Software Requirements Specification

for

Outlet Ordering Distribution System

Version 1.0 approved

Prepared by

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SMOOTEA BUBBLE TEA STORE

<date created>

Revision History

Name	Date	Reason For Changes	Version
GROUP 5	04/02/2024	SRS 1.0	<1.0>

Table of Contents

1. Introduction (proposal)

1.1. Purpose

In response to the rapid growth of Smootea, an established beverage store with outlets strategically located in Kajang (HQ), Shah Alam, and Kuantan, the Outlet Ordering Distribution System develops as an innovative solution to simplify stock management procedures. This Software Requirement Specifications (SRS) document is the first version (Version 1.0) of an innovative system targeted to replace Smootea's current manual stock request approach.

Usually, stock requests included the time-consuming process of manually filling out forms and then submitting them over messaging networks such as WhatsApp. Acknowledging the inefficiencies and inaccuracies that arise from this technique, the Outlet Ordering Distribution System aims to transform Smootea's stock management process. The system's goal is to simplify and speed up the stock ordering procedure through the establishment of an automated, standardized platform that benefits both Headquarters (HQ) and outlet supervisors.

1.2. Document Conventions

Convention	**Description**
Font Size	The header will include a font size of 18. The subheader is going to have a font size of 14. Font size 11 will be used for writing written material.
Font Type	The font used for the header, subheader, and written content is Arial.
Bold	It will be used to highlight headers and subheaders, as well as focusing on some contents titles.
SRS	Stands for System Requirement Specification
DB	Stands for database

SSD	Stands for system sequence diagram
HQ	Stands for headquarters

1.3. Intended Audience and Reading Suggestions

The Outlet Ordering Distribution System's Software Requirement Specifications (SRS) serve the needs of developers, users (including outlet supervisors and HQ staff), and testers. The sections 'System Requirements' and 'Functional Requirements' provide developers with thorough technical information into the system's structure, database requirements, and functionality implementation details. Users, particularly outlet supervisors and HQ staff, can refer to 'Functional Requirements' for an easy approach to submitting stock requests, keeping track of stocks, and monitoring application and delivery status. Testers will benefit from the specific test cases, scenarios, and performance expectations presented in both the 'Functional Requirements' and 'Non-functional Requirements' sections to make sure that the system is effectively tested the distribution System's functionality and technical elements. Developers are encouraged to read the 'System Requirements' and 'Functional Requirements' sections in order to gain an accurate understanding of the software's functions and constraints. The table of contents includes numbered requirements to help readers browse through the document.

1.4. Project Scope

The Outlet Ordering Distribution System is an innovative system built for Smootea, a growing beverage store with three locations: Kajang (HQ), Shah Alam, and Kuantan. The software is designed to substitute the manual stock request procedure, which previously required outlet supervisors to submit forms over WhatsApp, by providing a creative and efficient way. The primary objective is to assist both headquarters and outlet supervisors by providing a centralized platform for easy stock application placing and tracking. For headquarters, the system allows for efficient stock management, such as analyzing, creating, updating, and removal of stocks, as well as accepting or rejecting applications. Furthermore, HQ gains the ability to manage delivery through designated couriers and track the status of previous orders and application history. Outlet supervisors, on the other hand, benefit from simplified stock requests, order monitoring, as well as access to past order information. This software helps Smootea's overall business strategy through improving operational effectiveness and accuracy in stock management, resulting in a flexible and adaptable organizational structure.

1.5. References

Book

Glinz, M., Loenhoud, H. van, Staal, S., & Bühne, S. (n.d.). *Handbook for the Cpre Foundation Level according to the Ireb Standard* (First Release, Vol. 1.0.0).

John W. Satzinger, Robert B. Jackson, Stephen D. Burd. *System Analysis And Design in a Changing World* (7th edition) .

Website

Bandakkanavar, R. (2023, May 8). Software Requirements Specification document with example. Krazytech. https://krazytech.com/projects/sample-software-requirements-specificationsrs-report-airline-database

2. Overall Description

2.1. Product Perspective

The Outlet Ordering Distribution System comes as a standalone and independent software system developed exclusively for Smootea, a beverage store with three separate locations. Unlike an easy upgrade or component of an existing system, this new approach solves an important issue in Smootea's operations which is the manual stock request procedure. Previously relying on a form and WhatsApp uploads, the new innovation automates and transforms the stock ordering process. It highlights Smootea's commitment to performance effectiveness and adaptability to market demands. The proposed approach not only eliminates the workload for both headquarters and outlet supervisors, but it also indicates a change toward modern, efficient business procedures.

The system has two primary components which is the HQ interface and the outlet supervisor interface. These interfaces are closely connected, generating an integrated system that enables stock request, management, and delivery. The structure of the system provides a smooth flow of data between headquarters and individual outlets, stimulating effective communication and cooperation. This standalone character of the Outlet Ordering Distribution System highlights its significance as a key tool in Smootea's aim to achieve efficient operations and customer satisfaction.

2.2. Product Features

Actor	Use Case	Brief Description
HQ Admin	Manage stocks	HQ Admin will manage the stocks in this system by adding new stocks, update stocks quantity and delete unnecessary stocks.
Outlet Supervisor	Request Stocks	Outlet supervisor requesting desired stocks and desired quantity for the stocks.
Hq Admin, Outlet Supervisor	View Stocks	Both outlet supervisor and HQ admin able to view stocks detail that stores stock id, stock name and stock quantity.
	Track Delivery Status	Tracking the delivery once the order has been shipped out by HQ

	Display Past Order History	Viewing past order history that has been made and all the order details

2.3. User Classes and Characteristics

The Outlet Ordering Distribution System has the goal of catering to different user classes within Smootea's organizational structure, each carrying out a different function in the inventory management process.

1. HQ Admin

Characteristics

HQ Admin can assess all stocks, manage stock inventories (create, update, and delete stocks), accept or reject stock requests, arrange delivery, and track previous orders or application histories. Their tasks include general stock management at the headquarters, as well as administrative tasks including user management and system configuration.

Frequency of use:

Moderate - HQ Admins is involved in both admin tasks and regular inventory management.

Privileges levels

High - Having complete control over system setup, user handling and advanced stock management.

Technical expertise:

Moderate to Advanced - with areas including user interface navigation to stock management and administrative features.

2. Outlet Supervisor

Characteristics

Outlet supervisors have a moderate level of technical knowledge and limited access. They can request one or many stocks by providing stock IDs and requested amounts, look into stock listings, go through application statuses, and view past order histories particular to their outlets. Their main tasks include creating and tracking supply requests at their respective outlets.

Frequency of Use

Frequent - especially when submitting stock requests and viewing order history.

Privileges Levels

Limited - centered on outlet-specific stock management features. They are unable to manage the stock; only the HQ admin has the right to do so, since the outlet supervisor can only examine the list of stock but cannot modify any information.

Technical Expertise

Moderate - The primary focus is on submitting stock requests, tracking orders, and comprehending basic system functions.

2.4. Operating Environment

Hardware

Table 2.4.1 Hardware Description

Item	**Description**
Central Processing Unit (CPU)	AMD Athlon Silver 3050U with Radeon Graphics 2.30 GHz
Graphic Processing Unit (GPU)	AMD Radeon(TM) Graphics
Solid State Driver (SSD)	WDC PC SN530 SDBPNPZ-256G-1002
Random Access Memory (RAM)	4GB DDR4 on board
Power Supply	ø4.0, 45W AC Adapter, Output: 19V DC, 2.37A, 45W, Input: 100~240V AC 50/60Hz universal
Keyboard	PC/AT Enhanced PS/2 Keyboard (101/102-Key)
Mouse	CLIPtec Wireless Silent Optical Mouse DWM237

Operating System

Table 2.4.2 Operation System Description

Item	**Description**
Window 10 and above	Version 2202 and above

Software

Table 2.4.3 Software Description

Item	Description
Adalo's Builder	Version 2.0
Adalo's Built in database	Version 2.0
Internet Browser	Google Chrome, Firefox, Intenet Explorer, Microsoft Edge
Antivirus/Firewall	Avast Secure Antivirus

2.5. Design and Implementation Constraints

Types of Constraints	Constraints
Network	▪ Inconsistent internet connection ▪ Inadequate bandwidth due to large data transfers.
Software	▪ Inconsistencies data formats, APIs, or security standards needed specific skills or alternatives. ▪ Different kinds of operating system support for specific technologies or tools used by the system. ▪ Recurring license costs associated with the usage of third-party software
Hardware	▪ Limited processing speed or memory on devices at outlets could affect the system's performance, responsiveness, and its ability to deal with complex tasks. ▪ Devices with outdated or restricted input/output options can have an influence on the user experience and efficiency of data entry. ▪ Devices with a short battery life or high heat production require extra battery management or cooling solutions.
Tools and Database	▪ Complex queries or significant reporting requirements might demand a more advanced database solution ▪ Restricted scalability or usefulness of the selected database technology.

2.6. User Documentation

The user guide for the Outlet Ordering Distribution System will include important elements to help both outlet supervisors and HQ staff. A complete user manual will guide outlet supervisors through the process of requesting and tracking stocks, while another document will assist HQ staff

with stock management, request approval, and delivery handling. Contextual online support will provide real-time assistance within the system, while tutorials will cover both basic and complex functionality. Frequently Asked Questions (FAQs) will answer typical questions, while a glossary will explain system terms. Common problems and troubleshooting guides will help users resolve their problems. User interface standards will provide a smooth navigating experience. These resources will be made available via an online portal, downloadable PDFs, and video tutorials, all in agreement with organizational documentation standards and efficient procedures.

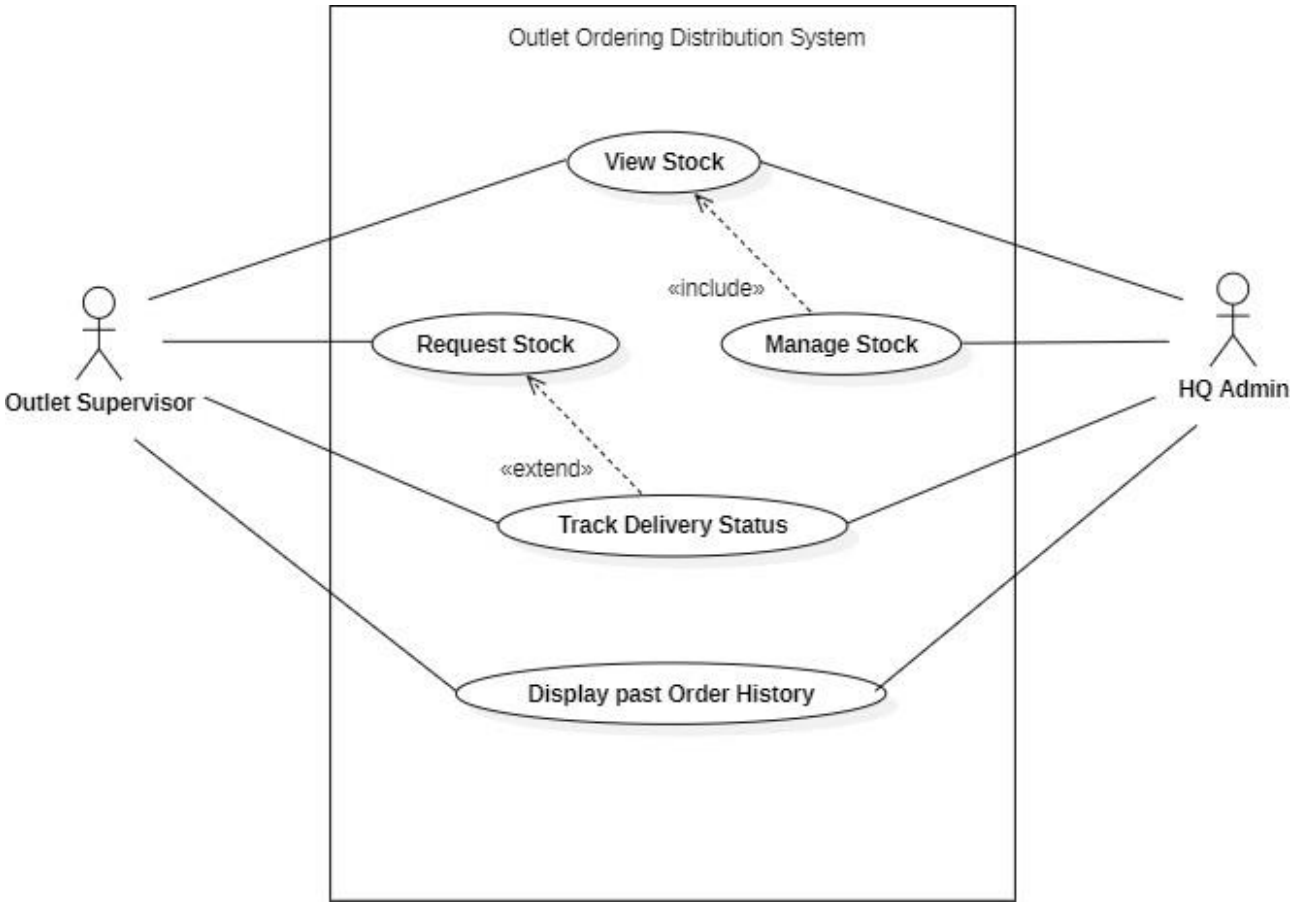
2.7. Assumptions and Dependencies

The Outlet Ordering Distribution System's performance is dependent on a few basic assumptions and external conditions. Assumptions are things we assume to happen, such as the availability of certain devices and the fact that communication follows established standards. Dependencies occur when we rely on other resources, such as specialized databases or courier services. Clearing out these assumptions and dependencies ensures that the system functions well for Smootea. More information about them is provided below:

- Assumes all users have solid internet access and enough server capacity to handle expected order volume. Delays or interruptions may affect system use.
- It depends on dependable hardware and software resources (servers, databases) to operate efficiently. interruptions and technical problems could have an impact on system performance.
- Assumes smooth communication with the chosen courier service API with consistent delivery performance. Coordination problems or courier delays could hinder the delivery process.
- Assumes that HQ users and outlet supervisors will input data accurately and consistently. Inaccurate data might cause stock issues and order processing problems.
- The system's dependence on solid and up-to-date stock data is essential.
- A dependency for the system's successful implementation into Smootea's operations is its compatibility with organizational policies.

