HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

School of Information and communications technology

Software Requirement Specification

Subject: ITSS Software Development

Bui Duc Viet – 20215254

ICT 01- K66

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1 Introduction

1.1 Objective

The purpose of this document is to provide an insight into the AIMS software, which is built for managing online shopping of digital media.

1.2 Scope

This application is allowed to:

- Manage the selling of products: Add, view, edit, delit products, etc.

- Manage all the users: Create, view, update, change user's role, etc.

- Manage user's orders.

1.3 Glossary

No	Term	Explanation	Example	Note
1	Administrator	The person who's responsible for overseeing the entire system		
2	Cart	Containing a list of chosen products and their quantity		
3	Invoice	A statement listing goods or services provided and their prices, in this case, a list of chosen items, along with their unit price and quantity, total amount of money, shipping fees, etc.		
4	Rush delivery	A delivery service that requires good to be delivery in a specific time frame, time limit		
5	Delivery information	Essential information for delivery	1, Dai Co Viet Street, Hai Ba Trung District, Hanoi	

1.4 References

2 Overall Description

2.1 Survey

The software includes 4 distinct actors, namely:

- Customer: The person who uses this website to search, buy products.
- Administrator: The highest authority actor, with the ability to manage the entire system.
- Product manager: The actor that is responsible for the selling of products.
- VNPay software: The service provider for the website's payment method.
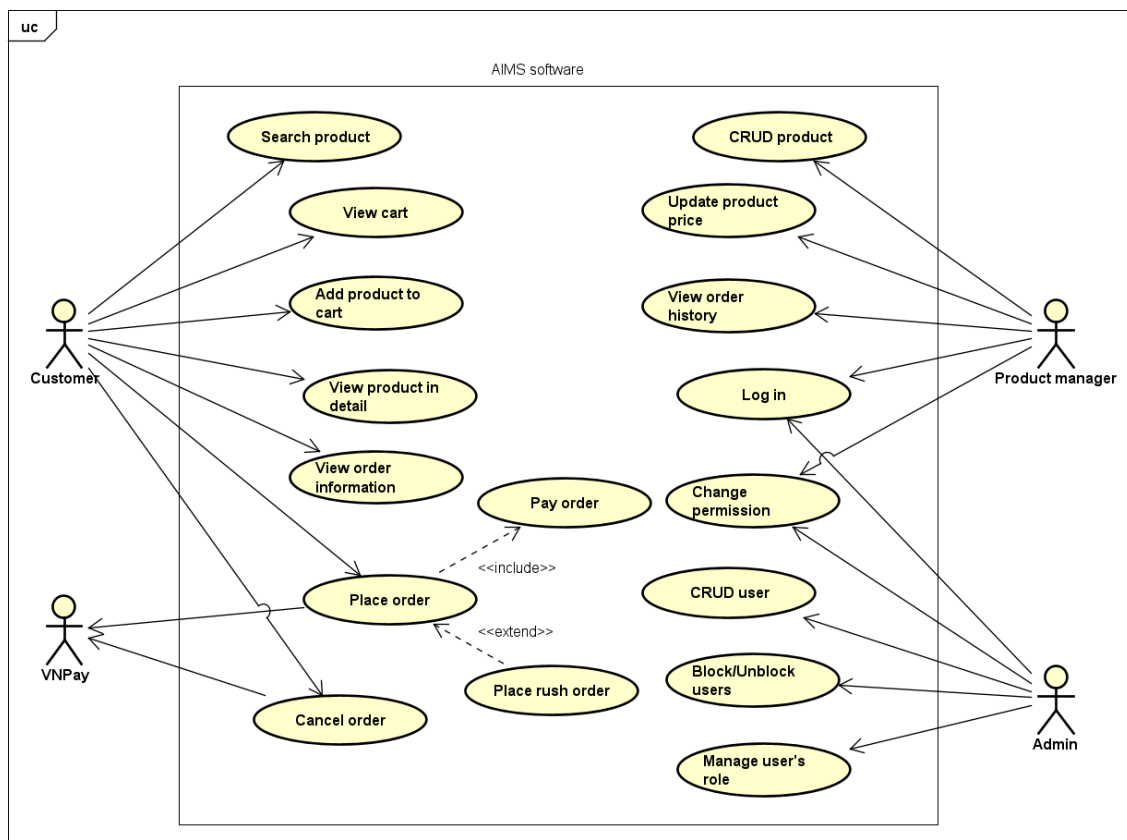
2.2 Overall requirements

Figure 1: Use case diagram of the software.

2.3 Business process

act Activity Diagram Place Order

Customer	AIMS Software

- Request to place order
- Check the availability of product
- False / True
- Display the form of delivery information with order information
- Enter and submit delivery information
- Not valid information
- Place rush order
- Place rush order
- Calculate and display fee
- Ask to pay order
- Call UC Pay order
- Payment fail / Successful
- Create new order
- Make the cart empty
- Send email about order information
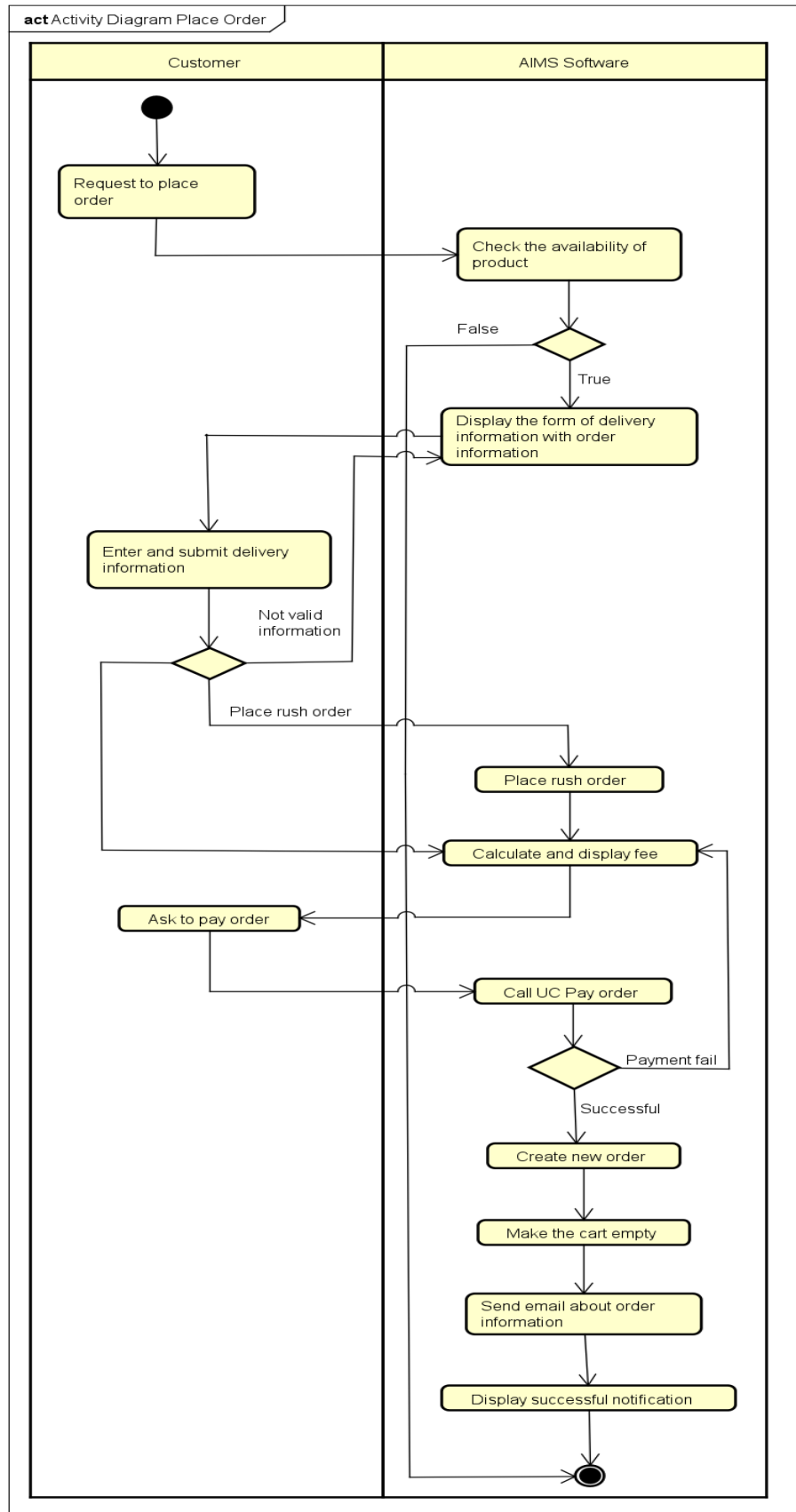- Display successful notification

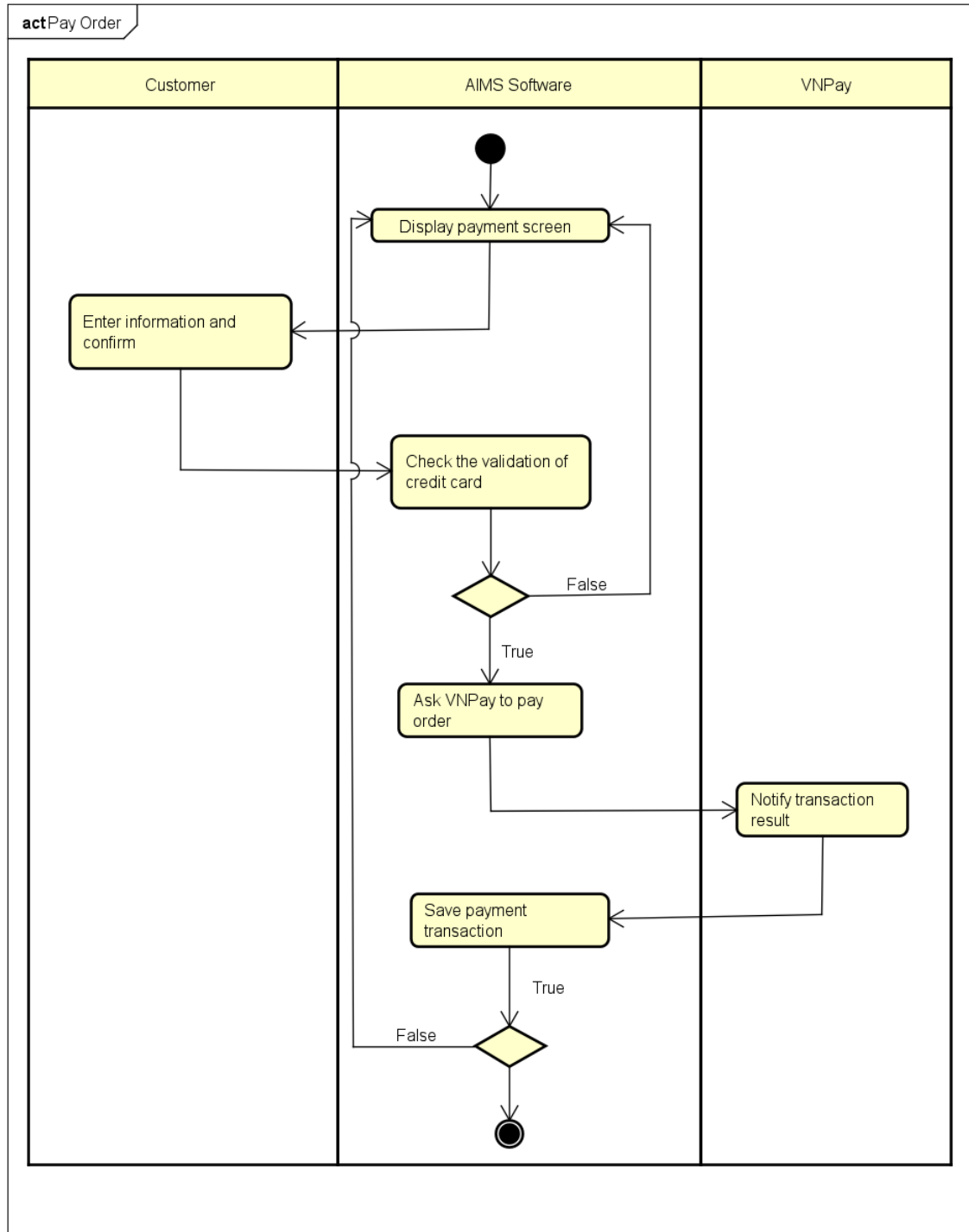Figure 2: Place order use case activity diagram

Figure 3: Pay order use case activity diagram.

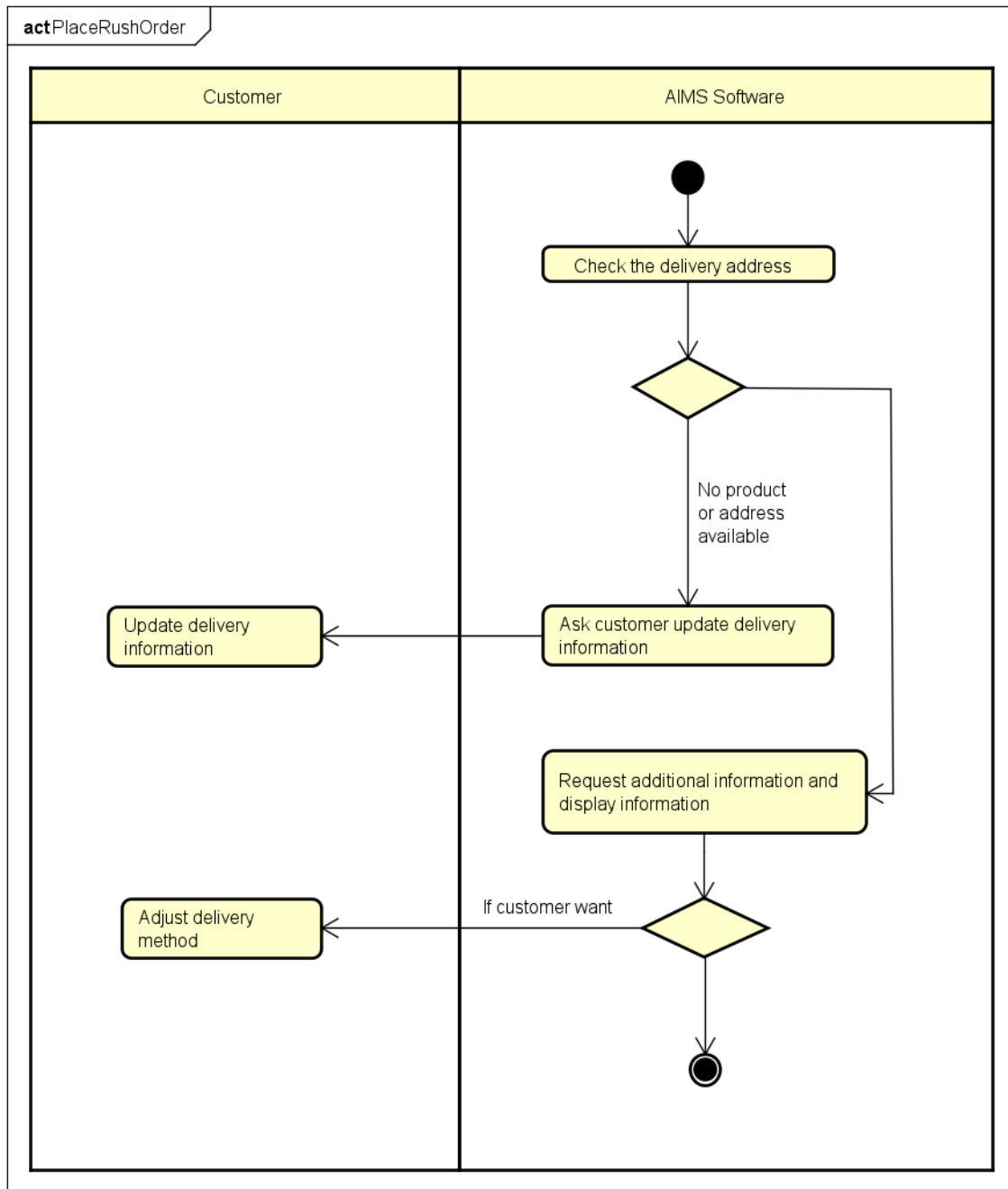Figure 4: Place rush order use case activity diagram

3 Detailed Requirements

3.1 Place order use case

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Use Case "Place order"

1. Use case code

    UC002

2. Brief Description

- This use case describes the interaction between customer and AIM Software when customer wishes to place an order..

3. Actors

- Customer

4. Preconditions

- There exists at least one item in the user's cart.

5. Basic Flow of Events

- Step 1. Customer requests to place order in the cart.
- Step 2. AIMS software checks the availability of products in the cart.
- Step 3. AIMS software displays the form of delivery information with order information.
- Step 4. Customer enters and submits delivery information. (See Table 1)
- Step 5. AIMS software calculates and displays order and shipping fees (See Table 2)
- Step 6. The customer asks to pay order.
- Step 7. The AIMS software calls UC "Pay order".
- Step 8. The AIMS software creates a new order.
- Step 9. The AIMS software makes the cart empty.
- Step 10. The AIMS software sends email about the order notification and information.
- Step 11. The AIMS software displays the successful order notification, the order and the transaction information (See Table 3).

6. Alternative flows

Table 1: Alternative flow of events for Place order UC

No	Location	Condition	Action	Resume location
1.	At Step 3	If the products are not available	- The AIMS software notifies that the products in	Use case ends

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			the cart are not available and stay at the use case "View cart".	
2.	At Step 5	If the delivery info is invalid	- The AIMS software notifies that the delivery info is invalid (blank or wrong format).	At Step 3
3.	At Step 5	If the user chooses to place a rush order	- The AIMS software inserts use case "Place rush order"	At Step 6
4.	At Step 8	If the order payment is not successful or goes back from payment		At Step 5

7. Input data

Table 2: Input data of delivery information

No	Data fields	Description	Mandatory	Valid condition	Example
1.	Receiver Name		Yes		Bui Duc Viet
2.	Phone Number		Yes	10 digits	0342256488
3.	Province	Choose from a list	Yes		Ha Noi
4.	Address		Yes		Hai Ba Trung, Ha Noi
5.	Shipping instructions		No		

8. Output data

Table 3: Output data of some object in software

No	Data fields	Description	Display format	Example
1.	Title	Title of a media product		Movie DVD – The Maze Runner
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 integer. - Right alignment.	2
4.	Amount	Total money of the corresponding media	- Comma for thousands separator. - Positive integer. - Right alignment	246,000
5.	Subtotal	Total amount of all products in the order	- Comma for thousands separator. - Positive integer. - Right alignment	2,316,000
6.	Shipping fee		- Comma for thousands separator. - Positive integer. - Right alignment	30,000

Table 4 – Output data of general information of order and transaction info

No	Data fields	Description	Display format	Example
1.	Customer name			Pham Quang Huy

2.	Phone number			0394977199
3.	Province			Ha Noi
4.	Address			Ha Dong, Ha Noi
5.	Total amount		- Right alignment. - Vietnamese currency.	1.200.000 VNĐ
6.	Transaction ID			
7.	Transaction content			
8.	Transaction date		dd/mm/yy	16/03/2024

9. Postconditions:
- A new order has been created and saved in the system

3.2 Use case Pay order

1. Use case code
- UC003

2. Brief Description
- This use case describes the interaction between actors: customer, VNPay software and AIMS software when customer wishes to pay for the order.

3. Actors
- Customer.
- VNPay software.

4. Preconditions
- The customer has requested to pay for an order.

5. Basic Flow of Events
- Step 1. AIMS software displays the invoice (See Table 6).
- Step 2. Customer asks to pay the invoice.

- Step 3. AIMS software redirects to VNPay with payment information.
- Step 4. VNPay notifies the transaction result.
- Step 5. AIMS software saves the payment transaction.

6. Alternative flows

Table 5: Alternative flows of events of Pay order use case

No	Location	Condition	Action	Resume Location
1.	At step 5	If the customer cancels the payment transaction		Step 1
2.	At step 3	If VNPay software is out of service	AIMS Software asks the customer to try again later	Use case ends

7. Input data

8. Output data

Table 6: Output data of general information of order and transaction info

No	Data fields	Description	Display format	Example
1.	Title	Title of a product		Frieren
2.	Price	Price of the product	- Comma for thousands separator - Positive value - Right alignment	49,000
3.	Quantity	Quantity of the items	- Positive value - Right alignment	3
4.	Amount	Total amount of money	- Comma for thousands separator	147,000
5.	Subtotal before VAT	Total amount of money before VAT	- Positive value - Right alignment	578,000
6.	Subtotal	Total amount of money (VAT included)		635,800
7.	Shipping fee			25,000

8.	Total	Sum of subtotal and shipping fee		660,800
9.	Currency			VND
10.	Name			Bui Duc Viet
11.	Phone number			0342256488
12.	Province			Ha Noi
13.	Address			Hai Ba Trung, Ha Noi
14.	Shipping instructions			

9. Postconditions
- AIMS software notifies of the successful money transaction.

3.3 Place rush order use case

1. Use case code
- UC004

2. Brief description
- This use case describes the interaction between customer and AIMS software when customer wishes to place a rush order.

3. Actors
- Customer.

4. Preconditions
- Customer select rush order delivery.

5. Basic Flow of Events
- Step 1. AIMS software checks whether the delivery address supports rush order delivery and if there exists any items that are eligible for this service.
- Step 2. AIMS software prompts customer to provide additional rush order delivery information.
- Step 3. Customer enter and submit rush order delivery information. (See Table 8)

6. Alternative flows

Table 7 - Alternative flows of events for UC Place rush order

No	Location	Condition	Action	Resume location

1.	At Step 1	If no products are eligible or the delivery address doesn't supports rush delivery survice	- The AIMS software prompts the customer to update the delivery information or delivery method	Use case ends
2.	At Step 3	If customer chooses to adjust the delivery method	- The AIMS software recalculates the delivery fees and updates the corresponding invoice.	At Step 3

7. Input data

Table 8 – Input data of rush delivery information

No	Data fields	Description	Mandatory	Valid condition	Example
1.	Delivery time		Yes		14h
2.	Delivery instructions		Yes		

8. Output data

Table 9 – Output data of delivery fees for items that are eligible for rush delivery

No	Data fields	Description	Display format	Example
1.	Title	Title of a media product		Movie DVD – The Maze Runner
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 integer. - Right alignment.	2
4.	Shipping fee		- Comma for thousands separator.	50,000

			- Positive integer. - Right alignment	

Table 10 - Output data of delivery fees for items that aren't eligible for rush delivery

No	Data fields	Description	Display format	Example
1.	Title	Title of a media product		Detective Conan
2.	Price	Price of the corresponding media product	- Comma for thousands separator. - Positive integer. - Right alignment	25,000
3.	Quantity	Quantity of the corresponding media	- Positive integer. - Right alignment.	2
4.	Shipping fee		- Comma for thousands separator. - Positive integer. - Right alignment	20,000

9. Post conditions

- The customer can now request to pay for the order.

4 Supplementary specification

4.1 Functionality

- The AIMS software allows product managers to add, view, edit, or delete any products.
- The AIMS software allows administrators to create new users, view user's information, update user's information, delete users and reset user's password. Administrators can also block or unblock users.
- The AIMS software allows users to put desired items to a cart, view the cart with all the chosen items with details, place an order of all the items they've chosen, adjust the delivery method and pay the order via VNPay software.

4.2 Usability

- The AIMS software should have an user-friendly user interface.
- The AIMS software should be able to access from a variety of devices.

4.3 Reliability

- The AIMS software should be able to serve up to 1000 customers simultaneously without significantly reducing performance.
- The AIMS software should be able to operate continuously for 300 hours without failure.
- The AIMS software should be able to resume normal operation within a maximum of 1 hour after any incidents.

4.4 Performance

- The maximum response time of the software is 2 seconds under normal conditions or 5 seconds during peak hours.

4.5 Supportability

- The AIMS website should be able to access via computers, mobile phones.

4.6 Other requirements