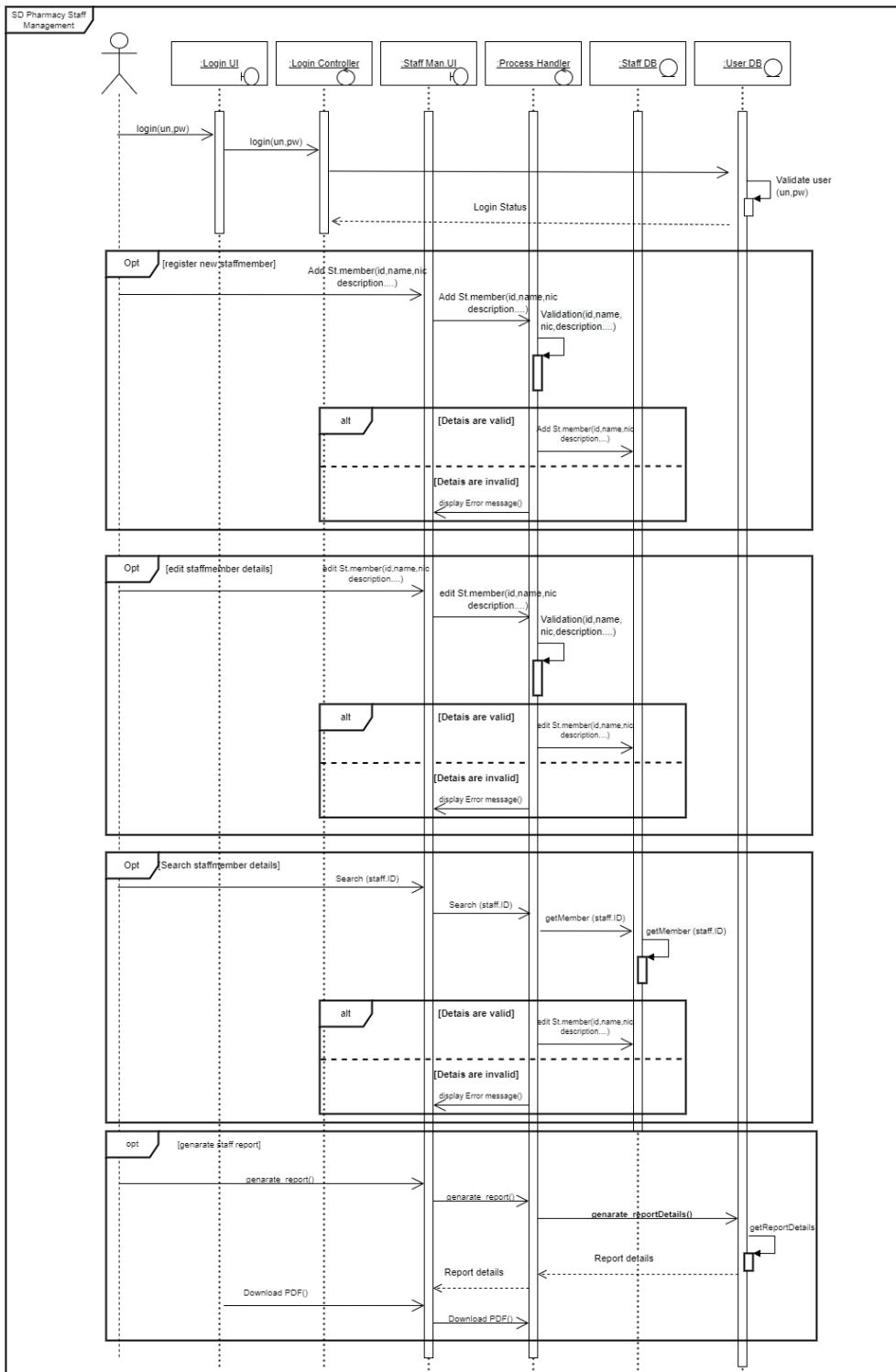


Figure 2.2.4-1 Sequence Diagram – Staff Management

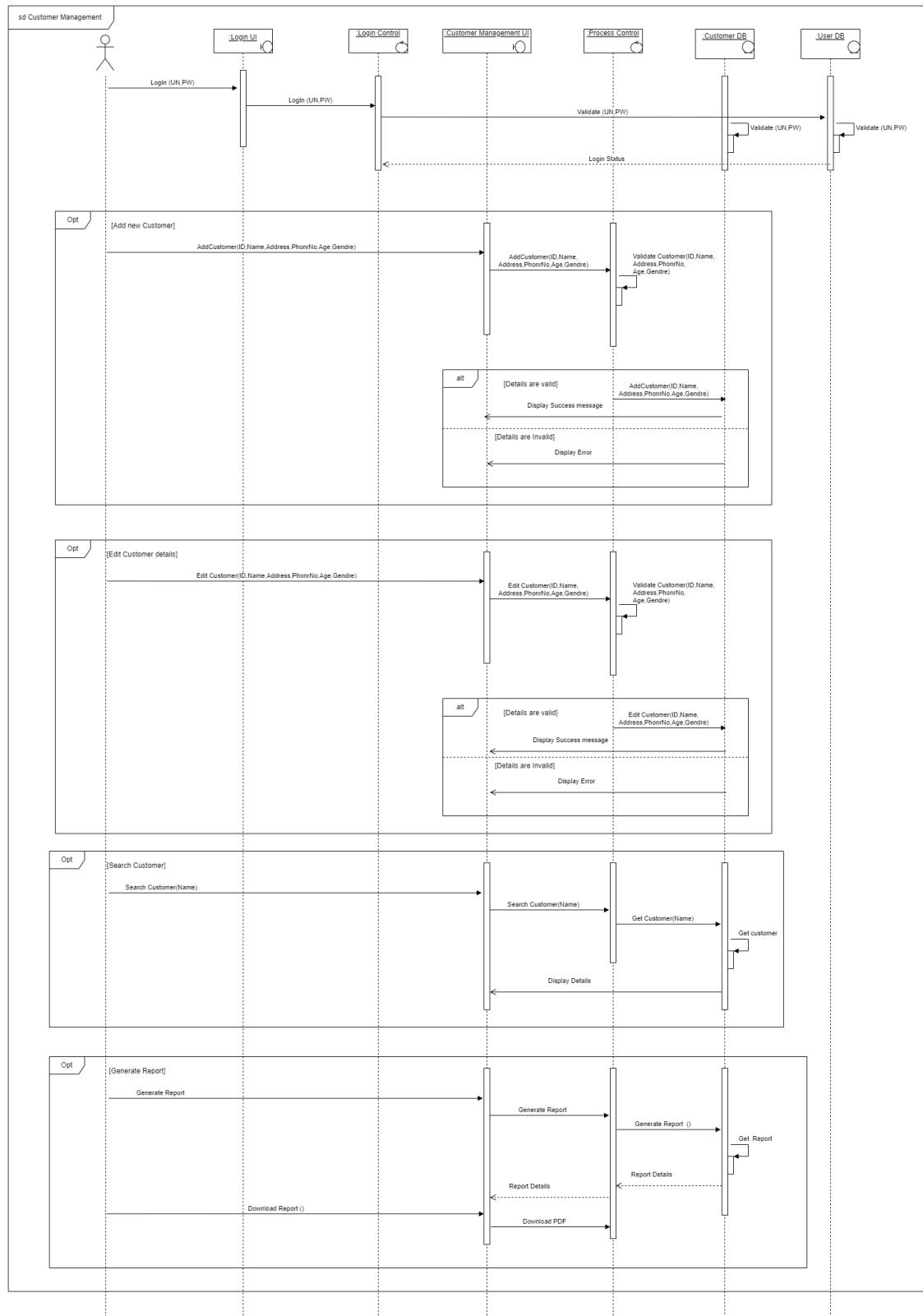


Figure 2.2.4-2 Sequence Diagram – Customer Management

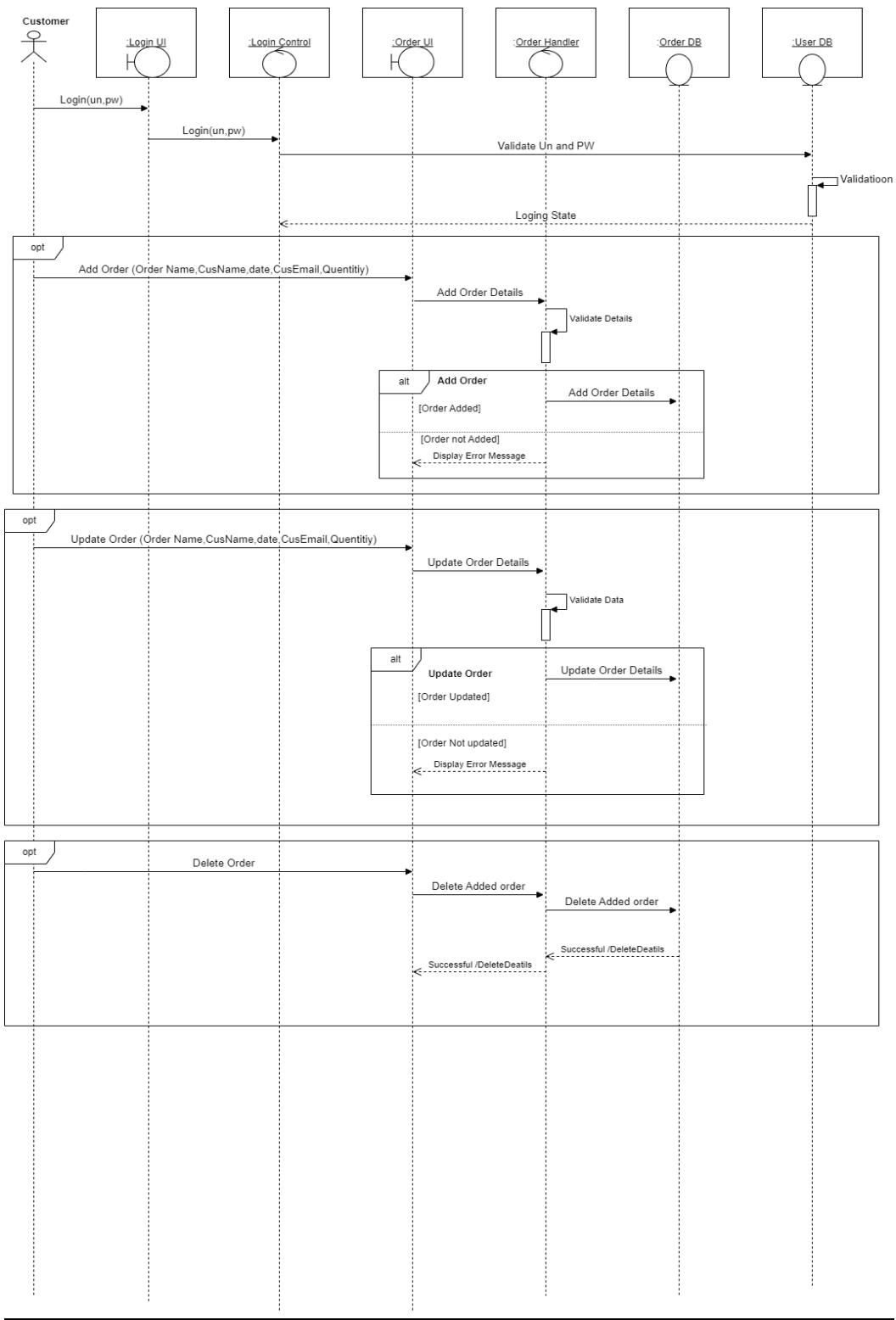


Figure 2.2.4-3.1 Sequence Diagram – Order Management

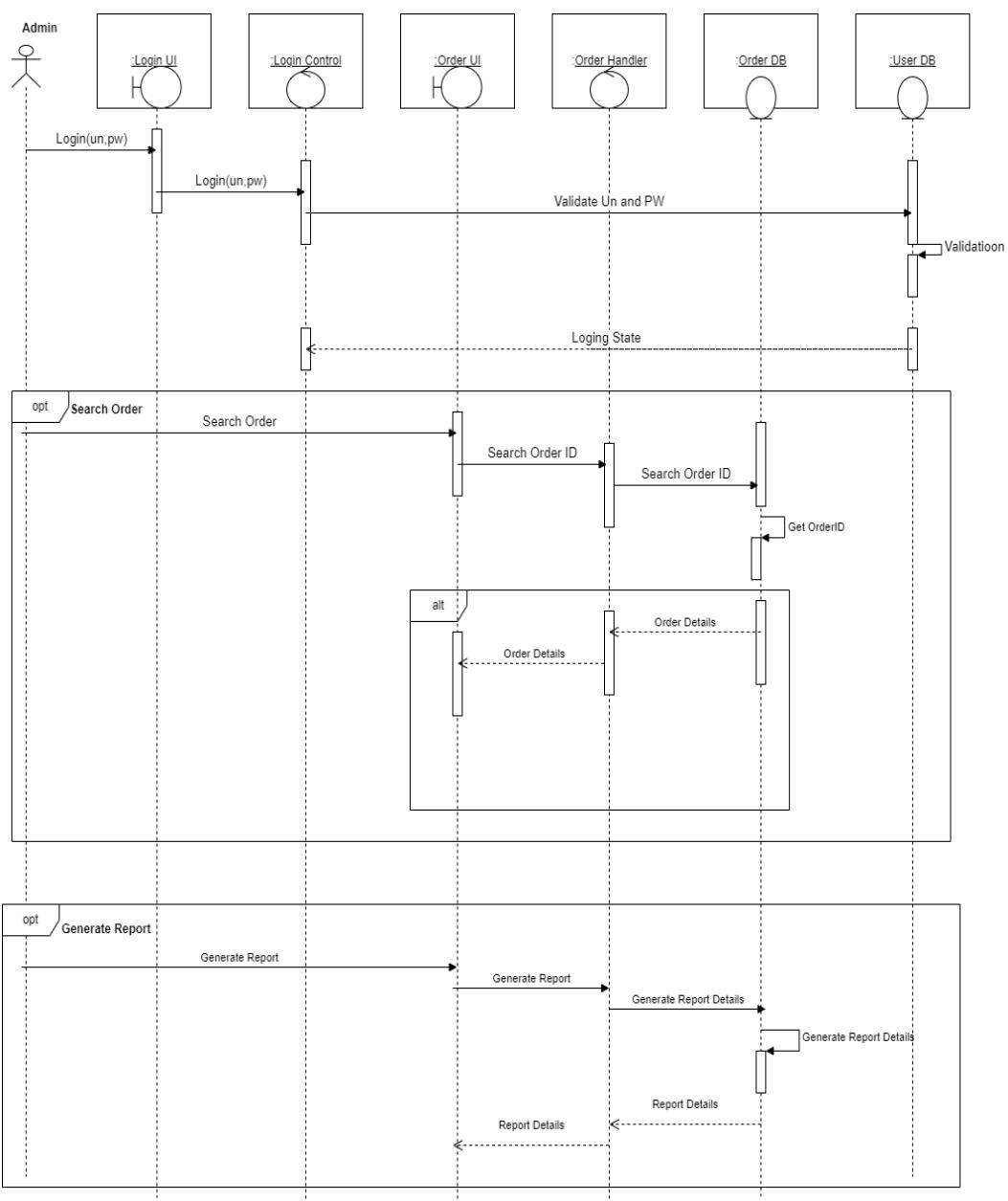


Figure 2.2.4-3.2 Sequence Diagram – Order Management

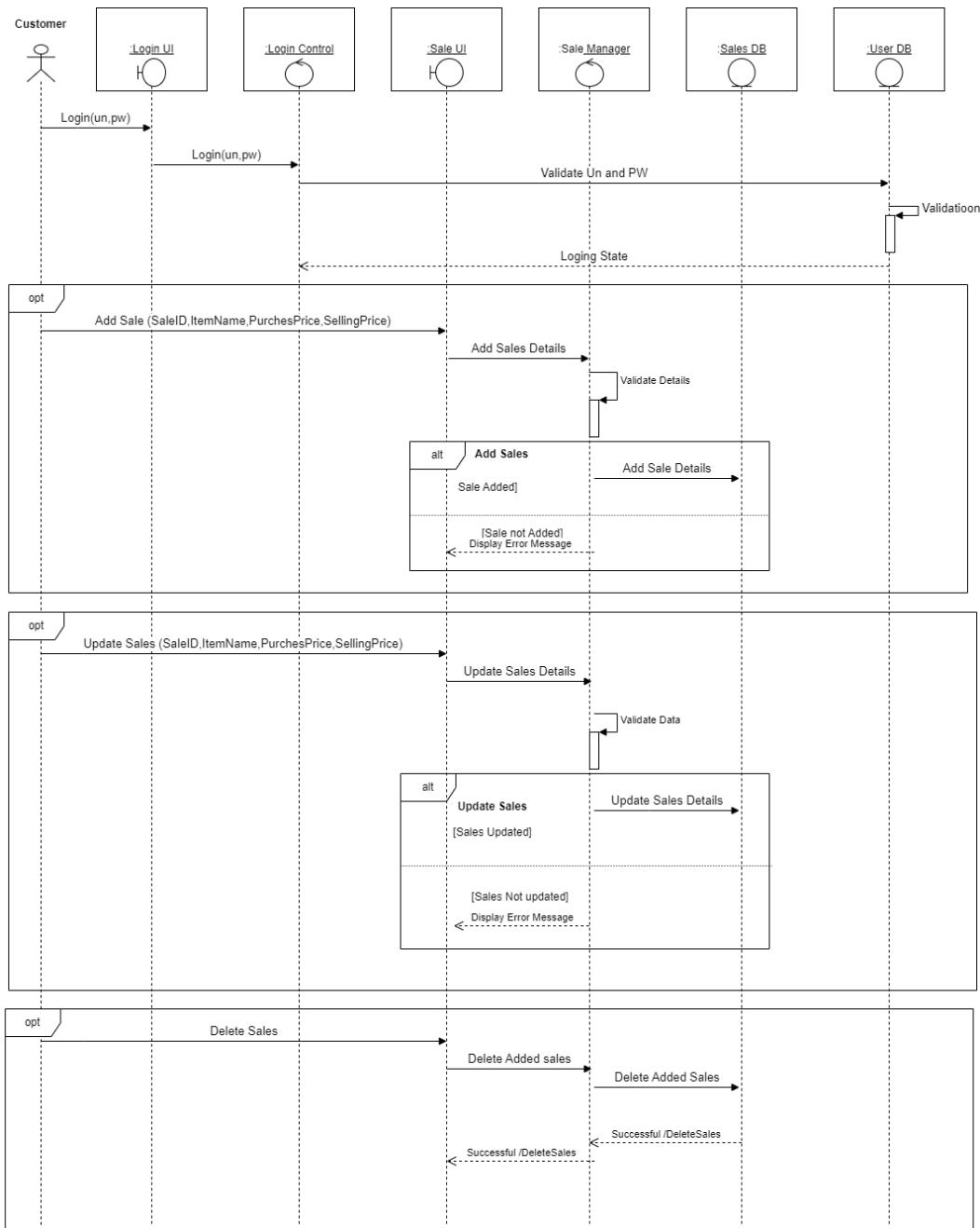


Figure 2.2.4-4.1 Sequence Diagram – Sales Management

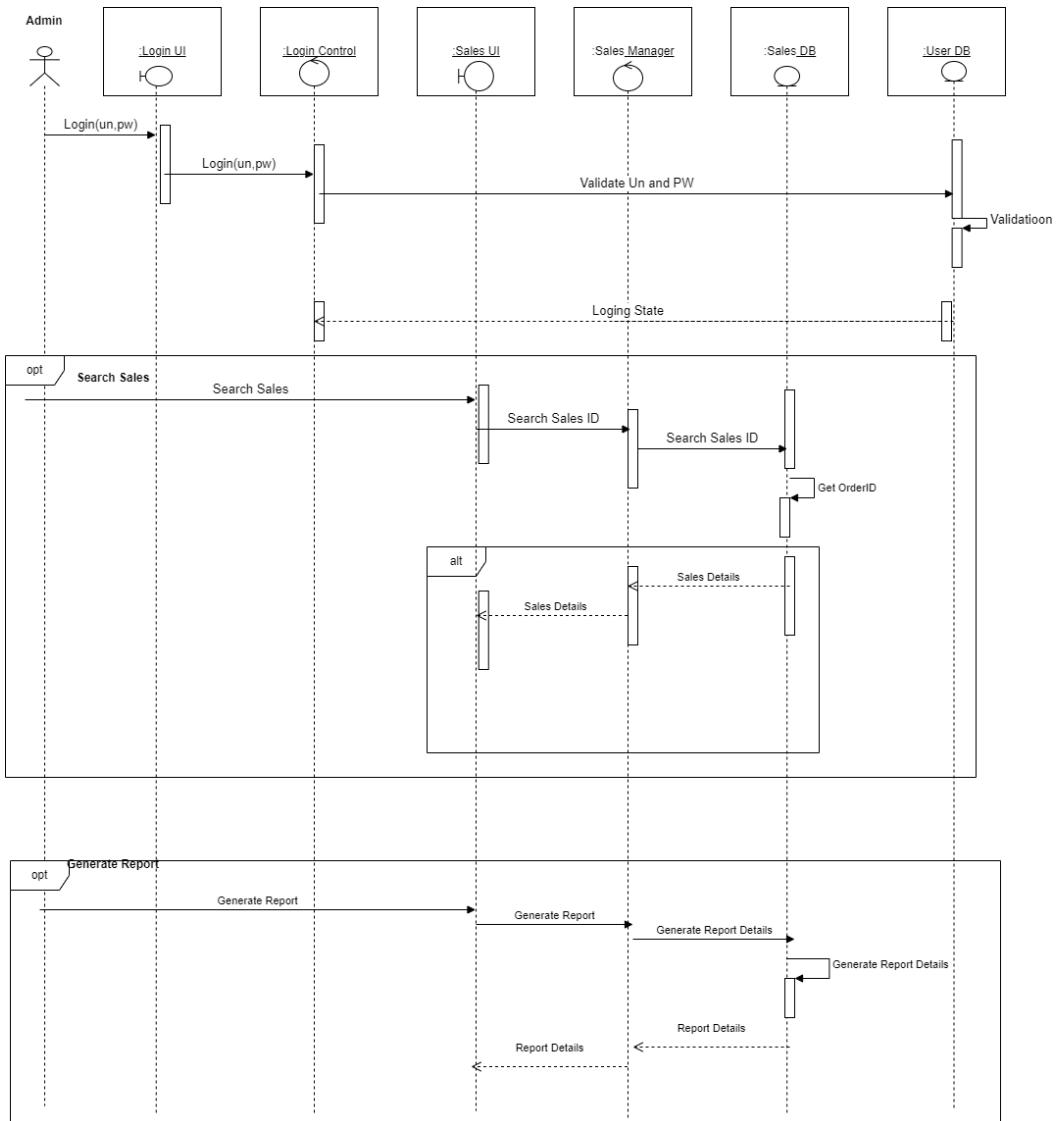