3. System Features (use case + description)

3.1 Use Case Diagram


Outlet Ordering Distribution System
View Stock
«include»
Request Stock
Manage Stock
Outlet Supervisor
HQ Admin
«extend»
Track Delivery Status
Display past Order History

3.2 Use Case Description

3.2.1 UCD100 – Request Stock

Use Case name	**Request stocks**	Created By	**NURUL ATHIRAH BINTI ASMADI**
Scenario	Requesting new stock to HQ Admin		
Triggering Event	Trigger when the actor wants to request stock		
Brief Description	The outlet supervisor inserts the stocks requesting details for this use case and HQ Admin will distribute the stocks according to the requested amount. The stocks amount will be stored in the database.		
Actor	Outlet Supervisor		
Related Use Cases	Not applicable		
Stakeholders	Outlet Supervisor, HQ admin		
Preconditions	1. The outlet supervisor needs to be logged into the outlet distribution system. 2. The Outlet Supervisor needs to know each stock amount to be requested.		
Post conditions	The number of stocks requested must be reviewed by HQ Admin to proceed with distribution.		
Flow of Activities	**Actor**	**System**	
	1. Actor click on request stock option 2. Select to: [A1: order] [A2: order status] 2.1.2 Outlet supervisor key in stock ID also their desired quantity to be requested and press confirm to proceed ordering 2.1.3 Outlet can add more request by pressing “+” button. 2.1.4 Outlet supervisor key in the next stock request and press confirm order button	2.1 [A1: order] System display a section to request stock 2.1.1 System display the first request details consist of stocks ID, stocks and quantity. 2.1.5 System display order ID and all details of the requested stock with edit and submit order	

		button
	2.1.6 Outlet Supervisor press submit button and confirm the order detail [E1, E2]	
		2.1.7 System will store stock order details in the database and will display order successfully submitted
		2.2 [A2: order status] System display a section to check order status
		2.2.1 System display a table with order date, order id, status of order and view order details.
	2.2.2 Outlet supervisor can view the status of their order request whether it has already been approved by HQ Admin.	
Exception Conditions	[E1: Failed to submit data] There might be a problem that occurred while submitting the data that might lead to the data aren't stored in the database. [E2: Details submitted is incomplete] The data that was submitted by the outlet supervisor regarding stocks requesting is incomplete and the application is not able to be submitted. The outlet supervisor needs to recheck the data inserted and submit again the complete data.	
Special requirements / Business Rules	The nature or pricing of things sought may affect approval of HQ Admin. The system should keep a record of all stock requests and their status.	
Assumptions	Only the HQ admin has the power to approve stock requests, and the outlet supervisor is educated to correctly analyze stock levels and determine when to seek restocking.	
Notes and issues	None/To be defined	

3.2.2 UCD102 – View Stocks

Use Case name	**View Stocks**	Created By	**NURUL IZZATI MAISARAH BINTI MOHAMMAD PADZIL**
Scenario	Observe stocks availability		
Triggering Event	Triggered by the actor when the actor wants to view and check stocks' availability.		
Brief Description	This use case will let HQ Admin view stocks availability and constantly monitor stocks levels in real-time and alert when the stocks quantity product drops.		
Actor	HQ Admin, Outlet Supervisor		
Related Use Cases	Manage stocks		
Stakeholders	Outlet Supervisor, HQ Admin		
Preconditions	HQ Admin need to check and confirm the stocks manually first.		
Post conditions	HQ Admin successfully viewed and checked total left of stocks availability.		
Flow of Activities	**Actor**	**System**	
	1. HQ Admin selects to view stocks availability. 2. HQ Admin: Select to [A1 : Click on Individual stocks] Click on individual stocks to check the stocks details. [A2 : Filter and Sort option] Select filter and sort options to specify the stocks needed.	1.2. System display screen of stocks available. 1.1 [A1 : Click on individual stocks] The system will show up with stocks details. 2.2 [A2 : Filter and Sort option] System will show up with stocks that are filtered and sorted by the HQ Admin. [E1]	
Exception Conditions	[E1: Error: Stocks not available] System will display Error Message "Stocks not available"		
Special requirements / Business Rules	The system must allow the HQ Admin to view and manage stocks across various outlets.		
Assumptions	The system assumes that data on stock levels and product details are regularly updated to reflect real-time changes.		
Notes and issues	1. It is recommended that the HQ Admin undergoes training on using the outlet distribution system to maximize		

	efficiency and minimize errors. 2. Purchase orders initiated by the HQ Admin may be subject to an approval workflow based on specific business rules.

3.2.3 UCD103 – Manage Stock

Use Case name	**Manage Stocks**	Created By	**NUR ATHIRAH BINTI MANSOR**
Scenario	Create stock information for the company		
Triggering Event	When HQ Admin want to add new stocks, update or delete unused stocks		
Brief Description	This use case is used by HQ Admin to add new stock, update or delete unused stock to keep the stocks information updated from time to time in the outlet distribution system		
Actor	HQ Admin		
Related Use Cases	View Stocks		
Stakeholders	Outlet Supervisor, HQ Admin		
Preconditions	Stock condition is authorized by HQ Admin		
Post conditions	Stock information has been updated		
Flow of Activities	**Actor**	**System**	
	1. Admin click on view stocks button. 2. Select to [A1 : Create New Stock] Create new stock whenever there is a new menu or promotion that requires new items. [A1 : Create New Stock] Admin insert all the information in the create new stock field and click create button after confirming all the information.	1.1. System display screen of available stock 2.1.1. [A1 : Create New Stock] System display create new stock field with all the required information. 2.1.2. [A1 : Create New Stock] System will save the information in database and revert to available stock Page. [E1]	

	[A2 : Update Stock Quantity] Update stocks quantity if there are changes in the stock's availability.	
		2.2.1. [A2 : Update Stock Quantity] System display update stock quantity field.
	[A2 : Update Stock Quantity] Admin will change the stock's quantity according to stock's availability and click update button after confirming the quantity.	
		2.2.1. [A2 : Update Stock Quantity] System will update the stock's quantity and revert to available stock page. [E2]
	[A3 : Delete Unnecessary Stock] Delete unnecessary stocks or when the stocks no longer available.	
		2.3.1. [A3 : Delete Unnecessary Stock] System will display all stocks.
	[A3 : Delete Unnecessary Stock] Admin click delete button on the selected stock.	
		2.3.2. [A3 : Delete Unnecessary Stock] System will display confirmation message whether to delete the selected stock.
	[A3 : Delete Unnecessary Stock] Admin click the confirm button to delete the unnecessary stock.	
		2.3.3. [A3 : Delete Unnecessary Stock] System will delete the selected stock(s) and revert to available stock page.

	3. Search desired stock's using id or name	[E3] 3.1 . System will display the stock that has been searched. [E4]
Exception Conditions	[E1 : Error: Stock Has Already Been Created] System will display Error Message "Sorry, The Stock Has Already Exist" and will revert to previous screen [E2 : Error: Stock Cannot Be Updated] System will display Error Message "Sorry, The Stock Cannot Be Updated" due to the duplicate information [E3 : Error: Stock Cannot Be Deleted] System will display Error Message "Sorry, The Stock Cannot Be Deleted" because the current stocks still available [E4 : Error: ID Not Found] System will display Error Message "No ID Found" when we search for the unavailable item.	
Special requirements / Business Rules	1. Only authorized user can manage the stocks 2. Each stock must have a unique identifier 3. Every action need to get a confirmation check	
Assumptions	1. Every selection performed need to have a transaction logging that includes timestamp and user responsible. 2. HQ Admin can manage stocks by categories	
Notes and issues	Ensure that every stock's information is correct by maintaining data integrity	

3.2.4 UCD104 – Tracking Delivery Status

Use Case name	**Tracking Delivery Status**	Created By	**1. NUR SYAFIKA ALYA BINTI MOHD ZAMRI AZHAR** **2. NURUL IZZATI MAISARAH BINTI MOHAMMAD PADZIL**
Scenario	Outlet Supervisor or HQ Admin wants to track the delivery status of a stock order		
Triggering Event	The Outlet Supervisor or HQ Admin initiates the tracking of the delivery status.		
Brief Description	Providing the Outlet Supervisor or HQ Admin with the ability to track the delivery status of a stock order placed through the outlet distribution system		
Actor	Outlet Supervisor, HQ Admin		
Related Use Cases	Not applicable		

Stakeholders	Outlet Supervisor, HQ Admin	
Preconditions	HQ Admin has updated delivery status	
Post conditions	Outlet Supervisor or HQ Admin receives real-time information on the delivery status of the stock order.	
Flow of Activities	**Actor**	**System**
		1. Display screen of delivery status.
	2. HQ Admin, select to [A1: Creates new delivery status] Create new delivery information about the stocks order	2.1. [A1: Creates new delivery status] The system will show up with a new delivery status [E1]
	[A2: Update delivery status] Update delivery status if there are any changes in the progress	2.2. [A2: Update delivery status] The system will show up with a new update of the delivery status [E2]
	[A3: Delete old delivery status] Delete unnecessary delivery status	2.3. [A3: Delete old delivery status] The system will delete old delivery status and it will no longer show up [E3]
	3. Outlet Supervisor, select to [A4: View delivery status] View delivery status for the requested stocks	3.1. [A4: View delivery status] The system will show up the delivery status

	[A5: Searching for specific delivery status] Search for the specific delivery status using product's ID or name	[E4] 3.2. [A5: Searching for specific delivery status] The system will show up the specific delivery status [E5]
Exception Conditions	[E1: Error: Delivery status is not created] System will display Error Message "Delivery status are not created." Due to connection interruption. [E2: Error: Delivery status is not updated] System will display Error Message "Delivery status are not updated." Due to lack of information. [E3: Error: Delivery status is not deleted] System will display Error Message "Delivery status are not deleted." Due to connection interruption. [E4: Error: Delivery status is not available] System will display Error Message "Delivery status are not available." Can happen due to wrong input information searched. [E5: Error: Delivery status is not available] System will display Error Message "Delivery status are not available." Can happen due to wrong input information searched.	
Special requirements / Business Rules	Real-time tracking of delivery status should be provided.	
Assumptions	The system has access to real-time delivery status data from the logistics provider.	
Notes and issues	Ensures transparency and enables users to monitor the progress of their stock orders.	

3.2.5 UCD105 – Display Past Order History

Use Case name	Display Past Order History	Created By	**NUR SYAFIKA ALYA BINTI MOHD ZAMRI AZHAR**
Scenario	Outlet Supervisor or HQ Admin wants to view their past order history within the outlet distribution system.		
Triggering Event	Outlet Supervisor or HQ Admin requests to view their past order history.		
Brief Description	Providing Outlet Supervisor or HQ Admin with the access to their historical stock order information within the outlet		

	distribution system	
Actor	Outlet Supervisor, HQ Admin	
Related Use Cases	Not applicable	
Stakeholders	Outlet Supervisor, HQ Admin	
Preconditions	Outlet Supervisor or HQ Admin must be logged into the outlet distribution system	
Post conditions	Outlet Supervisor or HQ Admin is able to view their past order history, including details such as order dates, quantities, and delivery statuses.	
Flow of Activities	**Actor**	**System**
	1. Outlet Supervisor 1.1 User requests to view past order history to their specific outlet on specific date. [E1]	
		1.2 System displays the past orders for specific outlet. 1.3 System fetches historical order data related to the specific outlet. 1.4 System present the data to the Outlet Supervisor, detailing past orders made by their outlet only.
	1.5 User requests to view more information about the order	
	2 HQ Admin 2.1 User requests to view past order history for analysis or reporting purposes. [E1]	
		2.2 System retrieves and display a list of past orders made across all outlets. 2.3 System retrieves historical from the central database.
	2.4 User requests to view more information about the order.	

		2.5 System present the data to the HQ Admin showing details such as order date, items, quantity and relevant information
Exception Conditions	[E1: Error: Order History Unavailable] System will display Error Message “Order History Unavailable” when there is no order were made on a specific date.	
Special requirements / Business Rules	The outlet supervisor can only access their own past order history. The system should store and maintain accurate records of past orders.	
Assumptions	The system has securely stored past order data for all Outlet Supervisors or HQ Admin	
Notes and issues	This use case provides Outlet Supervisor or HQ Admin with insights into their ordering patterns and helps in planning future stock orders	

4. External Interface Requirements

4.1. User Interfaces

The system's user interface is designed as a user-friendly web application that fulfils the unique needs of the HQ administrator and outlet supervisor. HQ administrators have access to features that enable them to effortlessly monitor and control inventory levels, as well as track incoming shipments. Outlet supervisors' benefit from an intuitive user interface that allows them to easily place orders while tracking the status of those orders in real time. This user-friendly web interface boosts overall operational efficiency by providing a centralized platform for key stakeholders to do their tasks more conveniently.

4.2. Hardware Interfaces

The software product interacts with the system's several hardware components, such as databases, mobile devices, networking equipment, and servers. For example, the database interface conducts logical operations like CRUD and connects to a relational database using SQL queries. Mobile devices have access to software through mobile operating systems and wireless protocols such as Wi-Fi or cellular networks. Networking equipment enables communication using standard networking protocols such as TCP/IP, ensuring reliable data delivery. The principal

application and database run on server infrastructure, which necessitates server hardware and operating systems. These interfaces collaborate to provide seamless and efficient communication between software and hardware components, covering a diverse variety of device types, data transfers, and communication protocols.

4.3. Software Interfaces

To ensure seamless functioning, the Outlet Ordering Distribution System integrates a range of software components. The system stores and maintains inventory data with a relational database management system (DBMS), such as MySQL version 8.0. The server infrastructure runs Windows Server 2019, while mobile devices use Android 10 and above and using tools such as Apache HTTP Server for web services. Data items that enter the system include order information, inventory updates, and requests for user authentication. Outgoing communications include order confirmations, inventory status reports, and transaction logs.

4.4. Communications Interfaces

To function effectively, the Outlet Ordering Distribution System requires a few communication routes. To provide simple access to inventory data and order processing, user interfaces are required to be web browser compatible. HTTP/HTTPS protocols are used in network server interactions to enable clients and servers to exchange data more effectively. Electronic forms are used to speed up data entry and maintain accuracy in inventory management. For web-based interfaces, the system utilizes HTTP, and file transfers may be done over FTP. Encryption methods safeguard sensitive data during transmission as part of communication security measures. Data transfer speeds have been optimized for speedier information exchange, while synchronization mechanisms ensure consistency across different databases. Standardized message formatting is essential for clear communication between system components, and adhering to communication standards promotes compatibility and effortless interaction with the wider technological environment.

