HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

School of Information and communications technology

Software Requirement Specification

AIMS: An Internet Media Store

Subject: Software Design and Construction

Lecturer: TS. Nguyen Thi Thu Trang

Student: Cao Thi Thu Ha 20215271

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1 Introduction

1.1 Objective

This document offers a comprehensive description of the User Management Subsystem, User Groups, and their functions available during runtime. It outlines the system's purpose and features, the interfaces, and the constraints that the system must adhere to in order to respond to external stimuli.

Documentation for stakeholders and software developers.

1.2 Scope

The purpose of the software is to enable customers to shop online by allowing them to view products, place orders, and make payments. User accounts will be created and assigned by the administrator.

Upon entering the system, the homepage will display 20 recommended products. Users can utilize the product search function to find specific items, sort these products, and, if satisfied, add them to their shopping cart. To manage the shopping cart, customers can view it, remove unwanted products, and proceed to place an order. For payment, customers will need to use a credit card, with transactions processed through interbank systems.

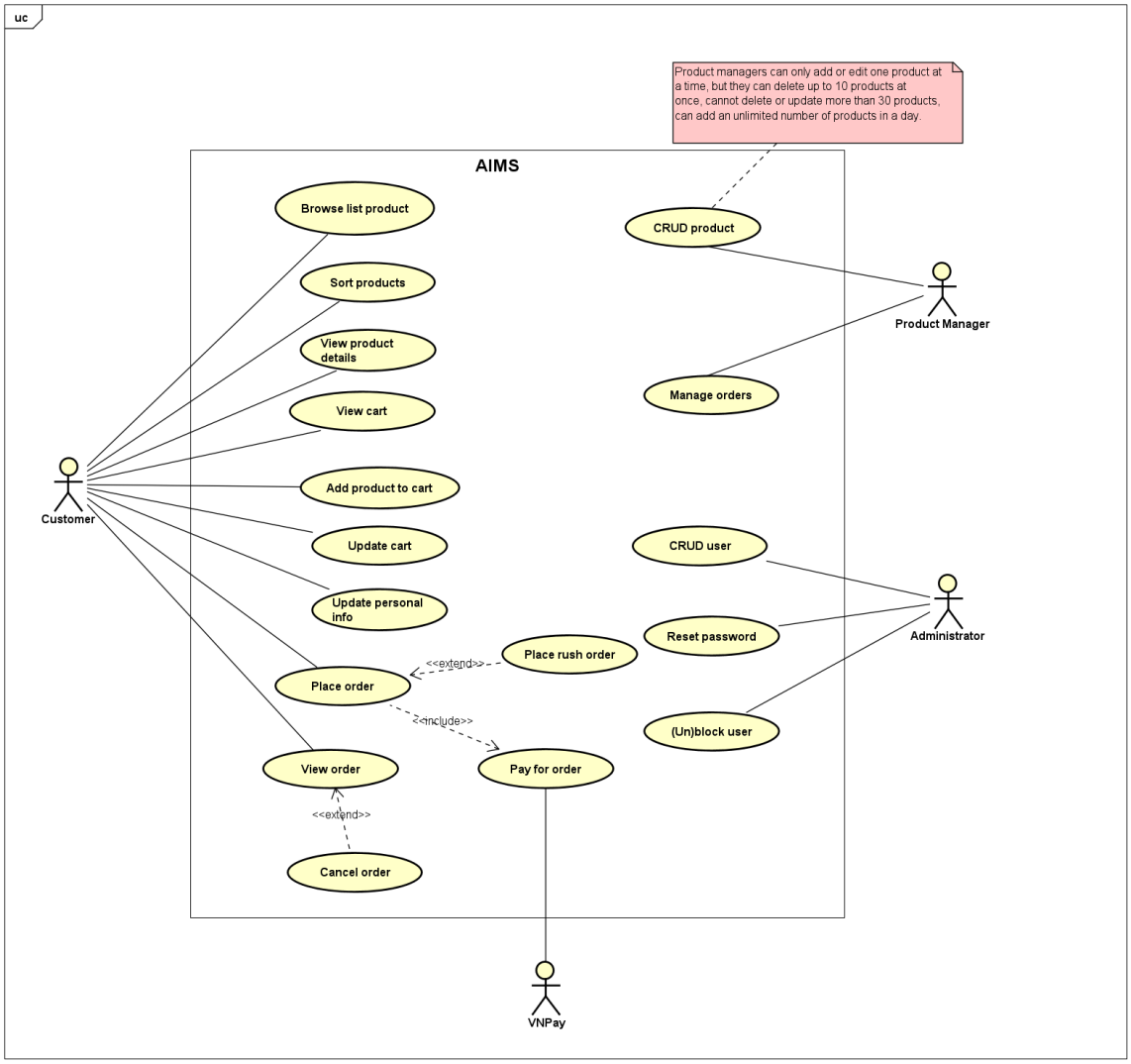
2 Overall Description

2.1 Survey

The software has 4 actors: Customer, Interbank (VNPay), Administrator and Product Manager.

