HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

School of Information and communications technology

Software Requirement Specification

Version 1.2

<AIMS Software>

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*Hanoi,* *<month, year>*

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# Introduction

## Objective

The purpose of this SRS is to define the software requirements for the AIMS (An Internet Media Store) system, a desktop e-commerce platform that allows users to buy and sell media products such as books, CDs, LPs and DVDs. This document is intended for developers, testers, and stakeholders involved in the project.

## Scope

The software product being produced is AIMS (An Internet Media Store).

AIMS will allow product managers to add, edit and delete media products, with appropriate constraints (e.g., a maximum of 30 deletions per day for security reasons). Customers can browse, search and purchase products with features like sorting by price and viewing detailed product information. The system will facilitate order processing, including cart management, inventory checks and order fulfillment. Payments will be processed via an integration with the VNPay gateway, and delivery options will include both standard and rush delivery within specific areas. The software will provide basic administration functions, such as user management and system notifications.

The software does not support digital media products, only physical media. The current version will not support multiple payment options beyond VNPay, though future versions may expand payment methods.

Application and benefits: The primary benefit of AIMS is that is provides a seamless, easy-to-use platform for managing media product sales, offering scalability to handle up to 1000 concurrent users. The system’s 24/7 operation and ability to recover within an hour of failure ensure high reliability. Customers benefit from a user-friendly interface to search, purchase, and manage orders efficiently.

## Glossary

*<Listing and explaining the terms appearing in the software’s profession and this documents. Any assumption of the reader’s prior knowledge or experience on the subject is ill advised>*

| ***No*** | ***Term*** | ***Explanation*** | ***Example*** | ***Note*** |
| --- | --- | --- | --- | --- |
| 1 | Product Manager | A user role responsible for overseeing the inventory of physical media products. |  |  |
| 2 | VNPay | A Vietnam payment gateway that provides online payment services, allowing users and businesses to make secure electronic transactions. |  |  |
| 3 | Order | A transaction initiated by a customer when they decide to purchase products from the store. |  |  |
| 4 | Cart | A virtual shopping basket that allows customers to collect and manage products they wish to purchase before placing an order. |  |  |

## References

*<Listing the referenced material used in this documents, including the one related to the project>*

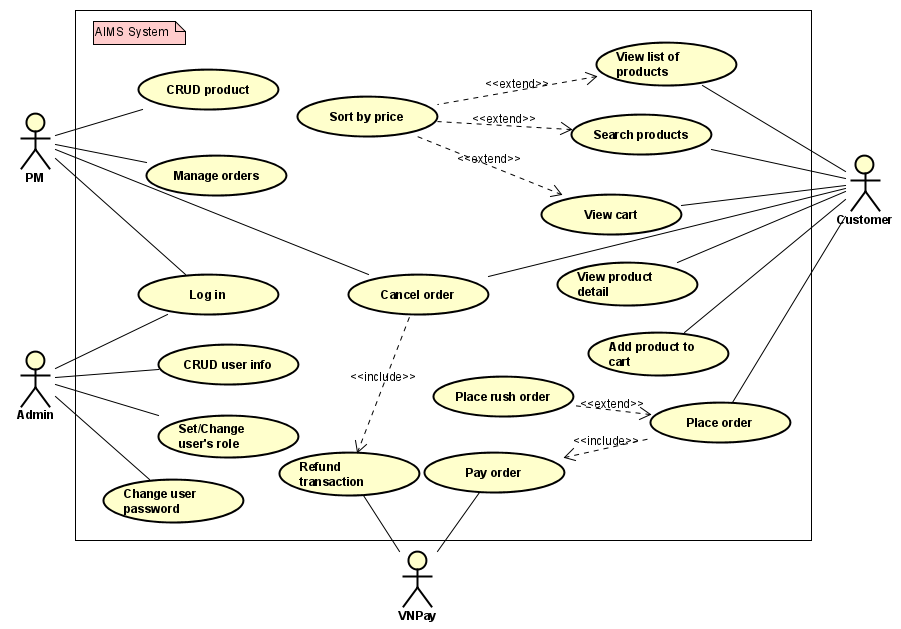
# Overall Description

## Survey

*<Software overall description. List of actors and descriptions>*

## Overall requirements

*<Use case diagram(s)>*

**

## Business process

*<Sequence of use cases, e.g. Use case 1 then use case 2, if a condition matched, do the use case 3… You should visualize the process with activity diagrams>*