4.5 System Interfaces

1. HQ Interfaces

Table 4.5.1 View Stocks

View Stock (HQ Admin)

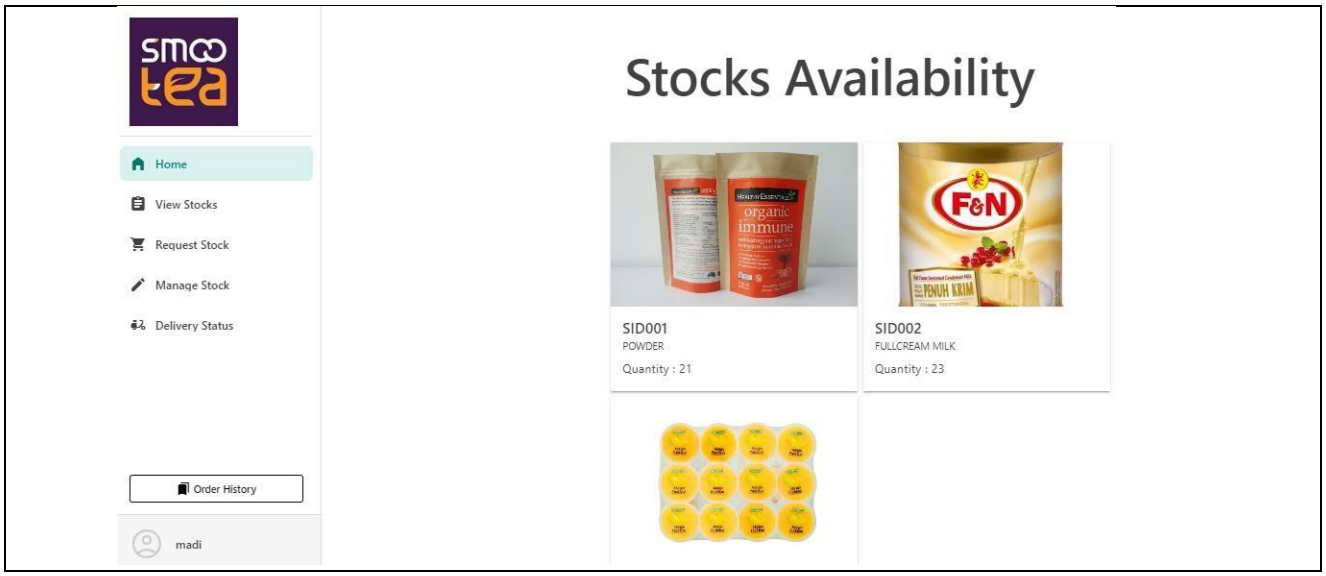
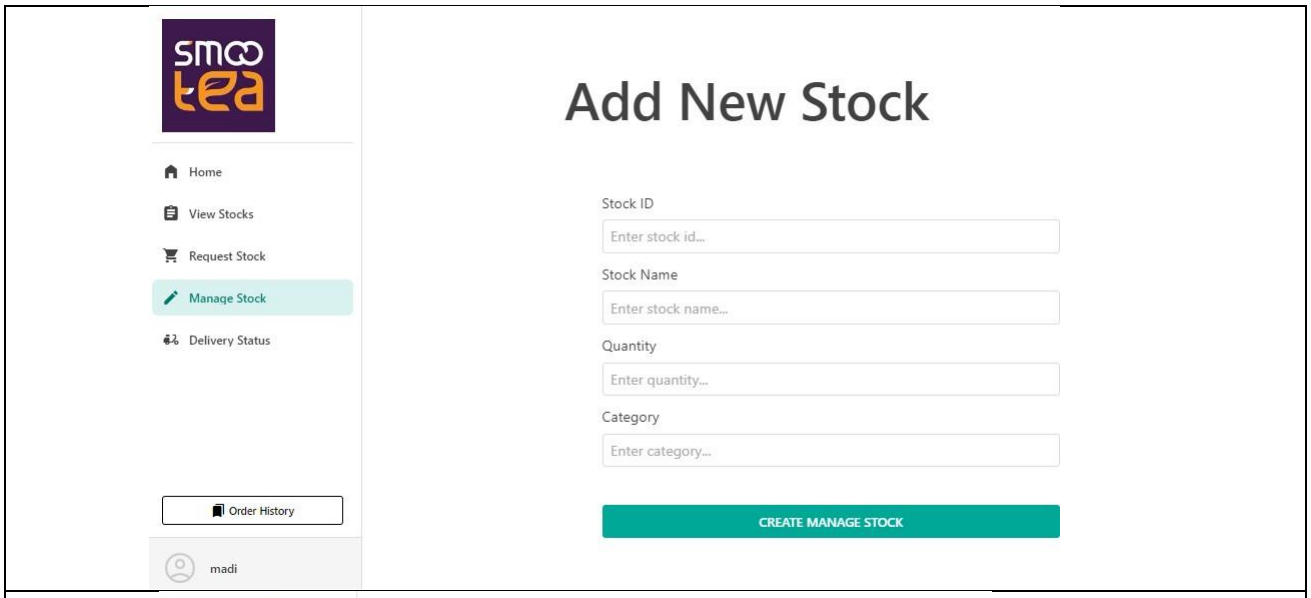


Table 4.5.2 Manage Stocks

Manage Stocks (Add, Update, Delete)



Home
View Stocks
Request Stock
Manage Stock
Delivery Status
Order History
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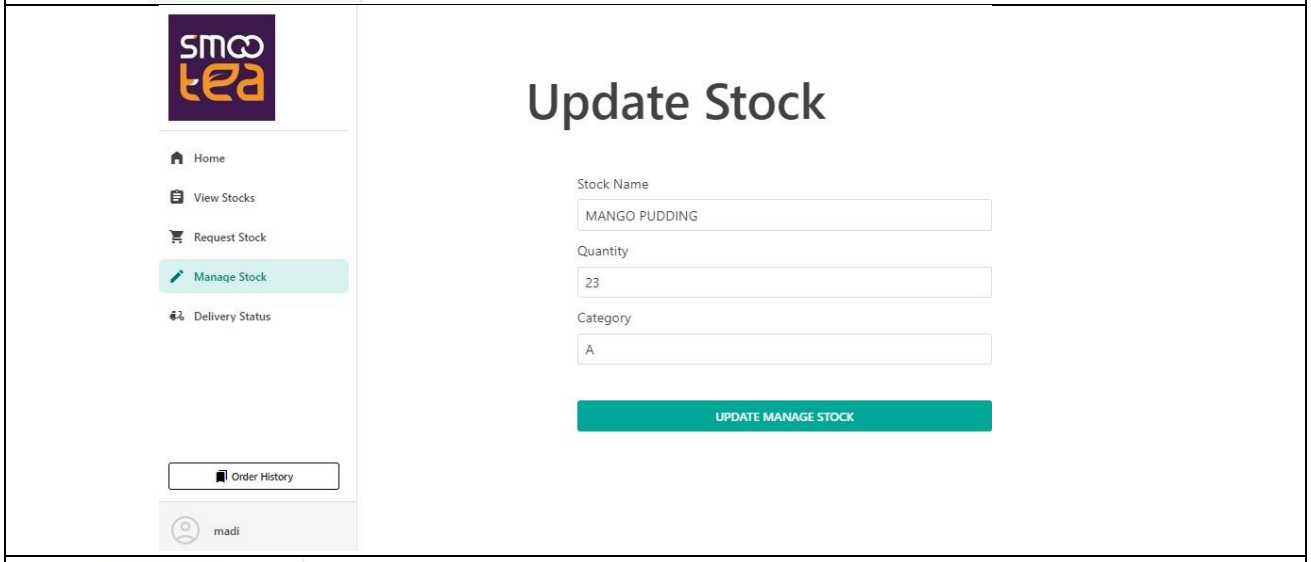
Add New Stock
Stock ID
Enter stock id...
Stock Name
Enter stock name...
Quantity
Enter quantity...
Category
Enter category...
CREATE MANAGE STOCK


Home
View Stocks
Request Stock
Manage Stock
Delivery Status
Order History
madi
Update Stock
Stock Name
MANGO PUDDING
Quantity
23
Category
A
UPDATE MANAGE STOCK

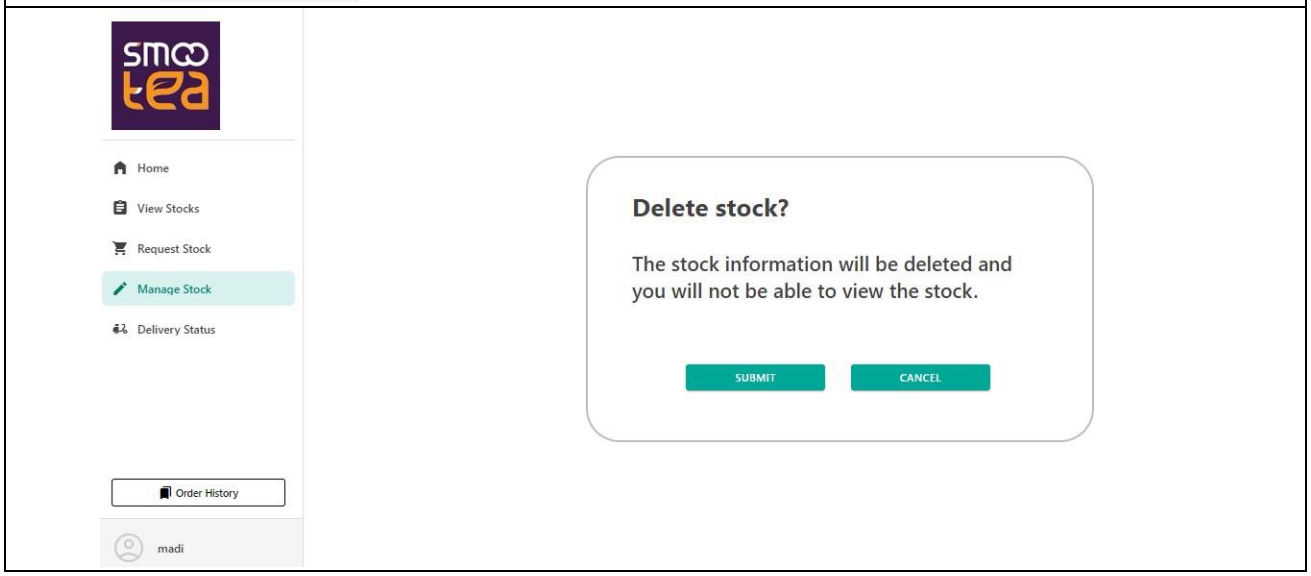
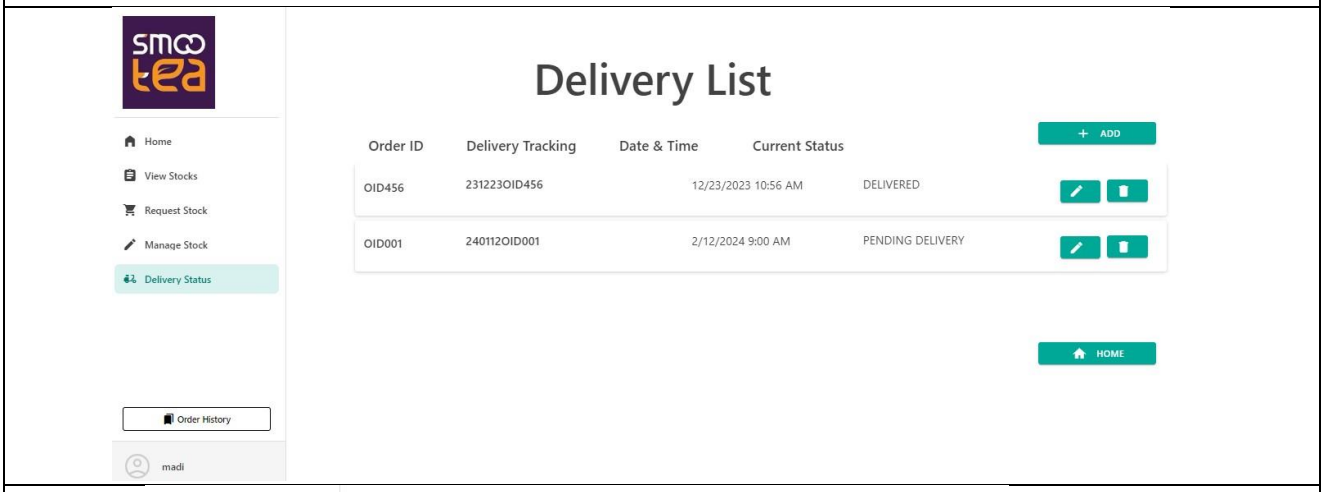
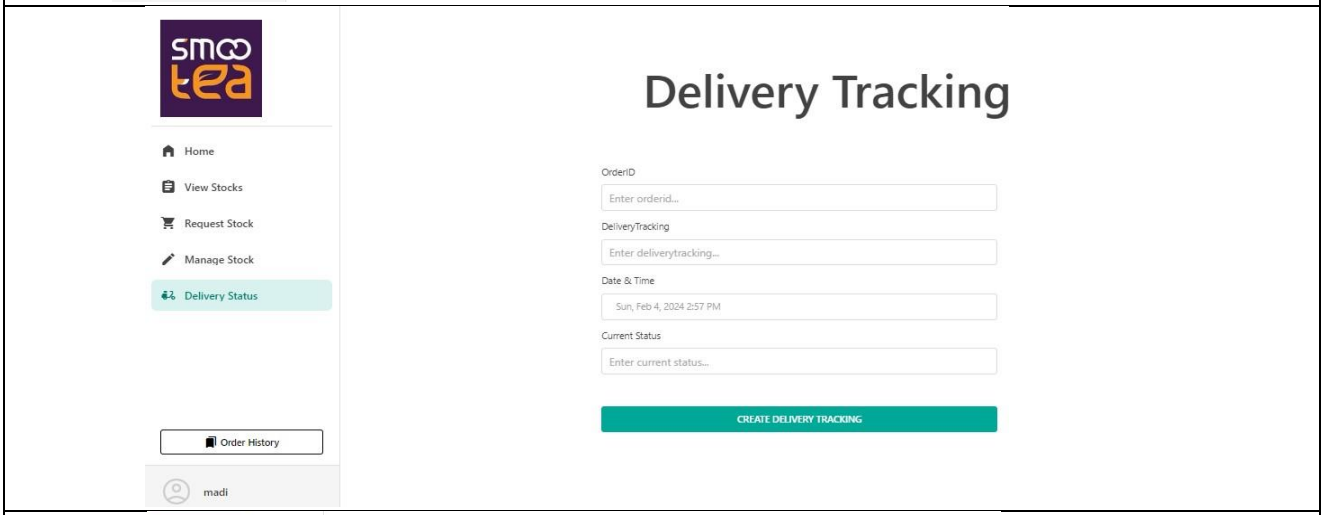
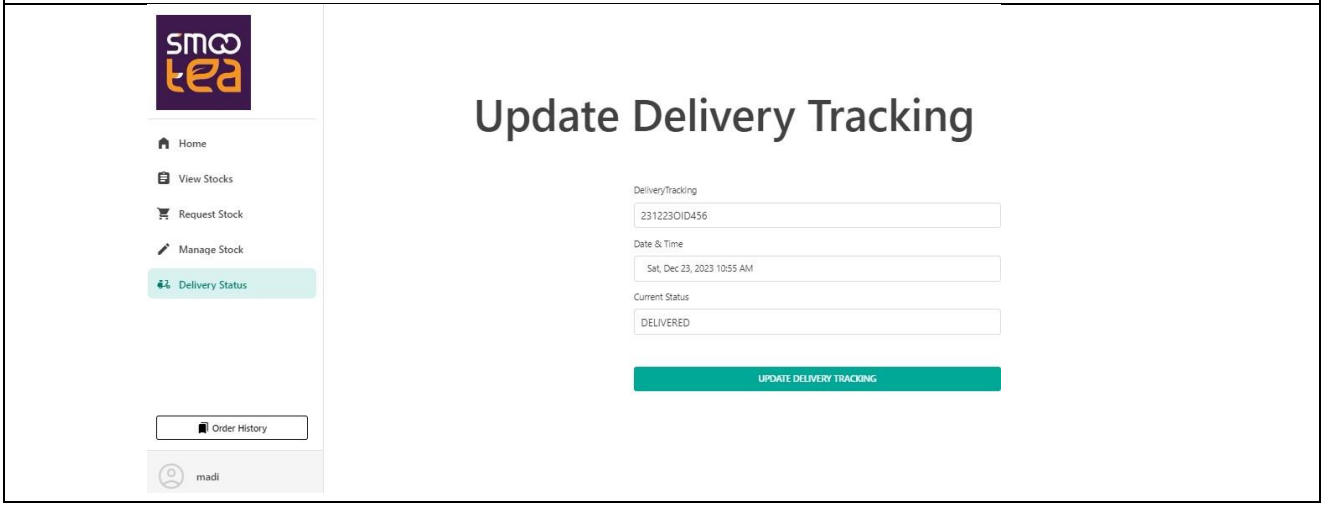

Home
View Stocks
Request Stock
Manage Stock
Delivery Status
Order History
madi
Delete stock?
The stock information will be deleted and you will not be able to view the stock.
SUBMIT
CANCEL

Table 4.5.3 Delivery Tracking Management

Delivery Management




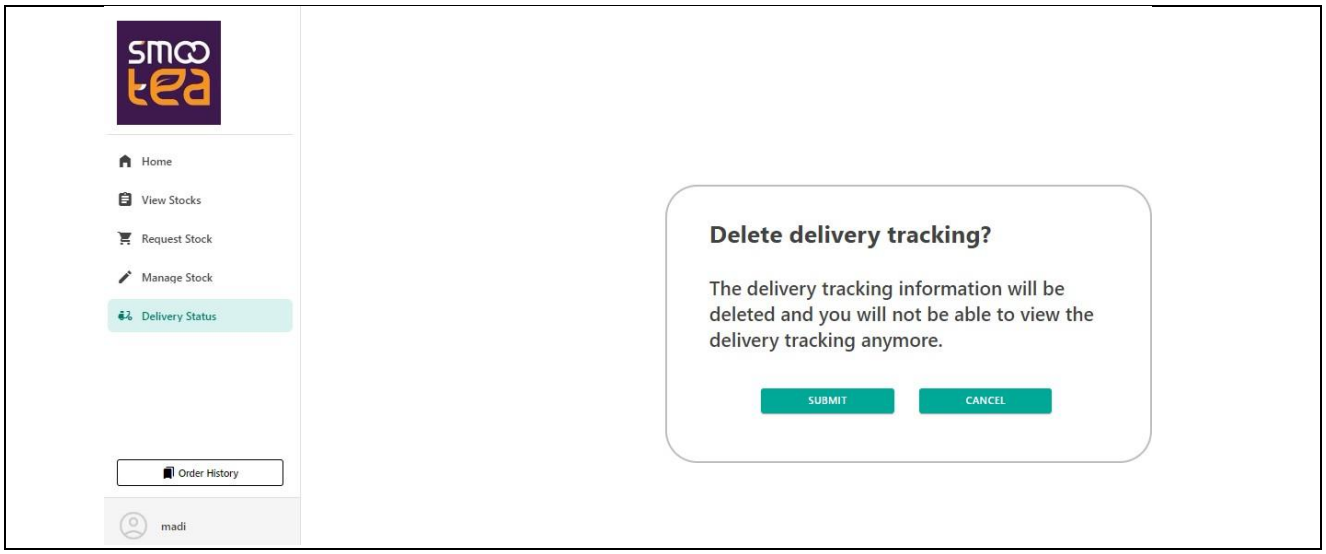
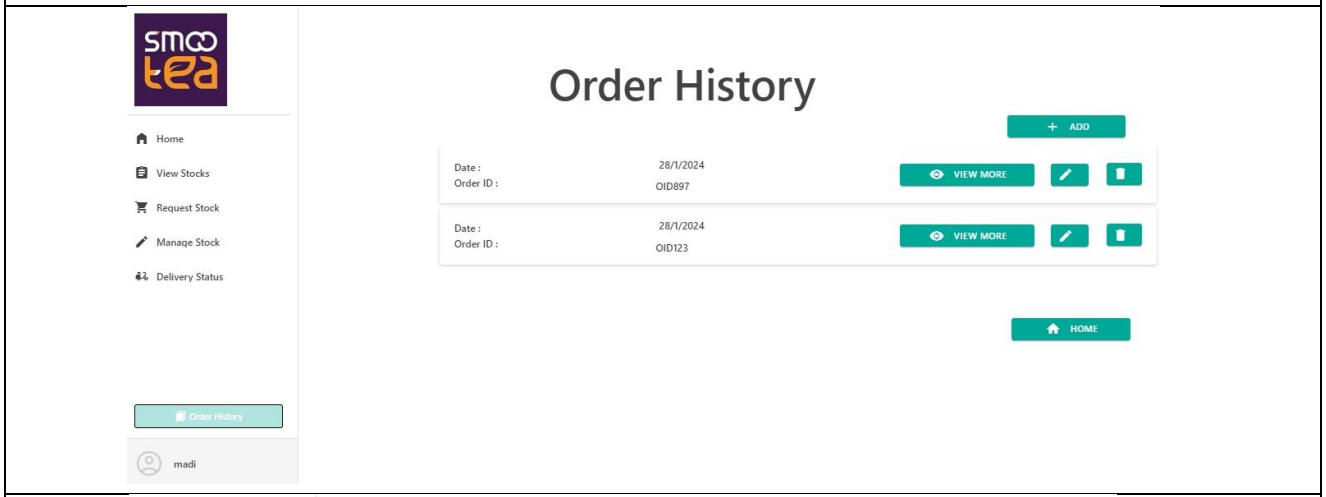
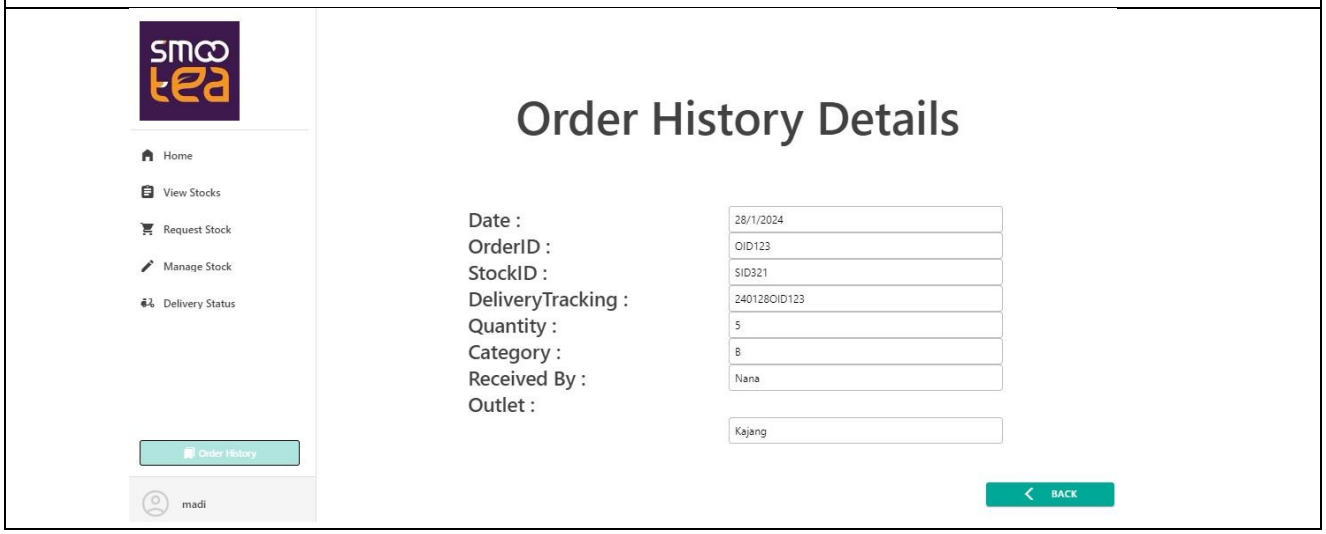
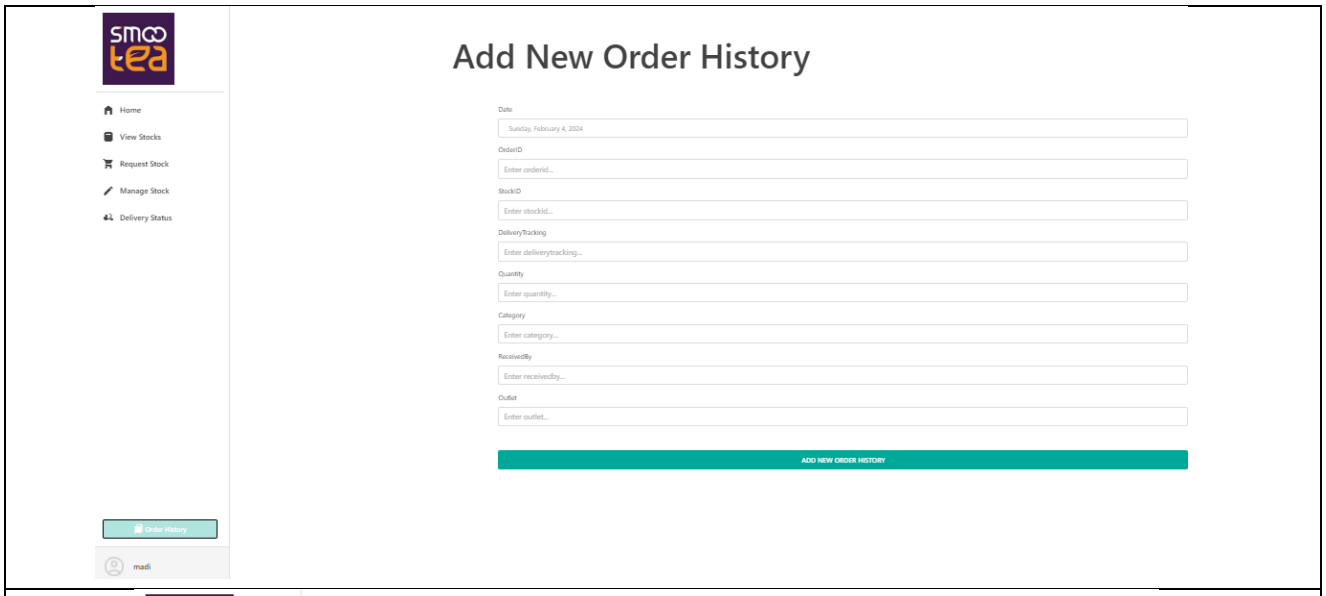
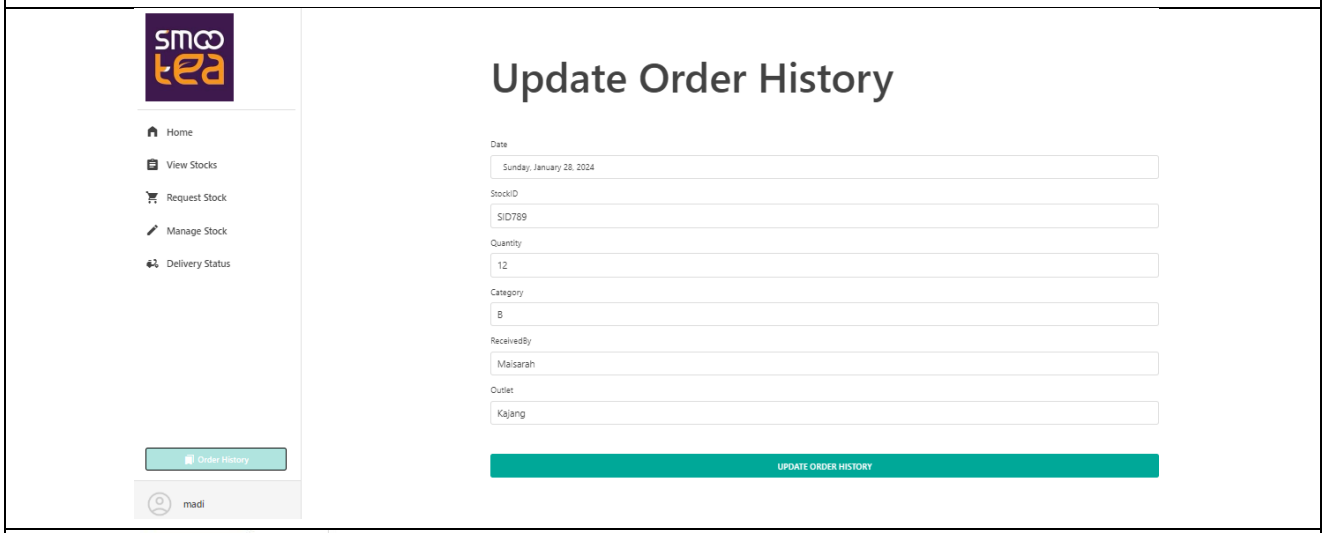
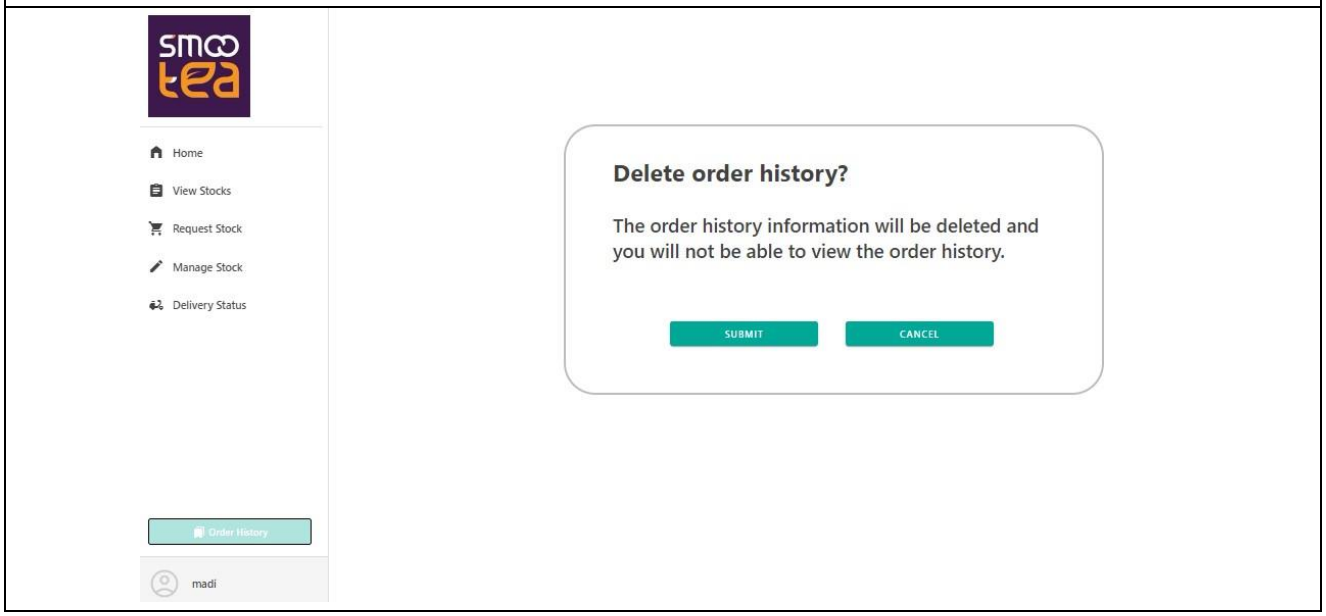


Table 4.5.4 Order History

Order History




Add New Order History
Home
View Stocks
Request Stock
Manage Stock
Delivery Status
Date
Sunday, February 4, 2024
OrderID
Enter orderid...
StockID
Enter stockid...
DeliveryTracking
Enter deliverytracking...
Quantity
Enter quantity...
Category
Enter category...
ReceivedBy
Enter receivedby...
Outlet
Enter outlet...
ADD NEW ORDER HISTORY
Order History
madi


Update Order History
Home
View Stocks
Request Stock
Manage Stock
Delivery Status
Date
Sunday, January 28, 2024
StockID
SID789
Quantity
12
Category
B
ReceivedBy
Maisarah
Outlet
Kajang
UPDATE ORDER HISTORY
Order History
madi


Home
View Stocks
Request Stock
Manage Stock
Delivery Status
Delete order history?
The order history information will be deleted and you will not be able to view the order history.
SUBMIT
CANCEL
Order History
madi

2. Outlet Supervisor Interfaces

Table 4.5.6 View Stocks (Outlet Supervisor)