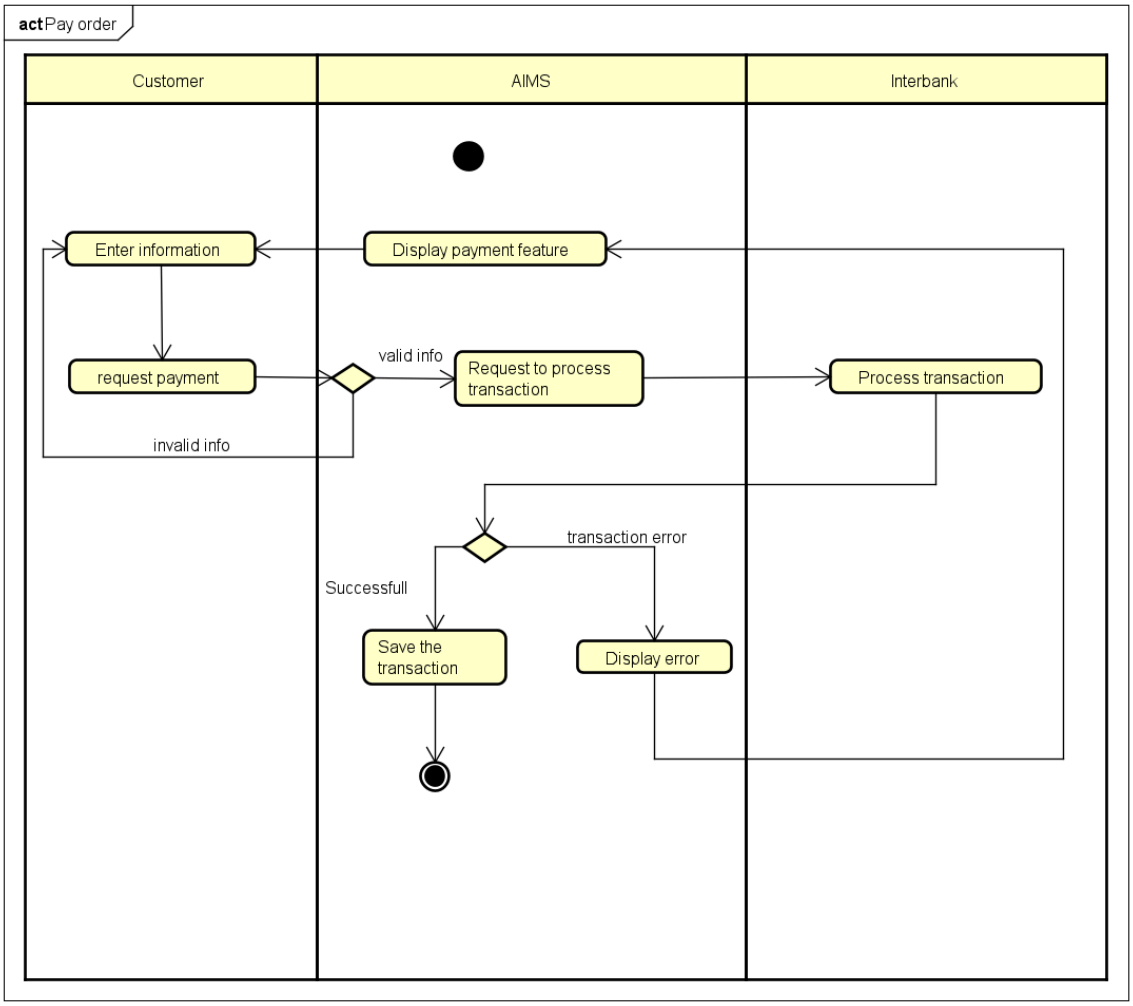
2.2 Overall requirements

When customers access the system, the home page will display products. Users can search for products, arrange them in a certain order and add them to the cart. When viewing the cart, customers can delete products or proceed to Order. The order is successful only after payment and the order request is sent to the system. Customers can order fast delivery or cancel the order. Administrators can manage users, block or unblock users. Product manager manage products, approve orders. Interbank: has the role of processing transactions when customers make payments.

