

HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

School of Information and communications technology

# Software Requirement Specification

Version 1.2

Subject: ITSS Software Development

Pham Quang Huy

20215207

*Hanoi, March, 2024*

## Contents

1	Introduction .....	3
1.1	Objective.....	3
1.2	Scope .....	3
1.3	Glossary .....	3
1.4	References .....	4
2	Overall Description .....	5
2.1	Survey .....	5
2.2	Overall requirements .....	5
2.3	Business process .....	6
3	Detailed Requirements .....	9
3.1	Place order use case .....	9
3.1.1	Use case code .....	9
3.1.2	Brief Description.....	9
3.1.3	Actors .....	9
3.1.4	Preconditions.....	9
3.1.5	Basic flow of events.....	9
3.1.6	Alternative flows.....	9
3.1.7	Input data .....	10
3.1.8	Output data.....	10
3.1.9	Postconditions .....	12
3.2	Pay order use case.....	12
3.2.1	Use case code .....	12
3.2.2	Brief Description.....	12
3.2.3	Actors .....	12
3.2.4	Preconditions.....	12
3.2.5	Basic Flow of Events .....	12
3.2.6	Alternative flows.....	12

3.2.7	Input data .....	13
3.2.8	Output data.....	13
3.2.9	Postconditions .....	14
3.3	Place rush order use case .....	14
3.3.1	Use case code.....	14
3.3.2	Brief description.....	14
3.3.3	Actors.....	14
3.3.4	Preconditions.....	14
3.3.5	Basic Flow of Events .....	14
3.3.6	Alternative flows.....	14
3.3.7	Input data .....	15
3.3.8	Output data.....	15
3.3.9	Post conditions .....	16
4	Supplementary specification .....	17
4.1	Functionality .....	17
4.2	Usability.....	17
4.3	Reliability .....	17
4.4	Performance.....	17
4.5	Supportability .....	17
4.6	Other requirements .....	17

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

## 1.3 Glossary

<i>No</i>	<i>Term</i>	<i>Explanation</i>	<i>Example</i>	<i>Note</i>
1	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.		
2	Cart	A list of all the chosen items along with their quantity.		
3	Administrator	The person who's responsible for overseeing the entire system.		
4	Rush delivery	A delivery service that requires goods to be delivered in a specific time frame, time limit.		
5	Response time	The total of time it takes for the system to respond to user's request	Whenever a customer chooses to add a new product, the cart will be updated within	Maximum 2 seconds under normal conditions, and 5 seconds

<i>No</i>	<i>Term</i>	<i>Explanation</i>	<i>Example</i>	<i>Note</i>
			about 2-5 seconds	during peak hours.
6	Downtime	The length of the time period when the system is out of service.		The system must be able to resume normal operations after a maximum of 1 hour after an incident.

