Title of the Project: Online Pharmacy Management

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Introduction

- The healthcare industry has been rapidly evolving, especially with the increasing use of technology. One of the most notable developments is the rise of online pharmacies. Online pharmacies offer the convenience of purchasing medications from the comfort of one's own home, making healthcare accessible to those who may have difficulty leaving their homes. This project proposal aims to develop an online pharmacy system that will provide a user-friendly and secure platform for customers to purchase medications online. The proposed system will incorporate features such as online consultations with licensed pharmacists, automatic prescription refills, and a reliable delivery system. This project will not only benefit customers but also healthcare providers who will be able to provide more efficient and effective services to their patients.

Motivation

- The motivation behind developing an online pharmacy system as a project is multi-faceted. Firstly, with the COVID-19 pandemic, there has been a surge in demand for online healthcare services, and an online pharmacy system can provide a safe and convenient way for individuals to access medications without leaving their homes. Additionally, the current healthcare system has limitations in terms of accessibility, especially for those who are elderly, disabled, or living in remote areas. An online pharmacy system can bridge this gap and provide healthcare access to a wider range of individuals. Moreover, by incorporating features such as online consultations with licensed pharmacists, the proposed system can offer personalized healthcare services that cater to the unique needs of each patient. Overall, the development of an online pharmacy system can bring about a positive impact on the healthcare industry by making healthcare more accessible, convenient, and efficient.

System Request

1. Project Sponsor:

Raiyan Nazir Chowdhury(CTO of BEXIMCO), Shahedur Rahman Ifty(CFO of BEXIMCO), Md. Moinul Hossain Bhuiyan(CMO of BEXIMCO), Md. Asaduzzaman Ridoy(CEO of BEXIMCO).

2. Business Need :

This project has been initiated to increase sales by allowing the customers to order products easily and hassle free which in return will increase customer loyalty. The website's database can provide information about the available products to customers in need, an improved customer service. The doctor's archive (doctors need a paid subscription to register in the archive) will guide the customers to visit their doctor in need. Attractive and premium online platform will also increase the pharmaceutical company's brand value. The online platform will reduce overall operational costs and will allow operations all over the country.

3. Business Requirements :

Using the website customer will be able to search for their desired products and order product to their desired amount. The product's description will include valuable information, uses and indications to use the product. The website will allow customer to upload their prescription and get verified by authorities.

- Search for medicines in the up-to date database.
- Customers will be able to look up for doctors categorized by the doctor's specialty.
- The website will generate receipts, bills, invoices, and allow online payment methods. Handle the whole billing management.
- The delivery of medications from the point of entrance to the point of sale should be maintained and assisted by the software.
- Option to upload prescriptions and verification of prescriptions.
- The website will allow user to create profile and keep track of their medical reports and previous orders.
- The system will notify customers to remind them that their medicines will soon stock out and they should refill.
- The system should be able to keep inventory track and remind admins to restock, keep necessary data.
- Users will get valuable basic health tips.
- Attractive and premium interface on the website.
- The user profile free registration will ask and record user's address for home delivery.

4. Business Value :

We are expecting that this new online pharmacy management system will increase sales by enabling customers to order their required products by sitting at home. The online system will allow the company to reach out multiple customers all around the country by using only one warehouse reducing operating costs. Premium interface in the website will increase brand value also attracting new potential customers. The product descriptions, valuable tips and customer's record will increase website traffic. Increased website traffic can be used for paid medicine advertisements. We expect to gain new revenue stream from new and old customers. We also expect some increase in cross-selling as customers can order from home and receive home delivery. We are also expecting an increase in revenue from the paid doctor's subscription to our archive.

Tangible:

Conservative approximate estimates of tangible value to the company include the following:

- $420,000 in sales from paid subscriptions (doctor)
- $300,000 from better and cheaper inventory management

- $275,000 in sales from loyal customers
- $150,000 in sales from paid promotions

Intangible:

In tangible value to the company include the following:

- The system will offer improved and better customer service
- Less paperwork and better integration of internal processes
- The system will provide better competitive position

5. Special Issues or Constraints :

- This is just a strategic system which will increase sales and will allow to dominate the competitive market but people needs to be known about the existence of website through wide promotion.
- Elderly customers may find it difficult to use. People without smartphones and internet access will not be able to use the system.
- Instant verification of prescriptions.
- Many of our competitors have this system and we must also provide this service to our customers or face the loss.

Functional Requirement:

FR1: Customers should be able to search medicine

FR2: Customers should be able to add medicines to carts.