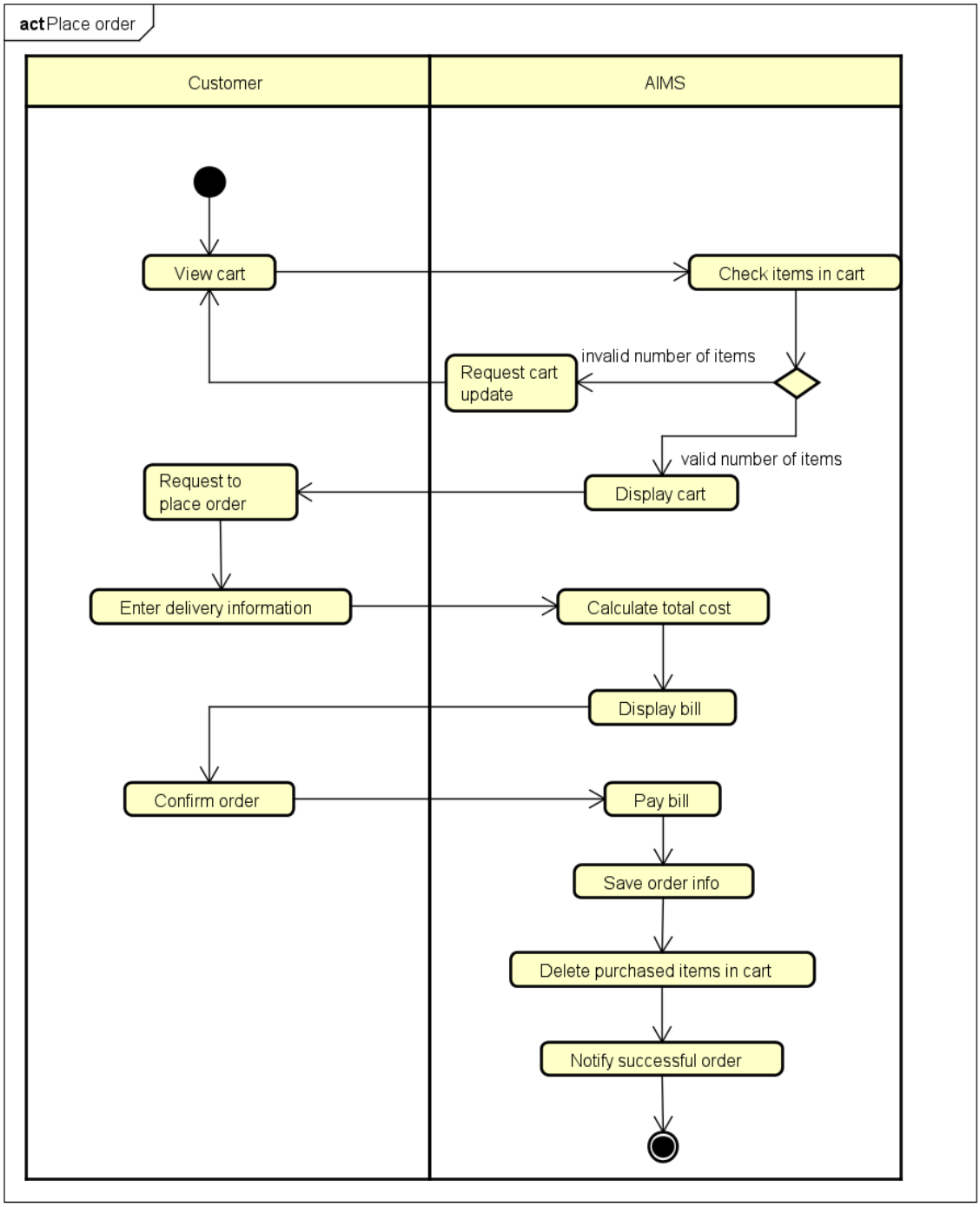


2.3 Business process

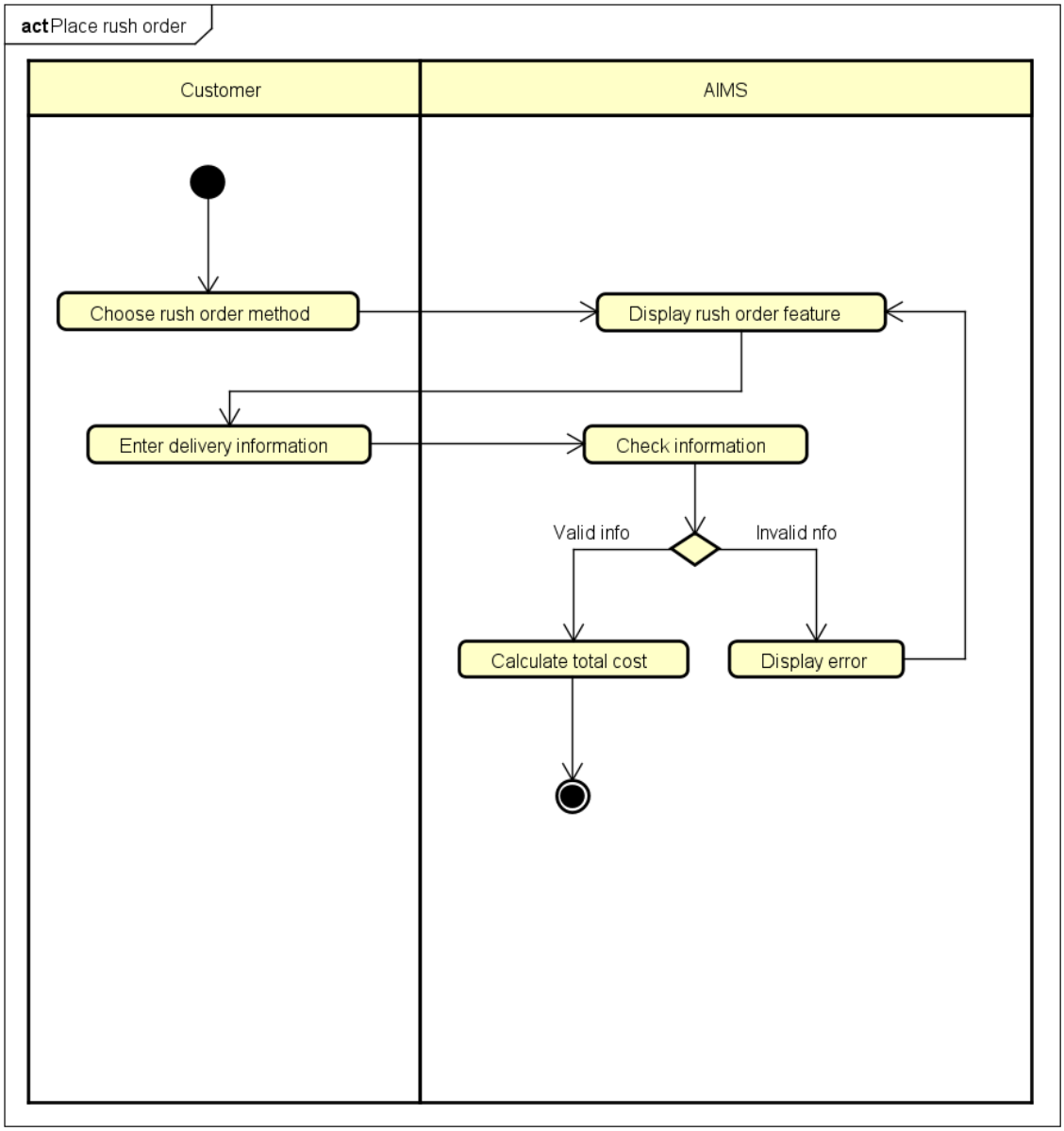
2.3.1 Payment process



2.3.2 Ordering Process



2.3.3 Rush ordering process


act Place rush order
Customer
AIMS
Choose rush order method
Display rush order feature
Enter delivery information
Check information
Valid info
Invalid nfo
Calculate total cost
Display error

3 Detailed Requirements

Details of the use cases given in section 2 are specified in the sections below.

3.1 Use case Pay order

1. Use case code

UC001

2. Brief Description

This use case describes the interaction between the customer, Interbank and AIMS when the customer wants to make a payment.

3. Actor

3.1 Customer

3.2 Interbank

4. Preconditions

AIMS has calculated the total amount payable

5. Basic Flow of Events

1. AIMS displays the payment interface
2. Customer enters card information and confirms transaction
3. AIMS requests Interbank to process the transaction
4. Interbank transaction processing
5. AIMS stores transaction information

6. Alternative flows

No	Location	Condition	Action	Resume Location