## 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 A – An use case diagram of the system

## 2.3 Business process

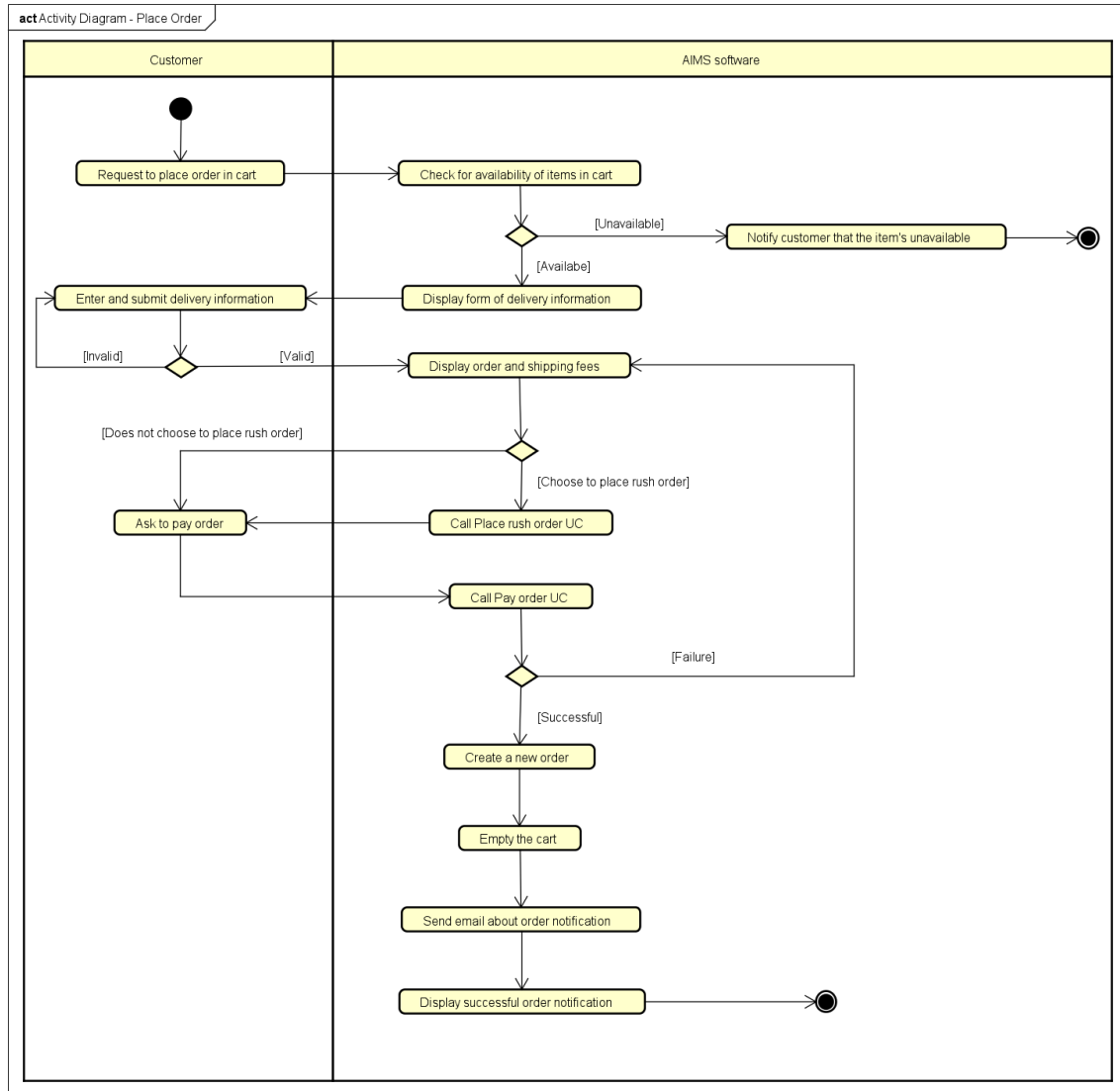
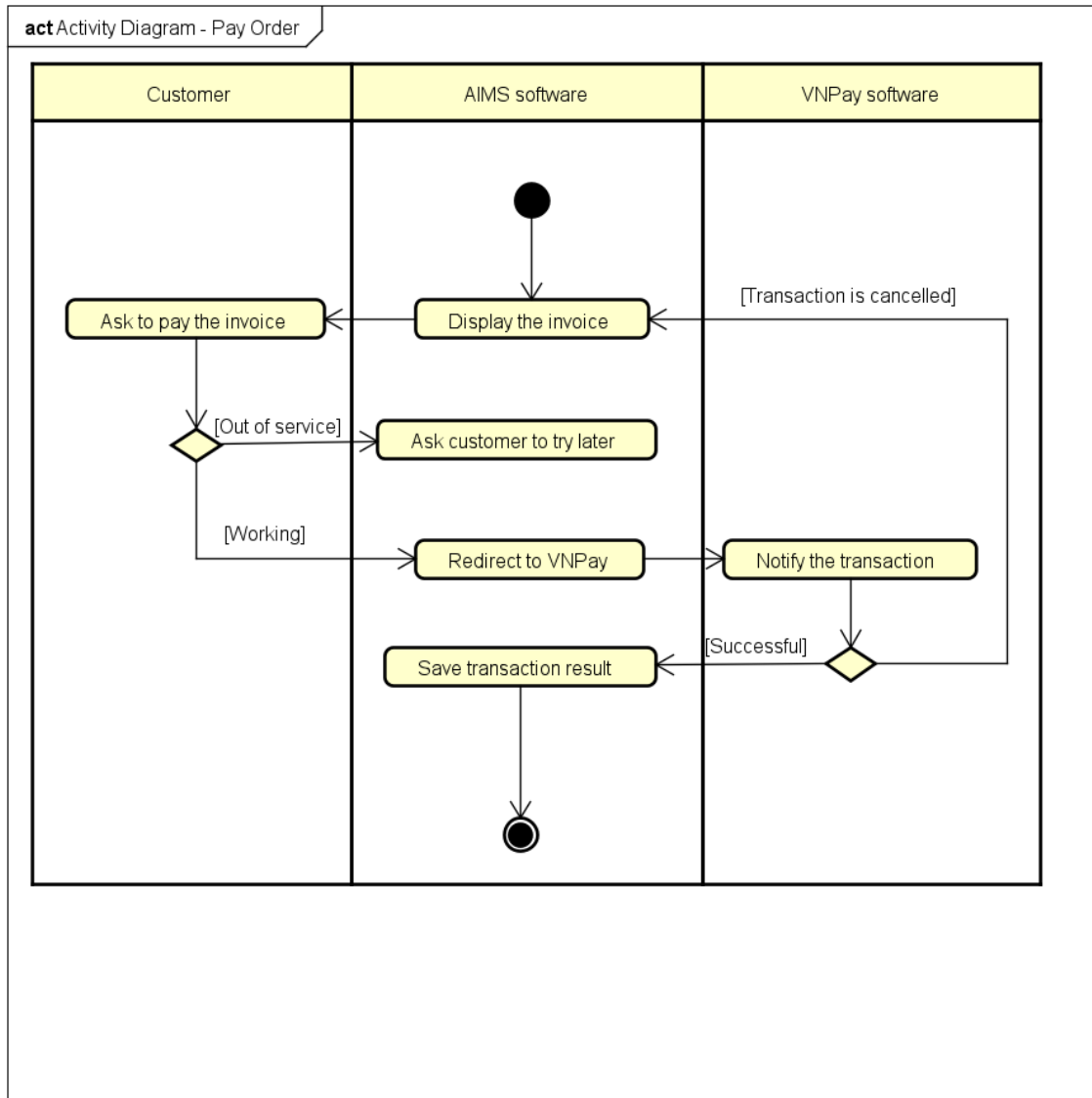
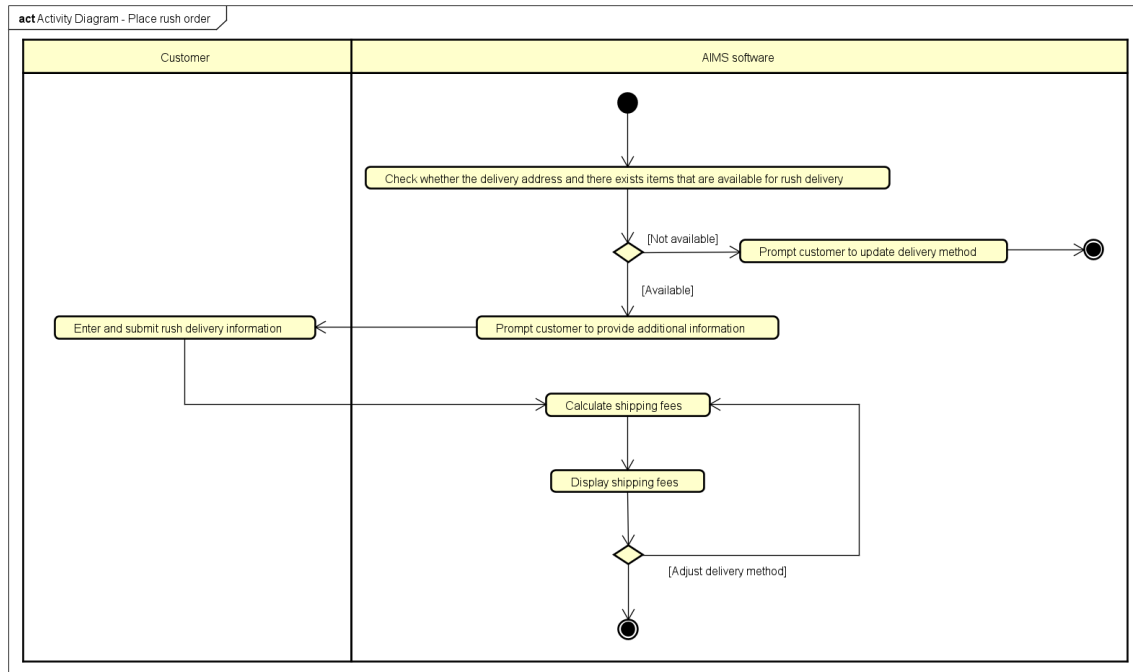


