HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

School of Information and communications technology

Software Requirement Specification

An Internet Media Store

Subject: ITSS Software Development

Group 09

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1 Introduction

1.1 Objective

The objective of the AIMS software is to offer a comprehensive and user-friendly desktop e-commerce platform dedicated to the buying, selling, and management of physical media products, including books, CDs, LP records, and DVDs. Designed to enhance operational efficiency and customer satisfaction, AIMS focuses on facilitating seamless interactions between product managers and customers. The software aims to support robust product management capabilities, enabling product managers to efficiently manage inventory, and to provide customers with a rich shopping experience that includes easy browsing, cart management, and secure checkout processes. Intended users of the software include product managers, who will oversee product listings and inventory; administrators, who will manage user roles and system settings; and customers, who will use the platform to discover and purchase physical media products. Through AIMS, we seek to improve the accessibility and availability of physical media products to a wide audience, fostering an engaging and reliable shopping environment.

1.2 Scope

The software product to be developed is named AIMS (An Internet Media Store). AIMS is designed to operate as a desktop e-commerce platform that facilitates the sale of physical media products, including books, CDs, LP records, and DVDs. The software will enable product managers to add, view, edit, or delete products within specified limits to ensure security and manageability. Customers will be able to browse products, add them to a cart, and proceed with ordering and payment, with support for a VNPay integration for payment processing.

The application of AIMS is aimed at creating a seamless and efficient shopping experience for customers while providing robust management tools for product managers and administrators. Benefits of the software include 24/7 availability, support for up to 1000 simultaneous customers, and the capability to handle extensive operational hours without failure. The goal is to enhance the market presence of physical media products through an accessible and user-friendly platform, ultimately increasing sales and customer satisfaction.

1.3 Glossary

No	Term	Explanation	Example	Note
1	Administrator	A user role in AIMS with permissions to manage user accounts and system-wide settings.		They maintain the overall system integrity and user management.
2	Physical Media Products	Tangible items such as books, CDs, LP records, and DVDs sold on the AIMS platform.	'The Great Gatsby' book, 'Abbey Road' vinyl record	Physical products require additional shipping and handling.
3	VNPay	A payment processing service integrated with AIMS to handle transactions securely.		VNPay is used for credit card payments within AIMS.
4	E-commerce	The buying and selling of goods or services using the internet, and the transfer of money and data to execute these transactions.		AIMS is an e-commerce platform for physical media products.
5	CRUD	An acronym for Create, Read, Update, Delete, referring to the basic operations users can perform on data.		Admin use CRUD operations to manage product listings in AIMS.