View Stocks Availability


Table 4.5.7 Request Stocks

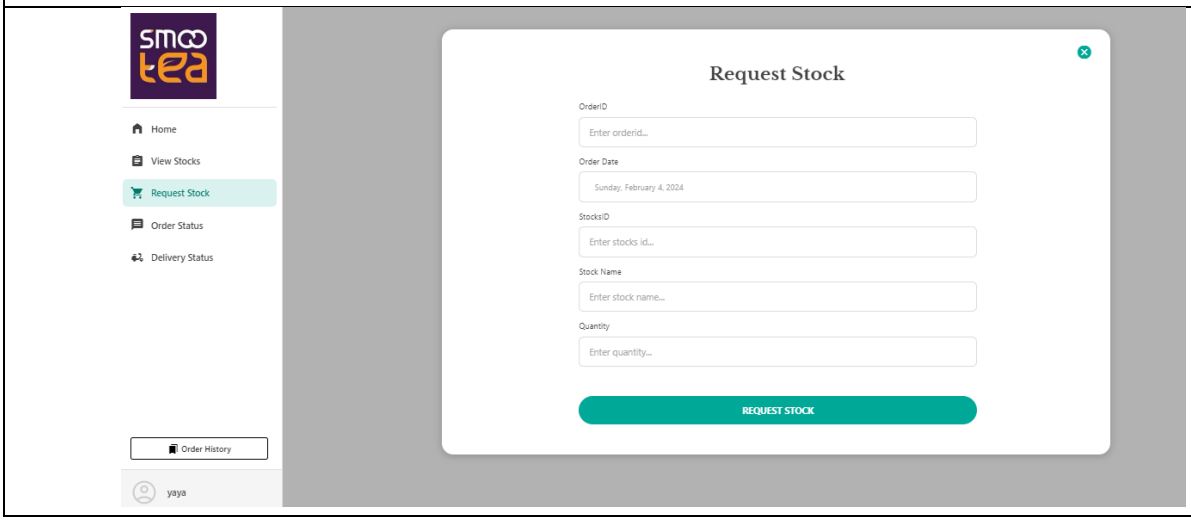
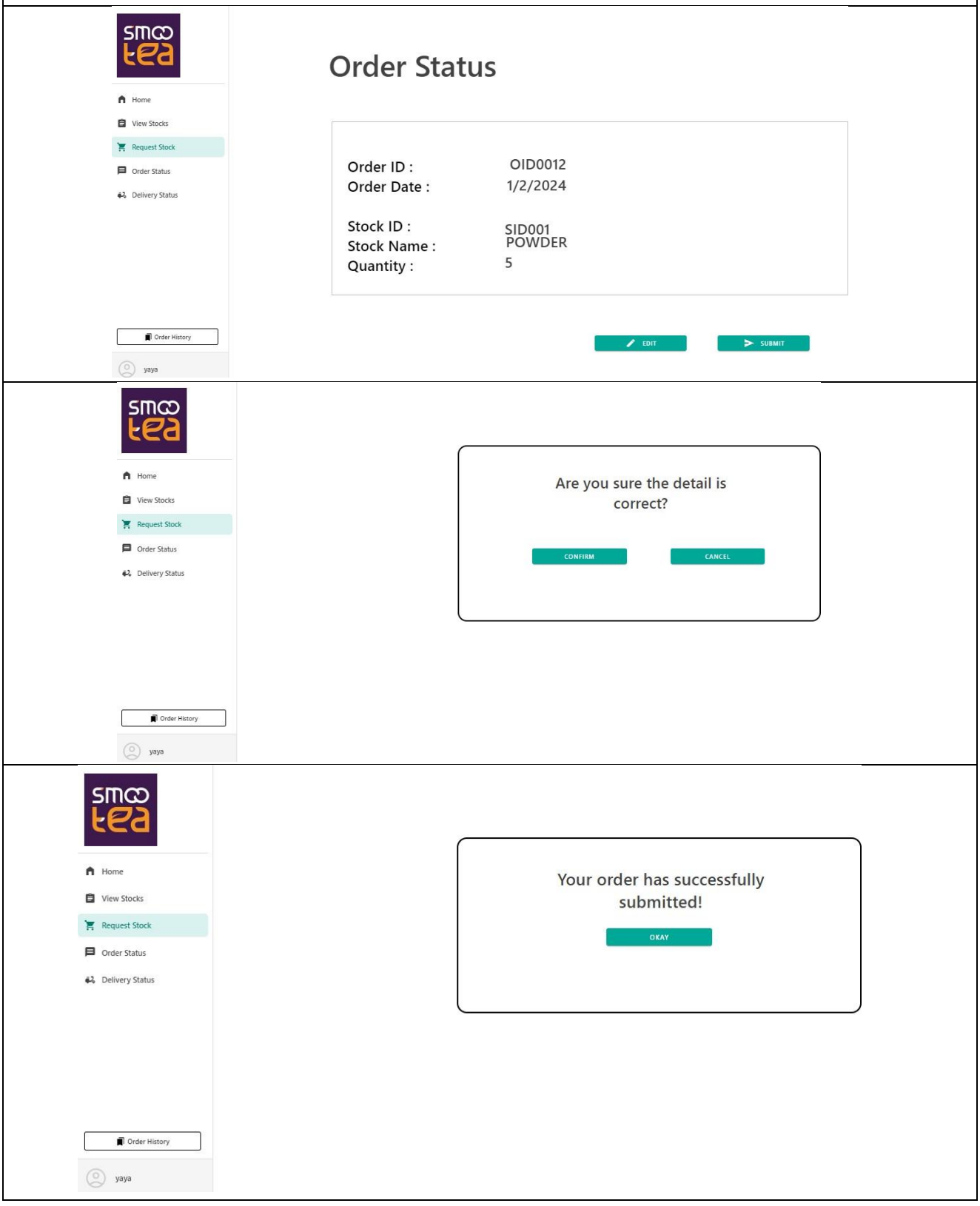
Request Stocks


Table 4.5.8 Order Status

Order Status Process



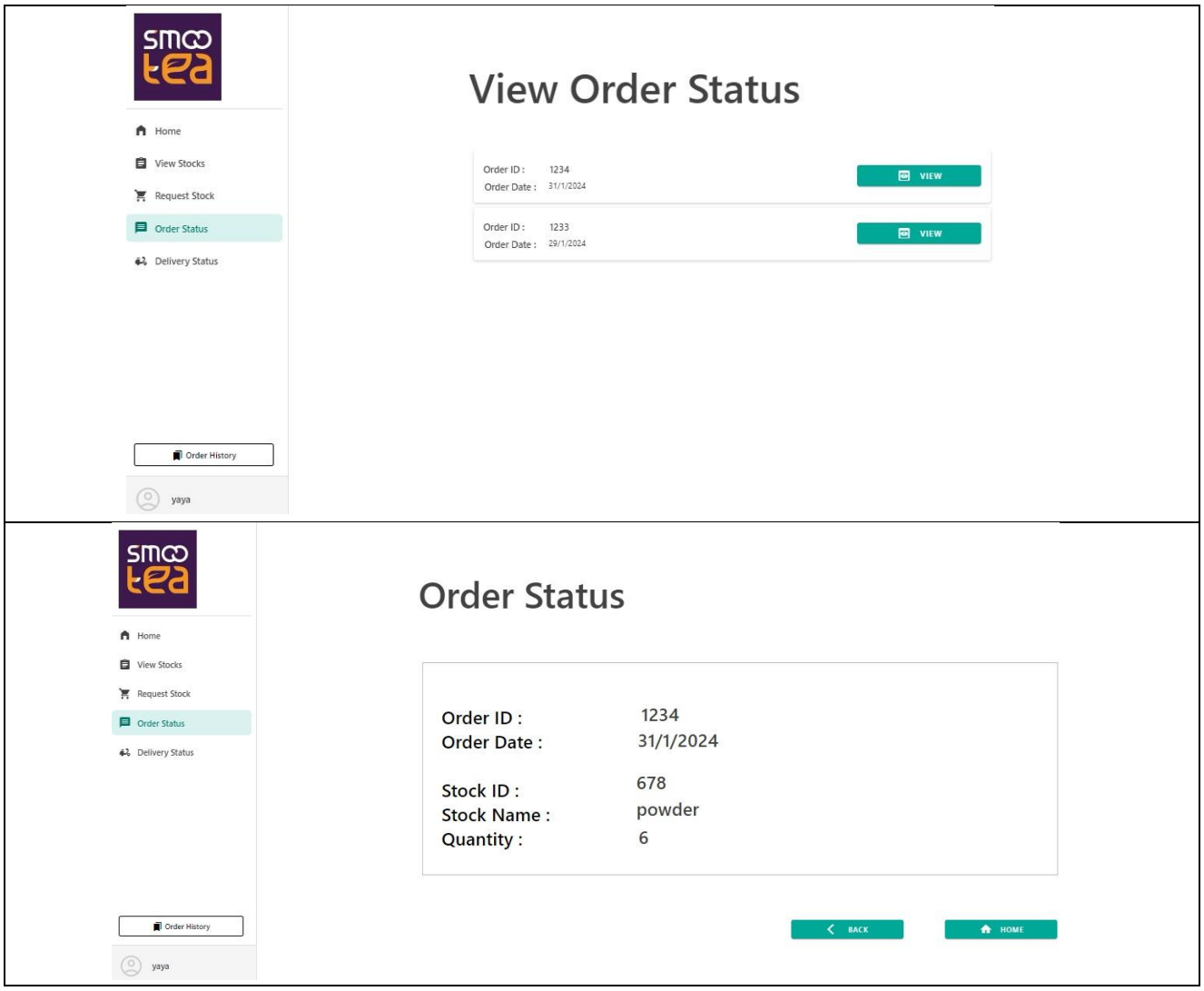
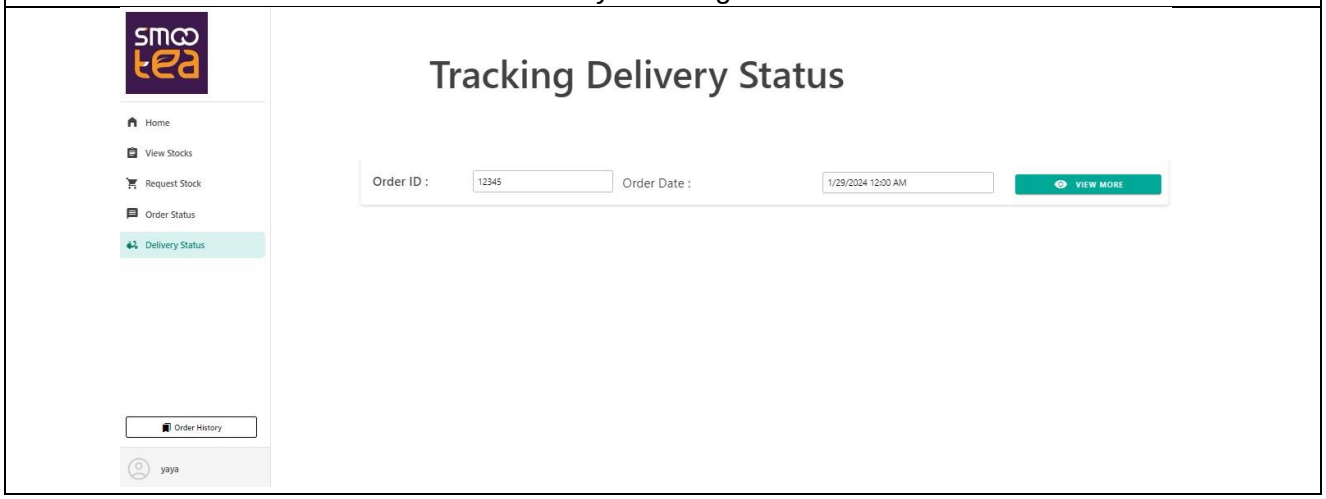


Table 4.5.9 Delivery Tracking

Delivery Tracking Status


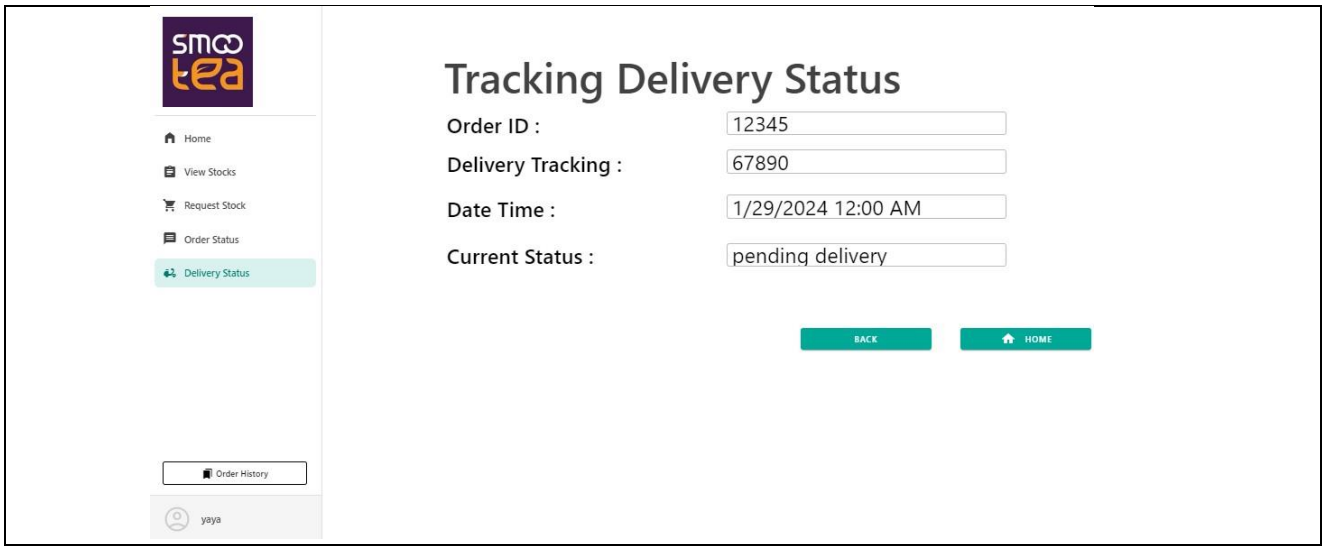
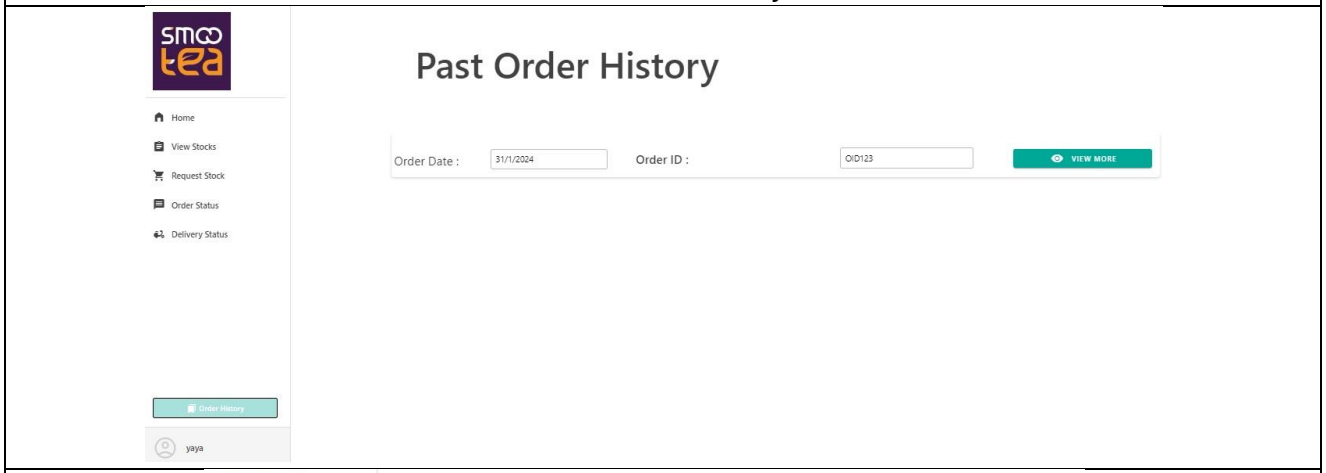
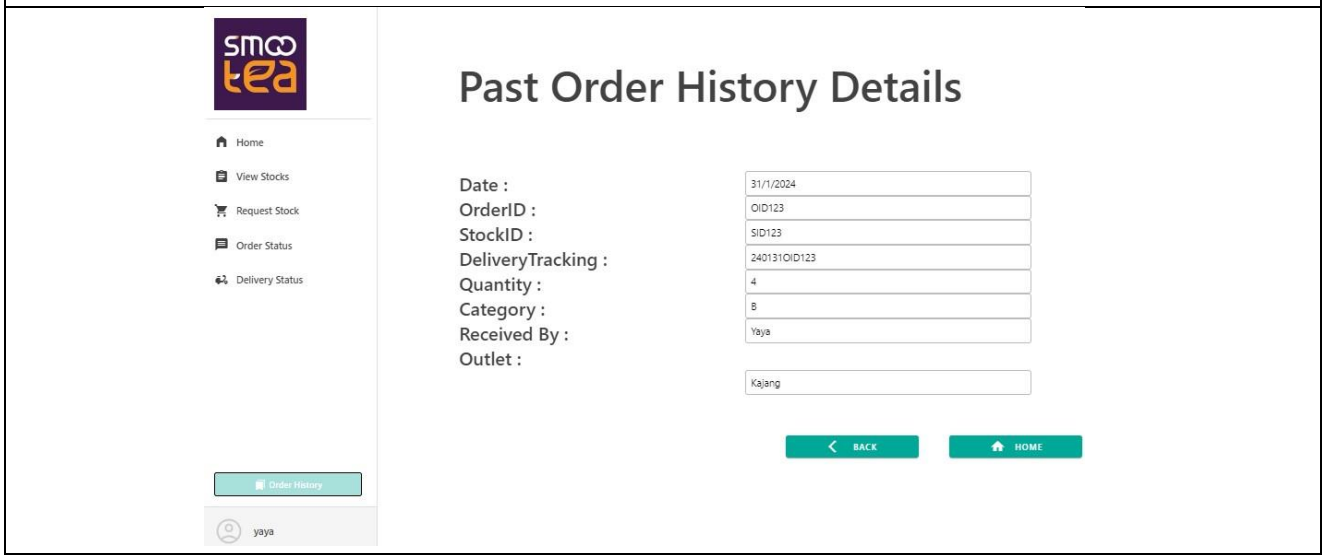