# Detailed Requirements

## Use case “Place Order”

*<Use case specification of use case 1 following the bellow template. You may need to design activity diagrams if the flow of events is complex>*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Use Case “Place Order”**   1. **Use case code**   UC001   1. **Brief Description**   This use case describes the interaction between customers and AIMS software when the customer wishes to place order.   1. **Actors**    1. **Customer**    2. **AIMS software** 2. **Preconditions**  * There is at least one item in the cart.  1. **Basic Flow of Events** 2. Customer requests to place order in the cart 3. AIMS software checks the availability of products in the cart 4. AIMS software displays the form of delivery information with order information 5. Customer enters and submits delivery information (Table 2) 6. AIMS software calculates and updates order information with shipping fees (Table 3) 7. Customer asks to pay order 8. AIMS software calls UC “Pay order” 9. AIMS software display general information of the order (Table 4) 10. AIMS software send invoice and payment transaction information to the customer’s email 11. AIMS software records the payment transaction information and the successfully paid order 12. AIMS software makes the cart empty 13. **Alternative flows**   Bảng 1: Alternative flow of events for UC "Place Order"   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **No** | **Location** | **Condition** | **Action** | **Resume location** | |  | At Step 3 | If the inventory quantity of these products is insufficient | * The AIMS software notifies that the products in the cart are not available and stay at the use case “View cart” | Use case ends | |  | At Step 6 | If there are any required fields left blank or invalid information | * AIMS software notifies that the delivery info is invalid (blank or wrong format) | Step 3 | |  | At Step 5 | If the user chooses to place a rush order | * AIMS software inserts use case “Place rush order” | Step 5  (in “flow of events” above) | |  | At Step 6 | If the users want to adjust the delivery method or the items | * AIMS software backs to the form of information | Step 3 | |  | At Step 9 | If customer cancels the order before the order is approved | * AIMS software refunds to the customer using VNPAY | Use case ends |  1. **Input data**   Bảng 2: Input data of delivery information   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **No** | **Data fields** | **Description** | **Mandatory** | **Valid condition** | **Example** | |  | Recipient Name |  | Yes |  | Nguyen Hung Cuong | |  | Phone Number |  | Yes | 10 digits | 0987654321 | |  | Email |  | Yes |  | Cuong.ng.23@gmail.com | |  | Province/City | Choose from a list | Yes |  | Hanoi | |  | Address |  | Yes |  | 12 Hang Trong | |  | Note |  | No |  | Che ten |  1. **Output data**   Bảng 3: Output data of invoice information   | **No** | **Data fields** | **Description** | **Display format** | **Example** | | --- | --- | --- | --- | --- | |  | Title | Title of a media product |  | DVD Phim Vượt ngục | |  | Price | Price of the corresponding media product | * Comma for thousands separator * Positive integer * Right alignment | 123,000 | |  | Quantity | Quantity of the corresponding media | * Positive integer * Right alignment | 2 | |  | Amount | Total money of the corresponding media | * Comma for thousands separator * Positive integer * Right alignment | 246,000 | |  | Subtotal | Total price of products | * Comma for thousands separator * Positive integer * Right alignment | 2,106,000 | |  | Shipping fees |  | 30,000 | |  | Total | Sum of subtotal and shipping fees |  | 2,346,000 | |  | Currency |  |  | VND |   Bảng 4: Output data of order and transaction information   | **No** | **Data fields** | **Description** | **Display format** | **Example** | | --- | --- | --- | --- | --- | | 1 | Name | Name of receiver |  | Do Minh Hieu | | 2 | Phone number | Valid phone number, SMS authenticate |  | 0987654321 | | 3 | Province | In Vietnam |  | Hanoi | | 4 | Address |  |  | 12, 34 Alley of Tran Thai Tong | | 5 | Shipping instructions |  |  | Hide information | | 6 | Total amount |  | * Comma for thousands separator | 2,346,000 | | 7 | Transaction ID | Take information from VNPay message result | * Right alignment * Only alphabet uppercase and number character | VNPAY1234 | | 8 | Transaction content | * No tone mark | Chuyen khoan mua hang | | 9 | Transaction datetime | * Year/Month/Day | 2024/9/16 |  1. **Postconditions**  * The order information and payment transaction are sent to the customer’s email or nothing happens if payment is not successful  1. **Activity Diagram** |

