Software Requirements Specification

for

Online Pharmacy

Version 1

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April 08, 2024

Table of Contents

1. Introduction

1.1. Purpose
The purpose of this Software Requirements Specification (SRS) document is to define the requirements for the development of an Online Pharmacy Application. It aims to guide the development team in implementing the necessary features and functionalities and provide a reference for stakeholders to understand the project scope and objectives.

1.2. Scope
This document encompasses the scope of the Online Pharmacy Application, including its features, user interactions, system architecture, and non-functional requirements. It outlines the boundaries of the project and defines what functionalities will be included.

1.3. Definitions
Online Pharmacy Application: A web-based platform allowing users to purchase pharmaceutical products remotely.
User: An individual who interacts with the Online Pharmacy Application to browse, purchase, or manage pharmaceutical products.
Administrator: A privileged user with access to administrative functionalities for managing products, users, and other aspects of the application.

SRS	Software Requirements Specification
BDD	Block Definition Diagram
UI	User Interface
API	Application Programming Interface
DBMS	Database Management System

1.4. References
1. IEEE Std 830-1998 - IEEE Recommended Practice for Software Requirements Specifications - Revision of IEEE Std 830-1993

1.5. Overview
The Online Pharmacy Application is envisioned to provide a seamless and efficient platform for users to browse, purchase, and manage pharmaceutical products. It will incorporate user-friendly interfaces for registration, login, order placement, and product browsing, along with robust backend functionalities for order processing, inventory management, and notification sending.
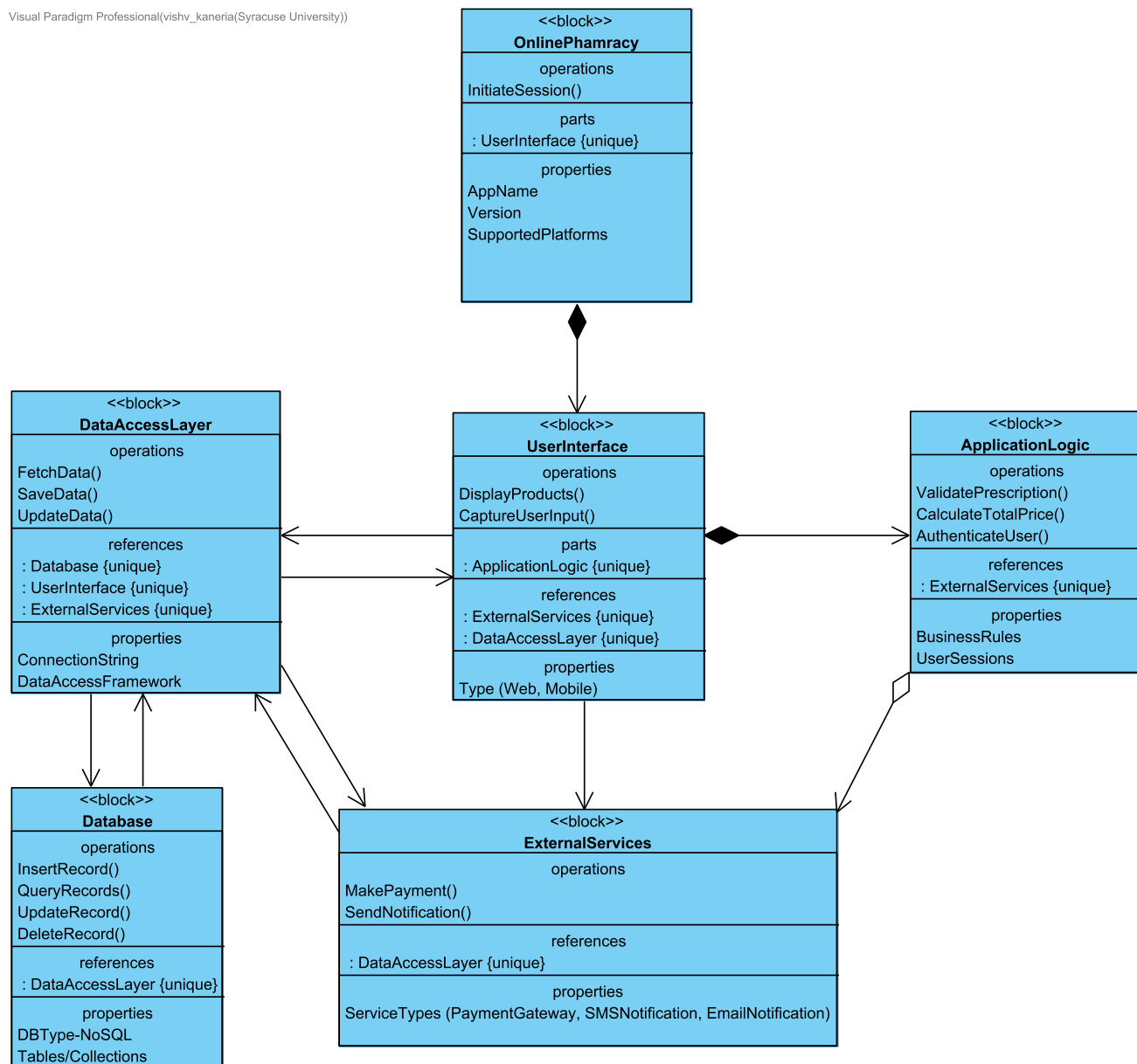
2. Overall Description

2.1. Product Perspective
The Online Pharmacy Application operates as a standalone web-based system, interacting with users through a web interface. It incorporates various modules for user management, order processing, product management, category management, pharmacy management, and notification sending.

2.1.1. Architecture Diagram

2.1.1.1. ApplicationLogic

Serving as the intermediary between the application's business logic and the database, the DataAccessLayer provides methods for fetching, saving, and updating data, ensuring data integrity and consistency.

2.1.1.1.1. Stereotypes

<<block>>

2.1.1.1.2. Properties

Visibility	public
Abstract	false
Leaf	false
Root	false
Active	false
Encapsulated	false

Parts	
References	
Values	
Flow Ports	
Properties	BusinessRules UserSessions

2.1.1.1.3. Relationships

Relationship	From	To
─ unnamed	ApplicationLogic	ExternalServices
─ unnamed	UserInterface	ApplicationLogic

2.1.1.2. DataAccessLayer

Serving as the intermediary between the application's business logic and the database, the DataAccessLayer provides methods for fetching, saving, and updating data, ensuring data integrity and consistency.

2.1.1.2.1. Stereotypes

<<block>>

2.1.1.2.2. Properties

Visibility	public
Abstract	false
Leaf	false
Root	false
Active	false
Encapsulated	false
Parts	
References	
Values	
Flow Ports	
Properties	ConnectionString DataAccessFramework

2.1.1.2.3. Relationships

Relationship	From	To
─ unnamed	DataAccessLayer	Database
─ unnamed	DataAccessLayer	UserInterface
─ unnamed	DataAccessLayer	ExternalServices
─ unnamed	UserInterface	DataAccessLayer
─ unnamed	Database	DataAccessLayer
─ unnamed	ExternalServices	DataAccessLayer

2.1.1.3. Database

The Database block is responsible for the storage, retrieval, and management of persistent data. It employs NoSQL technology for scalable data operations and manages diverse datasets across various tables or collections.

2.1.1.3.1. Stereotypes

<<block>>

2.1.1.3.2. Properties

Visibility	public
Abstract	false
Leaf	false
Root	false
Active	false
Encapsulated	false
Parts	
References	
Values	
Flow Ports	
Properties	DBType-NoSQL Tables/Collections

2.1.1.3.3. Relationships

Relationship	From	To
unnamed	Database	DataAccessLayer
unnamed	DataAccessLayer	Database

2.1.1.4. ExternalServices

ExternalServices interfaces with third-party services for payments and notifications. It's configured to interact with payment gateways, SMS, and email services, extending the functionality of the OnlinePharmacy application.

2.1.1.4.1. Stereotypes

<<block>>

2.1.1.4.2. Properties

Visibility	public
Abstract	false
Leaf	false
Root	false
Active	false
Encapsulated	false
Parts	
References	

Values	
Flow Ports	
Properties	ServiceTypes (PaymentGateway, SMSNotification, EmailNotification)

2.1.1.4.3. Relationships

Relationship	From	To
unnamed	ExternalServices	DataAccessLayer
unnamed	UserInterface	ExternalServices
unnamed	DataAccessLayer	ExternalServices
unnamed	ApplicationLogic	ExternalServices

2.1.1.5. OnlinePhamracy

This is the main entry point of the application, handling initial user sessions and interactions. It integrates user interface components and ensures application-wide settings like name, version, and supported platforms are in place.

2.1.1.5.1. Stereotypes

<<block>>

2.1.1.5.2. Properties

Visibility	public
Abstract	false
Leaf	false
Root	false
Active	false
Encapsulated	false
Parts	
References	
Values	
Flow Ports	
Properties	AppName SupportedPlatforms Version

2.1.1.5.3. Relationships

Relationship	From	To
unnamed	OnlinePhamracy	UserInterface

2.1.1.6. UserInterface

The UserInterface block acts as the front-end of the application, managing how products are displayed and user input is captured. It adapts to different platforms such as web and mobile for a consistent user experience.

2.1.1.6.1. Stereotypes

<<block>>

2.1.1.6.2. Properties

Visibility	public
Abstract	false
Leaf	false
Root	false
Active	false
Encapsulated	false
Parts	
References	
Values	
Flow Ports	
Properties	Type (Web, Mobile)

2.1.1.6.3. Relationships

Relationship	From	To
unnamed	UserInterface	ExternalServices
unnamed	UserInterface	ApplicationLogic
unnamed	UserInterface	DataAccessLayer
unnamed	OnlinePhamracy	UserInterface
unnamed	DataAccessLayer	UserInterface

2.2. Product Functions

The following use case diagram depicts the users of the system, and the intended way in which they will interact with the system.

2.2.1. Use Case Diagram
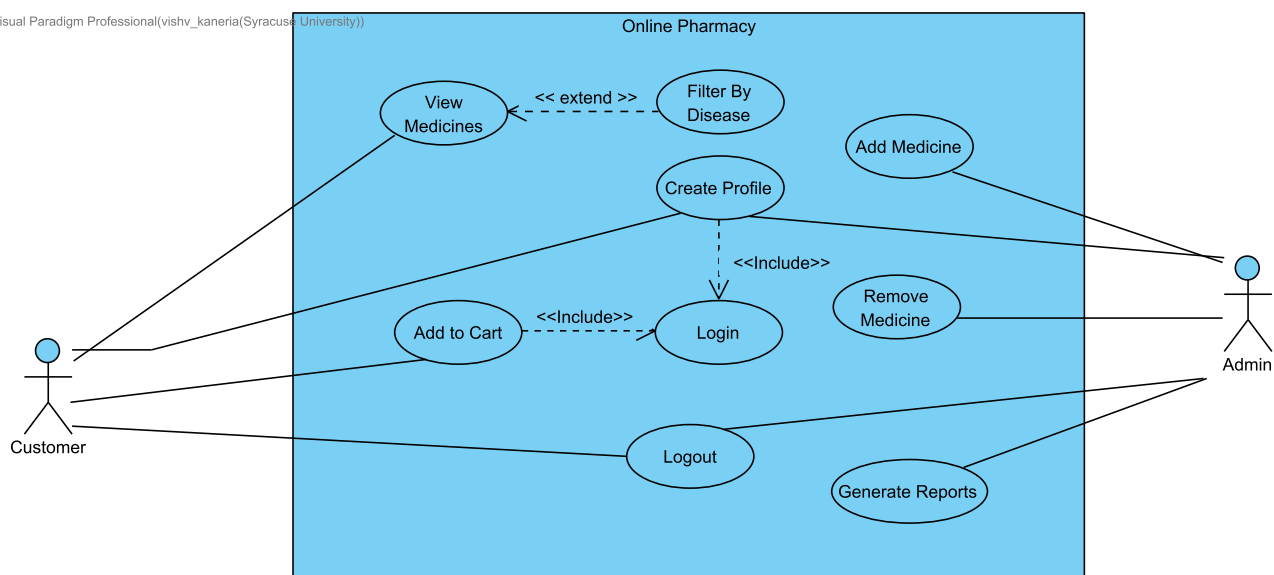
2.2.1.1. Add Medicine

ID: UC25

Admin can add new medicines to the inventory.

2.2.1.1.1. Primary Actors

👤 Admin

2.2.1.1.2. Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	Admin is logged in and has relevant details.
Post-conditions	New medicine is available for purchase.
Author	N/A
Assumptions	N/A

2.2.1.1.3. Scenarios

2.2.1.1.3.1. Scenario

1. New stock arrives and needs to be listed.

2.2.1.1.4. Requirements

2.2.1.1.4.1. Medicine Catalog Updating

ID: UC25.AM-UC01

2.2.1.1.4.2. Update Medicine Details

ID: UC25.AM-UC02

2.2.1.1.5. Relationships

Relationship	From	To
«d»unnamed	Add Medicine	Medicine Catalog Updating
unnamed	Add Medicine	👤 Admin

