Project Report

Only for Course Teacher						
		Needs Improvement	Developing	Sufficient	Above Average	Total Marks
Allocate Marks & Percentage		25%	50%	75%	100%	25
Problem understanding & Analysis						
Implementation						
Report Writing						
					Total obtained marks	
Comments						

Spring 2025

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Course Code: SE231 **Course Name: System Analysis & Design Capstone Project**

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Introduction

In the dynamic and competitive landscape of modern commerce, the efficient management of delivery operations and customer experiences is critical. The proposed **Online Delivery Management System** is an innovative platform designed to transform the way businesses manage delivery services, enhancing communication, tracking, and operational workflows. This comprehensive system encompasses a wide array of features aimed at improving user convenience, optimizing logistics, and ensuring secure transactions.

Objective

The primary objective of the Online Delivery Management System is to provide a seamless and user-centric platform that caters to the diverse needs of customers, delivery personnel, and administrators. By integrating essential functionalities, the system strives to enhance the entire delivery lifecycle—from order placement and real-time tracking to secure delivery and feedback—while maintaining a strong focus on operational efficiency, customer satisfaction, and data security.

Key Features

- **User Registration and Login**
  The system offers a streamlined registration process for users, including customers, delivery staff, and business owners. Secure login and robust authentication mechanisms ensure data protection, while password recovery options enhance accessibility.
- **Profile Management**
  Customers and delivery personnel can create and manage their profiles, enabling personalized interactions and efficient service delivery. Business owners can configure store profiles, operating hours, and delivery zones.
- **Order Placement and Management**
  Users can browse available products or services, add items to a cart, and place orders with customized delivery instructions. Real-time stock and availability updates help businesses manage resources effectively.
- **Delivery Tracking**
  A dynamic tracking feature allows customers to monitor the status of their orders in real-time—from dispatch to final delivery. Delivery personnel receive optimized routes and timely updates to enhance delivery efficiency.
- **Order Checkout and Payment**
  The system supports various payment gateways for secure online transactions, including UPI, cards, and wallets. Automatic invoicing and payment confirmation enhance transparency and record-keeping.
- **Notification System**
  Real-time notifications keep all parties informed at every step—order confirmation, dispatch, delivery status, and feedback requests. Users can customize notification preferences to suit their needs.
- **Customer Support and Feedback**
  A 24/7 support feature is integrated to address user queries, along with FAQs and instant chat support. Customers can rate delivery experiences and provide feedback to help improve service quality.
- **Security Measures**
  The system employs industry-standard security protocols such as SSL encryption for data protection, role-based access control for users, regular security audits, and safe financial transaction processing.

Scenario Writing

Scenario writing involves describing specific situations or use cases that illustrate how a system or software application will be used by its users. These scenarios help to better understand the system's functionalities, interactions, and outcomes. In the context of the **Online Delivery Management System**, the following scenarios depict typical user interactions:

Scenario-1: Add Profile

Scenario Description:

- Request to create a new user profile
- Provide required fields (name, contact, address, etc.)
- Fill in all necessary information
- Submit the form for profile creation
- Profile added successfully

Scenario-2: Place Order

Scenario Description:

- Request to place a new order
- Browse available items or services
- Select desired items and add to cart
- Enter delivery address and preferred time slot
- Confirm order placement
- Order placed successfully

Scenario-3: Track Delivery

Scenario Description:

- Request to track current order
- Select or enter order ID
- Retrieve real-time delivery status
- View estimated delivery time and route
- Delivery progress updated continuously

Scenario-4: Make Payment

Scenario Description:

- Request to pay for an order
- Provide order ID or select from recent orders
- Choose preferred payment method (UPI, card, wallet, etc.)
- Enter payment details and confirm
- Payment successful and receipt generated

Scenario-5: Submit Feedback

Scenario Description:

- Request to submit feedback after delivery
- Select delivered order

- Rate overall experience and write comments
- Submit feedback form
- Feedback recorded successfully

These scenarios provide practical examples of how different users interact with the **Online Delivery Management System** and how the system responds to their actions. Such scenarios are essential for understanding user behavior, testing functionality, and refining the system to ensure it meets user needs efficiently and effectively.

Stakeholder

The key stakeholders involved in this **Online Delivery Management System** are:

1. **Admin**
   They have elevated privileges to manage the entire system. Their responsibilities include overseeing user accounts (customers, business owners, delivery agents), monitoring system performance, maintaining data security, and providing technical support and helpline assistance.
2. **Business Owner**
   They use the system to manage their store or service offerings. This includes listing products, managing inventory, processing orders, coordinating with delivery agents, and monitoring sales and customer feedback.
3. **Delivery Agent**
   They interact with the system to receive delivery tasks, view delivery addresses, update delivery statuses in real time, and confirm successful deliveries. They play a key role in ensuring timely and efficient order fulfillment.
4. **Customer**
   They use the system to browse products or services, place orders, make secure payments, track their deliveries in real time, and provide feedback on the delivery experience.

User Profile

User Profile-01: Admin

User Class	Notes on Characteristic	Requirement Implied
Type of User	Admin	Verification
Age Range	30-40	Verification
Frequency of Use	Most of the time per day	Performance, Operation, Acceptance
Mandatory	Yes	
Computer Experience	Experienced	Documentation
Education	B. Sc	
Goals	Provide a best service	Resource, Performance, Security, Acceptance, Operation

Language Skills	Bangla, English	
Number of Users	15-20	Performance, Operation, Acceptance, Portability
Training	May accept some training, but be unwilling to repeat it	Documentation
Other System Used	No	
Ways of Working	Full support from the system	Acceptance, Safety, Security, Operation, Maintenance, Portability

User Profile-02: Customers

User Class	Notes on Characteristic	Requirement Implied
Type of User	Customer	Verification
Age Range	25-50	Verification
Frequency of Use	When it need	Performance, Operation, Acceptance
Mandatory	No	
Computer Experience	No	
Goals	Take a good service	Resource, Performance, Security, Acceptance, Operation
Language Skills	Bangla, English	
Number of Users	20-25	Performance, Operation, Acceptance, Portability
Training	No	
Other System Used	No	
Ways of Working	Sometime	Acceptance, Safety, Security, Operation, Maintenance, Portability

User Profile-03: Delivery Agent

User Class	Notes on Characteristic	Requirement Implied
Type of User	Delivery agent	Verification
Age Range	29-35	Verification
Frequency of Use	Most of the time per day	Performance, Operation, Acceptance
Mandatory	Yes	
Computer Experience	Experienced	Documentation
Goals	Make the system easy and user-friendly	Resource, Performance, Security, Acceptance, Operation
Language Skills	Bangla, English, and Computer Language	
Number of Users	15-20	Performance, Operation, Acceptance, Portability

Training	May accept some training, but be unwilling to repeat it	Documentation
Other System Used	No	
Ways of Working	Full support from the system	Acceptance, Safety, Security, Operation, Maintenance, Portability

User Profile-03: Business Owner

User Class	Notes on Characteristic	Requirement Implied
Type of User	Business owner	Verification
Age Range	29-35	Verification
Frequency of Use	Most of the time per day	Performance, Operation, Acceptance
Mandatory	Yes	
Computer Experience	Experienced	Documentation
Goals	Make the system easy and user-friendly	Resource, Performance, Security, Acceptance, Operation
Language Skills	Bangla, English, and Computer Language	
Number of Users	15-20	Performance, Operation, Acceptance, Portability
Training	May accept some training, but be unwilling to repeat it	Documentation
Other System Used	No	
Ways of Working	Full support from the system	Acceptance, Safety, Security, Operation, Maintenance, Portability

Scope

1. **User Registration and Login**
   a. **Objective**: To allow users (customers, business owners, delivery agents, and admins) to register and log in to the system.
   b. **Functionality**: Users will provide necessary information (e.g., name, contact, password) for registration. Secure authentication mechanisms (e.g., email/OTP verification, encrypted passwords) will be implemented. Password recovery options will be available for user convenience.
2. **Add Profile and Update Profile**
   a. Objective: Enable users to create and update their profiles within the system.
   b. Functionality: Users (customers, delivery agents, business owners) can enter and edit personal details, delivery addresses, business information, or availability preferences. Profile updates are reflected in real-time for personalized services.
3. **Place Order**
   a. Objective: Facilitate customers in browsing, selecting, and placing delivery orders.
   b. Functionality: Display available products/services from multiple vendors. Customers can search, filter, and add items to the cart. Orders can be placed with preferred delivery time and address. Order summary and confirmation are shown before final submission.
4. **Track Delivery**
   a. Objective: Provide real-time tracking of ongoing deliveries.
   b. Functionality: After an order is placed, customers can track the status (e.g., order accepted, out for delivery, delivered). Delivery agents can update progress via their interface. Real-time GPS location tracking (if available) can be shown.
5. **Generate Bill and Make Payment**
   a. Objective: Offer a seamless billing and secure payment experience for customers.
   b. Functionality: The system automatically generates bills based on selected items and applicable delivery/service charges. Multiple payment options (e.g., card, UPI, wallet, COD) are provided. Payment status is updated and transaction history is maintained securely.
   a. **Objective:** Offer 24/7 customer support within the system.
   b. **Functionality:** Provide a helpline feature for customers to seek assistance. Access to FAQs and common issues resolution.
6. **Notification System**
   a. Objective: Keep all users (customers, business owners, delivery agents) informed at every key stage.
   b. Functionality: Automated notifications via SMS, email, or in-app alerts for order confirmation, dispatch, delivery, payment status, and promotional updates. Notification preferences can be set by the users.
7. 7. **Helpline and Support**
   a. **Objective**: Provide round-the-clock support and resolve user issues quickly.
   b. **Functionality**: Integrated support system including live chat, support ticket generation, helpline contact, and access to FAQs or common troubleshooting steps.

Feasibility Study

The **Online Delivery Management System (ODMS)** aims to provide a scalable, user-friendly platform that streamlines order placement, tracking, billing, and delivery management for businesses and customers. This feasibility study evaluates the project's viability across technical, operational, economic, and scheduling dimensions.

1.Technical Feasibility:

a. **Hardware Compatibility**:

The ODMS will be designed to run on standard mobile devices, tablets, and desktops commonly used by customers, business owners, and delivery agents. Existing devices will be reviewed for compatibility, and minimal hardware upgrades will be needed.

b. **Software Compatibility**:

The system will be developed to support cross-platform compatibility (Android, iOS, Web). It will integrate with third-party APIs for maps, payment gateways, and SMS/email services. Compatibility with commonly used databases and operating systems will also be ensured.

c. **Technical Expertise**:

Basic training may be needed for delivery agents and business owners. Admins will require moderate technical skills to manage backend operations. Existing teams can be upskilled as needed through short training modules.

2. Operational Feasibility

a. **User Acceptance**:

Feedback from stakeholders (customers, vendors, and delivery staff) indicates a strong demand for a simplified and efficient delivery system. The user interface will be designed for ease of use with minimal onboarding requirements.

b. **Impact on Current Operations**:

The ODMS will enhance current operations by reducing manual work, optimizing delivery time, and improving communication. Temporary adjustments may be needed during implementation, but these will be addressed with proper training and phased rollout.

3. Economic Feasibility

a. **Cost-Benefit Analysis**:

The system will incur costs related to development, deployment, server hosting, and training. However, benefits include faster order processing, reduced errors, higher customer satisfaction, and increased delivery efficiency—leading to long-term cost savings and business growth.

b. **Return on Investment (ROI)**:

ROI is projected to be high due to scalability, automation, and potential increase in orders and repeat customers. Cost recovery is expected within the first 12–18 months after launch, depending on business scale.

4. Scheduling Feasibility

a. **Project Timeline**:

A detailed project timeline will be developed, including planning, development, testing, deployment, and training phases. Implementation can be phased by user group (e.g., start with business owners, then add customers and delivery agents).

b. **Dependencies**:
Dependencies may include third-party service integration (e.g., payment gateways, location APIs), local logistics regulations, and timely access to test data. These will be monitored and managed to prevent delays.

5. Security and Privacy Considerations
a. **Data Encryption**:
All sensitive information (user credentials, payment data, personal details) will be encrypted using SSL and modern security protocols to ensure data integrity and confidentiality.
b. **Compliance**:
The system will comply with data protection laws such as the GDPR (if applicable) and local privacy regulations. Regular security audits and compliance checks will be part of the maintenance process.

Conclusion
The feasibility study concludes that the **Online Delivery Management System** is **technically, operationally, economically, and schedulably viable**. The projected benefits—including improved delivery workflows, user satisfaction, and revenue potential—outweigh the associated costs. Risk mitigation strategies, stakeholder engagement, and phased deployment will be key to successful implementation.

Project Block Diagram

Block Diagram-1: Customer

Figure-1: Block Diagram for Customer

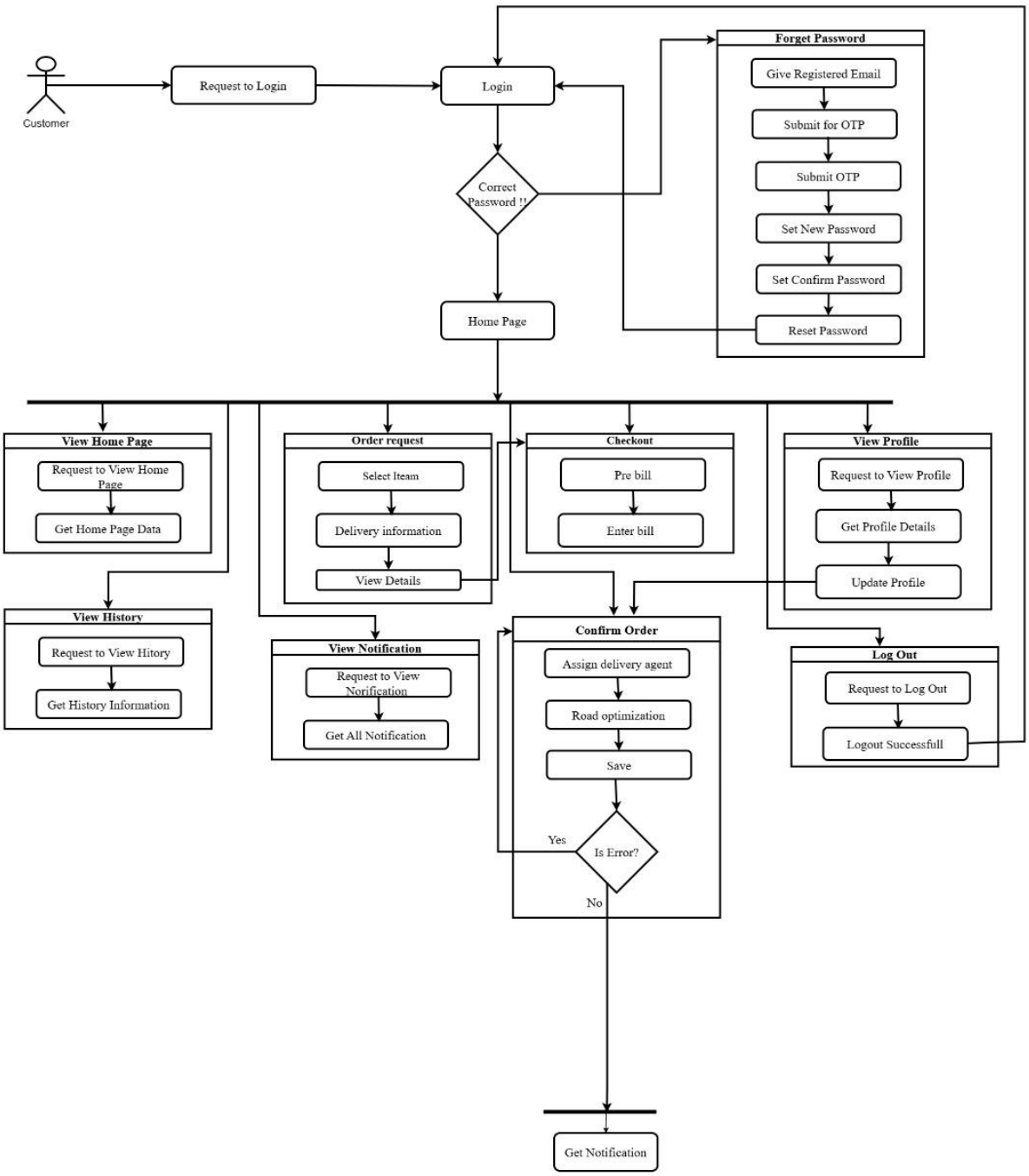

Figure-2: Block Diagram for Customer

Block Diagram-2: Business Owner

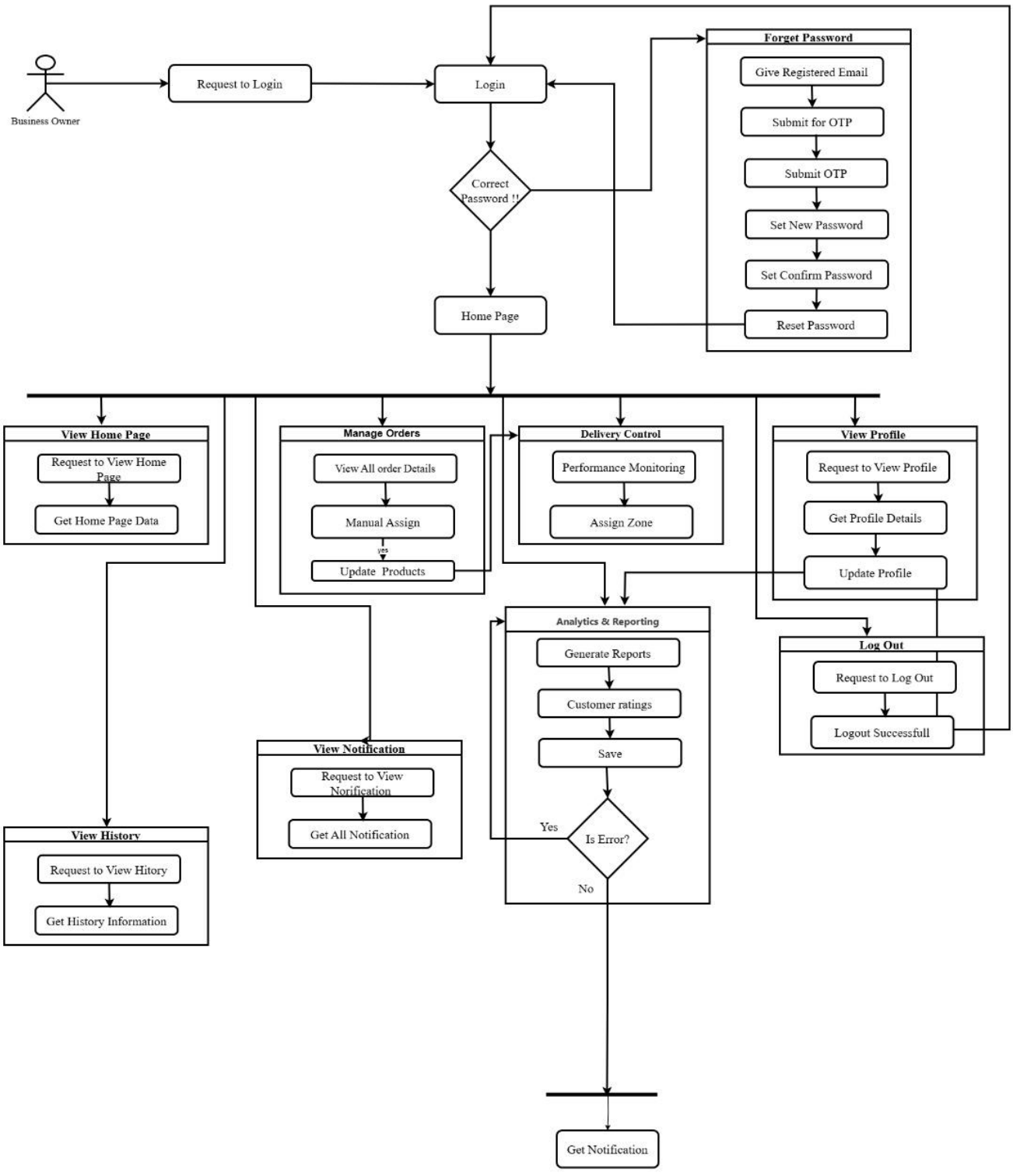

Figure-2: Block Diagram for Business Owner

Block Diagram-3: Delivery Agent

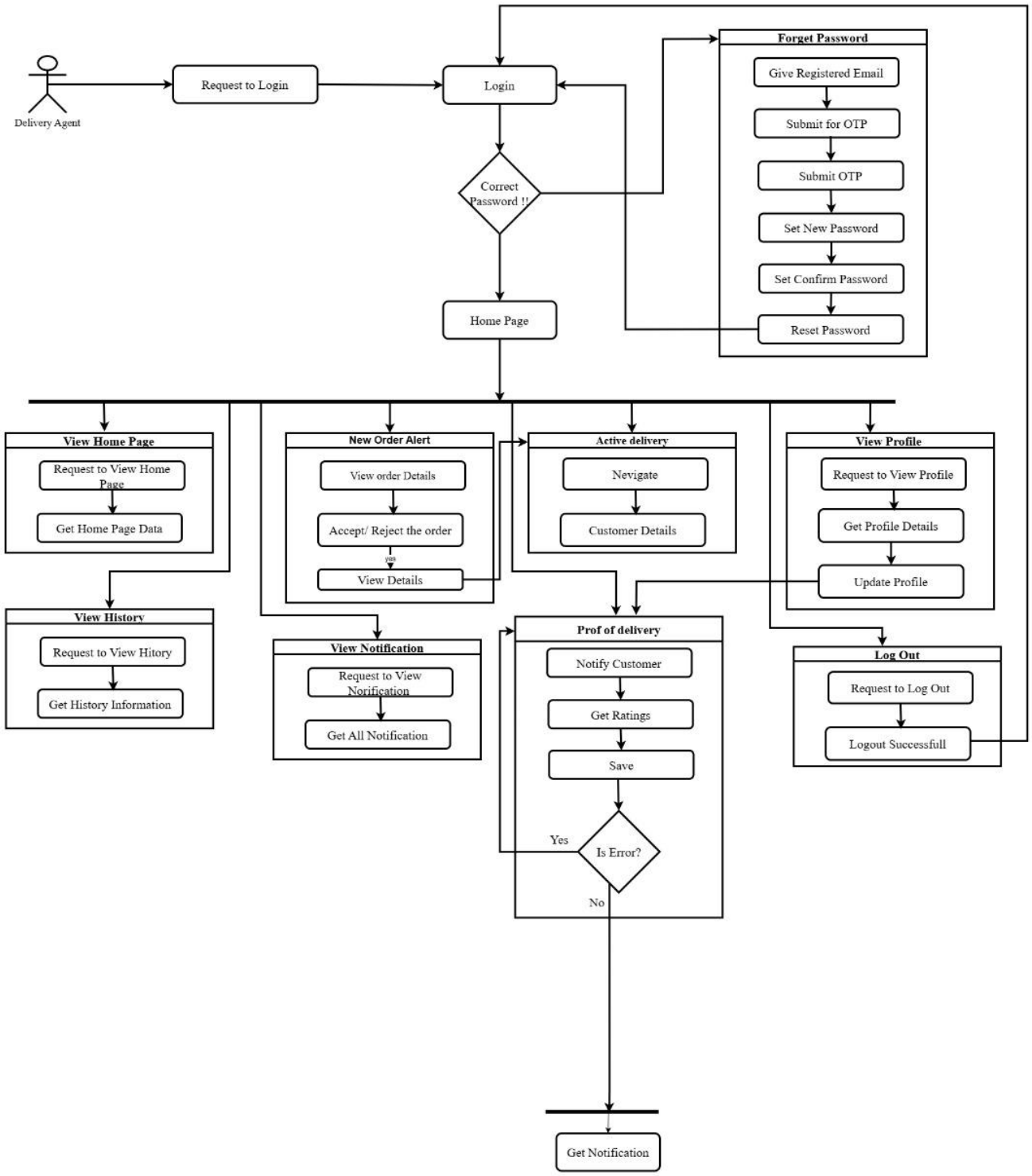

Figure-3: Block Diagram for Delivery Agent

Block Diagram-4: Admin

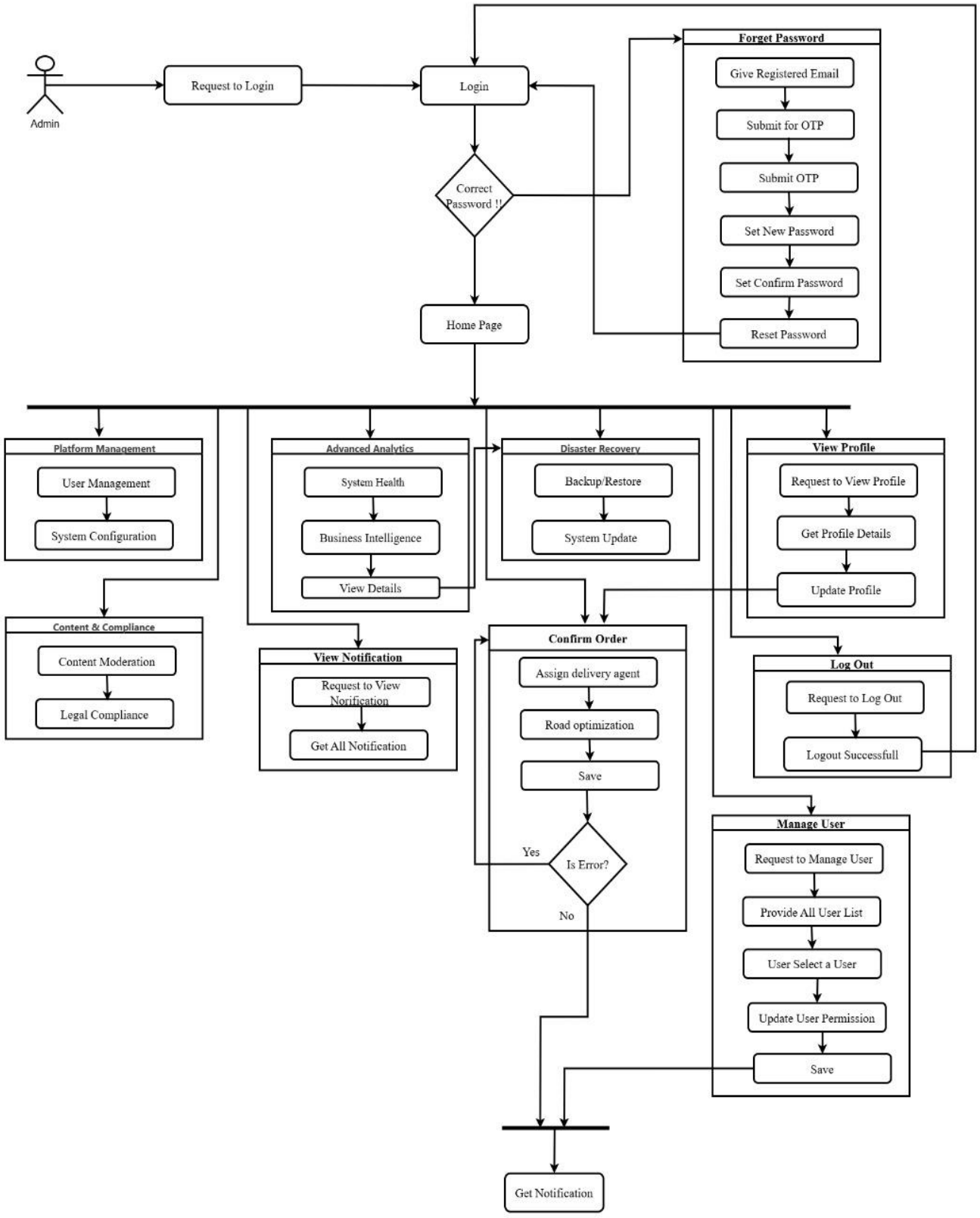

Figure-4: Block Diagram for Admin

Software Requirement Specification

SRS

Use Cases:

1.Sign Up
2.Login & Authentication
3.Manage Profile
4.Delivery Route Optimization
5.Log Out
6.Recover Password
7.Order Placement
8.Secure Payment Processing
9.Inventory Management
10.Order Cancellation
11.Order Assignment & Acceptance
12.Real-Time Order Tracking
13. In-App Notifications & Alerts
14.. Order Delivery Confirmation
15.. Order History & Records
16. Reporting & Analytics
17. Customer Support & Helpdesk
18. Reviews & Ratings

Use case Diagram

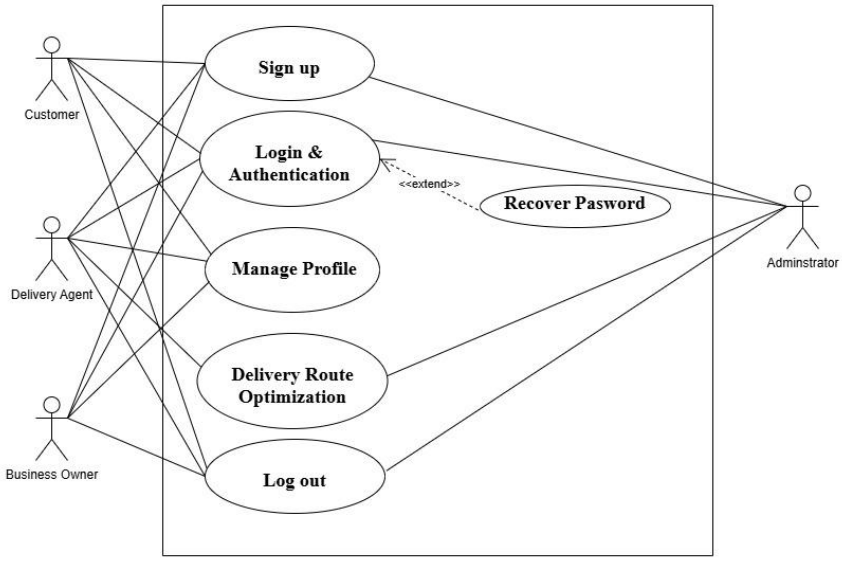

Figure: Use Case Diagram 01

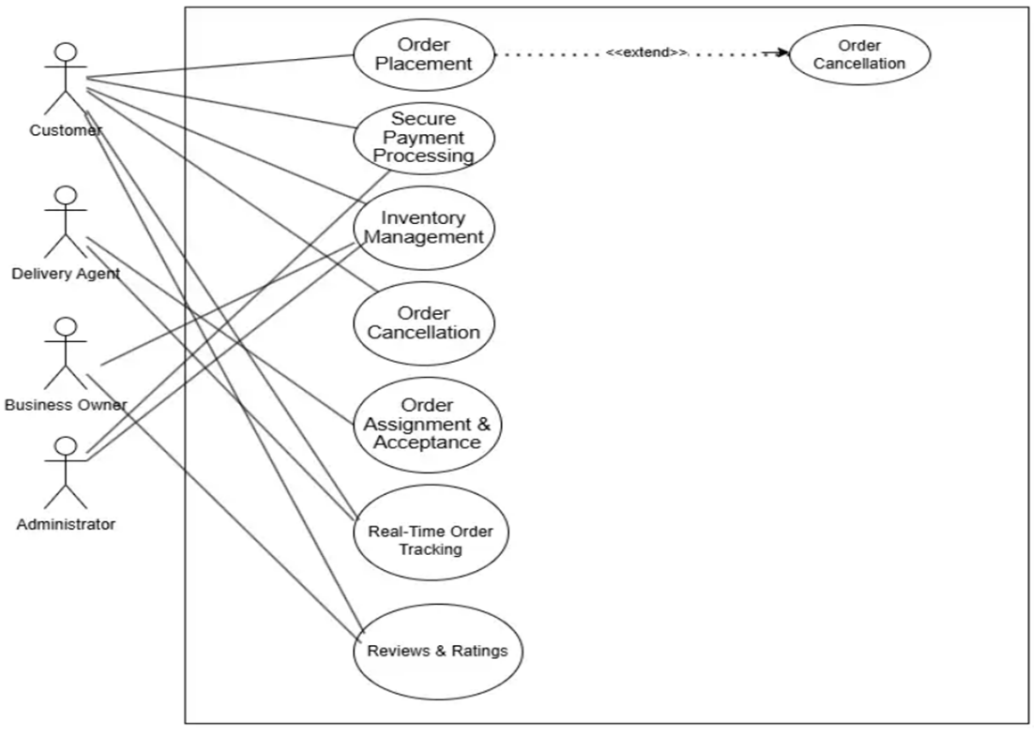

Figure: Use Case Diagram 02

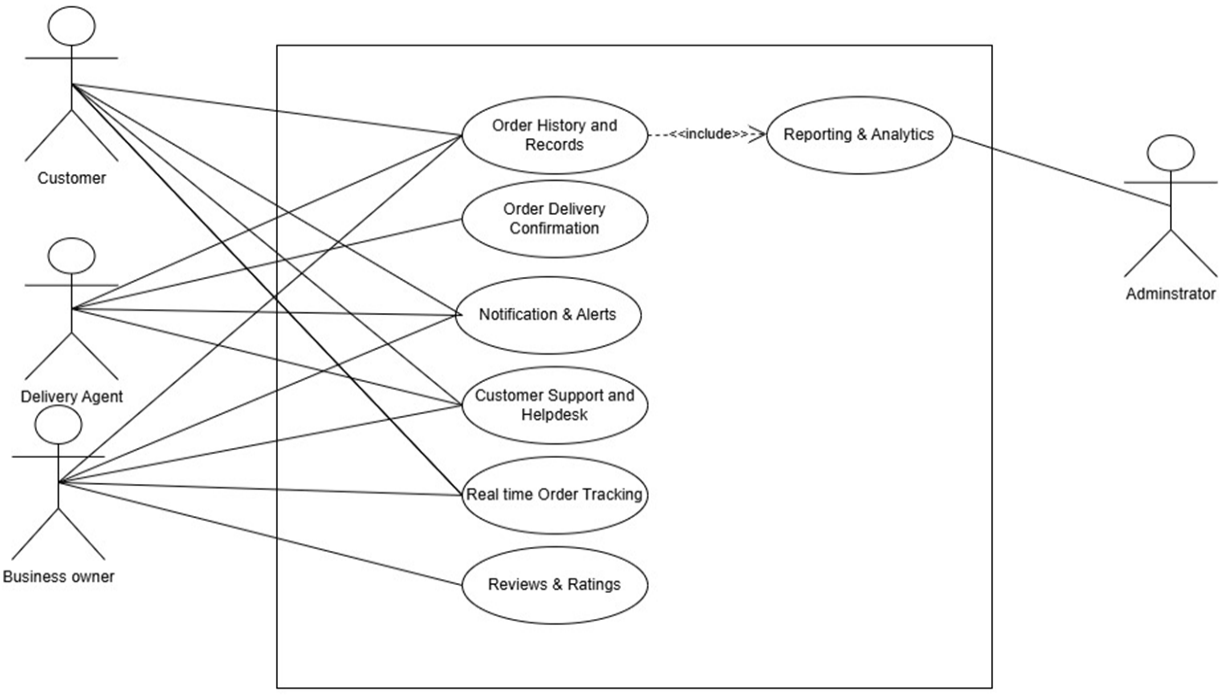

Figure: Use Case Diagram 03

1.

<table>
<tr><td>Use Case</td><td>Sign Up</td></tr>
<tr><td>Goal</td><td>Users can create a new account to access the online delivery management system.</td></tr>
<tr><td>Precondition</td><td>The user is not already registered in the system.
The user has a valid email or phone number.</td></tr>
<tr><td>Success End Condition</td><td>Message: "The user has successfully created an account and can now log in."</td></tr>
<tr><td>Failed End Condition</td><td>Message: "Sign-up is temporarily unavailable."</td></tr>
<tr><td>Primary Actors:

Secondary Actors:</td><td>Customer, Business Owner

Administrator (for reporting purposes)</td></tr>
<tr><td>Trigger</td><td>The user initiates the sign-up process to create an account..</td></tr>
<tr><td>Description / Main Success Scenario</td><td>
<table>
<tr><td>1.</td><td>The user navigates to the sign-up page</td></tr>
<tr><td>2.</td><td>The system prompts the user to enter required details (e.g., name, email, phone number, password).</td></tr>
<tr><td>3.</td><td>The user provides the required information and submits the form</td></tr>
<tr><td>4.</td><td>The system validates the details (checks for duplicate accounts, email/phone format, and password strength)</td></tr>
<tr><td>5.</td><td>If required, the system sends a verification code via email or SMS</td></tr>
<tr><td>6.</td><td>The user enters the verification code to confirm their identity.</td></tr>
<tr><td>7.</td><td>The system successfully creates the account.</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td>Alternative Flows</td><td>
<table>
<tr><td>2.1</td><td>The user enters an invalid email or phone number</td></tr>
<tr><td></td><td>2.1.a. Message: "Please enter a valid email or phone number."</td></tr>
<tr><td>3.1</td><td>The user attempts to register with an already existing email or phone number.</td></tr>
<tr><td></td><td>3.1.a. Message: "An account with this email/phone number already exists. Please log in or reset your password."</td></tr>
<tr><td>3.2</td><td>The password does not meet security requirements.</td></tr>
<tr><td></td><td>3.2.a. Message: "Password must contain at least 8 characters, including uppercase, lowercase, and a number."</td></tr>
<tr><td>4.1</td><td>The verification code is not received by the user.</td></tr>
<tr><td></td><td>4.1.a. massage: Message: "Check your spam folder or request a new verification code."</td></tr>
<tr><td>5.1</td><td>The user enters an incorrect verification code.</td></tr>
<tr><td></td><td>5.1.a. Message: "Invalid code. Please enter the correct verification code sent to your email or phone."</td></tr>
<tr><td>5.2</td><td>The system encounters an error while creating the account</td></tr>
<tr><td></td><td>5.2.a. massage: Message: "Something went wrong. Please try again later."</td></tr>
</table>
</td></tr>
<tr><td>Quality Requirements</td><td>The sign-up process should take no longer than 2 minutes.
Verification codes should be delivered within 30 seconds.
User data should be securely stored and encrypted
The sign-up process should take no longer than 2 minutes.</td></tr>
</table>

2.

<table>
<tr><td>Use Case</td><td>Login & Authentication</td></tr>
<tr><td>Goal</td><td>Users can securely log into the online delivery management system to access their accounts and manage orders</td></tr>
<tr><td>Precondition</td><td>The user is already registered in the system.
The user has a valid email/phone number and password</td></tr>
<tr><td>Success End Condition</td><td>Message: "The user has successfully logged into the system.</td></tr>
<tr><td>Failed End Condition</td><td>Message: "Login failed. Please check your credentials or try again later."</td></tr>
<tr><td>Primary Actors:

Secondary Actors:</td><td>Customer, Business Owner, Delivery agent

Administrator (for reporting purposes)</td></tr>
<tr><td>Trigger</td><td>The user initiates the login process by entering their credentials</td></tr>
<tr><td>Description / Main Success Scenario</td><td>
<table>
<tr><td>1.</td><td>The user navigates to the login page.</td></tr>
<tr><td>2.</td><td>The system prompts the user to enter their email/phone number and password.</td></tr>
<tr><td>3.</td><td>The user provides the required credentials and submits the form.</td></tr>
<tr><td>4.</td><td>The system validates the credentials against stored records</td></tr>
<tr><td>5.</td><td>If enabled, the system sends a one-time password (OTP) for additional authentication.</td></tr>
<tr><td>6.</td><td>The user enters the OTP to verify their identity. The user enters the OTP to verify their identity.</td></tr>
<tr><td>7.</td><td>The system successfully logs the user into their account.</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td>Alternative Flows</td><td>
<table>
<tr><td>2.1</td><td>The user enters an invalid email or phone number.</td></tr>
<tr><td></td><td>2.1.a. Message: "Please enter a valid email or phone number."</td></tr>
<tr><td>3.1</td><td>The system detects multiple failed login attempts.</td></tr>
<tr><td></td><td>3.1.a. Message: "Too many failed attempts. Your account has been temporarily locked.</td></tr>
<tr><td>3.2</td><td>The OTP is not received by the user.</td></tr>
<tr><td></td><td>3.2.a. Message: "Check your spam folder or request a new OTP."</td></tr>
<tr><td>4.1</td><td>The user enters an incorrect OTP.</td></tr>
<tr><td></td><td>4.1.a. massage: Message: "Invalid OTP. Please enter the correct code sent to your email or phone.</td></tr>
<tr><td>5.1</td><td>The system encounters an authentication error.</td></tr>
<tr><td></td><td>5.1.a Message: "Authentication service is temporarily unavailable. Please try again later."</td></tr>
<tr><td>5.2</td><td>The system encounters an error while creating the account</td></tr>
<tr><td></td><td>5.2.a. massage: Message: "Something went wrong. Please try again later."</td></tr>
</table>
</td></tr>
<tr><td>Quality Requirements</td><td>Users should be able to log in within 10 seconds.
OTPs should be delivered within 30 seconds.
User credentials should be securely encrypted and stored.
The system should lock the account after 5 consecutive failed login attempts for security</td></tr>
</table>

3.

Use Case	**Manage profile**
Goal	Users can create a new account to access the online delivery management system.
Precondition	The user is not already registered in the system. The user has a valid email or phone number.

<table>
<tr><td>Success End Condition</td><td>Message: "The user has successfully created an account and can now log in."</td></tr>
<tr><td>Failed End Condition</td><td>Message: "Sign-up is temporarily unavailable."</td></tr>
<tr><td>Primary Actors:

Secondary Actors:</td><td>Customer, Business Owner

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<table>
<tr><td>1.</td><td>The user navigates to the sign-up page</td></tr>
<tr><td>2.</td><td>The system prompts the user to enter required details (e.g., name, email, phone number, password).</td></tr>
<tr><td>3.</td><td>The user provides the required information and submits the form</td></tr>
<tr><td>4.</td><td>The system validates the details (checks for duplicate accounts, email/phone format, and password strength)</td></tr>
<tr><td>5.</td><td>If required, the system sends a verification code via email or SMS</td></tr>
<tr><td>6.</td><td>The user enters the verification code to confirm their identity.</td></tr>
<tr><td>7.</td><td>The system successfully creates the account.</td></tr>
</table>
</td></tr>
<tr><td>Alternative Flows</td><td>
<table>
<tr><td>2.1</td><td>The user enters an invalid email or phone number</td></tr>
<tr><td></td><td>2.1.a. Message: "Please enter a valid email or phone number."</td></tr>
<tr><td>3.1</td><td>The user attempts to register with an already existing email or phone number.</td></tr>
<tr><td></td><td>3.1.a. Message: "An account with this email/phone number already exists. Please log in or reset your password."</td></tr>
<tr><td>3.2</td><td>The password does not meet security requirements.</td></tr>
<tr><td></td><td>3.2.a. Message: "Password must contain at least 8 characters, including uppercase, lowercase, and a number."</td></tr>
</table>
</td></tr>
</table>

	4.1 The verification code is not received by the user. 4.1.a. massage: **Message:** "Check your spam folder or request a new verification code." 5.1 The user enters an incorrect verification code. 5.1.a. **Message:** "Invalid code. Please enter the correct verification code sent to your email or phone." 5.2 The system encounters an error while creating the account 5.2.a. massage: **Message:** "Something went wrong. Please try again later."
Quality Requirements	The sign-up process should take no longer than 2 minutes. Verification codes should be delivered within 30 seconds. User data should be securely stored and encrypted The sign-up process should take no longer than 2 minutes.

4.

Use Case	**Delivery Road Optimization**
Goal	The system optimizes delivery routes to ensure the fastest and most efficient delivery, reducing time and fuel costs
Precondition	The delivery agent is logged into the system. Active delivery orders exist in the system.
Success End Condition	**Message:** "The delivery route has been successfully optimized and assigned to the delivery agent."
Failed End Condition	**Message:** "Route optimization is temporarily unavailable."
Primary Actors: Secondary Actors:	Delivery agent Business Owner, Administrator (for reporting purposes)
Trigger	A new delivery request is assigned, or an agent requests an optimized route
Description / Main Success Scenario	1. The system retrieves active delivery orders and their locations

	2. The system calculates the most efficient delivery route using GPS and traffic data 3. The optimized route is displayed to the delivery agent 4. The delivery agent follows the recommended route 5. The system provides real-time updates on traffic conditions and suggests alternate routes if needed. 6. The delivery agent completes the deliveries efficiently. 7. The system logs the delivery route data for future analysis.
Alternative Flows	2.1 The system fails to retrieve active delivery orders.. 2.1.a. **Message:** "No active deliveries found. Please check again later." 3.1 The system cannot access GPS or traffic data.. 3.1.a **Message:** "GPS service is unavailable. Using the default route." 3.2 The delivery agent encounters an unexpected roadblock or delay 3.2.a. **Message:** "Rerouting... please wait while we calculate a new path." 4.1 The system fails to provide real-time updates. 4.1.a. **Message:** "Live traffic updates are temporarily unavailable." 5.1 The system encounters an authentication error. 5.1.a **Message:** "Authentication service is temporarily unavailable. Please try again later." 5.2 The system encounters an error while creating the account 5.2.a. massage: **Message:** "Something went wrong. Please try again later."

Quality Requirements	The system should optimize routes within 5 seconds. Delivery time should be reduced by at least 20% using optimized routes. Traffic updates should refresh every 30 seconds. The system should suggest alternative routes in case of delays

5.

Use Case	**Log out**
Goal	Users can securely log out of the online delivery management system to end their session and protect their account.
Precondition	The user is logged into the system.
Success End Condition	**Message:** "The user has successfully logged out of the system."
Failed End Condition	**Message:** "Logout failed. Please try again later."
Primary Actors: Secondary Actors:	Customer, Business Owner, Delivery Ageent Administrator (for reporting purposes)
Trigger	The user initiates the log-out process by selecting the "Log Out" option.
Description / Main Success Scenario	1. The user clicks the "Log Out" button. 2. The system confirms the user's request to log out. 3. The system securely terminates the user session. 4. The system clears session-related data from the device.

	5. The user is redirected to the login page 6. A confirmation message is displayed..
Alternative Flows	2.1 The system does not respond to the log-out request. 2.1.a. **Message:** "Logout request failed. Please try again." 3.1 The system encounters an error while terminating the session. 3.1.a. **Message:** "There was an issue ending your session. Please try again later." 3.2 The system fails to clear session-related data. **Message:** "Some session data may not have been cleared. Please restart your browser for security. 4.1 The user is not redirected to the login page 4.1.a. **Message:** "Logout successful, but redirection failed. Please go to the login page manually."
Quality Requirements	The logout process should complete within 3 seconds. User session data should be cleared securely. Users should be automatically logged out after a period of inactivity (e.g., 30 minutes)

6.

Use Case	**Recover Password**
Goal	Users can securely reset their password if they forget their login credentials.
Precondition	The user has a registered account in the system. The user has access to their registered email or phone number.
Success End Condition	**Message:** "The user has successfully reset their password and can now log in."
Failed End Condition	**Message:** "Password recovery is temporarily unavailable."

<table>
<tr><td>Primary Actors:

Secondary Actors:</td><td>Customer, Business Owner, Delivery agent

Administrator (for security monitoring and account recovery support)</td></tr>
<tr><td>Trigger</td><td>The user initiates the password recovery process by selecting "Forgot Password."</td></tr>
<tr><td>Description / Main Success Scenario</td><td>
<table>
<tr><td>1.</td><td>The user clicks on "Forgot Password" on the login page.</td></tr>
<tr><td>2.</td><td>The system prompts the user to enter their registered email or phone number</td></tr>
<tr><td>3.</td><td>The user provides the required details and submits the request.</td></tr>
<tr><td>4.</td><td>The system verifies the provided details and generates a password reset link or OTP</td></tr>
<tr><td>5.</td><td>The system sends the reset link via email or the OTP via SMS.</td></tr>
<tr><td>6.</td><td>The user clicks the reset link or enters the OTP.</td></tr>
<tr><td>7.</td><td>The system prompts the user to create a new password.</td></tr>
<tr><td>8.</td><td>The user successfully resets their password and can log in with the new credentials.</td></tr>
</table>
</td></tr>
<tr><td>Alternative Flows</td><td>
<table>
<tr><td>2.1</td><td>The user enters an unregistered email or phone number..</td></tr>
<tr><td></td><td>2.1.a Message: "No account found with this email/phone number."</td></tr>
<tr><td>3.1</td><td>The system encounters an error while generating the reset link or OTP.</td></tr>
<tr><td></td><td>3.1.a. Message: "Unable to process the request. Please try again later."</td></tr>
<tr><td>3.2</td><td>The user does not receive the reset link or OTP.</td></tr>
<tr><td></td><td>3.2.a "Check your spam folder or request a new reset link/OTP."</td></tr>
<tr><td>4.1</td><td>The user enters an incorrect or expired OTP.</td></tr>
</table>
</td></tr>
</table>

	<table><tr><td></td><td>4.1.a **Message:** "Invalid or expired OTP. Please request a new one."</td></tr><tr><td>5.1</td><td>The new password does not meet security requirements.</td></tr><tr><td></td><td>5.1. **Message:** "Password must contain at least 8 characters, including uppercase, lowercase, and a number."</td></tr><tr><td>5.2</td><td>The system fails to update the password.</td></tr><tr><td></td><td>5.2.a. **Message:** "Something went wrong. Please try again later."</td></tr></table>
Quality Requirements	The password reset process should be completed within 5 minutes. Reset links and OTPs should be valid for at least 10 minutes. New passwords should be encrypted and stored securely. The system should lock accounts after multiple failed reset attempts for security.

7.

Use Case	Order Placement
Goal	Users can place orders by selecting items, specifying delivery details, and confirming their purchase.
Precondition	User must be logged in to the application.
Success End Condition	The user has successfully placed an order.
Failed End Condition	Order placement failed. Please try again later.
Primary Actors: Secondary Actors:	Customer System
Trigger	The user initiates an order placement.
Description / Main Success Scenario	<table><tr><td>1.</td><td>The user selects the desired items.</td></tr></table>

	2. The system displays the order summary. 3. The user provides delivery details. 4. The user confirms the order. 5. The system processes the order and provides confirmation. 6. The user has successfully placed the order.
Alternative Flows	2.1 **2.1** System fails to display the order summary. 2.1.a Message: "Technical issue, please try again later." 3.1 3.1 User cannot enter delivery details. 3.1.a Message: "Check your internet connection." 3.1.b.massage: ‘‘Try again later.’’ 3.2 The user can not find a specific room category from the list. 3.2.a. massage: ‘‘Back to the home page.’’ 4.1 **4.1** Order confirmation 4.1.a. massage: ‘‘Something went wrong, try again later’’ 5.1 The user can not select a specific room category to view more detailed information. 5.1.a. massage: ‘‘Check your internet connection.’’ 5.2 The user can not find a specific room category to view more detailed information. 5.2.a. massage: ‘‘Try again later.’’ 6.1 The user can not explore other room categories or return to the main room category view.

	<table><tr><td></td><td>6.1.a. massage: ‘‘Check your internet connection.’’</td></tr><tr><td>7.1</td><td>The user has not successfully viewed the available room categories.</td></tr><tr><td></td><td>7.1.a message: ‘‘The room categories are temporarily unavailable.’’</td></tr></table>
Quality Requirements	Users should be able to place an order within 1-2 minutes (not 40-50 minutes.

8.

Use Case	Secure Payment Processing
Goal	Ensure that customers can securely complete payments for their orders.
Precondition	The user must have an active order and a valid payment method.
Success End Condition	"The user has successfully completed the payment."
Failed End Condition	"Payment processing failed. Please try again later."
Primary Actors: Secondary Actors:	Customer 1.Payment Gateway 2.System
Trigger	The user initiates payment for an order.

<table>
<tr><td>Description / Main Success Scenario</td><td>
<table>
<tr><td>1.</td><td>The user selects a payment method.</td></tr>
<tr><td>2.</td><td>The system redirects the user to a secure payment gateway.</td></tr>
<tr><td>3.</td><td>The user enters payment details and confirms the transaction.</td></tr>
<tr><td>4.</td><td>1. The payment gateway processes the transaction.</td></tr>
<tr><td>5.</td><td>The system verifies payment success and updates order status.</td></tr>
<tr><td>6.</td><td>The user receives a payment confirmation.</td></tr>
</table>
</td></tr>
<tr><td>Alternative Flows</td><td>
<table>
<tr><td>2.1</td><td>2.1 System fails to redirect to the payment gateway.</td></tr>
<tr><td></td><td>2.1.a Message: "Technical issue, please try again later."</td></tr>
<tr><td>3.1</td><td>User enters incorrect payment details</td></tr>
<tr><td></td><td>3.1.a Message: "Invalid payment information. Please re-enter details."</td></tr>
<tr><td></td><td>3.1.b.massage: ‘‘Try again later.’’</td></tr>
<tr><td>3.2</td><td>The user can not find a specific room category from the list.</td></tr>
<tr><td></td><td>3.2.a. massage: ‘‘Back to the home page.’’</td></tr>
<tr><td>4.1</td><td>4.1 Payment gateway fails to process the transaction.</td></tr>
<tr><td></td><td>4.1.a Message: "Payment failed. Check your card details or balance”</td></tr>
<tr><td>5.1</td><td>5.1 System fails to verify payment success.</td></tr>
<tr><td></td><td>5.1.a. massage: "Transaction verification failed. Please contact support."</td></tr>
</table>
</td></tr>
</table>

	5.2 The user can not find a specific room category to view more detailed information. 5.2.a. massage: ‘‘Try again later.’’
Quality Requirements	Payment processing should be completed within **30-60 seconds**. Transaction confirmation should be provided within **5-10 seconds**.