## Use case “Place Rush Order”

<Use case specification of use case 2>

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Use Case “Place Rush Order”**   1. **Use case code**   UC002   1. **Brief Description**   This use case describes the interaction between the AIMS software with the customer and VNPay when the customer desires to register rush order delivery services.   1. **Actors**    1. **Customer**    2. **AIMS software** 2. **Preconditions** 3. **Basic Flow of Events**    1. AIMS software checks whether the delivery address supports this service    2. AIMS software finds all of products that are eligible for this service    3. Customer enters rush order delivery information (Table 9)    4. AIMS software recalculates and displays separately for regular delivery and rush order delivery the order information with shipping fees (2 situations) (Table 10) 4. **Alternative flows**   Bảng 8: Alternative flow of events for UC "Place Rush Order"   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **No** | **Location** | **Condition** | **Action** | **Resume location** | |  | Step 2 | If the delivery address doesn’t support this service | The AIMS software prompts the customer to update the delivery information | Use case ends | |  | Step 3 | If no products are eligible for this service | Use case ends |  1. **Input data**   Bảng 9: Input data of rush order delivery information   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **No** | **Data fields** | **Description** | **Mandatory** | **Valid condition** | **Example** | |  | Delivery Time | Choose from a calendar | Yes | hh:mm yy/mm/dd | 12:30 2024/9/19 | |  | Delivery Instructions |  | No |  |  |  1. **Output data**   Bảng 3: Output data of invoice information   | **No** | **Data fields** | **Description** | **Display format** | **Example** | | --- | --- | --- | --- | --- | |  | Title | Title of a media product |  | DVD Phim Vượt ngục | |  | Price | Price of the corresponding media product | * Comma for thousands separator * Positive integer * Right alignment | 123,000 | |  | Quantity | Quantity of the corresponding media | * Positive integer * Right alignment | 2 | |  | Amount | Total money of the corresponding media | * Comma for thousands separator * Positive integer * Right alignment | 246,000 | |  | Subtotal | Total price of products | * Comma for thousands separator * Positive integer * Right alignment | 2,106,000 | |  | Shipping fees |  | 30,000 | |  | Total | Sum of subtotal and shipping fees |  | 2,346,000 | |  | Currency |  |  | VND |   Note: Output data of the order information with regular delivery is same to above table   1. **Postconditions**  * The order information and payment transaction are sent to the customer’s email or nothing happens if payment is not successful  1. **Activity Diagram** |

## Use case “Place Rush Order”

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Use Case “Pay Order”**   1. **Use case code**   UC003   1. **Brief Description**   This use case describes the interaction between the AIMS software with the customer and VNPay when the customer desires to pay order.   1. **Actors**    1. **Customer**    2. **AIMS software**    3. **VNPay** 2. **Preconditions** 3. **Basic Flow of Events**    1. AIMS software displays the invoice (Table 7)    2. Customer asks to pay the invoice    3. Customer enter payment information (Table 6)    4. AIMS software redirects to VNPay    5. VNPay notifies the payment result    6. VNPay sends payment result to AIMS software 4. **Alternative flows**   Bảng 5: Alternative flow of events for UC "PayOrder"   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **No** | **Location** | **Condition** | **Action** | **Resume location** | |  | Step 6 | If the customer cancels the payment transaction | The AIMS software notifies that customer just cancels the payment transaction | Step 1 | |  | Step 4 | If VNPay connectiom has an error | The AIMS software saves the invoice for the later transaction | Use case ends | |  | Step 2 | If customer refuses to pay the invoice | The AIMS software notifies that payment is unsuccessful | Use case ends |  1. **Input data**   Bảng 6: Input data of payment method   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **No** | **Data fields** | **Description** | **Mandatory** | **Valid condition** | **Example** | |  | Payment method | Choose from a list | Yes | VNPay | VNPay |  1. **Output data**   Bảng 7: Output data of invoice information   | **No** | **Data fields** | **Description** | **Display format** | **Example** | | --- | --- | --- | --- | --- | |  | Title | Title of a media product |  | DVD Phim Vượt ngục | |  | Price | Price of the corresponding media product | * Comma for thousands separator * Positive integer * Right alignment | 123,000 | |  | Quantity | Quantity of the corresponding media | * Positive integer * Right alignment | 2 | |  | Amount | Total money of the corresponding media | * Comma for thousands separator * Positive integer * Right alignment | 246,000 | |  | Subtotal before VAT | Total price of products in the cart before VAT | * Comma for thousands separator * Positive integer * Right alignment | 2,106,000 | |  | Subtotal | Total price of products | * Comma for thousands separator * Positive integer * Right alignment | 2,106,000 | |  | