Pharmacy Management System

Project Report

Sri Lanka Institute of Information Technology

IT2080 Information Technology Project

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Declaration

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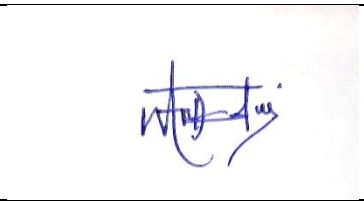
IT21168840	KusumsiriW.A.N.P.M	
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Abstract

The Pharmacy Management System is a web-based software solution developed to automate and streamline various processes within a pharmacy. It addresses the inefficiencies and challenges associated with manual methods, aiming to enhance efficiency, accuracy, and overall customer experience. The motivation behind the system's development stems from the need to integrate technology into pharmacy operations, improving patient care, inventory management, and workflow optimization.

The system's objectives include efficient inventory management, seamless prescription processing, enhanced patient information management, simplified billing, and compliance with regulatory requirements. It features user-friendly modules for inventory, prescriptions, patients, billing, and reporting, providing a comprehensive solution for managing pharmacy operations.

The development process of the system follows an iterative approach, involving requirements gathering, stakeholder analysis, requirements modeling, design, and testing. Stakeholder analysis is conducted to understand the needs and concerns of individuals and groups affected by the system, such as pharmacists, staff, patients, providers, insurers, and regulators.

The system's design and development focus on creating a modular and scalable architecture, adhering to coding standards and best practices. Comprehensive testing is conducted to ensure the system's functionality, performance, and reliability, covering unit testing, integration testing, system testing, and user acceptance testing.

In conclusion, the Pharmacy Management System is a comprehensive solution that automates and streamlines pharmacy operations, benefiting both staff and patients. By integrating technology, the system improves efficiency and accuracy in inventory management, prescription processing, patient information management, and billing while ensuring compliance with regulatory requirements. The user-friendly interface and modular design make it a valuable tool for pharmacies seeking to enhance their overall operations.

Acknowledgement

First and first, we would like to express our deep gratitude to Mrs. Vindhya, the lecture coordinator, and Ms. Bhagya, the group advisor, for their invaluable guidance in helping us during the entire system development process. We appreciate you pointing out the shortcomings and weaknesses in the system and directing us in the right direction so that we could create a competent system that is appropriate for the client. We also want to express our gratitude to Mr. Nuwan, our client, for his patience with us throughout the process and for providing us with the information we needed to determine the system's requirements. Additionally, we want to express our gratitude to our parents for all of the ways they supported us and helped us complete the project in a calm and collected manner.

Table of Contents

List Of Figures

List Of Tables

List Of Abbreviations

Short Form	Long Form
CSS	Cascading Style Sheets
CVN	Card verification number
DB	Database
ER	Entity Relationship
HR	Human Resource
ID	Identification
IT	Information Technology
MERN	MongoDB, Express, React, Node
PC	Personal Computer
SD	Sequence Diagram
USD	Use Case Diagram
UI	User Interface
GIT	Global Information Tracker
NIC	National Identity Card

1 Introduction

1.1 The structure of the report

The project consists of 7 main chapters:

a) Introduction
b) Methodology
c) Literature review
d) Requirements
e) Design and Development
f) Testing
g) Evaluation and Conclusion

Introduction again divides into 4sub-sections:

- Background
- Problem and motivation
- Aim and objectives
- Solution overview

Requirements part again divides into 3 sub parts

- Functional requirement
- Non functional requirement
- Technical requirement

Design and development contain ,

- Use case diagram
- EER diagram
- Class diagram
- Component diagram
- Activity diagram

1.2 Background

'EasyMed' is a pharmacy. Medicine is issued to patients/customers who come to the pharmacy through that pharmacy. Patients with a prescription are issued the relevant medicine accordingly, and medicine

and other products that can be obtained without a prescription are given to the customers accordingly. When providing this medicine to the customers, the item code of the relevant medicine or non-medicine items is mentioned through their existing system and the prices of those items are entered into the system and the total is generated and an e-bill is generated. Doctors who come to get medicine will issue medicine in bulk and generate an e-bill. Customers who come to the pharmacy and doctors can do the transaction with Visa card, master card or cash. The e-bill given to a customer in the pharmacy. A printed copy is kept. There is no way to buy medicine online through the pharmacy and you have to come to the pharmacy and get the medicine. The employees work in the pharmacy. The daily arrival to the service is collected and managed manually by a book. The time of arrival at the pharmacy, the time of departure and the days of the customer's arrival are managed manually. When managing the inventory of the pharmacy, the decrease in stock should be updated manually. A stock level report can be generated through the system. Expiry date management of products/items is done manually, and the employees of the pharmacy manually mention the item code and name of the products that are about to expire every month in a book and the items that are about to expire When they are removed from the stock of the pharmacy. The removed medicine is returned to the relevant supplier and the amount available to be returned can be checked through their existing system. The orders received from the supplier and supplier details are mentioned in a separate book and those details are managed separately. If a new product is obtained from the supplier, they are inserted under an existing category. is advertised among the customers. Also, a box called customer feedback has been placed in the pharmacy to evaluate and give feedback to the customers about their service and any customer can add comments to it. Through their existing system, they can look at the monthly loss and profit and report It is also possible to generate one.

1.3 Problem and motivation

1.3.1 Problem

After analyzing the current business processes and client requirements, we were able to identify the problems mentioned below in the existing structure.

- Managing attendance data manually.

  As the employee are being paid the correct attendance of the employee should be obtained

- Item expiration tracking do manually.

  Expiry date checking of the items (drug and non-drug items) in the pharmacy should be done manually. Therefore, it is difficult to track the expiration date of the items properly.

- Lack of ways for customers to order medicine online.

Customers have to come to the pharmacy to get medicine. With the current situation in Sri Lanka, it causes the sales of the pharmacy to decrease.

- Doctors do not have a way to order medicine in bulk.

  The doctors who come to the pharmacy and get medicine in bulk have to visit the pharmacy often to get the medicine. With the busy lifestyle of the doctors, it is difficult to come like that and it also affects the sales of the pharmacy.

- Manage supplier order details manually

  The information about the order received from the suppliers and the money paid to them is maintained manually through a book therefore a computerized system is needed.

- No way to create subcategories.

  Since there is no way to create a subcategory under the sub main category in the inventory, the added product must be added under the existing category. It is sometimes difficult to manage the product.

1.3.2 Motivation

- The HR manager marks the attendances and adds them to the system. After that, an attendance report can be generated through the system monthly and annually.
- When a new stock is added to the system, the system asks for the expiration date and the manufacture date of that item. Through this, an alert is given through the system for items that are about to expire.
- Customers can order medicine online through our online pharmacy management system. Doctors can order medicine in bulk. Therefore, customers can get medicine without visiting the pharmacy.
- It is easy to manage the product because it is possible to create subcategories through our system. Due to the facility of creating categories as needed, it makes the work of the pharmacy easier.
- Get supplier order details The supplier manager can manually enter the system and generate a supplier order details report when needed.

1.4 Aim and objectives

1.4.1 Aim

- develop a user-friendly application for the effective management of The Pharmacy management system which helps to manage all sections of pharmacy like medicine, store, and billing etc.

1.4.2 Objectives

- Improving the efficiency of the system by ensuring effective monitoring of services and activities.
- Ensuring effective policy by providing statistics of the products in stock.
- To ensure that the system is user-friendly.
- Maintaining correct database by providing an option to update the products in stock.
- To display Relevant messages of stock which are ending soon, expiry dates.
- Customer can search the availability of a particular product by viewing the website.
- The automating tasks of maintaining bills.
- To be able to generate various reports according to the requirements.
- To provide optimal drug inventory management by monitoring the drug movement in the pharmacy.
- To ensure that there exists a level of restricted access based on functionality and role.
- To manage employee records.
- To provide easily accessibility of Employees records.
- To minimize human errors.

- Fast searching for medicine.

1.5 Solution overview

- Flexible access – Students able to access the course materials and lectures can upload it into the system online.

- Higher efficiency – Time wastage is lower when compared with the manual method.
- Generate reports – Easy to generate relevant reports by using the data taken from the databases which simple the management works.
- Higher Security – Providing access privileges to users can secure the data from the unauthorized persons accessing the system.
- Organized – All the records of the system are up to date and structured well.
- User friendliness – System is well designed and easy to use with better GUI.
- Fewer human errors – Converting functions done by the manually into automation can reduce the human mistakes.
- Low redundancy – Storing all the records in the databases effectively minimizes the redundancy.

1.6 Git Repository

Link=mailto:https://github.com/SLIITITP/y2_s2_wd_it_01-itp_wd_b06_g03.git

2 Literature review

Overall, these articles demonstrate the importance of pharmacy management systems in improving the efficiency, safety, and effectiveness of pharmacy operations. They also highlight the challenges facing pharmacies in implementing these systems and provide recommendations for successful adoption.

A pharmacy management system is a piece of software that aids in managing the day-to-day activities of pharmacies, such as inventory control, prescription filling, client information, invoicing and payment, and other administrative functions. A review of the pharmacy management systems literature is provided below:

The International Journal of Scientific and Research Publications article "Pharmacy Management Systems: A Complete Overview" by Deepak K. Sharma gives a thorough review of the many kinds of pharmacy management systems that are offered on the market. The article lists the important aspects that pharmacies should take into account when choosing a system and compares the features and advantages of various systems.

Sanaa S. Al-Shaikh and Hassan M. Al-article Obaidi's "Pharmacy Management Systems: A Study of Their Existing Capabilities and Future Trends" gives a thorough examination of the present

capabilities and market trends for pharmacy management systems. The essay explains how technology might assist pharmacies overcome the difficulties they have in managing their business operations.

The American Journal of Health-System Pharmacy article "The Effect of Pharmacy Information Systems on Pharmacy Practice" by Jeffrey A. Johnson examines how these systems affect pharmacy practice. The advantages of employing these systems are emphasized in the paper, including enhanced patient safety, increased effectiveness, and decreased medication errors.

The Journal of Pharmaceutical Sciences and Research article "An Study of Pharmacy Management Systems and Its Function in Optimizing Medication Usage" by Rajashree K. Rane and Rakesh P. Kolhe examines the function of pharmacy management systems in medication use optimization. The essay goes over how these systems can enhance patient outcomes, decrease medication mistakes, and increase medication adherence.

A review of pharmacy management system implementations in developing countries is presented in Yasir Imran and Ali Afzal's article, "A Review of Pharmacy Management System Implementations in Developing Countries," which was published in the Journal of Pharmacy Practice and Research. The essay describes the difficulties these nations have in implementing new technologies and offers suggestions for doing so successfully.

These papers show the value of pharmacy management systems in raising the efficacy, safety, and efficiency of pharmacy operations overall. They also highlight the difficulties pharmacies will face in putting these systems in place and offer suggestions for successful adoption.

When a customer uploads a prescription before they need to order the medication again, they simply click the refill button to send a request to the pharmacy, and the pharmacy will refill their medication using the saved prescription in the pharmacy database. This is one of the new functionalities we show off in our system. As a result, placing an order for medication without repeatedly uploading a prescription is simple for the customer. We will specifically design a feature that will allow doctors to order massive quantities of medication for use in their medical centers. Because it is risky to give out such a large volume of medicine, we rarely pass large amounts of medicine orders to regular clients. Also, a new function called expiration tracking has been added to our system. As a result, the manufacturing date and the expiration date are entered into the system each time fresh stock is added. Because of this, the system manager will be notified if the stock expiration dates are approaching. As a result, the manager can act without spending time physically checking the stock levels. Also, the administrator can search for any drug and view the expiration dates of the stock of drugs.

3 Methodology

SE related Methods

Requirements engineering Method [1].

- **Interview**

  An interview is a process used to get information from a person by having them respond orally to questions.