FR3: Customers should be able to remove medicines from carts.

FR4: Customers should be able to view payment details.

FR5: Customers should be able to upload prescriptions.

FR6: Doctors should be able to verify prescriptions.

FR7: Admin should be able to have overall system's access and also the access of all kinds of users Information.

FR8: Only Admin should be able to control all the activities and have power to terminate any kind of order account.

Non-Functional Requirement:

NFR1: Customers may get a discount on certain medicines.

NFR2: Customers may ask for a rapid delivery.

NFR3: Customers will get to know about the verification result.

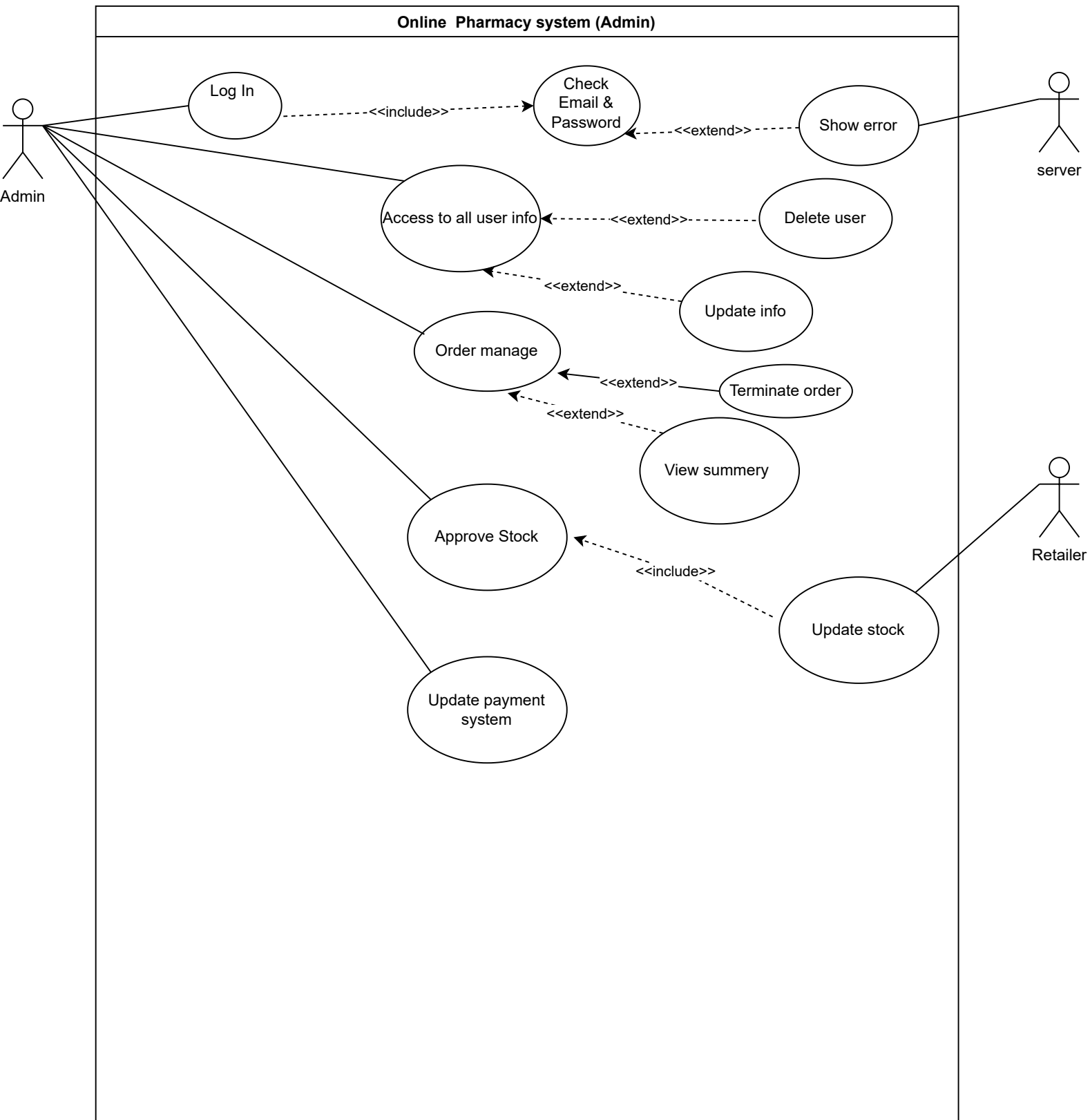NFR4: Admin will have a summary on that over a time period.

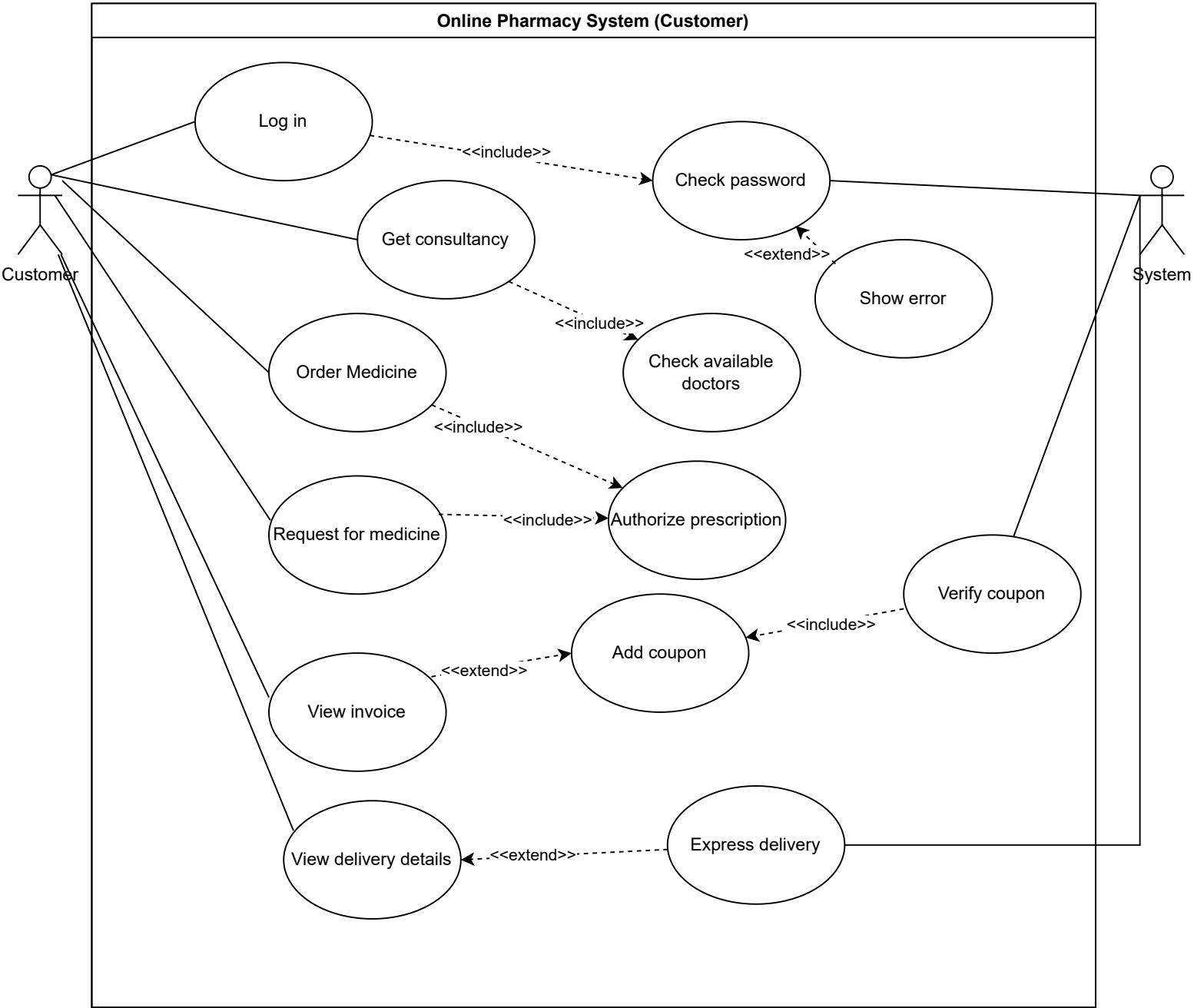NFR5: Technical issues during huge traffic on the server can occur.

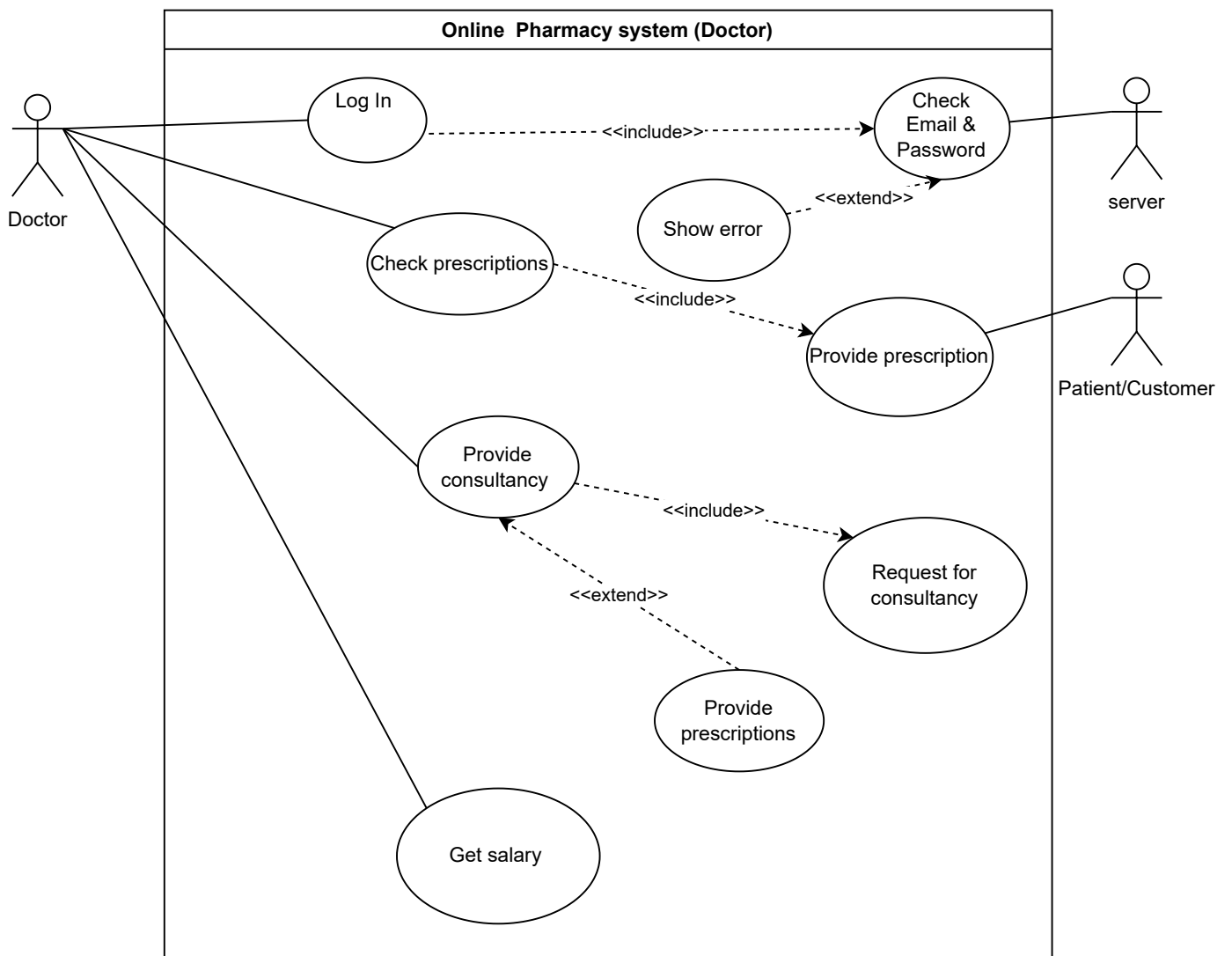NFR6: System should be able to handle multiple orders at a time.

NFR7: Govt. approval regarding the authorization of medicine.

Description for the use case diagram:

The use case diagram for the online pharmacy system includes several actors and their interactions with the system. The primary actor is the customer who can perform actions such as searching for medication, placing orders, and making payments. Another actor is the appointed doctor who can provide online consultations, review prescriptions, and approve orders. The retailer is another actor who can confirm the stock for the orders, update stock, and get reports on the sales. The system itself acts as an intermediary between the actors, facilitating their interactions and managing the workflow of the process. Use cases include the customer placing an order, the pharmacist reviewing a prescription, the delivery agent delivering medication, and the system updating order statuses. Additionally, the use case diagram includes various secondary actors such as the system administrator who manages the system, and the payment gateway which processes payments securely. Overall, the use case diagram provides a high-level overview of the system's functionalities and how different actors interact with it to achieve their goals.