Figure 1: The place order use case activity diagram



**Figure 2: The pay order use case activity diagram**





**Figure 3: The place rush order use case activity diagram**

## 3 Detailed Requirements

### 3.1 Place order use case

#### 3.1.1 Use case code

- UC002

#### 3.1.2 Brief Description

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

#### 3.1.3 Actors

- Customer.

#### 3.1.4 Preconditions

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

#### 3.1.5 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).

#### 3.1.6 Alternative flows

*Table A: Alternative flows of events for UC Place order*

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

			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

### 3.1.7 Input data

*Table 1 – Input data of delivery information*

No	Data fields	Description	Mandatory	Valid condition	Example
1.	Receiver Name		Yes		Pham Quang Huy
2.	Phone Number		Yes	10 digits	0394977199
3.	Province	Choose from a list	Yes		Ha Noi
4.	Address		Yes		Ha Dong, Ha Noi
5.	Shipping instructions		No		

### 3.1.8 Output data

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.	123,000

			<ul style="list-style-type: none"> <li>- Positive integer.</li> <li>- Right alignment</li> </ul>	
3.	Quantity	Quantity of the corresponding media	<ul style="list-style-type: none"> <li>- Positive integer.</li> <li>- Right alignment.</li> </ul>	2
4.	Amount	Total money of the corresponding media	<ul style="list-style-type: none"> <li>- Comma for thousands separator.</li> <li>- Positive integer.</li> <li>- Right alignment</li> </ul>	246,000
5.	Subtotal	Total amount of all products in the order	<ul style="list-style-type: none"> <li>- Comma for thousands separator.</li> <li>- Positive integer.</li> <li>- Right alignment</li> </ul>	2,316,000
6.	Shipping fee		<ul style="list-style-type: none"> <li>- Comma for thousands separator.</li> <li>- Positive integer.</li> <li>- Right alignment</li> </ul>	30,000

*Table 3 – 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		<ul style="list-style-type: none"> <li>- Right alignment.</li> <li>- Vietnamese currency.</li> </ul>	1.200.000 VNĐ
6.	Transaction ID			

7.	Transaction content			
8.	Transaction date		dd/mm/yy	16/03/2024

### 3.1.9 Postconditions

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

## 3.2 *Pay order use case*

### 3.2.1 Use case code

- UC003

### 3.2.2 Brief Description

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

### 3.2.3 Actors

- Customer.
- VNPay software.

### 3.2.4 Preconditions

- The customer has requested to pay for an order.

### 3.2.5 Basic Flow of Events

- Step 1. AIMS software displays the invoice (See Table 1).
- 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.

### 3.2.6 Alternative flows

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

### 3.2.7 Input data

### 3.2.8 Output data

Table 2. 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	<ul style="list-style-type: none"> <li>- Comma for thousands separator</li> <li>- Positive value</li> <li>- Right alignment</li> </ul>	49,000
3.	Quantity	Quantity of the items	<ul style="list-style-type: none"> <li>- Positive value</li> <li>- Right alignment</li> </ul>	3
4.	Amount	Total amount of money	<ul style="list-style-type: none"> <li>- Comma for thousands separator</li> <li>- Positive value</li> <li>- Right alignment</li> </ul>	147,000
5.	Subtotal before VAT	Total amount of money before VAT		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			Pham Quang Huy
11.	Phone number			0394977199
12.	Province			Ha Noi
13.	Address			Ha Dong District, Ha Noi
14.	Shipping instructions			

### 3.2.9 Postconditions

- AIMS software notifies of the successful money transaction.

## 3.3 **Place rush order use case**

### 3.3.1 Use case code

- UC004

### 3.3.2 Brief description

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

### 3.3.3 Actors

- Customer.

### 3.3.4 Preconditions

- Customer select rush order delivery.

### 3.3.5 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 1)
- Step 4. AIMS software calculates and displays all the delivery fees. (See Table 2 and Table 3)

### 3.3.6 Alternative flows

*Table A - 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 service	- The AIMS software prompts the customer to update the delivery information or delivery method	Use case ends
2.	At Step 4	If customer chooses to adjust the delivery method	- The AIMS software recalculates the delivery fees and updates the corresponding invoice.	At Step 4

### 3.3.7 Input data

*Table 1 – Input data of rush delivery information*

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

### 3.3.8 Output data

*Table 2 – 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	<ul style="list-style-type: none"> <li>- Comma for thousands separator.</li> <li>- Positive integer.</li> <li>- Right alignment</li> </ul>	123,000
3.	Quantity	Quantity of the corresponding media	<ul style="list-style-type: none"> <li>- Positive integer.</li> <li>- Right alignment.</li> </ul>	2
4.	Shipping fee		<ul style="list-style-type: none"> <li>- Comma for thousands separator.</li> <li>- Positive integer.</li> <li>- Right alignment</li> </ul>	50,000

*Table 3 - 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		Manga – My Hero Academia
2.	Price	Price of the corresponding media product	<ul style="list-style-type: none"> <li>- Comma for thousands separator.</li> </ul>	25,000



			<ul style="list-style-type: none"> <li>- Positive integer.</li> <li>- Right alignment</li> </ul>	
3.	Quantity	Quantity of the corresponding media	<ul style="list-style-type: none"> <li>- Positive integer.</li> <li>- Right alignment.</li> </ul>	2
4.	Shipping fee		<ul style="list-style-type: none"> <li>- Comma for thousands separator.</li> <li>- Positive integer.</li> <li>- Right alignment</li> </ul>	20,000

### 3.3.9 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**