INTERVIEW

- **The Benefits of choosing Interview.**

- Building relationships with stakeholders.
- Building relationships with stakeholders through interviews is a fantastic way to increase trust between them and developers.
- Able to gather in-depth information.
- With the help of this method, we can get comprehensive data on our clients' needs, demands, and expectations that other approaches, like surveys, would not be able to do.
- Able to clarify requirement.
- This method provides an opportunity to clarify and confirm requirements that might be ambiguous or unclear.

Alternatives

- **Brainstorm**

With this method, participants come together to foster a stimulating and concentrated environment. Its unique selling point is that no ideas are criticized.

- **User observation**

It involves closely observing and listening to users as they interact with a product. Even while much more in-depth data can be gathered, watching consumers is a simple approach to get a dispassionate impression of a product.

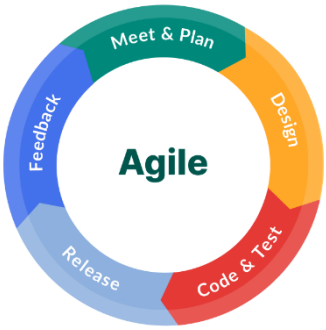
- **Questionnaires or surveys**

This is a method for gathering data from many people. This data can be used in one of two ways: either to gather opinions and suggestions or to obtain statistical support for an assumption.

Design Method

- **Agile**

It is a flexible, iterative approach that features collaboration and feedback between developers, customers, and other stakeholders.



- **The Benefits of choosing Agile Manifesto.**

- Higher client satisfaction.

The Agile manifesto technique, which places a strong emphasis on client interaction and feedback to ensure that the final products satisfy the customer's needs.

- Flexibility and adaptability.

This approach is made to be flexible and adaptable, allowing teams to react swiftly to shifting requirements.

- Increase collaboration and communication.

This method ensures that all parties are working toward a common objective by improving collaboration and communication between developers, customers, and stakeholders.

- Minimize the risk.

  This requirement engineering method mainly relies on delivering functional software regularly, allowing for the early identification and mitigation of risk.

❖ **Alternatives:**

- **Prototyping**

  Users get a better understanding of the system being developed. Errors can be detected much earlier. Quicker user feedback is available, leading to better solutions.

- **Waterfall**

  This method of development is sequential, and each stage must be finished before going on to the next.

4 Requirements

4.1 Functional Requirements [2]

Customer

- Log into the system.
- Register to the system.
- Reset the password.
- View profile details.
- Edit profile.
- View previous purchases.
- See all the items at store.
- Add items to the cart.
- Remove items from the cart.
- Search for items by entering the item name.

- Add delivery details.
- Edit delivery details.
- View order delivery details with status.
- Purchase items from the store.
- Refill request.
- Send customer feedback.
- View promotional message.
- View notification.
- Mange payment option.

Inventory Manager

- Log in to the system.
- Update to the system.
- Add new medicine detail to system.
- View all medicine available.
- Delete medicine details.
- Update medicine details.
- Add product image.
- View product image.
- Delete product image.
- Edit product image.
- Add a new category.
- Delete category.
- Edit category.
- View category.
- Update stock level.
- View stock level.
- Generate stock level report.
- View stock level alert message.

HR manager

- Register the employees to the system.
- Manager can login to the system.
- View details about the registered employees.
- Edit employee related details.
- Remove employees from the system.
- Mark attendance of employees.
- Calculate the salaries of employees by considering the attendance.
- Search for employees by entering employee name.
- Add salary details.
- Generate salary report of employees.
- Employee payroll management.
- View employe resignation list.
- View all order details with status.

Delivery Manager

- Assign drivers to each order.
- View all the drivers' details.
- Log in to the system.
- Update log in credentials.
- Generate delivery reports.

Delivery Driver

- Register to the system as a driver.
- View my profile.
- View orders that need to be delivered by one delivery driver.
- Update delivery status.

Supplier Manager

- Log in to the system as an employee.
- Add details of medicine suppliers.
- Update details of suppliers.
- Delete details of suppliers.
- View details of all suppliers.
- Generate Supplier reports.

- Update supplier agreement.
- Manage supplier order details.
- Create service catalog report.

Doctor

- Log into the system.
- Register to the system.
- View profile details
- Edit profile.
- See all the medicines and items.
- Search for items and medicines by entering the name.
- Add items to the order.
- Remove items from the order.
- View order summary.
- Add delivery details.
- Edit delivery details.
- View order delivery details with status.
- Purchase the order.
- Generate a report on the items purchased.

Customer service manager

- Log into the system
- Add promotion.
- View promotion.
- Remove promotion.
- Notify customers.
- Manage customer inquiries and issues.
- Manage customer contact details.
- provide information about products and services.
- monitor customer feedback and reviews.
- Add marketing campaign.
- Remove marketing campaign.
- View marketing campaign.

Financial manager

- Maintain the records of all transactions.
- Manage salaries and expenditures.
- Create budget.
- Generate reports.
- Mange loss and profit.

Moderator

- View all registered customer profile
- Delete customer profile
- Edit customer profile
- Add Manager Account
- View manager account
- Delete manager account
- Manager role base access controlling
- Logging
- Permission management
- View user Activity log
- Search Customers and managers profile

4.2 Non-Functional Requirements

- Usability – All direct stakeholders should be able to use this web application in an easy and convenient manner. The users of the system should be able to navigate between the pages without any difficulty. The workflow of the entire system must be easily understood and self-explanatory.
- Performance – Customers should be able to purchase items quickly, reducing the waiting time. All pages of the system should be loaded immediately on the browser in a seamless manner for enhanced user experience.
- Security- The data stored in the database should be protected as this information is highly confidential and vulnerable as it contains all business-related data, along with the personal data of Customers and employees. Only authorized personnel are allowed to login to the system. All passwords are encrypted before being entered into the system to ensure maximum security,
- Availability – The system should be available 24 hours for customers to purchase items at any time they want. All purchases should process through the system at any given time and place

they want without any delay. All employees should be able to login to the system and perform necessary operations regardless of the time or place.

- Reliability - All calculations done by the system, on both the customer and employee side should be accurate. Correct data should be passed between the client side and the server side when requests are made by users from the web server.

4.3 Technical Requirements

- Internet Connection required.
- High data quality required.
- Human error detection - The application must be able to detect when people have made errors and notify and advise about such discrepancies.
    - Ex: JavaScript data validations etc.
- Technical devices are required - A PC or mobile.
- Technical knowledge is required to navigate through the web application.