2.2.1.1.6. Sub Diagrams

2.2.1.1.6.1. Add Medicine Requirement Diagram
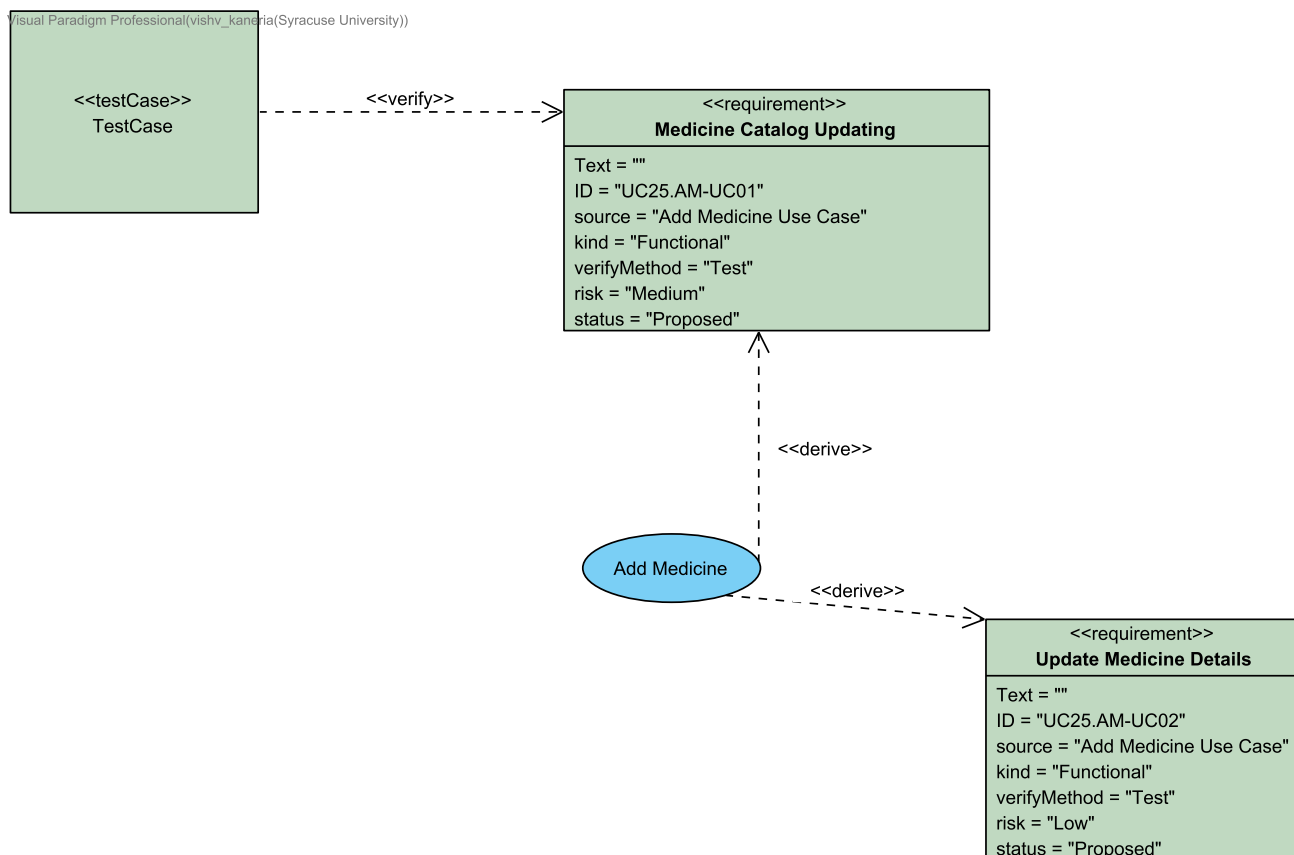
2.2.1.1.7. Reference Diagrams

2.2.1.1.7.1. Add Medicine Requirements Spec
Add Medicine Requirements Spec

⬭ *2.2.1.2. Add to Cart*
ID: UC19
Customers can add medicines to their shopping cart.

2.2.1.2.1. Primary Actors
👤 Customer

2.2.1.2.2. Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	Customer has browsed and chosen medicines.
Post-conditions	Selected medicines are added to the cart.
Author	N/A
Assumptions	N/A

2.2.1.2.3. Scenarios

> 1. Customer selects medicines to purchase.

2.2.1.2.4. Requirements

📄 *2.2.1.2.4.1. Availability Confirmation*
ID: UC19.ATC-UC04

📄 *2.2.1.2.4.2. Cart Quantity Update*
ID: UC19.ATC-UC02

📄 *2.2.1.2.4.3. Immediate Cart Feedback*
ID: UC19.ATC-UC03

📄 *2.2.1.2.4.4. Real-time update of cart contents.*
ID: UC19.ATC-UC01

2.2.1.2.5. Relationships

Relationship	From	To
→unnamed	🔵Add to Cart	🔵Login
—unnamed	🔵Add to Cart	👤Customer

2.2.1.2.6. Reference Diagrams

📄 *2.2.1.2.6.1. Add to Cart Requirements Spec*
Add to Cart Requirements Spec

👤 *2.2.1.3. Admin*
ID: AC02
Admin user with admin privileges.

2.2.1.3.1. Properties

Abstract	false
Leaf	false
Root	false

2.2.1.3.2. Relationships

Relationship	From	To
—unnamed	👤Admin	🔵Create Profile
—unnamed	🔵Add Medicine	👤Admin
—unnamed	🔵Remove Medicine	👤Admin
—unnamed	🔵Generate Reports	👤Admin
—unnamed	🔵Logout	👤Admin

🔵*2.2.1.4. Create Profile*

ID: UC07

Customers can create their own user profile.

2.2.1.4.1. Primary Actors

⚇ Admin, ⚇ Customer

2.2.1.4.2. Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	Customer has valid details for registration.
Post-conditions	Customer profile is created in the system.
Author	N/A
Assumptions	N/A

2.2.1.4.3. Scenarios

2.2.1.4.3.1. Scenario

1. A new customer registers an account.

2.2.1.4.4. Requirements

2.2.1.4.4.1. Account Confirmation
ID: UC07.CP-UC03

2.2.1.4.4.2. Email Verification
ID: UC07.CP-UC02

2.2.1.4.4.3. System must securely store customer information.
ID: UC07.CP-UC01

2.2.1.4.5. Relationships

Relationship	From	To
⋯⋯⊳unnamed	⬤Create Profile	⬤Login
—unnamed	⚇ Customer	⬤Create Profile
—unnamed	⚇ Admin	⬤Create Profile

2.2.1.4.6. Reference Diagrams

2.2.1.4.6.1. Create Profile Requirements Spec2
Create Profile Requirements Spec

⚇ *2.2.1.5. Customer*
ID: AC01

Customer/End-user will use the application with features they are allowed to use.

2.2.1.5.1. Properties

Abstract	false
Leaf	false
Root	false

2.2.1.5.2. Relationships

Relationship	From	To
—unnamed	🧍 Customer	⬤View Medicines
—unnamed	🧍 Customer	⬤Create Profile
—unnamed	⬤Add to Cart	🧍 Customer
—unnamed	⬤Logout	🧍 Customer

⬤2.2.1.6. Filter By Disease

ID: UC22

Customers can filter medicines by disease category.