Table 4.5.10 Past Order History

View Order History



5. Other Nonfunctional Requirements

5.1. Performance Requirements

The Smootea's outlet ordering distribution system’s database performance must be assessed based on an absolute dedication to data integrity, consistency, and accuracy. The database should be optimized to handle many interactions while ensuring minimal latency in data retrieval and adjustments. Data consistency procedures must be adopted to ensure that all distributed databases throughout the network have the most recent and accurate inventory status. Furthermore, precise records of stocks are vital, necessitating the use of demanding validation processes and error-checking algorithms to promptly detect and resolve any anomalies. This performance requirement stresses the database's critical role in ensuring the reliability of inventory information, promoting a dependable and precise inventory distribution system that adapts to changing business needs.

5.2. Safety Requirements

To maintain the outlet ordering distribution system's safety and dependability, it must be free of any dangerous hardware or software components. To preserve the system's integrity, strong procedures for identifying and blocking harmful components should be implemented, such as regular security assessments, rigorous code reviews, and the usage of well-known anti-malware solutions. The system design must include explicit safeguards against intentional manipulation or compromise, as well as preemptive steps to prevent any unauthorized attempts to include dangerous components. Compliance with external norms and safety regulations is vital, and the device should adhere to industry standards and obtain necessary safety certifications to demonstrate its commitment to a secure and dependable outlet ordering distribution system.

5.3. Security Requirements

To improve the outlet ordering distribution system's security structure, powerful data protection and user access control measures must be applied. The system should employ encryption techniques to safeguard sensitive data generated. Access to the system should be limited to HQ admin and outlet supervisors, who must verify their identities using unique

usernames and passwords. Implementing multi-factor authentication is crucial for increasing security. Furthermore, compliance with external laws and regulations addressing security concerns is necessary, and the system must fulfil any security or privacy certifications that apply to its operational environment. These measures work together to secure the outlet ordering distribution system's security, integrity, and availability, lowering the risk of unauthorized access or data breaches.

5.4. Software Quality Attributes

Adaptability

Specific: The system should be able to adapt to changes in business requirements or market conditions without needing extensive code modifications.

Quantitative: The system should be able to handle at least 90% of change requests within a single development iteration.

Verifiable: Periodically analyze the system's adaptability by introducing simulated changes and determining the time and effort required for implementation.

Usability

Specific: The system's usability and efficiency in allowing users to execute their tasks while lowering training requirements and user errors.

Quantitative: Aim to minimize the average time it takes for a new user to get familiar with the system by 20%.

Verifiable: Usability testing with representative users can help discover and fix any issues with the user interface.

Maintainability

Specific: The system's codebase should adhere to coding standards and be well-documented for easy maintenance.

Quantitative: Use static code analysis techniques to determine a code maintainability index of at least 80.

Verifiable: Conduct regular code reviews and inspections to ensure that coding standards are fulfilled and keep track of how long it takes to fix errors or implement changes.

6. Other Requirements

<There is no other requirements for the time being>

Appendix A: Glossary

Outlet Ordering Distribution System (OODS) Smootea created a computer program to speed up stock ordering and delivery between headquarters and outlets.

Smootea The stakeholder organization for which the Outlet Ordering Distribution System is developed, with outlets in Kajang, Shah Alam, and Kuantan.

Data Raw data, numbers, and symbols that represent information. Data in the OODS consists of stock details, request statuses, delivery information, and order history.

Hardware The physical components of a computer system, such as servers, computers, and networking devices, are required for the system to function.

Software Computer-based programs and applications.

Database A structured collection of data structured for easy access, storage, and management.

Operating System Software that holds computer hardware and provide services to computer applications.

Domain Class Diagram A visual illustration of the classes, relationships, and attributes inside the system's domain, providing an understanding of the important elements and how they relate to one another.

Use Case A description of a system's behavior as seen by an external actor (user or system).

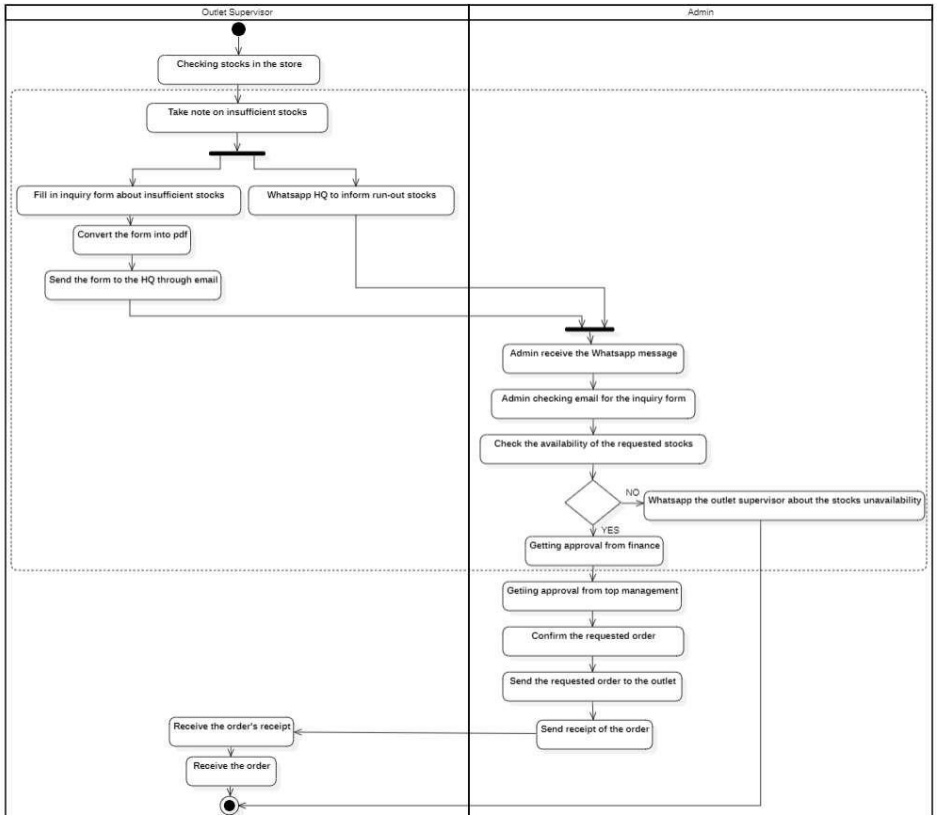
Activity Diagram A UML diagram shows the flow of activities inside of a system or process, including actions, decision points, and transitions. It may be used to simulate the flow of stock requests and approvals through the system.

System Sequence Diagram A UML diagram depicting the interactions between actors and the system, including the flow of information sent.

Appendix B: Analysis Models

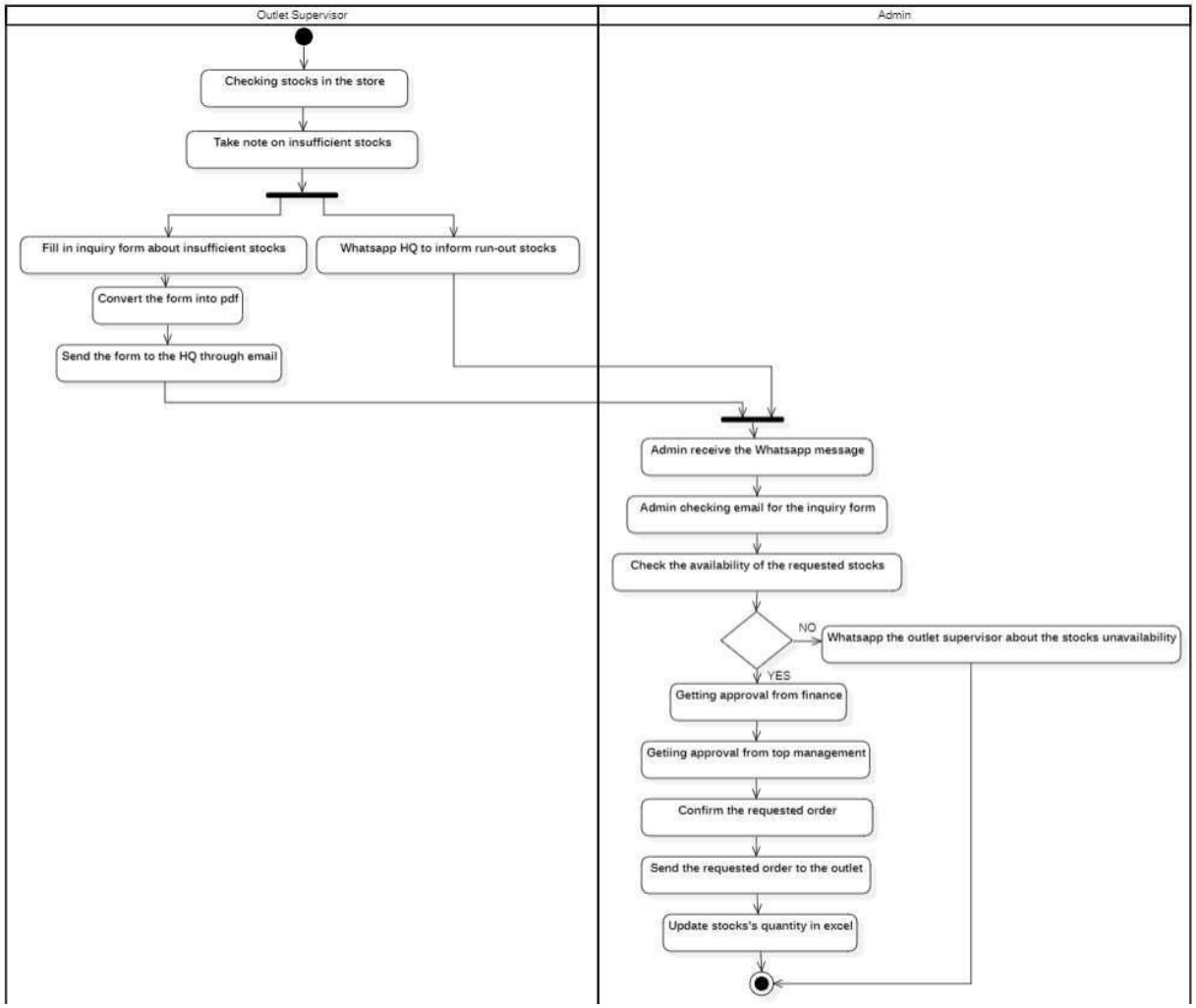
1. Business activity diagram

1.1 Activity diagram for Requesting run-out



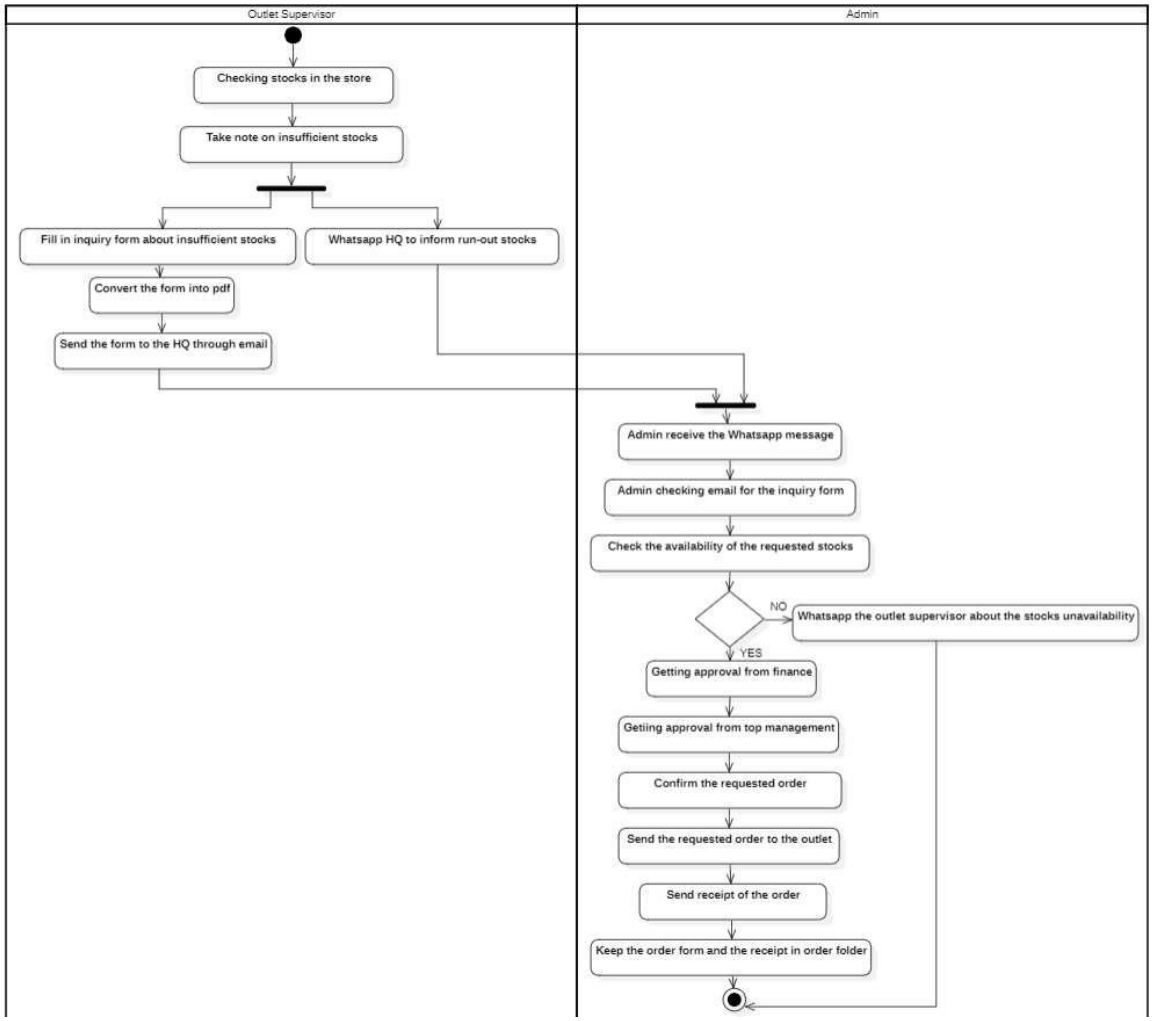
The activity diagram for the " “Requesting Run-Out" process in the Outlet Ordering Distribution System shows plenty ongoing processes. Initially, outlet supervisors perform a stock check to identify insufficiently stocked items. Then they fill out a stock order form and send it to the admin via email and WhatsApp. When the administrator receives the request, he or she looks into the inventory to see if the needed stocks are available. If the stock is unavailable, he or she right away alerts the outlet supervisor by WhatsApp. In case the correct stock is available, the administrator seeks approval from finance and top management. Once authorized, the administrator completes the order, sends it to the outlet, and issues a receipt. Finally, the outlet supervisor receives the requested supplies and the formal receipt, marking the end of the run-out request procedure. This systematic and well-defined activity diagram enables a simplified and effective inventory restocking approach in the Outlet Ordering Distribution System.

