HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

School of Information and communications technology

Software Requirement Specification

Lab 03

Nguyễn Đình Hồng Phong

Table of contents

1 Introduction

1.1 Objective

- AIMS Project is a desktop e-commerce software designed for round-the-clock operation, allowing new users to easily familiarize themselves.

1.2 Scope

- This software can serve up to 1,000 customers simultaneously without significantly reducing performance and can operate continuously for 300 hours without failure. Additionally, the software can resume normal operation within a maximum of 1 hour after an incident. The maximum response time of the software is 2 seconds under normal conditions or 5 seconds during peak hours.
- Users can register to create an account for themselves, then log in to use the functions of the system. Users can log in using their system account, or log in using their Facebook account. Any user can update their personal information. When a user forgets their password, they can request the system to allow them to reset their password via a link with a token sent to the registered email.
- The administrator can disable a user account, or require the user to change their password at a certain time or periodically. The administrator can assign user roles to users. A user can have multiple roles in the software. Each user role is set up to be able to use certain functions. Each function can be used by multiple user roles. Whenever a new function is added, the administrator needs to enter information about this function into the software for management. After a user successfully logs in, depending on the user roles they have, the software will automatically create a menu containing the functions that those user roles are allowed to use. Whenever the user selects a function on the menu, the interface corresponding to the function will be displayed.

1.3 Glossary

| No	Term	Explanation	Example	Note
1	CRUD	The four primary operations on an object : Create, Read, Update, and Delete.		
2	Administrator	A team of individuals tasked with management responsibilities.		

1.4 References

2 Overall Description

2.1 Survey

- There are 4 actors in this software : customer, product manager, administrator and VNPay. The customer is the normal user who access the system to purchase products. The product manager holds the reins of their shop, overseeing its administration. The admin can manage all system, change role of user. VNPay operates as a third-party facilitator, support the payment process for customers.