1.`	At step 5	Invalid card information	AIMS Invalid Card Information Notification	At step 1
2.	At step 5	Insufficient balance	AIMS Insufficient Balance Notification	At step 1
3.	At step 5	If the customer cancels the payment transaction		At step 1

7. Input data

Table 1- Input data of payment information

No	Data fields	Description	Mandatory	Valid condition	Example

1.	Cardholder		Yes		CAO THI THU HA
2.	Cart number		Yes		1234 5678 9012
3.	Expiry date		Yes	Month and last 2 digits of year	09/25
4.	CVV		Yes		123

8. Output data

Table 2-Output data of invoice

No	Data fields	Description	Display format	Example
1.	Title	Title of media product		DVD Hello
2.	Price	Price of the corresponding media product	- Comma for thousands separator - Positive integer - Right alignment	123,000
3.	Quantity	Quantity of the corresponding media	- Positive number - Right alignment	2
4.	Amount	Total money of corresponding media	- Comma for thousands separator - Positive integer - Right alignment	246,000
5.	Subtotal before VAT	Total amount of all products in the order before VAT		2,123,000
6.	Subtotal	Total amount of all products in the order with VAT		2,323,000
7.	Shipping fee			30,000
8.	Total			2,553,000
9.	Currency			VND
10.	Receiver name			Cao Thi Thu Ha
11.	Phone number			0987654321
12.	Province			Hanoi
13.	Address			12, 34 Alley of Tran Thai Tong street, Cau Giay district
14.	Shipping instructions			Located near a coffee shop

9. Postconditions

Null

3.2 Use case Place order

1. Use case code

UC002

2. Brief Description

This use case describes the interaction between the customer and AIMS when the customer wants to place an order.

3. Actor

3.1 Customer

4. Preconditions

The customer has products in the shopping cart.

5. Basic Flow of Events

1. The customer views the shopping cart.
2. AIMS checks if the products are still available.
3. AIMS displays the shopping cart.
4. The customer requests to place an order.
5. AIMS displays the shipping information form.
6. The customer enters and submits the shipping information.
7. AIMS calculates the shipping cost.
8. AIMS displays the invoice.
9. The customer confirms the order.
10. AIMS transitions to UC001 "Pay order".
11. AIMS saves the order.
12. AIMS clears the shopping cart.