Figure 2.2.4-4.2 Sequence Diagram – Sales Management

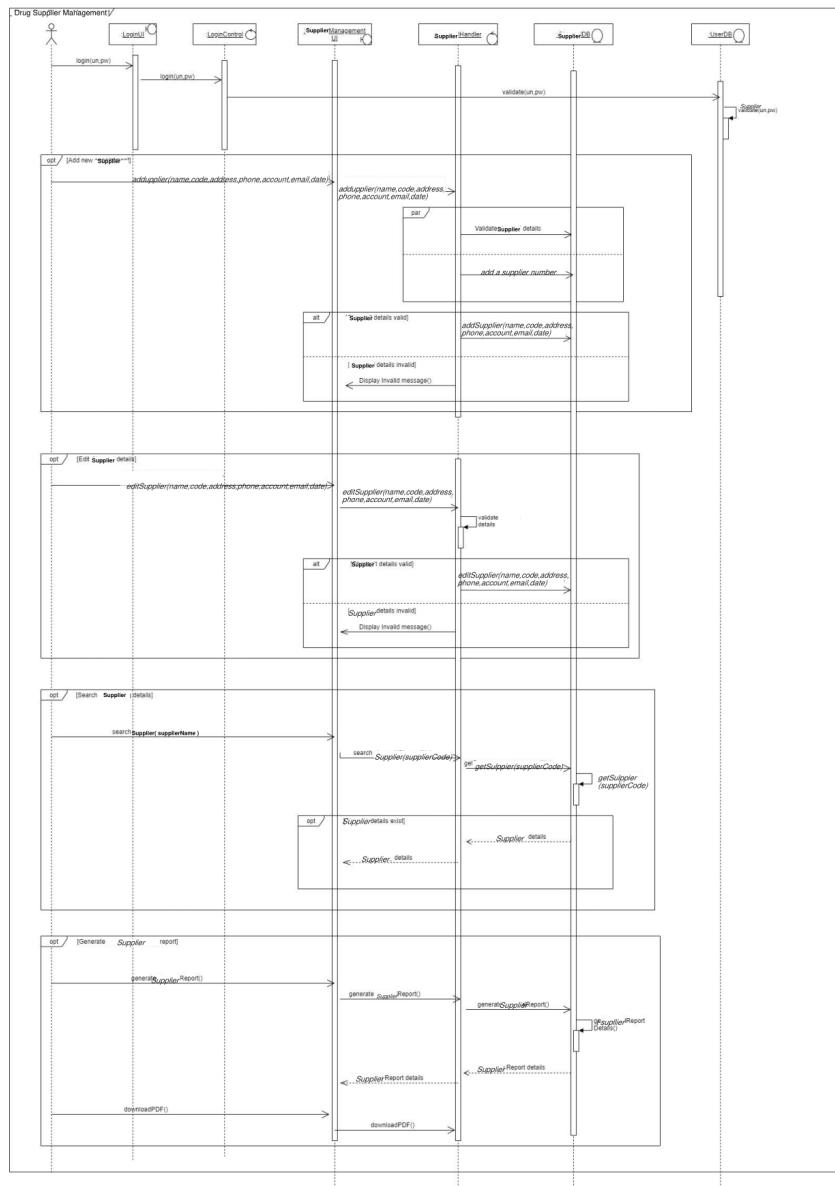


Figure 2.2.4-5 Sequence Diagram – Supplier Management

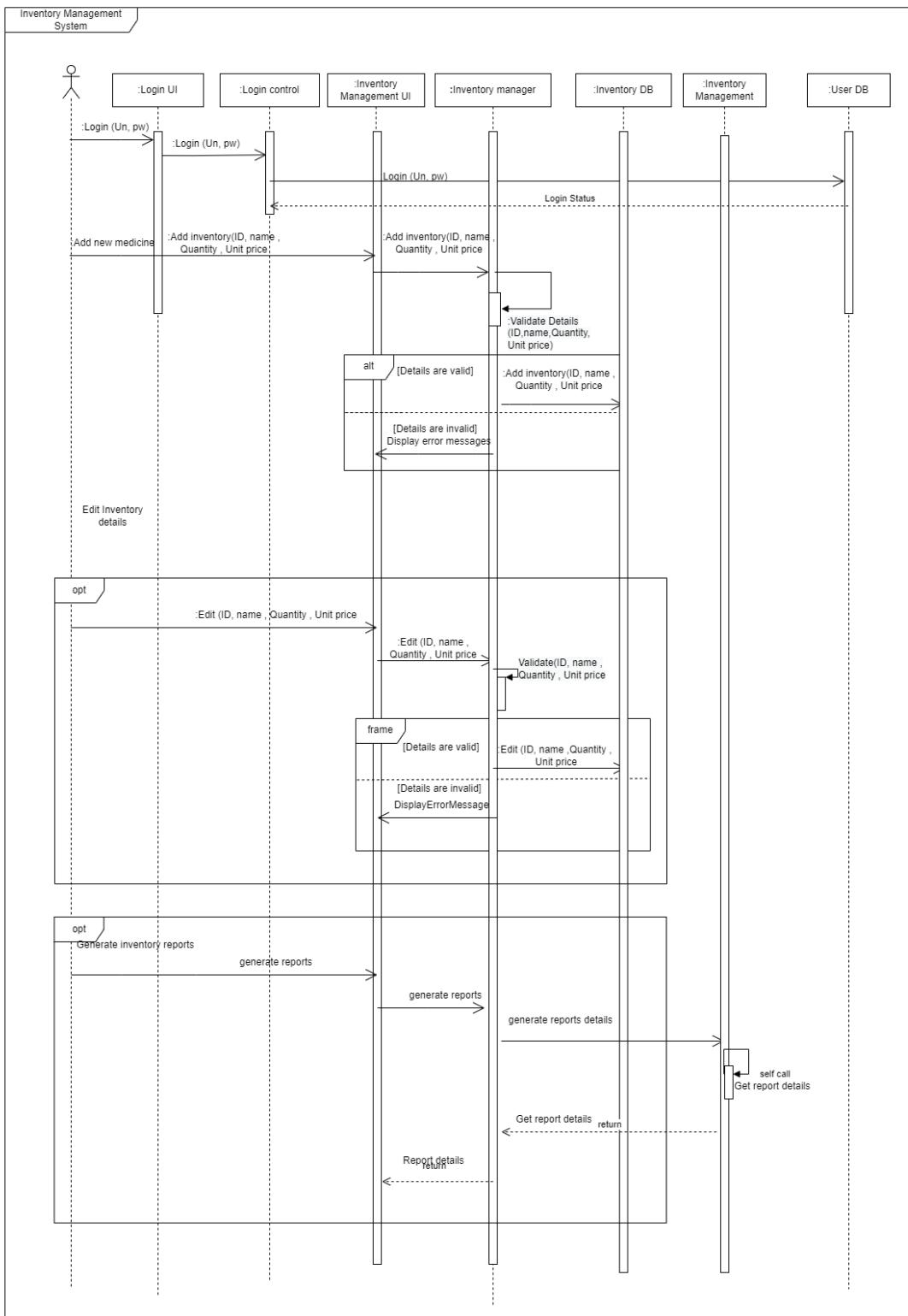


Figure 2.2.4-6 Sequence Diagram – Inventory Management

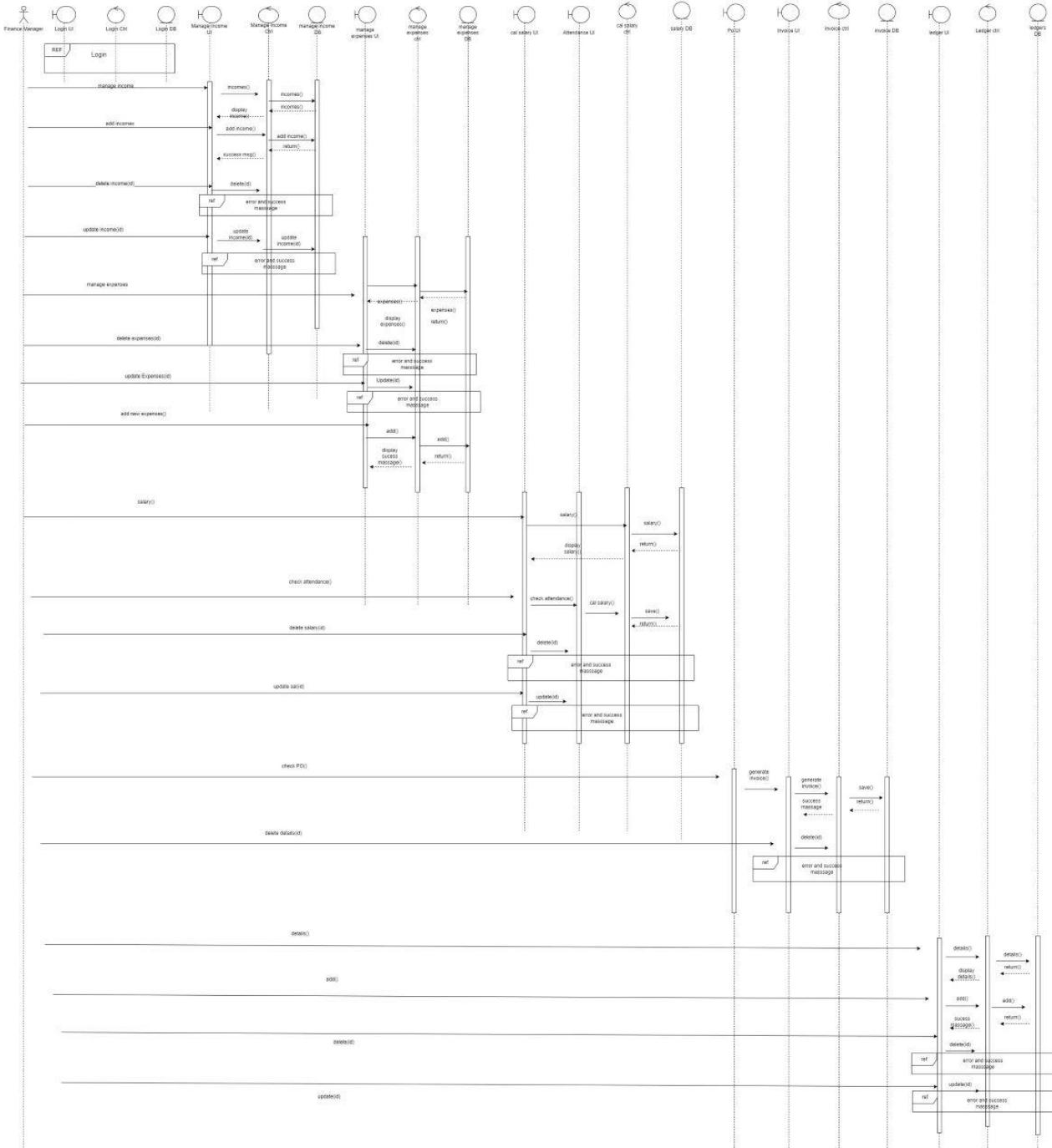


Figure 2.2.4-7 Sequence Diagram – Finance Management

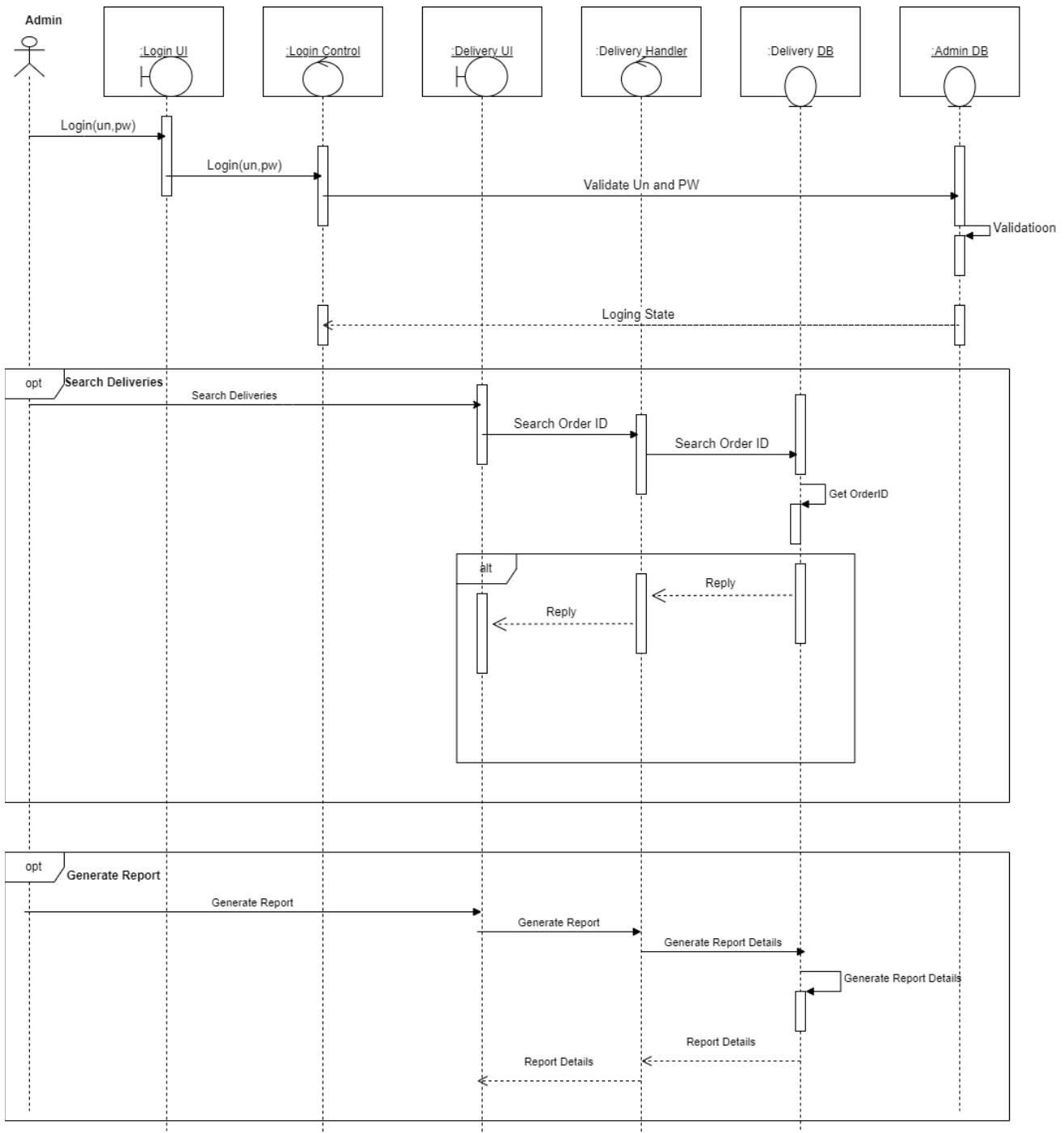


Figure 2.2.4-8.1 Sequence Diagram – Delivery Management

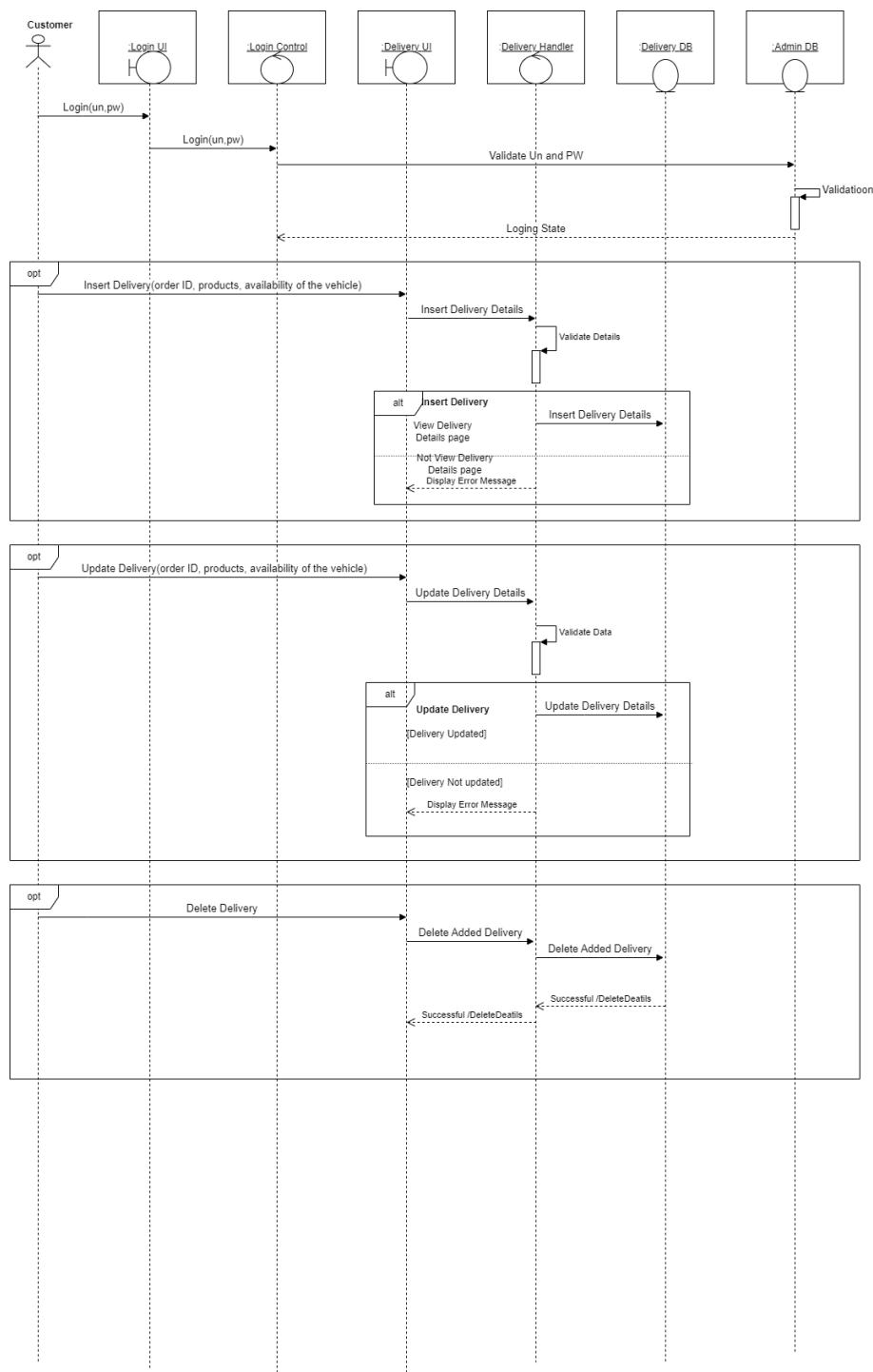