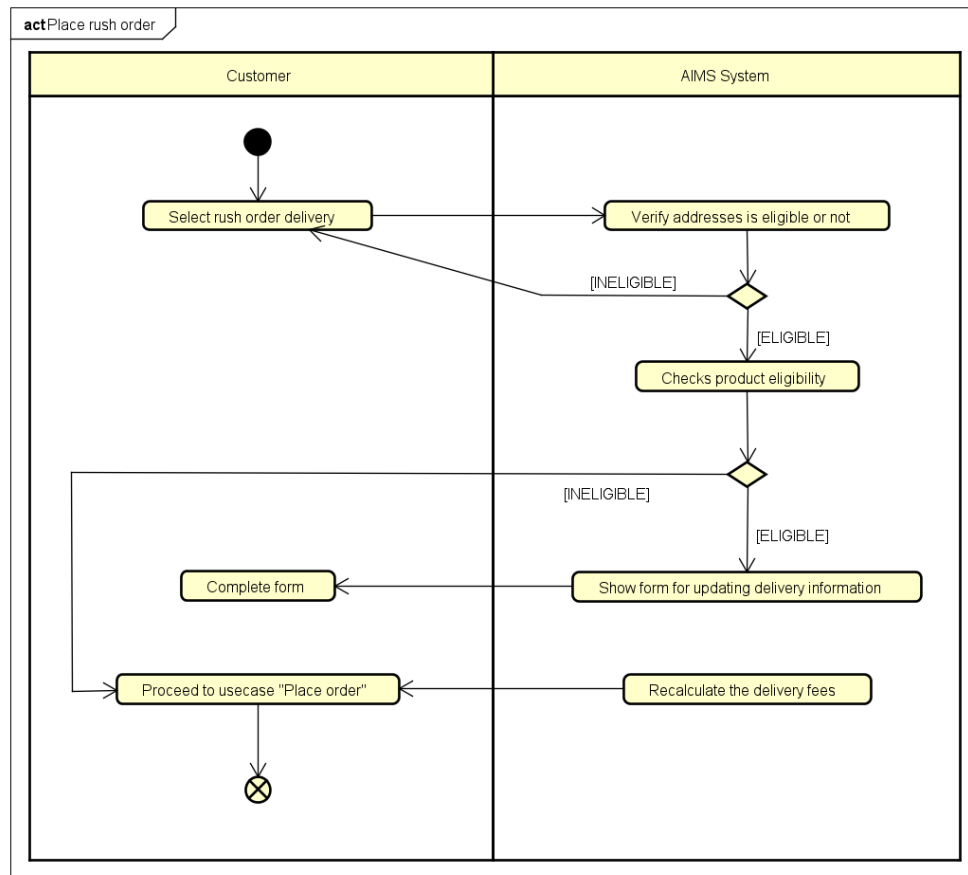## 2.2 Overall requirements
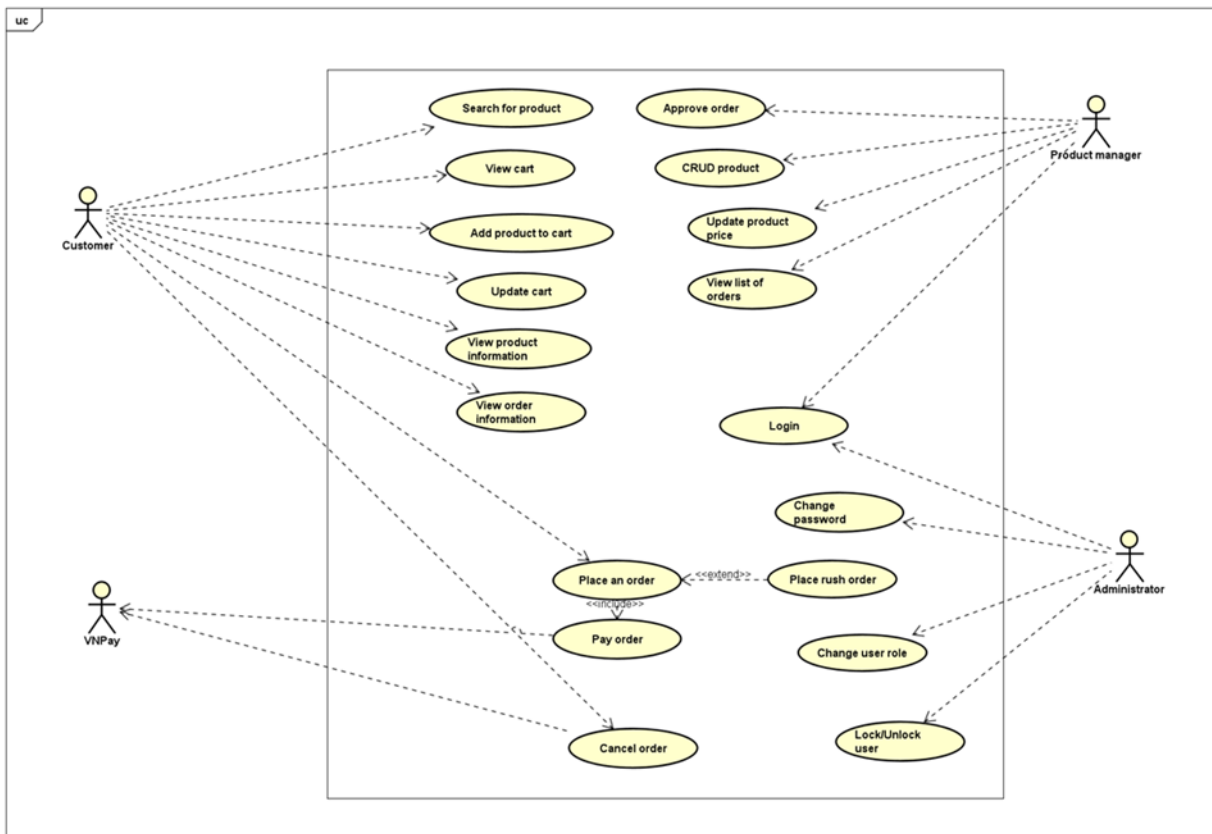
2.3 Business process

- **The process of placing an order as a customer** : Firstly, the customer selects the desired products they wish to purchase. Once they have made their selections, they proceed to request placing the order in the cart. At this stage, the AIMS software steps in to verify the availability of the chosen products in the cart.Following this, the AIMS software displays a form for the customer to input their delivery information along with the order details. This information is then submitted by the customer. Once the delivery information is received, the AIMS software proceeds to calculate and display the total order cost, including shipping fees. The customer is then prompted to proceed with payment for the order. Upon the customer's request to pay the order, the AIMS software initiates the "Pay order" use case, facilitating the creation of a new order. Subsequently, the software empties the cart to prepare for new transactions. Following the