5 Design and Development

5.1 Use case diagram

5.1.1 User management

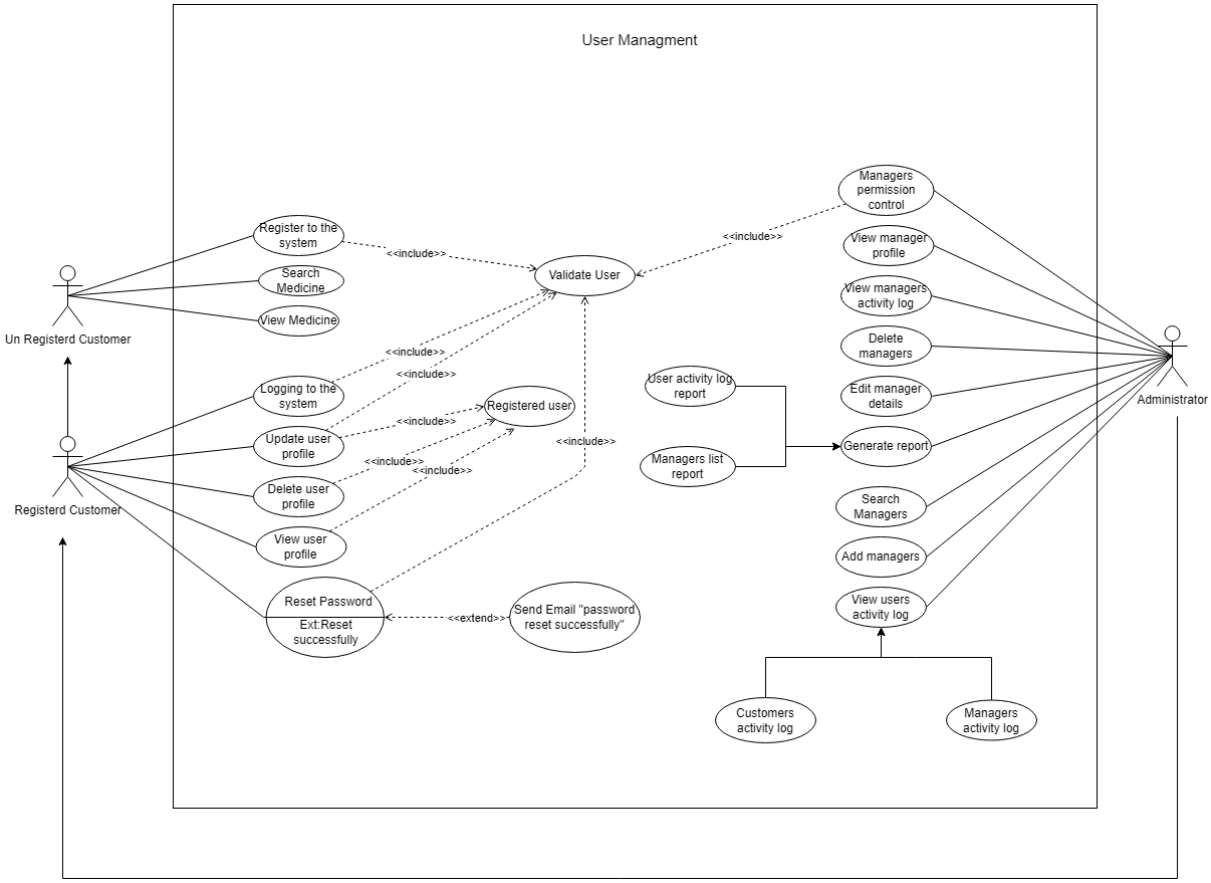


Figure 5.1Use case diagram for user management function

5.1.2 Doctor management

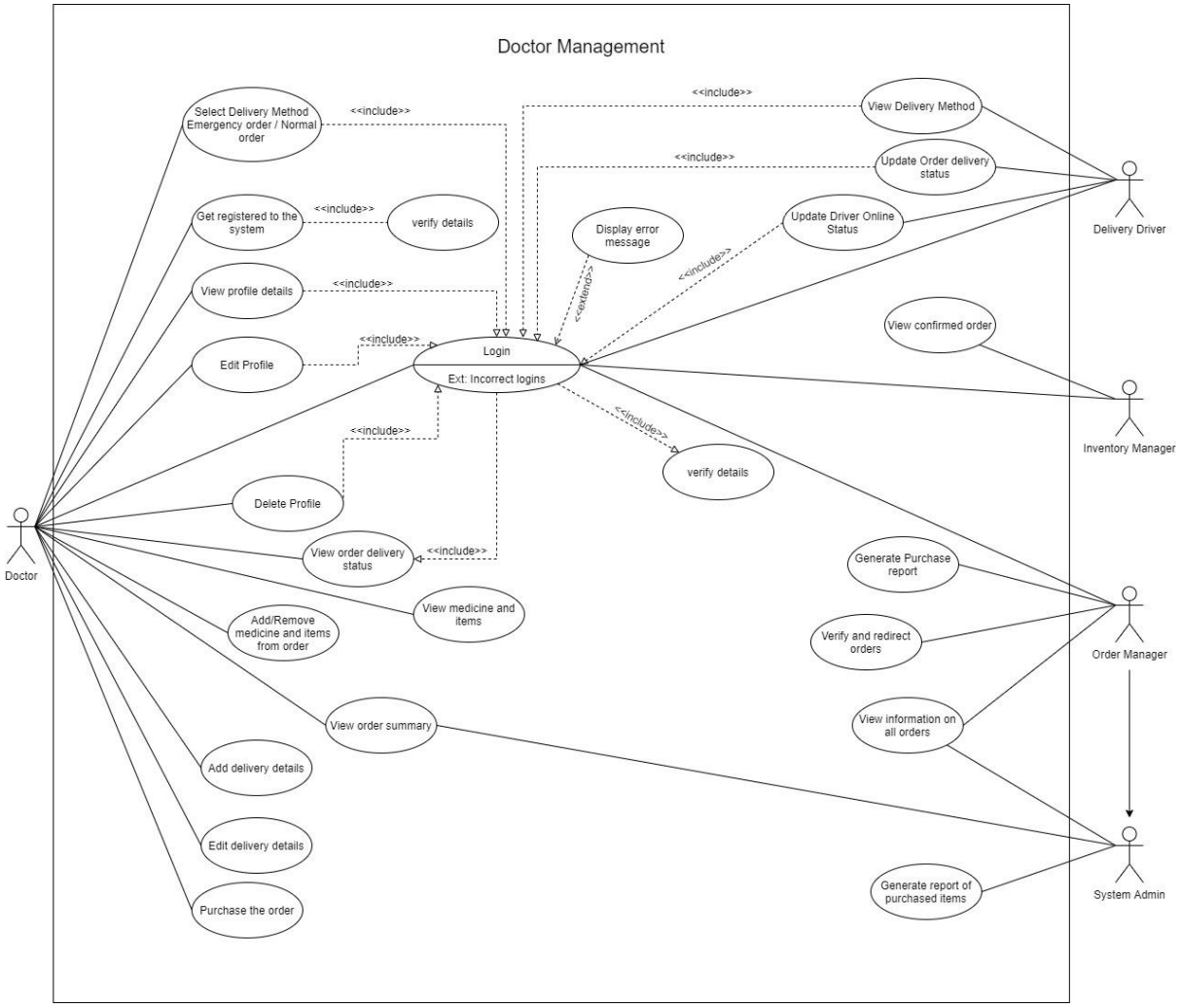


Figure 5.2Use case for doctor management

5.1.3 Marketing and promotion management

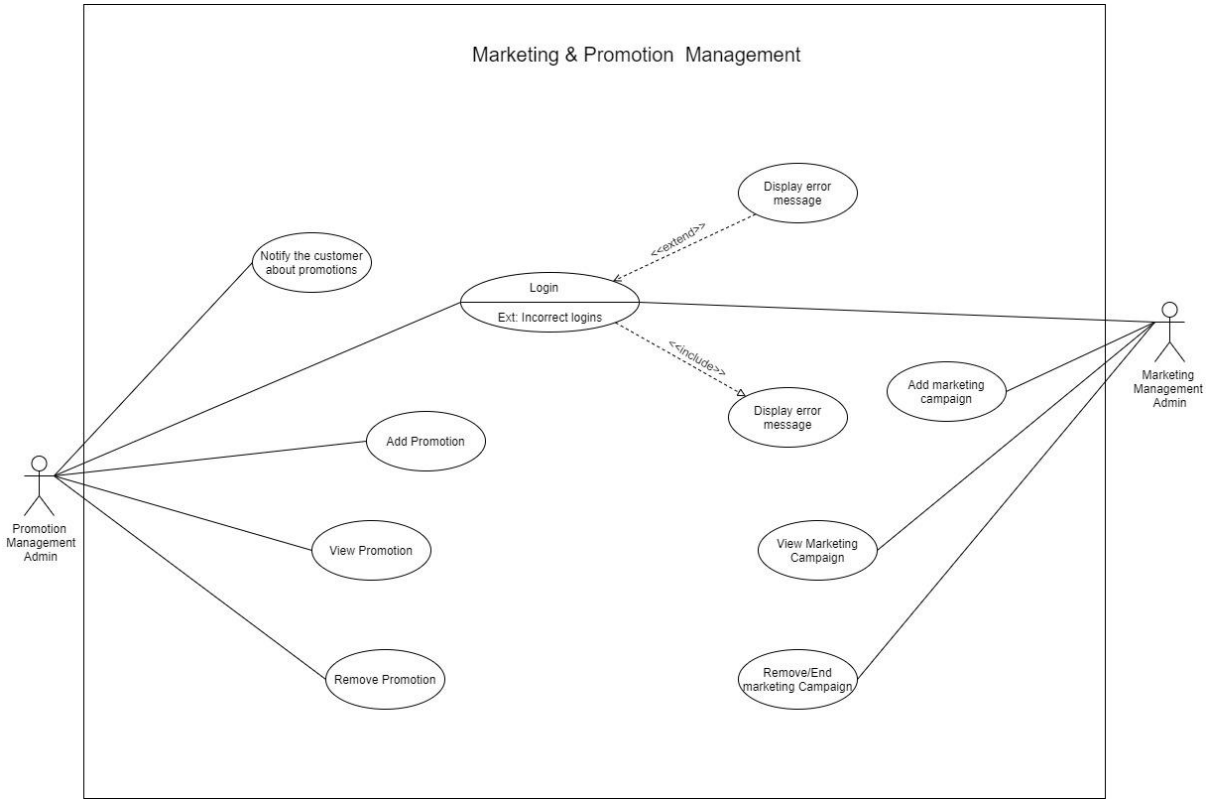


Figure 5.3Use case for marketing & promotion management

5.1.4 Employee management

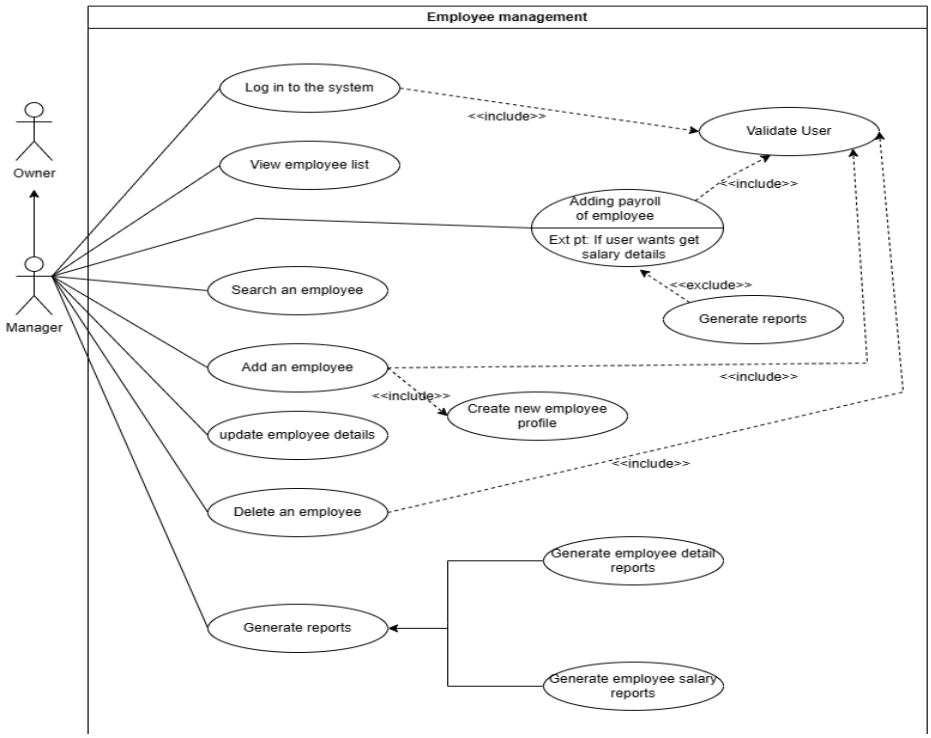


Figure 5.4Use case for employee management

5.1.5 Supplier management

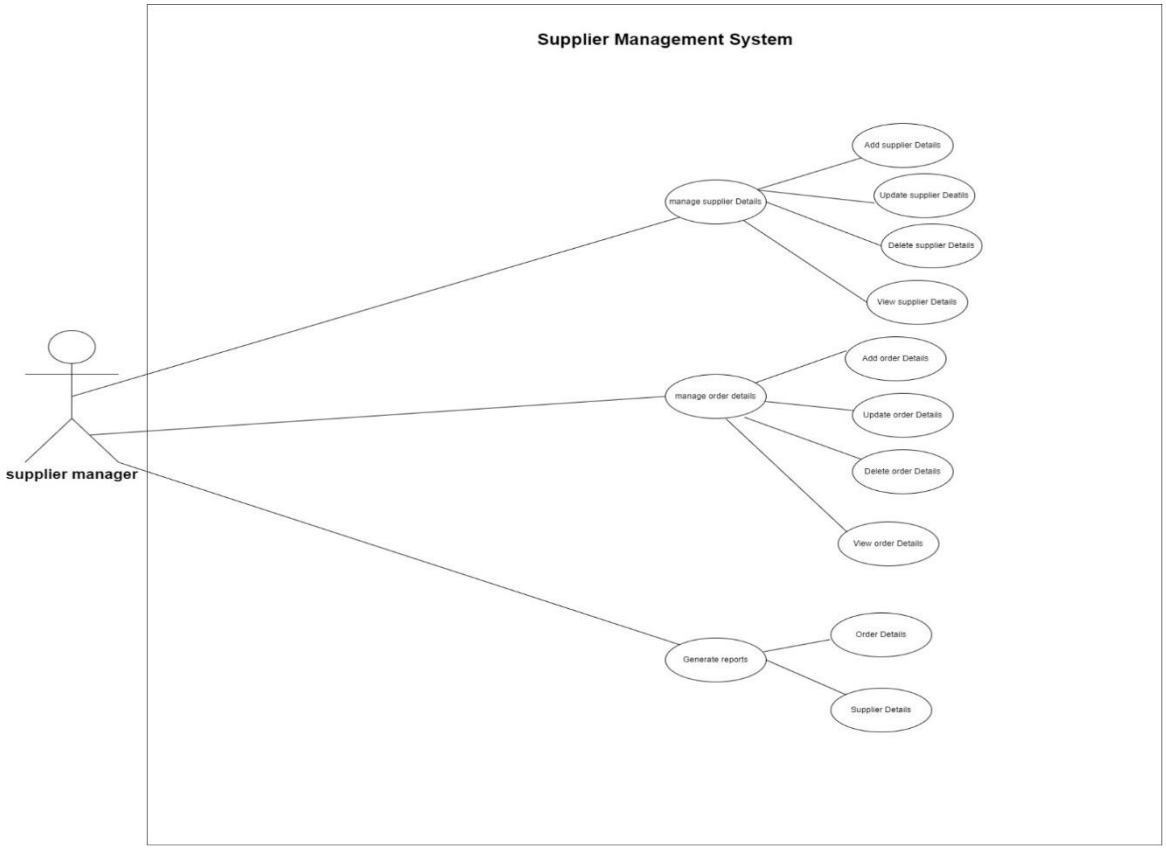


Figure 5.5Use case for employee management

5.1.6 Inventory management

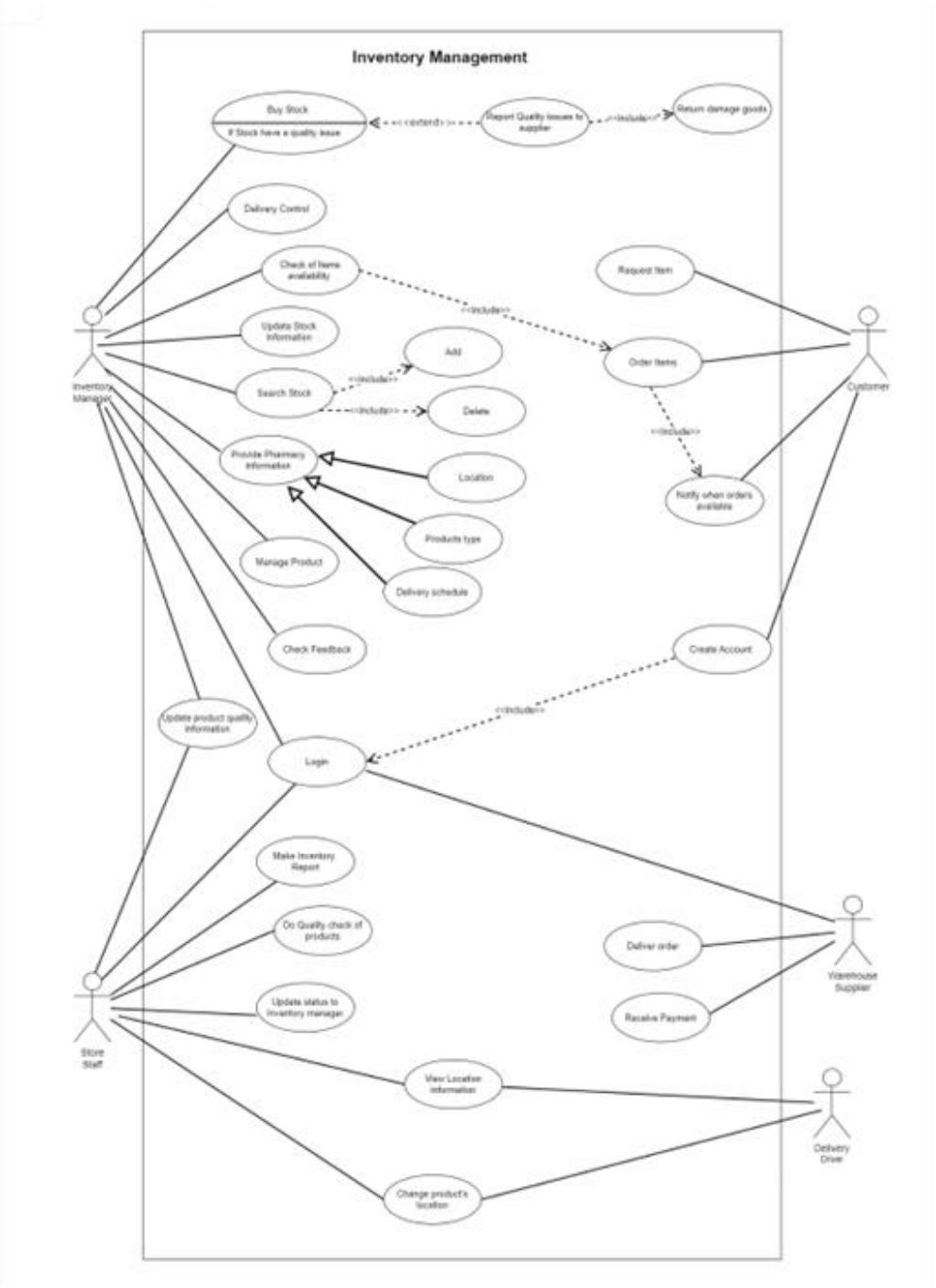


Figure 5.6Use case for inventory management

5.1.7 Order and cart management

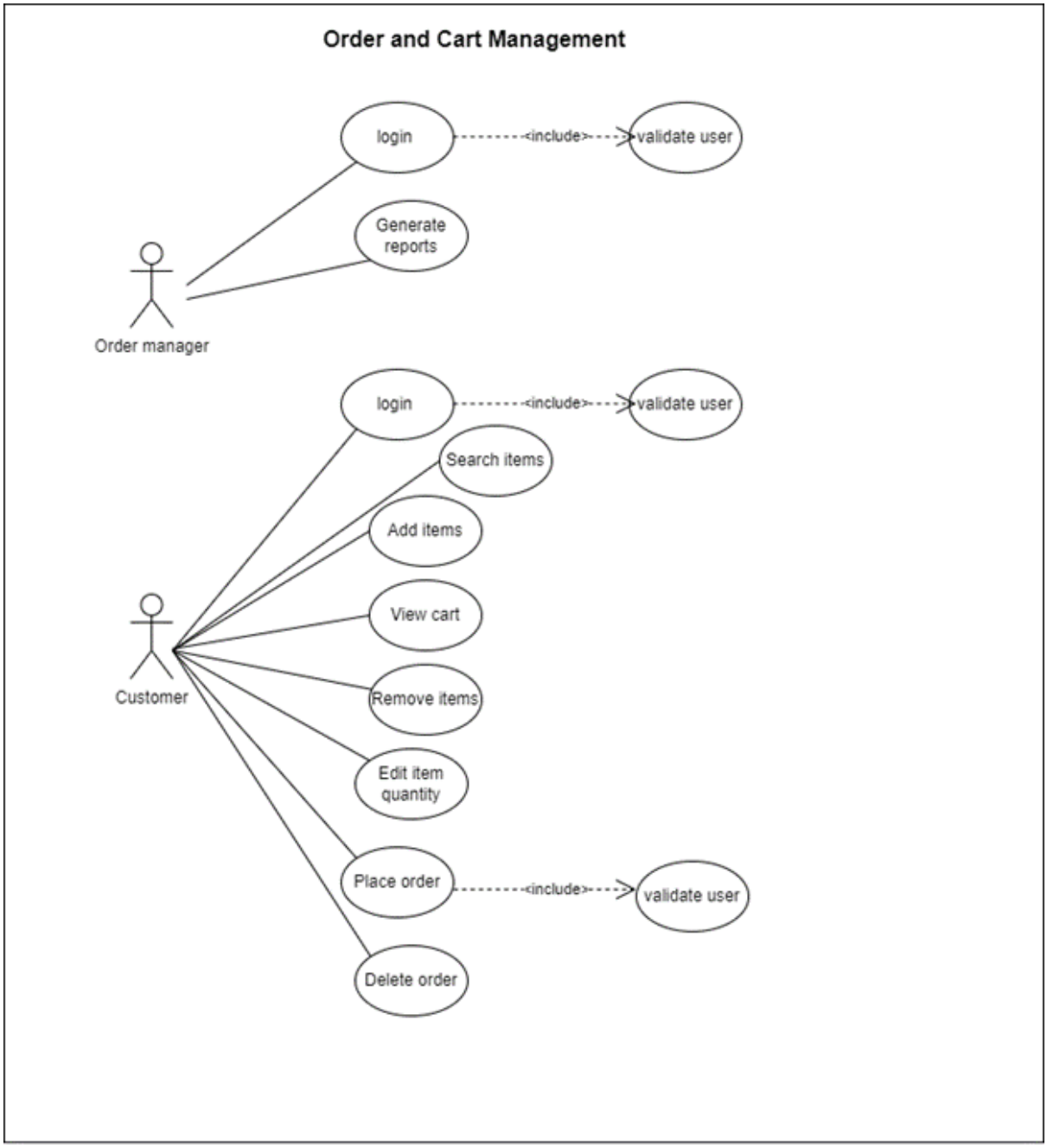


Figure 5.7Use case for order and cart management

5.1.8 Delivery management

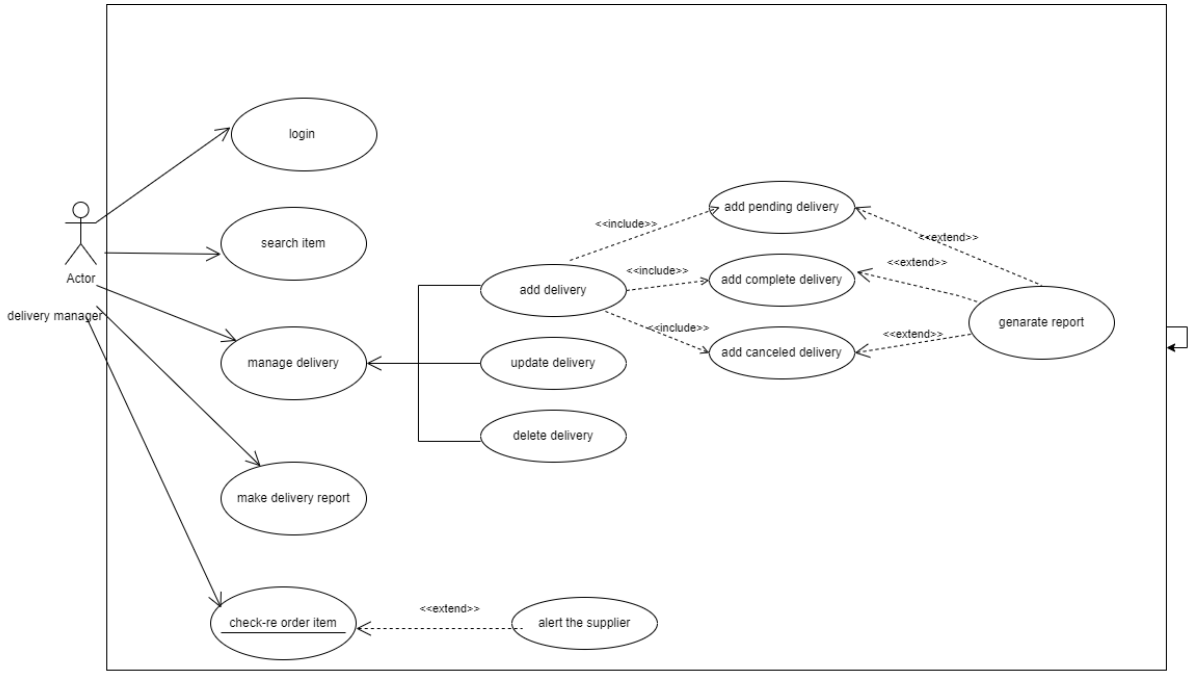


Figure 5.8Use case for delivery management

5.1.9 Customer service management and financial management

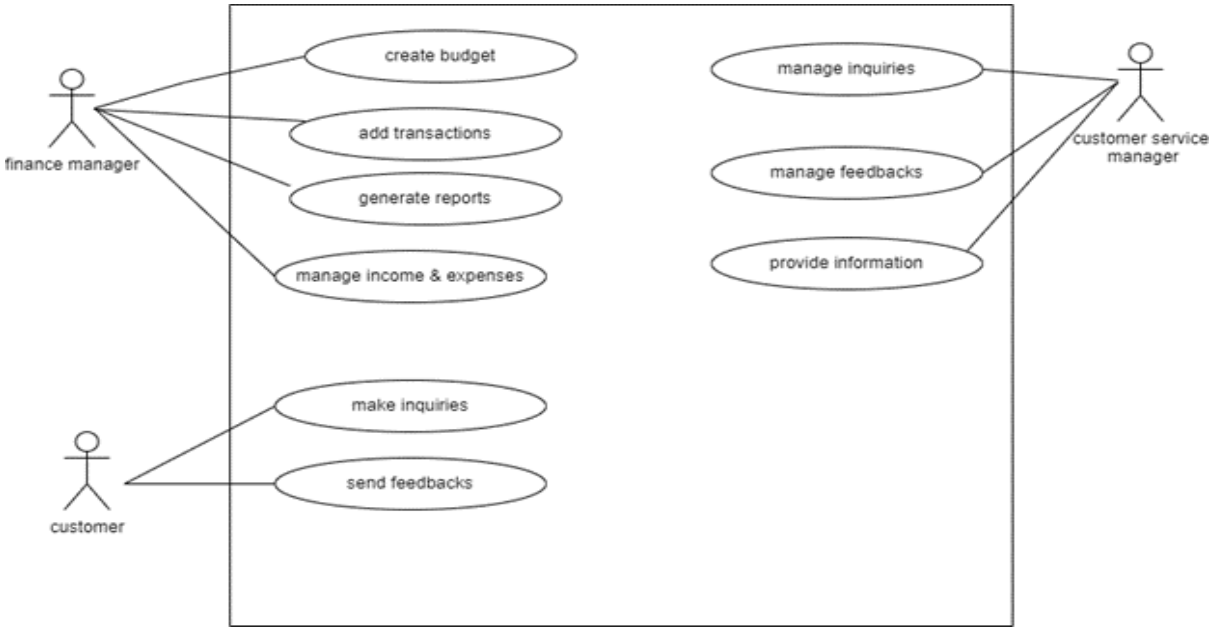


Table5. 9Customer service management and financial management

5.2 EER Diagram

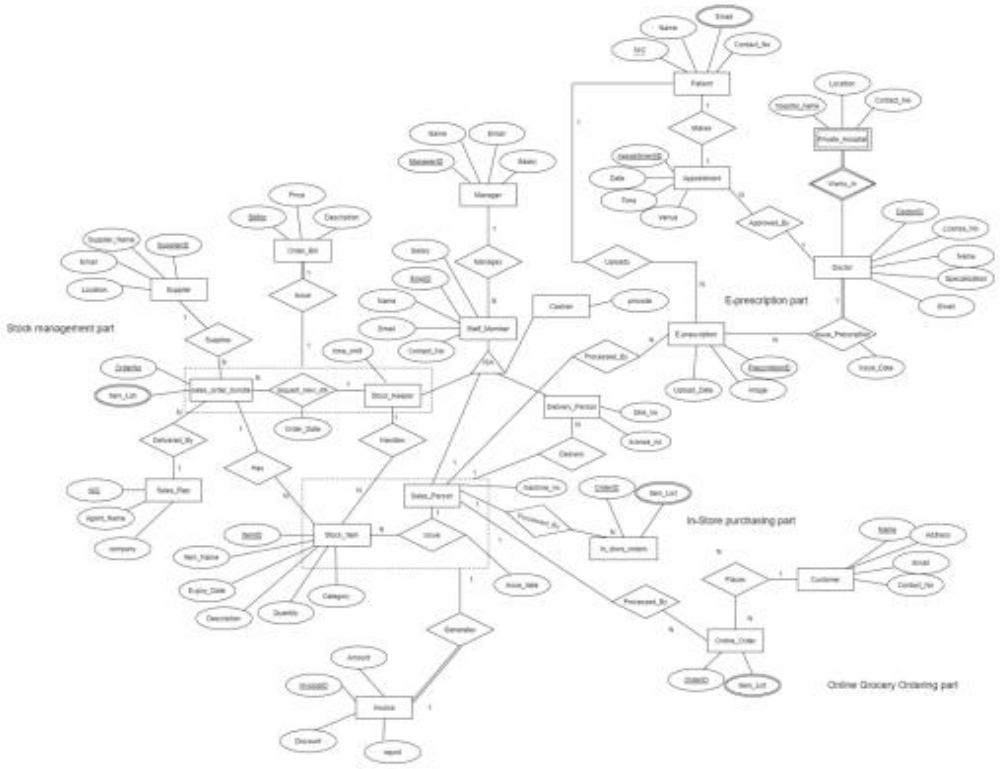


Figure 5.10 EER diagram

5.3 Class diagram

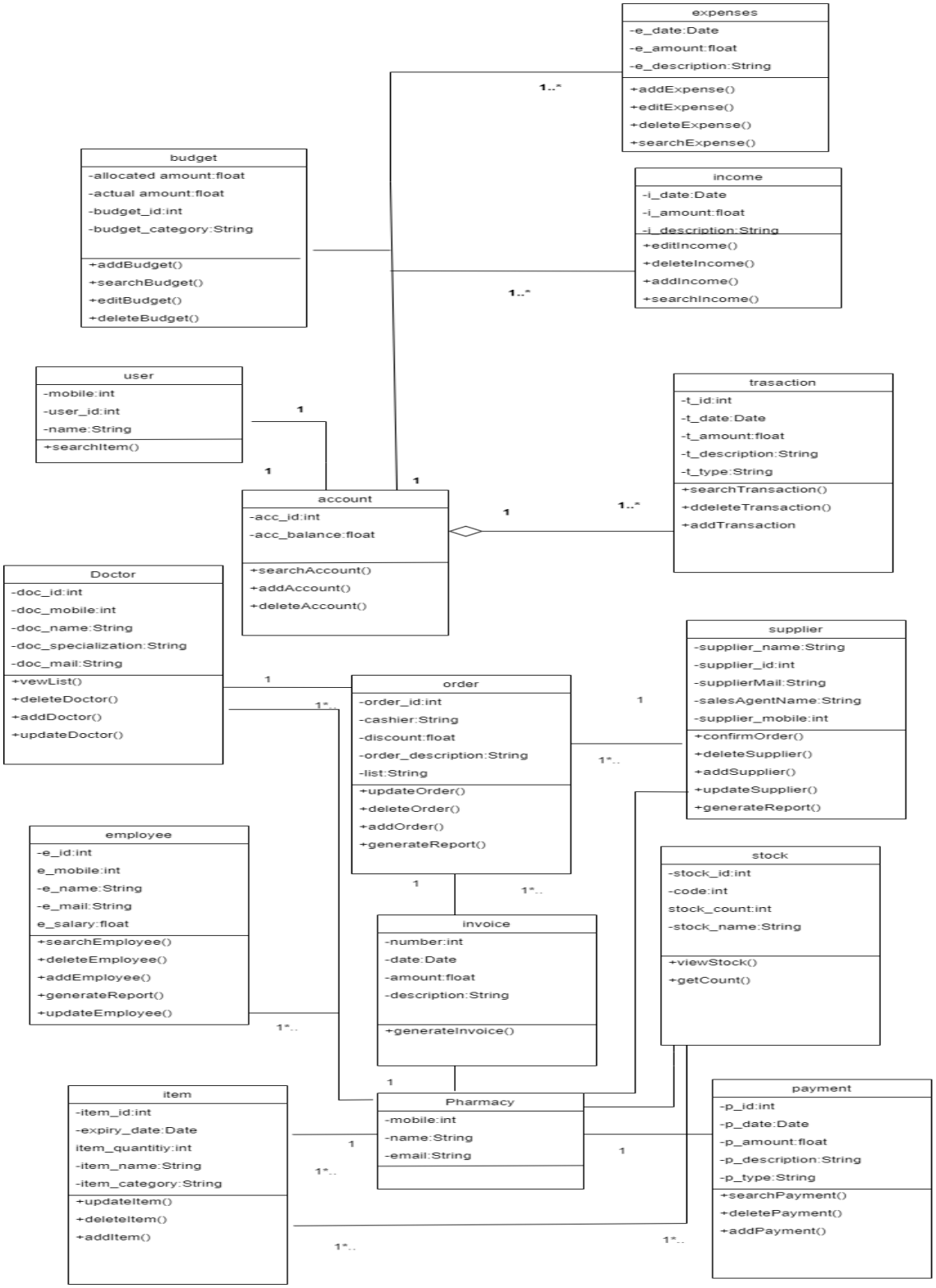


Figure 5.11Class diagram

5.4 Activity diagram

5.4.1 User management

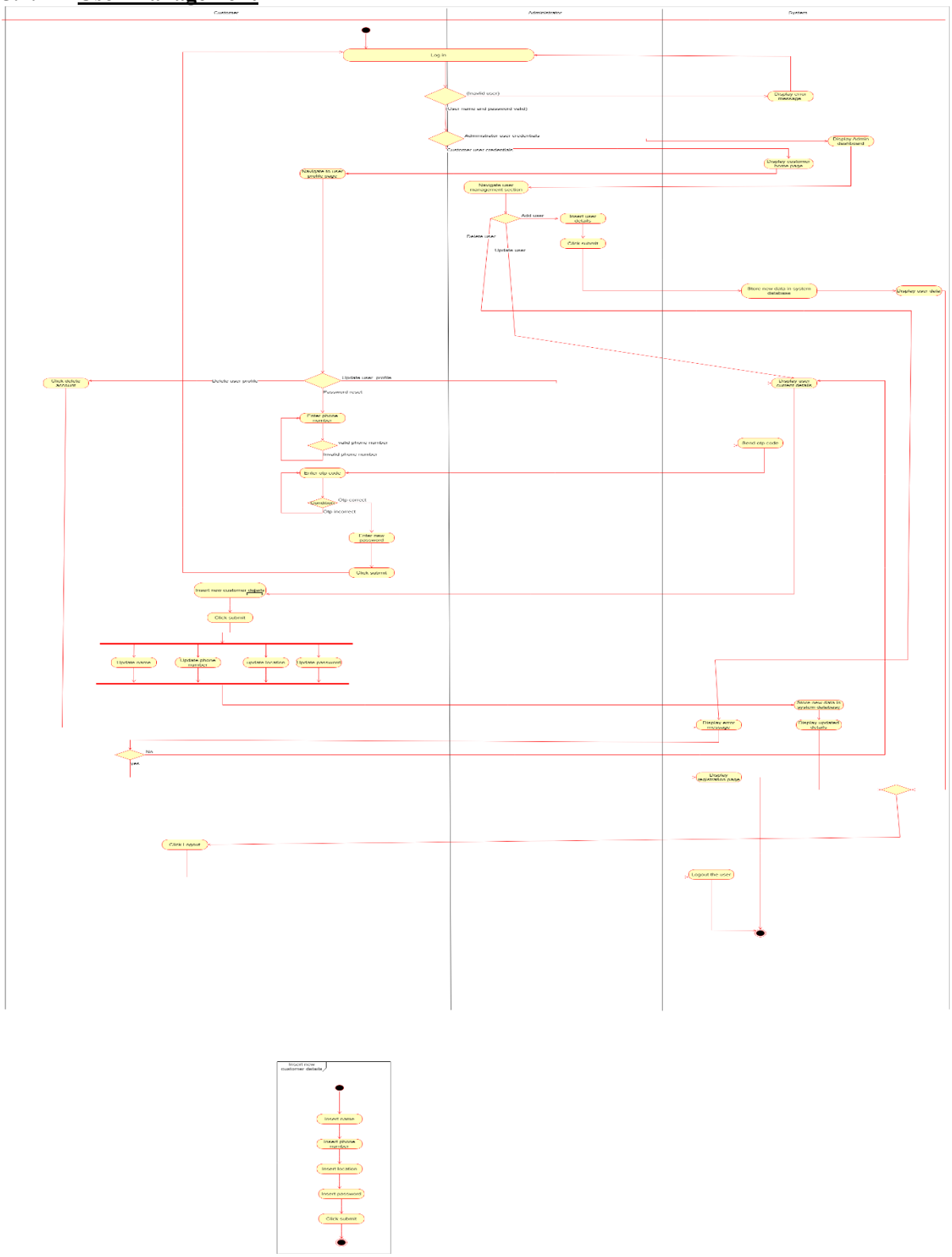


Figure 5.12 Activity diagram for User management

5.4.2 Doctor management

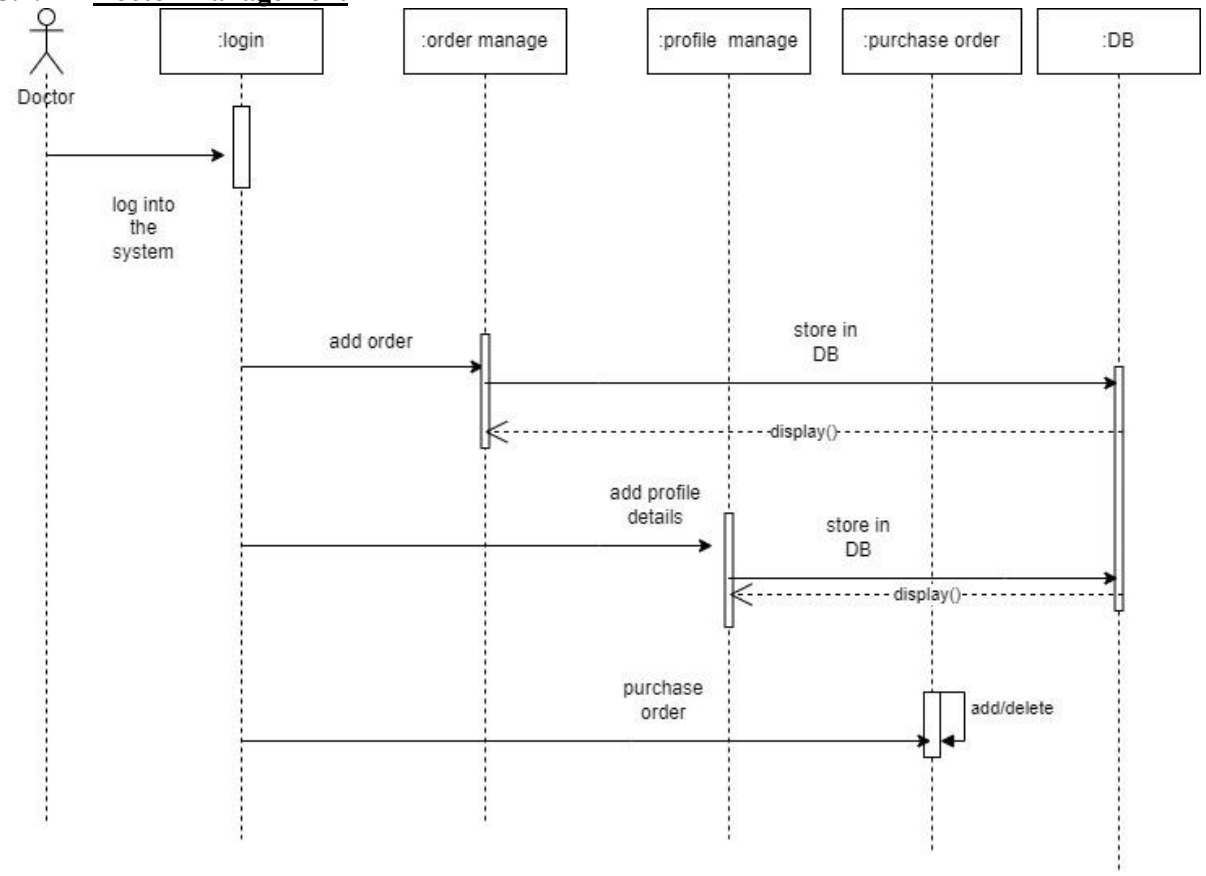


Figure 5.13 Activity diagram for doctor management

5.4.3 Employee management

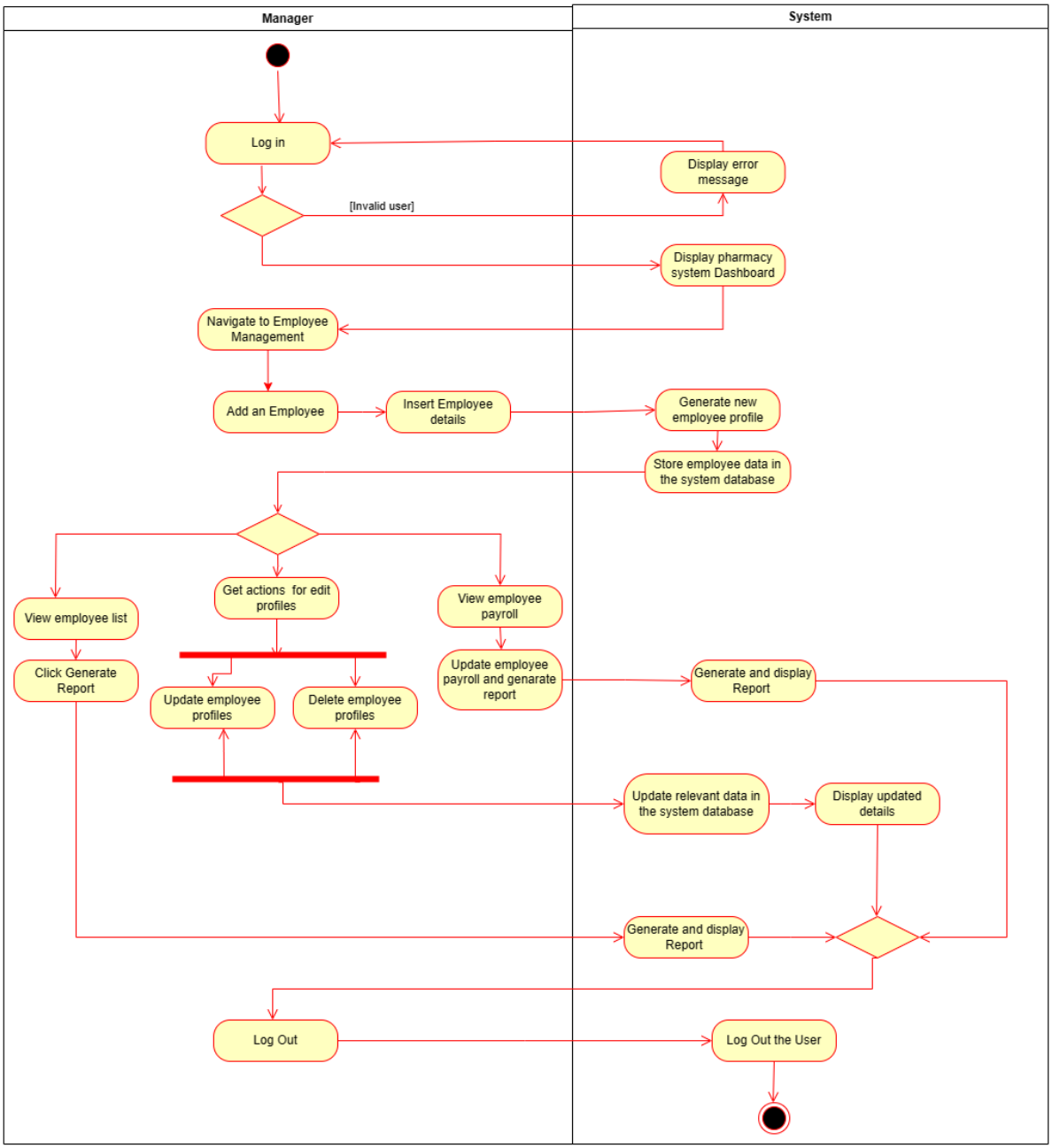


Figure 5.14 Activity diagram for employee management

5.4.4 Delivery management

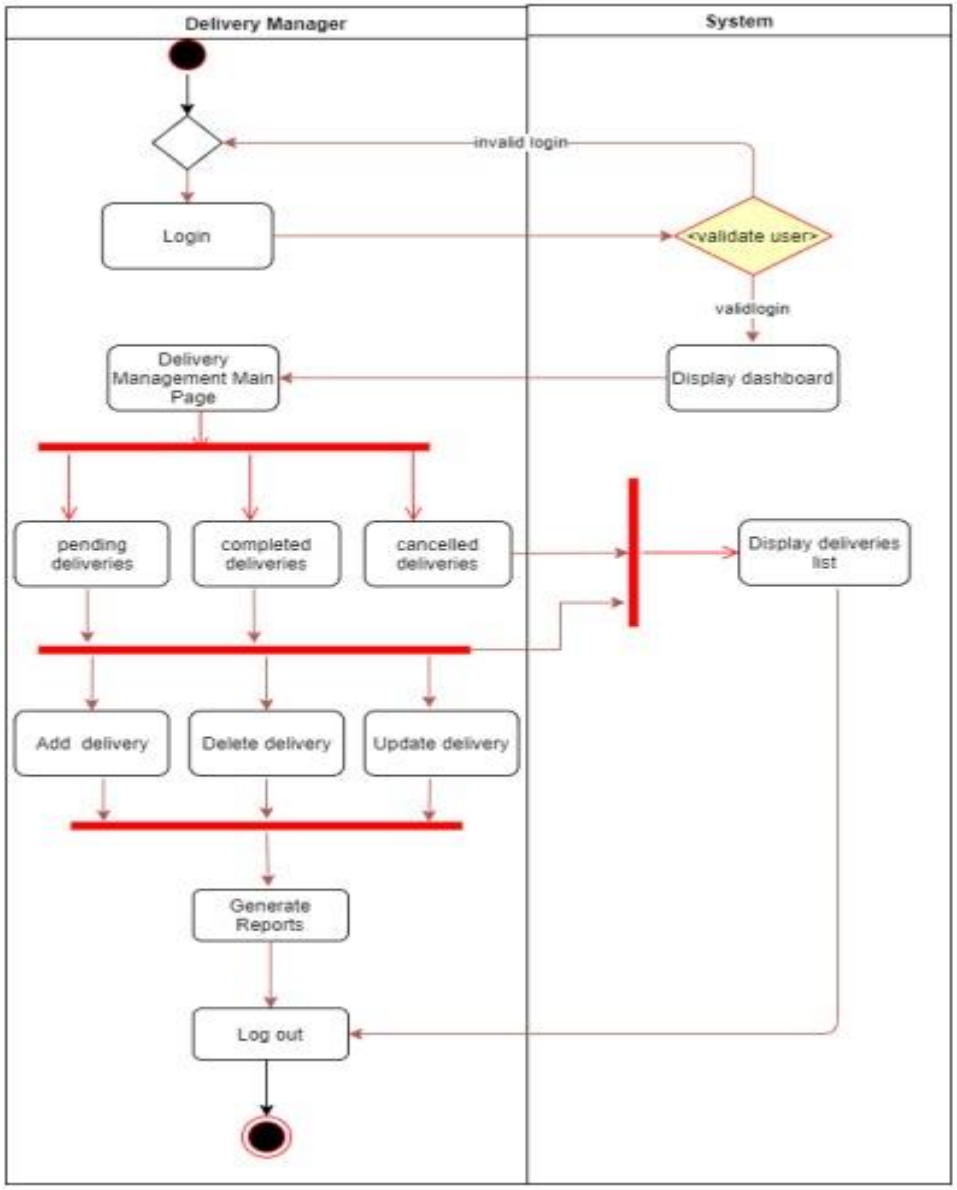


Figure 5.15 Activity diagram for delivery management

5.4.5 Supplier management

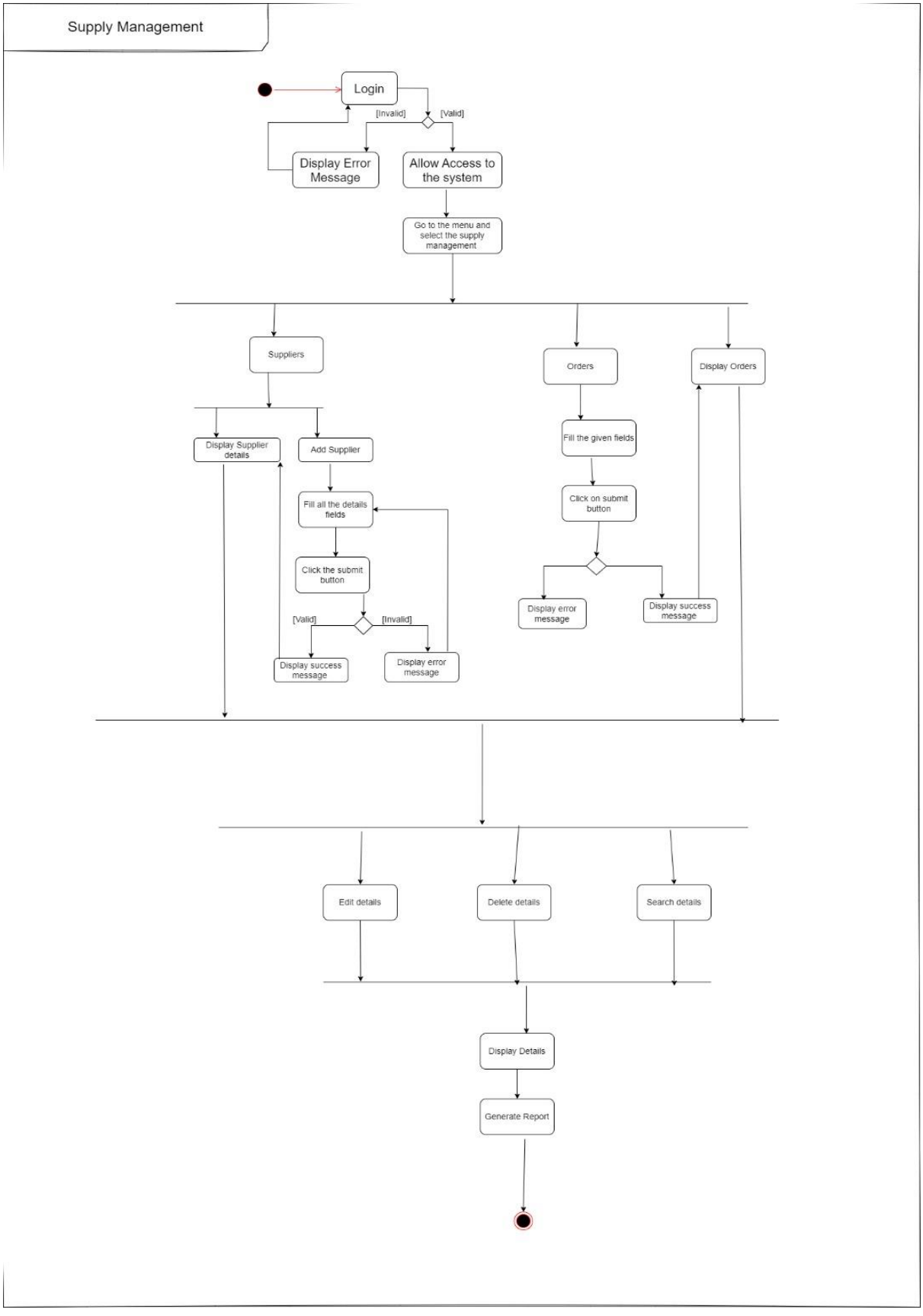


Figure 5.16 Activity diagram for supplier management

5.4.6 Inventory management

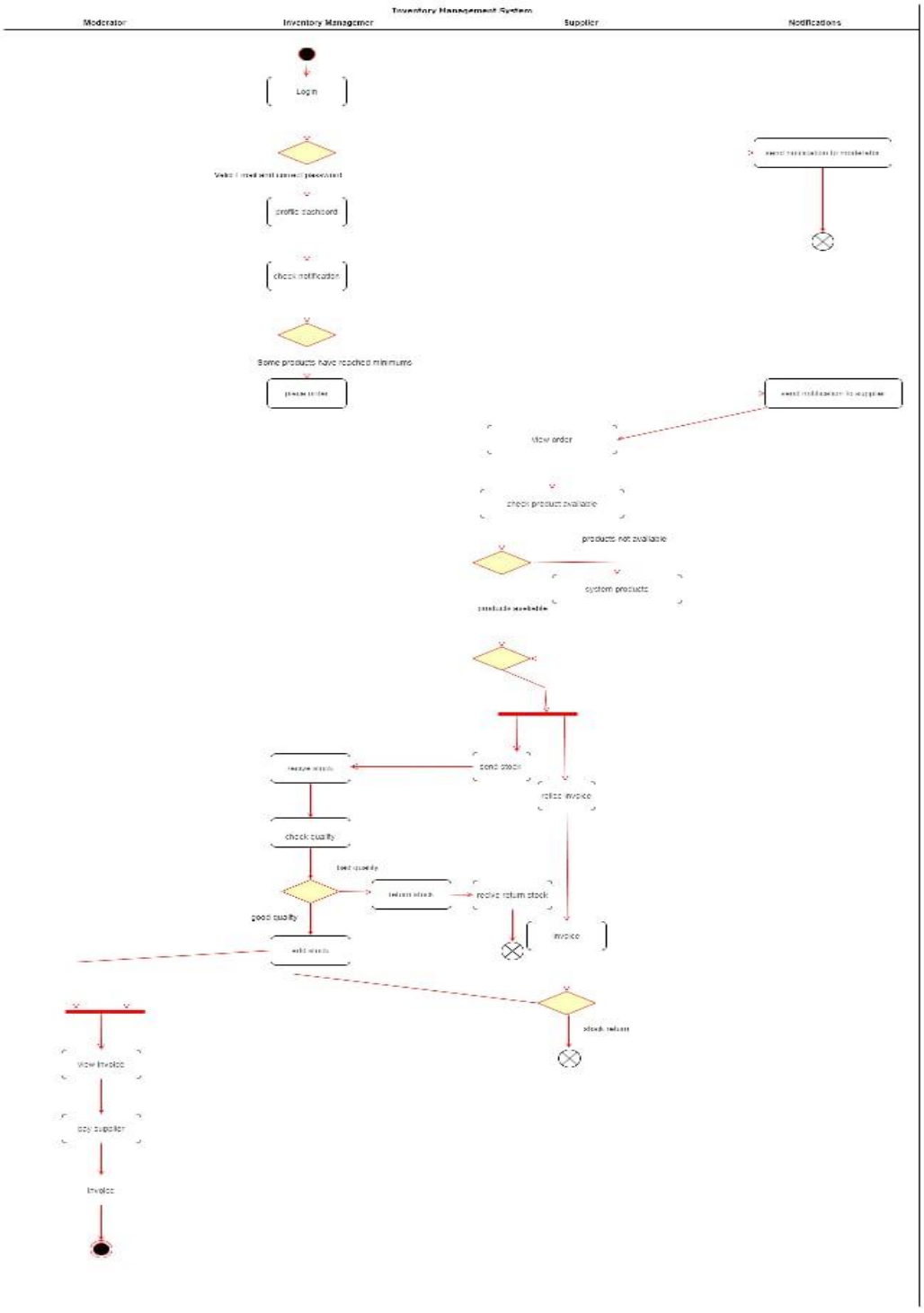


Figure 5.17 Activity diagram for inventory management

5.4.7 Financial manager

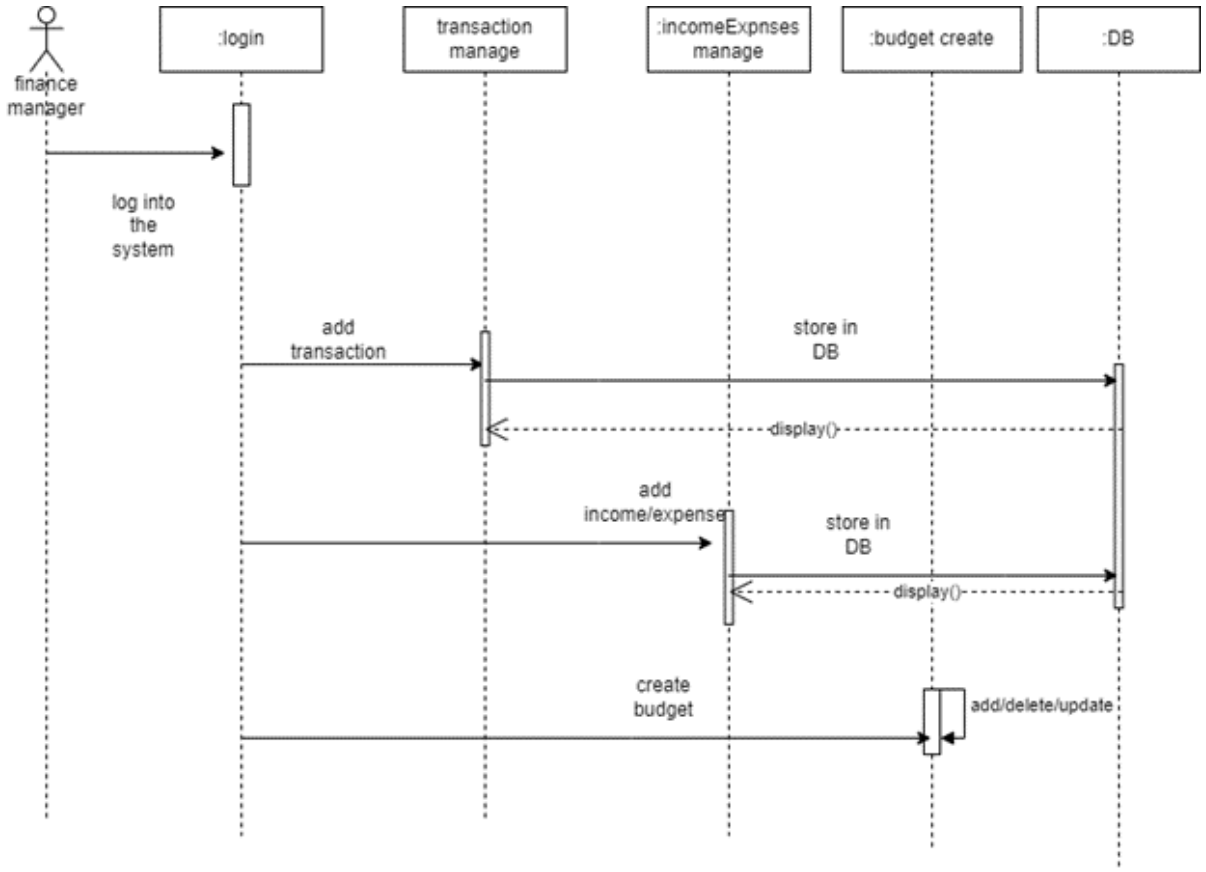


Figure 5.18 Activity diagram for financial manager

5.4.8 Customer service management

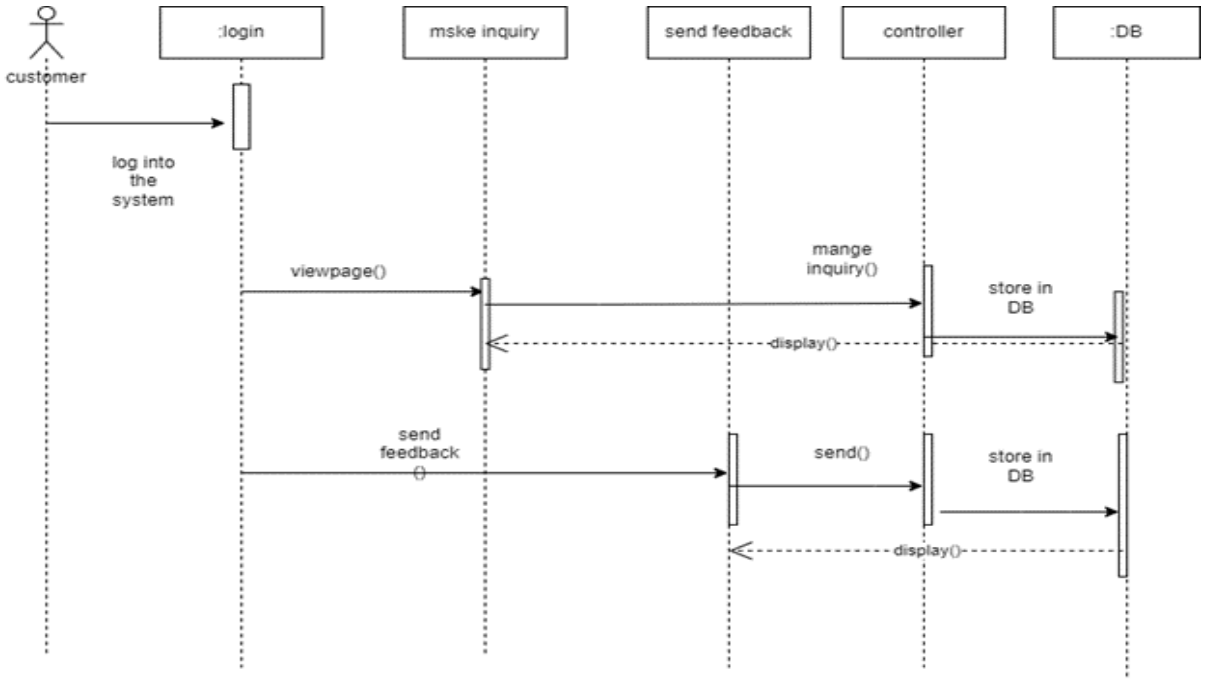


Figure 5.19 Activity diagram for customer service management

5.4.9 Order and cart management

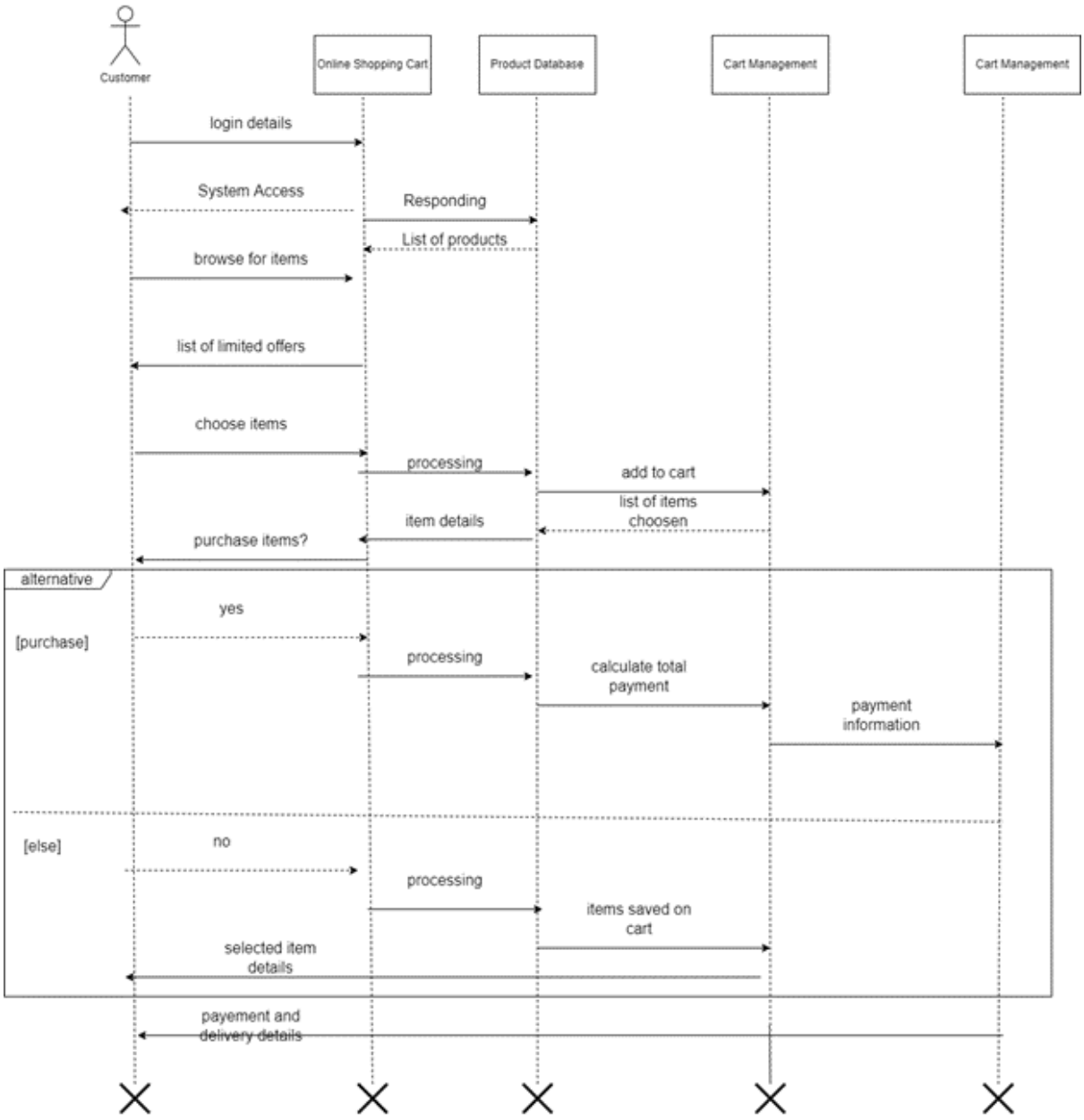


Figure 5.20 Activity diagram for order and cart management

6 Testing

6.1 User management-IT21184208

Table 6.1-:User management test case

Test ID	Description	Test Inputs	Expected Output	Actual Output	Result
	Entering characters in the numbers only input field for phone number	Name - Gayani Email – gaya@gmail.com Phone - Bandara	Display Error message – "Please enter valid input format"	Display Error message – "Please enter valid input	Pass
	Checking whether the data is successfully inserted into the database	Fill out the form with valid, correct information and click 'ADD User'	Displays an alert "User successfully added to the database" And new record is seen in the updated User List	Displays an alert "Employee successfully added to the database" And new record is seen in the updated Employee List	Pass

6.2 Customer service management-IT21242236

Table 6. 2-:Customer service management test case

Test ID	Description	Test Inputs	Expected Output	Actual Output	Result
	Add a new inquiry	Name, mobile, email, message	A new inquiry should be added	A new inquiry is added to the database and can view them in the inquiries page.	Pass
	Delete inquiry	Click on the delete button of the specific inquiry that you want to delete.	The specific inquiry will be removed from the system	Successfully deleted message appeared	pass
	Add income, expenses	Add +values for income and-values for expenses	The balance should display	Income. expenses are added to the DB	pass

6.3 Doctor management-IT21286650

Table 6.3-:Doctor management test case

Test ID	Description	Test Inputs	Expected Output	Actual Output	Result
	Add a doctor to the system and should have to display the details	Choose a doctor picture from the pc and insert its Id, name, specialized in, address, working hospital	Doctor added to the database. If the doctor picture is not chosen then the picture bar is empty , and the first name and last name fields are mandatory, after added to the database it shows a message that the doctor has been added to the database successfully	Expected output	Pass
	Add a prescription to the system and should have to display the details.	insert the name , age , date that the prescription issued and illness	should have to insert the details correctly (name , age , illness and the date of issue), if the name field is empty it shows a validation . after submitting it shows a message that the prescription has been successfully added to the database	Expected output	Pass

6.4 Supplier management-IT21175084

Table 6.4-:Supplier management test case

Test ID	Description	Test Inputs	Expected Output	Actual Output	Result

	Try to register a supplier without filling contact number and Main category (required fields)	Company NameHamas Holding Pvt ltd Company Address – Colombo Contact Number – 0 Email Address – hemas@gmail.com Main category -0 Register date – 01/10/2020	Error message – "Please fill required fields"	Error message– "Please fill required fields"	Pass
	Try to find a supplier by typing the company name in the supplier details list search bar	Search bar - Unilever	No matching records found	No matching records found	Pass

6.5 Employee management-IT21232572

Table 6.5-:Employee management test case

<<Not Given>>

6.6 Payment and Delivery management-IT21377662

Table 6.6-:Payment management and delivery management test case

<<Not Given>>

6.7 Order and cart management-IT21168840

Table 6.7-:Order and cart management test case

<<Not given>>

6.8 Inventory Management-IT21214370

Table 6.8-:Inventory management test case

<<Not Given>>

7 Evaluation and Conclusion

7.1 Evaluation

The pharmacy management web application is a powerful tool that aims to streamline and enhance various aspects of pharmacy operations. Upon evaluation, several key features and benefits stand out, making it a valuable asset for pharmacy management. First and foremost, the user interface of the web application is intuitive and user-friendly. Navigating through the different modules and functionalities is seamless, allowing pharmacists and staff to quickly adapt to the system. The application offers a well-organized dashboard with clear menus and options, making it easy to access and manage different aspects of pharmacy operations. One of the standout features of the application is its inventory management module. The system efficiently tracks stock levels, generates alerts for low stock items, and facilitates easy reordering. This functionality saves time and minimizes errors, ensuring that the pharmacy always has the necessary medications in stock. Additionally, the application allows for the categorization and classification of medications, making it easier to locate specific drugs when needed.

The web application also incorporates robust reporting and analytics capabilities. It generates detailed reports on sales, profits, and inventory, providing valuable insights into the pharmacy's performance. These analytics help pharmacy managers make informed decisions, identify trends, and optimize business strategies. With access to real-time data, managers can easily track the performance of different products, identify best-selling items, and adjust pricing and purchasing strategies accordingly. Furthermore, the application offers secure patient data management. It allows pharmacists to easily access and update patient profiles, medication history, and prescription information. The system ensures compliance with privacy regulations and safeguards sensitive patient data. This feature promotes efficient and accurate medication dispensing, reduces the risk of errors, and enhances patient safety.

The web application also provides seamless integration with external systems, such as insurance providers and healthcare networks. This integration facilitates efficient communication and collaboration, allowing for real-time information exchange. Pharmacists can quickly verify insurance coverage, check for potential drug interactions, and access relevant patient information, ultimately improving the quality and speed of patient care.

In conclusion, the pharmacy management web application offers a comprehensive and efficient solution for pharmacy operations. Its user-friendly interface, robust inventory management, powerful reporting capabilities, secure patient data management, and seamless integration with external systems make it a valuable tool for pharmacies. By leveraging this application, pharmacy managers can streamline operations, enhance patient care, and make data-driven decisions for optimal business performance.

7.2 Conclusion

The goal of developing this system was to automate the daily operations of a pharmacy and to increase the efficiency by saving time. The stock, supplier, staff, doctor, delivery, e-channeling, e-prescription, and invoice management is perfectly coordinated while producing the final completed project. The user can successfully use this system because the final testing is done and the result was positive. The stock management handles all the inventory activities and notifies user when there is a

product shortage or expired items. Supplier management is responsible for maintaining all the information about suppliers and helps the manager by directly connecting with the supplier through email interface. There are doctors registered into the system which the patients can place appointments by the e-channeling service. Furthermore, there is an e-prescription service which allows the users to upload the prescription photo to the website, and then retrieved by the pharmacy. Waiting in a queue is solved here. The staff management handles employee information and maintains their salary rates. Our group succeeded to meet the deadlines and accomplish the tasks, hence producing a complete, well-functioning Pharmacy Management System. We sincerely hope that this system will be used for the betterment of the pharmacy. Besides from team work, this was a great opportunity to get an understanding on how to work with real world clients, which was a novel experience

8 References

[1] "Jama Software," [Online]. Available: https://www.jamasoftware.com/requirements-management-guide/requirements-gathering-and-management-processes/requirements-engineering.

[2] "SAFe," [Online]. Available: https://scaledagileframework.com/nonfunctional-requirements/#:~:text=Nonfunctional%20Requirements%20(NFRs)%20define%20system,system%20across%20the%20different%20backlogs.

9 Appendix

Table 9-:Work Contribution

IT Number And Name	Function	Work Contributions
IT21184208-Kumara M.G.S.D	User management	• Draw user management use case diagram • Draw user management Activity diagram • Draw EER diagram • Create pre-body sections • Create evaluation and conclusion • Add references • Add testing part for user management • Finalize document
IT21168840-Kusumsiri W.A.N.P.M	Order and cart management	• Draw order and cart management use case diagram • Draw activity diagram for order and cart management • Write abstract for document
IT21377662-Herath . D.C	Payment and delivery management	• Draw use case diagram for payment and delivery management • Draw activity diagram for payment and delivery management
IT21175084-Pathirana V.P.E.P.V.	Supplier management	• Draw use case diagram for supplier management • Draw activity diagram for supplier management • Add testing part for supplier management function
IT21242236-Jayakody J.A.D.H.S	Financial management and customer service management	• Draw use case diagram for financial management and customer service management • Draw activity diagram for customer service management and financial management

		• Add testing for Financial management and customer service management part • Draw class diagram
IT21232572-Sepala S.N	Employee management	• Draw use case diagram for employee management • Draw activity diagram for employee management
IT21214370-Prasad P.A.J	Inventory management	• Draw use case for inventory management • Draw activity diagram for inventory management
IT21286650-Senevirathna D.M.O.C	Doctor management and promotion management	• Draw use case for doctor management and promotion management • Draw activity diagram for doctor management and promotion management • Add testing for doctor management