9.

Use Case	Inventory Management
Goal	Ensure efficient tracking and management of available inventory.
Precondition	The system must have up-to-date stock information. **Success End**
Success End Condition	"The inventory has been successfully updated." **Failed End Condition:** "Inventory update failed. Please try again later."
Failed End Condition	Massage: ‘‘The room categories are temporarily unavailable.’’
Primary Actors: Secondary Actors:	Admin Supplier
Trigger	Admin initiates an inventory update or a new order is placed.

<table>
<tr><td>Description / Main Success Scenario</td><td><table>
<tr><td>1.</td><td>The system monitors stock levels.</td></tr>
<tr><td>2.</td><td>Admin adds, updates, or removes inventory items.</td></tr>
<tr><td>3.</td><td>The system validates the changes.</td></tr>
<tr><td>4.</td><td>The updated inventory is saved.</td></tr>
<tr><td>5.</td><td>The system notifies relevant stakeholders of changes.</td></tr>
</table></td></tr>
<tr><td>Alternative Flows</td><td><table>
<tr><td>2.1</td><td>2.1 Admin fails to update inventory..</td></tr>
<tr><td></td><td>2.1.a Message: "Database update failed. Try again later."</td></tr>
<tr><td>3.1</td><td>System detects inconsistencies in stock levels.</td></tr>
<tr><td></td><td>3.1.a. massage: "Stock validation error. Please review inventory data."</td></tr>
</table></td></tr>
<tr><td>Quality Requirements</td><td>Inventory updates should be completed within 2-5 minutes.

System validation should take no longer than 30 seconds.</td></tr>
</table>

10.

Use Case	Order Cancellation
Goal	Allow users to cancel an order before it is processed for delivery.
Precondition	The order must not be out for delivery.
Success End Condition	"The order has been successfully canceled."

<table>
<tr><td>Failed End Condition</td><td>"Order cancellation failed. Please try again later."</td></tr>
<tr><td>Primary Actors:

Secondary Actors:</td><td>Customer

System
Administrator</td></tr>
<tr><td>Trigger</td><td>The user requests order cancellation.</td></tr>
<tr><td>Description / Main Success Scenario</td><td>
<table>
<tr><td>1.</td><td>The user selects an order to cancel.</td></tr>
<tr><td>2.</td><td>The system verifies order status.</td></tr>
<tr><td>3.</td><td>If eligible, the system processes the cancellation.</td></tr>
<tr><td>4.</td><td>The user receives a cancellation confirmation.</td></tr>
</table>
</td></tr>
<tr><td>Alternative Flows</td><td>
<table>
<tr><td>2.1</td><td>2.1 Order is already processed for delivery.</td></tr>
<tr><td></td><td>2.1.a Message: "Cancellation not allowed after processing stage."</td></tr>
<tr><td>3.1</td><td>3.1 System fails to process cancellation.</td></tr>
<tr><td></td><td>3.1.a Message: "Technical issue. Try again later."</td></tr>
<tr><td></td><td>3.1.b.massage: ‘‘Try again later.’’</td></tr>
<tr><td>3.2</td><td>The user can not find a specific room category from the list.</td></tr>
<tr><td></td><td>3.2.a. massage: ‘‘Back to the home page.’’</td></tr>
</table>
</td></tr>
<tr><td>Quality Requirements</td><td>Cancellation should be processed within 30-60 seconds.

Refund initiation (if applicable) should begin within 1-2 minutes.</td></tr>
</table>

11.

Use Case	Order Assignment & Acceptance
Goal	There must be an available delivery person.
Precondition	"The order has been successfully assigned and accepted."
Success End Condition	"The order has been successfully assigned and accepted."
Failed End Condition	"Order assignment failed. Please try again later."
Primary Actors: Secondary Actors:	Delivery Person System
Trigger	A new order is placed and requires assignment.
Description / Main Success Scenario	1. The system identifies an available delivery person. 2. The system sends an order request to the delivery person. 3. The delivery person accepts the order. 4. The system updates order status to "Accepted".

<table>
<tr><td>Alternative Flows</td><td><table>
<tr><td>2.1</td><td>No available delivery person.</td></tr>
<tr><td></td><td>1.1.a Message: "No delivery personnel available. Try again later."</td></tr>
<tr><td>3.1</td><td>• 3.1 Delivery person does not accept the order.</td></tr>
<tr><td></td><td>3.1.a Message: "Order not accepted. Assigning another person."</td></tr>
</table></td></tr>
<tr><td>Quality Requirements</td><td>Order assignment should be completed within 30 seconds.

Delivery person should respond within 1-2 minutes.</td></tr>
</table>

12.

<table>
<tr><td>Use Case</td><td>Real-Time Order Tracking</td></tr>
<tr><td>Goal</td><td>Allow users to track their orders in real time</td></tr>
<tr><td>Precondition</td><td>The order must be in transit.</td></tr>
<tr><td>Success End Condition</td><td>"The user has successfully tracked their order."</td></tr>
<tr><td>Failed End Condition</td><td>"Payment processing failed. Please try again later."</td></tr>
<tr><td>Primary Actors:

Secondary Actors:</td><td>Customer

Payment Gateway
System</td></tr>
<tr><td>Trigger</td><td>The user requests real-time tracking of their order.</td></tr>
<tr><td>Description / Main Success Scenario</td><td><table>
<tr><td>1.</td><td>The user opens the tracking interface.</td></tr>
<tr><td>2.</td><td>The system retrieves real-time GPS data from the delivery person.</td></tr>
</table></td></tr>
</table>

	3. The user views the current location and estimated arrival time. s
Alternative Flows	2.1 System fails to retrieve GPS data. "Tracking temporarily unavailable. Try again later. 3.1 User experiences delays in tracking updates. 3.1.a. massage: "Internet issue detected. Refresh the page."
Quality Requirements	Location updates should be refreshed every **5-10 seconds**. Estimated arrival time should be recalculated every **1-2 minutes**.

13.

Use Case	**Order History and Records**
Goal	**Users can view their past orders, including order details, status, and payment history, ensuring transparency and easy record-keeping**
Precondition	**The user is logged into the system.** **The user has placed at least one order in the past**
Success End Condition	**Message: "The user has successfully viewed their order history and records."**

<table>
<tr><td>Failed End Condition</td><td>Message: "Order history is temporarily unavailable."</td></tr>
<tr><td>Primary Actors:

Secondary Actors:</td><td>Customer, Business Owner

Administrator (for reporting purposes)</td></tr>
<tr><td>Trigger</td><td>The user requests to view past orders.</td></tr>
<tr><td>Description / Main Success Scenario</td><td>
<table>
<tr><td>1.</td><td>The user navigates to the order history section</td></tr>
<tr><td>2.</td><td>The system retrieves the list of past orders from the database</td></tr>
<tr><td>3.</td><td>The user selects a specific order to view details.</td></tr>
<tr><td>4.</td><td>The system displays order details, including items, prices, delivery status, and payment method.</td></tr>
<tr><td>5.</td><td>The user successfully reviews the order history.</td></tr>
<tr><td>6.</td><td>The business owner can also monitor the order status for better management.</td></tr>
<tr><td>7.</td><td>The user successfully views and tracks the order status</td></tr>
</table>
</td></tr>
<tr><td>Alternative Flows</td><td>
<table>
<tr><td>2.1</td><td>The system fails to retrieve order history.</td></tr>
<tr><td></td><td>2.1.a. massage: ‘‘There has a technical issue try again later.’’</td></tr>
<tr><td>3.1</td><td>The user cannot select a specific Order from the list.</td></tr>
<tr><td></td><td>3.1.a. massage: ‘‘Check your internet connection.’’</td></tr>
<tr><td></td><td>3.1.b.massage:‘‘Try again later.’’</td></tr>
<tr><td>3.2</td><td>The user cannot find a specific Order from the list.</td></tr>
<tr><td></td><td>3.2.a. massage: ‘‘Back to the home page.’’</td></tr>
</table>
</td></tr>
</table>

	<table><tr><td>**4.1**</td><td>**The system will not provide detailed information about the selected Order category**</td></tr><tr><td></td><td>**4.1.a. massage: ‘‘Something went wrong, try again later’’**</td></tr><tr><td>**5.1**</td><td>**The user cannot select a specific Order category to view more detailed information.**</td></tr><tr><td></td><td>**5.1.a. massage: ‘‘Check your internet connection.’’**</td></tr><tr><td>**5.2**</td><td>**The user cannot find a specific Order category to view more detailed information.**</td></tr><tr><td></td><td>**5.2.a. massage: ‘‘Try again later.’’**</td></tr><tr><td>**6.1**</td><td>**The user cannot explore other room categories or return to the main room category view.**</td></tr><tr><td></td><td>**6.1.a. massage: ‘‘Check your internet connection.’’**</td></tr><tr><td>**7.1**</td><td>**The user has not successfully viewed the Order.**</td></tr><tr><td></td><td>**7.1.a message: ‘‘The Order tracking are temporarily unavailable.’’**</td></tr></table>
Quality Requirements	**· Order history should load within 5 seconds.** **· Users should be able to filter and search records efficiently.** **· Secure encryption should be used to protect sensitive transaction details.** **· Users should be able to view order details from at least the past 12 months**

14.

Use Case	**Order Delivery Confirmation**
Goal	**Users can confirm the successful delivery of their orders, ensuring transparency and completion of the order process.**
Precondition	**The user has placed an order.** **The delivery agent has completed the delivery**
Success End Condition	**Message: "The user has successfully viewed their order history and records."**

<table>
<tr><td>Failed End Condition</td><td>Message: "Order history is temporarily unavailable."</td></tr>
<tr><td>Primary Actors:

Secondary Actors:</td><td>Customer, Delivery Agent

Business Owner, Administrator (for reporting purposes)</td></tr>
<tr><td>Trigger</td><td>The delivery agent marks the order as delivered, prompting the user to confirm receipt.</td></tr>
<tr><td>Description / Main Success Scenario</td><td>
<table>
<tr><td>1.</td><td>The delivery agent updates the order status to "Delivered."</td></tr>
<tr><td>2.</td><td>The system notifies the customer about the delivery.</td></tr>
<tr><td>3.</td><td>The customer reviews the delivered order.</td></tr>
<tr><td>4.</td><td>The customer confirms the delivery through the system</td></tr>
<tr><td>5.</td><td>The system updates the order status to "Completed."</td></tr>
<tr><td>6.</td><td>The business owner and administrator receive the delivery confirmation update.</td></tr>
<tr><td>7.</td><td>The process is successfully completed.</td></tr>
</table>
</td></tr>
<tr><td>Alternative Flows</td><td>
<table>
<tr><td>2.1</td><td>The system fails to notify the customer</td></tr>
<tr><td></td><td>2.1.a. Message: "There is a technical issue, please try again later."</td></tr>
<tr><td>3.1</td><td>The customer cannot review the order due to missing details</td></tr>
<tr><td></td><td>Message: "Order details are currently unavailable."</td></tr>
<tr><td></td><td>3.1.b. massage: ‘‘Try again later.’’</td></tr>
<tr><td>3.2</td><td>The user cannot find a specific Order from the list.</td></tr>
<tr><td></td><td>3.2.a. massage: ‘‘Back to the home page.’’</td></tr>
</table>
</td></tr>
</table>

	<table><tr><td>**4.1**</td><td>**The system will not provide detailed information about the selected Order category**</td></tr><tr><td></td><td>**4.1.a. massage: ‘‘Something went wrong, try again later’’**</td></tr><tr><td>**5.1**</td><td>**The user cannot select a specific Order category to view more detailed information.**</td></tr><tr><td></td><td>**5.1.a. massage: ‘‘Check your internet connection.’’**</td></tr><tr><td>**5.2**</td><td>**The user cannot find a specific Order category to view more detailed information.**</td></tr><tr><td></td><td>**5.2.a. massage: ‘‘Try again later.’’**</td></tr><tr><td>**6.1**</td><td>**The user cannot explore other room categories or return to the main room category view.**</td></tr><tr><td></td><td>**6.1.a. massage: ‘‘Check your internet connection.’’**</td></tr><tr><td>**7.1**</td><td>**The user has not successfully viewed the Order.**</td></tr><tr><td></td><td>**7.1.a message: ‘‘The Order tracking are temporarily unavailable.’’**</td></tr></table>
Quality Requirements	**· Delivery confirmation should be processed within 10 seconds.** **· Customers should receive a confirmation notification immediately after delivery.** **· Order status updates should be securely stored in the system.** **· The system should allow customers to report issues directly from the confirmation screen.**

15.

Use Case	**Notification & Alerts**
Goal	**Users receive real-time notifications and alerts about their orders, ensuring they stay informed about order status, delivery updates, and important system messages.**
Precondition	**The user is logged into the system.** **The user has an active order or relevant system updates**
Success End Condition	**Message: "The user has successfully received notifications and alerts."**
Failed End Condition	**Message: "Notifications are temporarily unavailable."**

<table>
<tr><td>Primary Actors:

Secondary Actors:</td><td>Customer, Delivery Agent, Business Owner

Administrator (for reporting purposes)</td></tr>
<tr><td>Trigger</td><td>The system generates an event that requires a notification, such as order status updates, delivery progress, or system messages.</td></tr>
<tr><td>Description / Main Success Scenario</td><td><table>
<tr><td>1.</td><td>The system detects an event that requires a notification (e.g., order status update, estimated delivery time)</td></tr>
<tr><td>2.</td><td>The system generates a notification and sends it to the relevant user(s).</td></tr>
<tr><td>3.</td><td>The user receives a real-time notification via the system (app notification, SMS, or email).</td></tr>
<tr><td>4.</td><td>The user reviews the notification details.</td></tr>
<tr><td>5.</td><td>The user takes necessary action based on the notification (e.g., tracking order, confirming delivery)</td></tr>
<tr><td>6.</td><td>The system logs the notification for future reference</td></tr>
<tr><td>7.</td><td>The process is successfully completed</td></tr>
</table></td></tr>
<tr><td>Alternative Flows</td><td><table>
<tr><td>2.1</td><td>The system fails to generate the notification</td></tr>
<tr><td></td><td>2.1. Message: "There is a technical issue, please try again later."</td></tr>
<tr><td>3.1</td><td>The user does not receive the notification due to a network issue.</td></tr>
<tr><td></td><td>3.1. Message: "Check your internet connection and try again."</td></tr>
<tr><td></td><td>3.1.b.massage:‘‘Try again later.’’</td></tr>
<tr><td>3.2</td><td>The user has disabled notifications in system settings</td></tr>
<tr><td></td><td>Message: "Enable notifications to receive real-time updates.</td></tr>
<tr><td>4.1</td><td>The system fails to display notification details.</td></tr>
</table></td></tr>
</table>

	<table><tr><td></td><td>4.1.a. massage: ‘‘Something went wrong, try again later’’</td></tr><tr><td>5.1</td><td>The user cannot take action on the notification due to missing information.</td></tr><tr><td></td><td>5.1.a. Message: "Notification details are incomplete, please refresh."</td></tr><tr><td>5.2</td><td>The user cannot find a specific Order category to view more detailed information.</td></tr><tr><td></td><td>5.2.a. massage: ‘‘Try again later.’’</td></tr><tr><td>6.1</td><td>The user cannot explore other room categories or return to the main room category view.</td></tr><tr><td></td><td>6.1.a. massage: ‘‘Check your internet connection.’’</td></tr><tr><td>7.1</td><td>The user has not successfully viewed the Order.</td></tr><tr><td></td><td>7.1.a message: ‘‘The Order tracking are temporarily unavailable.’’</td></tr></table>
Quality Requirements	**· Notifications should be delivered within 5 seconds of the triggering event.** **· Users should be able to enable/disable notifications from settings.** **· The system should ensure no duplicate notifications are sent.** **· Notifications should be categorized (e.g., order updates, promotional alerts, security alerts).**

16.

Use Case	**Customer Support and Helpdesk**
Goal	**Users can access customer support and helpdesk services to resolve issues, get assistance, and seek clarifications regarding their orders and deliveries.**
Precondition	**The user is logged into the system.** **The user has an issue or query requiring support.**
Success End Condition	**Message: "The user has successfully received support and resolved their issue."**
Failed End Condition	**Message: "Customer support is temporarily unavailable."**

<table>
<tr><td>Primary Actors:

Secondary Actors:</td><td>Customer, Business Owner

Delivery agent, Administrator (for reporting purposes)</td></tr>
<tr><td>Trigger</td><td>The user requests support through the helpdesk system.</td></tr>
<tr><td>Description / Main Success Scenario</td><td>
<table>
<tr><td>1.</td><td>The user navigates to the customer support section.</td></tr>
<tr><td>2.</td><td>The user submits a query or issue through the system (chat, email, or call).</td></tr>
<tr><td>3.</td><td>The system logs the request and assigns it to an available support agent.</td></tr>
<tr><td>4.</td><td>The support agent reviews the query and provides a response.</td></tr>
<tr><td>5.</td><td>If needed, the agent escalates the issue to higher support levels</td></tr>
<tr><td>6.</td><td>The user receives the resolution and marks the issue as resolved</td></tr>
<tr><td>7.</td><td>The system logs the conversation for future reference.</td></tr>
<tr><td>8.</td><td>The process is successfully completed.</td></tr>
</table>
</td></tr>
<tr><td>Alternative Flows</td><td>
<table>
<tr><td>2.1</td><td>The system fails to log the support request.</td></tr>
<tr><td></td><td>2.1. Message: "There is a technical issue, please try again later."</td></tr>
<tr><td>3.1</td><td>No support agent is available at the moment.</td></tr>
<tr><td></td><td>3.1. Message: "All agents are currently busy, please try again later.</td></tr>
<tr><td></td><td>3.1.b. massage:‘‘Try again later.’’</td></tr>
<tr><td>3.2</td><td>The user has disabled notifications in system settings</td></tr>
<tr><td></td><td>Message: "Enable notifications to receive real-time updates.</td></tr>
</table>
</td></tr>
</table>

	<table><tr><td>4.1</td><td>The support agent is unable to resolve the issue immediately.</td></tr><tr><td></td><td>4.1.a. Message: "Your issue has been escalated to higher support, please wait for a response."</td></tr><tr><td>5.1</td><td>The user does not receive a response within the expected time.</td></tr><tr><td></td><td>5.1.a. Message: "Response time may be delayed due to high volume, please be patient."</td></tr><tr><td>5.2</td><td>The user cannot find a specific Order category to view more detailed information.</td></tr><tr><td></td><td>5.2.a. massage: ‘‘Try again later.’’</td></tr><tr><td>6.1</td><td>The user is unsatisfied with the provided solution</td></tr><tr><td></td><td>6.1.a. Message: "If you need further assistance, please reopen the ticket."</td></tr></table>
Quality Requirements	· Email inquiries should be responded to within 24 hours. · Support availability should be 24/7 for urgent issues. ·Users should have an option to track their support tickets.

17.

Use Case	**Reporting and Analysis**
Goal	**The system provides detailed reports and analytics to help users monitor and improve delivery operations.**
Precondition	**The user has the necessary permissions to access reports.** **The system has collected sufficient data for analysis.**
Success End Condition	**Message: "The user has successfully generated and viewed the report."**
Failed End Condition	**Message: "Report generation is temporarily unavailable."**
Primary Actors:	**Administrator, Business Owner**

<table>
<tr><td>Secondary Actors:</td><td>Delivery Agent (for performance tracking), Customer (for order history and feedback insights)</td></tr>
<tr><td>Trigger</td><td>The user initiates a request to generate or view reports.</td></tr>
<tr><td>Description / Main Success Scenario</td><td>
<table>
<tr><td>1.</td><td>The user navigates to the reporting and analysis section.</td></tr>
<tr><td>2.</td><td>The system prompts the user to select report criteria (e.g., date range, delivery status, performance metrics)</td></tr>
<tr><td>3.</td><td>The user selects the desired report type and filters.</td></tr>
<tr><td>4.</td><td>The system retrieves the relevant data from the database.</td></tr>
<tr><td>5.</td><td>The system processes and generates a report in real-time.</td></tr>
<tr><td>6.</td><td>The report is displayed on the dashboard with visual charts and insights.</td></tr>
<tr><td>7.</td><td>The user successfully views and analyzes the report.</td></tr>
</table>
</td></tr>
<tr><td>Alternative Flows</td><td>
<table>
<tr><td>2.1</td><td>The user does not have permission to access report.</td></tr>
<tr><td></td><td>2.1.a. Message: "You do not have the necessary permissions to view this report."</td></tr>
<tr><td>3.1</td><td>The system fails to retrieve data</td></tr>
<tr><td></td><td>3.1.a. Message: "No data available for the selected criteria. Try adjusting the filters."</td></tr>
<tr><td>3.2</td><td>The report takes too long to generate.</td></tr>
<tr><td></td><td>3.2.a. Message: "Report generation is taking longer than expected. Please wait or try again later."</td></tr>
<tr><td>4.1</td><td>The system encounters an error while displaying the report.</td></tr>
<tr><td></td><td>4.1.a. Message: "Something went wrong. Please refresh the page or try again later."</td></tr>
<tr><td>5.1</td><td>The user is unable to download or export the report.</td></tr>
</table>
</td></tr>
</table>

	<table><tr><td></td><td>5.1.a. Message: "Download failed. Please check your internet connection and try again."</td></tr><tr><td>5.2</td><td>The user cannot find a specific Order category to view more detailed information.</td></tr><tr><td></td><td>5.2.a. massage: ‘‘Try again later.’’</td></tr></table>
Quality Requirements	· Reports should be generated within 10 seconds. · Data visualization should be clear and user-friendly. · Reports should be exportable in multiple formats. · Historical data should be available for at least six months

18.

Use Case	Reviews & Ratings
Goal	Users can provide feedback by submitting reviews and ratings for their orders, delivery experience, and service quality, ensuring continuous improvement and customer satisfaction.
Precondition	The user is logged into the system. The order has been successfully delivered and completed
Success End Condition	Message: "The user has successfully submitted a review and rating." Message: "The user has successfully submitted a review and rating."
Failed End Condition	Message: "Review submission is temporarily unavailable." Message: "Review submission is temporarily unavailable."
Primary Actors: Secondary Actors:	Customer Business Owner, Delivery agent, Administrator (for reporting purposes)
Trigger	The user submits a review or rating after receiving the order. The user submits a review or rating after receiving the order.
Description / Main Success Scenario	<table><tr><td>1.</td><td>The system prompts the user to leave a review and rating after order completion.</td></tr><tr><td>2.</td><td>The user navigates to the review section and selects a rating (e.g., 1-5 stars).</td></tr><tr><td>3.</td><td>The user writes an optional review about the order, delivery experience, or service quality</td></tr></table>

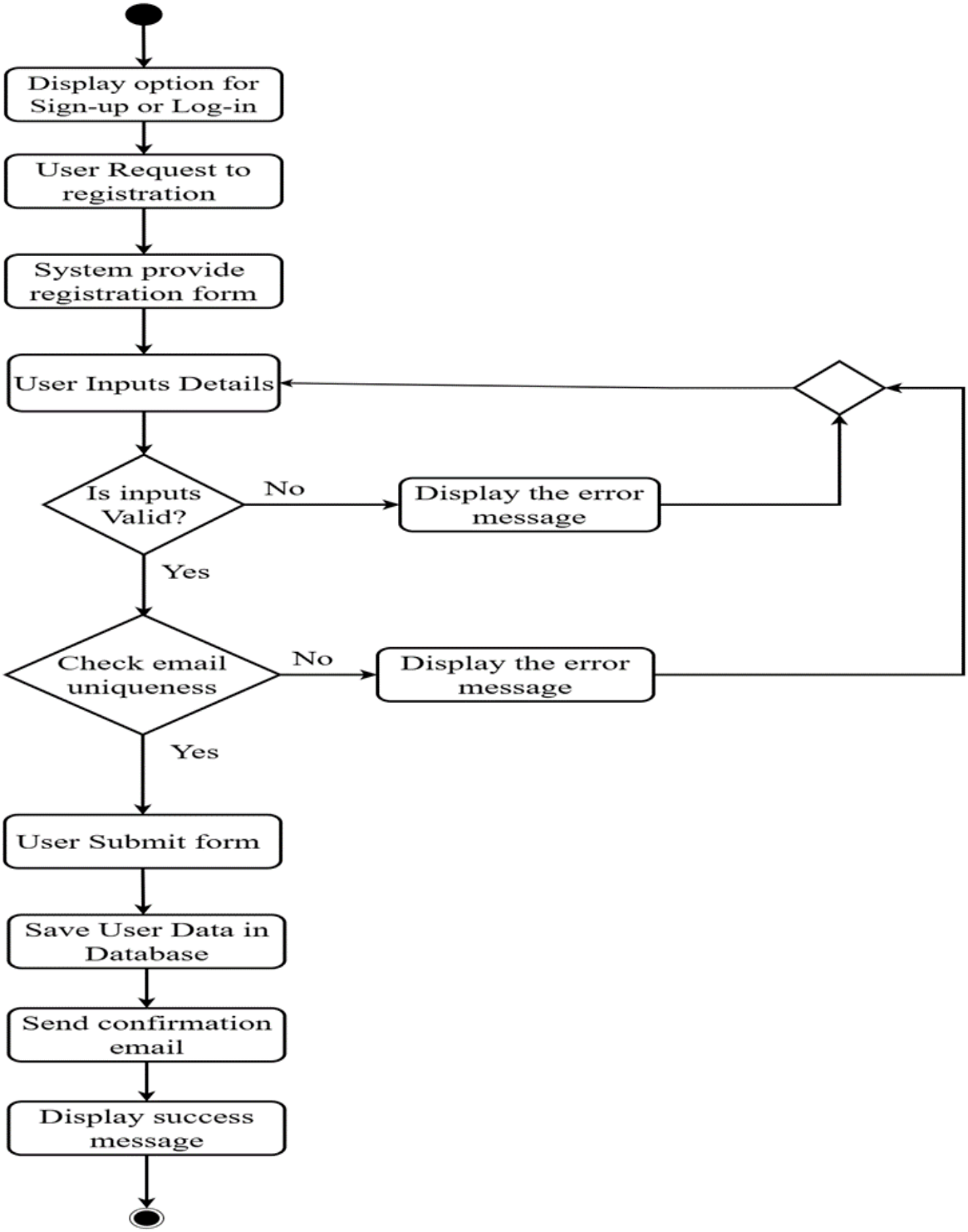
	4. The system validates and submits the review. **5.** The review and rating are stored and displayed publicly (if applicable) **6.** The business owner and delivery agent can view and respond to the review. **7.** The system logs the review for analytics and future reference. **8.** The process is successfully completed.
Alternative Flows	**2.1** The user skips the review process Message: "You can submit a review later from your order history." **3.1** The user cannot submit a rating due to a system error. Message: "There is a technical issue, please try again later." 3.1.b. massage:‘‘Try again later.’’ **3.2** The user attempts to submit an invalid or inappropriate review Message: "Your review contains restricted content. Please revise and submit again. **4.1** The system fails to store the review 4.1 Message: "Something went wrong, try again later." **5.1** The review does not appear immediately due to moderation or delay. 5.1.a. Message: "Your review is under moderation and will be published soon.
Quality Requirements	· Reviews should be submitted and visible within 5 seconds. · Users should be able to edit or delete their reviews within a specified time. · The system should filter and moderate inappropriate content.