Figure 2.2.4-8.2 Sequence Diagram – Delivery Management

2.2.5 State Chart Diagrams

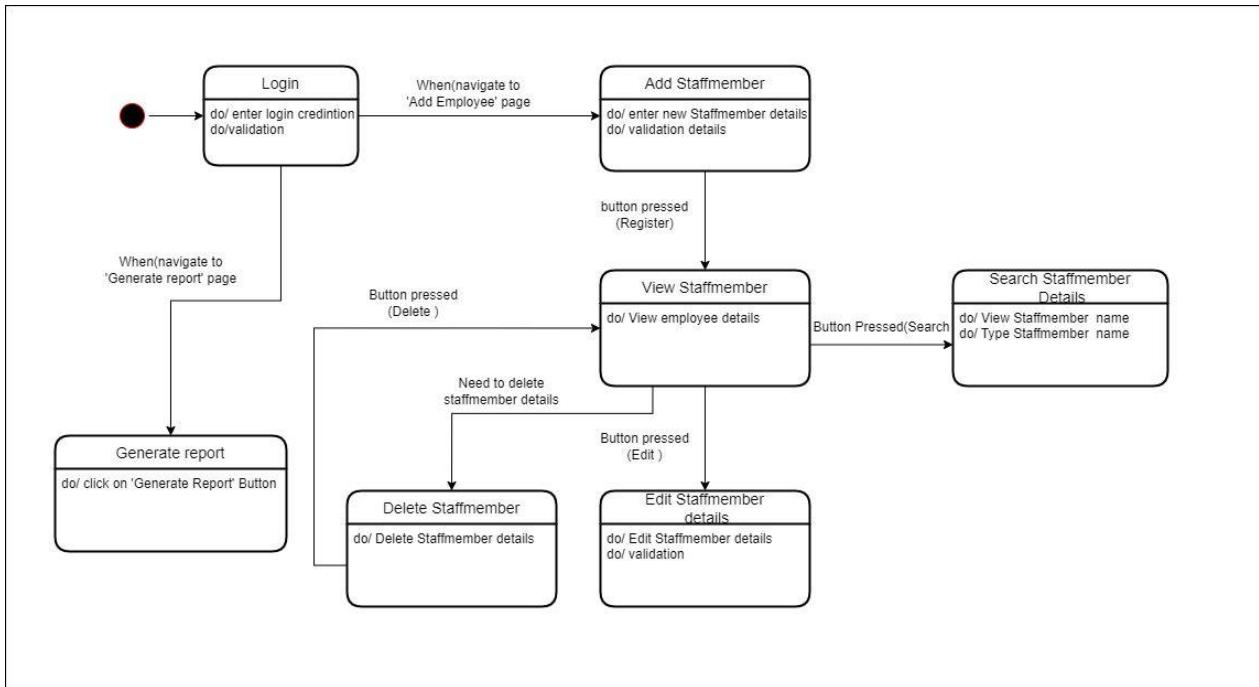


Figure 2.2.5 -1 State Chart Diagram – Staff Management

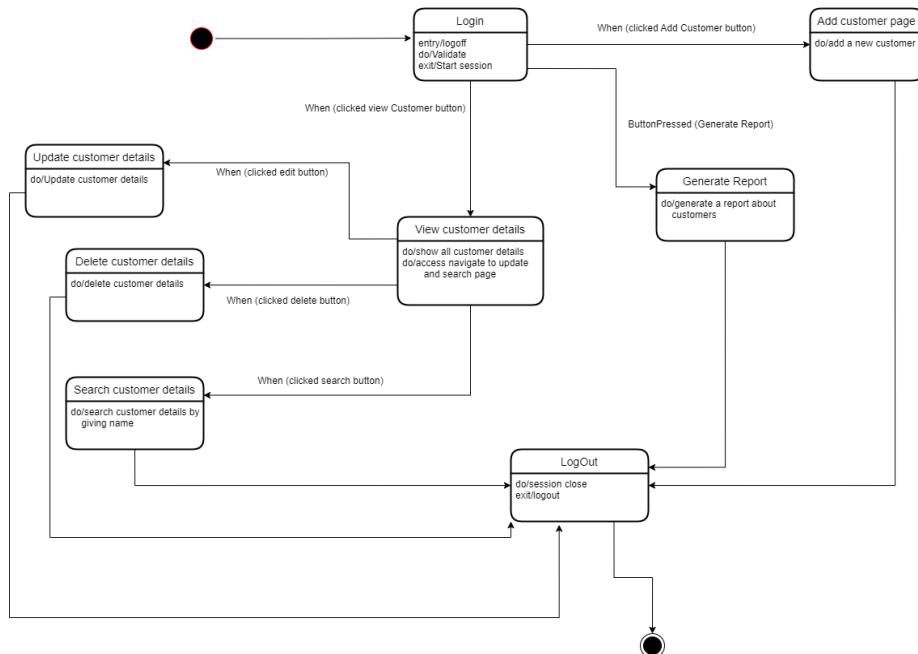


Figure 2.2.5 -2 State Chart Diagram – Customer Management

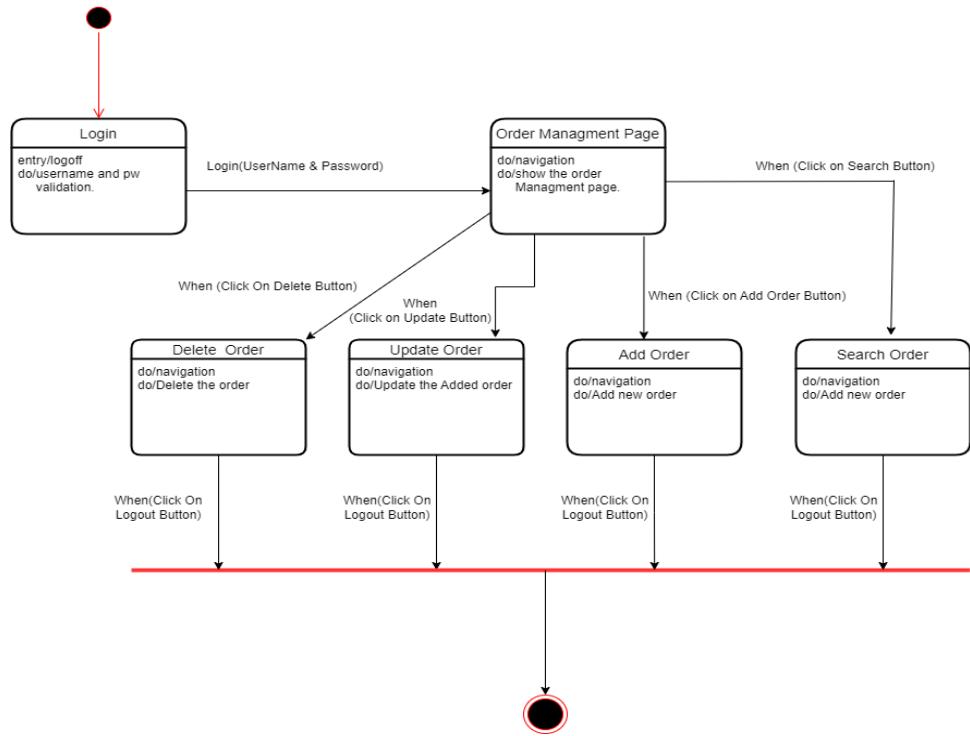


Figure 2.2.5 -3 State Chart Diagram – Order Management

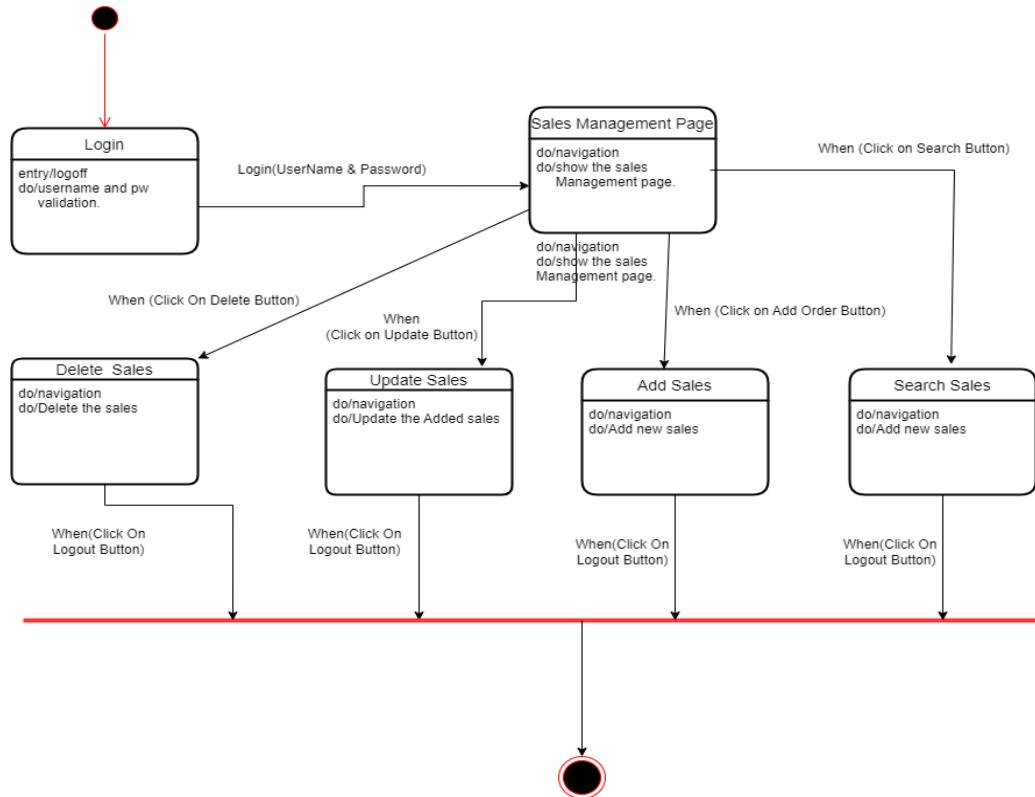


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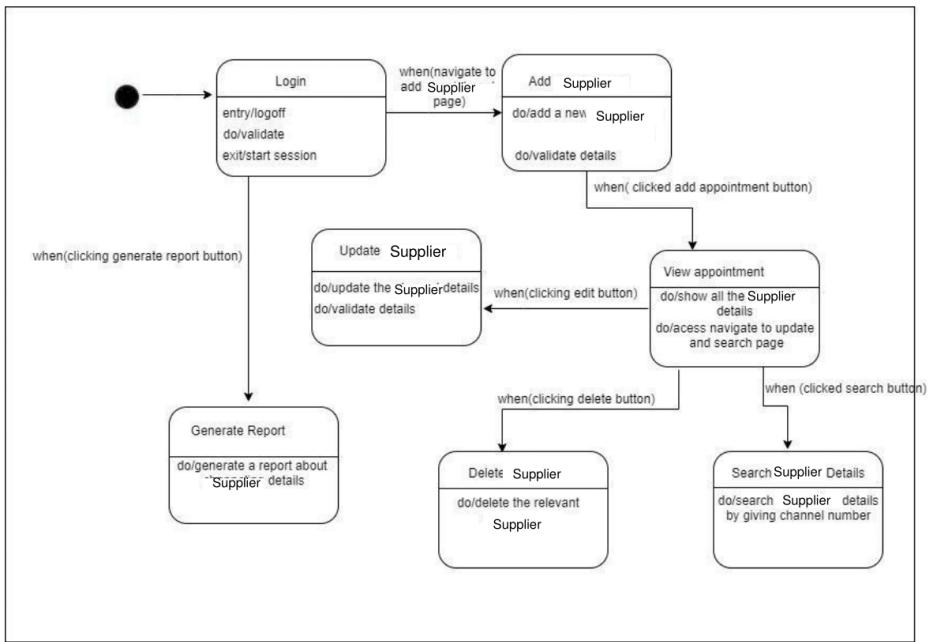


Figure 2.2.5 -5 State Chart Diagram – Supplier Management

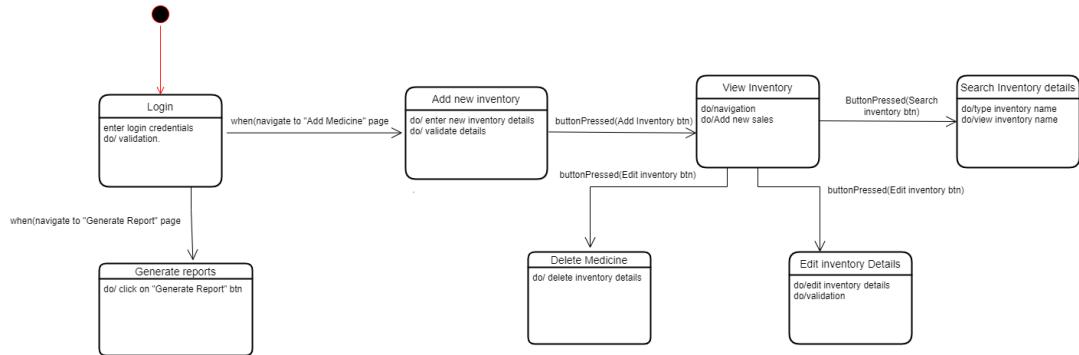


Figure 2.2.5 -6 State Chart Diagram – Inventory Management

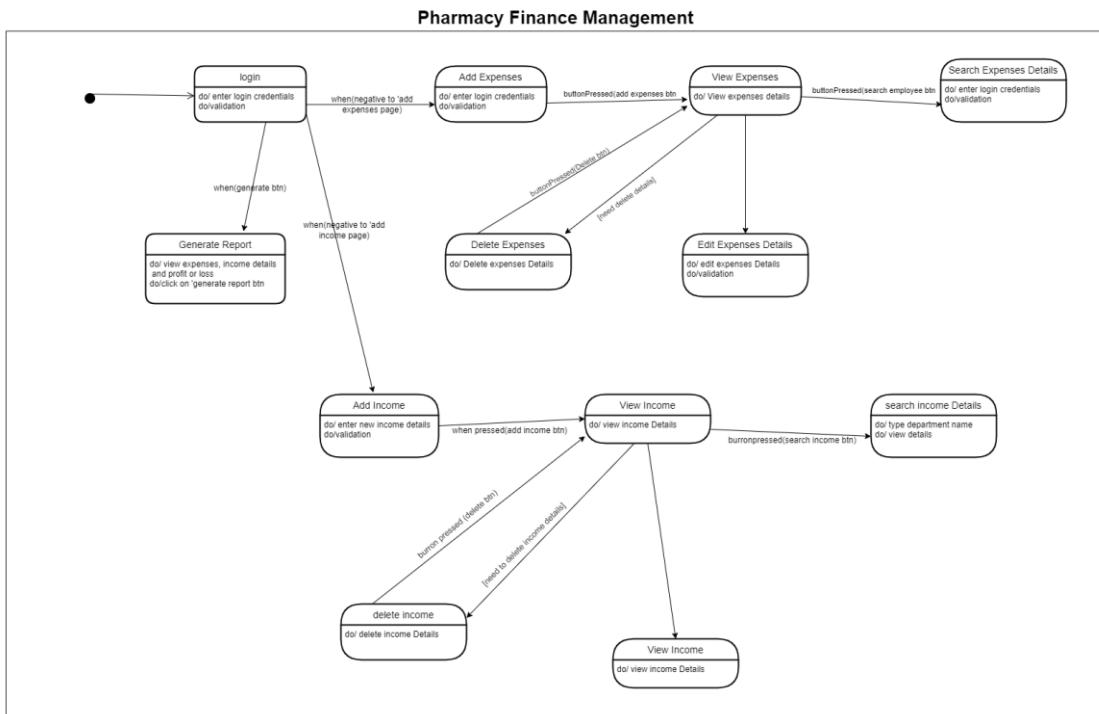


Figure 2.2.5 -7 State Chart Diagram – Finance Management

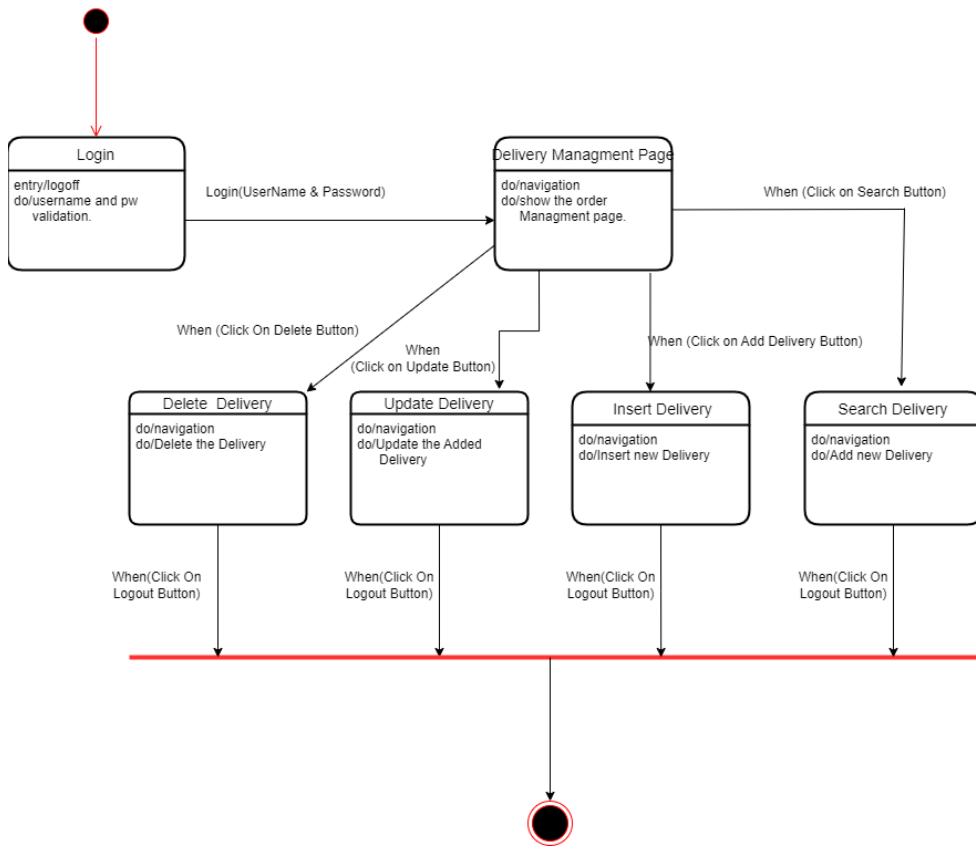


Figure 2.2.5 -9 State Chart Diagram – Delivery Management

2.2.6 Interfaces

Landing Interface

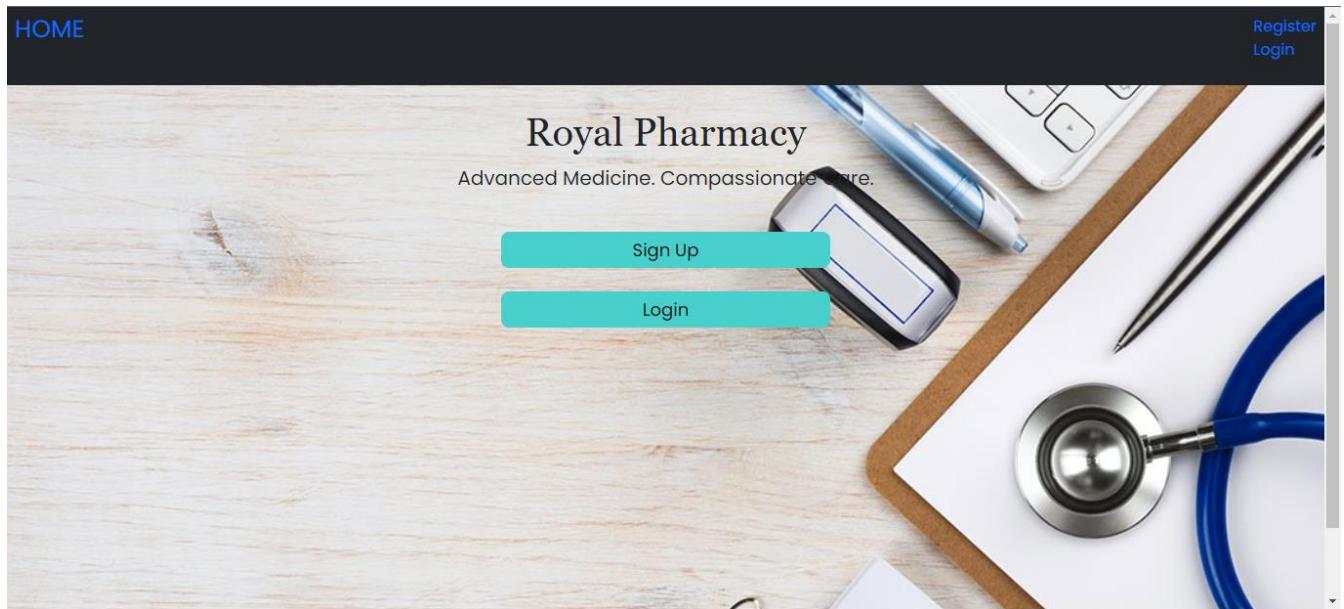


Figure 2.2.6 – 1 User Interface – Landing

Sign In Interface

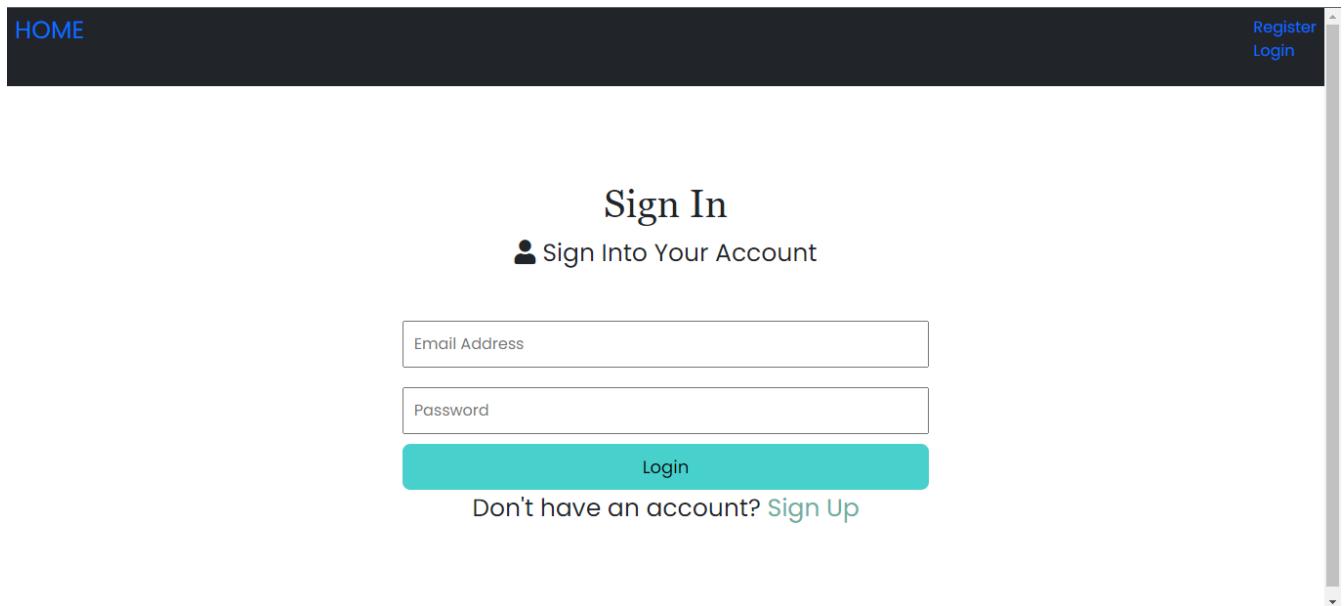


Figure 2.2.6 - 2 User Interface – Sign In

Sign Up Interface

Sign Up

Create Your Account

Register

Already have an account? [Sign In](#)