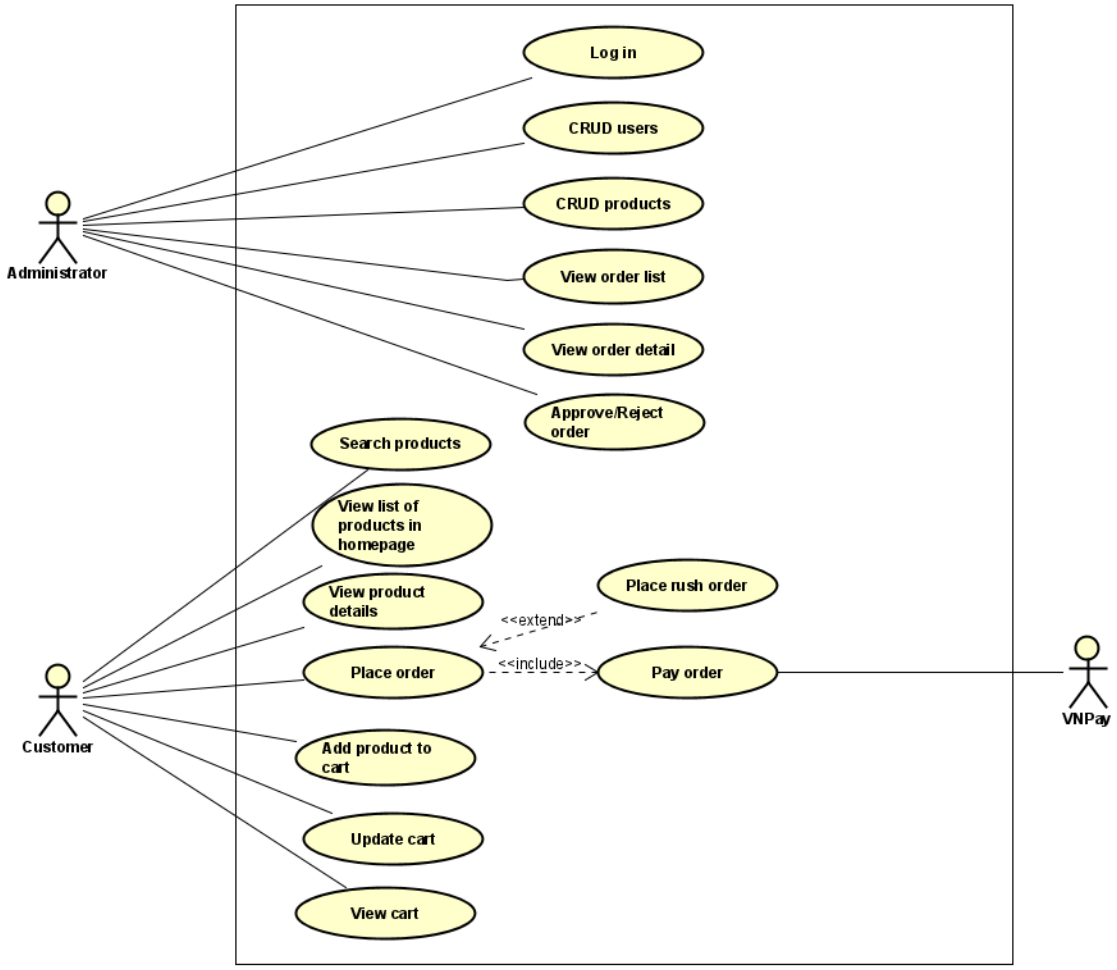
1.4 References

2 Overall Description

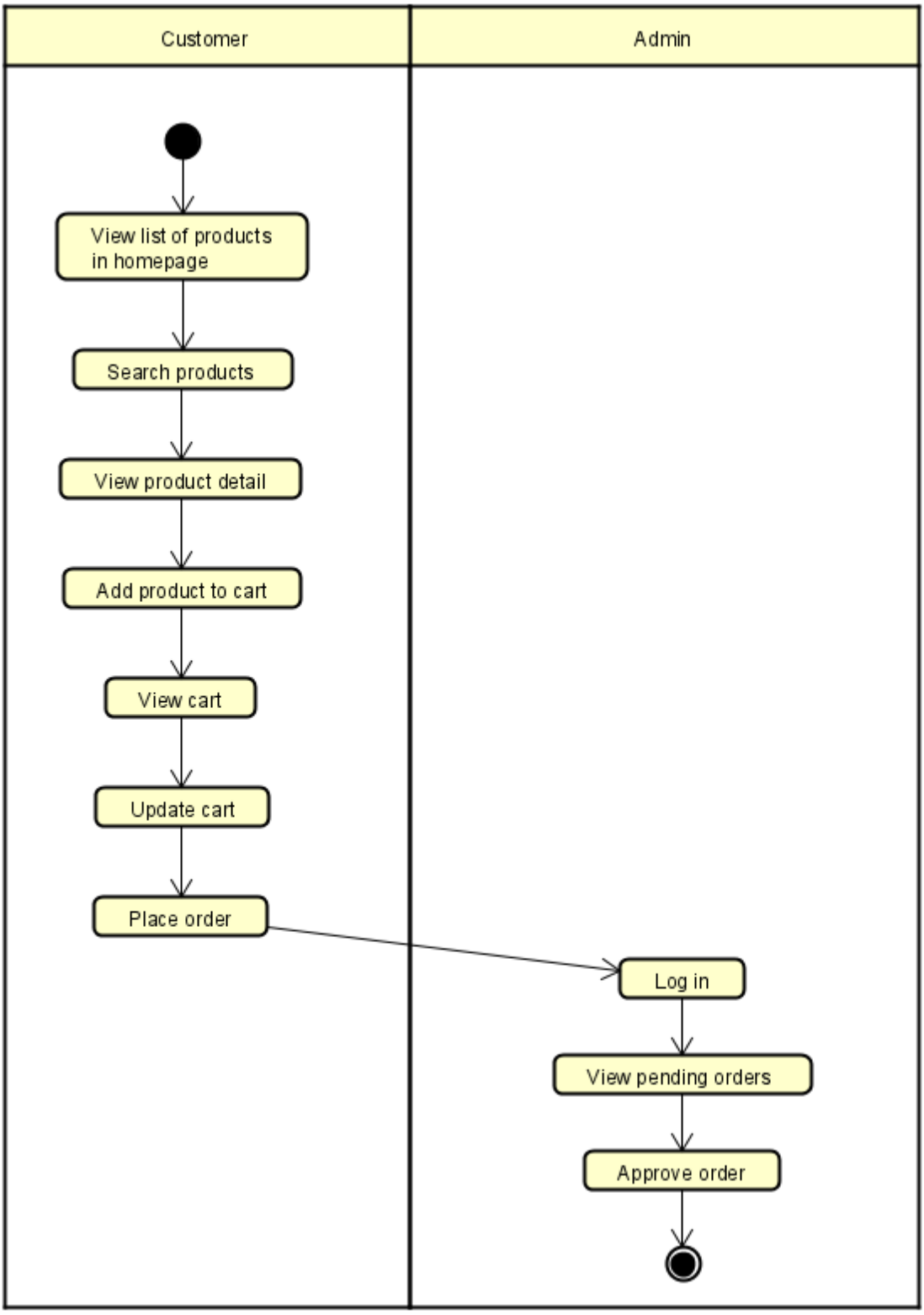
2.1 Survey

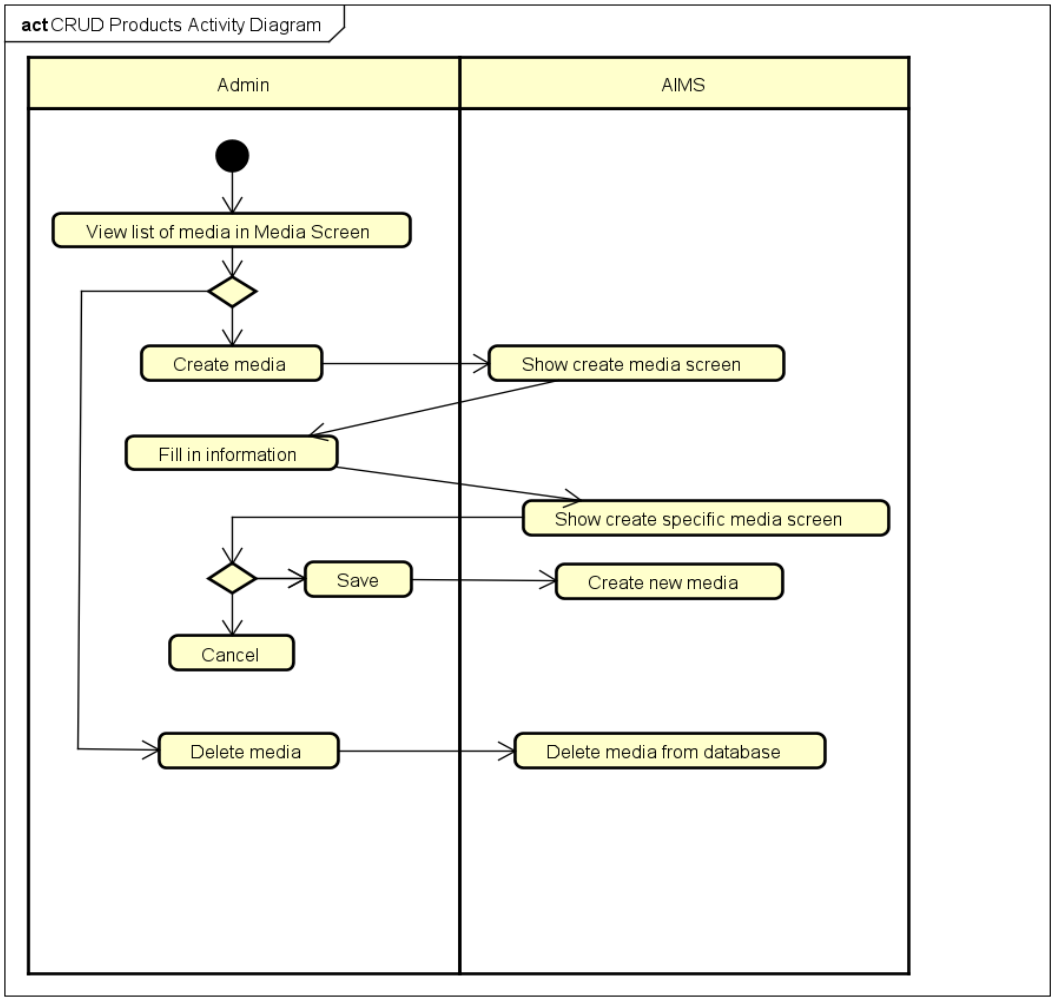
There are three actors including admininistrator, customer and VNPay.