2.2.1.6.1. Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	Customer is looking for cold medication.
Post-conditions	Only medicines relevant to the selected disease are displayed.
Author	N/A
Assumptions	N/A

2.2.1.6.2. Scenarios

2.2.1.6.2.1. Scenario

> 1. Customer is looking for cold medication.

2.2.1.6.3. Requirements

📑2.2.1.6.3.1. Disease-based Medicine Filtering
ID: UC22.FBD-UC01

📑2.2.1.6.3.2. Filter Clarity and Usability
ID: UC22.FBD-UC03

📑2.2.1.6.3.3. Multiple Filters Application
ID: UC22.FBD-UC02

📑2.2.1.6.3.4. Persistent Filter Selections
ID: UC22.FBD-UC04

2.2.1.6.4. Relationships

Relationship	From	To
--->`<< extend >>`	●Filter By Disease	●View Medicines

2.2.1.6.5. Reference Diagrams

📄 2.2.1.6.5.1. Filter By Disease Requirements Spec
Filter By Disease Requirements Spec

● 2.2.1.7. Generate Reports
ID: UC20
Admin can generate various reports for the business.

2.2.1.7.1. Primary Actors
👤 Admin

2.2.1.7.2. Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	Admin requests a specific type of report.
Post-conditions	The requested report is generated.
Author	N/A
Assumptions	N/A

2.2.1.7.3. Scenarios

2.2.1.7.3.1. Scenario

> 1. Admin requires sales or inventory reports.

2.2.1.7.4. Requirements

📄 2.2.1.7.4.1. Custom Report Filters
ID: UC20.GR-UC04

📄 2.2.1.7.4.2. Inventory Level Reports
ID: UC20.GR-UC02

📄 2.2.1.7.4.3. Sales Report Generation
ID: UC20.GR-UC01

📄 2.2.1.7.4.4. User Activity Reports
ID: UC20.GR-UC03

2.2.1.7.5. Relationships

Relationship	From	To
⸺unnamed	⬤Generate Reports	☥ Admin

2.2.1.7.6. Reference Diagrams

📄 2.2.1.7.6.1. Generate Reports Requirements Spec
Generate Reports Requirements Spec

⬤ 2.2.1.8. Login
ID: UC04
Users with existing profiles can authenticate themselves to access their accounts within the system.

2.2.1.8.1. Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	User has already created an account with the system and has a valid username and password.
Post-conditions	Upon successful authentication, the user is granted access to their account and associated features specific to their role (such as viewing personal data, managing orders, accessing account settings).
Author	N/A
Assumptions	N/A

2.2.1.8.2. Scenarios

2.2.1.8.2.1. Scenario

> 1. A user enters their username and password to gain access to their personalized account on the platform.

2.2.1.8.3. Requirements

📄 2.2.1.8.3.1. Authentication Process
ID: UC04.LG-UC01

📄 2.2.1.8.3.2. Multi-Factor Authentication
ID: UC04.LG-UC04

📄 2.2.1.8.3.3. Password Recovery
ID: UC04.LG-UC02

📄 2.2.1.8.3.4. Session Initiation
ID: UC04.LG-UC03

2.2.1.8.4. Relationships

Relationship	From	To
⸺⸺unnamed	⬤Create Profile	⬤Login

Relationship	From	To
⊶unnamed	⬤Add to Cart	⬤Login

2.2.1.8.5. Reference Diagrams

📄 *2.2.1.8.5.1. Login Requirements Spec*
Login Requirements Spec

⬤*2.2.1.9. Logout*
ID: UC27
Customers can log out of their profile.

2.2.1.9.1. Primary Actors
👤 Admin, 👤 Customer

2.2.1.9.2. Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	Customer is logged in.
Post-conditions	Customer is logged out of the system.
Author	N/A
Assumptions	N/A

2.2.1.9.3. Scenarios

2.2.1.9.3.1. Scenario

> 1. Customer completes their session and wants to exit securely.

2.2.1.9.4. Requirements

📄 *2.2.1.9.4.1. Auto-Logout Timer*
ID: UC27.LO-UC03

📄 *2.2.1.9.4.2. Confirmation of Logout*
ID: UC27.LO-UC02

📄 *2.2.1.9.4.3. Logout on Multiple Devices*
ID: UC27.LO-UC04

📄 *2.2.1.9.4.4. Session termination must be secure.*
ID: UC27.LO-UC01

2.2.1.9.5. Relationships

Relationship	From	To
—unnamed	⬤Logout	👤Admin

Relationship	From	To
unnamed	🔵Logout	👤Customer

2.2.1.9.6. Reference Diagrams

📄2.2.1.9.6.1. Logout Requirements Spec
Logout Requirements Spec

📘2.2.1.10. Online Pharmacy

2.2.1.10.1. Properties

Abstract	false
Leaf	false
Root	false

2.2.1.10.2. Children Summary

Name	Description
🔵Add Medicine	Admin can add new medicines to the inventory.
🔵Add to Cart	Customers can add medicines to their shopping cart.
🔵Create Profile	Customers can create their own user profile.
🔵Filter By Disease	Customers can filter medicines by disease category.
🔵Generate Reports	Admin can generate various reports for the business.
🔵Login	Users with existing profiles can authenticate themselves to access their accounts within the system.
🔵Logout	Customers can log out of their profile.
🔵Remove Medicine	Admin can remove medicines from the inventory.
🔵View Medicines	Customers can browse available medicines.