Online Pharmacy system (Admin)

Admin

Log In

- - - <<include>> - - - -> Check Email & Password

- - - <<extend>> - - - Show error

server

Access to all user info <- - - - <<extend>> - - - - - - Delete user

- - - <<extend>> - - - Update info

Order manage

<<extend>> Terminate order

- - <<extend>> - - View summery

Approve Stock

- - - <<include>> - - - Update stock

Retailer

Update payment system

Online Pharmacy System (Customer)

Customer

System

Log in

Check password   <<include>>

Get consultancy

Show error   <<extend>>

Check available doctors   <<include>>

Order Medicine

Authorize prescription   <<include>>

Request for medicine   <<include>>

Verify coupon

Add coupon   <<include>>

View invoice   <<extend>>

View delivery details   <<extend>>

Express delivery

Online Pharmacy system (Doctor)

Doctor

Log In
<<include>>
Check Email & Password
server

Check prescriptions
<<include>>
Show error
<<extend>>

Provide prescription
Patient/Customer

Provide consultancy
<<include>>
Request for consultancy

<<extend>>
Provide prescriptions

Get salary

Online Pharmacy System (Retailer)

Retailer

Log in

<<include>>

Verify Password

<<extend>>

Show Error

Check Stock

<<extend>>

Update info
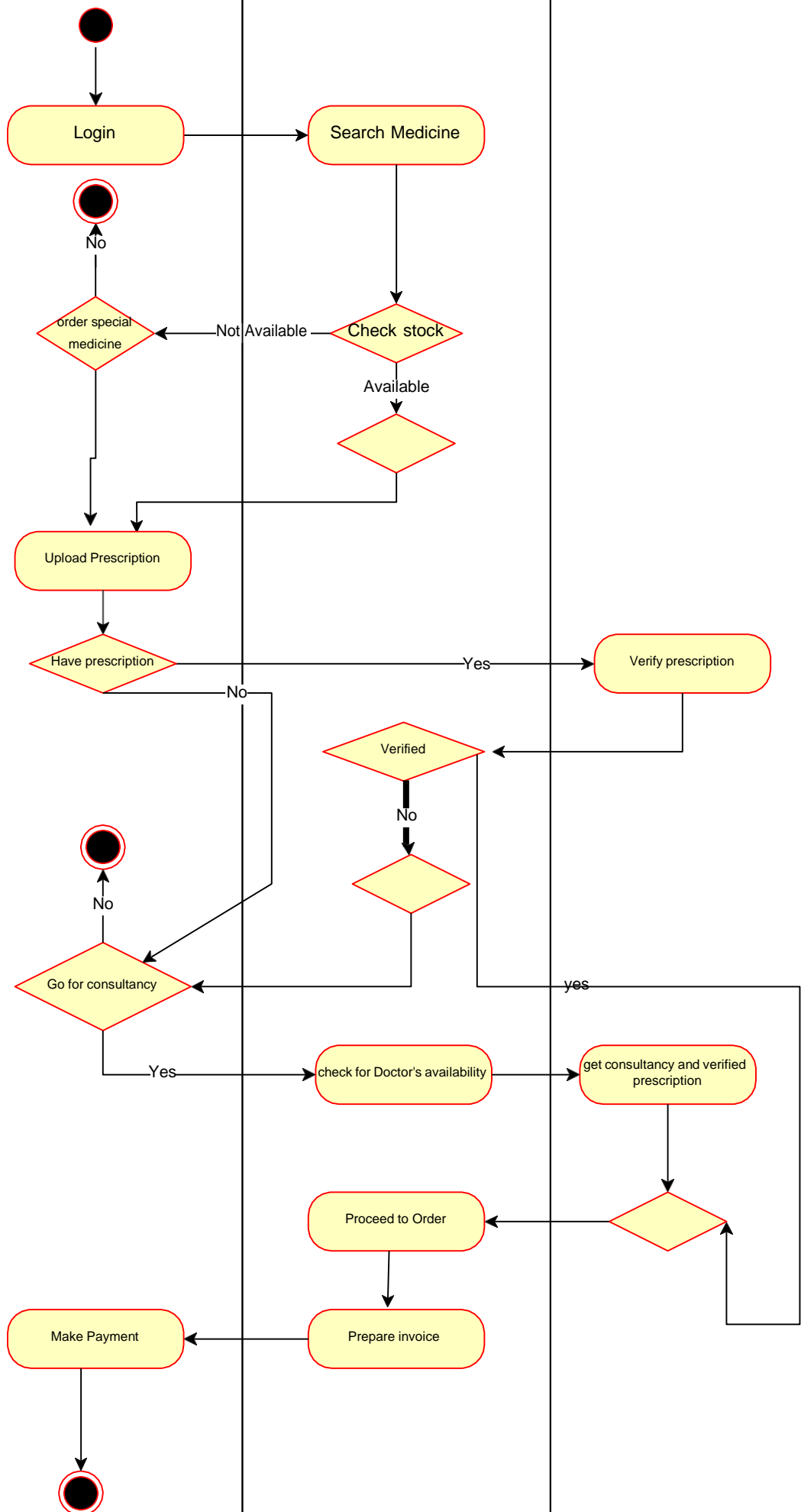
Get a report on sales

Server
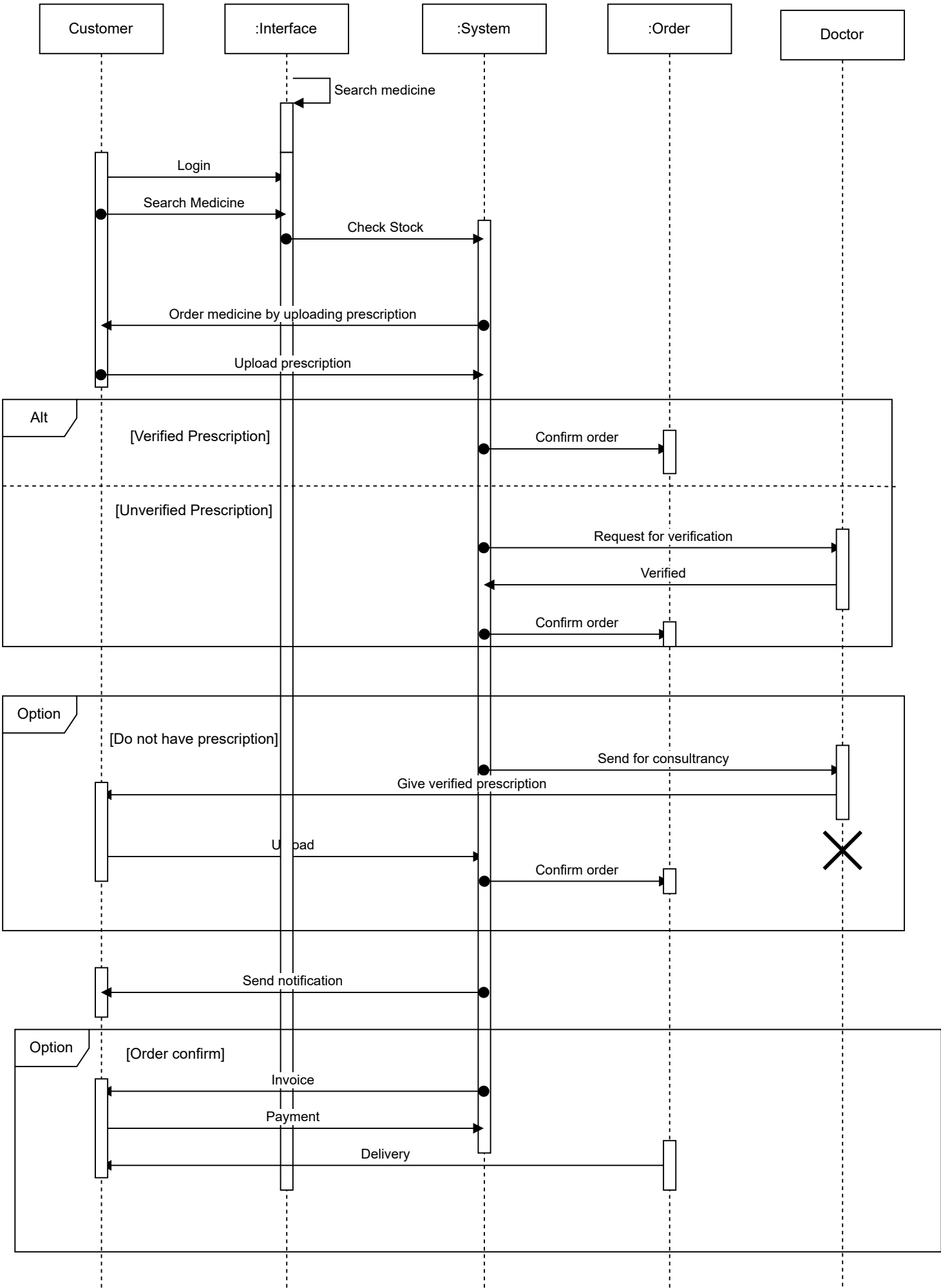
Admin

Description for the activity diagram:

The activity diagram illustrates the process of ordering medication through an online pharmacy system. Customers search and select medication, add it to their cart, and proceed to checkout where they can review and pay for their order. The system then sends the prescription to a licensed doctor for review and consultation if required. Once approved, the order is confirmed, sent to the pharmacy, and tracked by the customer. Upon delivery, the customer receives a notification. While online pharmacies offer convenience, it is important to ensure safe and legal use of medication, verification of online pharmacies, and protection of customer information.

	Customer	System	Doctor

Pool

- Login
- Search Medicine
- No
- order special medicine
- Check stock
- Not Available
- Available
- Upload Prescription
- Have prescription
- Yes
- Verify prescription
- No
- Verified
- No
- No
- Go for consultancy
- yes
- Yes
- check for Doctor's availability
- get consultancy and verified prescription
- Proceed to Order
- Prepare invoice
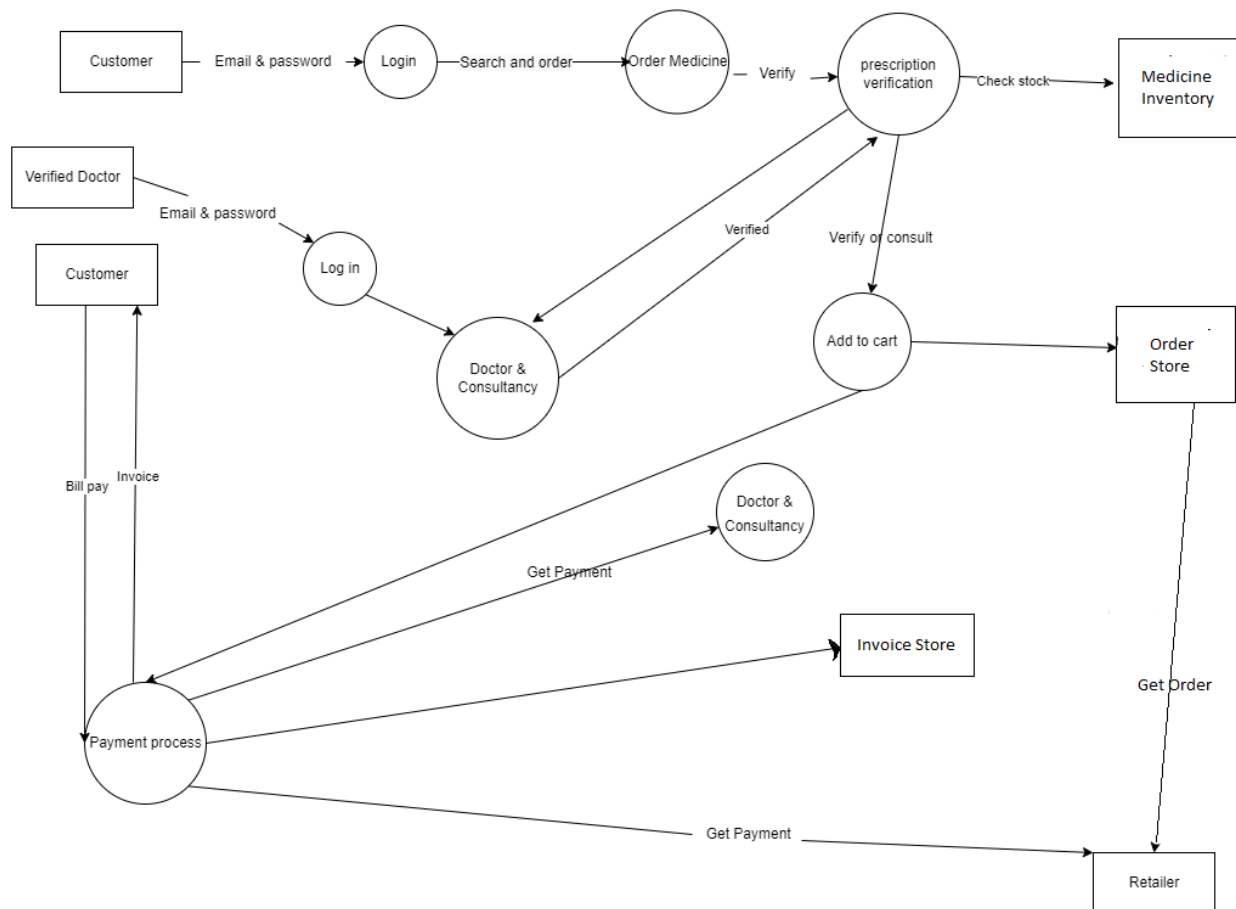- Make Payment

Description for the sequence diagram:

The sequence diagram for the online pharmacy system depicts the chronological interactions between actors and the system involved in ordering medication. The customer requests a search for medication and selects the desired medication, adds it to the cart, and proceeds to checkout. At checkout, the customer confirms the order and pays through an online payment gateway. The system sends the prescription to a doctor for review, who approves it or contacts the customer for additional information. Once the prescription is approved, the system confirms the order and sends it to the pharmacy for delivery. The customer can track the progress of their order, and upon delivery, receives a notification. The diagram clearly displays the roles and order of steps involved in the ordering process.