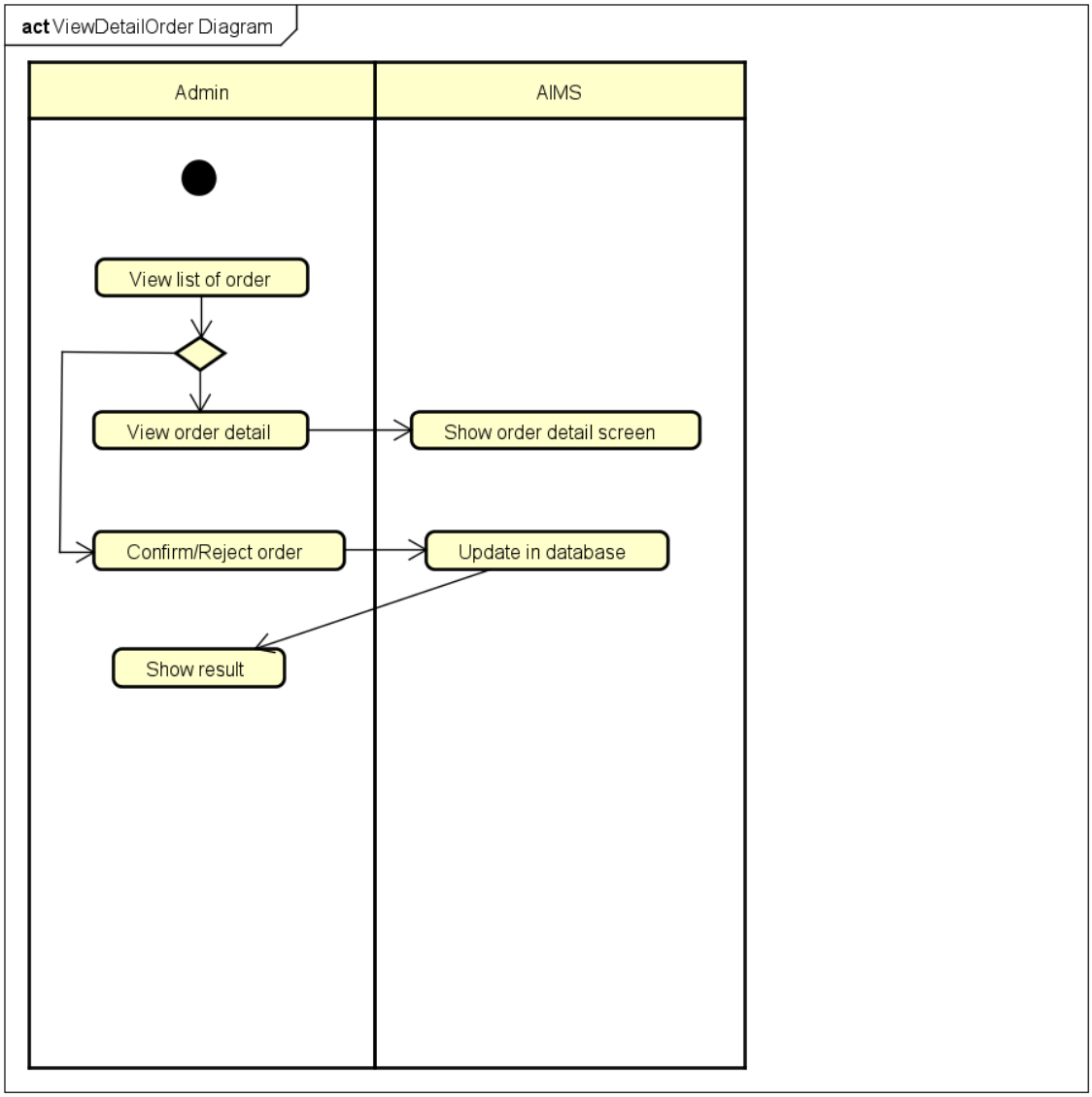
2.2 Overall requirements



2.3 Business process


Customer
Admin
View list of products in homepage
Search products
View product detail
Add product to cart
View cart
Update cart
Place order
Log in
View pending orders
Approve order


act CRUD Products Activity Diagram
Admin
AIMS
View list of media in Media Screen
Create media
Show create media screen
Fill in information
Show create specific media screen
Save
Create new media
Cancel
Delete media
Delete media from database


act ViewDetailOrder Diagram
Admin
AIMS
View list of order
View order detail
Show order detail screen
Confirm/Reject order
Update in database
Show result

3 Detailed Requirements

3.1 View list of products in homepage

Use Case View List of Products in Homepage

1. Use case code

UC001

2. Brief Description

This use case describes the interaction between customer and AIMS system when customer wish(es) to view list of products in homepage.