Figure 2.2.6 - 3 User Interface – Sign Up

Home



Figure 2.2.6 - 4 User Interface – Home

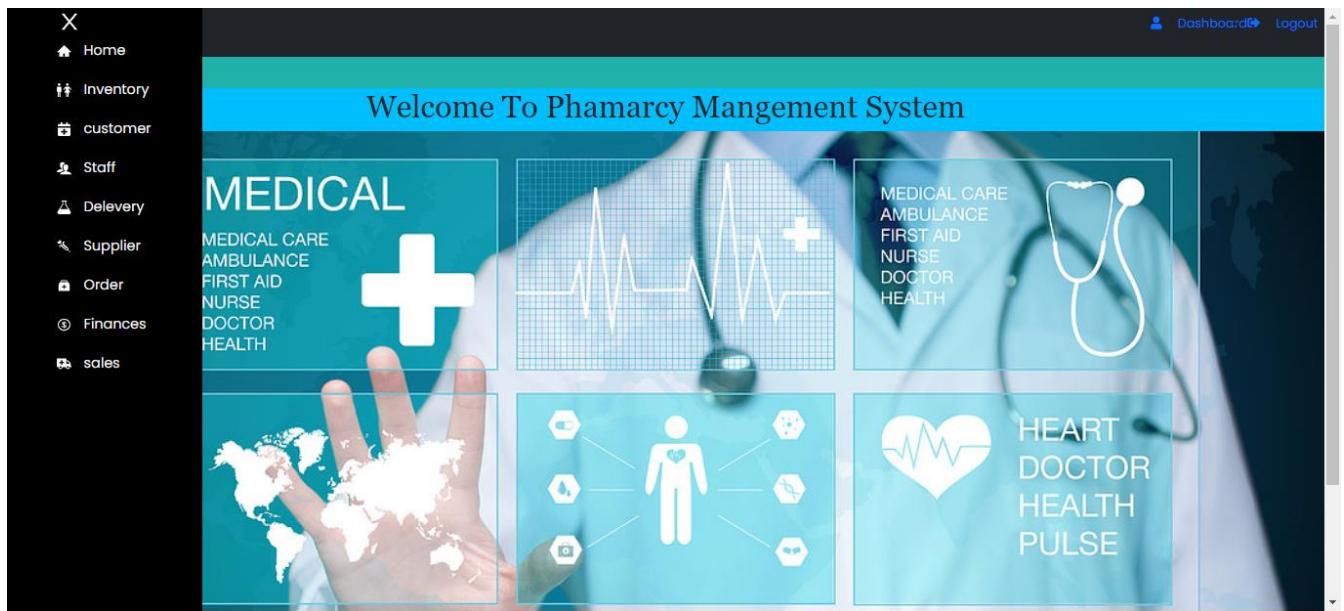


Figure 2.2.6 - 5 User Interface – Menu

Inventory Management

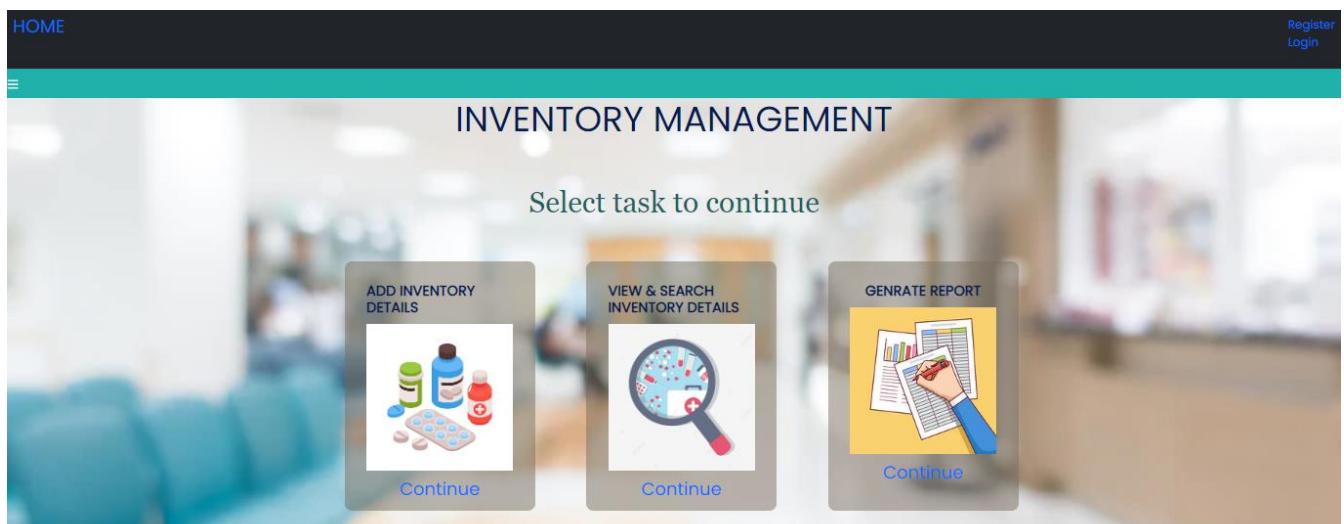
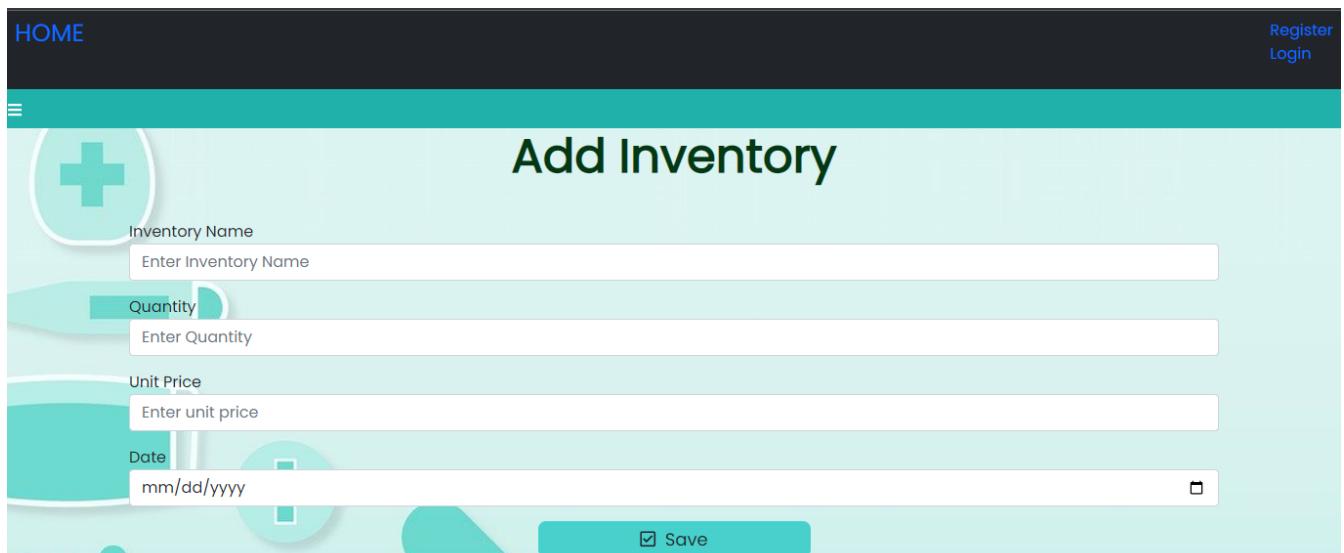
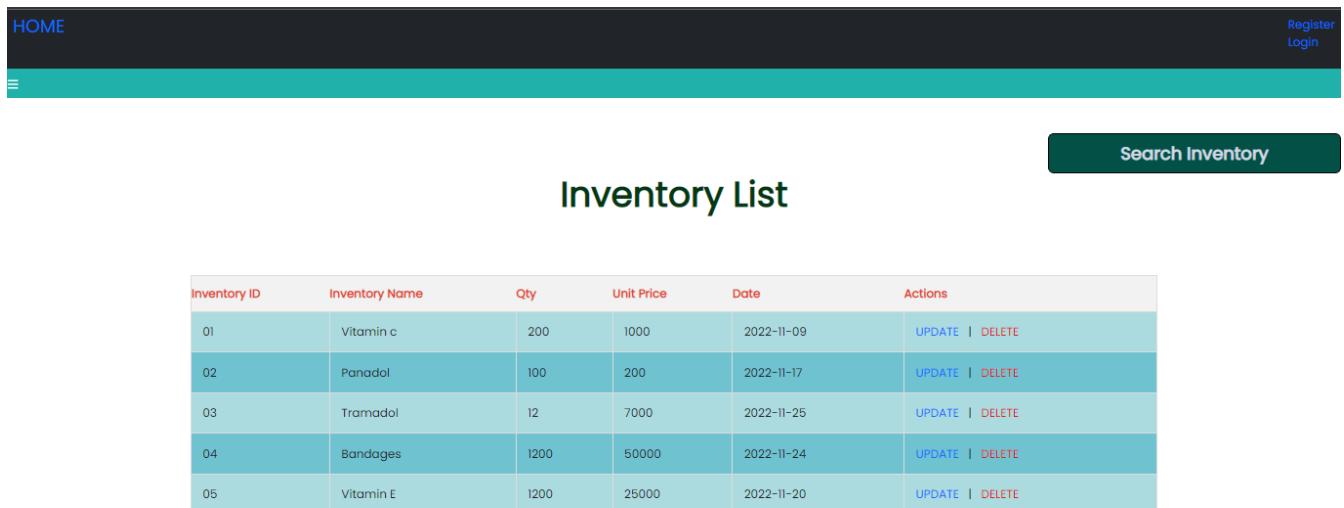


Figure 2.2.6 - 6 User Interface – Inventory Management



The screenshot shows a mobile-style user interface for adding inventory. At the top, there's a dark header with 'HOME' on the left and 'Register Login' on the right. Below it is a teal header with the title 'Add Inventory'. The main area has a light teal background with a decorative pattern of overlapping circles. It contains four input fields: 'Inventory Name' with placeholder 'Enter Inventory Name', 'Quantity' with placeholder 'Enter Quantity', 'Unit Price' with placeholder 'Enter unit price', and 'Date' with placeholder 'mm/dd/yyyy'. Each field has a small circular icon to its left. A large teal button at the bottom right contains the text 'Save' with a checked checkbox icon before it.

Figure 2.2.6 - 7 User Interface – Add Inventory



The screenshot shows a mobile-style user interface for viewing the inventory list. The top navigation bar includes 'HOME' and 'Register Login'. Below it is a teal header with the title 'Inventory List'. On the right side of the header is a dark teal button labeled 'Search Inventory'. The main content area displays a table with the following data:

Inventory ID	Inventory Name	Qty	Unit Price	Date	Actions
01	Vitamin c	200	1000	2022-11-09	UPDATE DELETE
02	Panadol	100	200	2022-11-17	UPDATE DELETE
03	Tramadol	12	7000	2022-11-25	UPDATE DELETE
04	Bandages	1200	50000	2022-11-24	UPDATE DELETE
05	Vitamin E	1200	25000	2022-11-20	UPDATE DELETE

Figure 2.2.6 - 8 User Interface – Inventory List

The screenshot shows a web-based application interface titled "Inventory DETAILS". At the top, there is a navigation bar with "HOME" on the left and "Register Login" on the right. Below the title, there is a table with the following data:

Inventory Name	Quantity	unit Price	Date
Vitamin c	200	1000	2022-11-09
Panadol	100	200	2022-11-17
Tramadol	12	7000	2022-11-25
Bandages	1200	50000	2022-11-24
Vitamin E	1200	25000	2022-11-20

Below the table is a red button labeled "GENERATE REPORT".

Figure 2.2.6 - 9 User Interface – Inventory Report

Customer Management

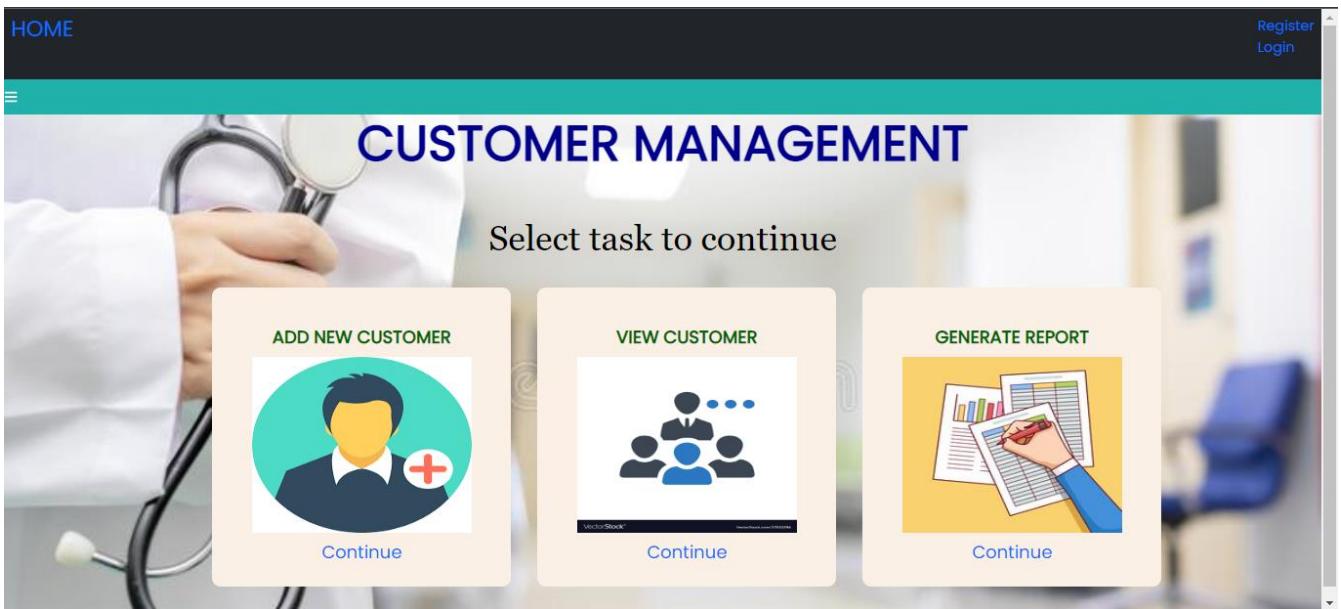


Figure 2.2.6 - 10 User Interface – Customer Management

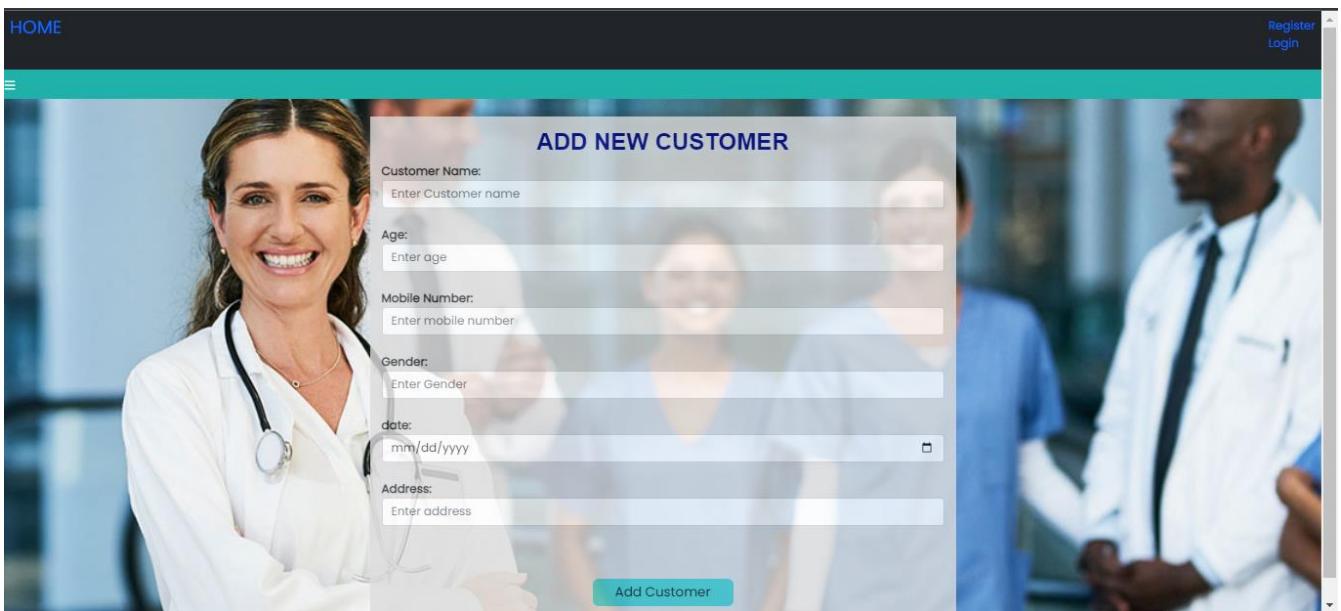


Figure 2.2.6 -11 User Interface – Add Customer

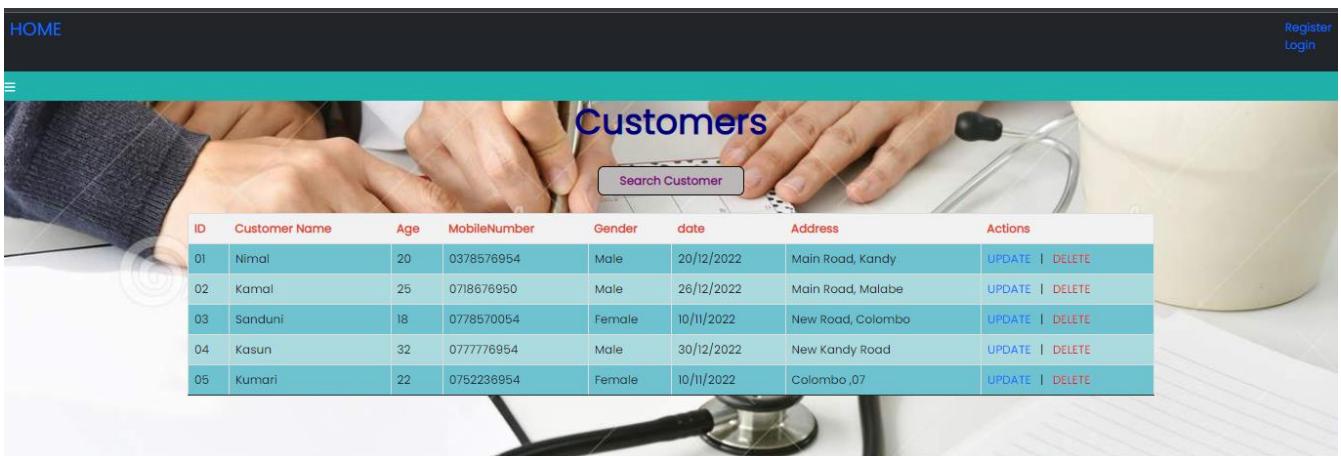


Figure 2.2.6 - 12 User Interface – Customer List

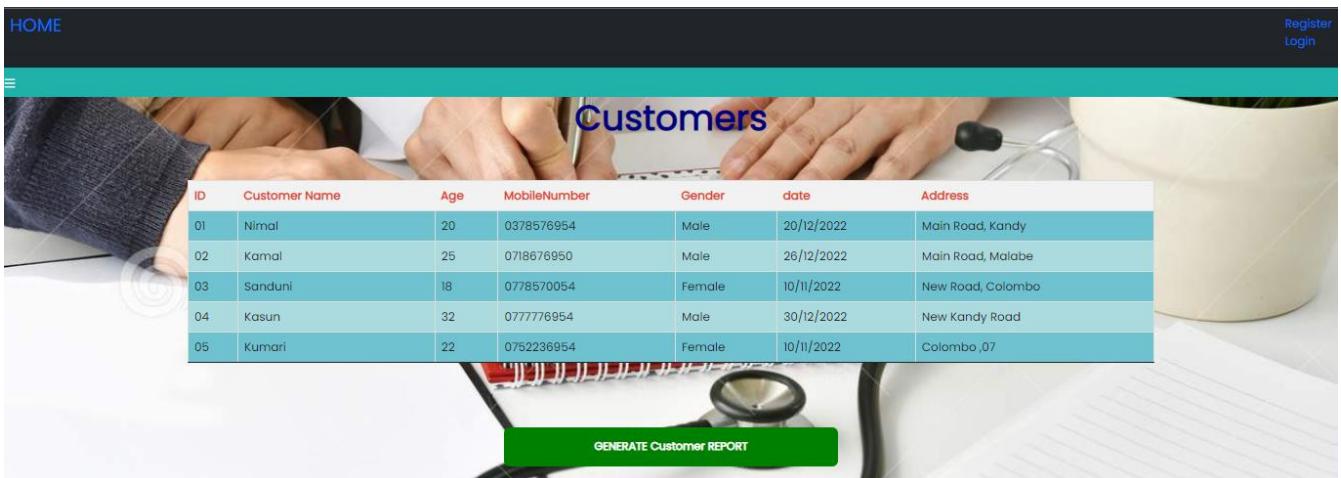


Figure 2.2.6 - 13 User Interface – Customer Report

Stuff Management

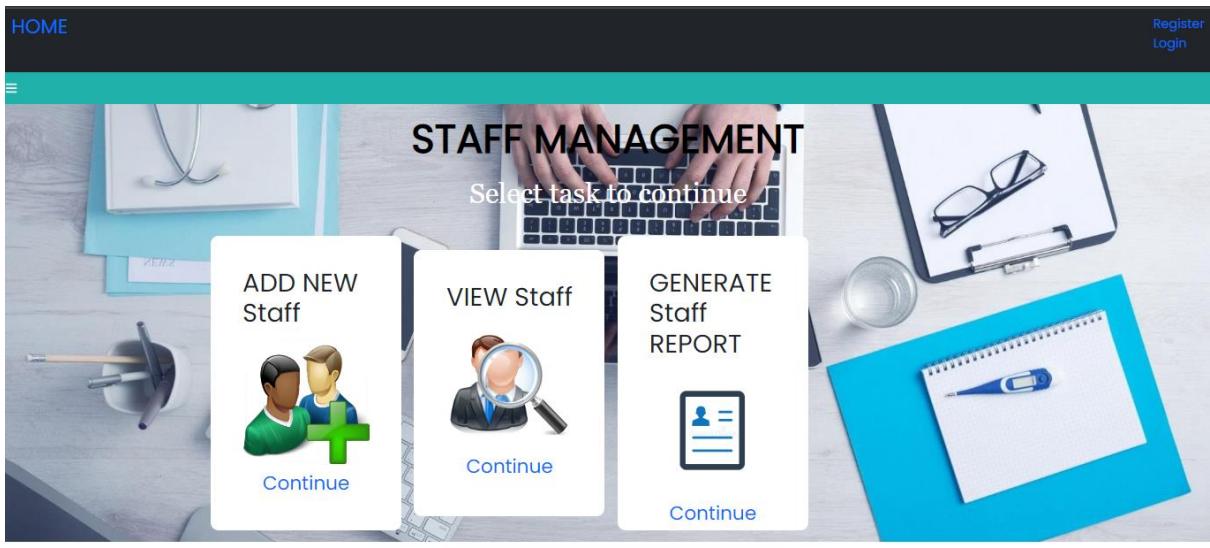


Figure 2.2.6 - 14 User Interface – Stuff Management

A screenshot of the 'Add New Staff Member' form. The form is titled 'ADD NEW STAFF MEMBER' and includes fields for 'Staff ID' (with a 'Demo' button), 'Name', 'Department' (a dropdown menu with 'Select'), 'NIC', 'Gender' (a dropdown menu with 'Select'), 'Phone', and 'Email'. At the bottom is a red 'REGISTER EMPLOYEE' button. The background features a photograph of a laptop keyboard and a stethoscope.

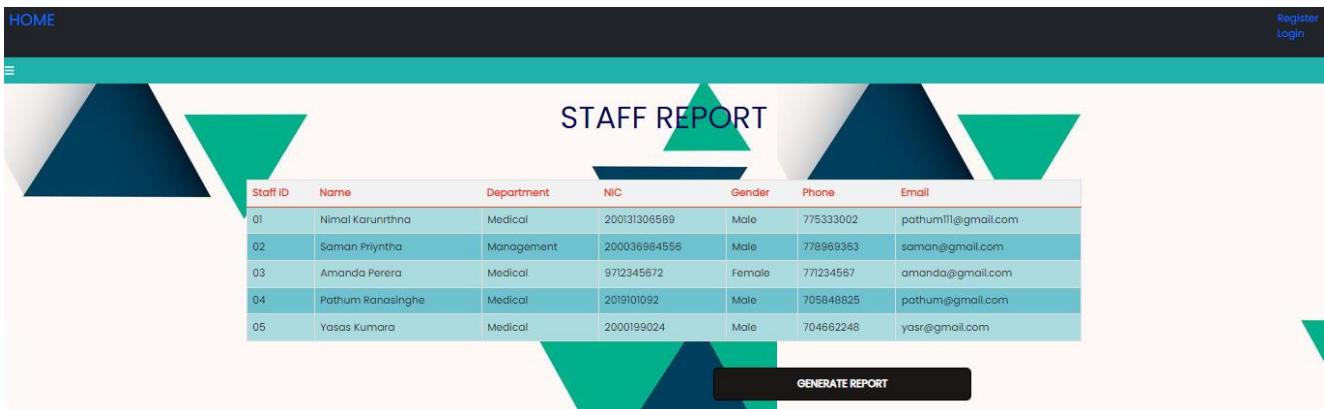
Figure 2.2.6 - 15 User Interface – Add Stuff



The screenshot shows a web-based application interface titled "Pharmacy STAFF". At the top left is a "HOME" button, and at the top right are "Register" and "Login" links. A search bar labeled "Search Staff" is located at the top center. Below the title, there is a table with the following data:

Staff ID	Name	Department	NIC	Gender	Phone	Email	Action
01	Nimal Karunrthna	Medical	200131306589	Male	775333002	pathum11@gmail.com	UPDATE delete
02	Saman Priynta	Management	200036984556	Male	778969363	saman@gmail.com	UPDATE delete
03	Amanda Perera	Medical	9712345672	Female	771234567	amanda@gmail.com	UPDATE delete
04	Pathum Ranasinghe	Medical	2019101092	Male	705848825	pathum@gmail.com	UPDATE delete
05	Yasas Kumara	Medical	2000199024	Male	704662248	yasr@gmail.com	UPDATE delete

Figure 2.2.6 - 16 User Interface – Stuff List



The screenshot shows a web-based application interface titled "STAFF REPORT". At the top left is a "HOME" button, and at the top right are "Register" and "Login" links. The main content area features a table with the same data as the previous screenshot:

Staff ID	Name	Department	NIC	Gender	Phone	Email	Action
01	Nimal Karunrthna	Medical	200131306589	Male	775333002	pathum11@gmail.com	UPDATE delete
02	Saman Priynta	Management	200036984556	Male	778969363	saman@gmail.com	UPDATE delete
03	Amanda Perera	Medical	9712345672	Female	771234567	amanda@gmail.com	UPDATE delete
04	Pathum Ranasinghe	Medical	2019101092	Male	705848825	pathum@gmail.com	UPDATE delete
05	Yasas Kumara	Medical	2000199024	Male	704662248	yasr@gmail.com	UPDATE delete

At the bottom center is a "GENERATE REPORT" button.

Figure 2.2.6 - 17 User Interface – Stuff Report

Delivery Management

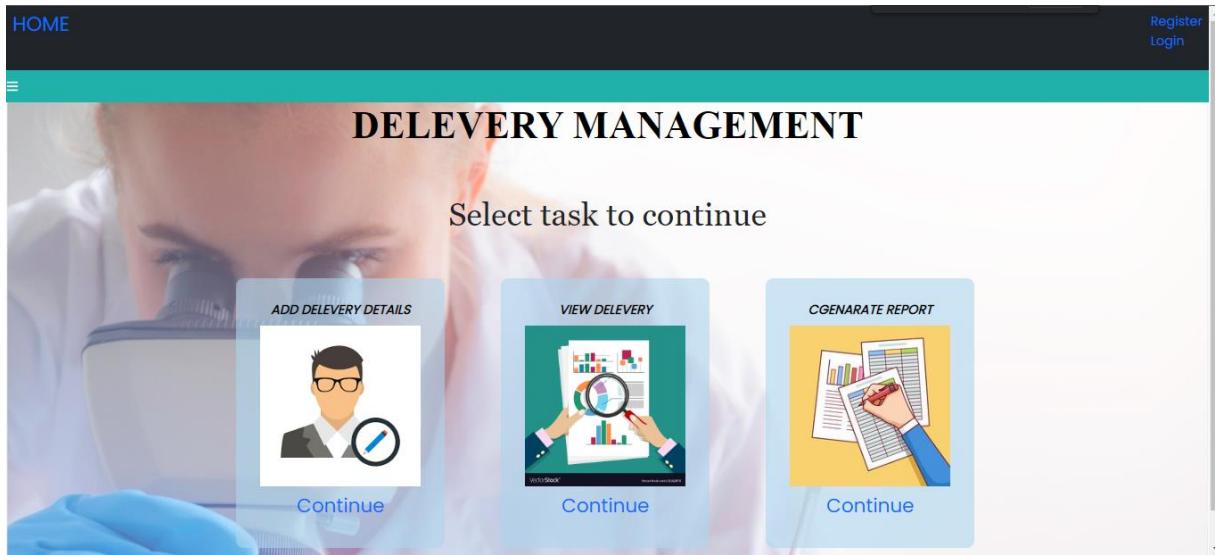


Figure 2.2.6 - 18 User Interface – Delivery Management

A screenshot of the 'Add Delivery' form. The top navigation bar includes 'HOME' and 'Register Login'. The main title 'Add Delevery' is centered above the form. The form itself has five input fields: 'Order ID:' with placeholder 'Enter Order ID', 'Customer Name:' with placeholder 'Enter Customer Name', 'Mobile Number:' with placeholder 'Enter Mobile Number', 'Address:' with placeholder 'Enter Address', and 'Date:' with placeholder '11/11/2022'. A large blue 'ADD DELEVERY DETAILS' button is at the bottom of the form.

Figure 2.2.6 - 19 User Interface – Add Delivery

ID	Customer Name	Mobile Number	Address	Date	Actions
01	Saman Kuamara	0779869525	52/A Kandy peradeniya	20-05-2022	UPDATE DELETE
02	Niaml Kuamara	0752469525	01/B Kandy Haragama	22-05-2022	UPDATE DELETE
03	Aamal Ranathunga	0769855215	02/A Kandy polgolla	19-05-2022	UPDATE DELETE
04	Pasindu Karunathilka	0799995215	52/A Kandy Diagana	15-10-2022	UPDATE DELETE
05	Kasun Premadasa	0723456789	No 25 New Kandy Road	13-11-2022	UPDATE DELETE

Figure 2.2.6 - 20 User Interface – Delivery List

ID	Customer Name	Mobile Number	Address	Date
01	Saman Kuamara	0779869525	52/A Kandy peradeniya	20-05-2022
02	Niaml Kuamara	0752469525	01/B Kandy Haragama	22-05-2022
03	Aamal Ranathunga	0769855215	02/A Kandy polgolla	19-05-2022
04	Pasindu Karunathilka	0799995215	52/A Kandy Diagana	15-10-2022
05	Kasun Premadasa	0723456789	No 25 New Kandy Road	13-11-2022

Figure 2.2.6 - 21 User Interface – Delivery Report

Supplier Management

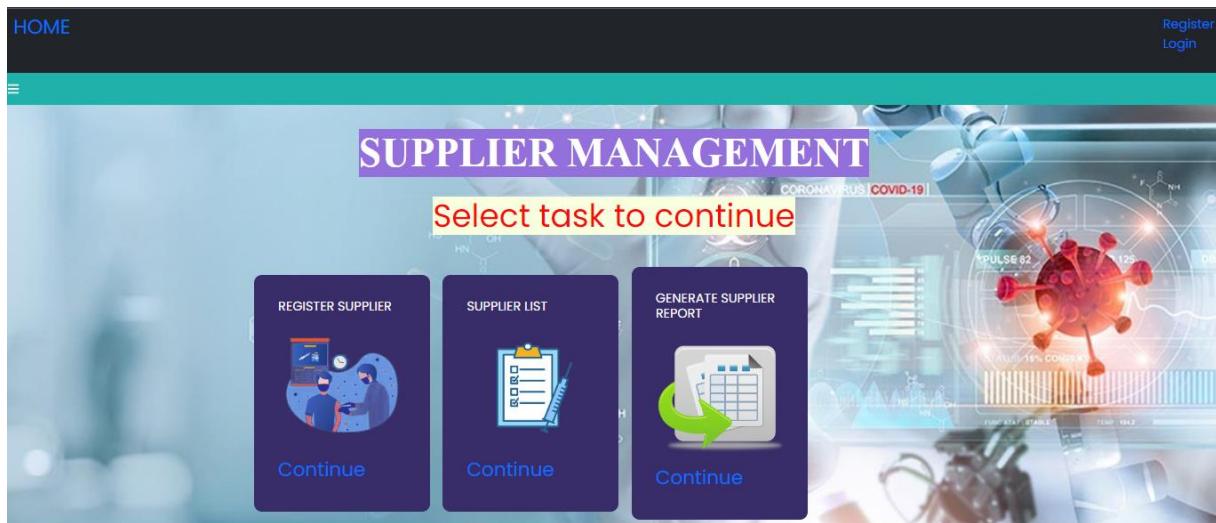


Figure 2.2.6 - 22 User Interface – Supplier Management

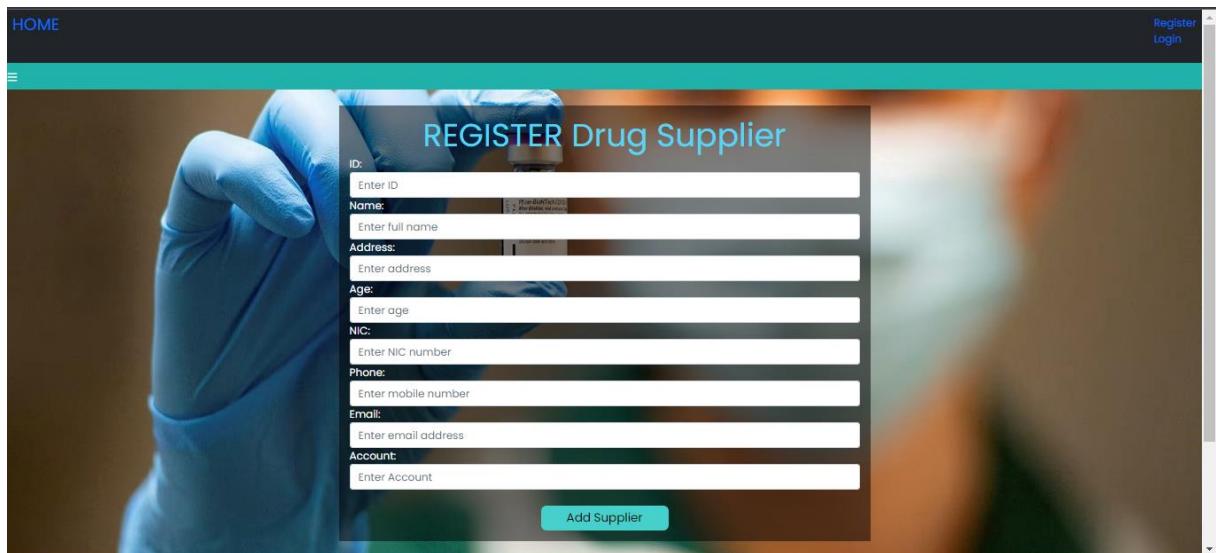


Figure 2.2.6 - 23 User Interface – Add Supplier

The screenshot shows a web-based application interface titled "Supplier Details". At the top, there is a search bar labeled "Search Supplier details". Below the search bar is a table with the following columns: ID, Name, Address, NIC, Phone, Account, and Action. The table contains five rows of data:

ID	Name	Address	NIC	Phone	Account	Action
01	Thilina Ruwan	Kengalla Diagana	201131147569	0778987585	5555-9898-7856	UPDATE DELETE
02	Methamli Silva	Balawaththa kandy	200131302569	0703646929	5147-7898-7889	UPDATE DELETE
03	Vishwa Vasnagoda	Polgolla Road Kandy	200036459865	0778585139	5455-7798-7111	UPDATE DELETE
04	Sachintha Jayasinghe	Manikkinna Road Madawala	200158697825	0725869382	1120-4585-7896	UPDATE DELETE
05	Pasindu Deepa	Kegolle Road Kegolle	200158697856	0779678969	1245-7854-9685	UPDATE DELETE

Figure 2.2.6 - 24 User Interface – Supplier List

The screenshot shows a web-based application interface titled "SUPPLIER DETAILS". The background features a calculator on the left and a stethoscope on the right, suggesting a medical or financial context. Below the title is a table with the same columns as Figure 2.2.6-24. The table data is identical to the previous figure:

ID	Name	Address	NIC	Phone	Account
01	Thilina Ruwan	Kengalla Diagana	201131147569	0778987585	5555-9898-7856
02	Methamli Silva	Balawaththa kandy	200131302569	0703646929	5147-7898-7889
03	Vishwa Vasnagoda	Polgolla Road Kandy	200036459865	0778585139	5455-7798-7111
04	Sachintha Jayasinghe	Manikkinna Road Madawala	200158697825	0725869382	1120-4585-7896
05	Pasindu Deepa	Kegolle Road Kegolle	200158697856	0779678969	1245-7854-9685

At the bottom of the table is a red button labeled "GENERATE REPORT".

Figure 2.2.6 - 25 User Interface – Supplier Report

Order Management

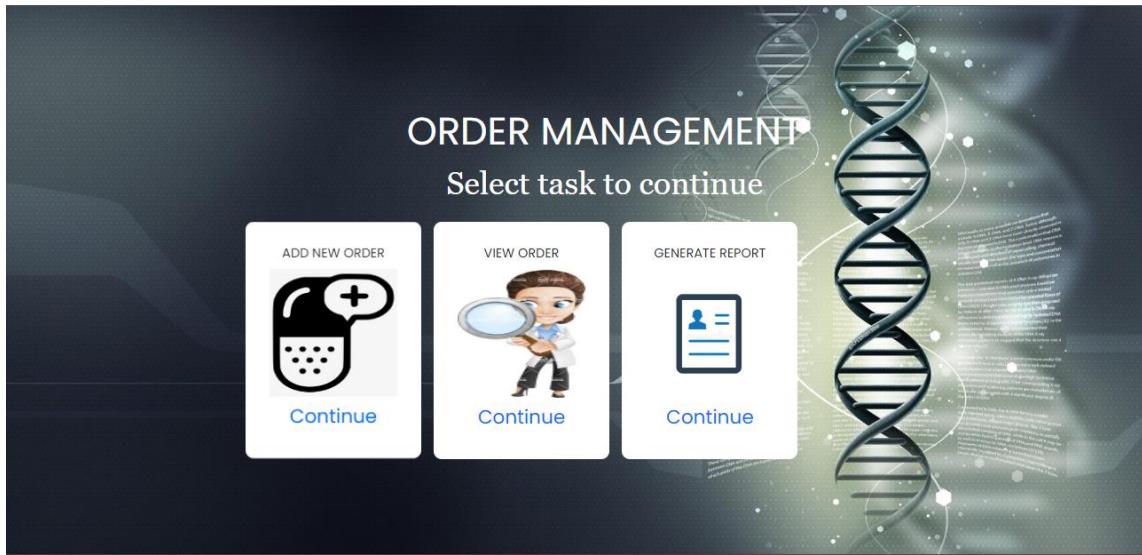


Figure 2.2.6 - 26 User Interface – Order Management

A screenshot of a mobile application titled "HOME" at the top. Below it is a form titled "Add New Order". The form fields are: "Order Id:" (text input), "Customer Name:" (text input), "Address:" (text input), "Date:" (date picker showing "mm/dd/yyyy"), and "Mobile Number:" (text input). At the bottom is a "Create Order" button. To the right of the form is a decorative image of various colorful pills and capsules.

Figure 2.2.6 - 27 User Interface – Add Order

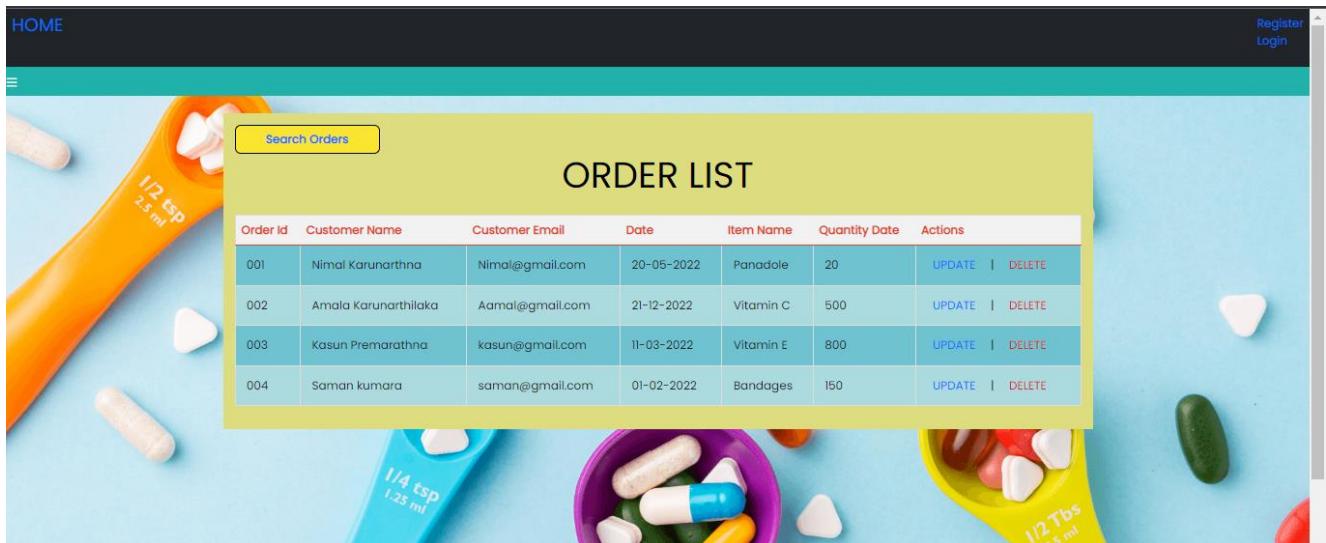


Figure 2.2.6 - 28 User Interface – Order List

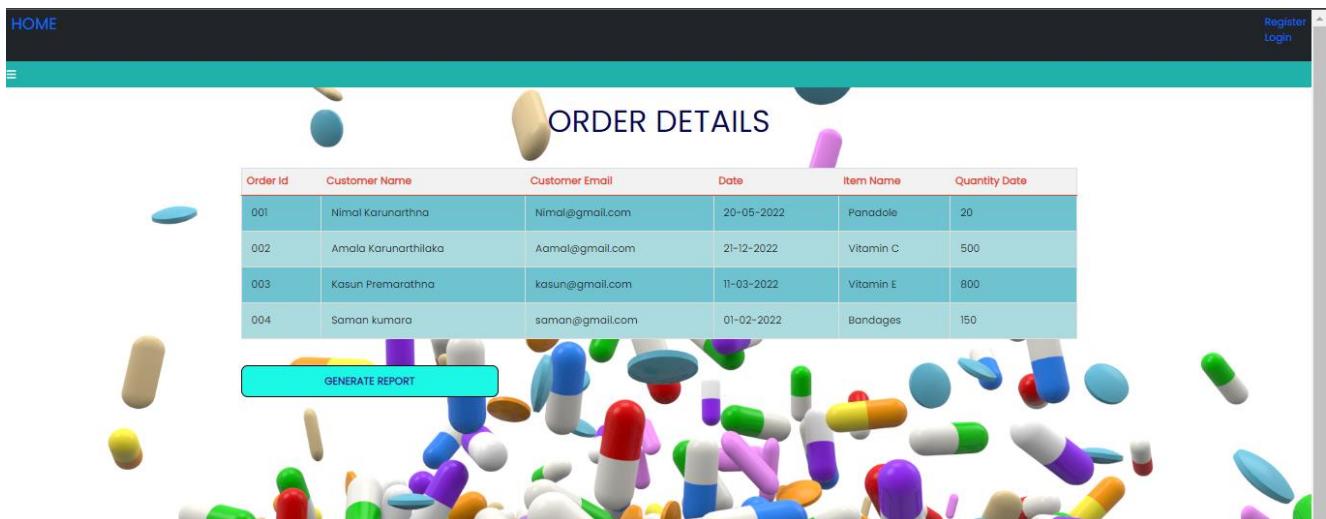


Figure 2.2.6 - 29 User Interface – Order Report

Finance Management



Figure 2.2.6 - 30 User Interface – Finance Management

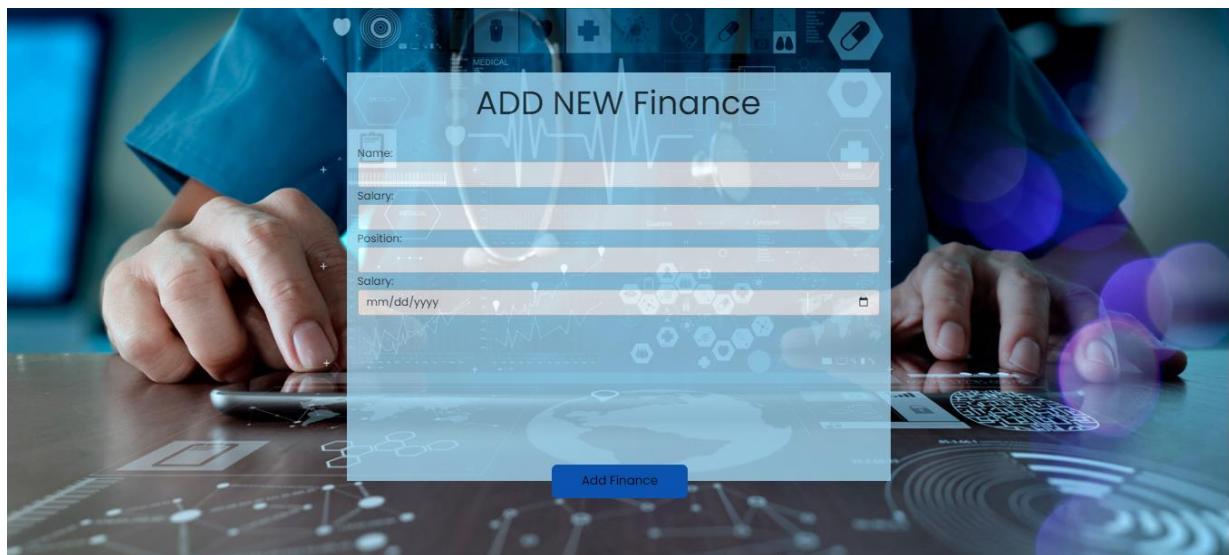


Figure 2.2.6 – 31 User Interface – Add Finance

Finance Details					
Id	Name	Salary	Position	Date	Actions
01	Nimal Karunarthna	250000	Manager	20-02-2022	UPDATE DELETE
02	Amala Karunarthilaka	220000	Accountant	21-12-2022	UPDATE DELETE
03	Kasun Premarathna	200000	System Admin	11-03-2022	UPDATE DELETE
04	Saman kumara	250000	Staff	01-02-2022	UPDATE DELETE

Figure 2.2.6 – 32 User Interface – Finance List

Finance Details				
Id	Name	Salary	Position	Date
01	Nimal Karunarthna	250000	Manager	20-02-2022
02	Amala Karunarthilaka	220000	Accountant	21-12-2022
03	Kasun Premarathna	200000	System Admin	11-03-2022
04	Saman kumara	250000	Staff	01-02-2022

[GENERATE REPORT](#)

Figure 2.2.6 – 33 User Interface – Finance Report

Sales Management

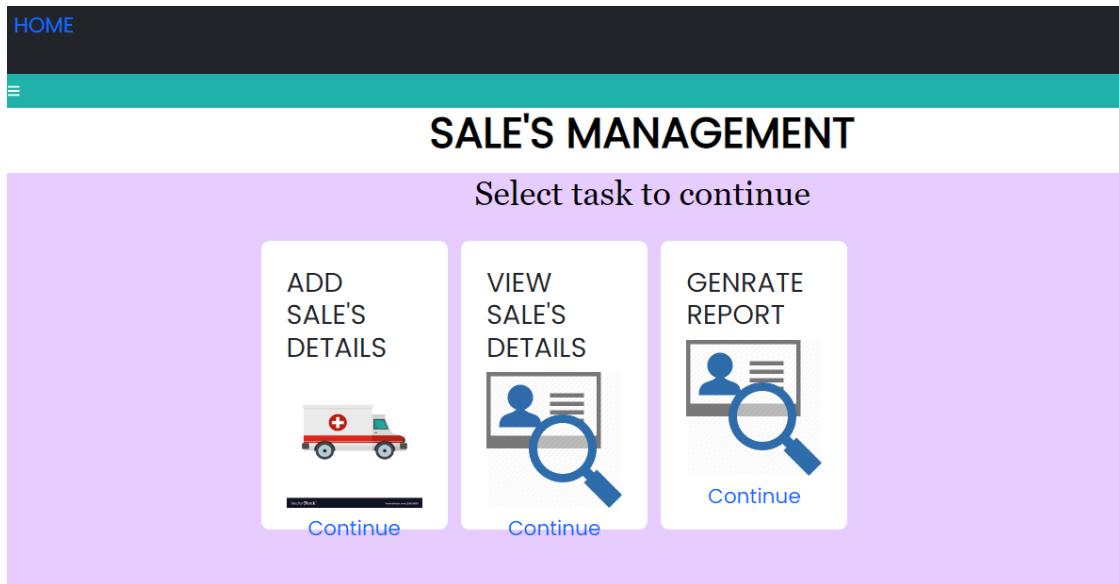


Figure 2.2.6 – 34 User Interface – Sales Management

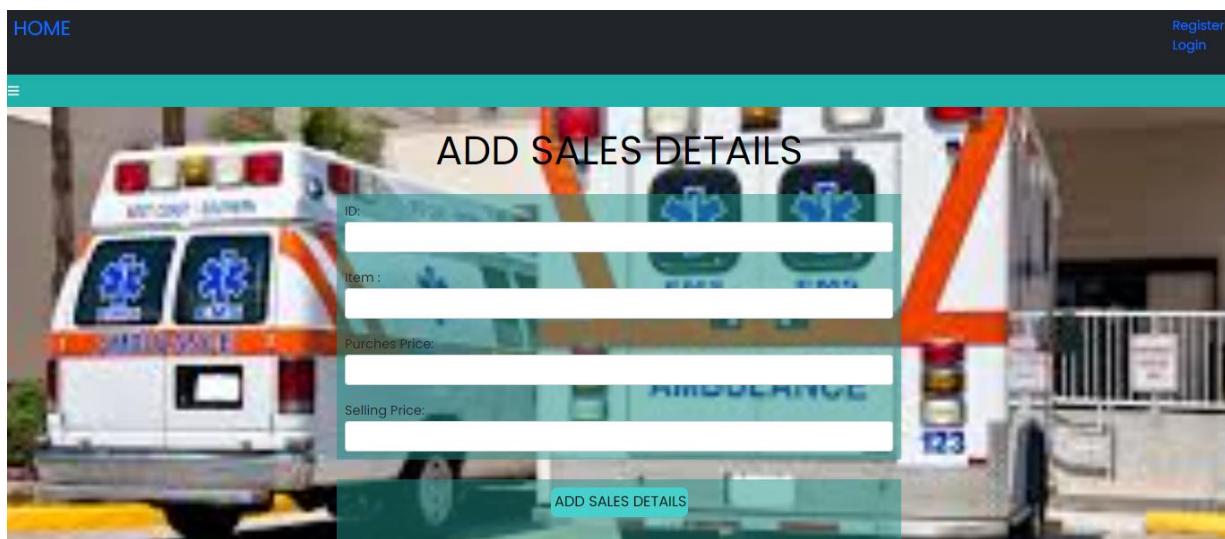
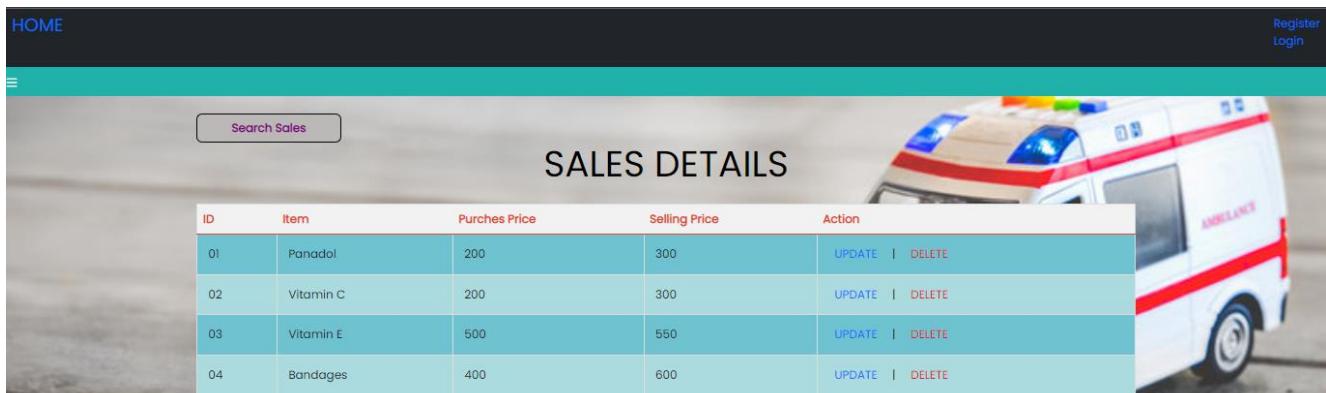


Figure 2.2.6 – 35 User Interface –Add Sales



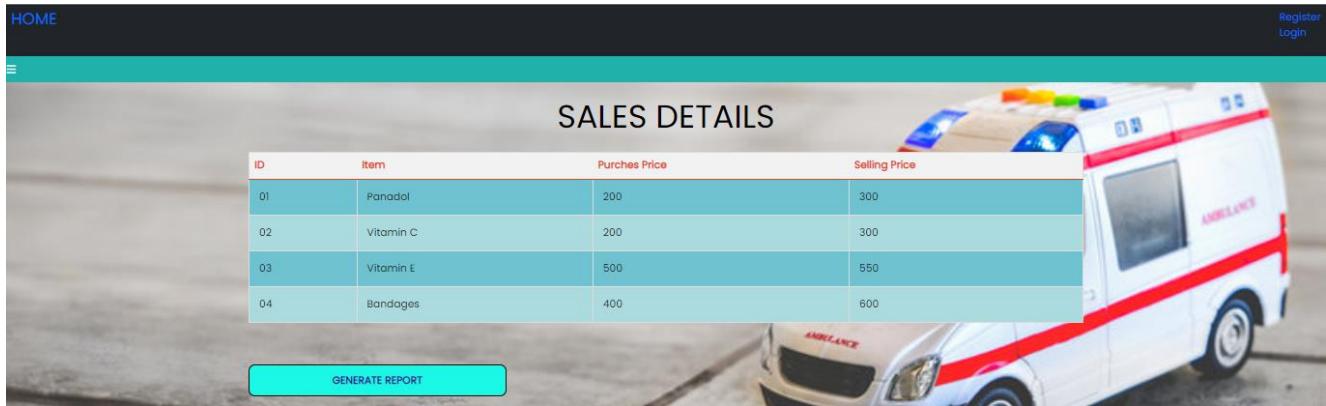
HOME Register Login

Search Sales

SALES DETAILS

ID	Item	Purches Price	Selling Price	Action
01	Panadol	200	300	UPDATE DELETE
02	Vitamin C	200	300	UPDATE DELETE
03	Vitamin E	500	550	UPDATE DELETE
04	Bandages	400	600	UPDATE DELETE

Figure 2.2.6 – 36 User Interface – Sales List



HOME Register Login

SALES DETAILS

ID	Item	Purches Price	Selling Price
01	Panadol	200	300
02	Vitamin C	200	300
03	Vitamin E	500	550
04	Bandages	400	600

GENERATE REPORT

Figure 2.2.6 – 37 User Interface – Sales Report

2.3 Implementation

ROYAL Pharmacy was developed on VS code using MERN stack as the technology. VS code was selected due to its user-friendliness and advanced features such as syntax highlighting, bracket-matching, and auto-indentation [1].