6. Alternative flows

No	Location	Condition	Action	Resume Location
1.`	At step 3	If product is out of stock	- AIMS notifies that there is not enough left, shows the remaining quantity and asks the customer to update the shopping cart. - Customer updates cart	At step 2

2.	At step 6	If customer requires fast delivery	- AIMS checks to see if any products support expedited shipping. - If not, ask the customer to re-enter (step 6) - If yes, AIMS goes to UC003 “Place rush order”	At step 8
3.	At step 7	If missing shipping information	AIMS requires customers to enter full	At step 5
4.	At step 7	If phone number is not valid	AIMS requires re-entering phone number	At step 5

7. Input data

Table 1- Input data of delivery information

No	Data fields	Description	Mandatory	Valid condition	Example
1.	Receiver name		Yes		Cao Thi Thu Ha
2.	Phone number		Yes	10 digits	0987654321
3.	Province	Choose from a list	Yes		Hanoi
4.	Address		Yes		12, 34 Alley of Tran Thai Tong street, Cau Giay district
5.	Shipping instructions		No		Located near a coffee shop

8. Output data

Table 2-Output data of order information and shipping fee

No	Data fields	Description	Display format	Example
1.	Title	Title of media product		DVD Hello
2.	Price	Price of the corresponding media product	- Comma for thousands separator - Positive integer - Right alignment	123,000
3.	Quantity	Quantity of the corresponding media	- Positive number - Right alignment	2

4.	Amount	Total money of corresponding media	- Comma for thousands separator - Positive integer - Right alignment	246,000
5.	Subtotal	Total amount of all products in the order		2,123,000
6.	Shipping fee			30,000
7.	Total			2,153,000

Table 3-Output data of order information and shipping fee

No	Data fields	Description	Display format	Example
1.	Customer name			Cao Thi Thu Ha
2.	Phone number			0987654321
3.	Province			Hanoi
4.	Address			12, 34 Alley of Tran Thai Tong street, Cau Giay district
5.	Total amount		Right alignment Vietnamese currency (VND)	1,000,000 VND
6.	Transaction ID			
7.	Transaction content			
8.	Transaction date		dd/mm/yyyy	17/09/2024

9. Postconditions

Null

3.3 Use case Place rush order

1. Use case code

UC003

2. Brief Description

This use case describes the interaction between a customer and AIMS in the case of customers who want to order fast delivery

3. Actor

3.1 Customer

4. Preconditions

Customers choose express delivery method when ordering

5. Basic Flow of Events

1. AIMS displays the express delivery order interface, list of products supporting express delivery
2. Customers update fast delivery information, choose fast delivery products
3. AIMS calculates shipping fee.

6. Alternative flows

No	Location	Condition	Action	Resume Location
1.`	At step 3	Address not in Hanoi	AIMS announces no support for external delivery Hanoi	At step 1
2.	At step 3	Missing shipping information	AIMS requires customers to enter ful	At step 1
3.	At step 3	Invalid phone number	AIMS required re-entering phone number	At step 1

7. Input data

Table 1- Input data of delivery information

No	Data fields	Description	Mandatory	Valid condition	Example
1.	Receiver name		Yes		Cao Thi Thu Ha
2.	Phone number		Yes	10 digits	0987654321
3.	Province	Choose from a list	Yes		Hanoi
4.	Address		Yes		12, 34 Alley of Tran Thai Tong street, Cau Giay district
5.	Time		Yes		12:00 18/09/2024
6.	Shipping instructions		No		Located near a coffee shop

8. Output data

Null

9. Postconditions

Calculate shipping fee to continue with invoice in UC002

4 Supplementary specification

4.1 Functionality

The general display format is as follows:

- o Right root number
- o Left aligned
- o White background
- o Font: Arial 14, black

4.2 Usability

Functions should be designed to be easy to use. There should be specific instructions for user errors so that users know where the error is, what the error is, and how to fix it.

4.3 Reliability

The system must maintain high reliability, ensuring minimal downtime and consistent performance under various conditions.

4.4 Performance

The system is expected to handle a load of 1000 concurrent users without significant degradation in performance.

Maximum response time:

- Normal operation: 1 second
- Peak operation: 2 seconds

4.5 Supportability

The system should be easy to maintain and support, allowing for quick resolutions to issues that arise.

4.6 Other requirements

The system operates 24/7, can serve 1000 customers at the same time without significant loss of performance, and can operate continuously for 300 hours without failure.

In addition, the system can return to normal operation within 1 hour after the fault occurs. The maximum system response time is 1 second during normal or 2 seconds during peak.