3. Actors

Customer.

4. Preconditions

5. Basic Flow of Events

1. Customer chooses to go to home page.
2. System gets data about products in store.
3. System displays list of all products in home page.

6. Alternative flows

7. Input data

8. Output data

The format of displayed result:

No	Data fields	Description	Display format	Example
1	Title	Name of product	String	‘Avatar’
2	Price	Price of product Unit: Viet Nam Dong	Period for thousands separator Positive number	‘150.000đ’
3	Category	Category of product (book, dvd or cd)	String	‘book’
4	Avail	Number of products available in store	Non-negative integer	‘5’
5	Image	Image of product	Image(.jpg or .png file)	

9. Postconditions

3.2 Search products

Use Case "Search Product"

1. Use case code

UC002

2. Brief Description

This use case describes the interaction between customer and AIMS system when customer wish(es) to search for a specific product.

3. Actors

Customer.

4. Preconditions

5. Basic Flow of Events

1. The customer chooses searching for products and entering keyword for searching.
2. AIMS software finds products matching the keywords.
3. AIMS software displays list of results

6. Alternative flows

Table 1-Alternative flows of events for UC Search Product

No	Location	Condition	Action	Resume location
1.	At Step 1	If customer choose to find all books	AIMS software searches for all 'book' products	Resumes at Step 3
2.	At Step 1	If customer choose to find all DVDs	AIMS software searches for all 'DVD' products	Resumes at Step 3
3.	At Step 1	If customer choose to find all CDs	AIMS software searches for all 'CD' products	Resumes at Step 3

7. Input data

8. Output data

The format of displayed result:

No	Data fields	Description	Display format	Example
1	Title	Name of product	String	'Avatar'
2	Price	Price of product Unit: Viet Nam Dong	Period for thousands separator Positive number	'150.000đ'
3	Category	Category of product (book, dvd or cd)	String	'book'
4	Avail	Number of products available in store	Non-negative integer	'5'
5	Image	Image of product	Image(.jpg or .png file)	

9. Postconditions

3.3 View product detail

Use Case "View Product Detail"

1. Use case code

UC003

2. Brief Description

This use case describes the interaction between customer and AIMS system when customer wish(es) to view detail of a product.

3. Actors

Customer.

4. Preconditions

5. Basic Flow of Events

1. The customer chooses a product to view its details.
2. AIMS software displays the detail screen of the product.

6. Alternative flows

7. Input data

8. Output data

Common information for all category:

No	Data fields	Description	Display format	Example
1	Title	Name of product	String	'Avatar'
2	Price	Price of product Unit: Viet Nam Dong	Period for thousands separator Positive number	'150.000đ'
3	Category	Category of product (book, dvd or cd)	String	'book'
4	Avail	Number of products available in store	Non-negative integer	'5'
5	Image	Image of product	Image(.jpg or .png file)	

Detail information for books:

No	Data fields	Description	Display format	Example
1	Author	Author of the book	String	JK. Rowling
2	Publisher	Publisher of the book.	String	Nha Nam
3	Cover Type	Type of the cover of the book	String	Paperpack
4	Number of pages	Total number of pages in the book	Positive integer	500
5	Publication Date	Date on which the version of book is publicated.	Date (Year-Month-Day)	2024-06-18
6	Language	The language of the book's content	String	Vietnamese
7	Genre	Main genre of the book	String	Fiction

ii. Detail information for DVDs

No	Data fields	Description	Display format	Example
1	Disc Type	Type of the DVD	String	Blu-ray
2	Studio	Studio publishing the movie in the DVD	String	Warner Bros.

3	Language	Main language in the movie	String	English
4	Subtitle	Language used for subtitle in the movie	String	Vietnamese
5	Release Date	The date the movie is released.	Date(Year-Month-Day)	2009-12-10
6	Genre	Main genre of the movie	String	Dramatic

iii. Detail information for CDs

No	Data fields	Description	Display format	Example
1	Artist	Name of the artist who creates the CD	String	Taylor Swift
2	Record Label	The label who records the songs and publishes the CD	String	Warner Music Group
3	Genre	Main genre of the songs in the CD	String	Hip Hop
4	Release Date	The date the CD is released	Date (Year-Month-Day)	2024-18-06
5	Track list	List of the songs in the CD	String	1.Good Day 2.Choker 3.Shy Away 4.The Outside 5.Saturday 6.Never Take It 7.Mulberry Street 8.Formidable 9.Bounce Man 10.No Chances 11.Redecorate

9. Postcondition

3.4 Add product to cart

Use Case “Add Product To Cart”

1. Use case code

UC004

2. Brief Description

This use case describes the interaction between customer and AIMS system when customer wish(es) to add a product to cart.