🔵2.2.1.11. Remove Medicine
ID: UC21

Admin can remove medicines from the inventory.

2.2.1.11.1. Primary Actors

👤 Admin

2.2.1.11.2. Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	Admin identifies medicine to be removed.
Post-conditions	Medicine is no longer listed or available for purchase.
Author	N/A

Assumptions	N/A

2.2.1.11.3. Scenarios

2.2.1.11.3.1. Scenario

> 1. A medicine is no longer available or recalled.

2.2.1.11.4. Requirements

2.2.1.11.4.1. System must ensure no pending orders for that medicine.
ID: UC21.RM-UC01

2.2.1.11.5. Relationships

Relationship	From	To
—unnamed	⬭Remove Medicine	⚥ Admin

2.2.1.11.6. Reference Diagrams

2.2.1.11.6.1. Remove Medicine Requirements Spec
Remove Medicine Requirements Spec

⬭2.2.1.12. View Medicines
ID: UC01
Customers can browse available medicines.

2.2.1.12.1. Primary Actors
⚥ Customer

2.2.1.12.2. Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	Customer accesses the pharmacy system.
Post-conditions	Medicine list is displayed to the customer.
Author	N/A
Assumptions	N/A

2.2.1.12.3. Scenarios

2.2.1.12.3.1. Scenario

> 1. A customer browses through a list of medicines.

2.2.1.12.4. Requirements

2.2.1.12.4.1. Catalog Accessibility
ID: UC01.VM-UC01

2.2.1.12.4.2. Medicine Detailed View

ID: UC01.VM-UC04

📄 *2.2.1.12.4.3. Medicine Search Function*
ID: UC01.VM-UC03

📄 *2.2.1.12.4.4. Real-Time Inventory Display*
ID: UC01.VM-UC02

2.2.1.12.5. Relationships

Relationship	From	To
--->＜＜ extend ＞＞	🔵Filter By Disease	🔵View Medicines
—unnamed	🧍 Customer	🔵View Medicines

2.2.1.12.6. Reference Diagrams

📄 *2.2.1.12.6.1. View Medicines Requirements Spec*
View Medicines Requirements Spec

2.3. User Characteristics

Users of the Online Pharmacy Application may vary in their technical proficiency, familiarity with online shopping platforms, and preferences for browsing and purchasing pharmaceutical products. The application should cater to users of all backgrounds and provide a seamless experience.

2.4. Constraints

The development of the Online Pharmacy Application may be subject to certain constraints, including budgetary limitations, time constraints, technology limitations, and regulatory requirements related to the sale of pharmaceutical products online.

