
Software Requirements and Design Document

for

TradeTrack

Prepared by

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A Project By :



Date Created :

Wednesday, 27th November 2024

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1. Introduction

1.1 Purpose

The software requirements document describes TradeTrack, an integrated desktop-based application. TradeTrack merges eCommerce functionalities with inventory management to streamline retail operations for SaveMart. It covers key areas, including eCommerce management, inventory tracking, and analytics. This SRS outlines the entire system.

1.2 Product Scope

TradeTrack is designed for Metro Cash and Carry's retail operations. It combines eCommerce and inventory management to reduce manual errors, automate processes, and facilitate real-time synchronization of data. The system will address current inefficiencies in retail by:

- *Managing online sales and payments.*
- *Tracking inventory and automating reordering.*
- *Generating reports for strategic decision-making.*

1.3 Title

TradeTrack: An Integrated eCommerce and Inventory Management System for Retail Operations

1.4 Objectives

*Streamline operations by merging eCommerce and inventory systems.
Provide real-time inventory updates and automate stock adjustments.
Enhance customer satisfaction through accurate order tracking and timely fulfillment.
Offer analytics for informed decision-making.
Create a scalable and user-friendly solution with robust security measures.*

1.5 Problem Statement

Retail businesses face inefficiencies due to disconnected eCommerce and inventory systems:

Manual Errors: Prone to data discrepancies.

Operational Inefficiencies: Redundant data entry increases workload.

Customer Dissatisfaction: Delays in order processing and stock inaccuracies.

TradeTrack solves these issues by integrating eCommerce and inventory management into a cohesive system.

2. Overall Description

2.1 Product Perspective

TradeTrack is a new, self-contained system addressing gaps in existing solutions by providing:

Integrated inventory and sales tracking.

Automation of key operations like reordering and reporting.

Diagram: Displays system components, subsystems (eCommerce, inventory management), and interfaces.

2.2 Product Functions

Manage online customer orders and payments.

Track and reorder inventory automatically.

Generate analytics for sales, inventory, and finances.

2.3 List of Use Cases

1. View Product Catalog
2. Place Order
3. Track Order Status
4. View Order History
5. Notify Low Stock Levels
6. Set Restock Levels
7. Restock Inventory
8. Manage Users
9. Manage Products
10. Send Order Confirmation
11. View Inventory Status
12. Manage Customer Feedback
13. Manage Orders

1

2.4 Extended Use Cases

1. View Product Catalog

Component	Description
Use Case Name	View Product Catalog

Scope	TradeTrack eCommerce System
Level	User-goal
Primary Actor	Customer
Stakeholders and Interests	Customer: Wants to browse products easily. Store: Wants to present available products clearly.
Preconditions	The customer has access to the eCommerce platform.
Postconditions	The customer successfully views the product catalog.
Main Success Scenario	Actor Action 1. Customer navigates to the product catalog. 2. Customer browses and filters products. 3. Customer searches for specific items. 4. Customer views product details.
Extensions	- If the product data fails to load, the system displays an error message.

2. Place Order

Component	Description
Use Case Name	Place Order
Scope	TradeTrack eCommerce System

Level	User-goal
Primary Actor	Customer
Stakeholders and Interests	Customer: Wants to place an order for products efficiently. Store: Ensures that orders are processed smoothly.
Preconditions	Customer is logged in and has added items to the shopping cart.
Postconditions	Order is successfully placed and confirmed.
Main Success Scenario	Actor Action <ol style="list-style-type: none">1. Customer reviews items in the shopping cart.2. Customer proceeds to checkout.3. Customer enters payment and shipping details.4. Customer confirms the order.
Extensions	<ul style="list-style-type: none">- If payment fails, the system prompts the customer to retry or choose a different payment method.- If stock is unavailable, the system notifies the customer of stock issues.

3. Track Order Status

Component	Description
Use Case Name	Track Order Status
Scope	TradeTrack eCommerce System

Level	User-goal
Primary Actor	Customer
Stakeholders and Interests	Customers want to track the progress of their order. Store: Ensures clear communication on order progress.
Preconditions	Customer has placed an order.
Postconditions	The customer successfully tracks the order status.
Main Success Scenario	Actor Action <ol style="list-style-type: none">1. Customers log into their account.2. Customer navigates to 'Order History'.3. Customer views order status.4. Customer selects order to track detailed progress.
Extensions	- If the order status fails to load, the system displays an error message.

4. View Order History

Component	Description
Use Case Name	View Order History
Scope	TradeTrack eCommerce System
Level	User-goal
Primary Actor	Customer
Stakeholders and Interests	Customer: Wants to view details of past orders for reference. Store: Ensures accurate record-keeping.
Preconditions	The customer is logged in.
Postconditions	Customers successfully view their order history.
Main Success Scenario	Actor Action <ol style="list-style-type: none">1. Customer logs into the system.2. Customer navigates to 'Order History'.3. Customer views a list of past orders.4. Customer clicks on a specific order to view details.
Extensions	- If the customer has no order history, the system informs the customer accordingly.

5. Notify Low Stock Levels

Component	Description
Use Case Name	Notify Low Stock Levels
Scope	TradeTrack Inventory Management System
Level	System-goal
Primary Actor	System
Stakeholders and Interests	<p>Store Manager: Needs to be informed of low stock levels to restock and avoid running out of products.</p> <p>Warehouse Staff: Requires timely information to prepare for restocking.</p>
Preconditions	<p>The system is actively monitoring inventory levels.</p> <p>Products are already in the inventory with set threshold levels for low stock alerts.</p>
Postconditions	<p>Store Manager and/or Warehouse Staff are notified of items with low stock.</p> <p>Inventory continues to be tracked, and items with low stock are flagged for further action.</p>
Main Success Scenario	<p>Actor Action</p> <ol style="list-style-type: none">1. System detects that a product's stock level has fallen below the predefined threshold.2. System automatically generates a low stock notification.3. System sends the notification to the Store Manager and/or Warehouse Staff.

Extensions

- If the notification cannot be sent due to a system error, the system retries after a set period.
- If multiple products are low in stock, the system can consolidate notifications into a summary alert.

6. Set Restock Levels

Component	Description
Use Case Name	Set Restock Levels
Scope	TradeTrack Inventory Management System
Level	User-goal
Primary Actor	Store Manager
Stakeholders and Interests	Store Manager: Wants to maintain sufficient stock to avoid stockouts.
Preconditions	Inventory data is available in the system.
Postconditions	Reorder levels are set, and the system monitors stock levels for reordering.
Main Success Scenario	Actor Action <ol style="list-style-type: none">1. Store manager logs into the system.2. Store manager navigates to the inventory settings.3. Store manager selects the option to set restocklevels.4. Store manager enters reorder threshold values for different products.
Extensions	- If stock data is incomplete, the system warns the manager before setting reorder levels.

7. Restock Inventory

Component	Description
Use Case Name	Restock Inventory
Scope	TradeTrack Inventory Management System
Level	User-goal
Primary Actor	Warehouse Staff
Stakeholders and Interests	Warehouse Staff: Wants to update inventory after receiving stock. Store Manager: Needs inventory data updated accurately after restocking.
Preconditions	New stock has been received at the warehouse.
Postconditions	Inventory is successfully updated in the system.
Main Success Scenario	Actor Action <ol style="list-style-type: none">1. Warehouse staff logs into the system.2. Warehouse staff selects 'Restock Inventory'.3. Warehouse staff enters the details of the received stock.4. Warehouse staff submits the stock update.
Extensions	- If the stock information is incomplete, the system prompts the staff for more details.

8. Manage Users

Component	Description
Use Case Name	Manage User Roles
Scope	TradeTrack User Management System
Level	User-goal
Primary Actor	System Administrator
Stakeholders and Interests	System Administrator: Needs to assign and manage roles for staff. Store Manager: Wants to ensure appropriate access for different user roles.
Preconditions	The system administrator is logged in and has access to user management.
Postconditions	User roles are successfully updated in the system.
Main Success Scenario	Actor Action 1. Administrator logs into the system. 2. Administrator navigates to 'User Roles'. 3. Administrator selects a user and assigns or updates their role. 4. Administrator confirms and saves changes.
Extensions	- If an invalid role is selected, the system notifies the administrator and prevents changes.

9. Manage Products

Component	Description
Use Case Name	Update Product Information
Scope	TradeTrack Product Management System
Level	User-goal
Primary Actor	Store Manager
Stakeholders and Interests	Store Manager: Needs to update product details accurately. Customers: Expect up-to-date information on product availability, price, and descriptions.
Preconditions	The product exists in the system and requires an update.
Postconditions	Product information is successfully updated in the system.
Main Success Scenario	Actor Action <ol style="list-style-type: none">1. Store manager logs into the system.2. Store manager navigates to the 'Product Information' section.3. Store manager selects a product to update.4. Store manager updates the necessary fields (e.g., price, description, availability).5. Store manager submits the changes.6. There is also an option to delete or add a new product
Extensions	- If required fields are missing, the system prompts the manager to complete the information.

10. Send Order Confirmation

Component	Description
Use Case Name	Send Order Confirmation
Scope	TradeTrack eCommerce System
Level	User-goal
Primary Actor	System (Automated Process)
Stakeholders and Interests	Customer: Expects confirmation of their purchase. Store Manager: Wants to ensure order confirmations are sent promptly to maintain customer satisfaction.
Preconditions	An order has been successfully placed.
Postconditions	The customer receives an order confirmation via email or message.
Main Success Scenario	Actor Action 1. Customer places an order. 2. System processes the payment and verifies order details. 3. Customer receives an email or message confirming the order.
Extensions	- If the confirmation fails to send, the system logs the error and retries or alerts the store manager.
Group Member	Muhammad Danish (22I-1305)

11. View Inventory Status

Component	Description
Use Case Name	View Inventory Status
Scope	TradeTrack Inventory Management System
Level	User-goal
Primary Actor	Store Manager, Warehouse Staff
Stakeholders and Interests	Store Manager: Needs to monitor current inventory levels for stock planning. Warehouse Staff: Needs to check inventory status for restocking or order processing.
Preconditions	Inventory data is available in the system.
Postconditions	The store manager or warehouse staff can view the real-time inventory status.
Main Success Scenario	Actor Action <ol style="list-style-type: none">1. Store managers or warehouse staff log into the system.2. User navigates to 'Inventory Status'.3. Users view the current stock levels for all products.4. User applies filters (e.g., location, product category) if needed.
Extensions	- If inventory data fails to load, the system alerts the user and logs the issue for further investigation.