1.2 Activity diagram for stocks update



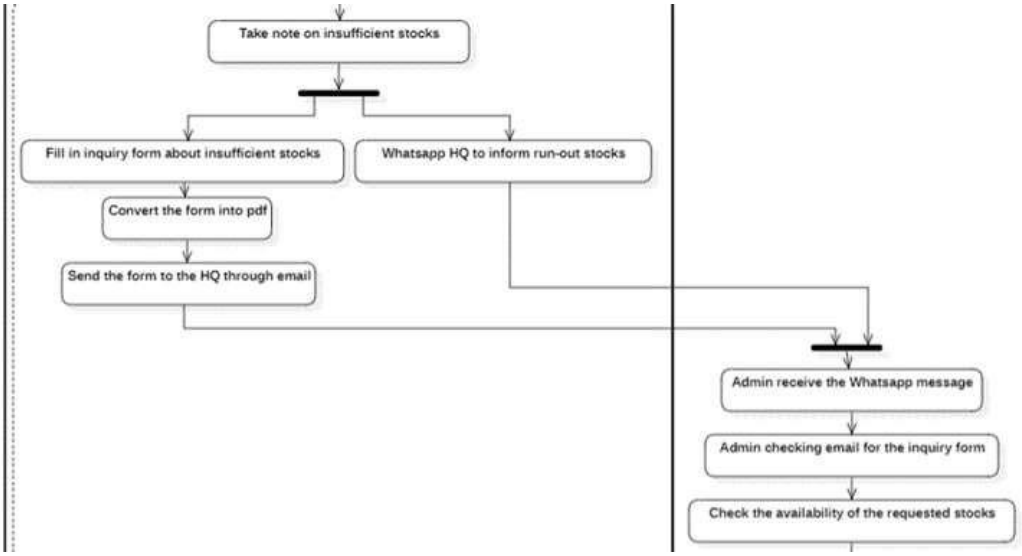
At first, outlet supervisors perform inventory checks to detect stocks with insufficient amounts. They then fill out a stock order form and notify the administrator by email and WhatsApp of the supply shortages. After receiving the request, the administrator checks the stock to ensure that the desired stocks are available. In the event that stock is unavailable, the administrator instantly notifies the outlet supervisor via WhatsApp. If there are sufficient stocks, the administrator requests authorization from finance and upper management. Once approved, the admin confirms the order and sends it to the right outlet. In addition, the administrator changes the stock amounts in an Excel file to ensure that the inventory records accurately reflect current stock quantities. This comprehensive activity diagram illustrates a simple and efficient method for updating stocks in the system, stimulating effective communication and simplified stock management.

1.3 Activity diagram for ordering history



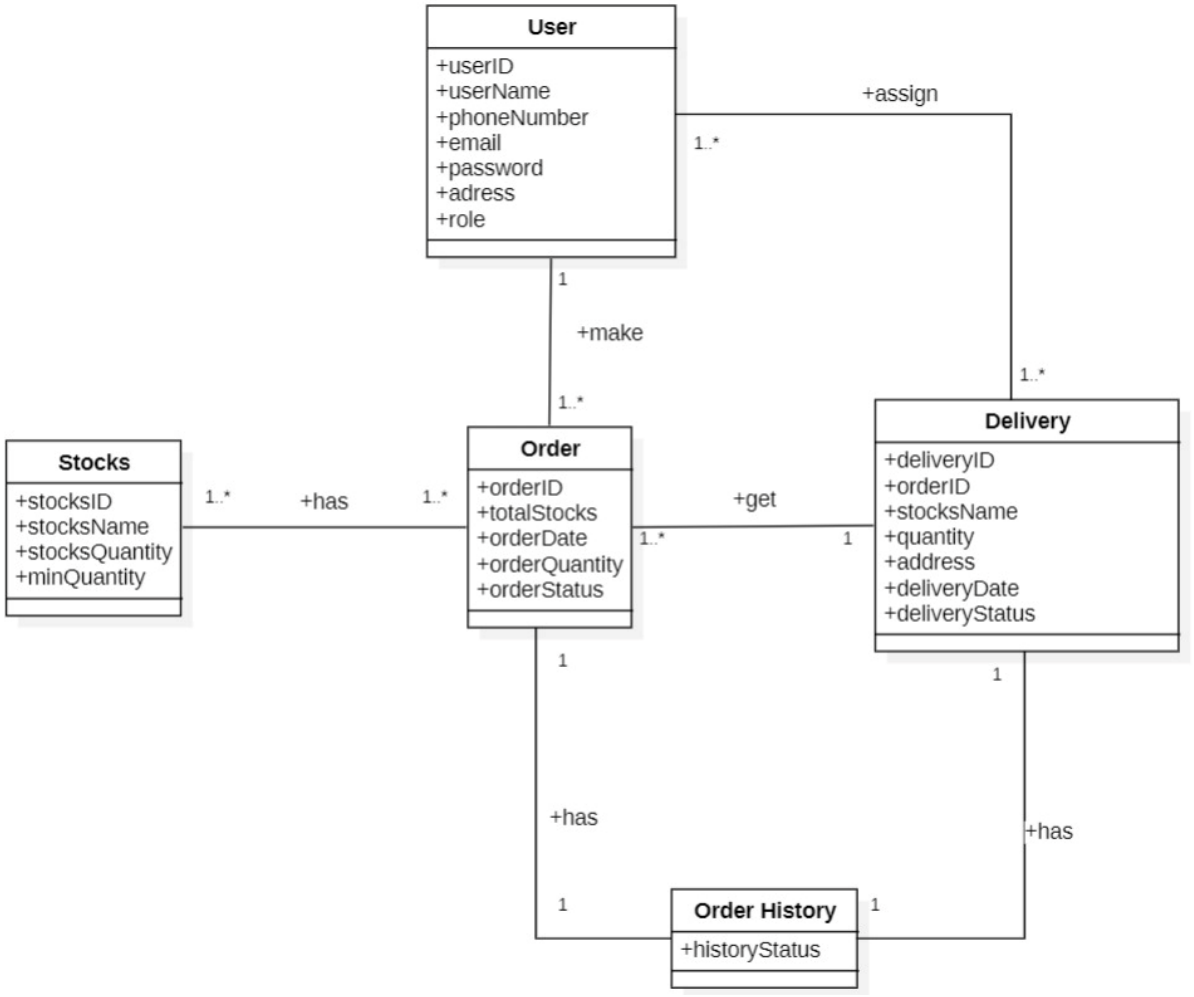
The procedure begins with outlet supervisors conducting stock checks to detect insufficient stocks, followed by completing of a stock order form and notification of stock shortages to the admin by email and WhatsApp. Subsequently, the admin checks the inventory for stock availability and, if it is insufficient, instantly informs the outlet supervisor via WhatsApp. In circumstances when there are sufficient stocks, the administrator obtains permission from finance and upper management before confirming the order and delivering it to the right outlet with a receipt. Importantly, to guarantee a well-organized record-keeping system, the administrator keeps both the order form and the receipt in a dedicated order folder. This activity diagram illustrates a systematic and comprehensive way to keeping order history in the Outlet Ordering Distribution System, enhancing accuracy and ease of access to previous orders.

1.4 Highlighted Activity diagram



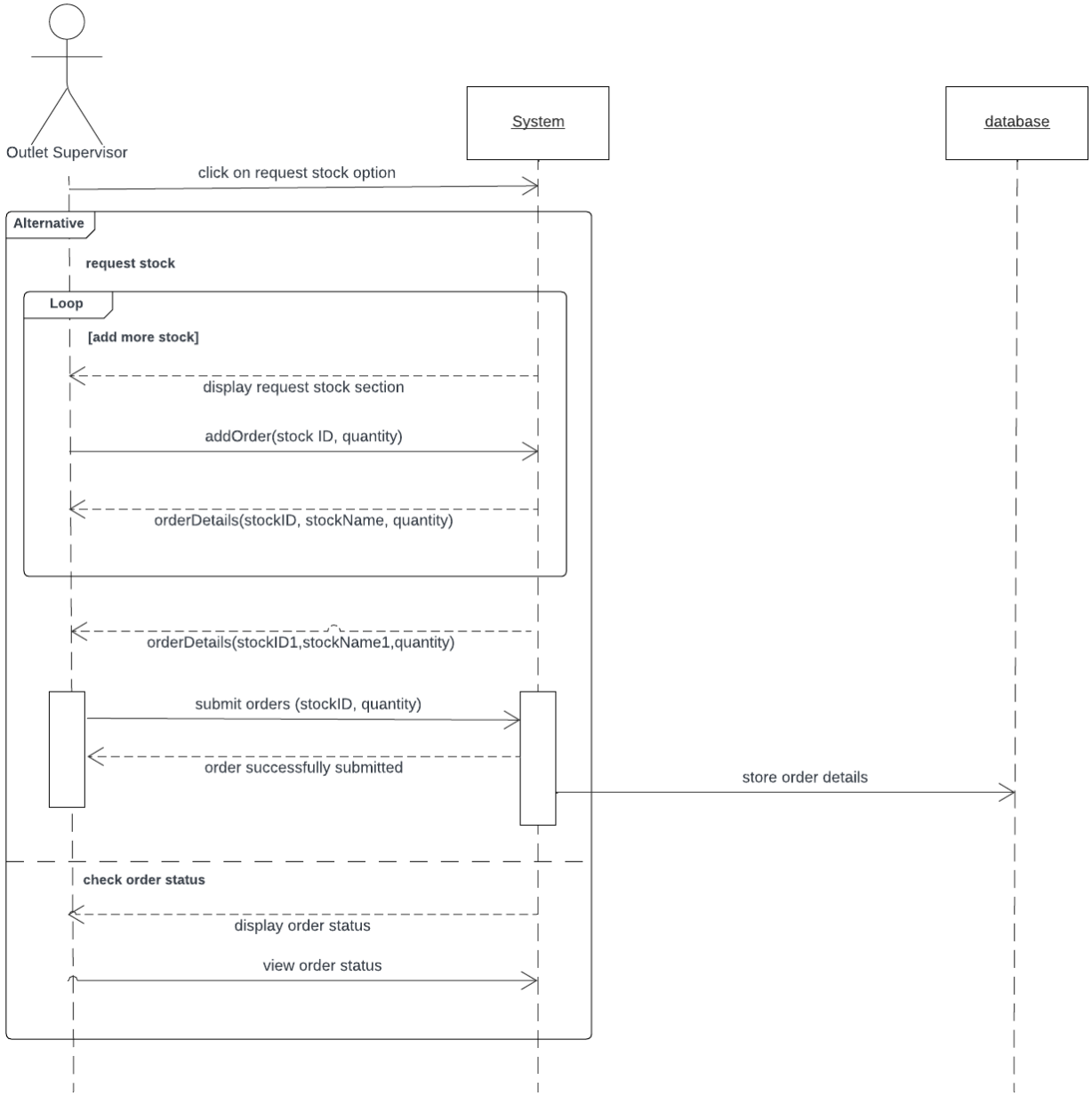
This is the highlighted activity diagram taken from activity diagram from requesting run-out stocks process. It is mainly focused on how the outlet supervisor need to fill out the form and send it to the HQ Admin.