3. Specific Requirements

3.1. Overview

3.1.1. Activity Diagram
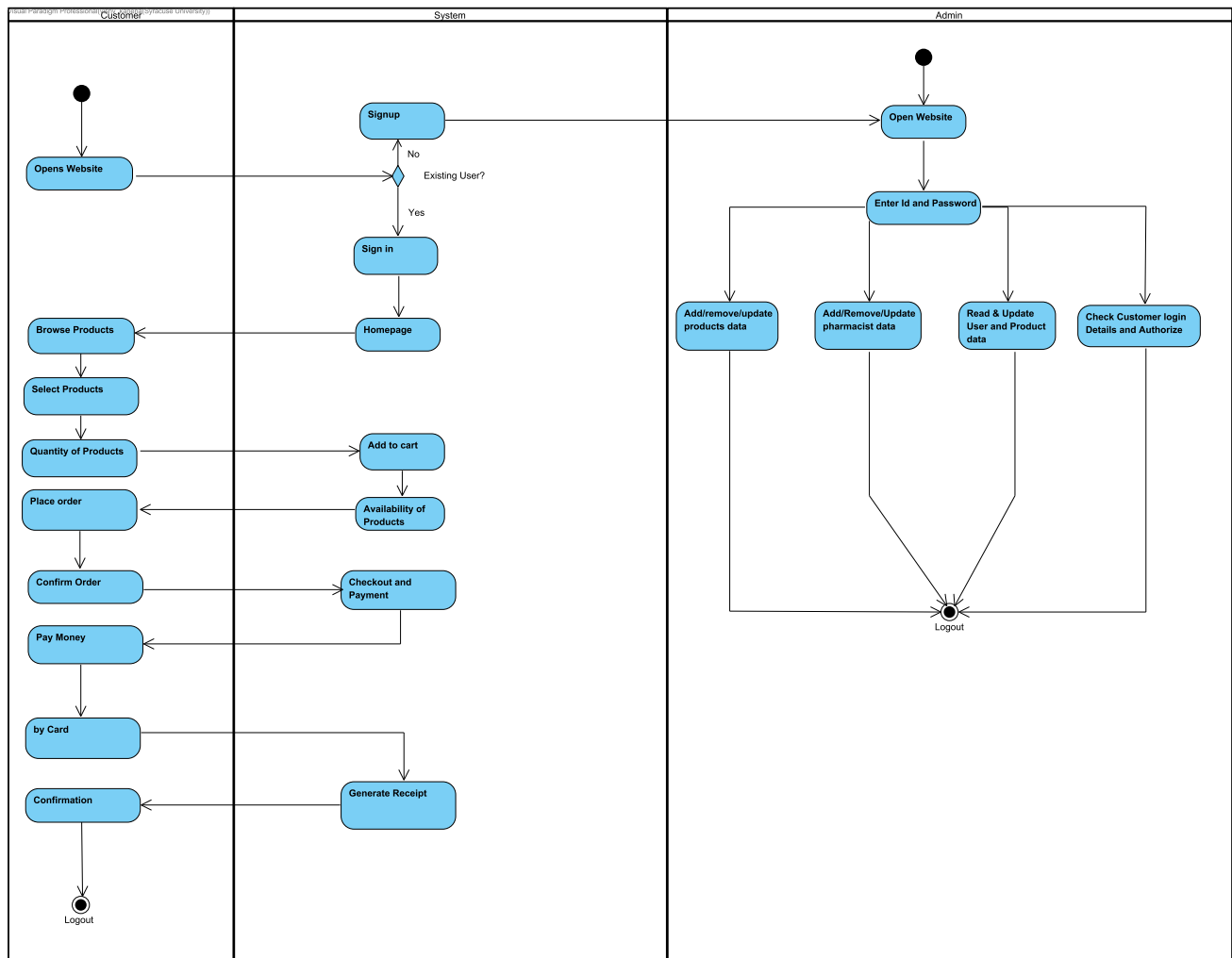
3.1.2. Add to cart

The system updates the cart to reflect the new items and quantities, providing a subtotal for the order.

3.1.3. Add/Remove/Update pharmacist data

Admins manage the profiles and schedules of pharmacists, including the addition of new staff to the system.

3.1.4. Add/remove/update products data

They ensure that the pharmacy's product listings are current, adding new items, updating existing ones, or removing outdated products.

3.1.5. Availability of Products

Behind the scenes, the system verifies the stock levels to ensure all items in the order can be fulfilled.

3.1.6. Browse Products

They navigate through the catalogue, filtering and sorting products based on various criteria like price, popularity, or category.

3.1.7. Check Customer login Details and Authorize

Admins oversee customer account activity, resolving access issues and approving exceptional account activities.

3.1.8. Checkout and Payment

The customer is taken to a secure payment page where they enter payment information and apply any coupons or discounts.

3.1.9. Confirm Order

After confirmation of product availability, the customer confirms their shipping details and any special instructions.

3.1.10. Confirmation

The customer receives a clear confirmation message on-screen confirming their order, with details about expected delivery times.

3.1.11. Enter Id and Password

Utilizing secure credentials, the admin logs into the backend system to access the full range of management tools.

3.1.12. Generate Receipt

Upon successful payment, the system generates a digital receipt, which is also sent to the customer's email.

3.1.13. Homepage

After logging in, customers are welcomed to the homepage which showcases product categories, deals, and recommendations.

3.1.14. Open Website

The admin's interaction with the system starts when they access the admin portal of the online pharmacy website.

3.1.15. Opens Website

The journey begins when the customer visits the online pharmacy's website, seeking to purchase medicines or view product offerings.

3.1.16. Pay Money

Payment is processed securely, with options including credit/debit card, online wallets, or cash on delivery.

3.1.17. Place order

The customer reviews their cart and confirms the items before proceeding to place the order.

3.1.18. Quantity of Products

For each item in the cart, they specify the desired quantity, adjusting according to their needs and the available stock.

3.1.19. Read & Update User and Product data

They have the ability to review and edit user accounts and product details, maintaining the integrity of the data.

3.1.20. Select Products

Customers add their chosen products to their virtual shopping cart by clicking on an 'Add to Cart' button.

3.1.21. Sign in

Returning customers are prompted to log in to their accounts to access personalized features and order history.

3.1.22. Signup

New customers are presented with a registration form to create an account, providing essential details such as name, email, and setting up a password.