12. Manage Customer Feedback

Component	Description
Use Case Name	Manage Customer Feedback
Scope	TradeTrack Feedback Management System
Level	User-goal
Primary Actor	Store Manager
Stakeholders and Interests	Store Manager: Wants to review and respond to customer feedback. Customers: Expect their feedback to be acknowledged and responded to.
Preconditions	Customers have left feedback in the system.
Postconditions	Customer feedback is reviewed and responded to by the store manager.
Main Success Scenario	Actor Action 1. Store manager logs into the system. 2. Store manager navigates to the 'Customer Feedback' section. 3. Store manager reviews feedback. 4. Store manager responds to the feedback (if required).
Extensions	- If there is no feedback, the system notifies the manager accordingly.

13. Manage Orders

Component	Description
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Use Case Name	Manage Orders
Scope	TradeTrack Feedback Management System
Level	User-goal
Primary Actor	Store Manager/Admin
Stakeholders and Interests	<p>Store Manager: Needs to view, update, and manage orders efficiently to ensure smooth operations and customer satisfaction.</p> <p>Customers: Expect timely and accurate processing of their orders.</p> <p>Warehouse Staff: Relies on accurate order details for packing and dispatching items.</p>
Preconditions	<p>The store manager is logged into the system.</p> <p>Orders exist in the system for processing.</p>
Postconditions	<p>Orders are successfully updated, canceled, or marked as fulfilled in the system.</p> <p>Relevant stakeholders are notified of any significant updates to orders.</p>
Main Success Scenario	<p>Actor Action</p> <p>The store manager logs into the system.</p> <p>The store manager navigates to the 'Orders' section of the dashboard.</p> <p>The store manager views the list of pending orders.</p> <p>The store manager selects an order to manage.</p> <p>The store manager updates the order status (e.g., "In Progress," "Shipped," "Fulfilled").</p> <p>The store manager updates or modifies the order details if required (e.g., product quantity, delivery date).</p> <p>The store manager cancels an order if necessary.</p>

The store manager submits the changes or marks the order as complete.

System Response

The system retrieves and displays the list of orders.

The system displays order details upon selection.

The system validates and saves updates made to the order.

Notifications are sent to the customer and/or warehouse staff regarding changes to the order status.

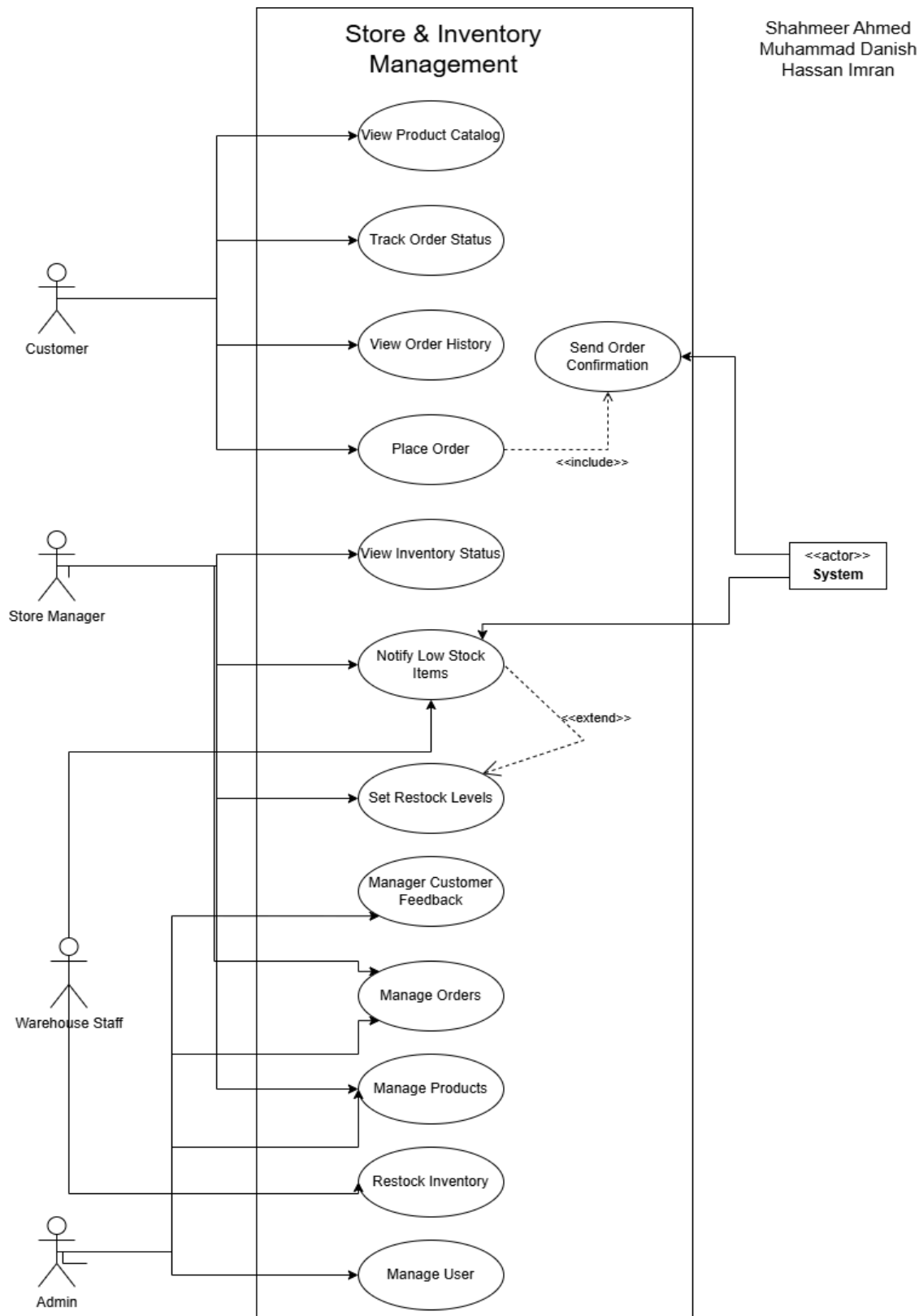
Extensions

If an order is not found: The system notifies the store manager that the order ID does not exist.

If order details are invalid: The system prompts the store manager to correct the information.

If a required update (e.g., status) is missing: The system highlights the missing fields and requests completion.

2.5 Use Case Diagram



3. Other Nonfunctional Requirements

3.1 Performance Requirements

*Real-time updates for inventory and order statuses.
Handle up to 10,000 concurrent user requests without degradation.*

3.2 Safety Requirements

*Prevent data loss during system crashes via periodic backups.
Ensure regulatory compliance with data protection standards.*

3.3 Security Requirements

*Encrypted communication for sensitive data.
Role-based access control for Store Managers and Customers.*

3.4 Software Quality Attributes

*Adaptability: Compatible with future extensions.
Reliability: Ensure 99.9% uptime.
Usability: Intuitive interfaces for non-technical users.*

3.5 Business Rules

*Only Store Managers can approve refunds.
Warehouse Staff manages restocking processes.*

3.6 Operating Environment

*Hardware: Windows/Linux desktops with a minimum of 8GB RAM.
Software: Java-based application using SQL Server for the database.*

3.7 User Interfaces

The image displays two screenshots of a web application interface, likely for a system named TradeTrack.

Top Screenshot: Login to TradeTrack

- The window title is "Hello!".
- The main heading is "Login to TradeTrack".
- There are two input fields: one for the Username (containing a single character) and one for the Password (labeled "Password").
- A teal "Log In" button is centered below the input fields.
- A link "Create an Account" is centered below the "Log In" button.

Bottom Screenshot: Create Account

- The window title is "Create Account".
- The main heading is "Create an Account".
- There are six input fields, each with a label to its left:
 - Username: (containing a single character)
 - Email: (placeholder text "Enter Email")
 - Password: (placeholder text "Enter Password")
 - Address: (placeholder text "Enter Address")
 - Phone: (placeholder text "Enter Phone Number")
 - Role: (a dropdown menu with "Select Role" as the selected option)
- A teal "Create Account" button is centered below the input fields.
- A teal "Back to Login" button is centered below the "Create Account" button.

Admin:

The admin interface provides comprehensive control over the system, enabling the management of user accounts, permissions, and overall system configurations. Admins can oversee inventory, monitor sales analytics, and generate reports. Additionally, they can resolve escalations from other roles and maintain system security.

The screenshot displays the 'Staff Dashboard' interface. On the left is a dark blue sidebar titled 'Admin Panel' containing a list of navigation items: 'Profile', 'Manage Users', 'Manage Orders', 'Manage Products', 'Manage Notifications', and 'Manage Feedback'. At the bottom of this sidebar is a red 'Logout' button. The main content area is titled 'My Profile' and is divided into two sections. The top section, 'Personal Information', contains four input fields: 'Username' (Shahmeer Ahmed), 'Email' (shahmeer.ahmed@gmail.com), 'Address' (123 Admin St, Karachi), and 'Phone Number' (03001234567). The bottom section, 'Change Password', contains three input fields: 'Current Password', 'New Password', and 'Confirm Password'. The interface is presented within a browser window with standard window controls (minimize, maximize, close) in the top right corner.

Personal Information	
Username:	<input type="text" value="Shahmeer Ahmed"/>
Email:	<input type="text" value="shahmeer.ahmed@gmail.com"/>
Address:	<input type="text" value="123 Admin St, Karachi"/>
Phone Number:	<input type="text" value="03001234567"/>

Change Password	
Current Password:	<input type="password"/>
New Password:	<input type="password"/>
Confirm Password:	<input type="password"/>

Staff Dashboard

Admin Panel

Profile

Manage Users

Manage Orders

Manage Products

Manage Notifications

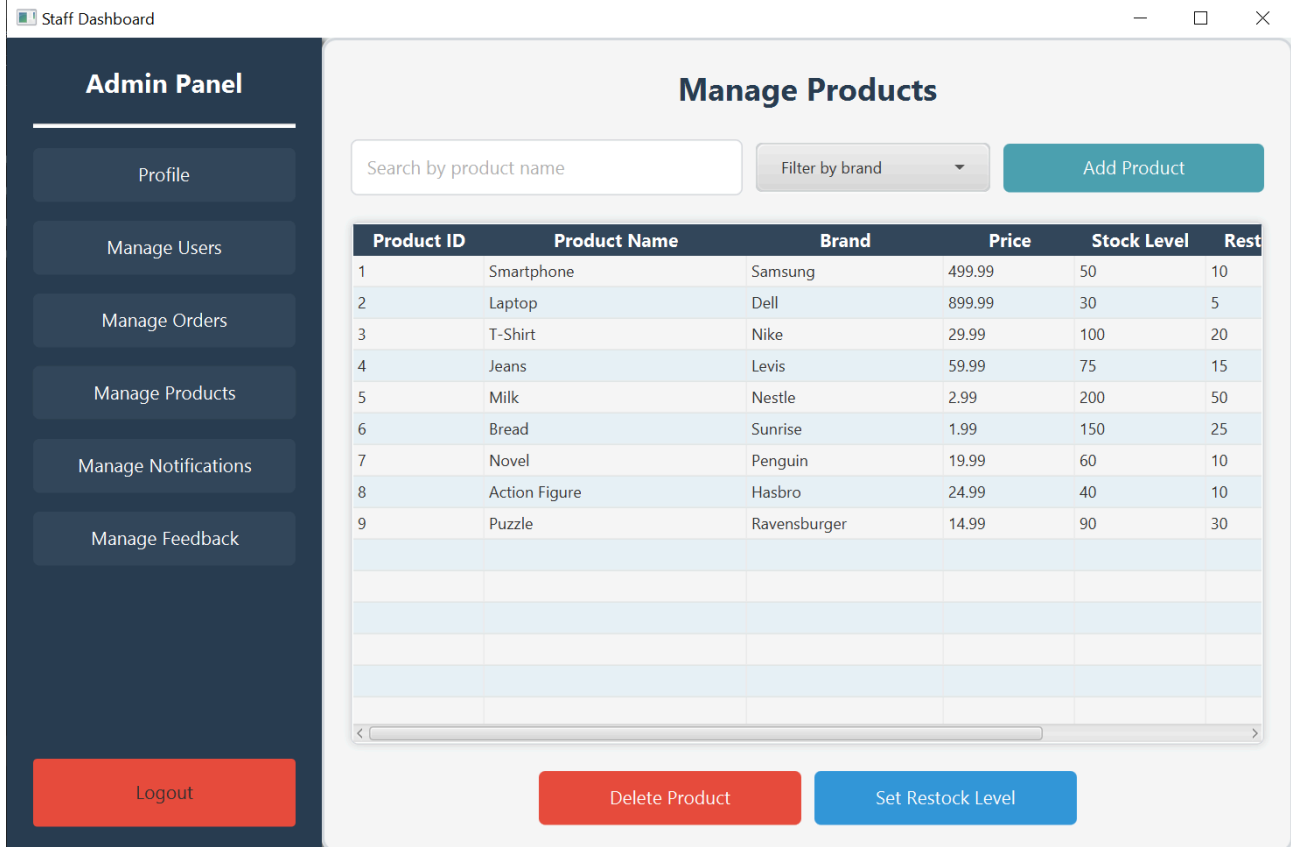
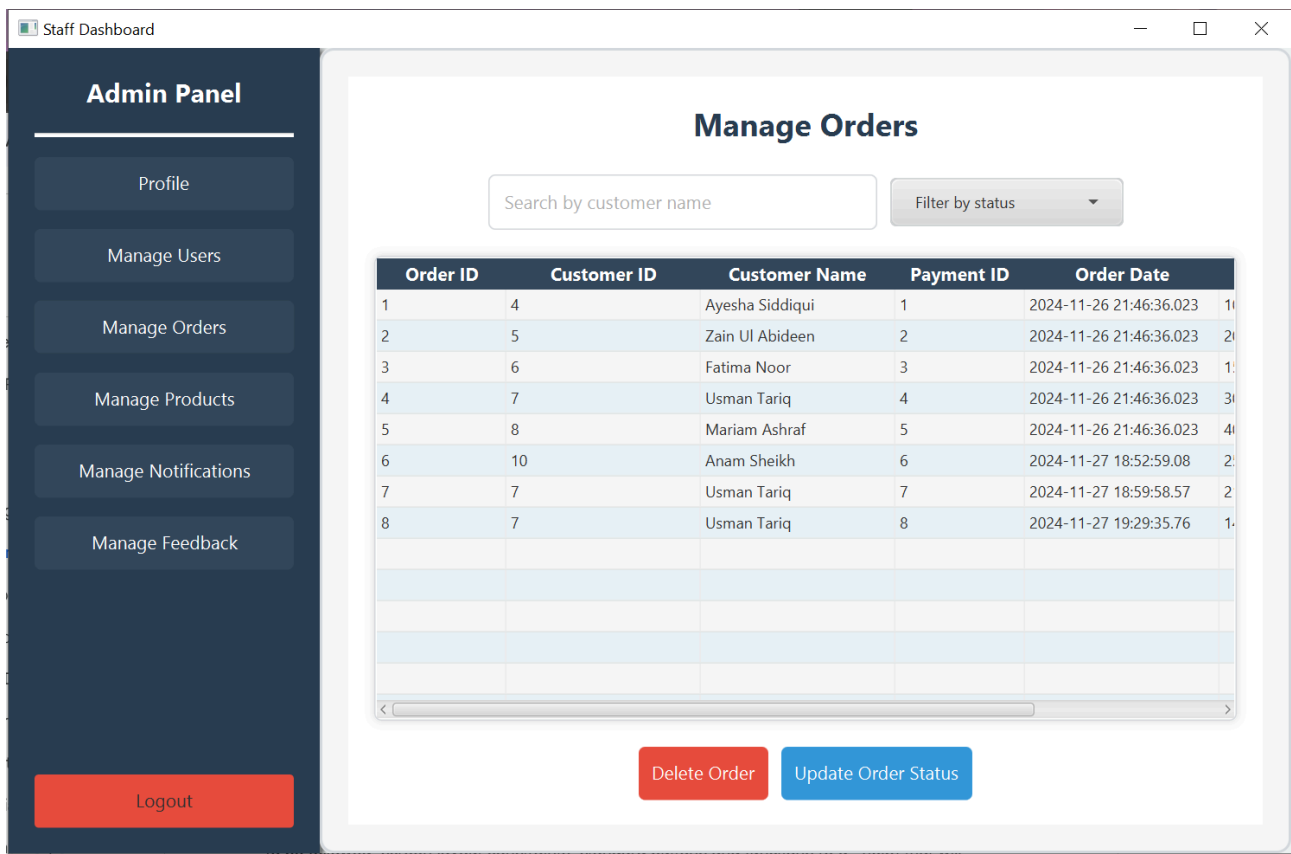
Manage Feedback

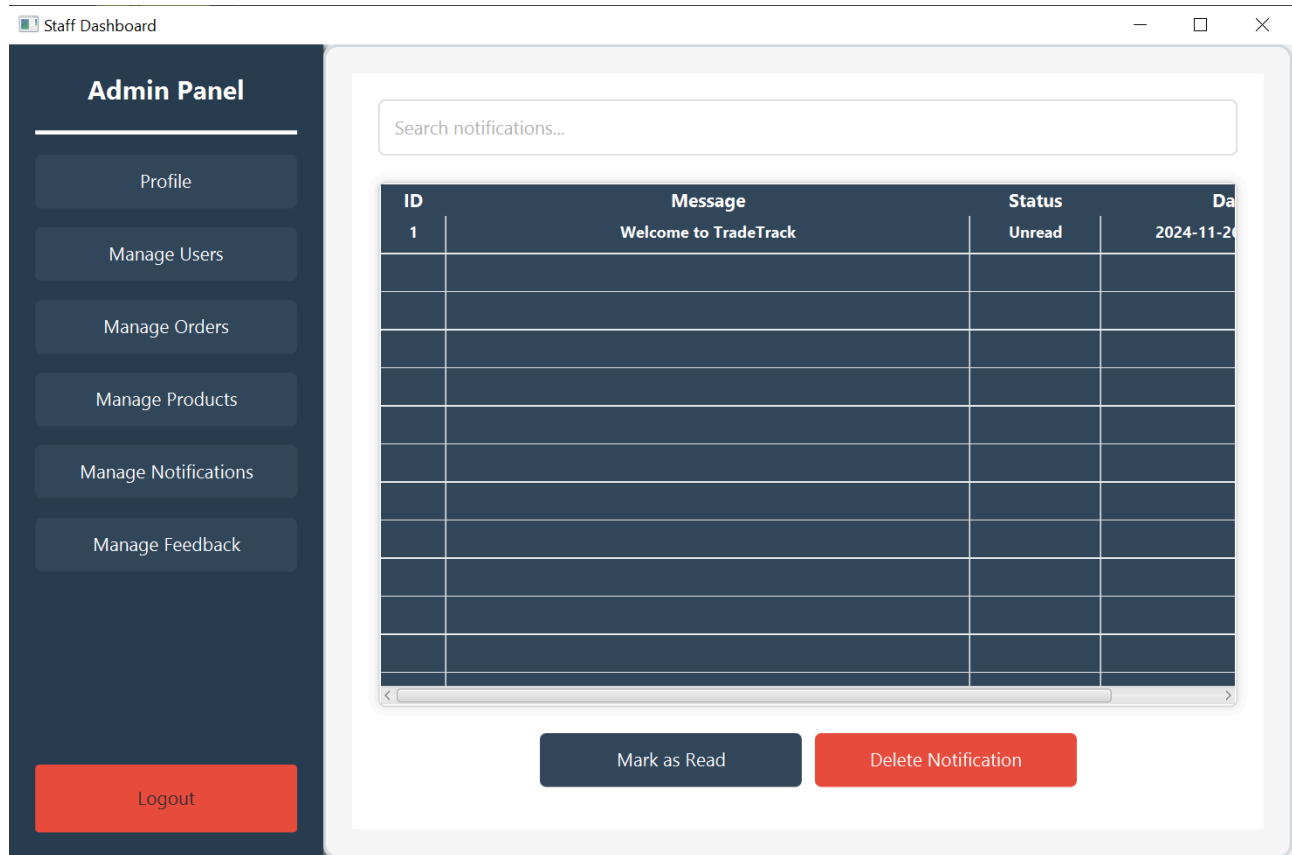
Logout

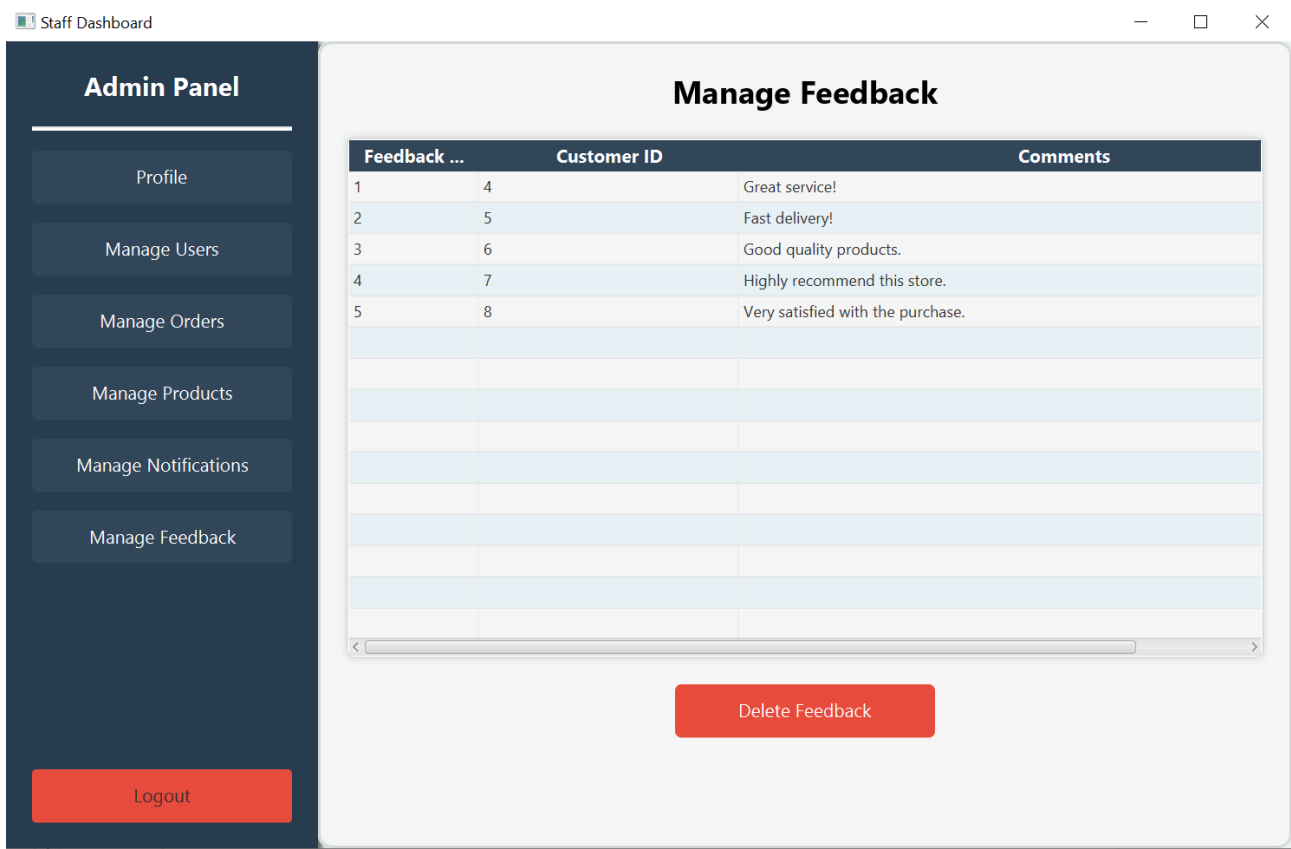
Manage Users

Search Users

Name	Email	Role	User ID	Actions
Shahmeer Ahmed	shahmeer.ahmed@gmail.com	Admin	1	Delete
Muhammad Danish	danish.manager@gmail.com	Manager	2	Delete
Hassan Imran	hassan.warehouse@gmail.c...	Warehouse...	3	Delete
Ali Raza	ali.raza@gmail.com	Customer	4	Delete
Sarah Khan	sarah.khan@gmail.com	Customer	5	Delete
Hamza Malik	hamza.malik@gmail.com	Customer	6	Delete
Ayesha Siddiqui	ayesha.siddiqui@gmail.com	Customer	7	Delete
Zain Ul Abideen	zain.abideen@gmail.com	Customer	8	Delete
Fatima Noor	fatima.noor@gmail.com	Customer	9	Delete







WarehouseStaff:

The warehouse staff interface focuses on inventory management and order fulfillment. Staff can view incoming and outgoing stock, update inventory levels, and track stock movements. The interface also supports scanning products for faster processing and provides alerts for low stock or discrepancies during audits.

Staff Dashboard

Sign Out

Warehouse Staff

Inventory

Notifications

Profile

Inventory Management

Product Name	Price	Stock Level	Restock Level	Restock Date	
Smartphone	499.99	50	10	2024-11-26 21:46:36.027	
Laptop	899.99	30	5	2024-11-26 21:46:36.027	
T-Shirt	29.99	100	20	2024-11-26 21:46:36.027	
Jeans	59.99	75	15	2024-11-26 21:46:36.027	
Milk	2.99	200	50	2024-11-26 21:46:36.027	
Bread	1.99	150	25	2024-11-26 21:46:36.027	
Novel	19.99	60	10	2024-11-26 21:46:36.027	
Action Figure	24.99	40	10	2024-11-26 21:46:36.027	
Puzzle	14.99	90	30	2024-11-26 21:46:36.027	

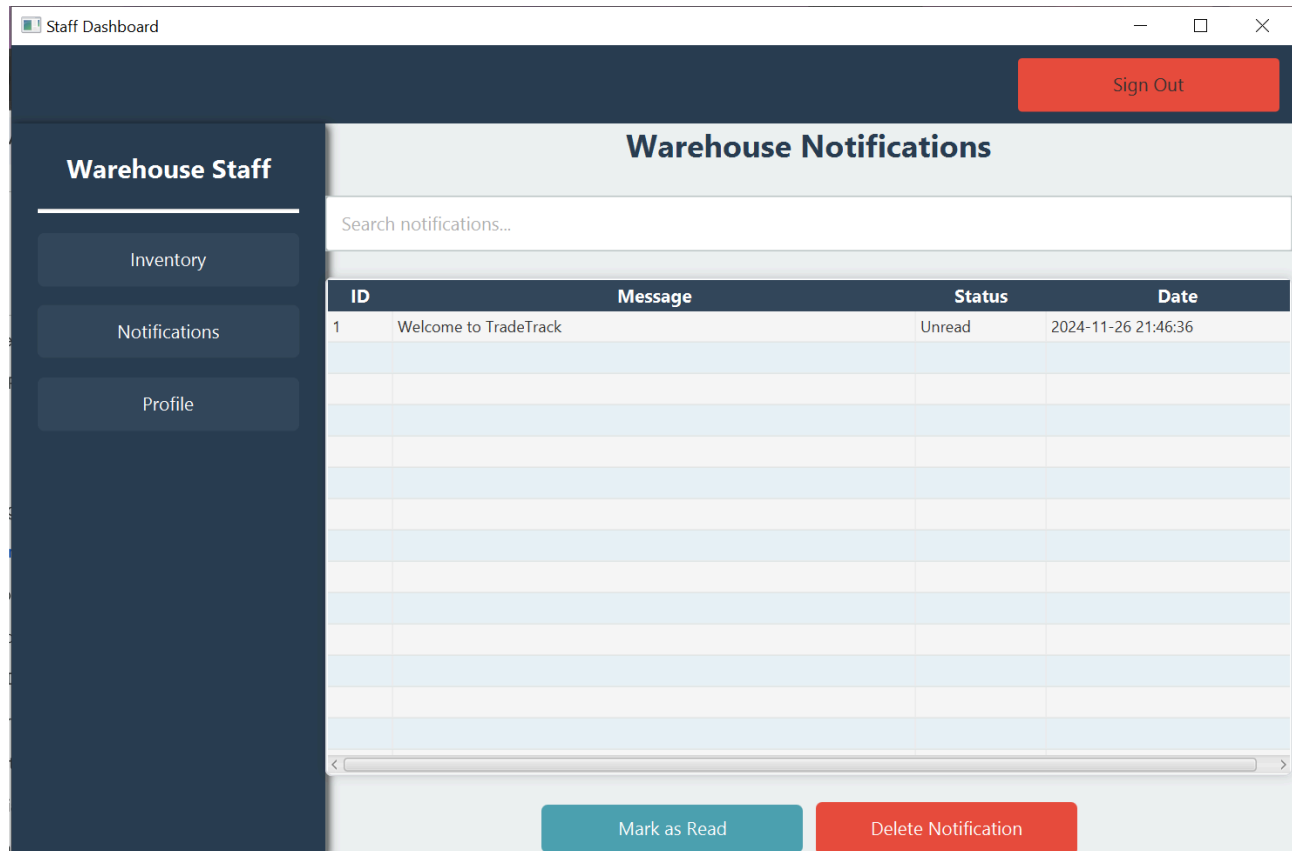
Stock Level:

Enter new stock level

Restock Level:

Enter new restock level

Update



Staff Dashboard

Sign Out

Warehouse Staff

- Inventory
- Notifications
- Profile

My Profile

Personal Information

Username: Hassan Imran

Email: hassan.warehouse@gmail.com

Address: 789 Warehouse Rd, Islamabad

Phone Number: 03023456789

Change Password

Current Password:

New Password:

Confirm Password:

Customer:

The customer interface is designed for shopping convenience, allowing users to browse products, add items to their cart, and complete secure checkouts. Customers can track their orders, view past purchases, and manage their profile details. The interface also provides personalized recommendations and promotional offers.

Customer Dashboard

— □ ×

Sign Out

Customer Dashboard

Categories: All Categories

Products

Cart

Orders

Notifications

Profile

Feedback

Smartphone

\$499.99

1

Add to Cart

Laptop

\$899.99

1

Add to Cart

T-Shirt

\$29.99

Jeans

\$59.99

Customer Dashboard

Sign Out

Customer Dashboard

Products

Cart

Orders

Notifications

Profile

Feedback

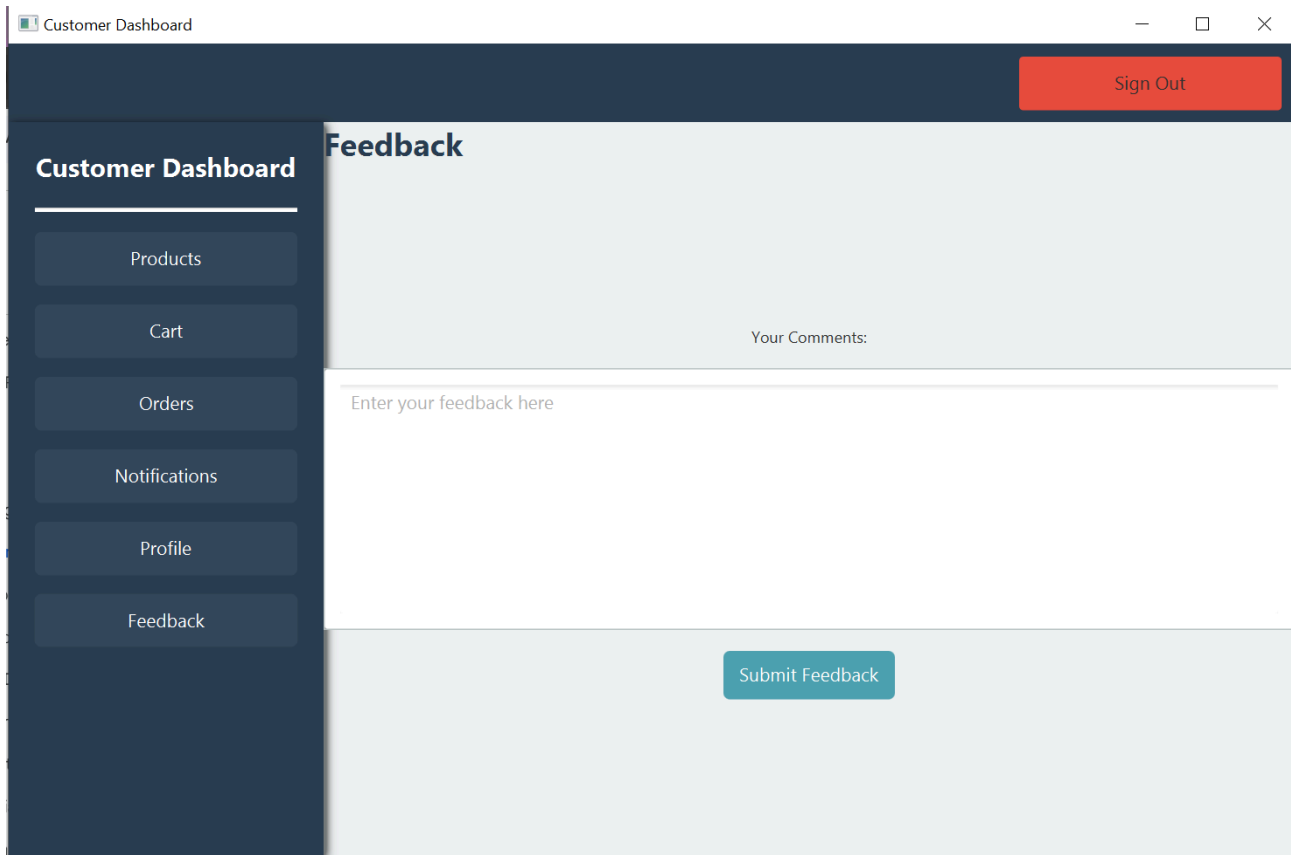
Your Shopping Cart

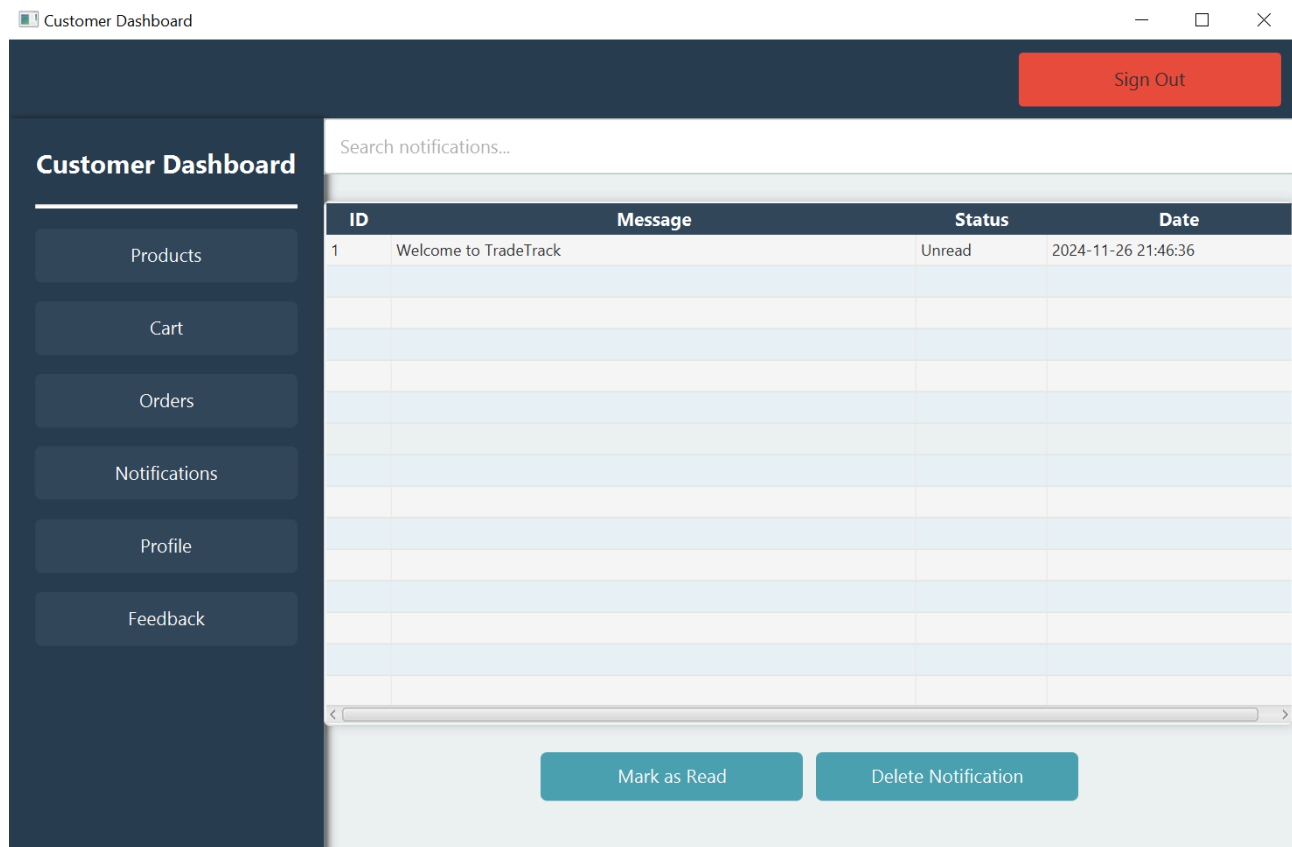
Product Name	Brand	Quantity	Price	Total	Action
Smartphone	Samsung	1	499.99	499.99	<div>+</div> <div>-</div>
T-Shirt	Nike	3	29.99	89.97	<div>+</div> <div>-</div>
Novel	Penguin	3	19.99	59.97	<div>+</div> <div>-</div>

Total Price: \$649.93

Clear Cart

Proceed to Checkout





[illegible]

Customer Dashboard

Sign Out

Customer Dashboard

Products

Cart

Orders

Notifications

Profile

Feedback

My Profile

Username: Usman Tariq

Email: usman.tariq@gmail.com

Address: 707 Tariq Lane, Lahore

Phone Number: 03090123456

Change Password

Current Password:

New Password:

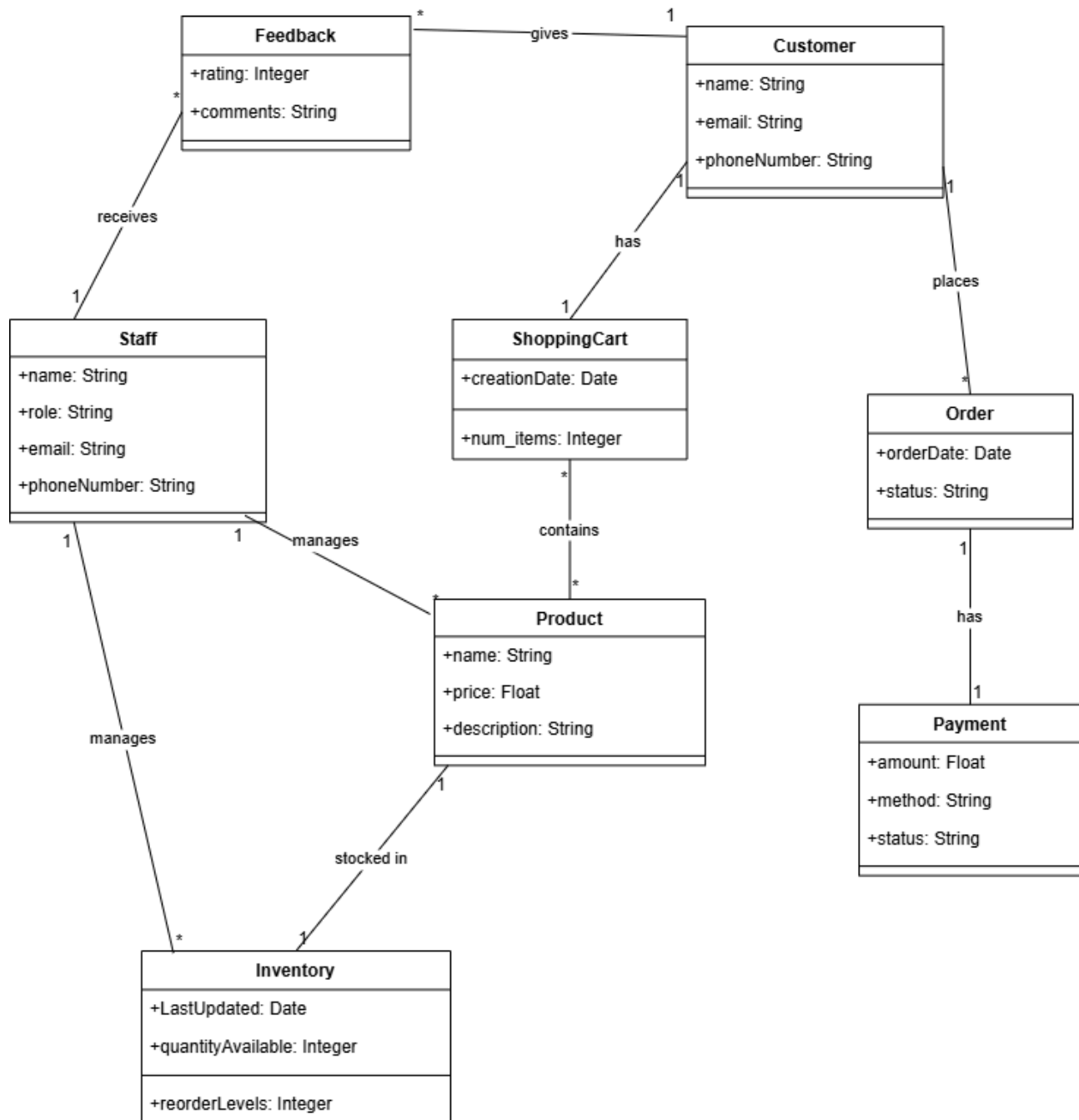
Confirm Password:

Update Profile

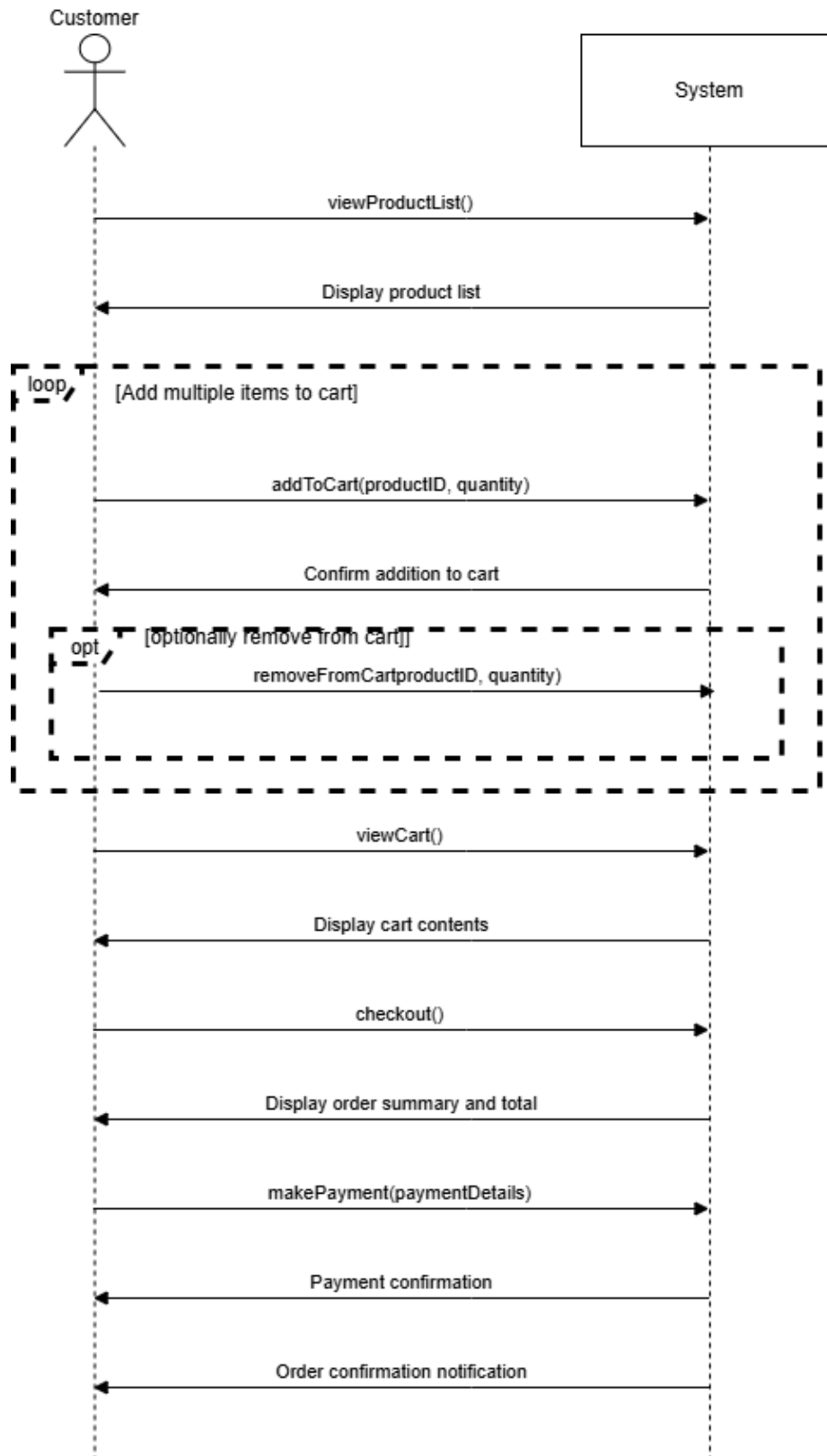
Change Password

Recharge

4. Domain Model

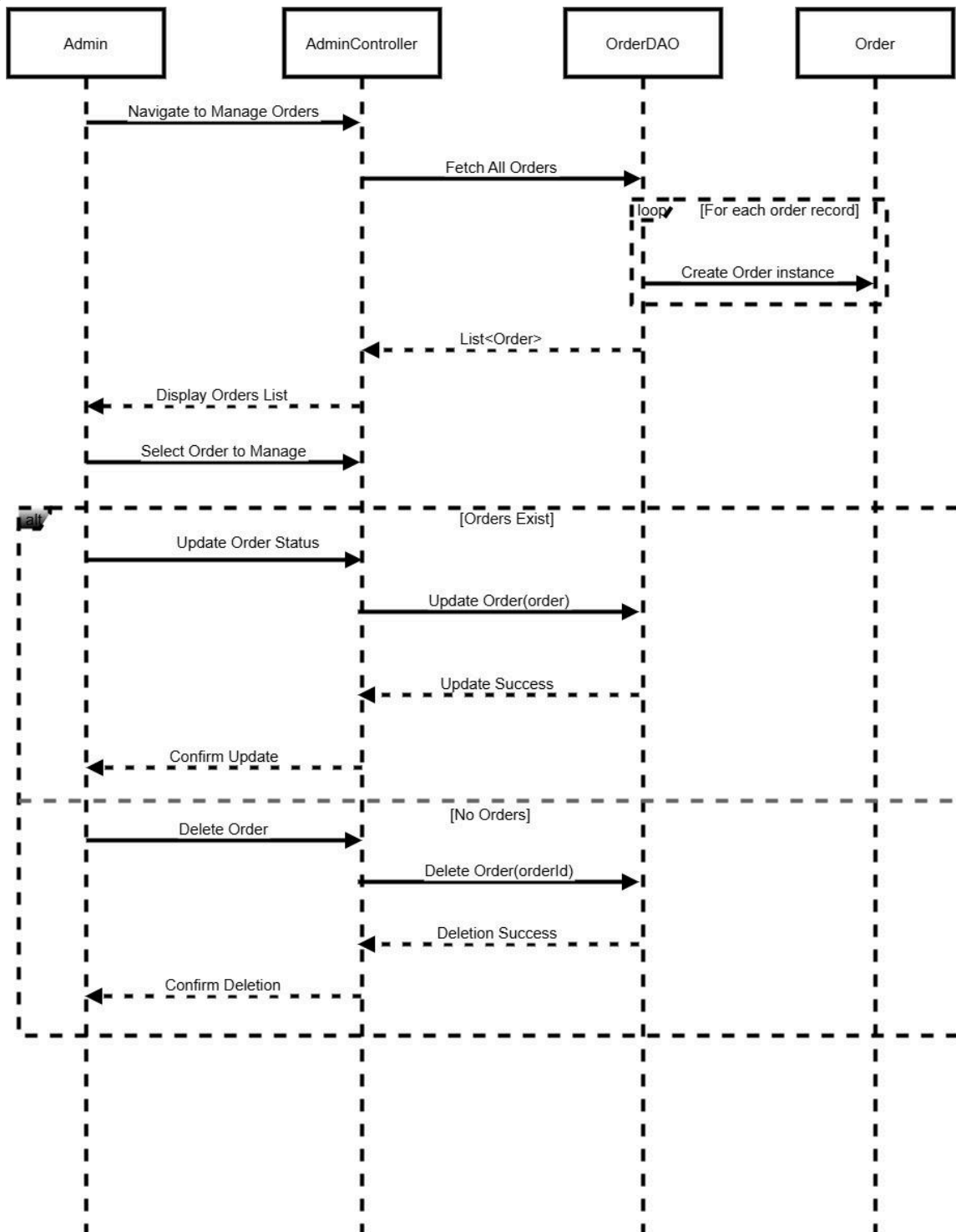


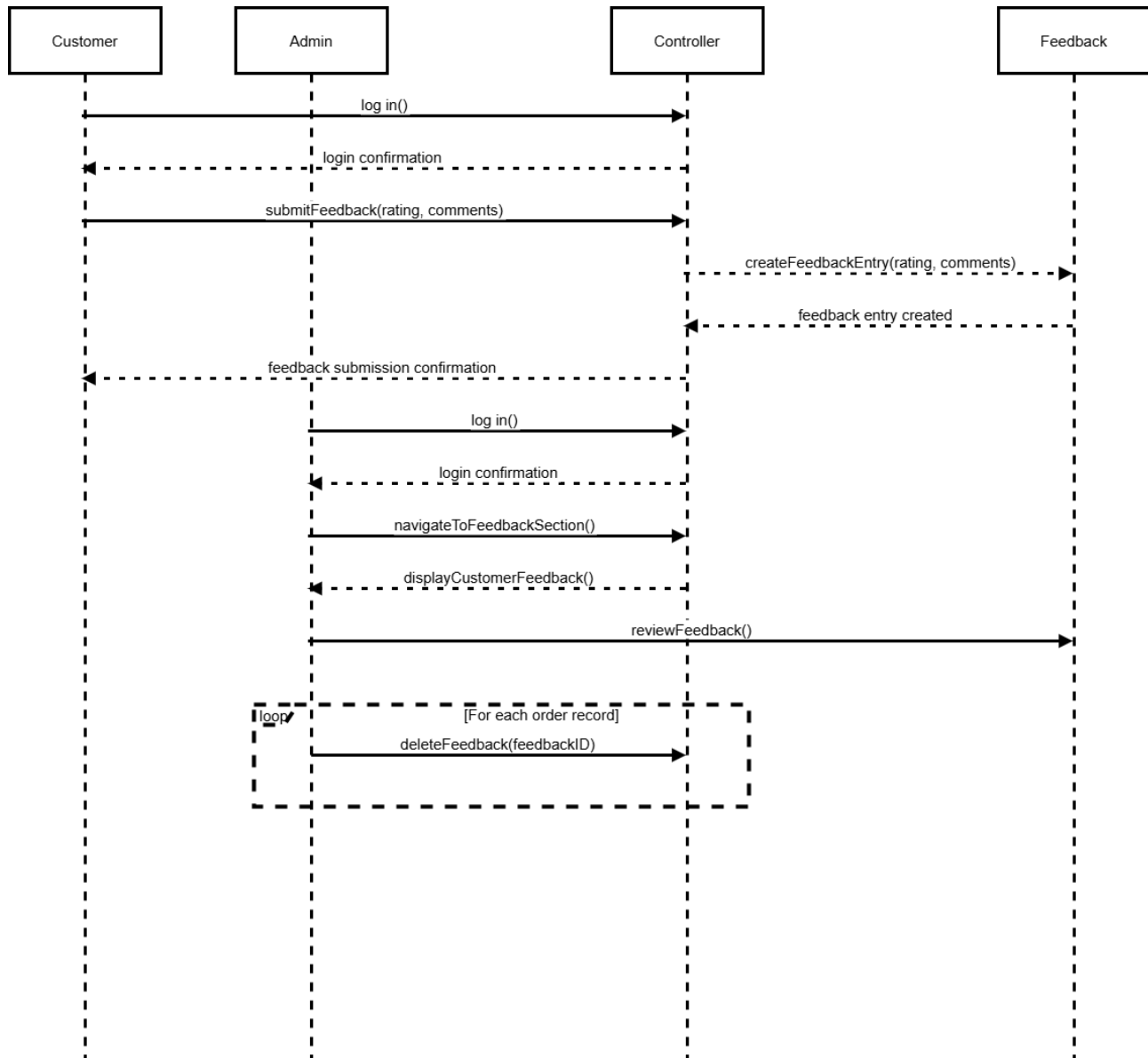