successful completion of the transaction, the AIMS software sends an email notification containing order details and information to the customer, ensuring transparency and communication throughout the process. Finally, the software displays a confirmation message to the customer, providing them with details of the successful order, as well as transaction information. This step concludes the ordering process, ensuring a seamless experience for the customer from start to finish.
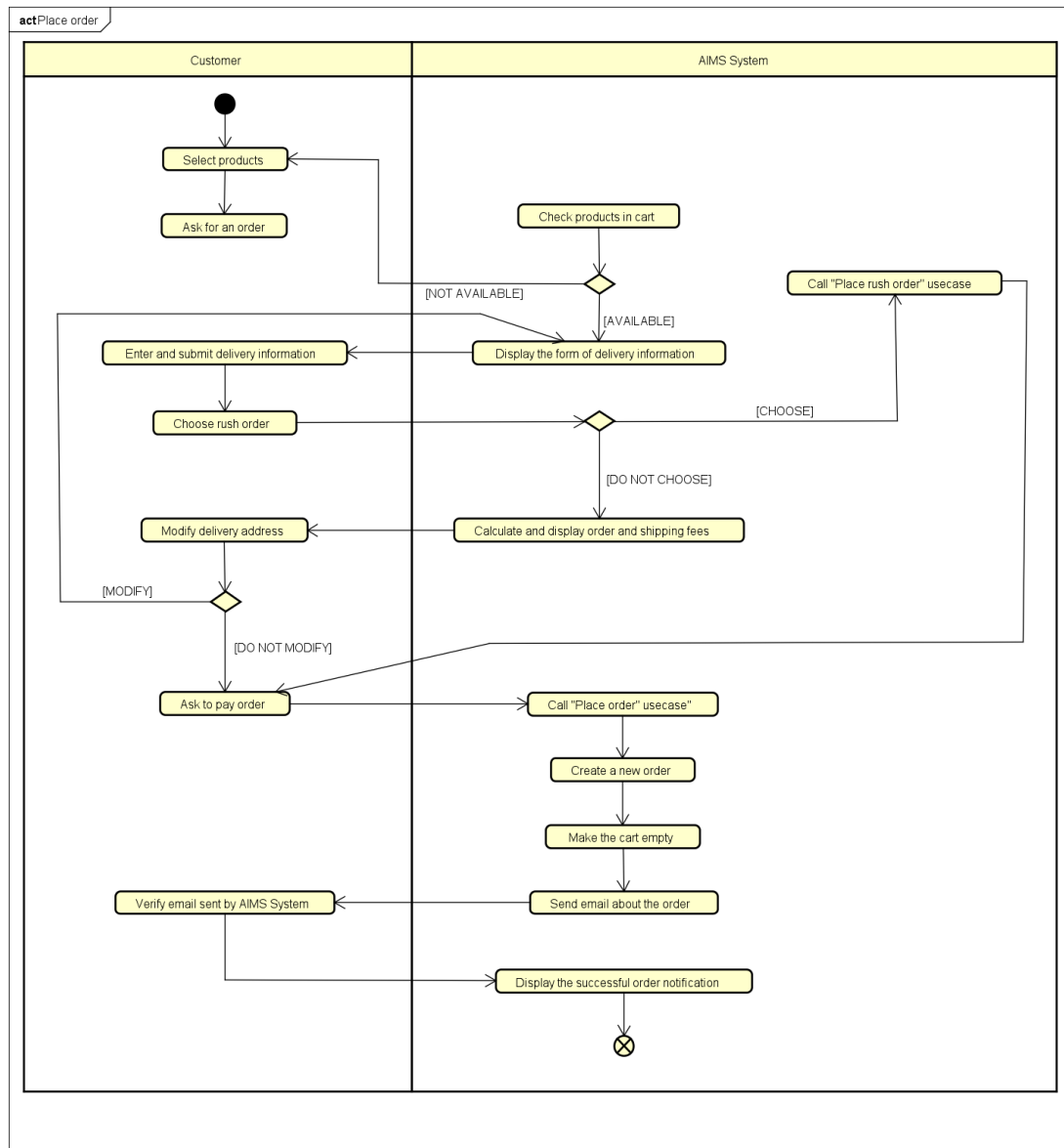
-   **The process of placing a rush order as a customer** : Initially, customers are provided with the option to select rush order delivery, indicating their urgency for the delivery of their purchases. Following this, the AIMS software undertakes a crucial verification process to determine whether the specified delivery addresses fall within the inner city limits of Hanoi. Once the addresses are confirmed, the software proceeds to assess the eligibility of the selected products for rush delivery. Subsequently, the AIMS software prompts customers to review and potentially update their delivery information or method. The