	· Reviews and ratings should be accessible to both customers and business owners for service improvements

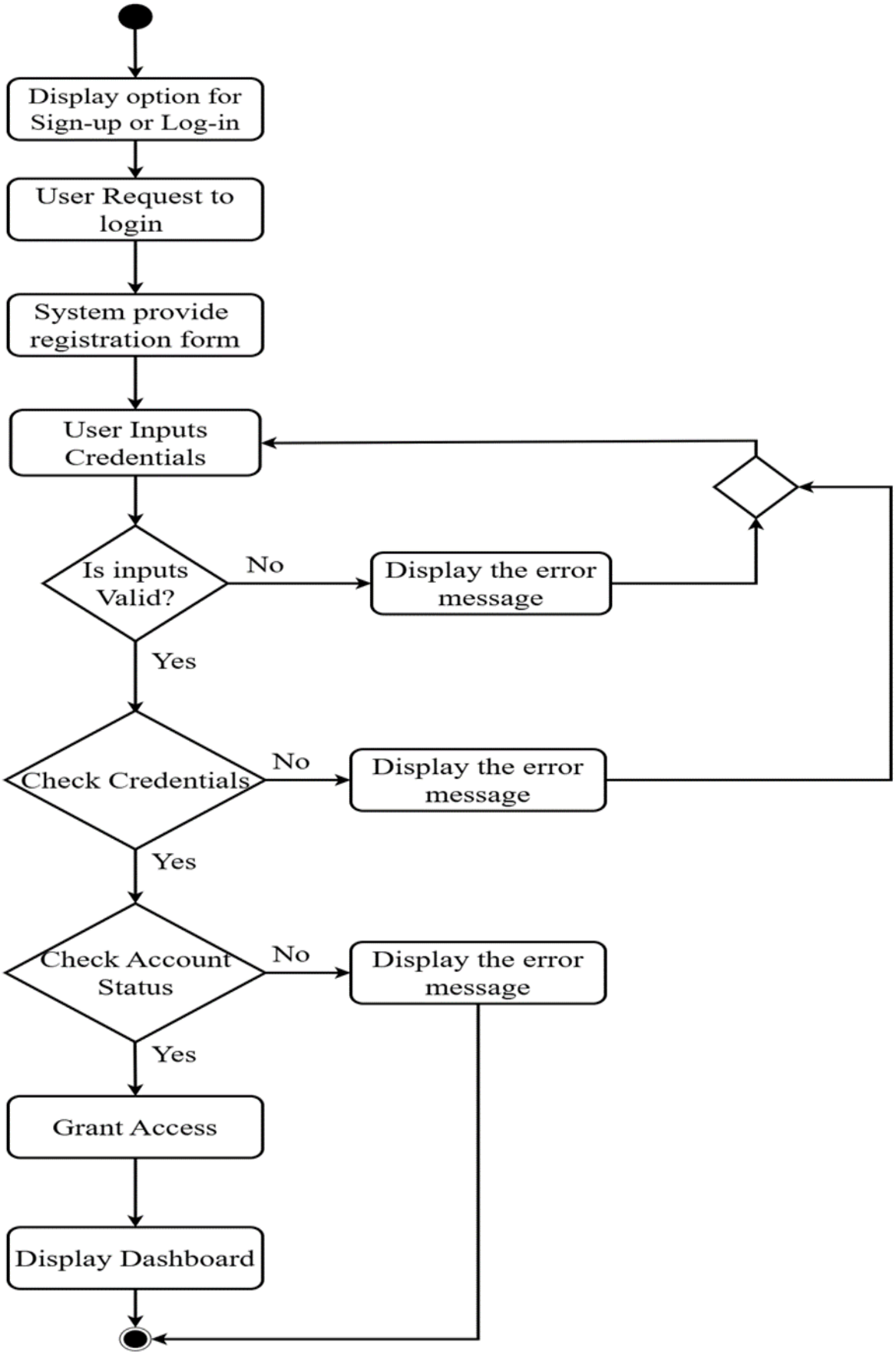
System Design

Activity Diagram

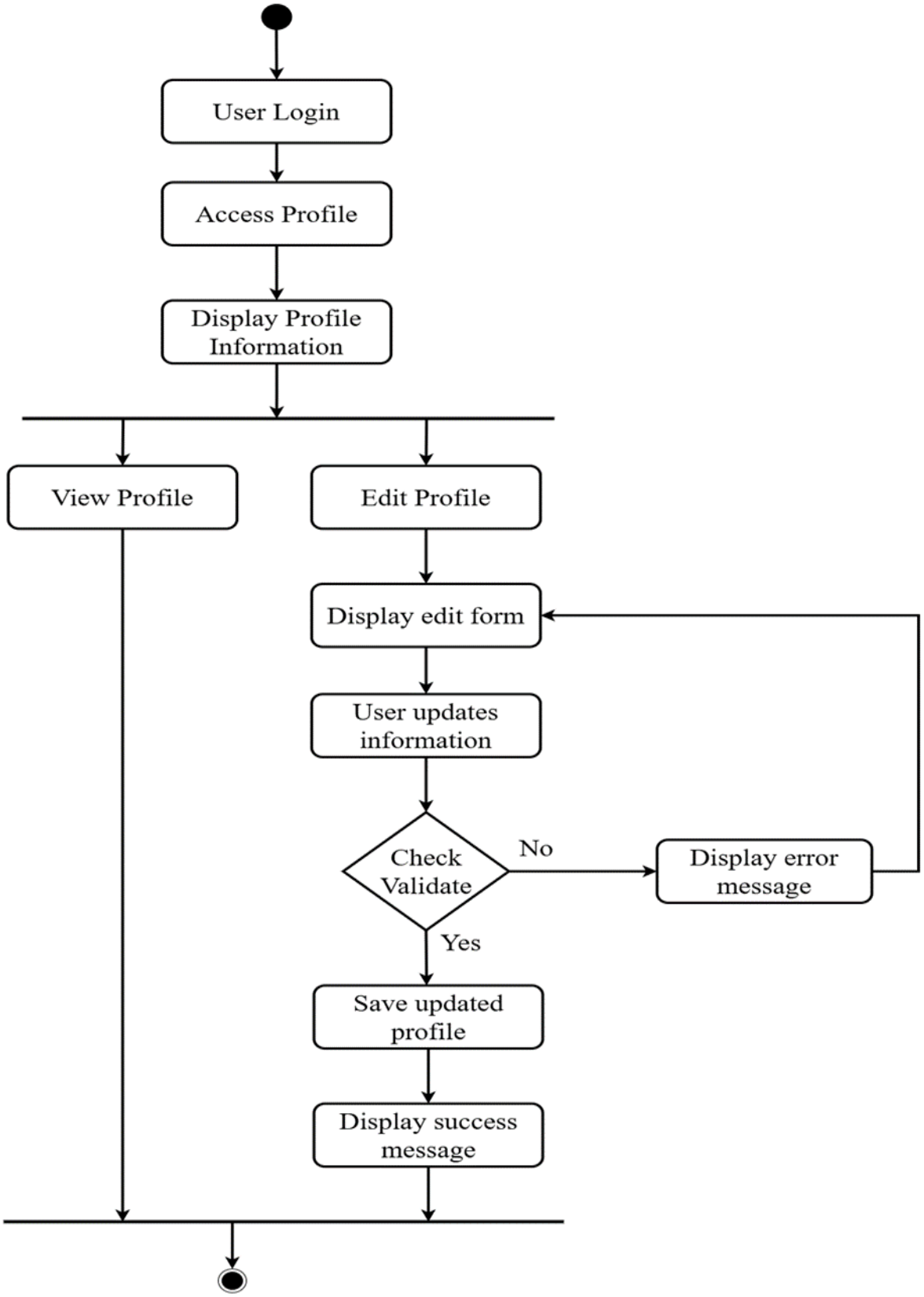
Activity Diagram 1:User Registration



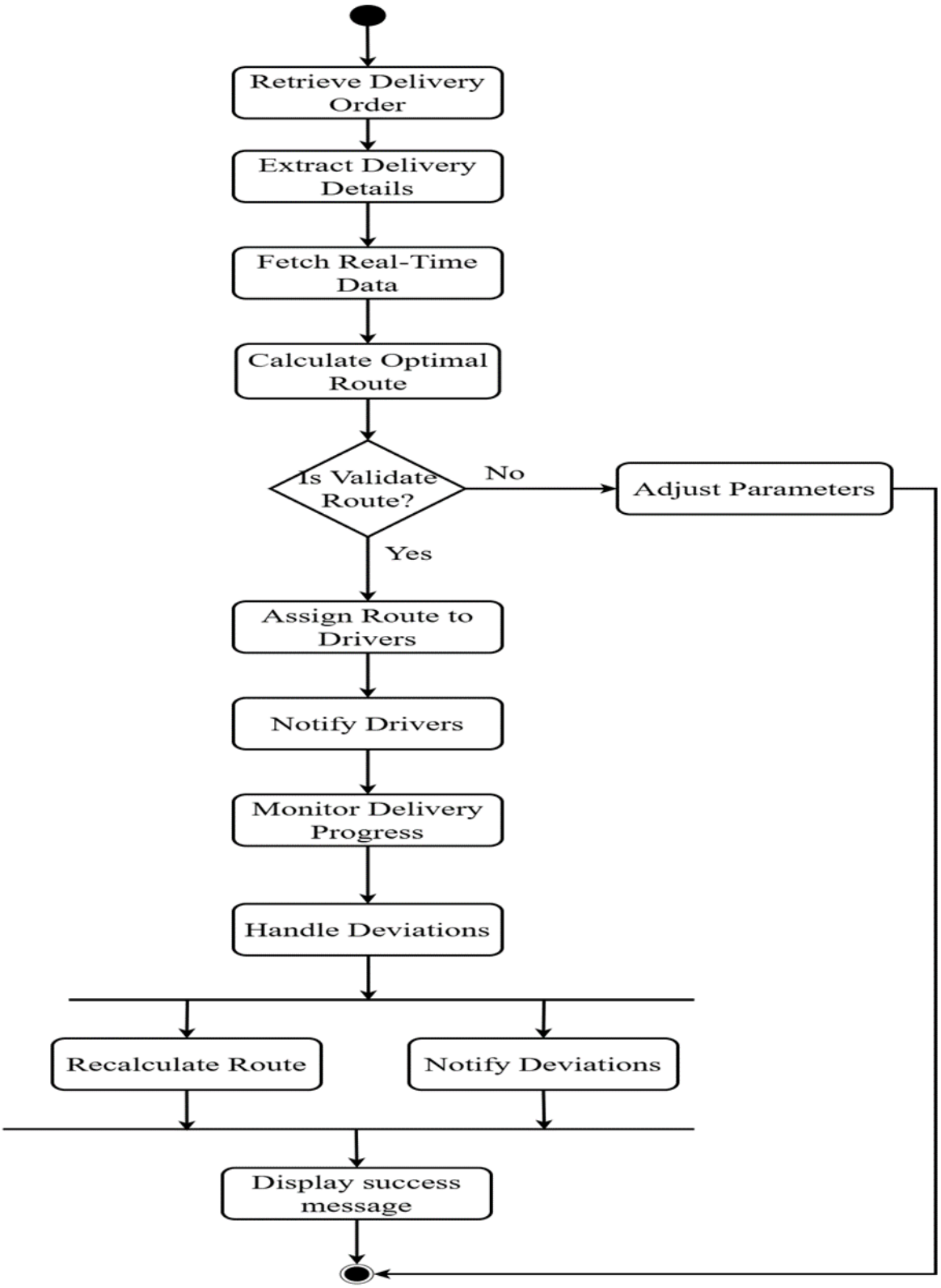
Activity Diagram 2:User Login


Display option for Sign-up or Log-in
User Request to login
System provide registration form
User Inputs Credentials
Is inputs Valid?
No
Display the error message
Yes
Check Credentials
No
Display the error message
Yes
Check Account Status
No
Display the error message
Yes
Grant Access
Display Dashboard

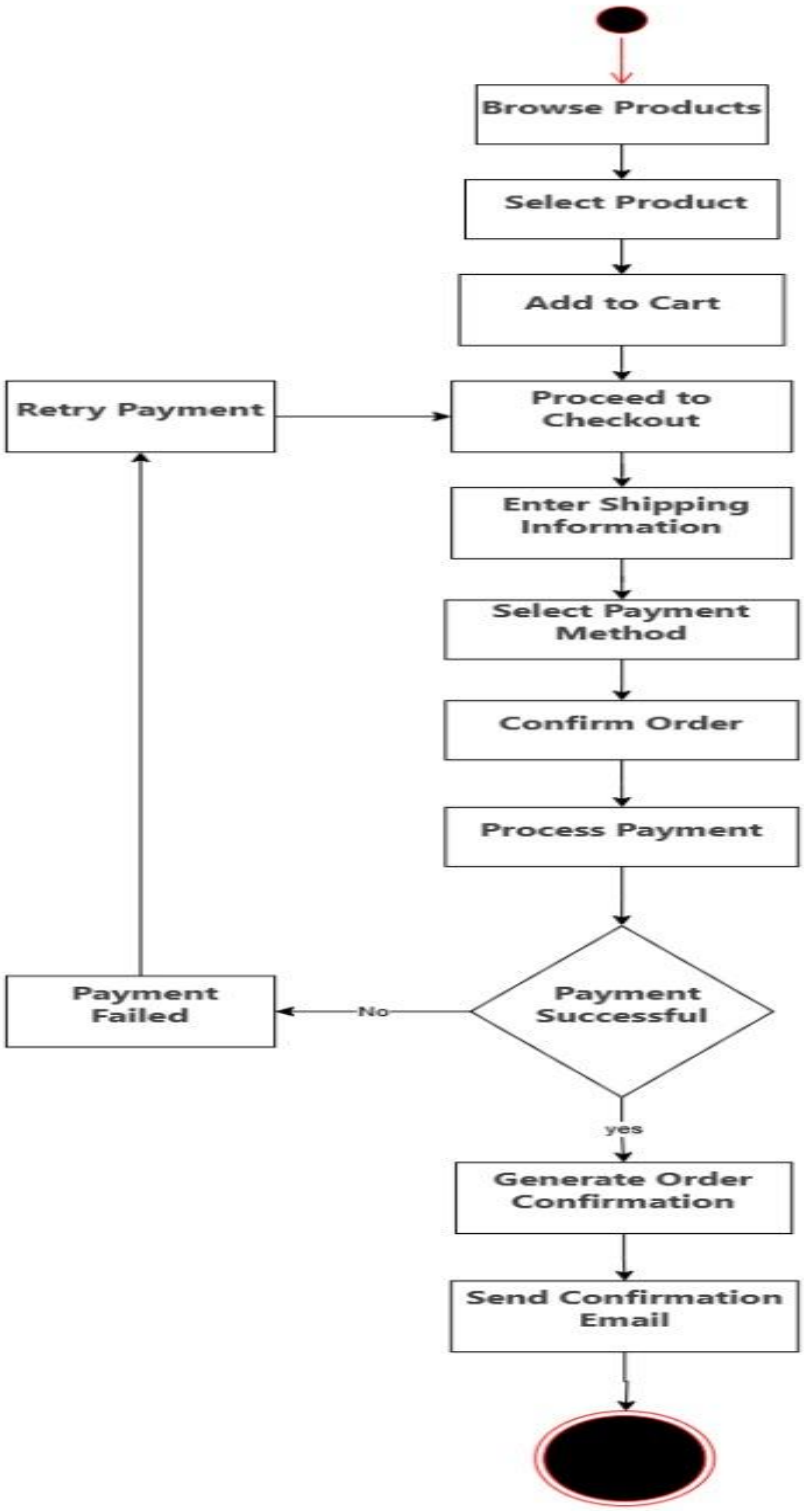
Activity Diagram 3:**Profile Management**



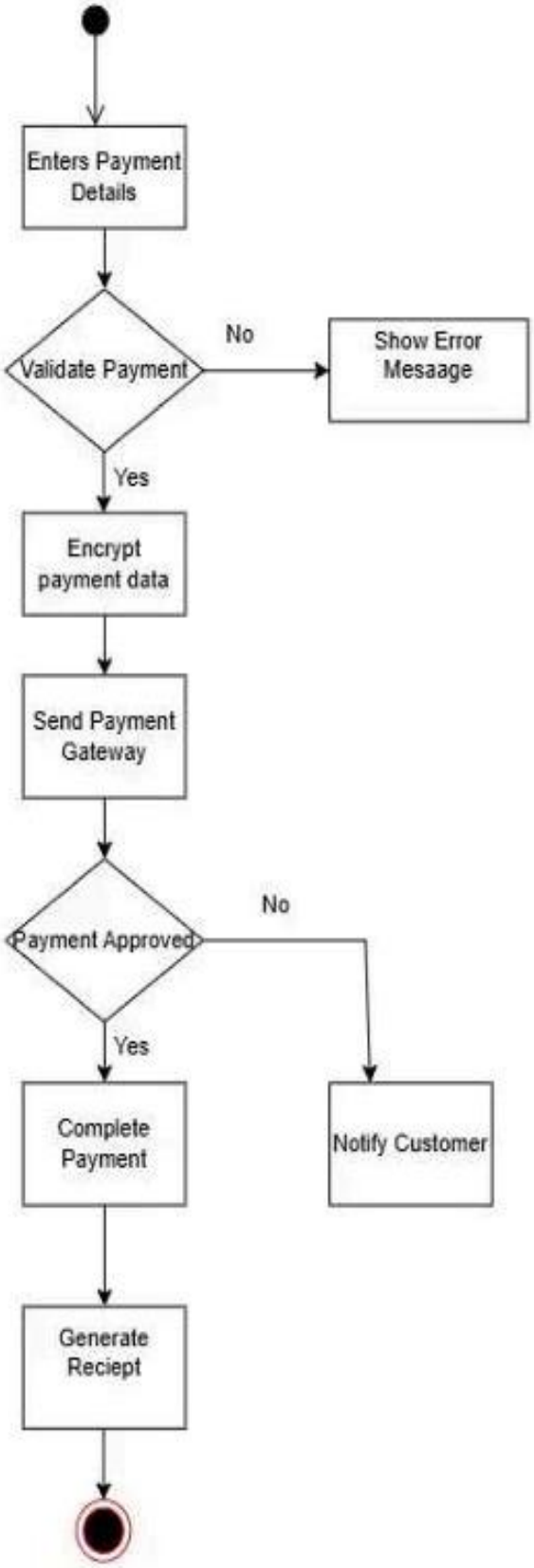
Activity Diagram 4: Delivery Route Optimization



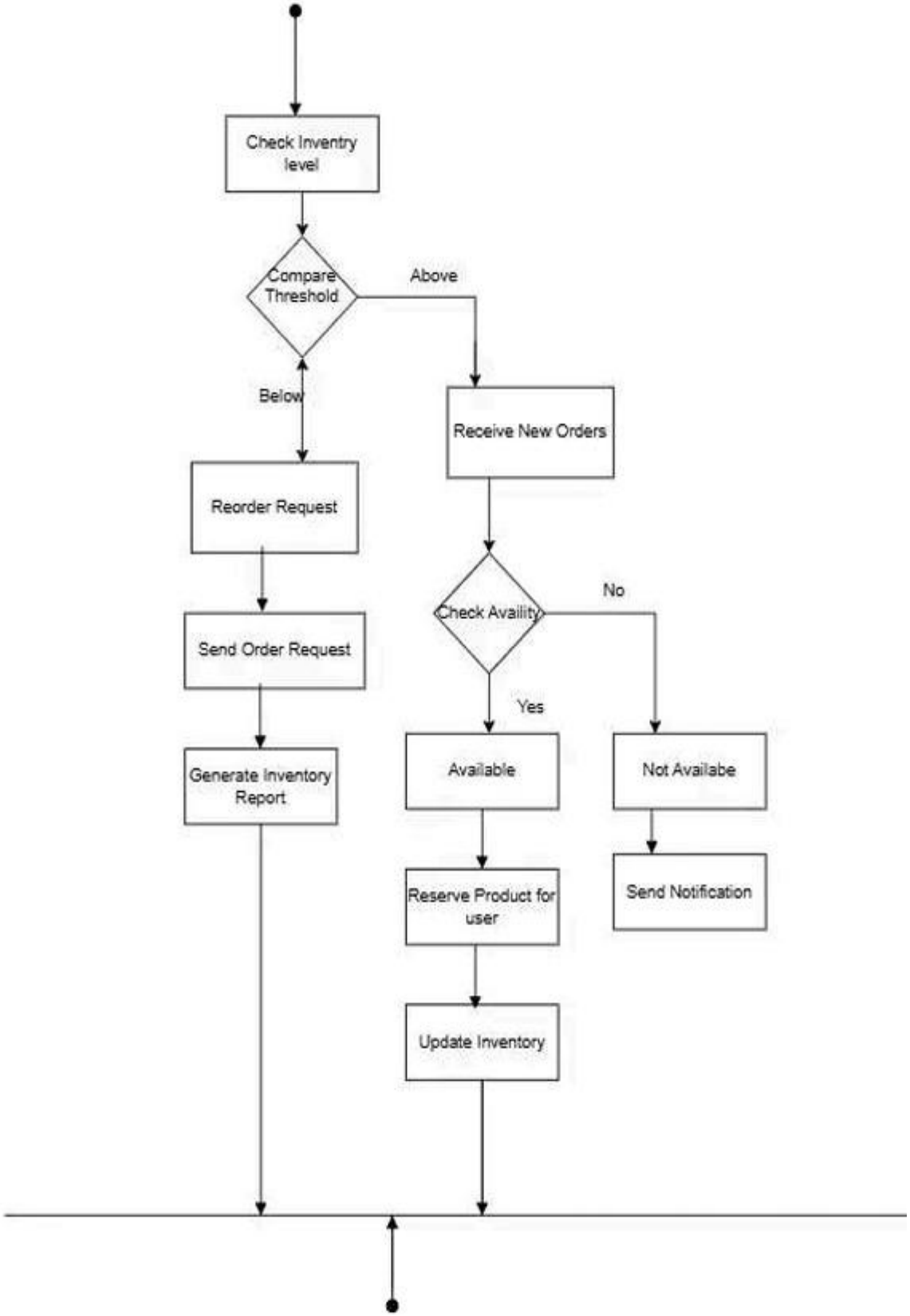
Activity Diagram 5: Order Placement



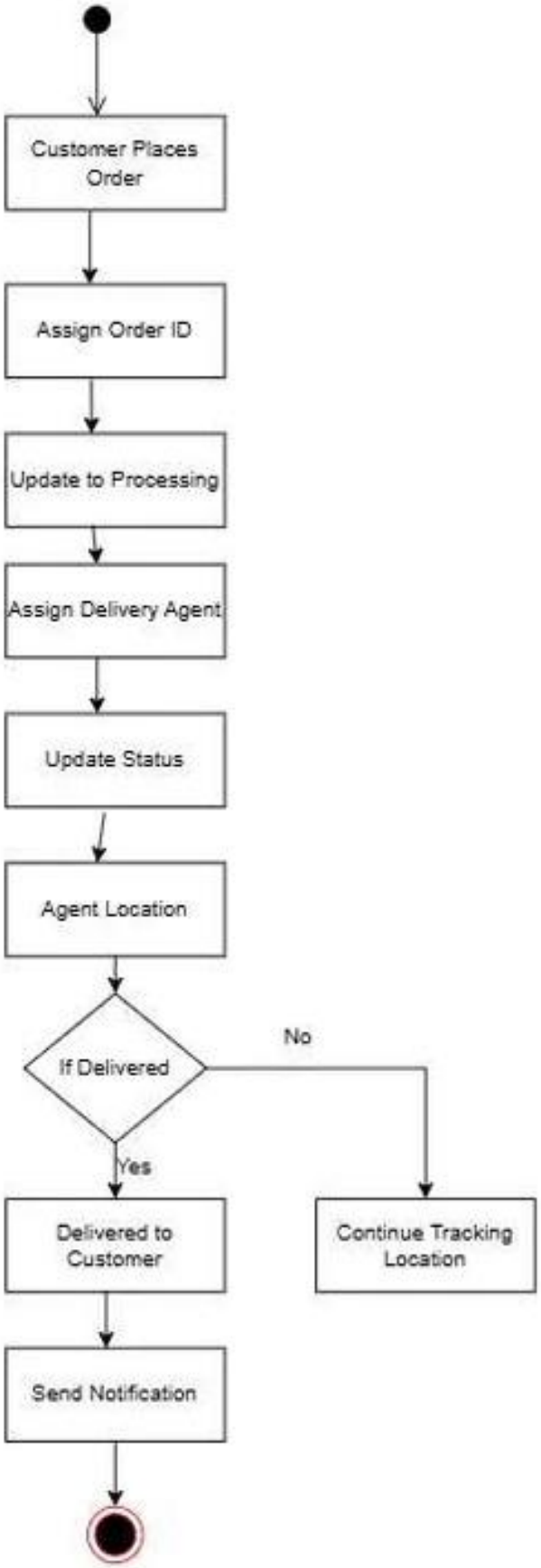
Activity Diagram 6:Secure Payment Processing



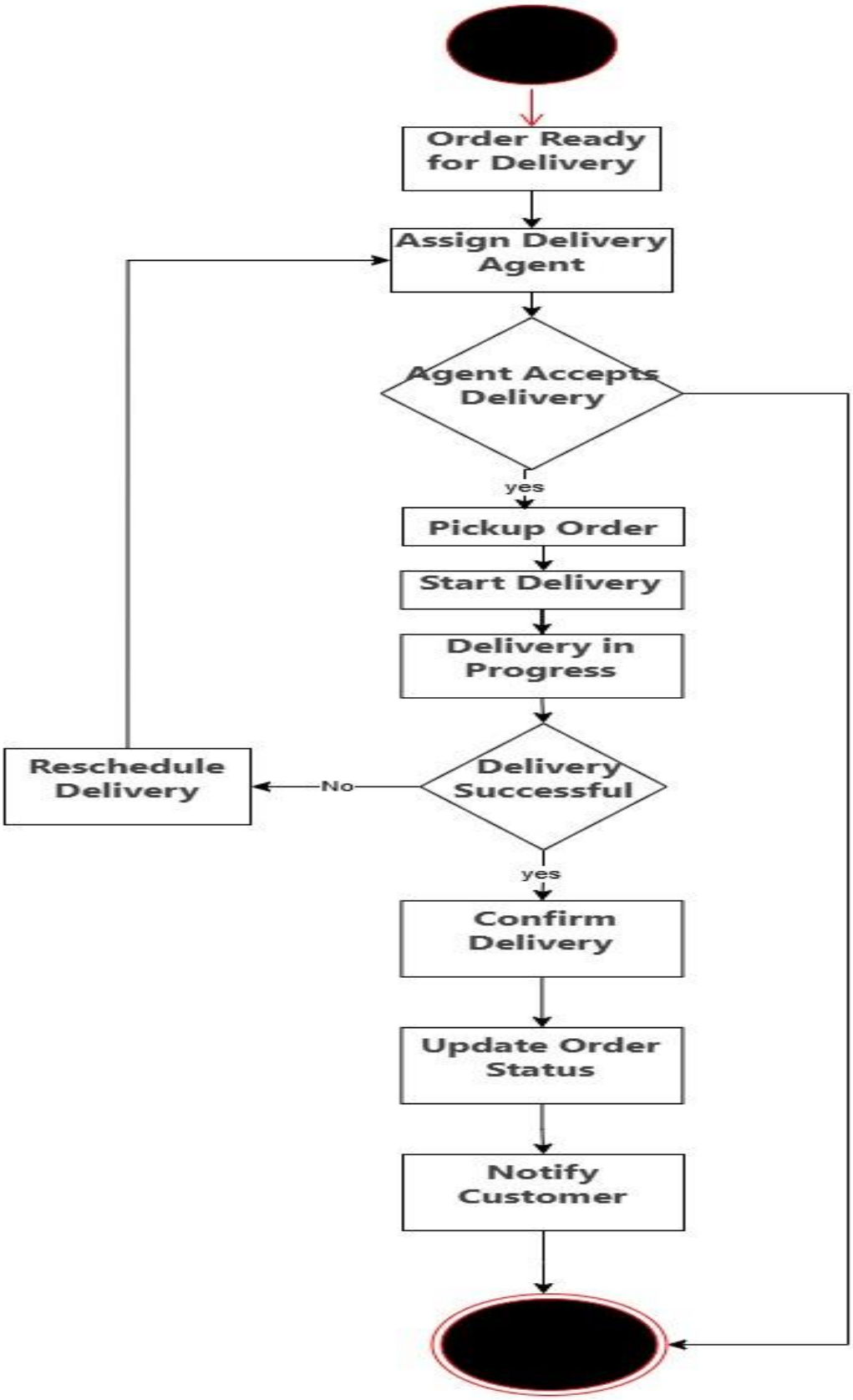
Activity Diagram 7:Inventory Management



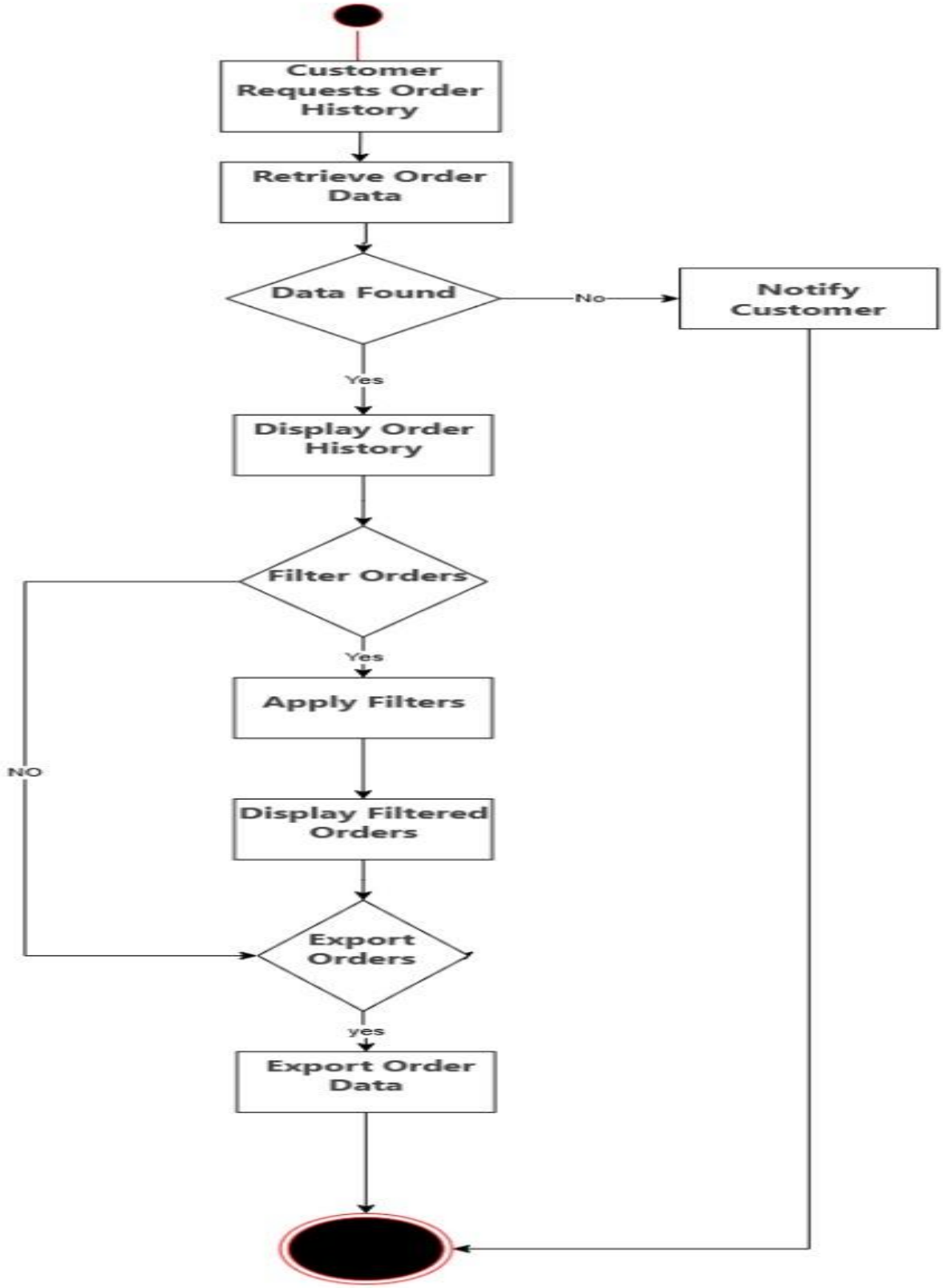
Activity Diagram 8:Real Time order tracking



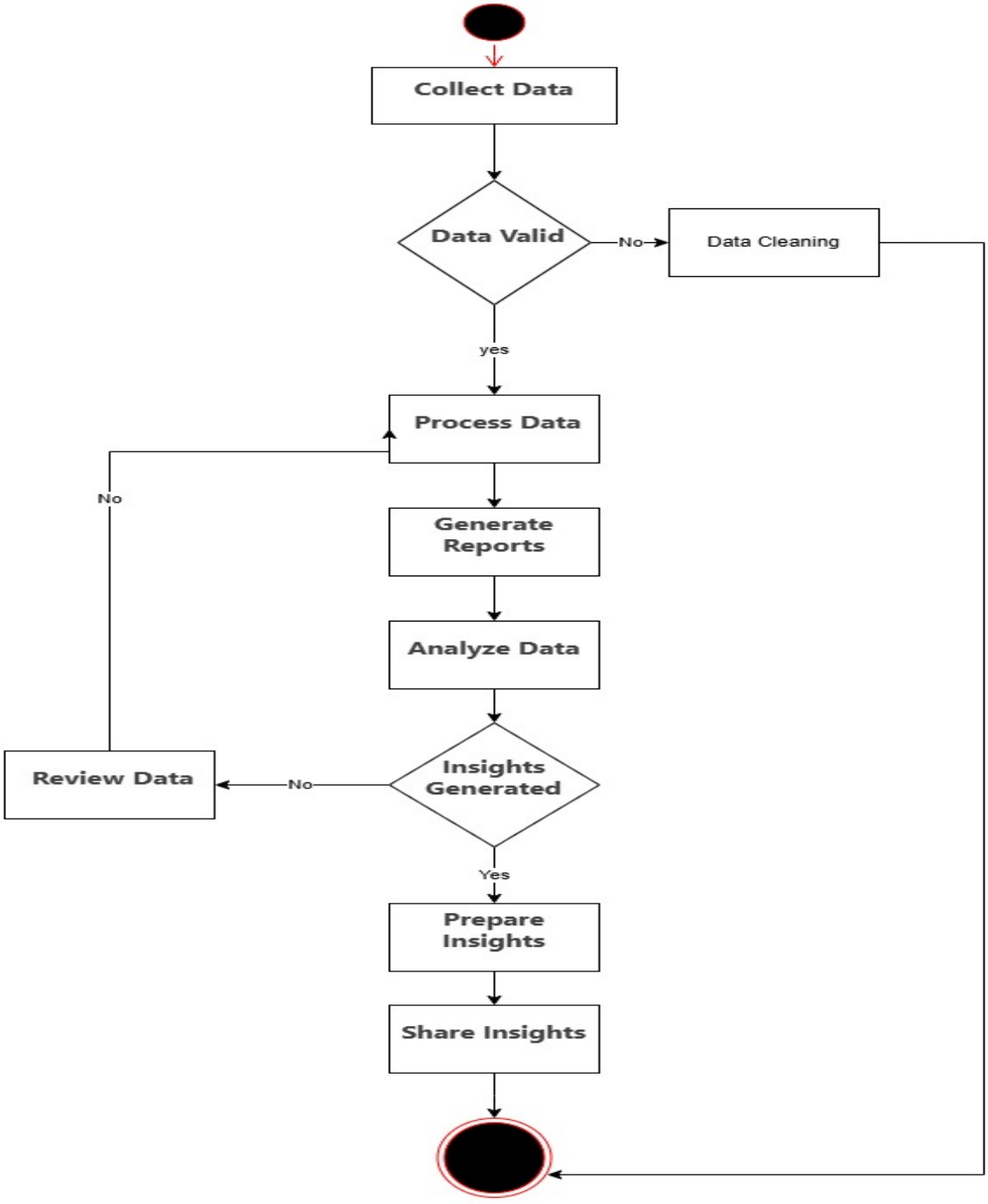
Activity Diagram 9: Order Delivery Confirmation



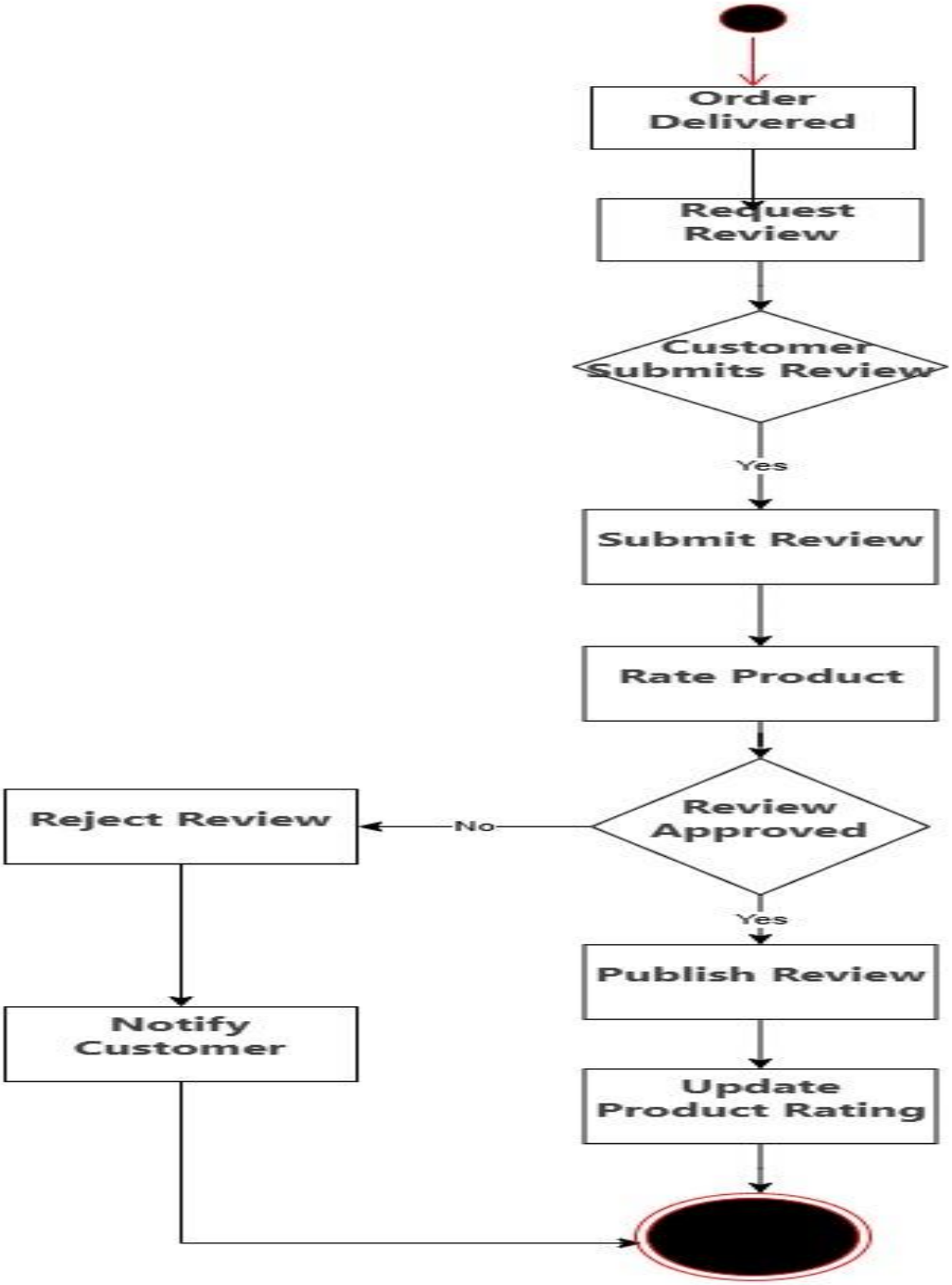
Activity Diagram 10:Order History And Record



Activity Diagram 11:Report Analysis

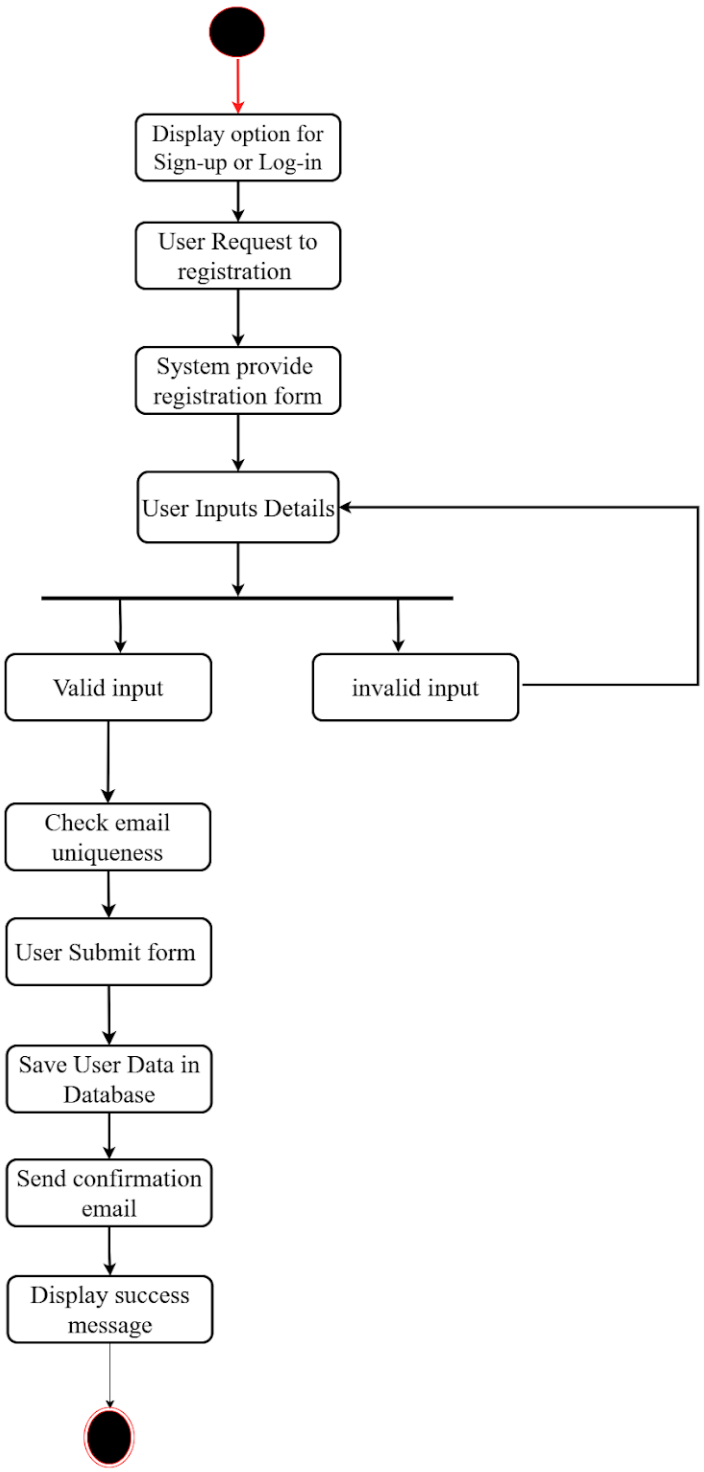


Activity Diagram 12:Review and ratings

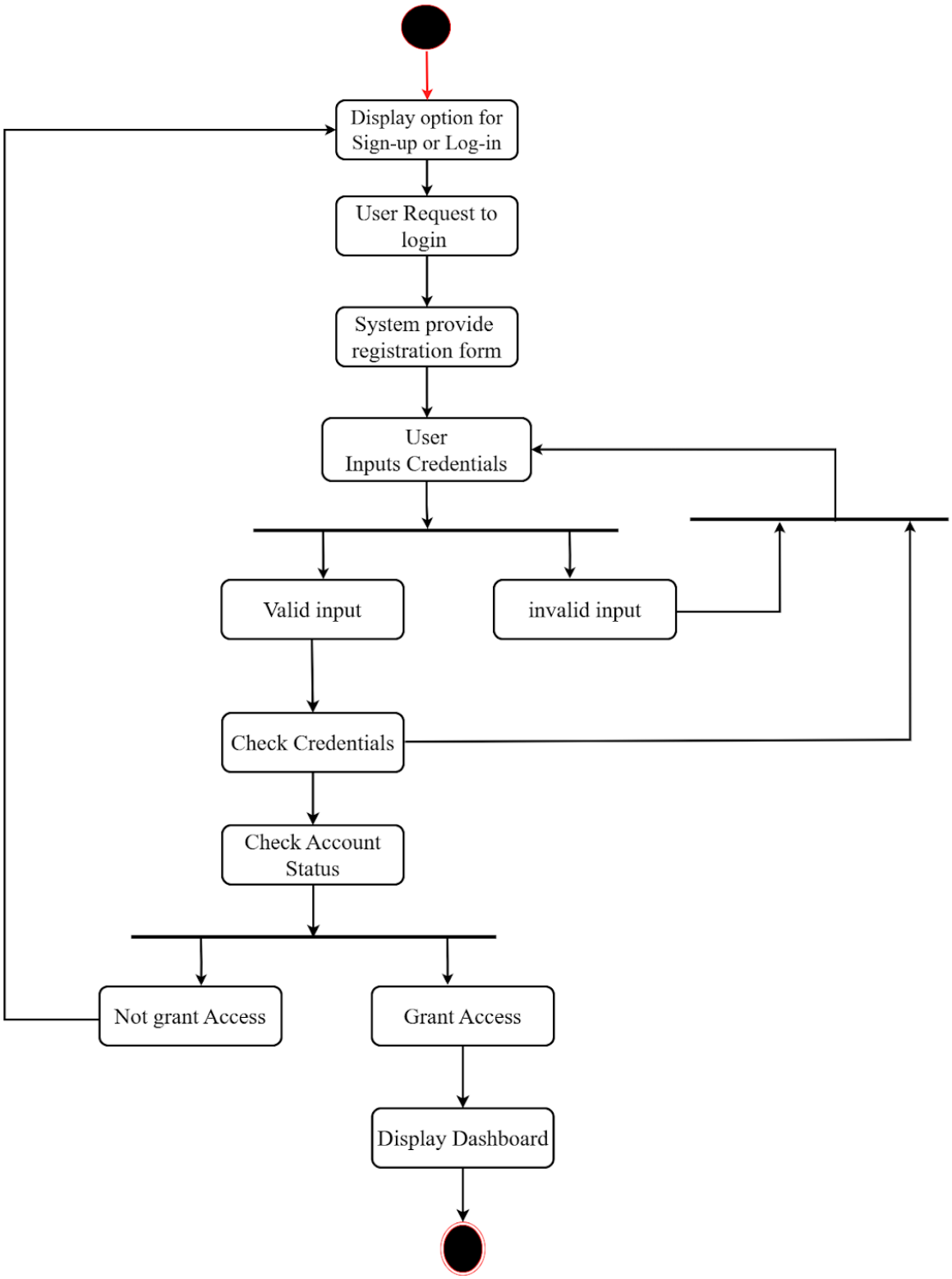


State Diagram

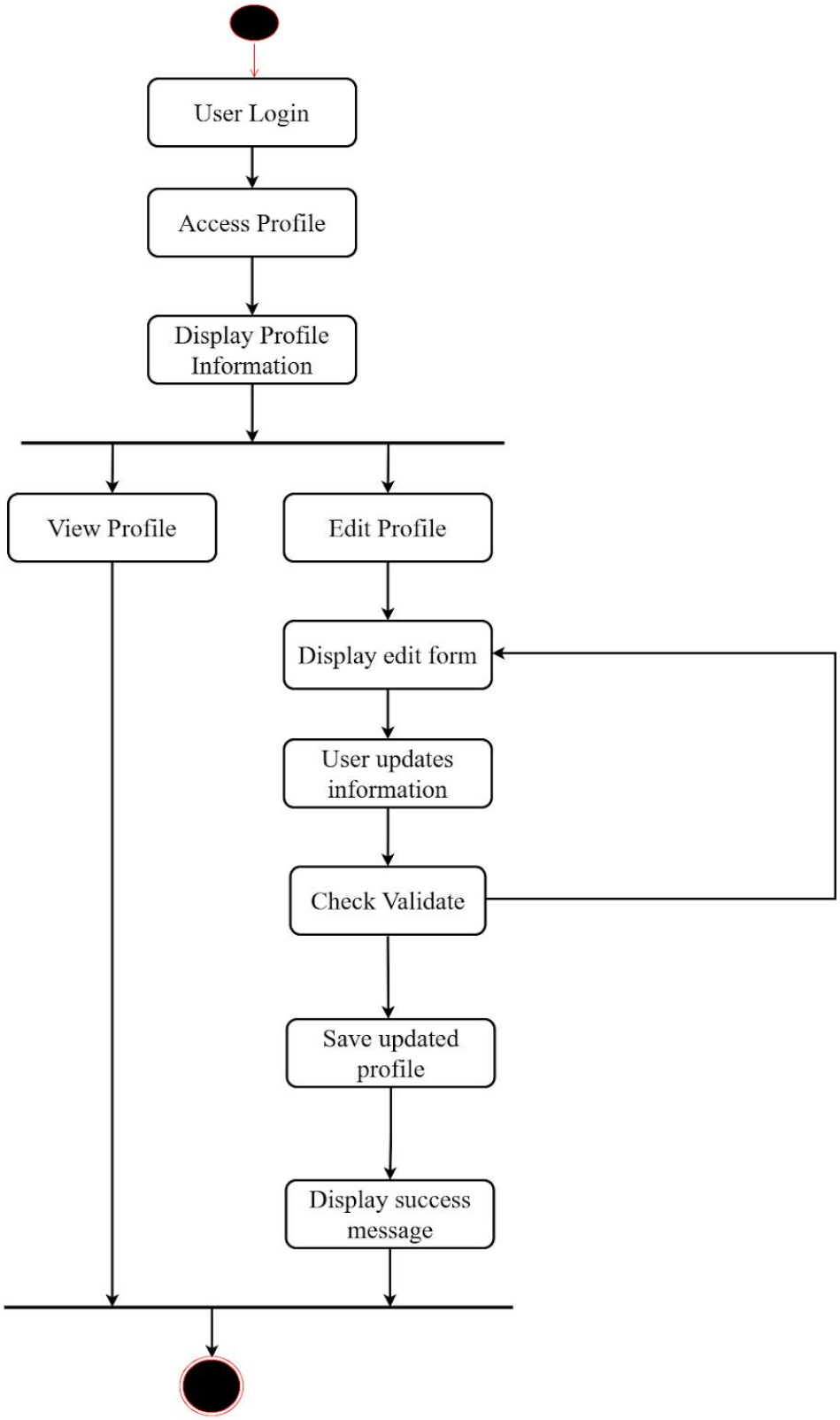
State Diagram-1: Sign up



State Diagram-2: Log In



State Diagram-3: Profile Management



State Diagram-4: Delivery route optimization

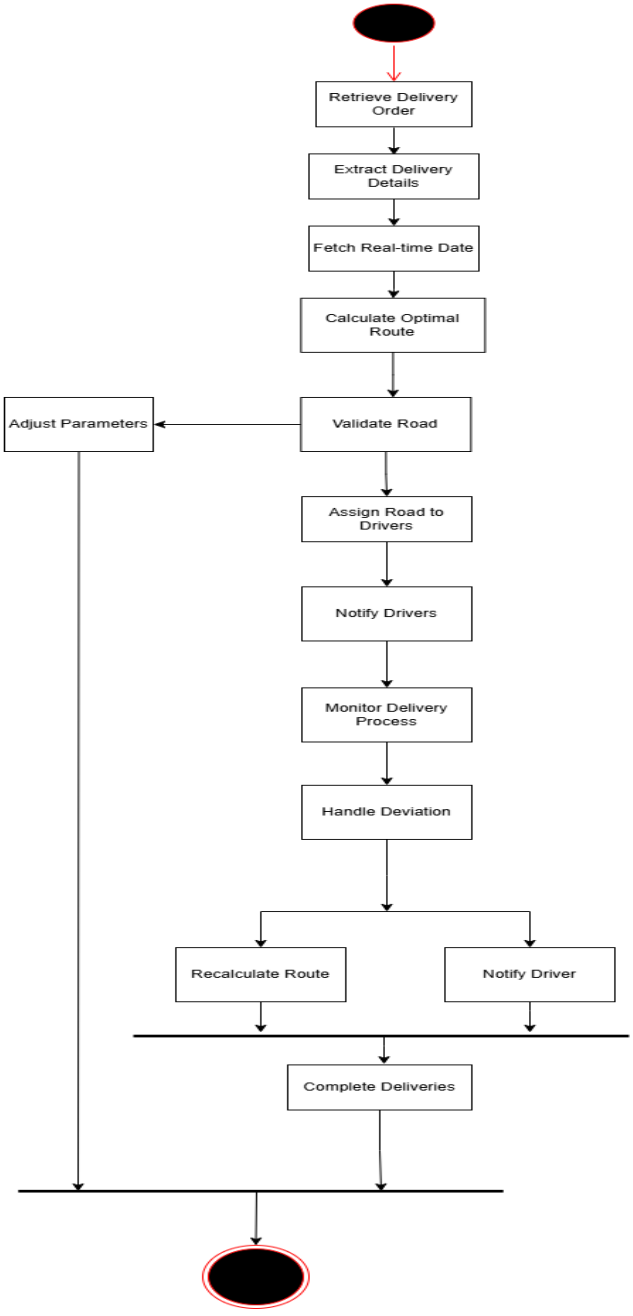
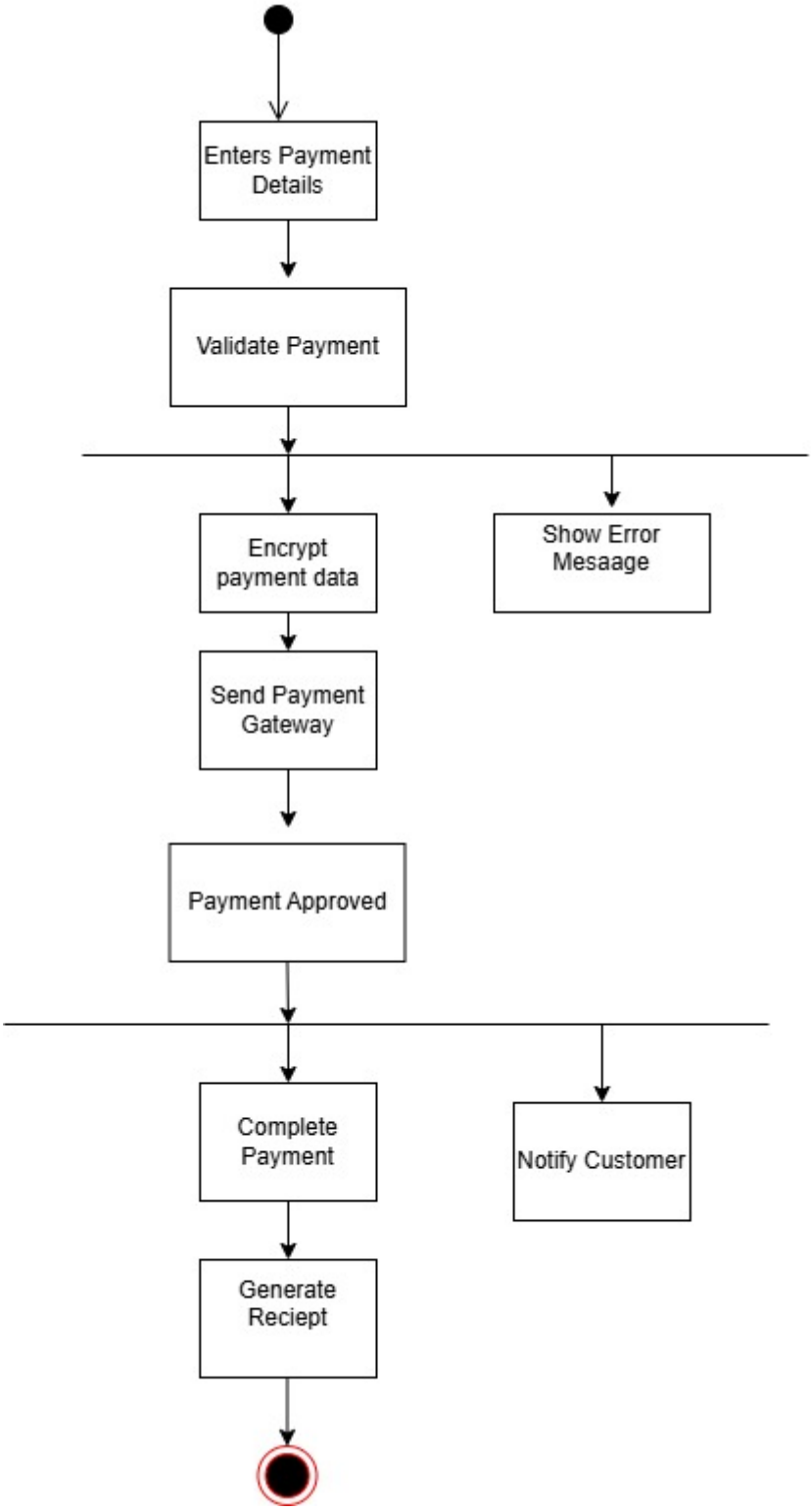


Figure-15: State Diagram for Make a Bill

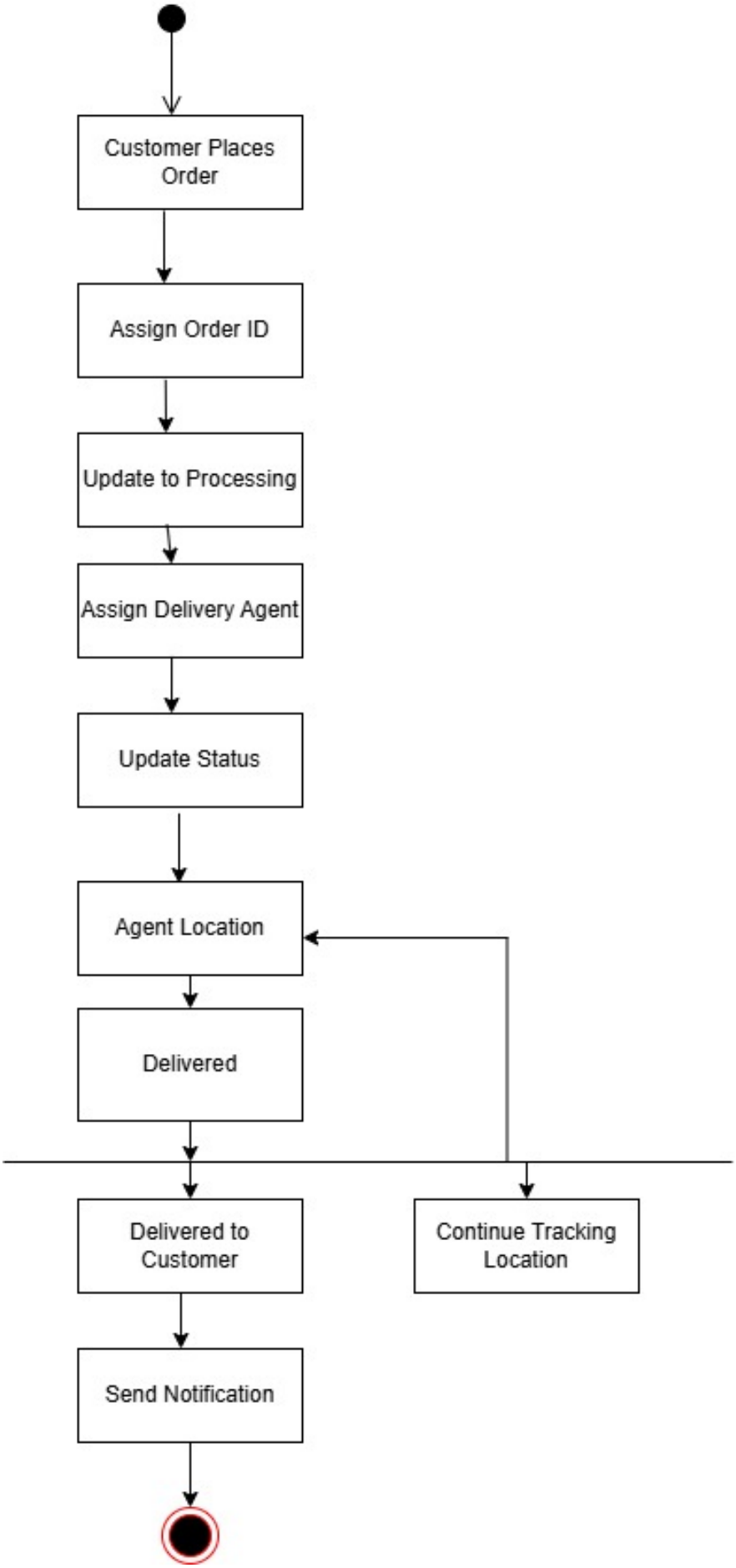
State Diagram-5: .Order Placement

State Diagram-6:Secure Payment Processing

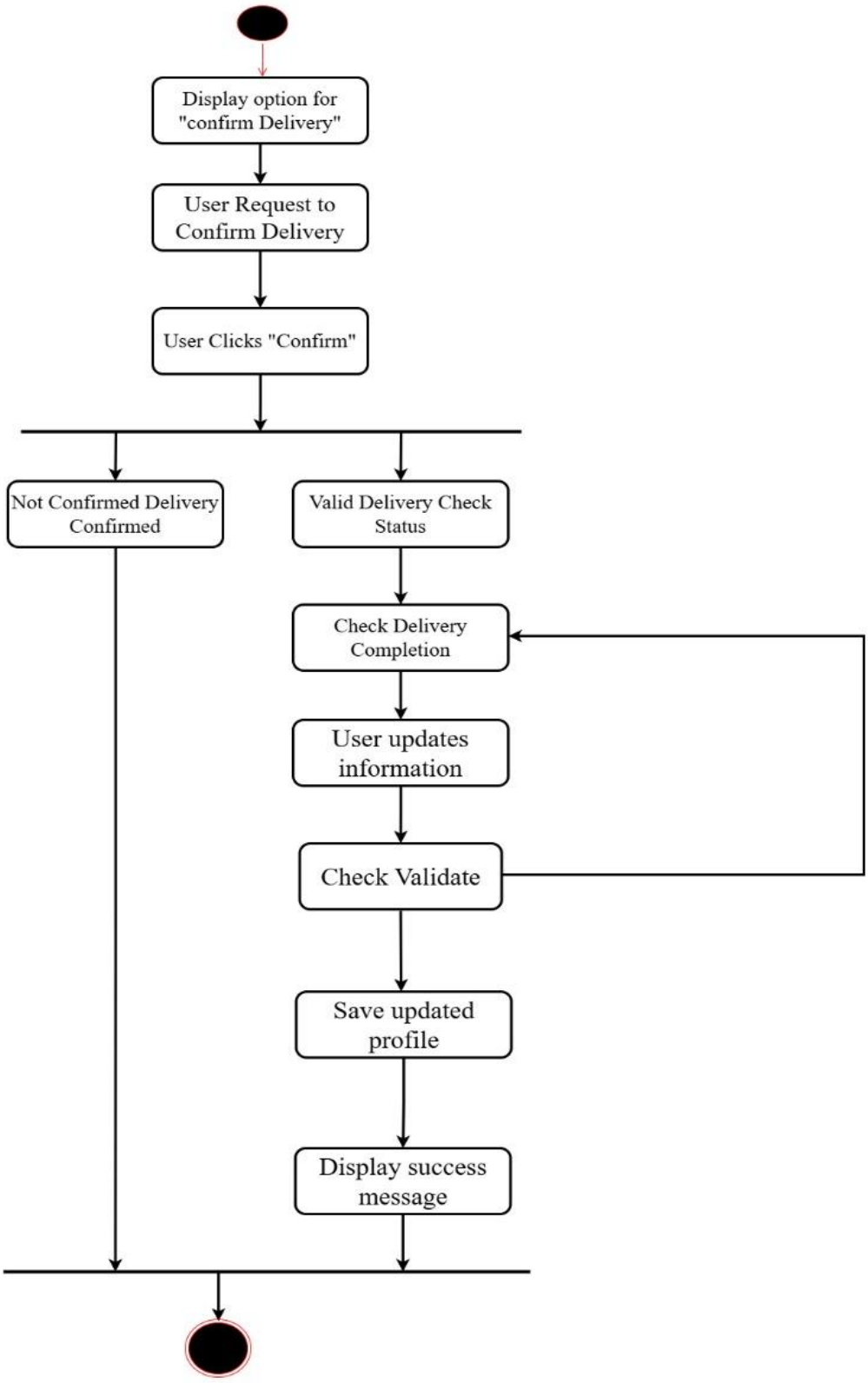


State Diagram-7: Inventory Management

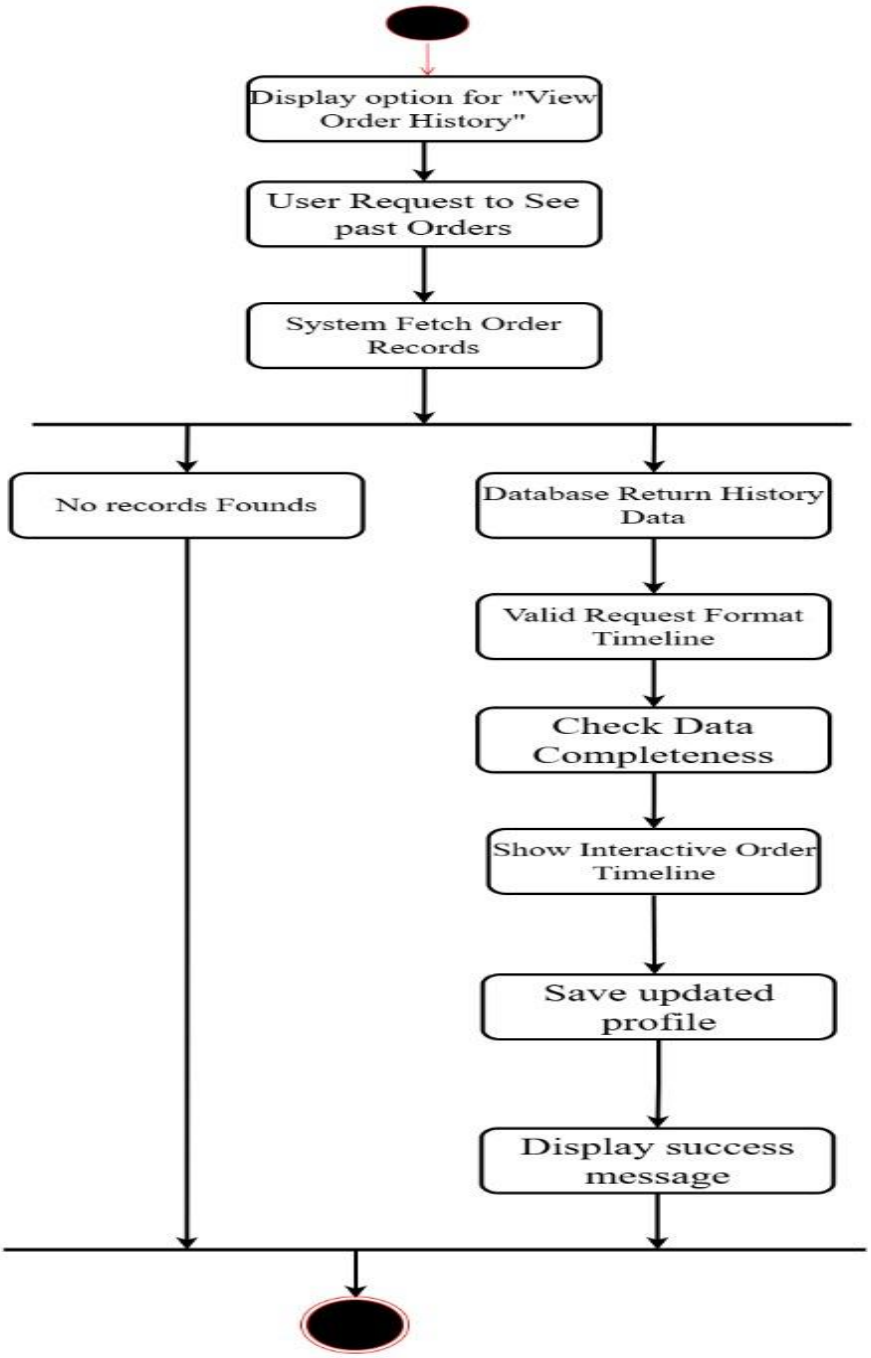
State Diagram-8: .Real-Time Order Tracking



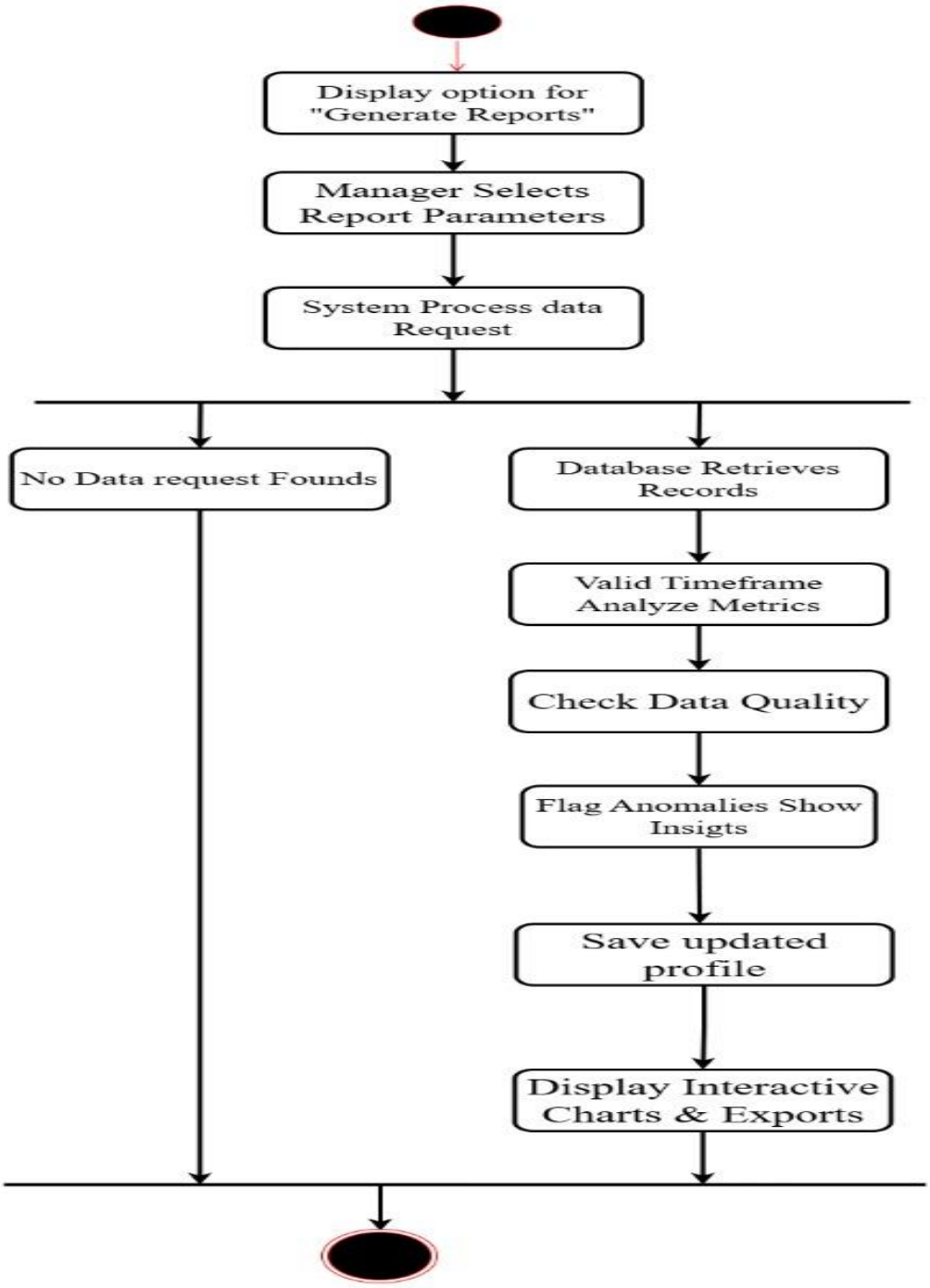
State Diagram-9: .Order Delivery Confirmation



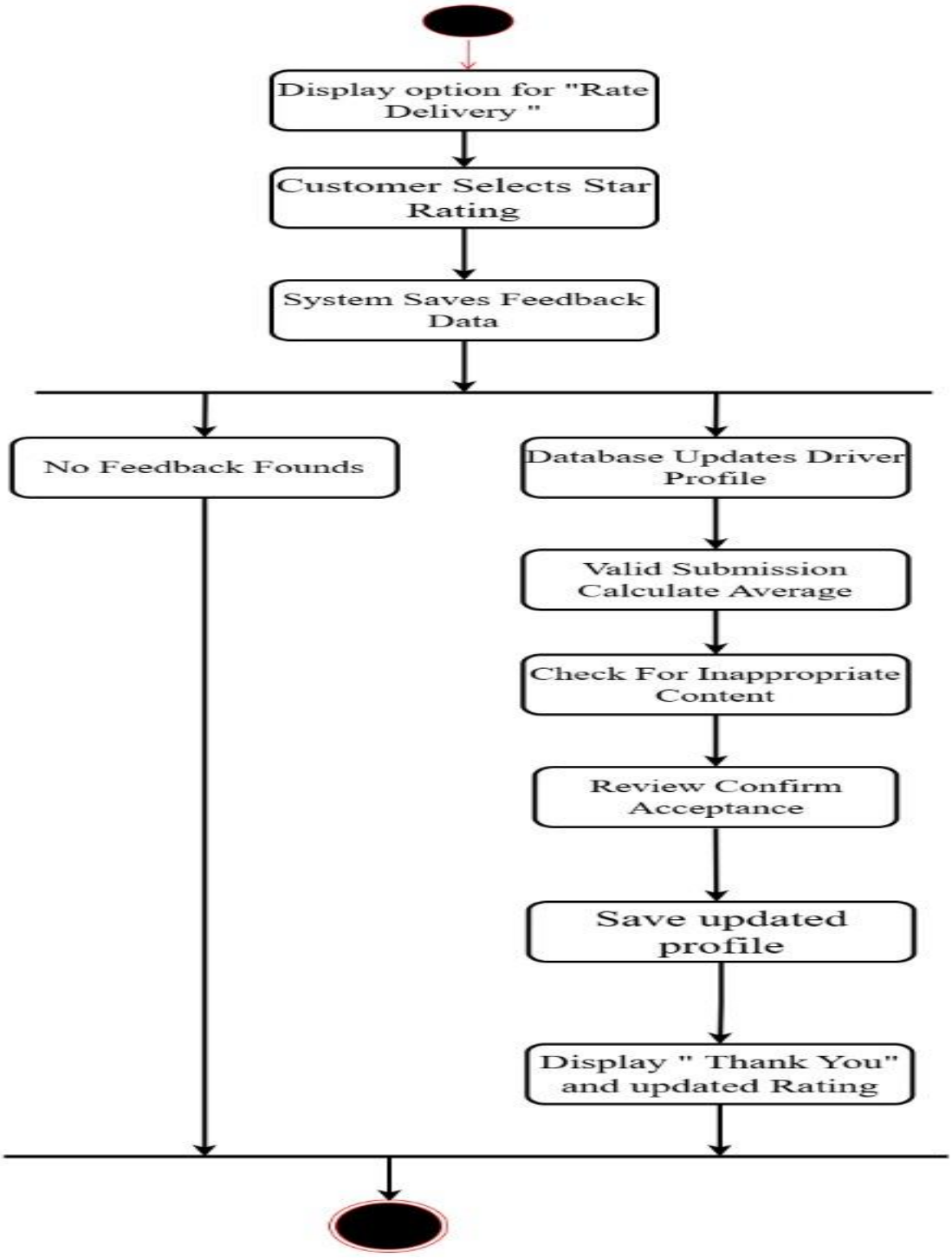
State Diagram 10: Order history and record



State Diagram 11:Report analysis

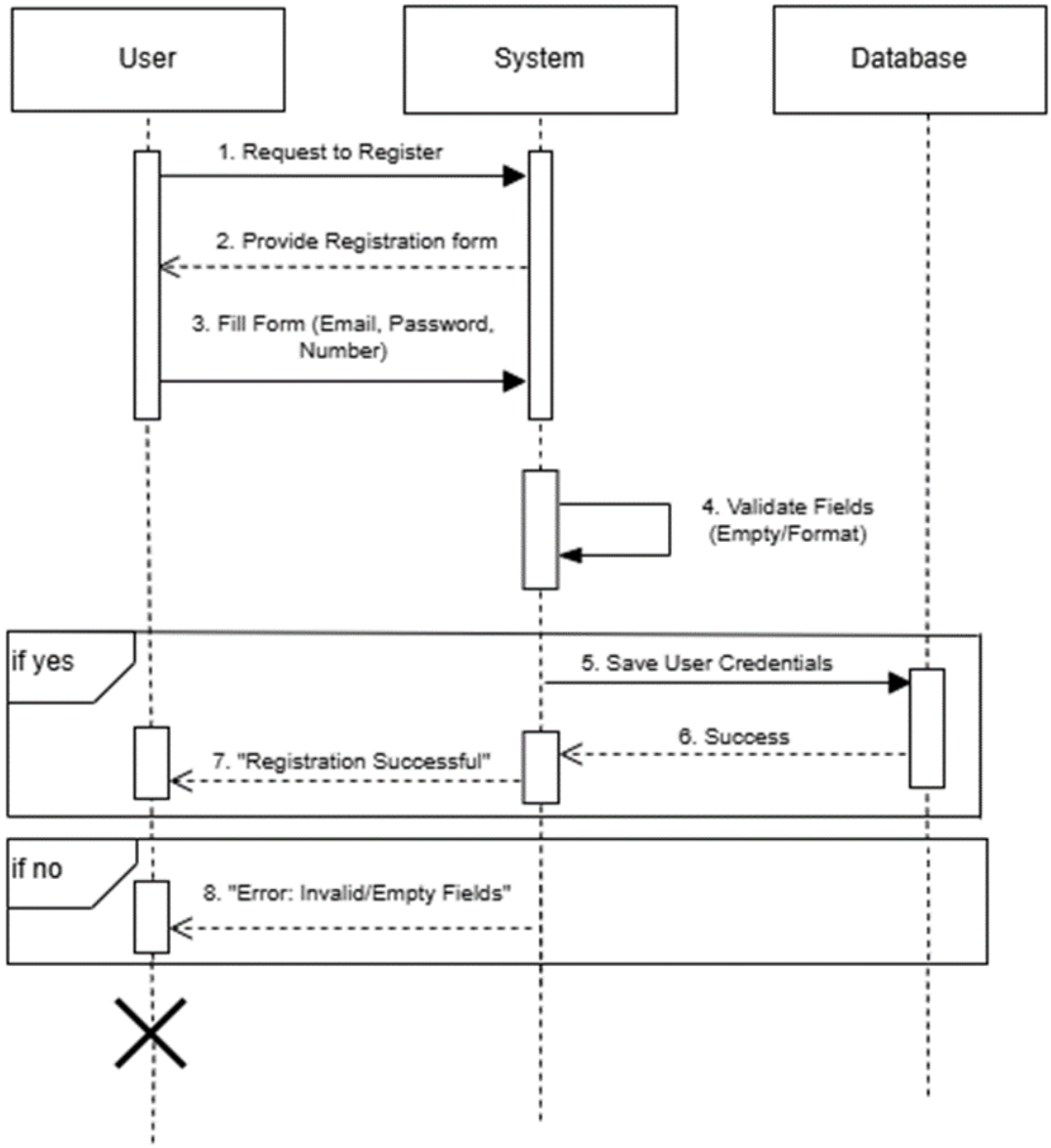


State Diagram 11:Review and ratings



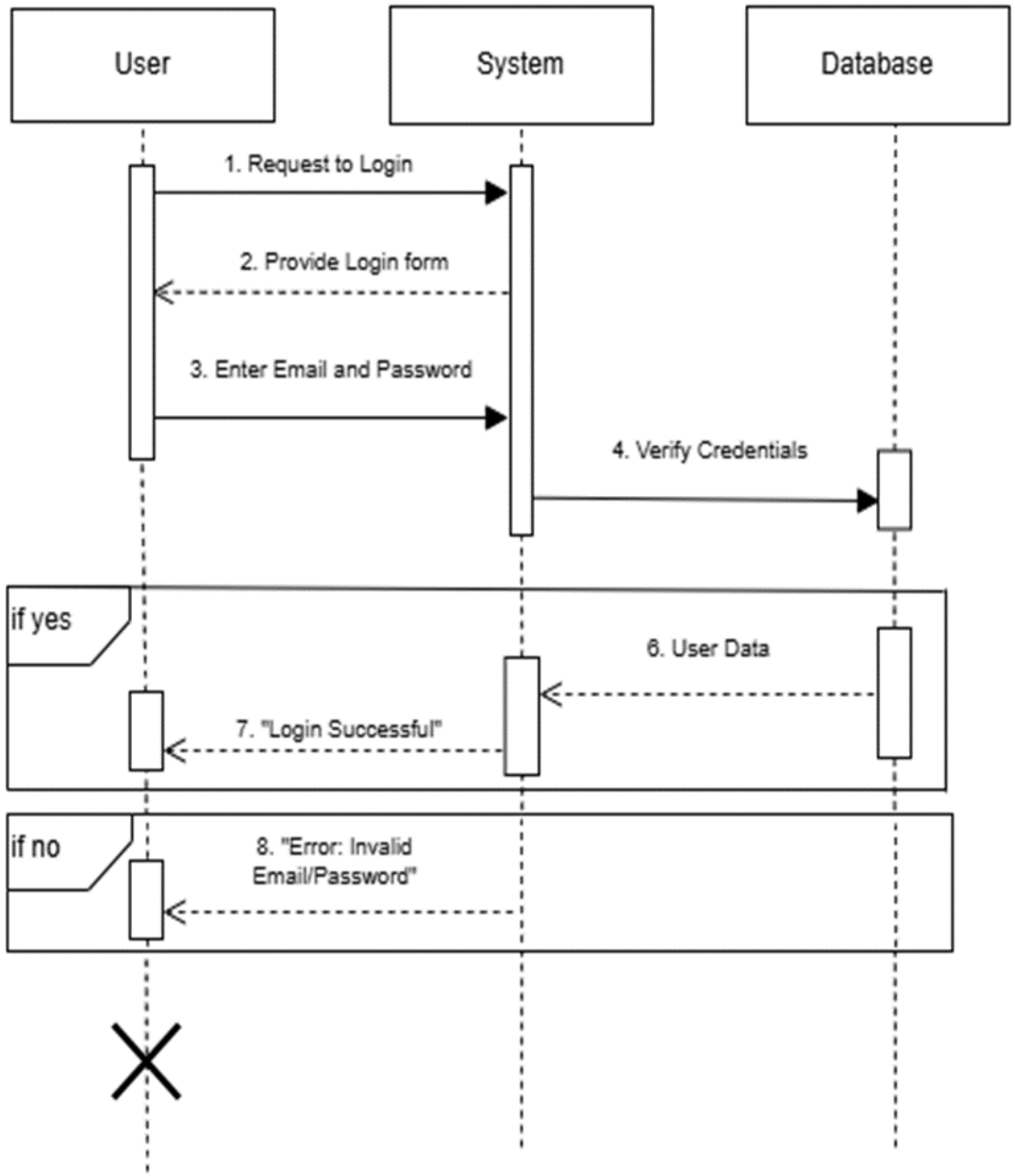
Sequence Diagram

Sequence Diagram 1: User Registration

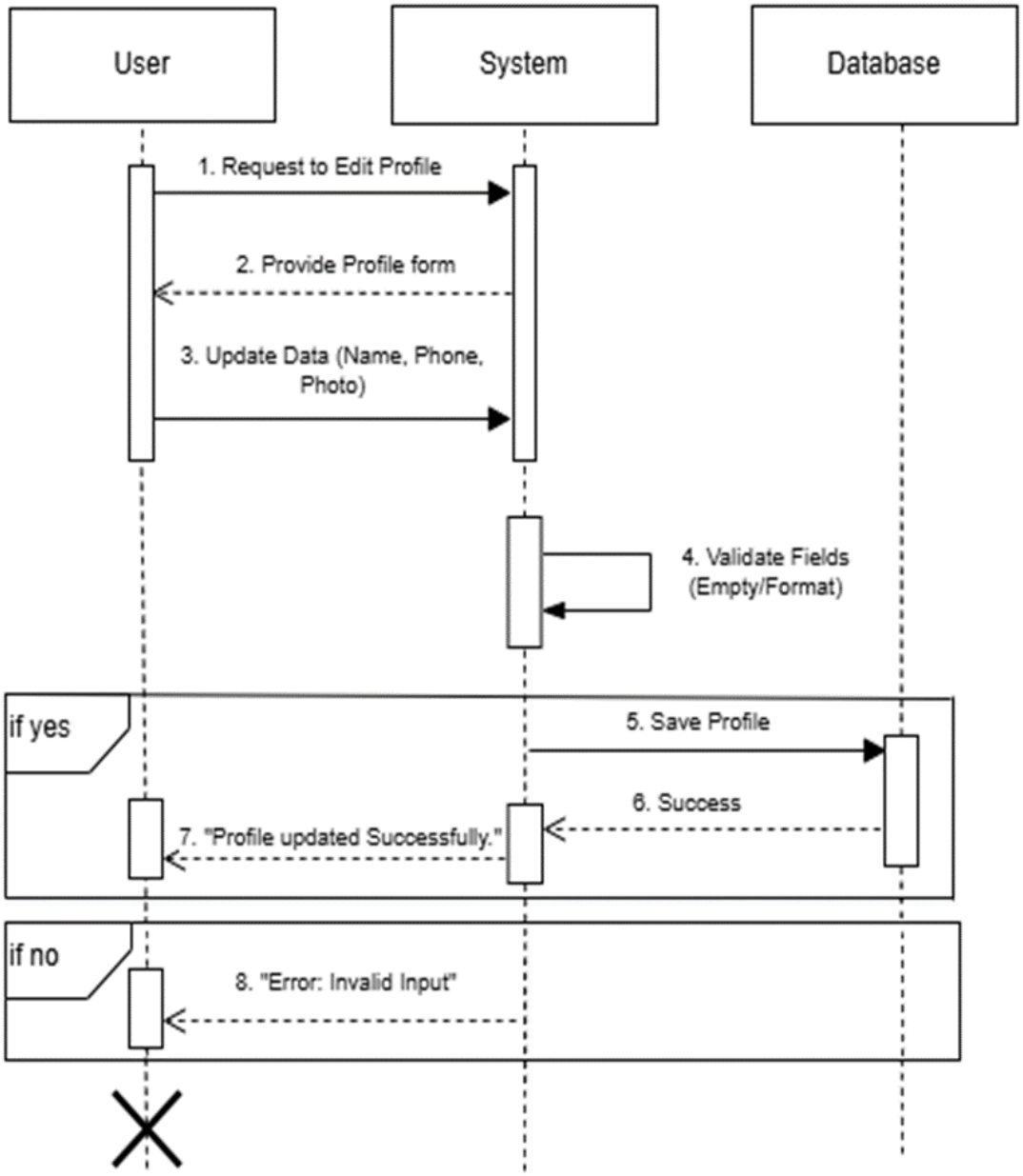


Sequence Diagram 2:User Login

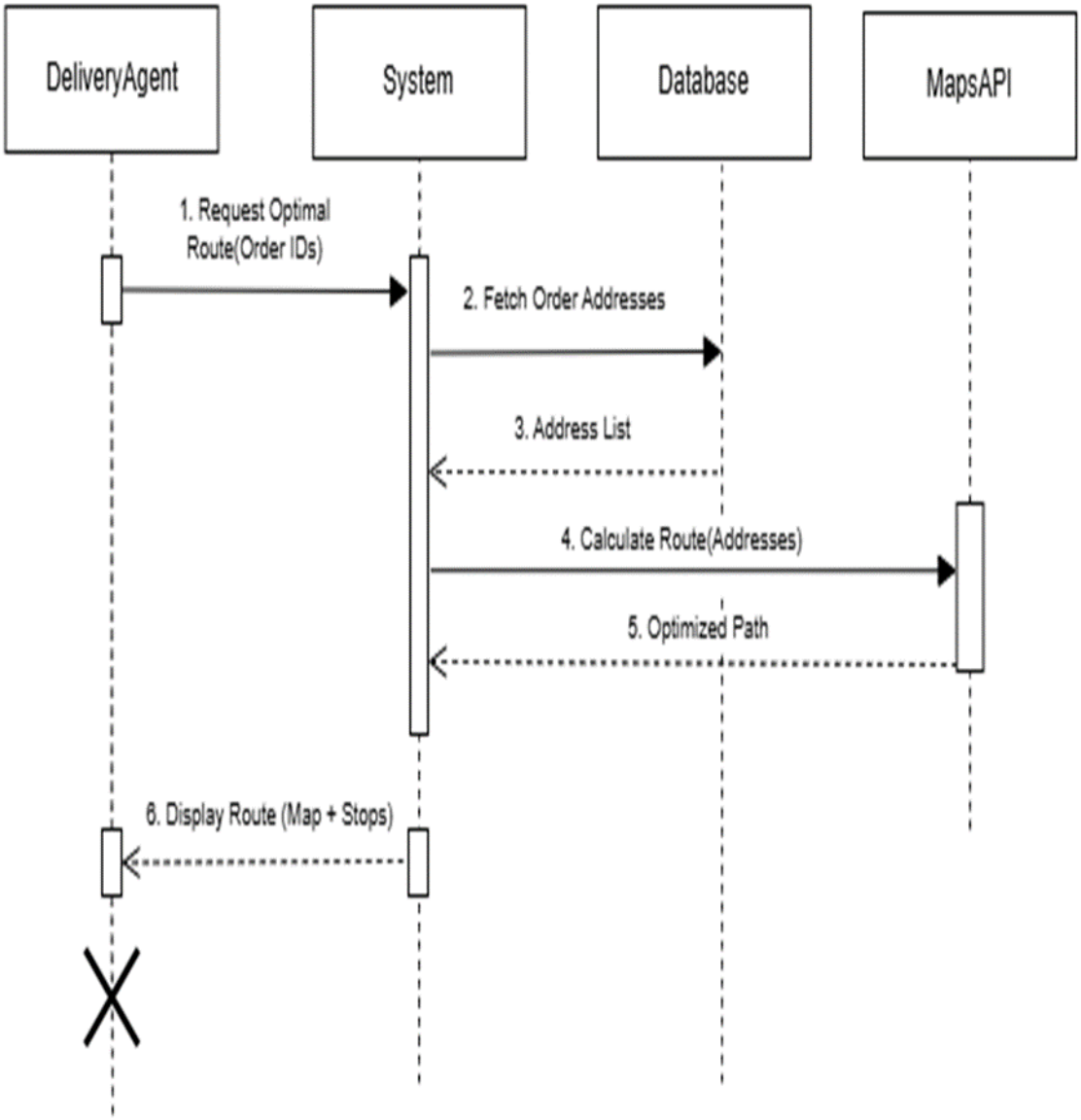
Figure-18: Sequence Diagram for Room Booking



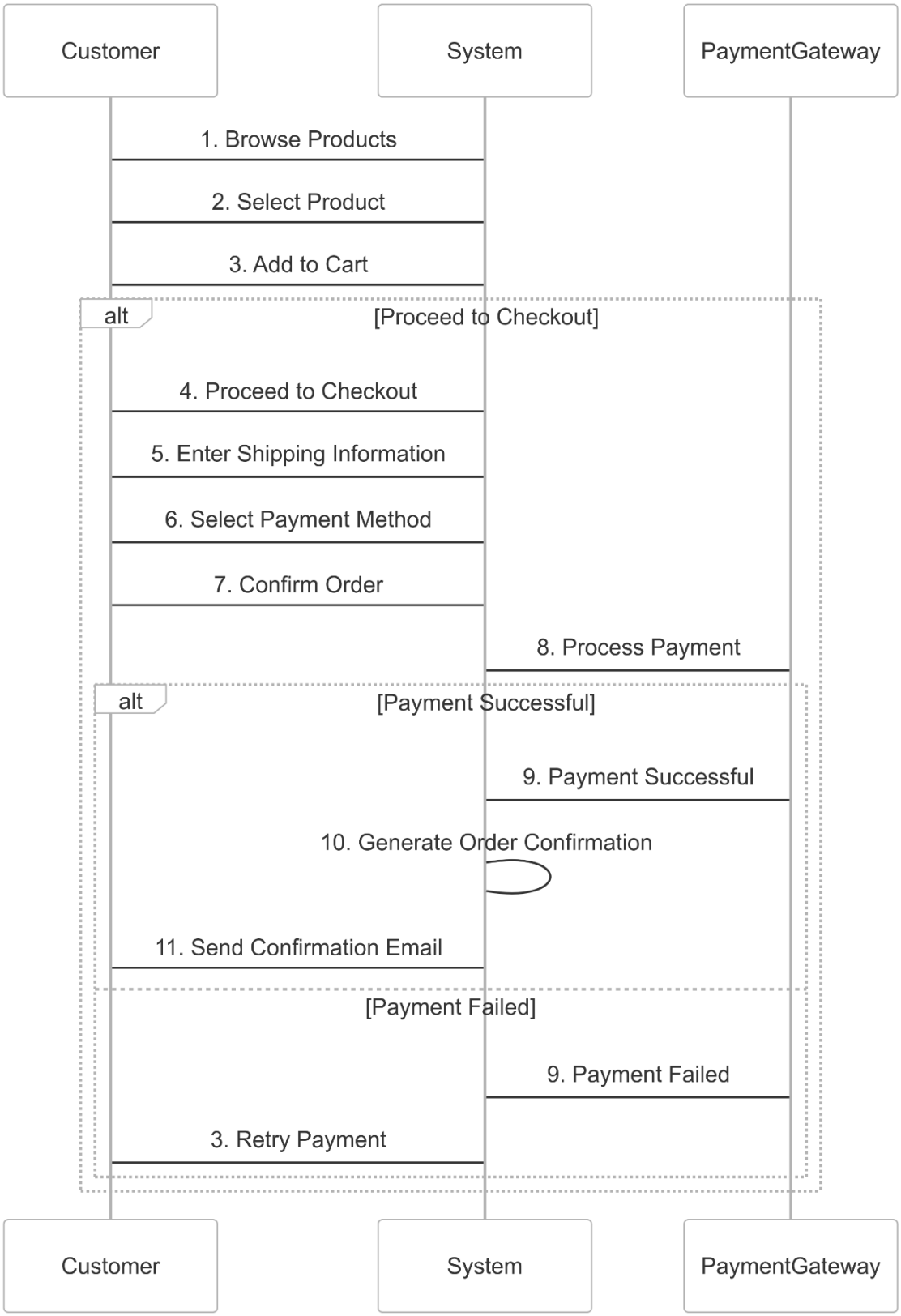
Sequence diagram-3: Profile Management



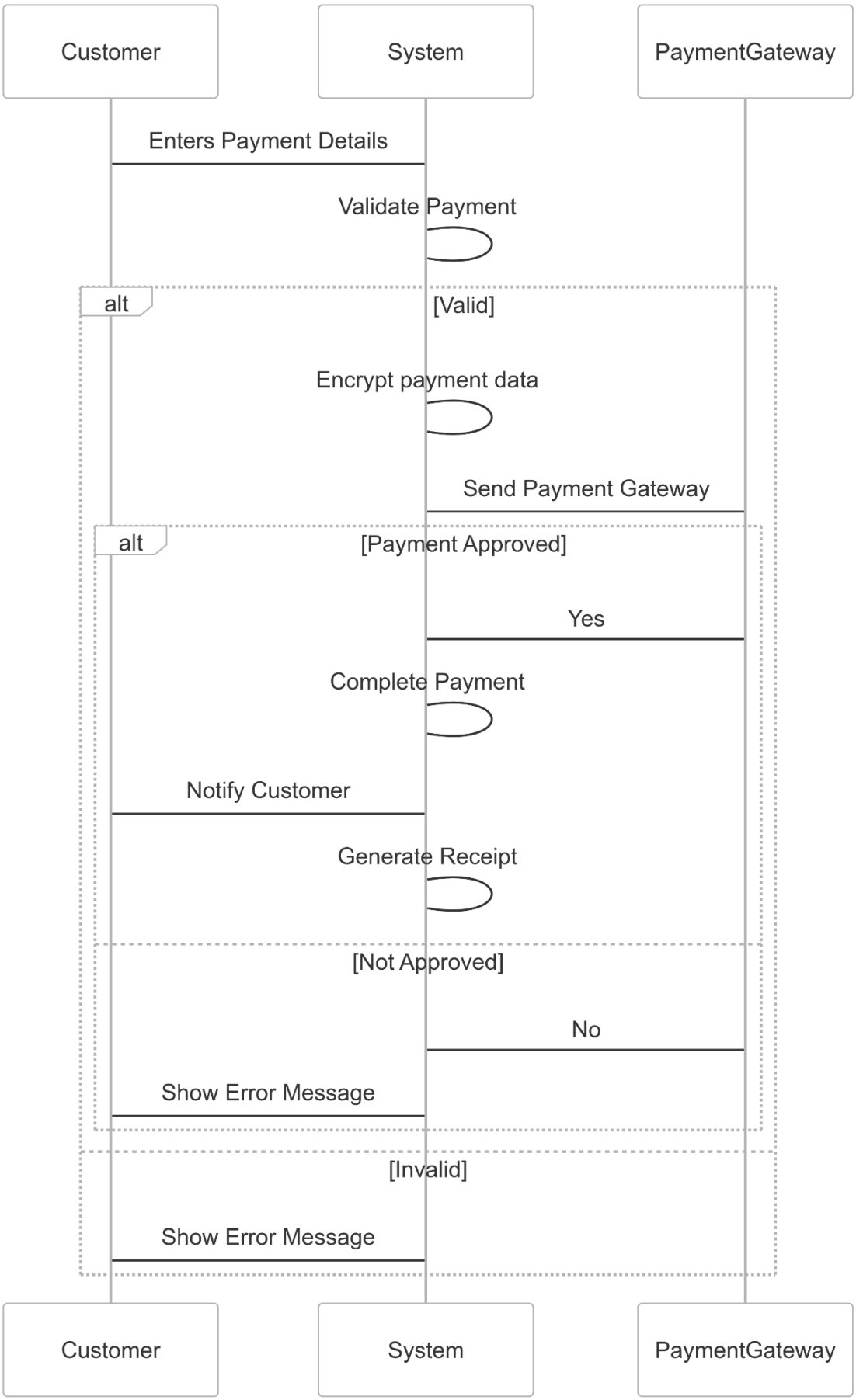
Sequence diagram-4:Delivery Route Optimization



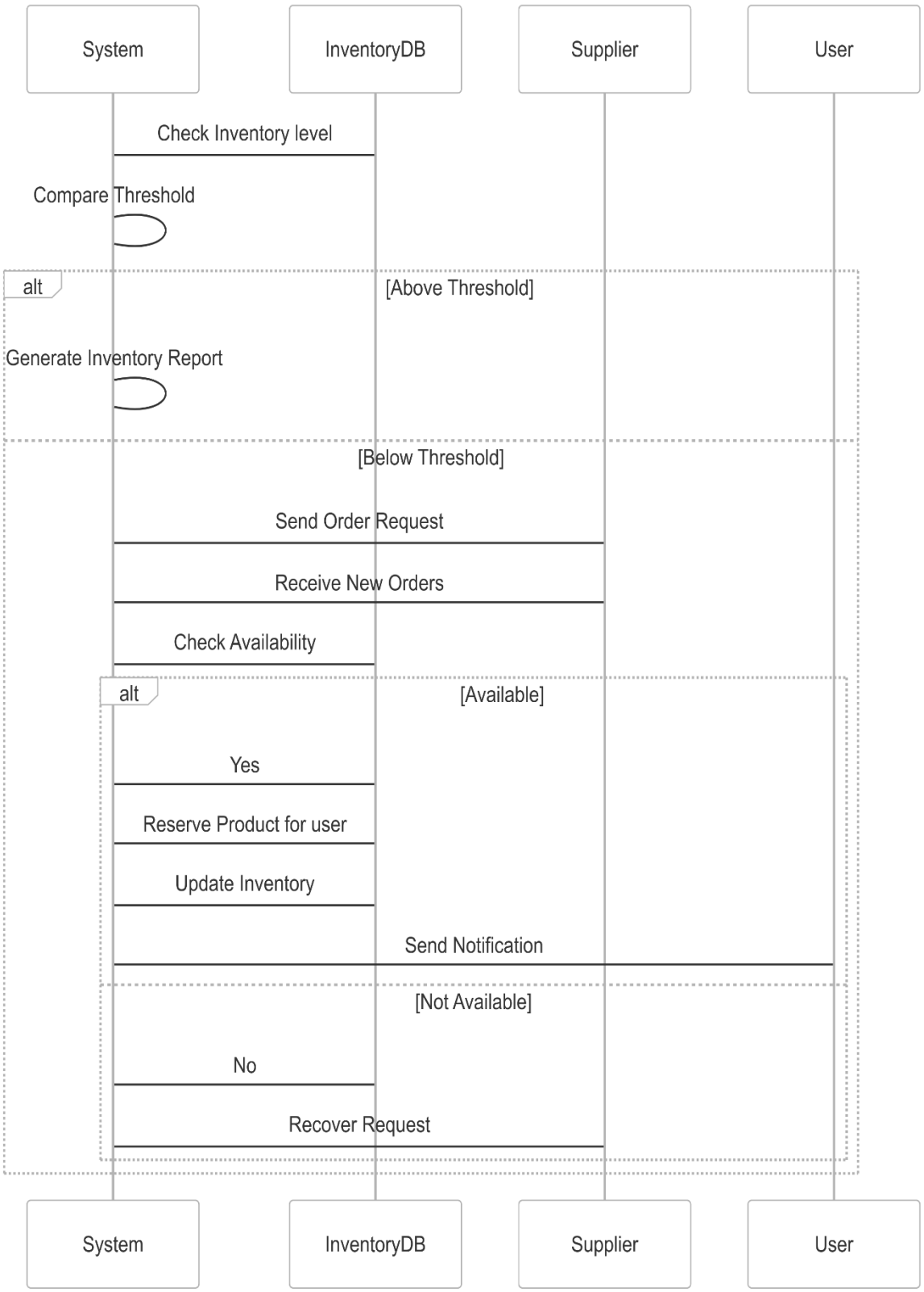
Sequence diagram-5: **Order Placement**



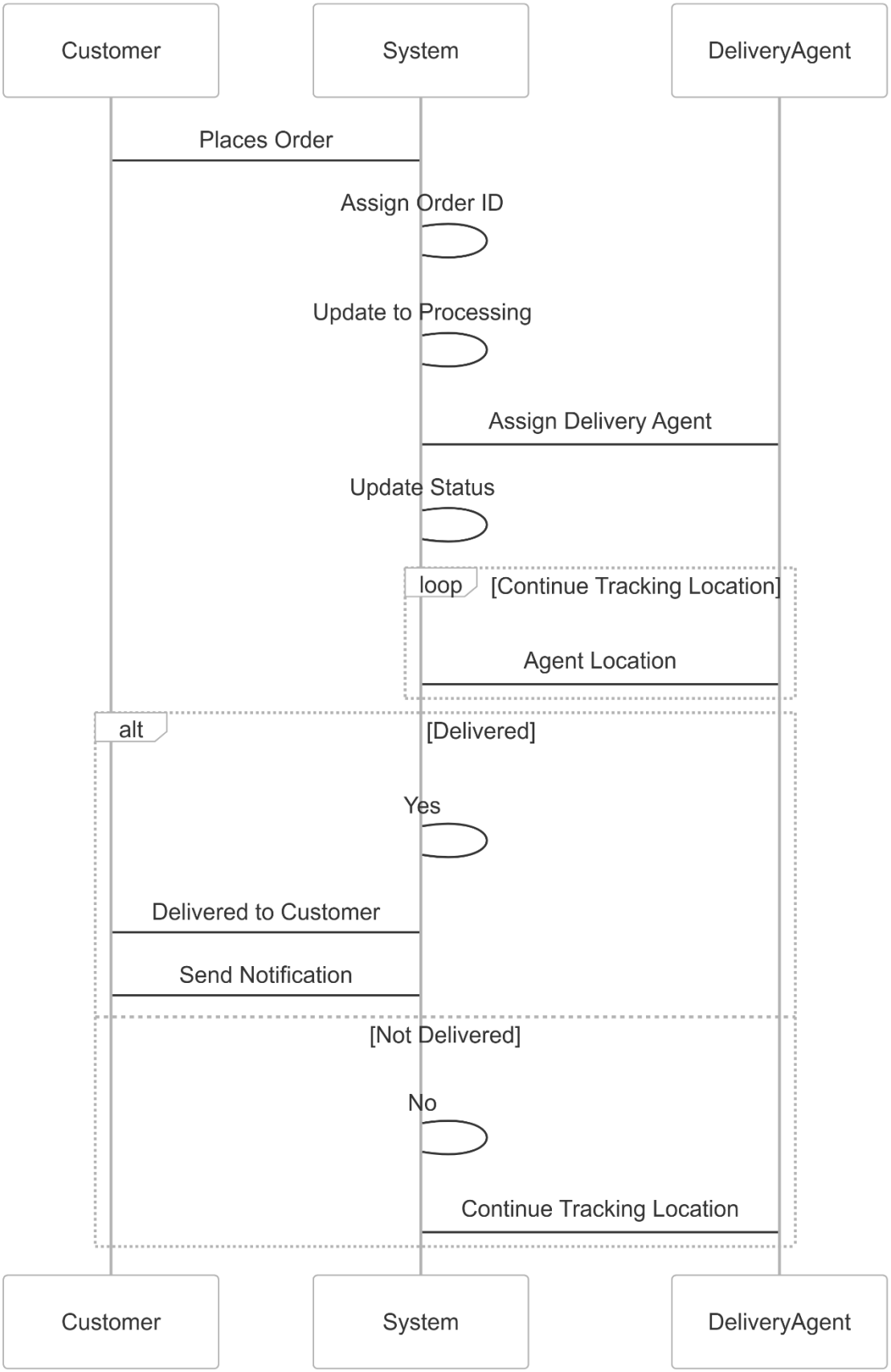
Sequence diagram-6: Secure Payment Processing