Customer   :Interface   :System   :Order   Doctor

Search medicine

Login

Search Medicine

Check Stock

Order medicine by uploading prescription

Upload prescription

Alt

[Verified Prescription]

Confirm order

[Unverified Prescription]

Request for verification

Verified

Confirm order

Option

[Do not have prescription]

Send for consultrancy

Give verified prescription

Upload

Confirm order

Send notification

Option

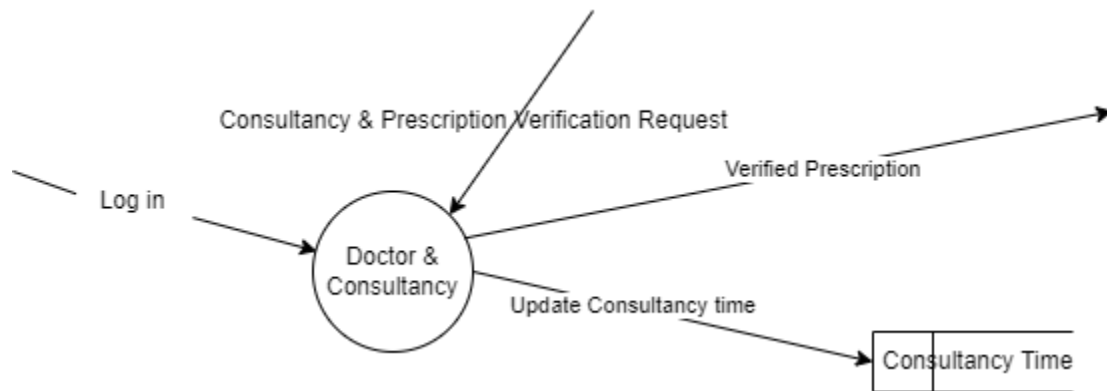[Order confirm]

Invoice

Payment

Delivery

Description for DFD:

The data flow diagram for the online pharmacy system illustrates the flow of data between the customer, doctor, pharmacy, and the system. The diagram shows the customer inputting data such as medication details and delivery address, which flows to the system. The system sends the prescription to the doctor for review and approval, and then to the pharmacy for processing and delivery. Throughout the process, the system manages and stores data such as customer details, medication orders, and delivery statuses. The diagram provides a clear visualization of the data management and processing within the system, highlighting the different components and interactions between them.

Level 1

Customer —Email & password→ Login —Search and order→ Order Medicine — Verify → prescription verification —Check stock→ Medicine Inventory

Verified Doctor —Email & password→ Log in → Doctor & Consultancy

Doctor & Consultancy —Verified→ prescription verification

prescription verification —Verify or consult→ Add to cart

Add to cart → Order Store

Customer —Bill pay / Invoice→ Payment process

Payment process —Get Payment→ Doctor & Consultancy

Payment process → Invoice Store

Payment process —Get Payment→ Retailer

Order Store —Get Order→ Retailer

Level 2 For Doctor :

Consultancy & Prescription Verification Request

Log in

Doctor & Consultancy

Verified Prescription

Update Consultancy time

Consultancy Time

Level 2 Login :

Doctor

User email, password

User info storage

retrieve user data

Log in

User email, password

Customer

User email, password

Retailer

User email, password

Admin

Conclusion:

The proposed online pharmacy system is a promising project that aims to provide customers with a convenient and efficient way of ordering medication. The system offers a unique opportunity to combine online shopping and telemedicine, providing customers with the added benefit of online consultation with a licensed doctor. The use case diagram, activity diagram, sequence diagram, and data flow diagram provide a comprehensive overview of the system's functionality, interactions, and data flow. These diagrams allow for a better understanding of the system's components, facilitating the development and implementation of the system. Overall, the online pharmacy system has the potential to revolutionize the way people access medication, offering a safe and secure way of ordering medication from the comfort of their homes.