5. System Sequence Diagram



6. Sequence Diagram

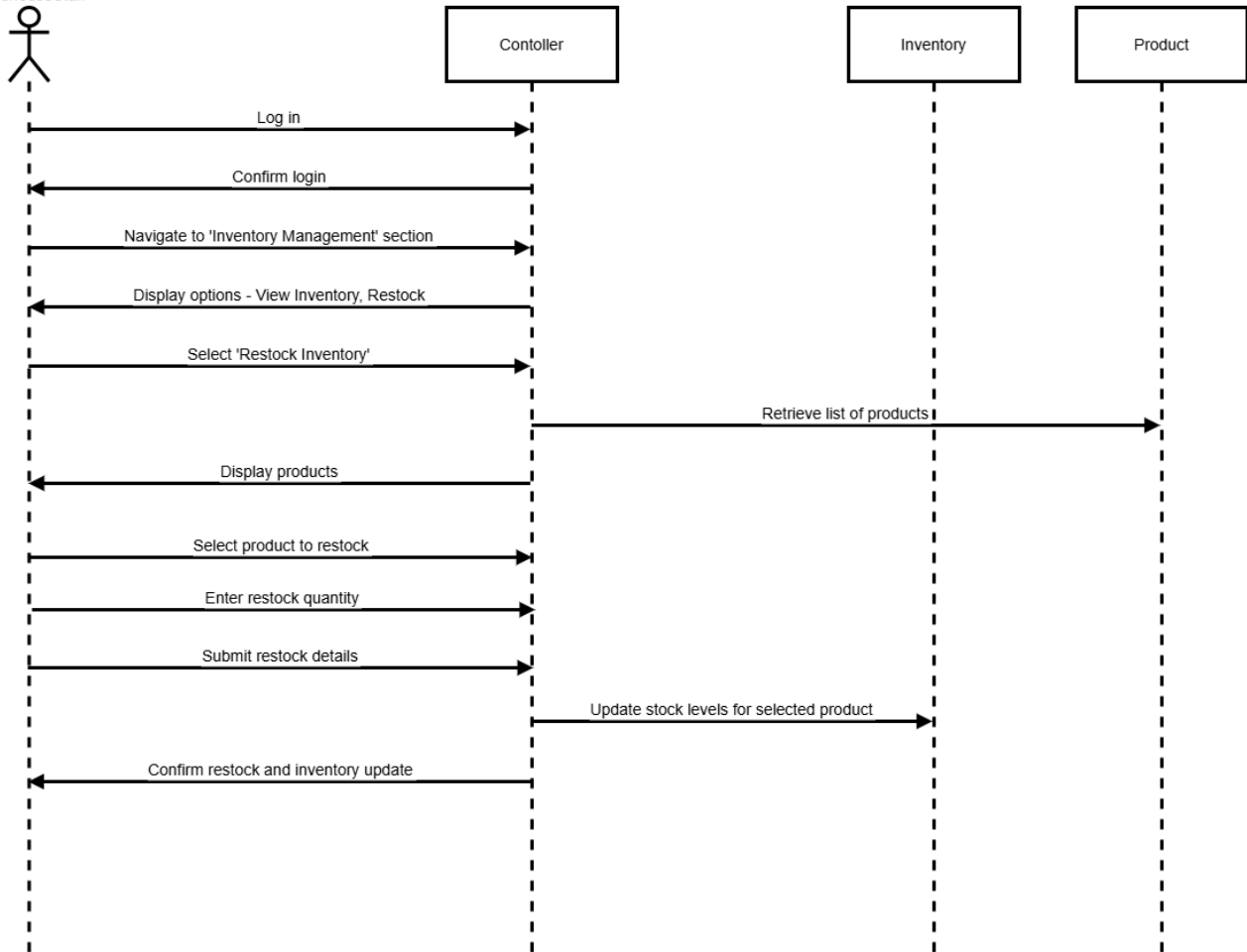
Manage Orders :

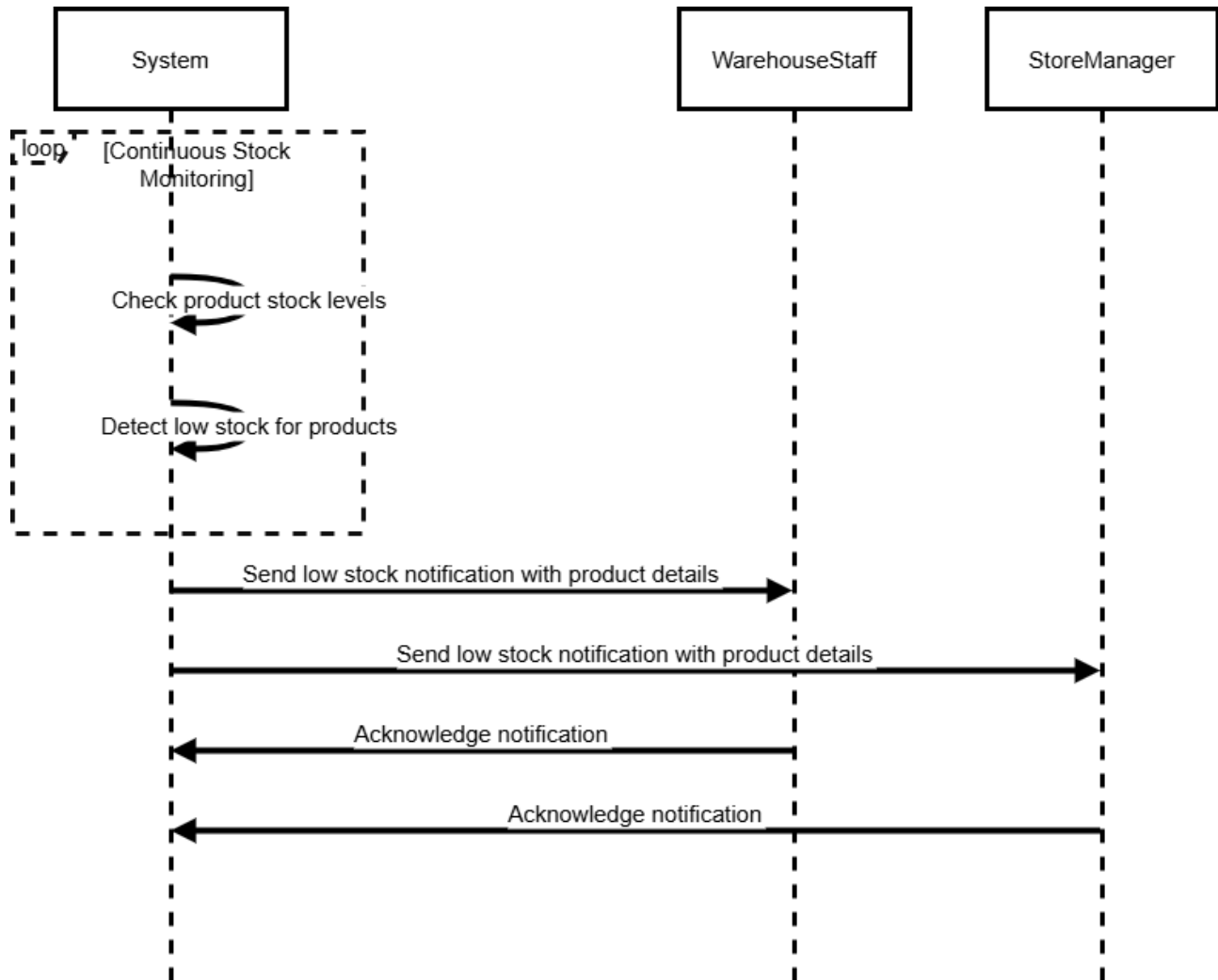


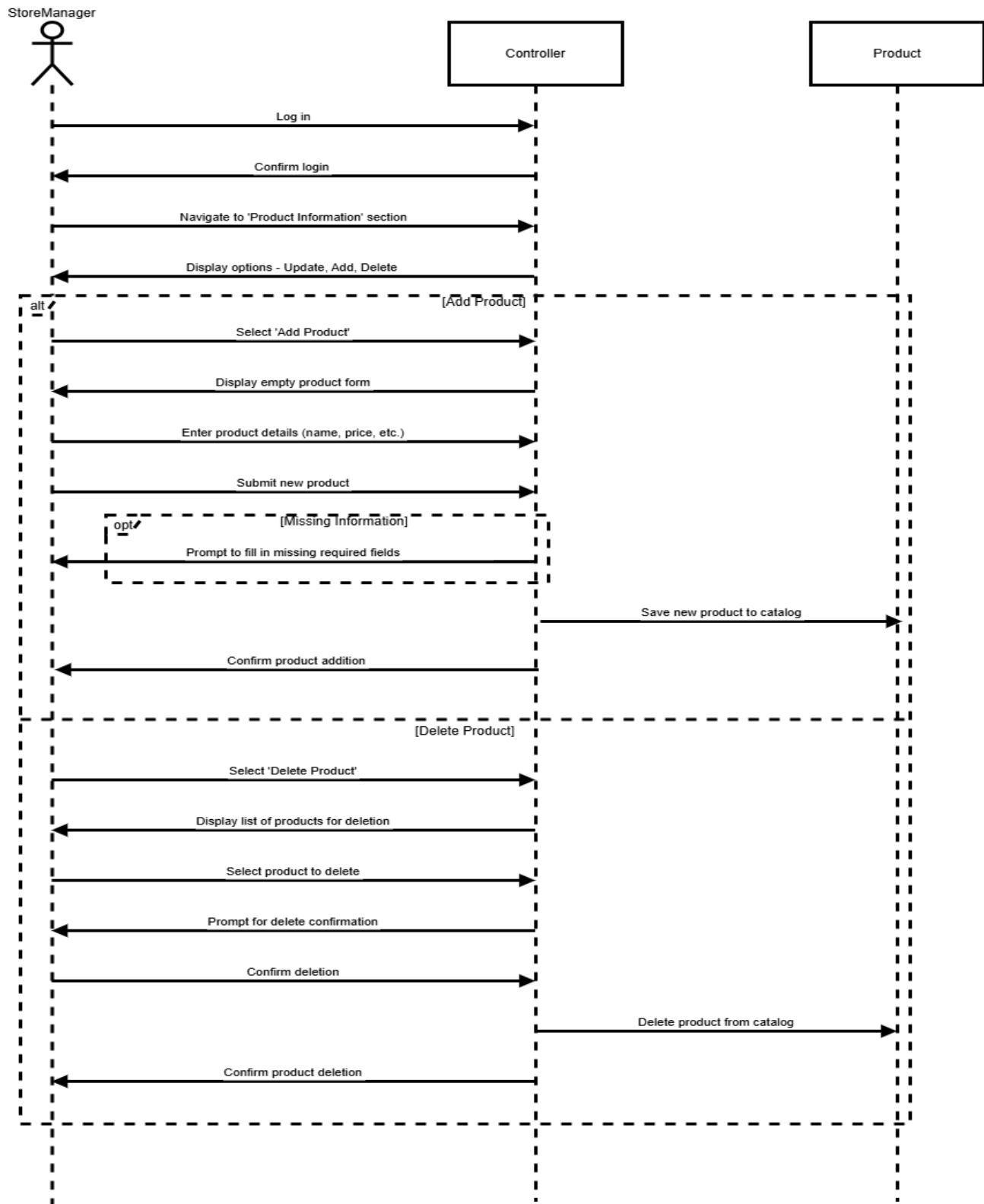
Manage Feedback:

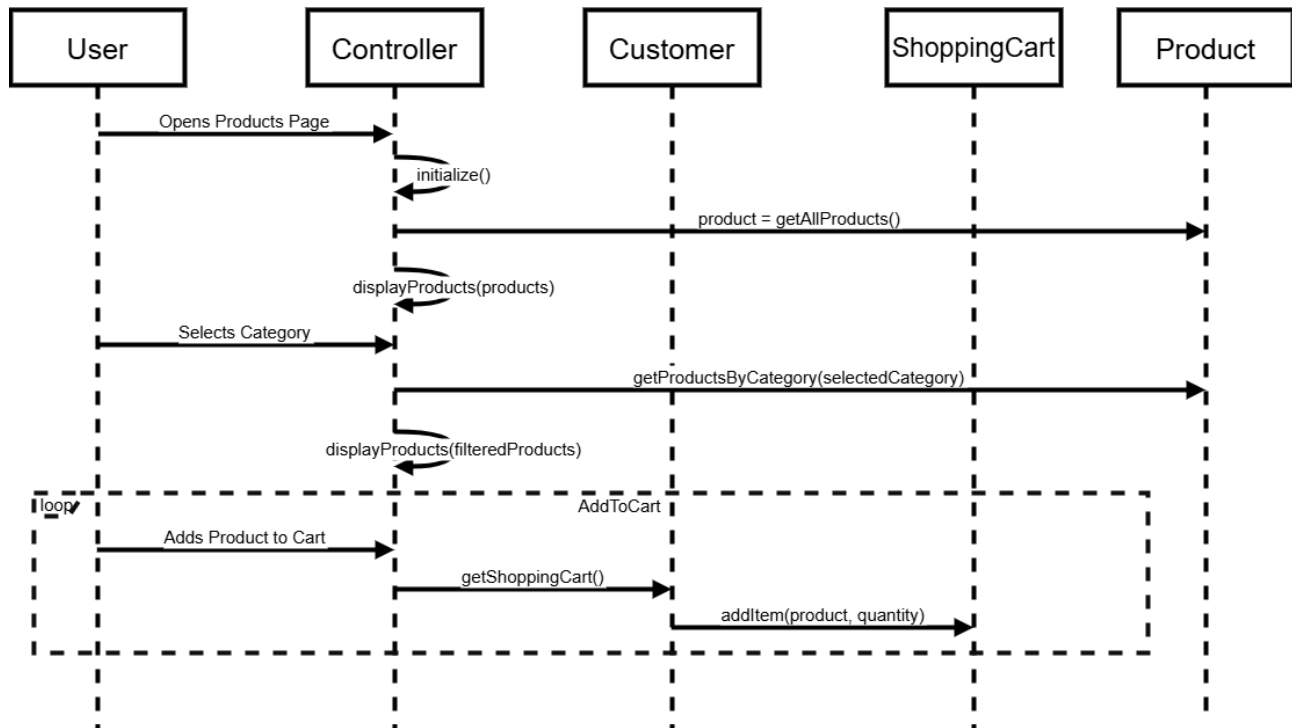
Restock Inventory:

WarehouseStaff

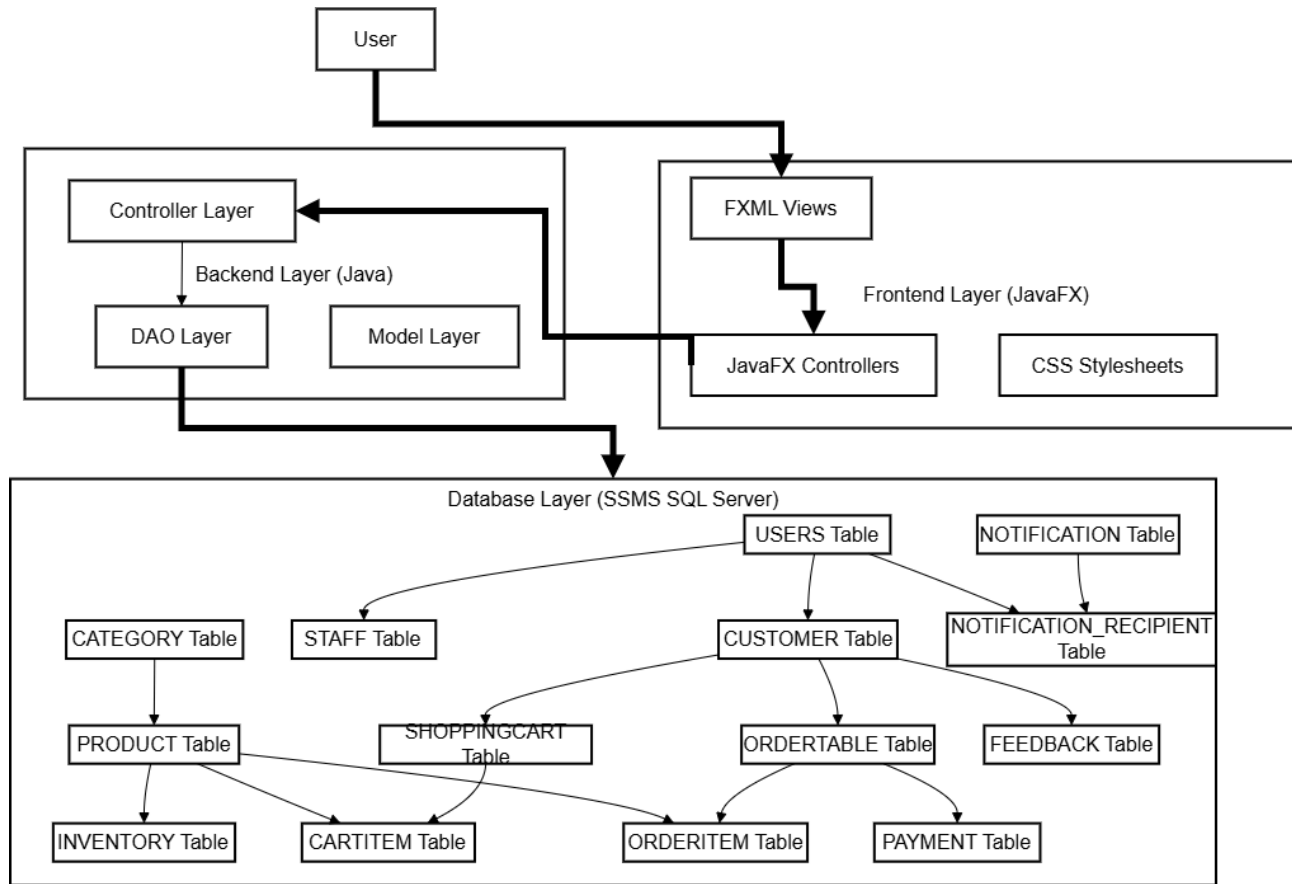


Notify Low Stock:

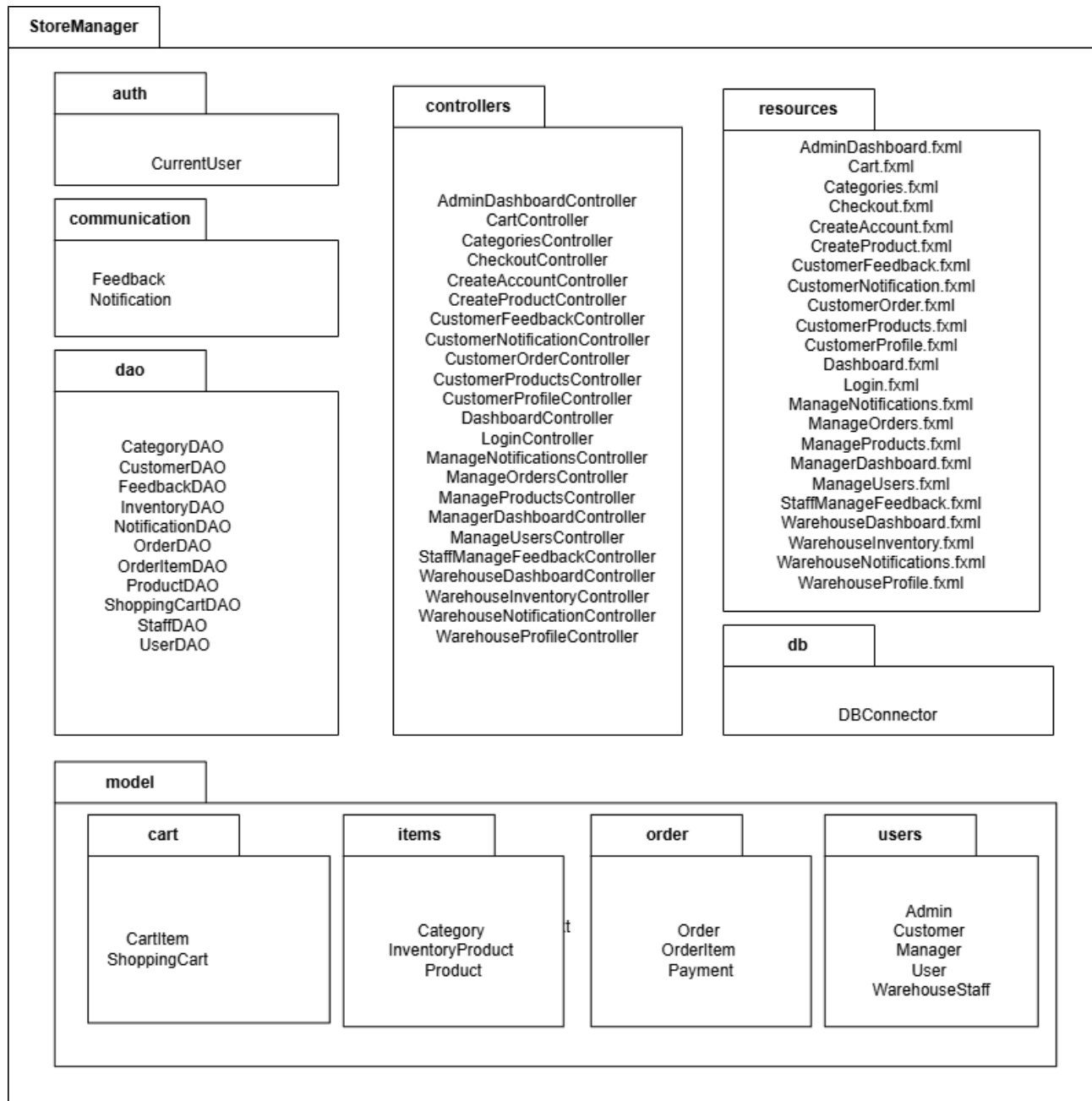
Manage Products:

View Products:

8. Component Diagram



9. Package Diagram



10. Deployment Diagram