MERN is an open source, easily accessible framework [2]. As majority of the team members had prior experience working with MERN stack, and as MERN requires a lower learning time the team decided that it was the most suitable technology for the project.

The combination of backend technologies Node.js and Express.js with frontend JavaScript framework React.js allow JSON data flows naturally from front to back, making it fast to build on and reasonably simple to debug [2].

MongoDB is a NoSQL database which holds a collection of documents, and the combination of MongoDB with Node.js, makes storing, manipulating, and representing JSON data incredibly easy [2].

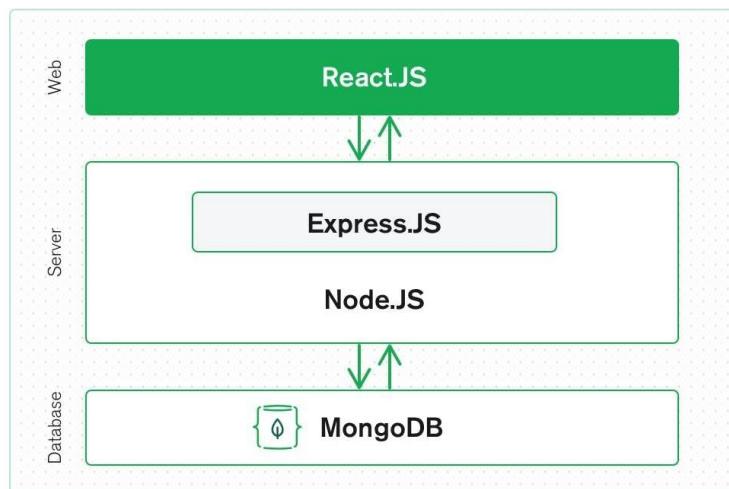


Figure – MERN Architecture via <https://www.mongodb.com/mern-stack>

2.4 Testing

Project ID: WD_B02_ITP_11									
Project Name: Pharmacy Management System – Royal Pharmacy									
Testing Function: Login function									
Test case ID: M001		Test case designed by, ID No: IT21062438 Name: Samarawickrama S.L.D.H.							
Test Priority (High/Medium/Low)		High							
Test Description: System should allow authorized users to access the system									
Test Steps:									
<ol style="list-style-type: none"> 1. Enter user email address and password 2. Click on ‘Login’ button 									
Test ID	Test Inputs	Expected Outputs	Actual Output	Result (Pass/Fail)	Comments				
M001	Valid email address and password	User should be redirected to Home Page	User is redirected to Home Page	Pass	Login function is working properly				
M001	Valid email address Invalid password	‘Invalid Password’ message should be displayed	‘Invalid Password’ message is displayed	Pass	System denies access to unauthorized users				

Table 2.4-1 Test Case – Customer Management- Login function

Group ID: WD_B02_ITP_11									
Project title: Pharmacy Management System – Royal Pharmacy									
Testing Function: Customer Management – Add New customer									
Test case ID: M002		Test case designed by, ID No: IT21062438 Name: Samarawickrama S.L.D.H.							
Test Priority (High/Medium/Low)		High							
Test Description: Once a customer is registered in the system with valid details, the customer details should be shown in the Pharmacy customer list.									
Test Steps: 3. Go to ‘Add new customer’ interface 4. Fill in the form with valid details 5. Click on ‘Register’ button									
Test ID	Test Inputs	Expected Outputs	Actual Output	Result (Pass/Fail)	Comments				
M002	Valid Customer ID, name, Address, gender, phone and age	Details of new customer should be visible on the Pharmacy Customer List interface	Details of new customer are visible on the Pharmacy Customer List interface	Pass	Register Customer function is working properly				
M002	Invalid age (numbers are Valid)	Display an error message, as ‘Age should be a positive number. Please enter age again’	‘Please lengthen this text to 10 characters (you are currently using 5 characters)’ message is displayed	Pass	Valid details should be entered to successfully register Customer member				

Table 2.4-2 Test Case – Customer Management- Add new Customer

Group ID: WD_B02_ITP_11									
Project title: Pharmacy Management System – Royal Pharmacy									
Testing Function: Customer Management – Update customer									
Test case ID: M003		Test case designed by, ID No: IT21062438 Name: Samarawickrama S.L.D.H.							
Test Priority (High/Medium/Low)		Medium							
Test Description: Update customer details									
Test Steps:									
<p>6. Navigate to my account page.</p> <p>7. Click the update button and navigate to the form.</p> <p>8. In the Type field, update the name, address, phone number and age of customer. Fill the form with new details and</p> <p>9. Click the ‘Save’ button.</p>									
Test ID	Test Inputs	Expected Outputs	Actual Output	Result (Pass/Fail)	Comments				
M003	Valid Customer ID, name, Address, gender, phone and age	Display alert as ‘Details saved successfully’ and clear the fields	Display alert as ‘Details saved successfully’ and clear the fields	Pass	Update customer function is working properly				
M003	Invalid age (numbers are Valid)	Display an error message, as ‘Age should be a positive number. Please enter age again’	Display an error message, as ‘Age should be a positive number. Please enter age again’	Pass	Valid details should be entered to successfully update customer.				

Table 2.4-3 Test Case – Customer Management-Update Customer

Group ID : WD_B02_ITP_11	
Project title: Pharmacy Management System – Royal Pharmacy	
Testing Function : Order Management	
Test case ID : M004	Test designed by: Reg. No- IT21047138 Name- Bandara L.R.H.P
Test priority (High/Medium/Low):	High
Test Description: Add the Order	
Preconditions (if there are any): The customer must need to login into the system	
Dependencies (if there are any):	

Test steps:
<ol style="list-style-type: none"> 1. User should click Add order button on the navigation bar. 2. User navigates to Add order page. 3. User navigates to the reservation form. 4. In the “Customer Name” field, a user should enter his/her name. 5. In the “Email” field, a user should enter a valid Email address. 6. In the “Order Date” field, the user must select the date. 7. In the “Item Name” field, the user should enter what she/he orders. 8. In the “Quantity” field, a user should enter the Quantity of the order. 9. In the “Action” field, the user can update or delete the <u>Added</u> order. 10. User should click on the “Confirm” button.

Pass-condition:

System displays a success message as “Order Added”

Table 2.4-4 Test Case – Order Management-Add Order

Group ID : WD_B02_ITP_11	
Project title: Pharmacy Management System – Royal Pharmacy	
Testing Function : Order Management	
Test case ID : M005	Test designed by: Reg. No- IT21047138 Name- Bandara L.R.H.P
Test priority (High/Medium/Low):	Medium
Test Description: Update /Delete the Order	
Preconditions (if there are any): User need to logging as a customer	
Dependencies (if there are any):	
Test steps:	
<ol style="list-style-type: none"> 1. User should click on the Order Edit/Delete button on the navigation bar on the Add order home page. 2. User navigates to the “Order Management” page. 3. User selects the Edit button and updates the added details. 4. After selecting the Confirm button redirect to the “Order Management “ page. 5. In this page User click the delete button. 6. System show order deleted. 	

Pass-condition:

System displays a success message as “Order Updated” and “Order Deleted”

Table 2.4-5 Test Case – Order Management-Update Order

Group ID : WD_B02_ITP_11	
Project title: Pharmacy Management System – Royal Pharmacy	
<u>Testing Function : Supplier Management</u>	
Test case ID : M006	Test designed by: Reg. No- IT21110016 Name- Kushan H.G.P.S
Test priority (High/Medium/Low):	High
Test Description: inserting a new supplier to the supplier database	
Preconditions (if there are any): Supplier manager should login to the system first.	
Dependencies (if there are any):	

Pass-condition:

Display an alert as “Supplier added successfully”

Table 2.4-6 Test Case – Supplier Management- Add Supplier

Group ID : WD_B02_ITP_11	
Project title: Pharmacy Management System – Royal Pharmacy	
Testing Function : Supplier Management	
Test case ID : M007	Test designed by: Reg. No- IT21110016 Name- Kushan H.G.P.S
Test priority (High/Medium/Low):	Medium
Test Description: Update supplier database	

Preconditions (if there are any): Supplier manager should login to the system first.
Dependencies (if there are any):

Test steps:
<p>Navigate to the Supplier management page. Click the edit button and navigate to the edit page. In the “Name” field, update the name of the supplier. In the “Supplier Code” field, update the id number of the supplier. In the “Address” field, update the address of the supplier. In the “Account Number” field, update the account no. of the supplier. In the “Telephone Number” field, update the telephone no. of the supplier. In the “E-mail” field, update the email of the supplier. In the “Date” field, update the date which the supplier is added to the system. Click the ‘Update’ button.</p>

Pass-condition:
Display an alert as “Supplier updated successfully”

Table 2.4-7 Test Case – Supplier Management-Update

Group ID : WD_B02_ITP_11	
Project title: Pharmacy Management System – Royal Pharmacy	
Testing Function : Inventory Management	
Test case ID : M008	Test designed by: Reg. No- IT21045530 Name- Nissanka K.G.T.R.K
Test priority (High/Medium/Low):	High
Test Description: inserting a new item to the inventory database	
Preconditions (if there are any): Inventory manager should login to the system first.	
Dependencies (if there are any):	

Test steps:
Navigate to the Inventory management page.
Click the add new item button and navigate to the button.
In the “Inventory Name” field, enter the name of the item.
In the “Inventory ID” field, enter the id number of the item.
In the “Quantity” field, enter the quantity of the item.
In the “Unit Price” field, enter the price of the item. Click the ‘Save’ button.

Pass-condition:

Display an alert as “Item added successfully”

Table 2.4-8 Test Case – Inventory Management- Add inventory

Group ID : WD_B02_ITP_11	
Project title: Pharmacy Management System – Royal Pharmacy	
Testing Function : Inventory Management	
Test case ID : M009	Test designed by: Reg. No- IT21045530 Name- Nissanka K.G.T.R.K
Test priority (High/Medium/Low):	Medium
Test Description: Update inventory database	
Preconditions (if there are any): Inventory manager should login to the system first.	
Dependencies (if there are any):	
Test steps: Navigate to the Inventory management page. Click the edit button and navigate to the button. In the “Inventory Name” field, update the name of the item. In the “Inventory ID” field, update the id number of the item. In the “Quantity” field, update the quantity of the item. In the “Unit Price” field, update the price of the item. Click the ‘Update’ button.	
Pass-condition: Display an alert as “Item updated successfully”	

Table 2.4-9 Test Case – Inventory Management- Update inventory

Project ID: WD_B02_ITP_11									
Project Name: Royal Pharmacy Management System									
Testing Function: Pharmacy Finance Management – Profit/Loss Calculation									
Test case ID: M010		Test case designed by, ID No: IT21039522 Name: Jayasinghe J.M.S.D							
Test Priority (High/Medium/Low)		Medium							
Test Description: The user must fill in all details to calculate profit/loss and generate a Pharmacy Finance report									
Test Steps:									
<ol style="list-style-type: none"> 1. Go to the ‘Calculation Status’ interface 2. Fill in the form with valid details 3. Click on the ‘Generate’ button 									
Test ID	Test Inputs	Expected Outputs	Actual Output	Result (Pass/Fail)	Comments				
M010	Fill out the fields in the form, leaving one empty field	Display an alert message showing “All fields are required!”.	Display an alert message showing “All fields are required!”.	Pass	All details required for the calculation				

Table 2.4-10 Test Case – Finance Management-Profit/Loss Calculation

Project ID: WD_B02_ITP_11									
Project Name: Royal Pharmacy Management System									
Testing Function: Pharmacy Finance Management – Add Expenses									
Test case ID: M011		Test case designed by, ID No: IT21039522 Name: Jayasinghe J.M.S.D							
Test Priority (High/Medium/Low)		Medium							
Test Description: The user must add a unique id for expenses ID and income ID									
Test Steps:									
<ol style="list-style-type: none"> 1. Go to the ‘Add Finance’ interface 2. Fill in the form with valid details 3. Click on the ‘Add Finance’ button 									
Test ID	Test Inputs	Expected Outputs	Actual Output	Result (Pass/Fail)	Comments				
M011	Finance ID, Department name, Type, Value	When entering a similar id, it will not go to the database and “Find expenses” page	When entering a similar id, it will not go to the database and “Find expenses” page	Pass	ID must be Unique				

Table 2.4-11 Test Case – Finance Management-Add Expenses

Group ID: WD_B02_ITP_11	
Project title: Pharmacy Management System	
Testing Function: Pharmacy staff Management – Register New staff	
Test case ID: M012	Test case designed by, ID No: IT21010712 Name: Weerasooriya.W.M.P.P
Test Priority (High/Medium/Low)	Medium
Test Description: Once an Staff member is registered in the system with valid details, the Staff member details should be shown in the Pharmacy Staff list.	
Test Steps: 3. Go to ‘Add New Staff member’ interface 4. Fill in the form with valid details 5. Click on ‘Register Staff member’ button	

Test ID	Test Inputs	Expected Outputs	Actual Output	Result (Pass/Fail)	Comments
M012	Valid Staff member ID, name, NIC, gender, phone and email	Details of new employee should be visible on the Hospital Staff List interface	Details of new employee are visible on the Hospital Staff List interface	Pass	Register Staff member function is working properly
M012	Invalid mobile number(5 characters) Valid employee ID, name, NIC, gender, phone and email	‘Please lengthen this text to 10 characters(you are currently using 5 characters)’ message should be displayed	‘Please lengthen this text to 10 characters(you are currently using 5 characters)’ message is displayed	Pass	Valid details should be entered to successfully register Staff member

Table 2.4-12 Test Case – Staff Management-Add Staff

3. Evaluation

3.1 Assessment of the Project results

The group members research how pharmacies run before building the system. The team assembled to design the system once the requirements had been determined. The system was created to be as user-friendly as possible for the users, requiring no prior training to operate. Some tasks turned out to be trickier than anticipated. As a result, a fundamental implementation of such functions was created, and we intend to advance the system in the future.

However, with the assistance of our lecturers, instructors, and classmates, we were able to construct a comprehensive system that can be utilized in a pharmacy by the conclusion of the semester.

3.2 Lessons Learned

- The importance of developing a complete product equipped with validations prior to releasing to the market.
- The power and importance of teamwork.
- This project taught us the importance of time management and proper planning in order to complete the work in time prior to the deadline.

3.3 Future Work

- Implement basic functions in more complex and advanced ways to make the system more efficient.
- Insert more validations to data to prevent any sort of invalid data entering the database

3. Conclusion

The goal of the "Royal Pharmacy Lanka (PVT), Ltd" Pharmacy Management System was to aid pharmacy in carrying out their duties more effectively. The projects' goal is to develop a system that is simple for pharmacy staff to use and enables them to give customers good service.

All computations and data validations are completed automatically by "Royal Pharmacy Lanka (PVT), Ltd" with no human input, which saves time and reduces the chance of errors.

The pharmacy database will only contain accurate data, which makes it simpler for the staff to manage the data. Additionally, adopting a cloud database to hold pharmacy information reduces paper effort, which frees up physical storage space for papers. By reducing the amount of paper needed and resulting paper waste, this also helps the pharmacy operate in a more environmentally friendly manner.

4. References

Bibliography

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