HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

School of Information and Communications Technology

Software Design Documentation

AIMS Software

Course: Software Design and Construction

Team : 5

Lecturer : Nguyen Thi Thu Trang

Member:

	Full name	Student ID	Email	Class
1	Nguyễn Hữu Đức	20215353	Duc.NH215353@sis.hust.edu.vn	IT1
2	Nguyễn Mạnh Đức	20215350	Duc.NM215350@sis.hust.edu.vn	IT1
3	Nguyễn Văn Đức	20204530	Duc.NV204530@sis.hust.edu.vn	IT1
4	Nguyễn Trọng Đức	20215356	Duc.NT215356@sis.hust.edu.vn	IT1
5	Trần Tiến Đức	20204643	Duc.TT204643@sis.hust.edu.vn	IT1

Hanoi, 1/2025

Table of Contents

1. Introduction

1.1. Objective

This SRS is a comprehensive blueprint for the development of an internet media store (AIMS). This document will serve as a guide for the development team, ensuring that the final product meets the specified requirements and aligns with the project's goals. It also provides information for testing team to create test cases and ensure that the developed system adheres to the specified requirements and for documentation team to create user manual and related documents.

1.2. Scope

The product that the SRS refers to is AIMS Software (An Internet Media Store Software). AIMS is a desktop e-commerce software supporting online transactions of a media store. It helps the product managers completing their work in managing products of the store, also assists administrators controlling information of their users. The software at the same time is used by customers for selecting the products they want to purchase, placing and paying the orders.

1.3. Glossary

No	Term	Explanation	Example	Note
1	product	The item that store sells in general	Customers can see detail of a product by clicking at the item.	
2	price	The amount of money charged for a product	The price of the product may change depending on market demand.	
3	value	The perceived worth of a product, determined by factors such as quality, demand and customer satisfaction	The price of the product must always be between 30% and 150% of the product value.	
4	order	A request to supply products in the store	To place a successful order, customers need to proceed with payment.	
5	invoice	A statement listing products provided and their prices, along with customer and order’s related information	The software displays and temporarily save invoice information.	
6	cart	A virtual collection that contains all the products selected by customers	There is one cart per software session.	

1.4. References

- AIMS – Problem Statement v2.0 – Nguyen Thi Thu Trang, HUST

2. Overall Description

2.1. Survey

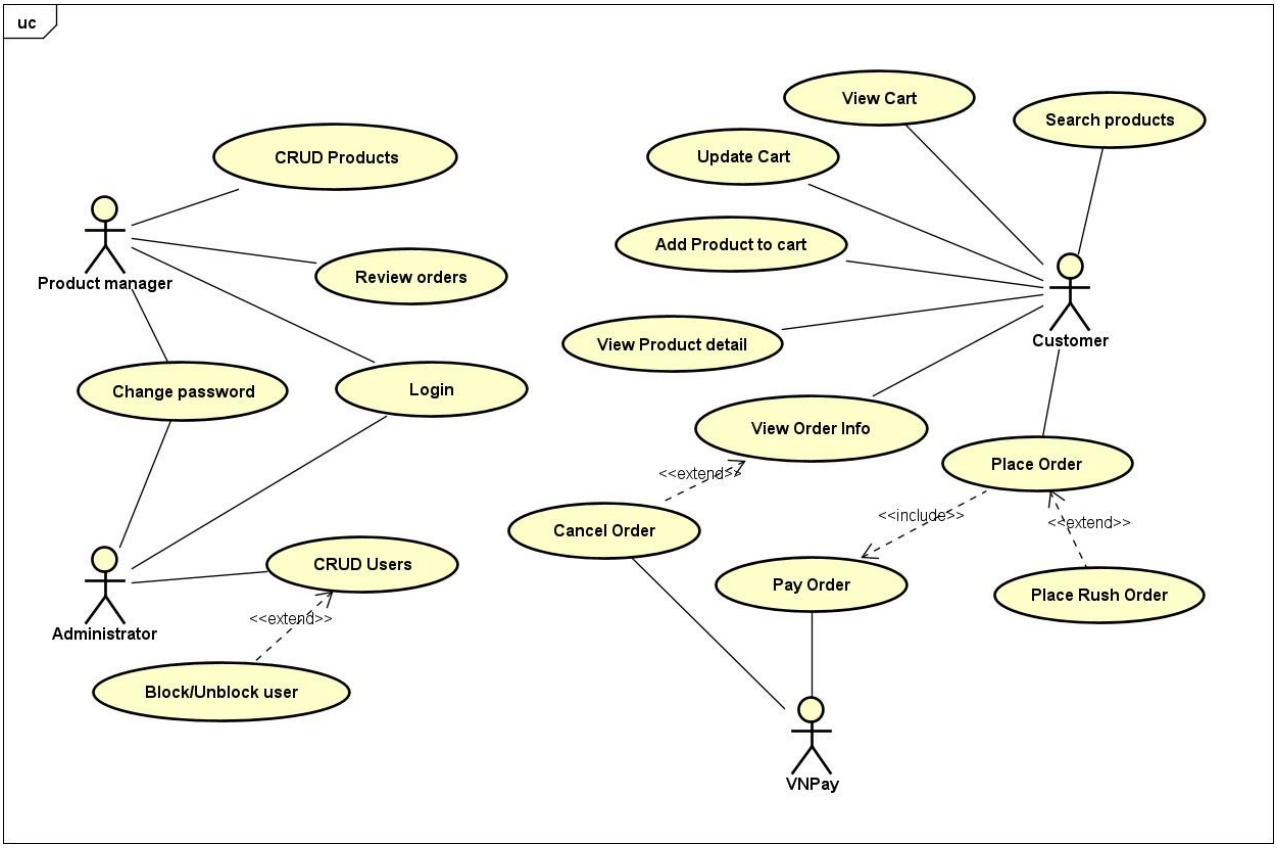
There are 4 main actors:

- Product manager: Responsible for managing products and orders in the store
- Administrator: Responsible for managing users information

- Customer: People who want to buy goods from media store
- VNPay: The banking system responsible for customers' payment of the orders

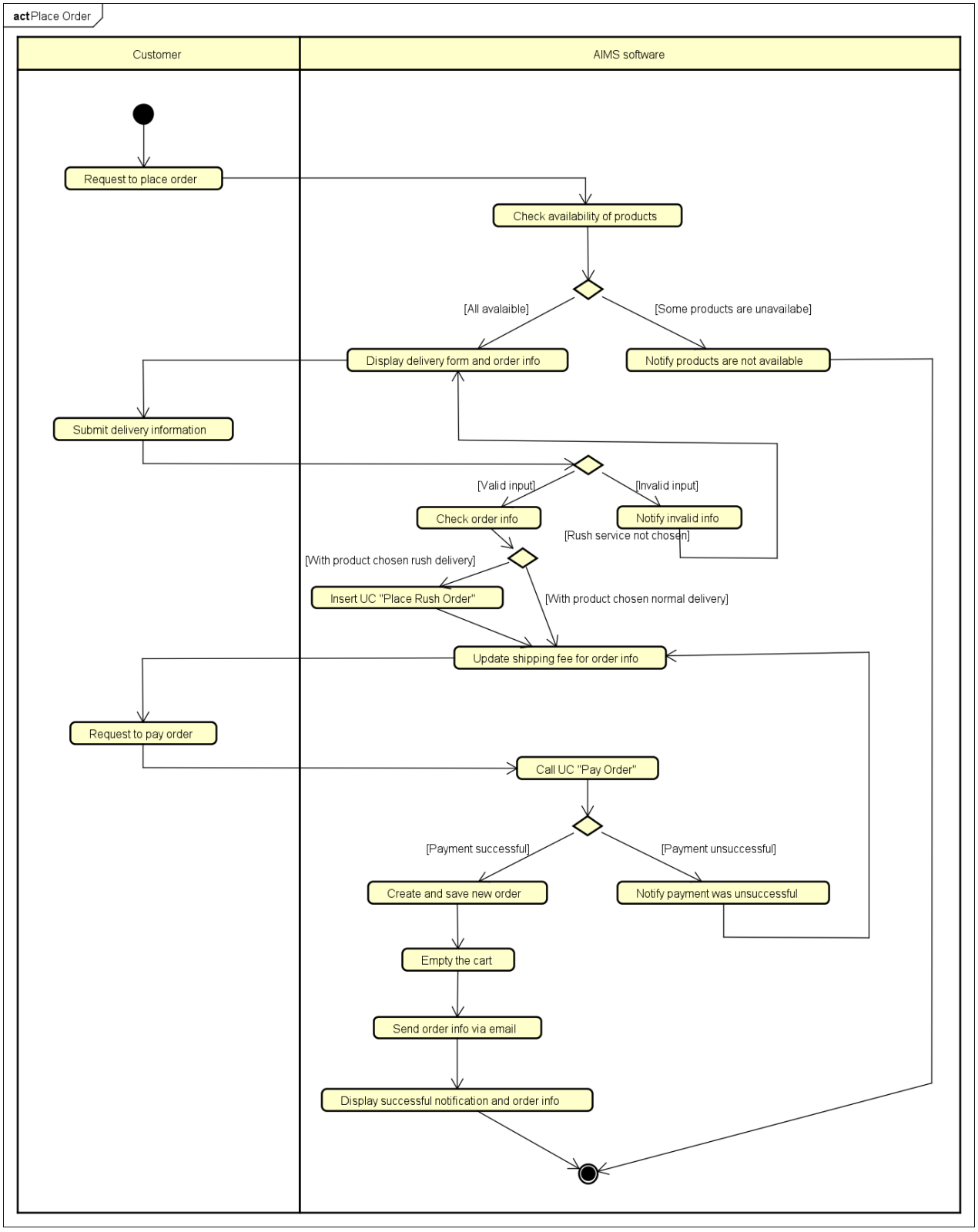
2.2. Overall requirements

General use case diagram:

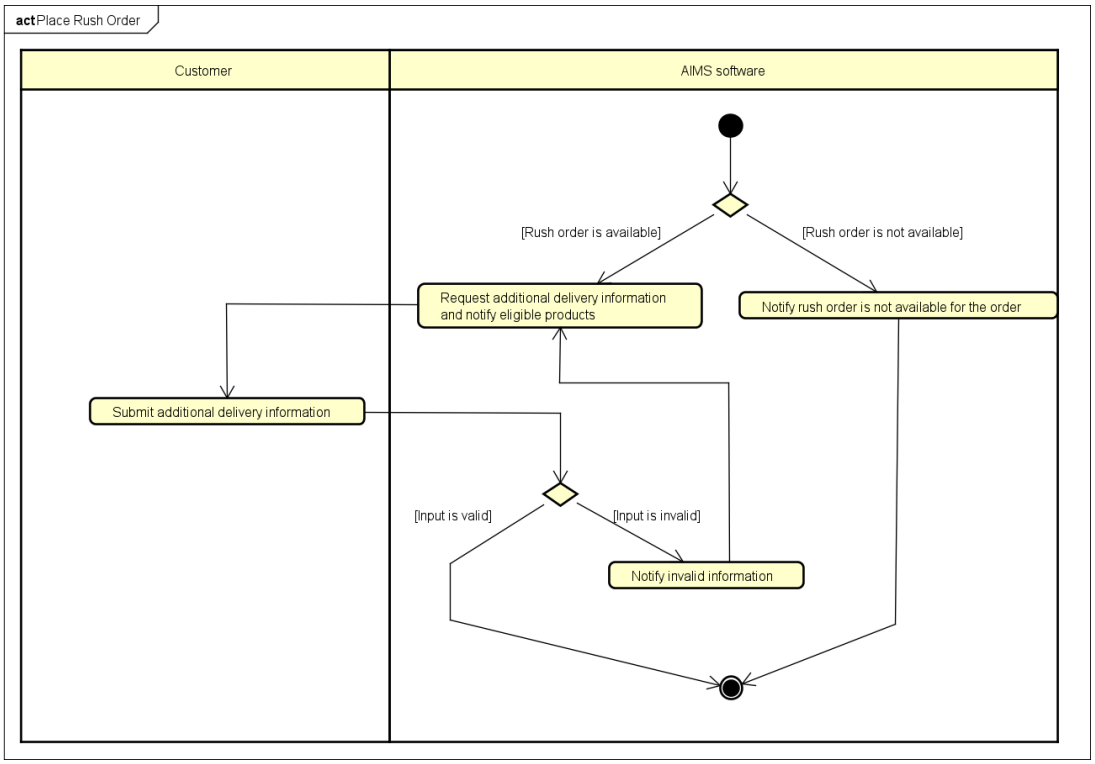


2.3. Business process

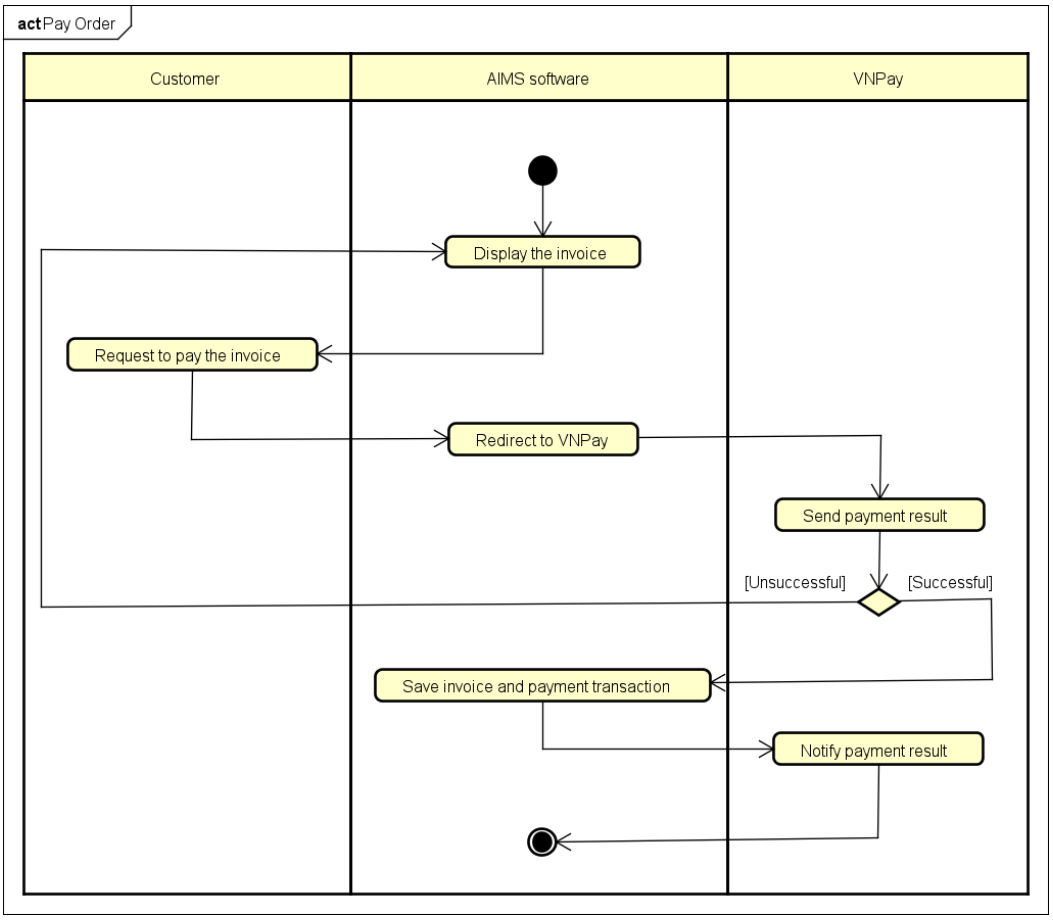
Use case "Place Order":



Use case “Place Rush Order”:



Use case “Pay Order”:



3. Detailed Requirements

3.1. Use case "Place Order"

Use case "Place Order"

1. Use case code

UC001

2. Brief Description

This use case describes the interaction between a customer and AIMS software when the customer wishes to place and purchase an order created by him/herself.

3. Actors

3.1. Customer

4. Preconditions

There is at least one item in the cart.

5. Basic Flow of Events

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

6. Alternative flows

No	Location	Condition	Action	Resume location
1	At Step 3	If the products are not available	AIMS software notifies that the products in cart are not available and stay at the use case "View cart"	Use case ends
2	At Step 5	If the delivery info is invalid	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	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	AIMS software notifies that the payment is unsuccessful.	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		Nguyen Huu Duc

2	Phone number		Yes	10 digits	0123456789
3	Province	Choose from a list	Yes		Hanoi
4	Address		Yes		1 Dai Co Viet street, Hai Ba Trung district
5	Shipping instructions		No		Call me 15 minutes before delivering!

8. Output data

Table 2: Output data of order information and shipping fee

No	Data field	Description	Display format	Example
1	Title	Title of a media product		DVD Phim Vượt ngục
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 product	Positive integer Right alignment	2
4	Amount	Total money of the corresponding media product	• 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	Calculated shipping fee for the order	• Comma for thousands separator • Positive integer • Right alignment	30,000
7	Total	The amount of money customer has to pay	• Comma for thousands separator • Positive integer • Right alignment	2,346,000

Table 3: Output data of general information of order and transaction info

No	Data field	Description	Display format	Example
1	Customer name			Nguyen Huu Duc

2	Phone number			0123456789
3	Province			Hanoi
4	Address			1 Dai Co Viet street, Hai Ba Trung district
5	Total amount		• Right alignment • Vietnamese currency (VNĐ) • Vietnamese locale	1,200,000 VNĐ
6	TransactionID	The ID of the transaction stored in the database		VN010834018

9. Postconditions

A new order is created, and its information is sent via email to the customer or nothing happens if payment is not successful.