AIMS software undertakes these calculations meticulously, reflecting any adjustments required for rush order delivery accurately. With the recalculated fees and invoice updates in place, customers proceed seamlessly to the next step in the ordering process. The customer proceeds to Use Case "Place Order" to continue.

act Place rush order

Customer	AIMS System

- Select rush order delivery
- Verify addresses is eligible or not
- [INELIGIBLE]
- [ELIGIBLE]
- Checks product eligibility
- [INELIGIBLE]
- [ELIGIBLE]
- Complete form
- Show form for updating delivery information
- Proceed to usecase "Place order"
- Recalculate the delivery fees

- **The process of paying for an order as a customer** : The initiation of the payment process as the AIMS software transitions to the checkout process. Following this, the AIMS software redirects customers to VNPay, a trusted payment gateway, providing them with essential payment information. Customers with the freedom to select their preferred payment method from the options provided by VNPay. Upon selecting a payment method, VNPay displays a form for customers to fill out. This form captures essential payment information required to process the transaction securely and efficiently. Customer's active participation in the payment process as they provide the necessary information requested by VNPay. With the information provided, VNPay prompting the customer to verify their information and authorize the payment. Upon receiving authorization, the customer confirming the payment, signifying the completion of the transaction process. Subsequently, VNPay notifies the transaction result and redirects customers back to the AIMS software. The AIMS software diligently saves the payment transaction, capturing essential details for record-keeping and future reference.

act Pay Order

Customer	VNPay	AIMS System
		●
Select payment ←		Show checkout
	Show payment method	
Choose payment method ←		
	Show form	
Fill in form ←		
	Show verification for transaction	
Payment confirmation ←		
		Notify customer
[FAIL]		
◇ [SUCCESS] →	Notify the transaction result →	Save transaction
		⊗
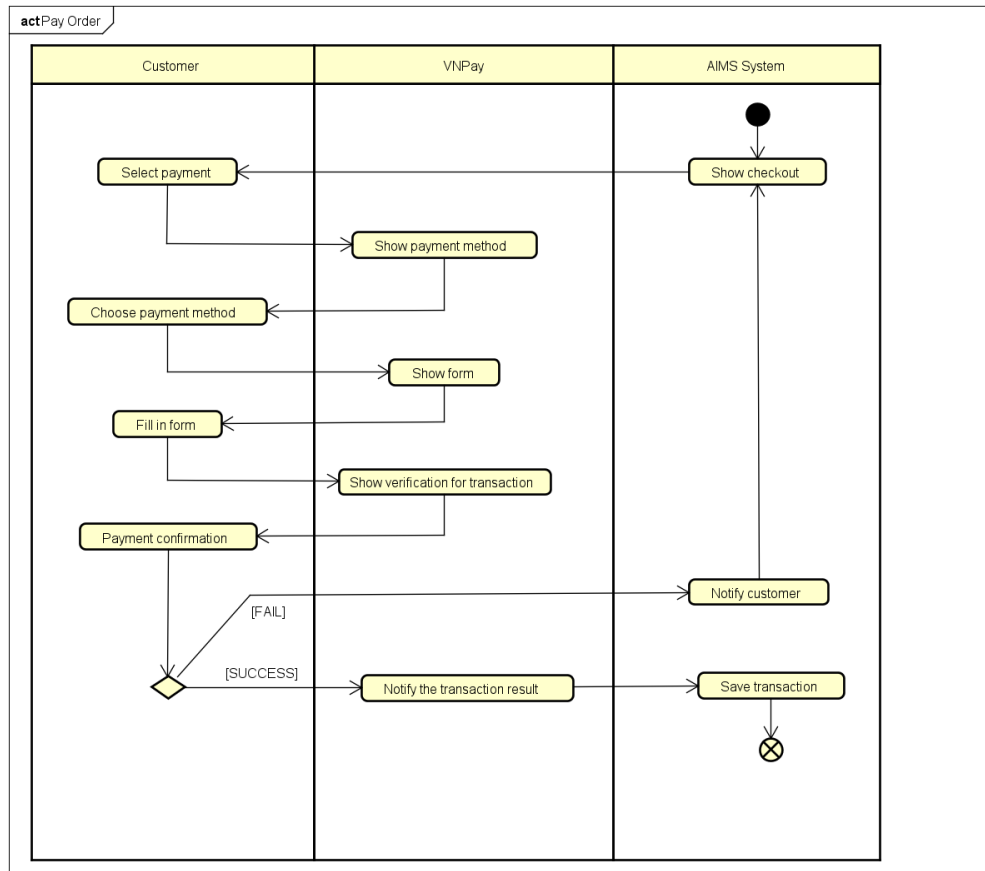
3 Detailed Requirements