2. Domain Class Diagram

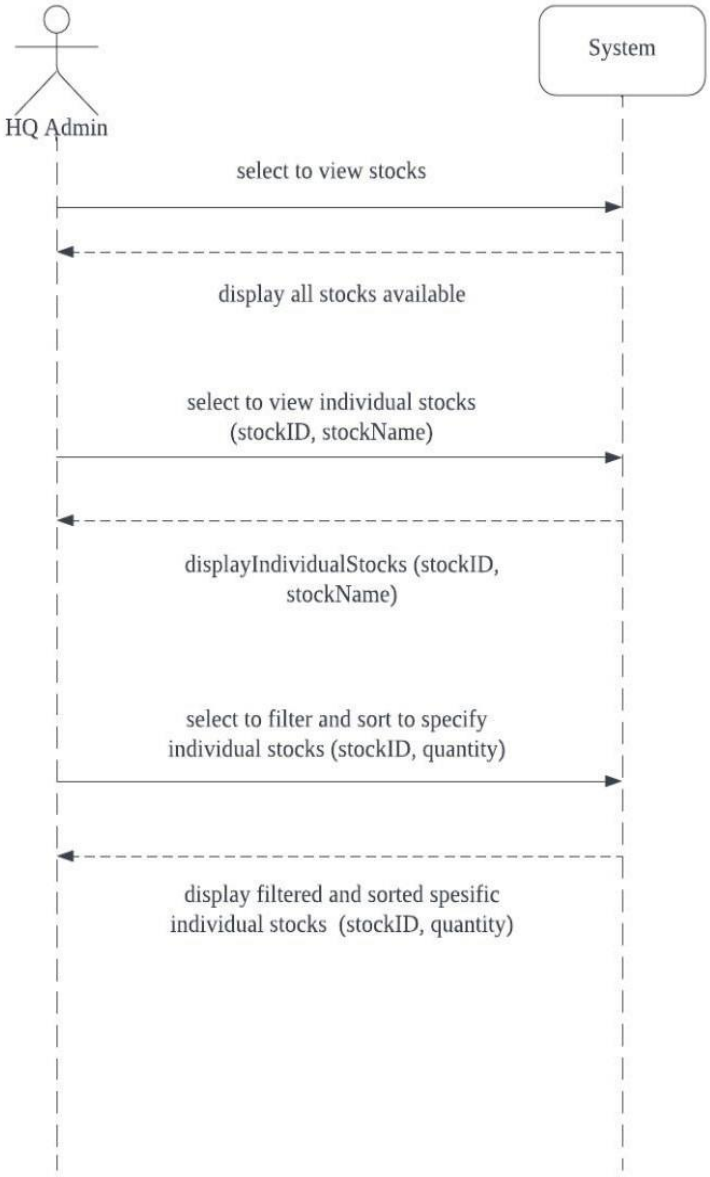


3. System Sequence Diagram

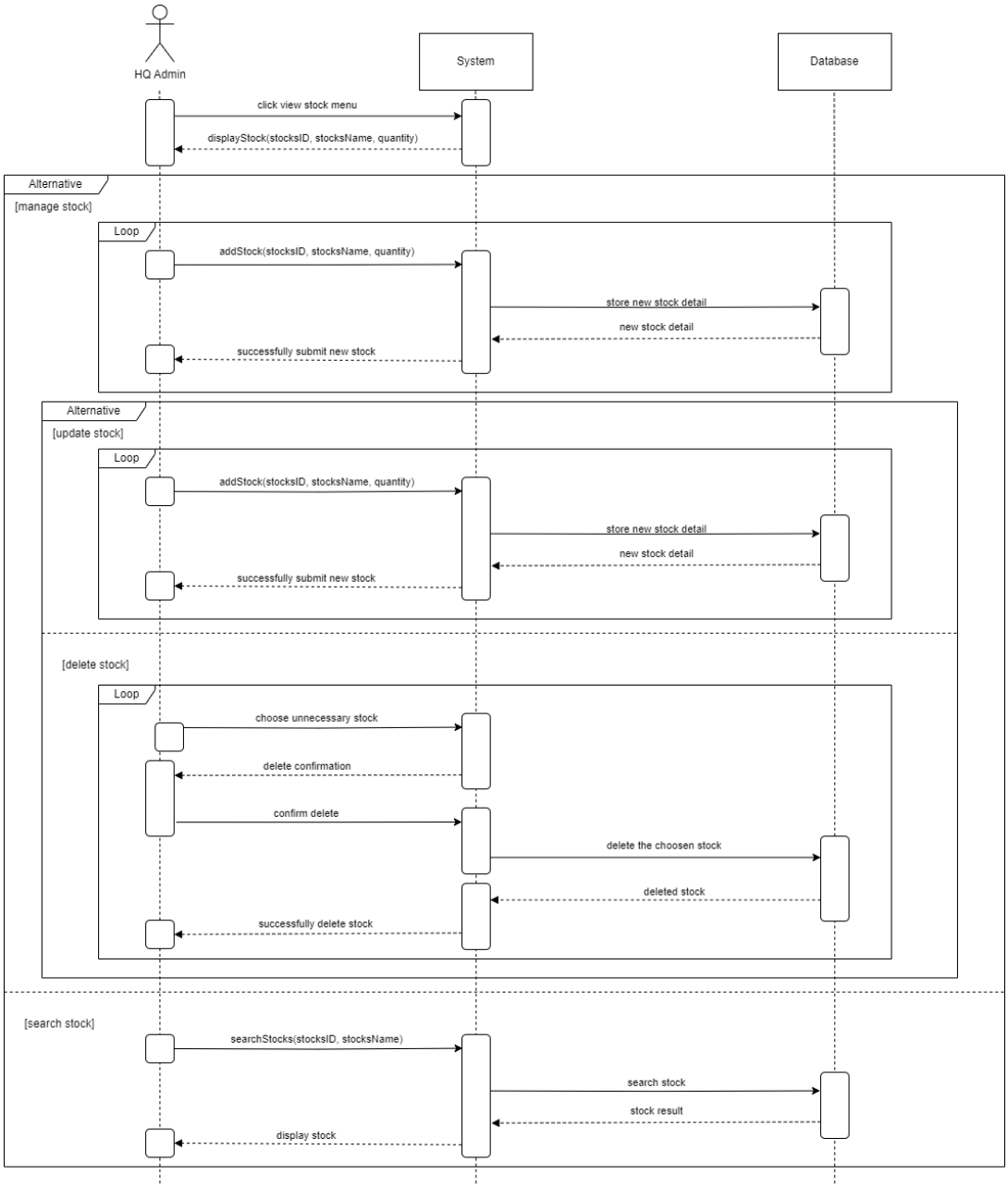
3.1. SRS_UCD001 - Request Stocks



3.2. SRS_UCD002 - View Stocks

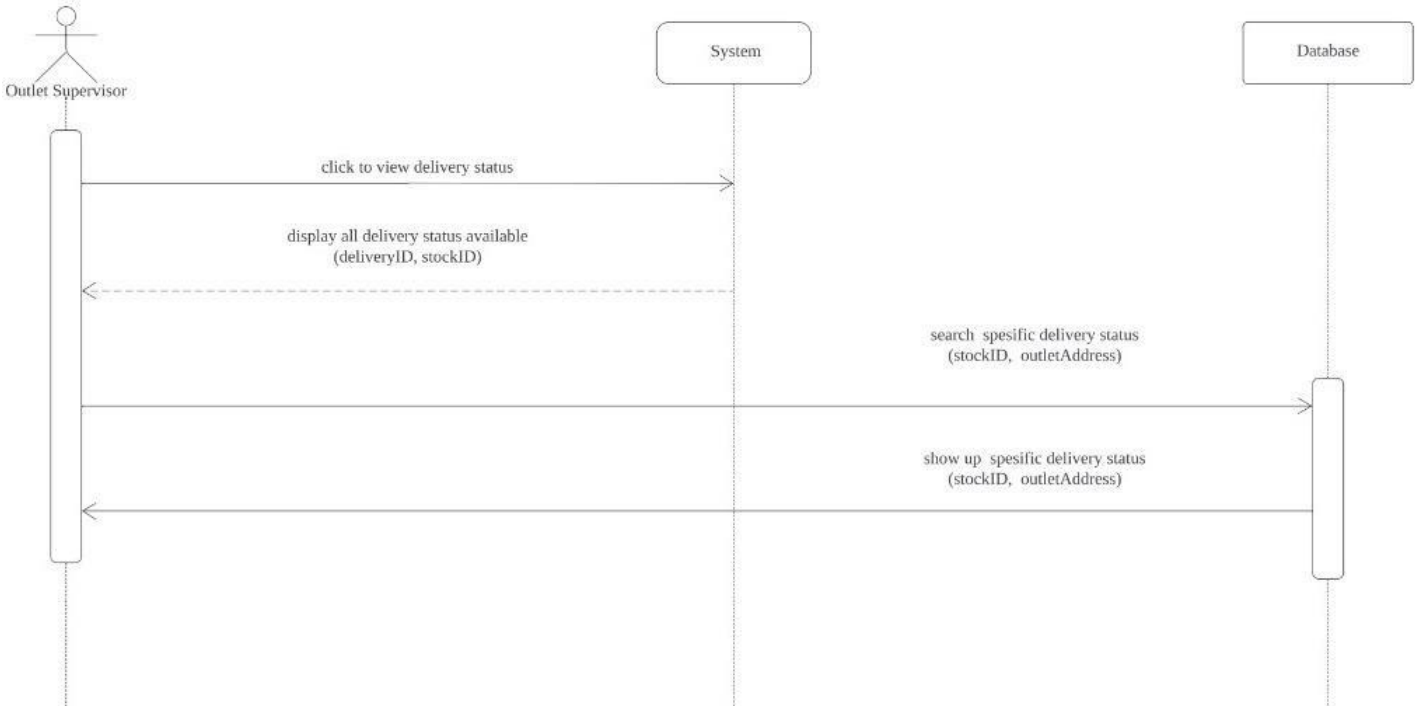


3.3. SRS_UCD003 - Manage Stocks

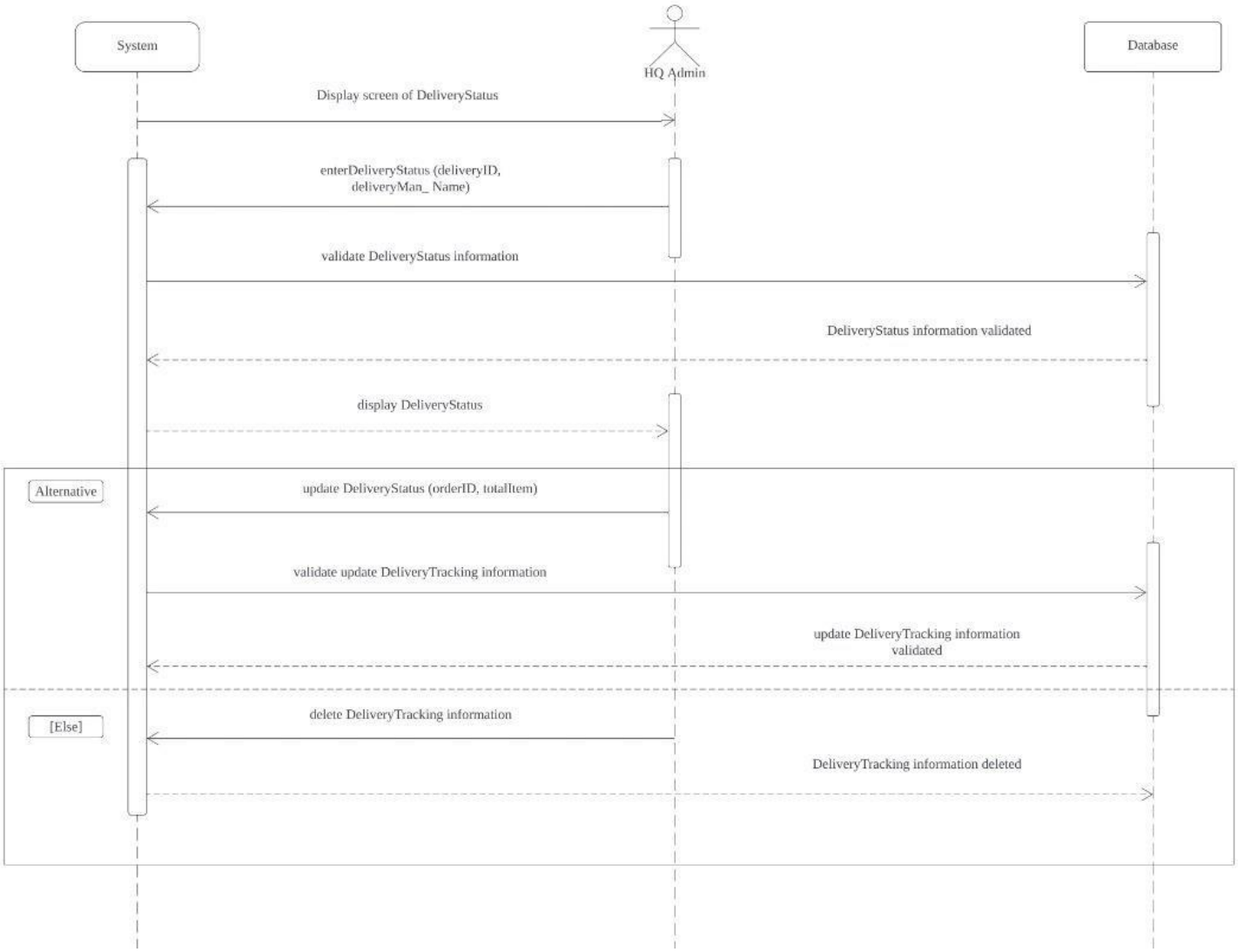


3.4. SRS_UCD004 - Tracking Delivery Status

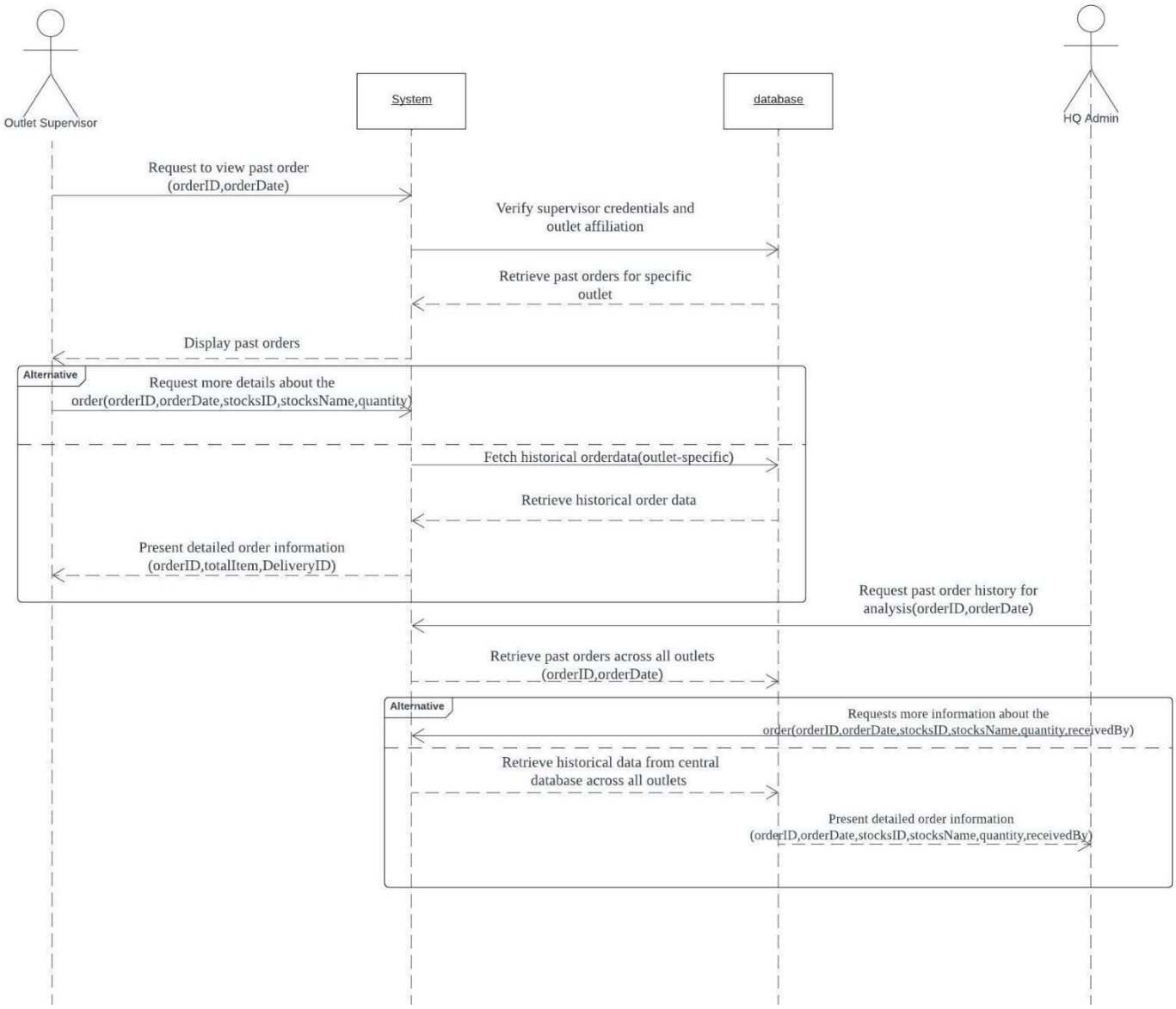
3.4.1 Outlet Supervisor



3.4.2 HQ Admin


System
HQ Admin
Database
Display screen of DeliveryStatus
enterDeliveryStatus (deliveryID, deliveryMan_ Name)
validate DeliveryStatus information
DeliveryStatus information validated
display DeliveryStatus
Alternative
update DeliveryStatus (orderID, totalItem)
validate update DeliveryTracking information
update DeliveryTracking information validated
[Else]
delete DeliveryTracking information
DeliveryTracking information deleted

3.5. SRS_UCD005 - Display Past Order History



Appendix C: Issues List

< No issue or indecisive decision for the time being>