3.2. Class Diagram

3.2.1. Class Diagram
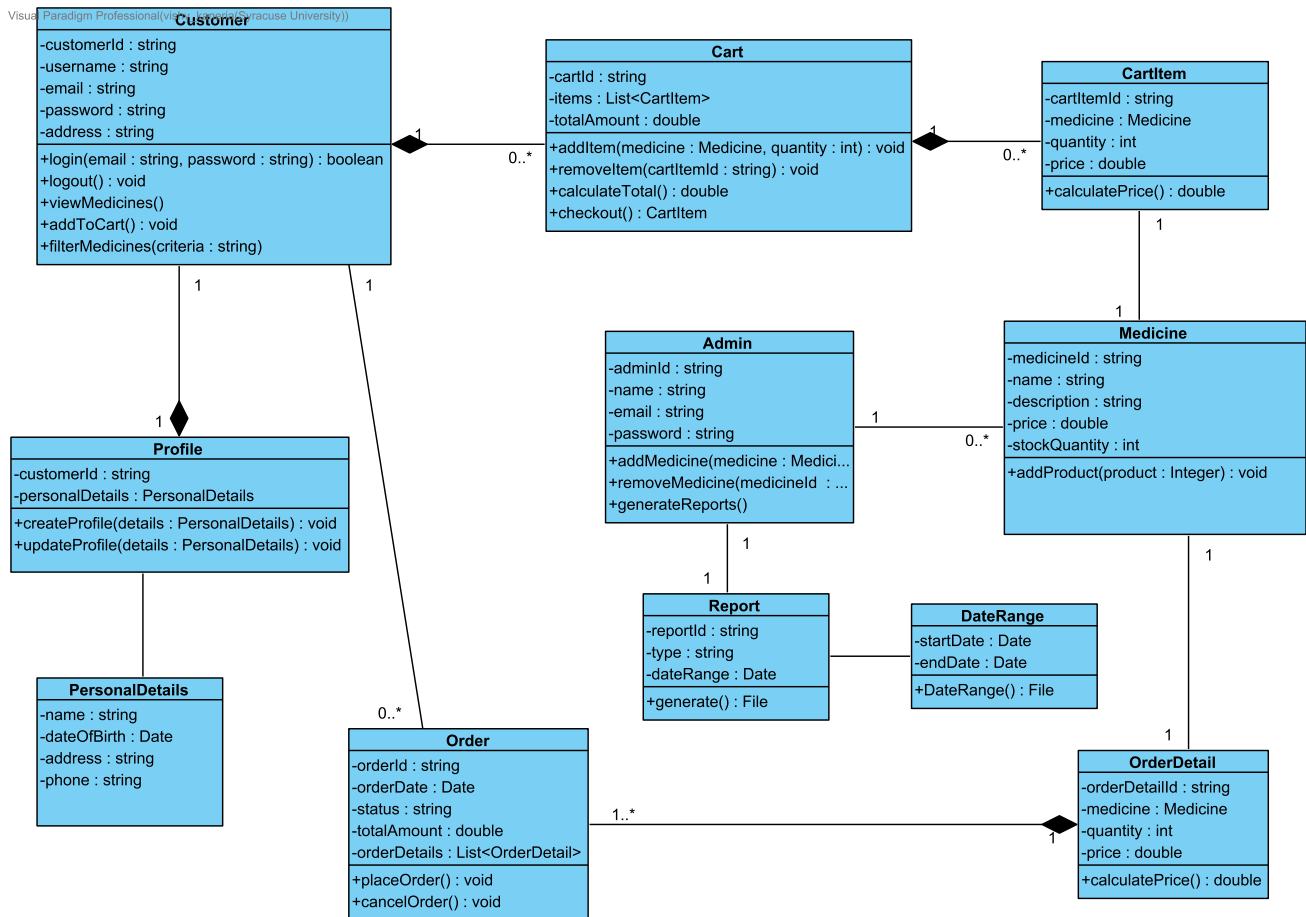
3.2.2. Admin

Represents users with administrative privileges who can add or remove medicines, manage inventory, and generate reports for the pharmacy.

3.2.3. Cart

Holds detailed personal information about the customer, such as name, date of birth, and contact details. Profiles are created and updated by customers.

3.2.4. CartItem

Represents an individual item within a cart, including its quantity and price, and is responsible for price calculation based on the quantity.

3.2.5. Customer

Represents the end-users of the online pharmacy system who can browse, select, and purchase medicines. Customers handle their authentication and manage their shopping activities.

3.2.6. DateRange

Defines a specific range of dates, likely used for filtering data when generating reports to provide insights within a specific timeframe.

📄 3.2.7. Medicine

Contains data about a specific medicine, including its ID, name, description, price, and stock quantity. This class is interacted with for inventory management and shopping functionalities.

📄 3.2.8. Order

Manages the orders placed by customers, including order details, status, and total amount. It handles the placement and potential cancellation of orders.

📄 3.2.9. OrderDetail

Holds information about a specific item within an order, such as the medicine selected, its quantity, and price, and performs price calculation.

📄 3.2.10. PersonalDetails

Contains individual-specific information associated with a customer profile. This class encapsulates data such as the customer's full name, date of birth, address, and phone number, crucial for customer identification and contact purposes.

📄 3.2.11. Profile

Manages the account-specific attributes and behaviors of a customer. This class encapsulates authentication credentials and references PersonalDetails to maintain comprehensive information about the customer. The Profile class facilitates the creation and updating of user profiles, serving as a central point for managing identity and access within the online pharmacy system.

📄 3.2.12. Report

Generates different types of reports based on the data range and type specified. Used by admins to monitor and manage business operations.

3.3. Functional Requirements

3.3.1. User Management
The system shall allow users to create a new account by providing their name, email, phone, password, and address.
The system shall authenticate users by verifying their login credentials (email and password).

3.3.2. Order Processing
The system shall generate a unique order ID for each new order placed by a user.
The system shall calculate the total price of an order based on the sum of prices for each product in the order.

3.3.3. Product Management
The system shall allow administrators to update the stock quantity of a product.

3.3.4. Notification Sending
The system shall provide functionalities for sending email notifications to users or administrators.
The system shall provide functionalities for sending SMS notifications to users or administrators.

3.4. Non-Functional Requirements

3.4.1. Performance
The system shall provide responsive user interactions with minimal latency.

3.4.2. Security
The system shall implement robust security measures to protect user data.

3.4.3. Scalability
The system shall be designed to scale horizontally and vertically to accommodate increasing user traffic and growing product inventory.