3. Actors

Customer.

4. Preconditions

5. Basic Flow of Events

1. The customer requests to add a product to cart.
2. AIMS software checks if the product is available to add to cart.
3. AIMS software adds product to cart.

6. Alternative flows

Table 1-Alternative flows of events for UC Add Product To Cart

No	Location	Condition	Action	Resume location
1.	At Step 2	If the product remaining quantity is insufficient.	AIMS alerts that the product is unavailable.	Resumes at Step 1

3.5 View cart

Use Case "View Cart"

1. Use case code

UC005

2. Brief Description

This use case describes the interaction between customer and AIMS system when customer wish(es) to view cart.

3. Actors

Customer.

4. Preconditions

5. Basic Flow of Events

1. The customer requests to view cart.

2. AIMS software displays cart screen

6. Alternative flows

7. Input data

8. Output data

Table 1: Output data of use-case "View Cart"

No	Data fields	Description	Display format	Example
1	products	List of items with quantiy in cart	List of Product	
2	subtotal	Subtotal value of all items in cart	numeric	100.000
3	VAT	VAT of order created from cart	numeric	10.000
4	Total	Subtotal + VAT	numeric	110.000

3.6 Update cart

Use Case "Update Cart"

1. Use case code

UC006

2. Brief Description

This use case describes the interaction between customer and AIMS system when customer wish(es) to update cart.

3. Actors

Customer.

4. Preconditions

Customer is in cart screen

5. Basic Flow of Events

1. Customer requests to increase the number of products in the cart.

2. AIMS software checks the availability of the products.

3. AIMS updates the quantity of cart

6. Alternative flows

Table 1-Alternative flows of events for UC Update Cart

No	Location	Condition	Action	Resume location
1.	At Step 2	If the remaining quantity is insufficient	AIMS alerts that the product is unavailable	Use case ends.
2.	At step 1	Customer removes a product.	AIMS removes the product from cart and updates the remaining quantity.	Use case ends.

3.7 Place order

Use Case "Place Order"

1.Use case code

UC007

2. Brief Description

This use case describes the interaction between customer and AIMS system when the user wants to place order

3. Actors

Customer

4. Preconditions

User is in the cart page

5.Basic Flow of Events

1. The user proceeds to place order
2. AIMS system checks whether the cart is empty
3. AIMS system checks the availability of every product in the cart
4. AIMS displays the delivery form
5. Customer enters the delivery form
6. AIMS displays the shipping fee and total cost
7. Customer submits the form
8. AIMS checks the validity of the info
9. AIMS displays the invoice
10. Customer proceeds to pay order
11. AIMS calls UC Pay Order

6. Alternative flows

Table 1-Alternative flows of events for UC Place Order

No	Location	Condition	Action	Resume location
1.	At Step 2	The cart is empty	AIMS notifies the error that cart is empty	Use case ends
2	At Step 3	The remaining quantity of a product is insufficient	AIMS notifies the error of product unavailability	Use case ends
3	At Step 8	The information is invalid or empty	AIMS notifies the error of invalid information	Step 6

7. Input data

Table 2-Input data of Place order screen

No	Data fields	Description	Mandatory	Valid condition	Example
1.	Name	Name of customer	yes		Hieu
2.	Email	Email of customer	yes	Must contain "@gmail"	H@gmail.com
3.	Phone	Phone of customer	yes	Must contain 10 digits	0123456789
4.	City/ Province	City/ Province	yes		Ha Noi
5.	Address	Address of customer	yes		12, Bach Mai
6.	Shipping íntruction	Shipping ínstruction	yes		
7.	Shipping method	Normal or Rush	yes		Normal

8.Output data

Table B-Output data of invoice screen:

No	Data fields	Description	Display format	Example
1	Name	Name of customer	String	Hieu
2	Address	Address of customer	String	12 Bach Mai Street
3	Phone	Phone of customer	10 digits	0123456789
4	Shipping instruction	Shipping instruction	String	
5	Subtotal		Integer	200.000D
6	Shipping fee		Integer	200.000D
7	Total cost	Total cost of order	Integer	350.000D