3.2. Use case "Place Rush Order"

Use case "Place Rush Order"

1. Use case code

UC003

2. Brief Description

This use case describes the interaction between a customer and AIMS software when the customer wishes to place a rush order created by him/herself.

3. Actors

a. Customer

4. Preconditions

Customer selected Rush Order service.

5. Basic Flow of Events

1. AIMS software notifies the information about eligible products for the service (update Table 2)
2. AIMS software requests additional rush order delivery information (see Table 1)
3. Customer enters and submits required information
4. AIMS software checks and saves additional information

6. Alternative flows

No	Location	Condition	Action	Resume location
1	At Step 1	If all of the products are not eligible for rush order service or delivery address doesn't support rush order service.	AIMS software notifies that rush order service is not available for this order	Use case ends

2	At Step 4	If the additional info is invalid	AIMS software notifies that the additional info is invalid (blank or wrong format)	At Step 2

7. Input data

Table 1: Input data of additional information for rush order service

No	Data fields	Description	Mandatory	Valid condition	Example
1	Delivery time		Yes	DD/MM/ YYYY hh:mm	04/01/2025 16:30
2	Rush delivery instructions		No		Be careful with the eggs!

8. Output data

Table 2: Output data of order information and shipping fee with Rush Order service

No	Data field	Description	Display format	Example
1	Title	Title of a media product		DVD Phim Vượt ngục
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 product	• Positive integer • Right alignment	2
4	Amount	Total money of the corresponding media product	• Comma for thousands separator • Positive integer • Right alignment	246,000
5	Rush delivery option	Availability for rush delivery of the corresponding product	Y/N	Y
5	Subtotal	Total amount of all products in the order	• Comma for thousands separator • Positive integer • Right alignment	2,316,000
6	Shipping fee	Calculated shipping fee for the order	• Comma for thousands separator • Positive integer • Right alignment	110,000

7	Total	The amount of money customer has to pay	• Comma for thousands separator • Positive integer • Right alignment	2,426,000

9. Postconditions

The status of products in the order are updated with Rush Order service.

3.3. Use case "Pay Order"

Use case "Pay Order"

1. Use case code

UC002

2. Brief Description

This use case describes the interaction between a customer and VNPay as banking system towards AIMS software when the customer wishes to purchase the cost of an order created by him/herself.

3. Actors

a. Customer
b. VNPay

4. Preconditions

5. Basic Flow of Events

1. AIMS software displays the invoice (see Table 1)
2. Customer asks to pay the invoice
3. AIMS software redirects to VNPay
4. VNPay sends payment result to AIMS software
5. AIMS software saves invoice and payment transaction
6. AIMS software notifies the payment result to user

6. Alternative flows

No	Location	Condition	Action	Resume location
1	At Step 5	If the customer cancels the payment transaction	AIMS software notifies that the invoice was not paid successfully and displays the invoice again	At Step 1

7. Input data

8. Output data

Table 1: Output data of invoice

No	Data field	Description	Display format	Example
1	Title	Title of a media product		DVD Phim Vượt ngục
2	Price	Price of the corresponding media product	• Comma for thousands separator	123,000

			• Positive integer • Right alignment	
3	Quantity	Quantity of the corresponding media product	• Positive integer • Right alignment	2
4	Amount	Total money of the corresponding media product	• Comma for thousands separator • Positive integer • Right alignment	246,000
5	Subtotal before VAT	Total price of products in the cart before VAT		2,106,000
6	Subtotal	Total price of products in the cart with VAT		2,316,000
7	Shipping fee	Calculated shipping fee for the order		30,000
8	Total	The amount of money customer has to pay		2,346,000
9	Currency			VNĐ
10	Name			Nguyen Huu Duc
11	Phone number			0123456789
12	Province			Hanoi
13	Address			1 Dai Co Viet street, Hai Ba Trung district
14	Shipping instructions			Call me 15 minutes before delivering!

9. Postconditions

Payment for order is completed, VNPay returns status of the purchase to AIMS software.

4. Supplementary specification

4.1. Functionality

- The software ensures that each action can only be done by person with permission (for managing use cases).
- Sensitive data is encrypted.

4.2. Usability

- The software allows new users to easily familiarize themselves.

4.3. Reliability

- The software can resume normal operation within a maximum of 1 hour after an incident.

4.4. Performance

- AIMS software can serve up to 1000 customers simultaneously without significantly reducing performance and can operate continuously for 300 hours without failure.
- The maximum response time of the software is 2 seconds under normal conditions or 5 seconds during peak hours.

4.5. Supportability

- Separated test environments will be prepared to carry out functional, integration and acceptance tests