3.1 Use case 1

1. **Use case code**
   UC002
2. **Brief Description**
   This use case describes the interaction between Customer and AIMS System when Customer wishes to place an rush order with the confirmed items.
3. **Actors**
   - Customer
4. **Preconditions**
   - Customer has already selected products
   - Customer has completed the delivery information
5. **Basic Flow of Events**
   - Step 1: Customer selects rush order delivery
   - Step 2 : The AIMS software verifies whether addresses are located within the inner city of Hanoi or not
   - Step 3 : The AIMS software checks product eligibility
   - Step 4 : The AIMS software prompts the customer to update the delivery information or delivery method (See Table 1)
   - Step 5 : Customer completes all procedure that software request
   - Step 6: The AIMS software recalculates the delivery fees and updates the corresponding invoice (See Table 2)
   - Step 7: The customer proceeds to Step 8 – Use Case "Place Order"
6. **Alternative flows**

No	Location	Condition	Action	Resume location
1	At step 2	If address does not support rush order	AIMS Software notifies and requests customer to update address	Resume at step 1
2	At step 3	If no product is eligible for rush delivery	AIMS Software notifies the and requests customer to update cart	Resume at step 5

7. **Input data**

Table 1

No	Data fields	Description	Mandatory	Valid condition	Example
1	Delivery Time	Time for delivery follow format "dd/mm/yyyy hh:mm"	Yes	hh from 6 to 22 mm from 0 to 59 dd/mm/yyyy must be valid date	20/03/2024 17:30

	2	Delivery note	String	Yes	String with minimum length of 5 characters	Ship to my company

8. Output data

Table 2

No	Data fields	Description	Display format	Example
1	Product Name	Name of product	String	Book
2	Rush delivery availability	Check whether rush delivery is eligible or not	True if rush delivery is eligible or False otherwise	False
3	Price of products		Positive number denominated in VND with "," delimiter	100,000 VND
4	Fee for rush delivery	If rush delivery is eligible, determine fee for rush delivery	0 if rush delivery is unavailable, otherwise Positive number denominated in VND with "," delimiter	0 50,000 VND
5	Fee for normal delivery	If rush delivery is ineligible, determine fee for normal delivery	0 if rush delivery is available, otherwise Positive number denominated in VND with "," delimiter	0 40,000 VND
6	Total fee	Total amount for products and delivery	Positive number denominated in VND with "," delimiter	350,000 VND

9. Postconditions
- AIMS System sends information about rush delivery order to Customer
Customer can see notice from AIMS System

3.2 Use case 2

Use Case "Place rush order"

10. Use case code

UC002

11. Brief Description

This use case describes the interaction between Customer and AIMS System when Customer wishes to place an rush order with the confirmed items.

12. Actors

- Customer

13. Preconditions

- Customer has already selected products
- Customer has completed the delivery information

14. Basic Flow of Events

- Step 1: Customer selects rush order delivery
- Step 2 : The AIMS software verifies whether addresses are located within the inner city of Hanoi or not
- Step 3 : The AIMS software checks product eligibility
- Step 4 : The AIMS software prompts the customer to update the delivery information or delivery method (See Table 1)
- Step 5 : Customer completes all procedure that software request
- Step 6: The AIMS software recalculates the delivery fees and updates the corresponding invoice (See Table 2)
- Step 7: The customer proceeds to Step 8 – Use Case "Place Order"

15. Alternative flows

No	Location	Condition	Action	Resume location
1	At step 2	If address does not support rush order	AIMS Software notifies and requests customer to update address	Resume at step 1
2	At step 3	If no product is eligible for rush delivery	AIMS Software notifies the and requests customer to update cart	Resume at step 5

16. Input data

Table 1

No	Data fields	Description	Mandatory	Valid condition	Example
1	Delivery Time	Time for delivery follow format "dd/mm/yyyy hh:mm"	Yes	hh from 6 to 22 mm from 0 to 59 dd/mm/yyyy must be valid date	20/03/2024 17:30

| | 2 | Delivery note | String | Yes | String with minimum length of 5 characters | Ship to my company |

17. Output data

Table 2

No	Data fields	Description	Display format	Example
1	Product Name	Name of product	String	Book
2	Rush delivery availability	Check whether rush delivery is eligible or not	True if rush delivery is eligible or False otherwise	False
3	Price of products		Positive number denominated in VND with "," delimiter	100,000 VND
4	Fee for rush delivery	If rush delivery is eligible, determine fee for rush delivery	0 if rush delivery is unavailable, otherwise Positive number denominated in VND with "," delimiter	0 50,000 VND
5	Fee for normal delivery	If rush delivery is ineligible, determine fee for normal delivery	0 if rush delivery is available, otherwise Positive number denominated in VND with "," delimiter	0 40,000 VND
6	Total fee	Total amount for products and delivery	Positive number denominated in VND with "," delimiter	350,000 VND

18. Postconditions
-   AIMS System sends information about rush delivery order to Customer

-	Customer can see notice from AIMS System

3.3 Use case 3

<table>
<tr><td colspan="5" align="center"><h2>Use Case "Pay order"</h2></td></tr>
<tr><td colspan="5">

19. Use case code
- UC003

20. Brief Description
- This use case describes the interaction between Customer and AIMS System when Customer wishes to pay order before finishing place an order.

21. Actors
- Customer
- AIMS System
- VNPay

22. Preconditions
- Customer has already furnished delivery information(or rush delivery).

23. Basic Flow of Events
- Step 1 : The AIMS software shifts to checkout process (See Table 2)
- Step 2 : The AIMS software redirects to VNPay with payment information
- Step 3 : Customer selects a payment method
- Step 4 : VNPay displays a form for customers to fill out (See Table 1)
- Step 5 : Customer provides the necessary information
- Step 6 : VNPay asks the customer to verify their information and authorize the payment
- Step 7 : Customer confirms the payment
- Step 8 : VNPay notifies the transaction result and redirects to AIMS software
- Step 9 : AIMS software saves the payment transaction

24. Alternative flows

</td></tr>
</table>

24. Alternative flows

No	Location	Condition	Action	Resume location
1	At step 7	If customer does not confirm payment or they can not afford payment	VNPay redirects to AIMS software	Resume at step 1

25. Input data

Table 1

No	Data fields	Description	Mandatory	Valid condition	Example
1	Phone number		Yes		0358337038

26. Output data

Table 2

No	Data fields	Description	Display format	Example
1	Product Name	Name of product	String	Book
2	Price	Price of the corresponding media product	Positive number denominated in VND with "," delimiter	100,000 VND
3	Quantity	Quantity of the corresponding media	Positive integer number	4
4	Amount	Total money of the corresponding media	Positive number denominated in VND with "," delimiter	750,000 VND
5	Subtotal Before VAT	Total price of products in the cart before VAT	Positive number denominated in VND with "," delimiter	350,000 VND
6	Subtotal	Total price of products in the cart before VAT	Positive number denominated in VND with "," delimiter	375,000 VND
7	Shipping fees		Positive number denominated in VND with "," delimiter	50,000 VND
8	Total	Sum of subtotal and shipping fees	Positive number denominated in VND with "," delimiter	425,000 VND
9	Name			Nguyễn Đình Hồng Phong
10	Phone number			0358337038
11	Province			Bắc Ninh
12	Address			Khu phố Rích Gạo, Phù Chẩn, Thành phố Từ Sơn, Bắc Ninh
13	Shipping instructions			Ship to my house

27. Postconditions
- Customer's available online balance exceeds the total fees

4 Supplementary specification

4.1 Functionality

- The AIMS Project functions as a desktop e-commerce application, guaranteeing continuous operation and facilitating smooth introduction for inexperienced users.

4.2 Usability

- The software is designed with user-friendliness in mind, allowing new users to easily familiarize themselves with its features and capabilities.

4.3 Reliability

- AIMS demonstrates exceptional reliability, capable of accommodating up to 1,000 concurrent customers without experiencing notable performance decline. It boasts continuous operation for up to 300 hours without interruption, and in the event of an incident, it can resume normal functionality within a maximum of 1 hour.

4.4 Performance

- Under regular conditions, the software consistently maintains a maximum response time of 2 seconds. Additionally, it is equipped to manage peak loads, ensuring efficient performance even during periods of high traffic, with a maximum response time of 5 seconds.

4.5 Supportability

- The AIMS platform is backed by a robust technical infrastructure, facilitating easy maintenance and updates. This ensures uninterrupted service and enables the platform to adapt seamlessly to evolving requirements.

4.6 Other requirements

- Additional requirements encompass the integration capabilities with the VNPay payment gateway service.