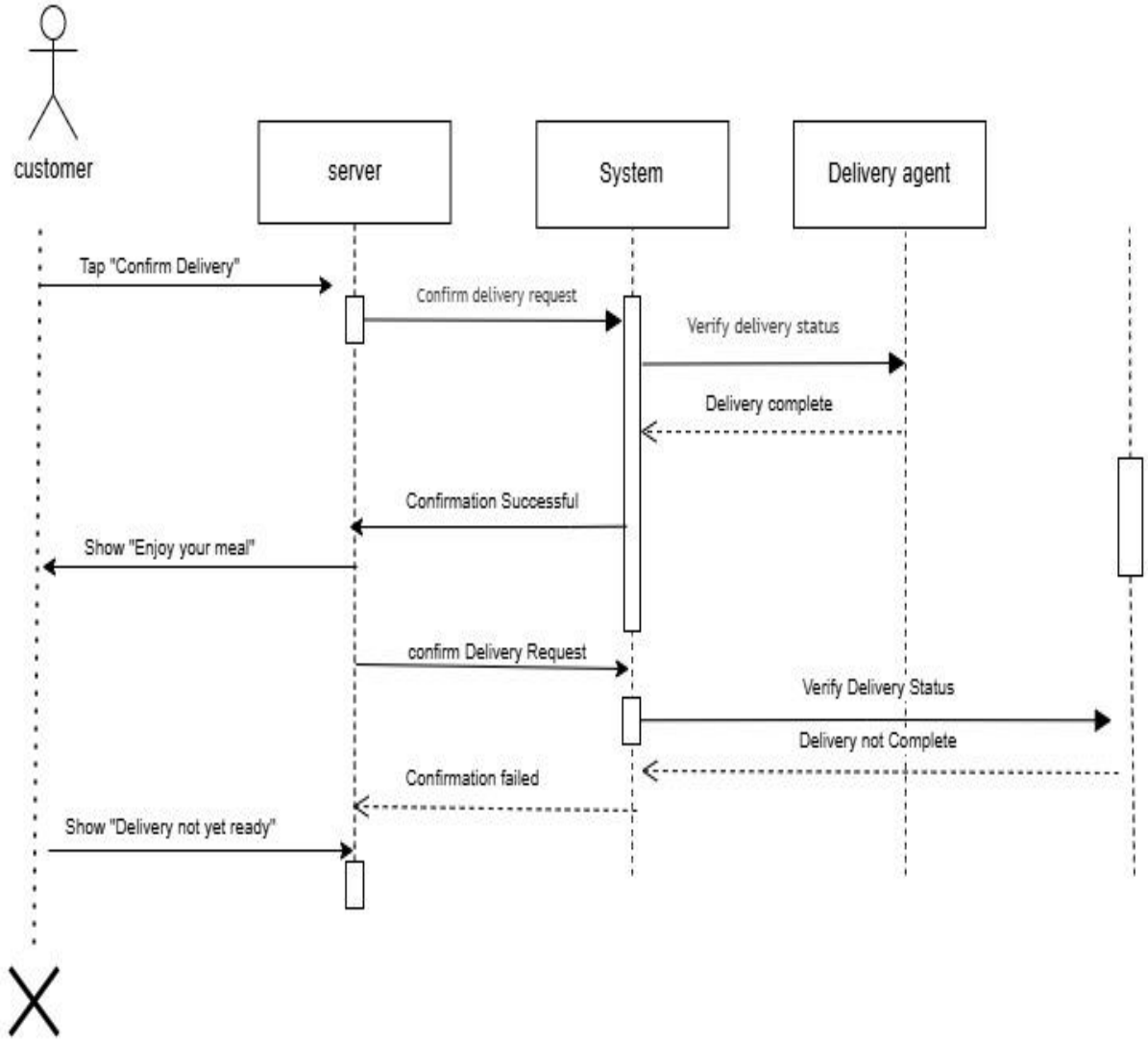
Sequence diagram-7: Inventory Management



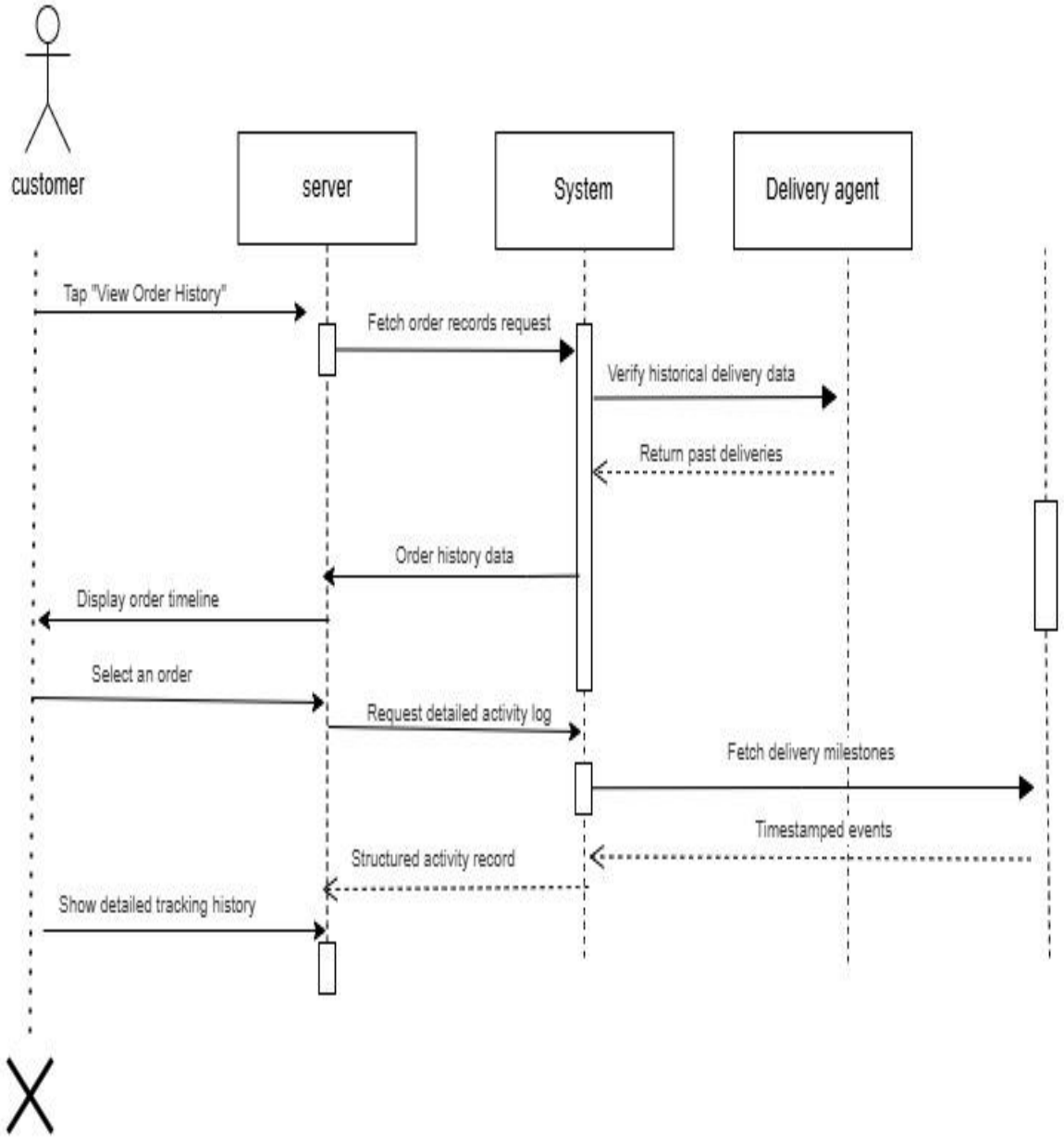
Sequence diagram-8: Real-Time Order Tracking



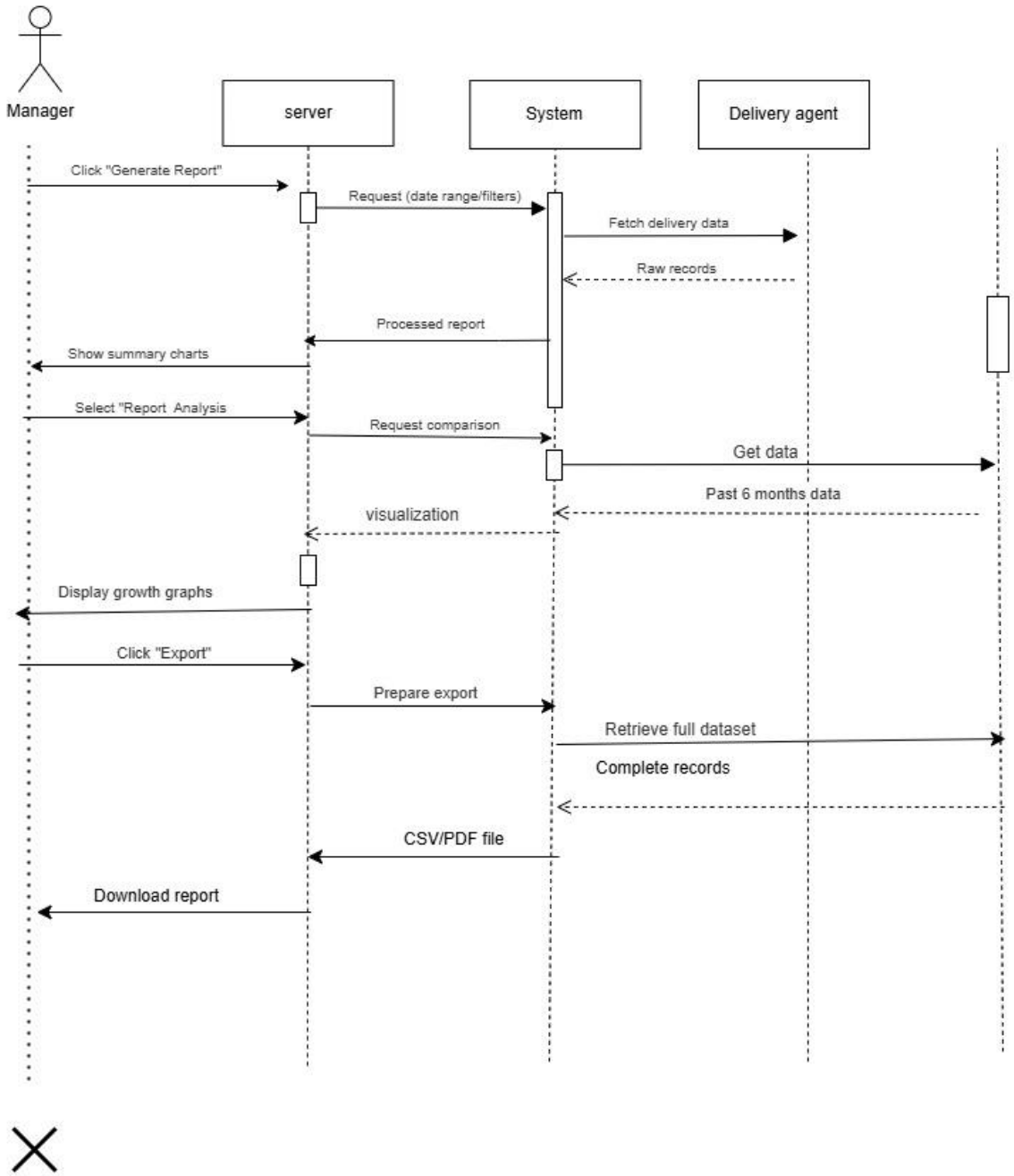
Sequence diagram-9: Order Delivery Confirmation



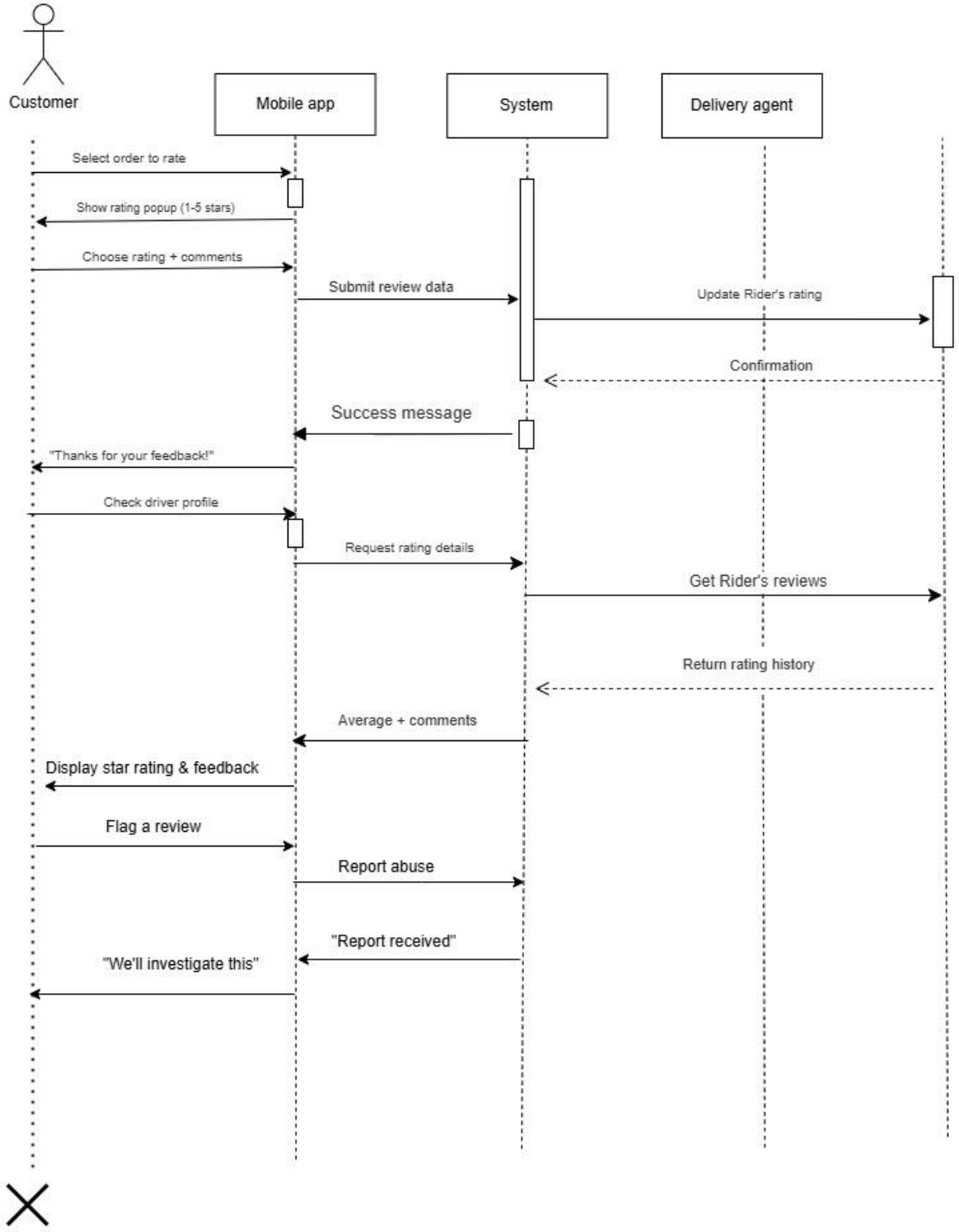
Sequence diagram-10: Order History and Record



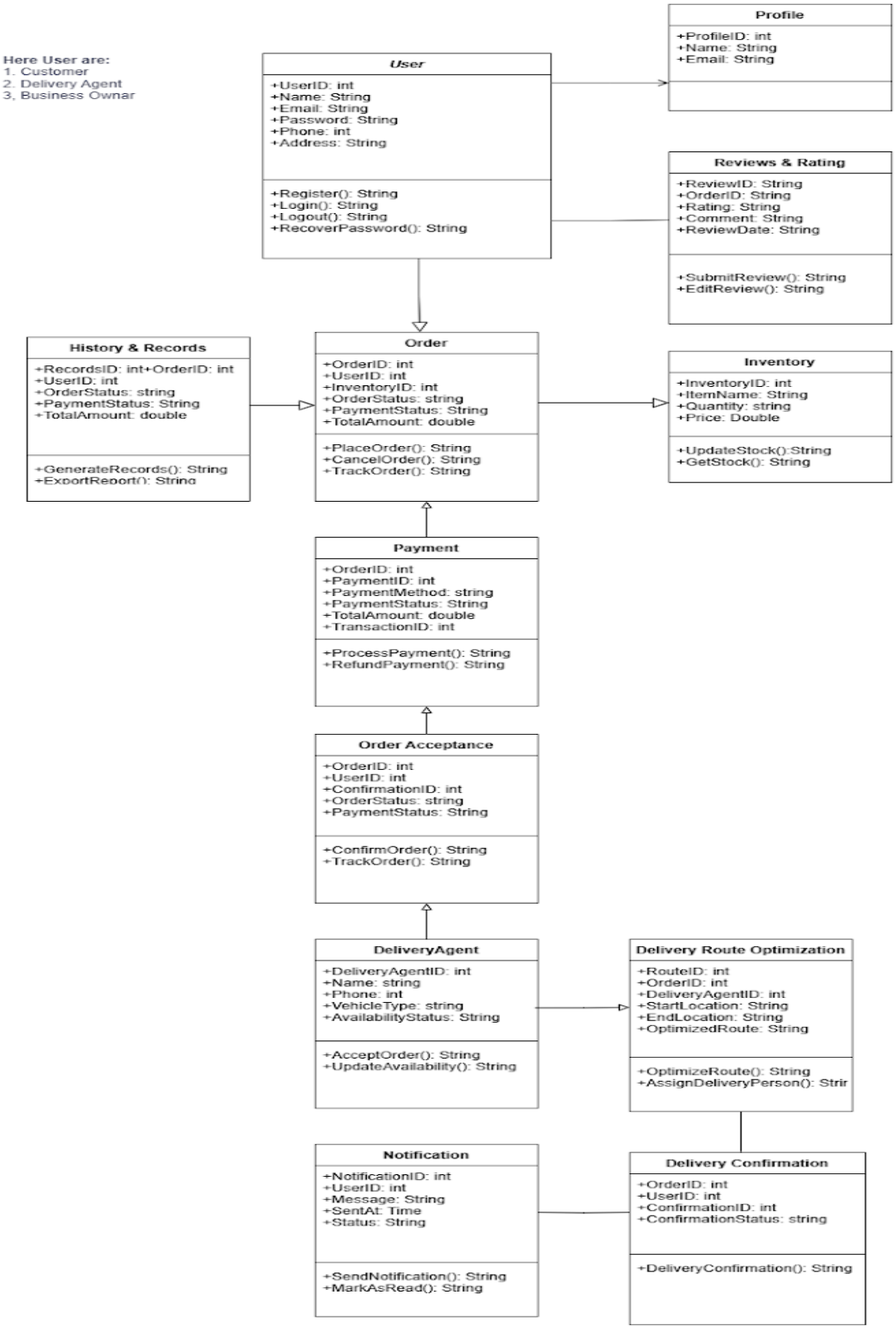
Sequence diagram-11: Report Analysis



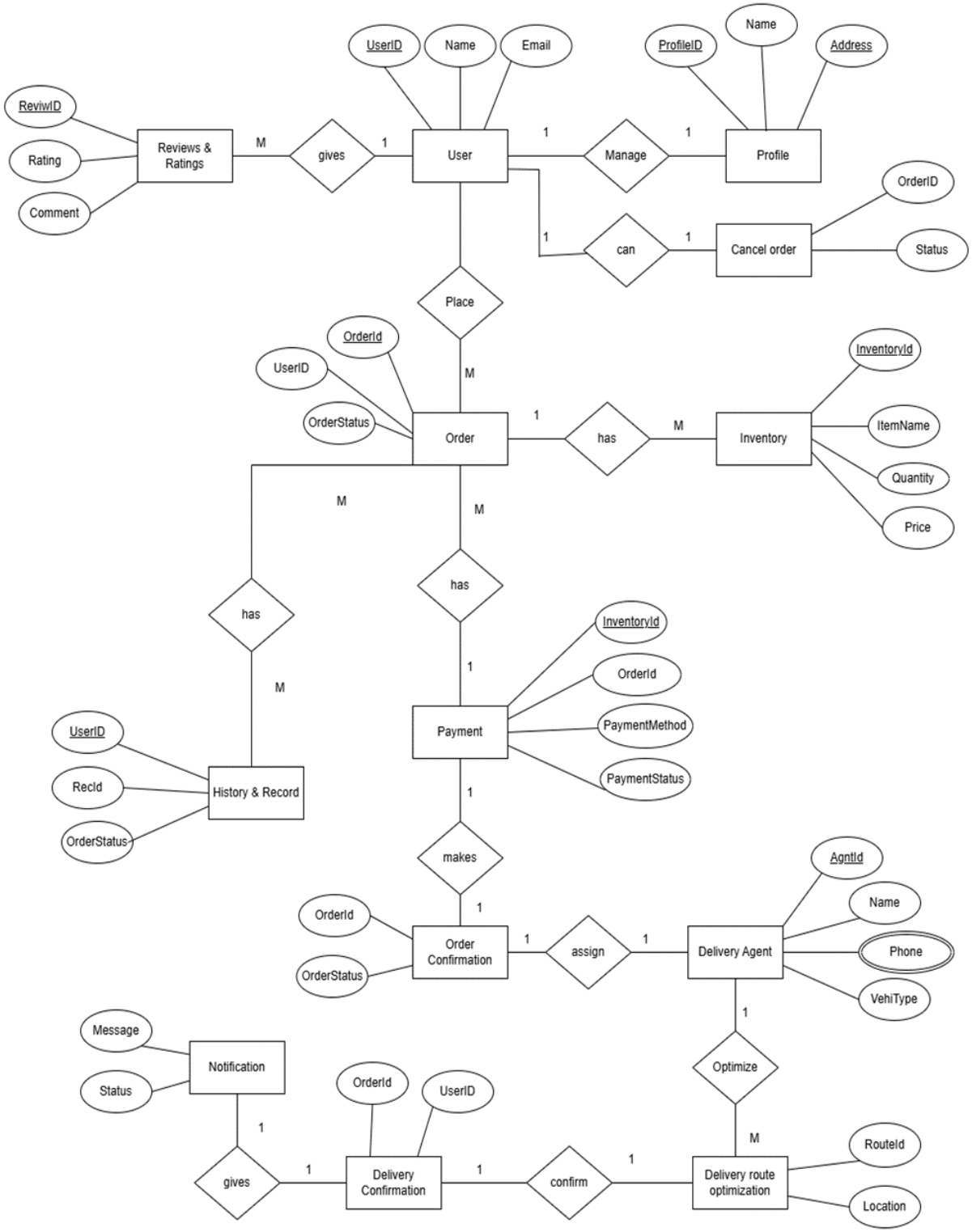
Sequence diagram-12: Review and Ratings



Class Diagram



Er Diagram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Comment
Reviews & Ratings
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can
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Cancel order
OrderID
Status
Place
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OrderStatus
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RouteId
Location
Delivery route optimization