3.8 Place rush order

Use Case "Place Rush Order"

1.Use case code

UC008

2. Brief Description

This use case describes the interaction between customer and AIMS system when the user wants to place rush order

3. Actors

Customer

4. Preconditions

5.Basic Flow of Events

1. Aims checks the eligibility of every product in the cart and checks the eligibility of province
2. Aims displays updated shipping fee and total cost
3. Aims show additional information for rush delivery

6. Alternative flows

Table 1-Alternative flows of events for UC Place Rush Order

No	Location	Condition	Action	Resume location
1.	At Step 1	All products and province are not eligible for rush delivery	AIMS system notifies the error	Use case ends
2	At step 3	Customer changes the province		Resumes at Step 1
3	At step 3	Customer unselects the rush delivery option	AIMS displays updated shipping fee and total cost	Use case ends

7. Input data

No	Data fields	Description	Mandatory	Valid condition	Example
1.	Delivery time	Rush time delivery	yes		16/7/2024
2.	Rush shipping instruction	Rush instruction	yes		

8. Output data

3.9 Pay order

Use Case “Pay order”

1.Use case code

UC009

2. Brief Description

This use case describes the interaction between customer and AIMS system when the user has a list in the cart and wants to place order

3. Actors

Customer and VNPay

4. Preconditions

5.Basic Flow of Events

1. AIMS saves the order and empty the cart
2. AIMS redirects to VNPay with order information
3. AIMS shows the successful payment
4. AIMS saves the transaction
5. AIMS updates the order payment status
6. AIMS sends order information to customer’s email

6. Alternative flows

Table 7-Alternative flows of events for UC Place Order

No	Location	Condition	Action	Resume location
1.	At Step 3	AIMS shows the failded payment		Use case ends.

7. Input data

8.Output data

3.10 Log in

Use Case “Login”

1.Use case code

UC0010

2.Brief Description

This use case describes the interaction between admin and AIMS system when admin want to login

3.Actors

Administrator.

4.Preconditions

5.Basic Flow of Events

1. Admin accesses login page
2. Admin fill-in login form and confirm
3. AIMS system checks credentials
4. Admin successfully logs in

6.Alternative flows

Table N-Alternative flows of events for UC Login

No	Location	Condition	Action	Resume location
1.	At Step 3	If the credential is invalid	▪ Aims notifies the error	Resumes at Step 2

7.Input data

No	Data fields	Description	Mandatory	Valid condition	Example
1.	username		yes		admin
2.	password		yes		12345

3.11 CRUD Users

Use Case "CRUD Users"

1.Use case code

UC0011

2.Brief Description

This use case describes the interaction between admin and AIMS system when admin want to crud user

3.Actors

Administrator.

4.Preconditions

User logged in system as admin.

5.Basic Flow of Events

1. Admin accesses user management page
2. Admin system shows list of users
3. Admin chooses to create a new user
4. AIMS system displays the form
5. Admin fills in the form and submit
6. AIMS system checks the validity of the information
7. AIMS system creates a new user.

6.Alternative flows

Table 1-Alternative flows of events for UC CRUD Users

No	Location	Condition	Action	Resume location
1.	At Step 6	If the information is invalid	▪ Aims notifies the error	Resumes at Step 4
2.	At Step 3	Admin chooses to edit a user	▪ AIMS shows the form ▪ Admin edits user information and saves ▪ AIMS checks the validity of new info and updates	Use case ends
3.	At Step 3	Admin deletes a user	▪ AIMS deletes the user from the user list	Use case ends

7. Input Data

Table 2-Input data of the form for creating and editing user

No	Data fields	Description	Mandatory	Valid condition	Example
1.	name		yes		Admin

2.	email		yes	Email format	Email@exmaple.com
3.	phone		yes	10 digits	0123456789

3.12 CRUD Products

Use Case "CRUD Products"

1. **Use case code**

   UC0012

2. **Brief Description**

   This use case describes the interaction between Admin and AIMS when Admin wish(es) to create, read, update and delete products.

3. **Actors**

   Admin

4. **Preconditions**

   Admin is currently in the media screen

5. **Basic Flow of Events**

   1. Admin chooses create media
   2. AIMS shows create media screen
   3. Admin fills in all fields and press Save
   4. AIMS shows create specific media screen
   5. Admin continues to fill in fields and press Save
   6. AIMS update new product to database and display on the screen

6. **Alternative flows**

Table 1-Alternative flows of events for UC CRUD Products

No	Location	Condition	Action	Resume location
1.	At Step 1	If admin choose delete	▪ AIMS delete product from database	Use case ends.

7. **Input data**

Table 2-Input data of Media

No	Data fields	Description	Mandatory	Valid condition	Example

1.	Title	Title of media	yes		name
2.	Category	Category of media	yes		book
3.	Value	Value of media	yes	Must be number	12
4.	Price	Price of media	yes	Must be number	110
5.	Quantity	Quantity of media	yes	Must be number	1
6.	Image Path	Image Path of media	yes		AIMS/assets/img1.jpg
7.	Support rush shipping	true/false	yes		False
8.	Weight	Weight of media	yes	Must be number	12

8. Output data

9. Postconditions

3.13 View order list

Use Case "View Order List"

1. Use case code

UC0013

2. Brief Description

This use case describes the interaction between Admin and AIMS when Admin wish(es) to view order list

3. Actors

Admin

4. Preconditions

Admin has logged in and currently in the view media screen.

5. Basic Flow of Events

1. The admin press the order button on the screen
2. AIMS switch from media screen to order screen

6. Alternative flows

7. Input data

8. Output data

Table B-Output data of …

No	Data fields	Description	Display format	Example
1	Id	Id of order	Integer	1
2	Name	Name of customer	String	Hieu
3	Phone	Phone of customer	10 digits	0123456789
4	isRush	Rush order or Normal order	true/false	true
5	Order status	Status of order	String	Pending
6	Total cost	Total cost of order	Integer	350

10. Postconditions

3.14 View order detail

Use Case "View order detail"

1. Use case code

UC0014

2. Brief Description

This use case describes the interaction between Admin and AIMS when Admin wish(es) to view order detail.

3. Actors

Admin

4. Preconditions

The admin is currently in the order screen.

5. Basic Flow of Events

1. The admin presses the view detail button on the screen
2. AIMS switches to the view order detail of the corresponding order

6. Alternative flows

7. Input data

8. Output data

Table B-Output data of order screen:

No	Data fields	Description	Display format	Example
1	Name	Name of customer	String	Hieu
2	Address	Address of customer	String	12 Bach Mai Street
3	Phone	Phone of customer	10 digits	0123456789
4	Ship Type	Rush order or Normal order	True/False	Normal
5	Delivery Date	Delivery Date Of order	Dd-mm-yyyy	12-12-2023
6	Total price(VAT)	Total price of order	Integer	200
7	Shipping fee	Shipping fee of order	Integer	20
8	Order status	Status of order	String	Pending
9	Total cost	Total cost of order	Integer	350

11. Postconditions

3.15 Approve/Reject order

Use Case "Approve/Reject order"

1. Use case code

UC0015

2. Brief Description

This use case describes the interaction between Admin and AIMS when admin wish(es) to ...

3. Actors

Admin

4. Preconditions

The admin is currently in the order screen.

5. Basic Flow of Events

1. The admin presses the approve button
2. AIMS update the status of the order in database and in the screen.

6. Alternative flows

Table N-Alternative flows of events for UC Place order

No	Location	Condition	Action	Resume location
2.	At Step 1	If the admin press the reject button	▪ AIMS update the status	Resumes at Step 2

7. Input data

8. Output data

9. Postconditions

4 Supplementary specification

4.1 Functionality

The AIMS software consolidates key functional requirements that span multiple use cases to support the platform’s e-commerce activities. Its features enable efficient inventory management, product browsing, and order processing.

4.2 Usability

To ensure usability, AIMS is developed with an intuitive interface that simplifies the navigation and transaction processes for its diverse users, which include customers, product managers, and system administrators. It strives to minimize user learning time and offers supportive documentation and tools to aid user interactions with the software.

4.3 Reliability

AIMS aims to establish itself as a reliable software by ensuring a continuous operation capable of handling up to 1000 simultaneous customers for extended hours without performance reduction. The AIMS Software can also be fixed within 1 hours after any typical failure.

4.4 Performance

Performance metrics are a cornerstone of the AIMS software's design, ensuring a maximum response time of 2 seconds under regular conditions and 5 seconds during peak hours.

4.5 Supportability

Supportability considerations include maintaining a history of product operations to aid in transparency and accountability, as well as automated email notifications for administrative actions. The software is built with features that support its maintenance, including error logging, modular architecture for ease of updates, and clear documentation to assist in future support and development efforts.

4.6 Other requirements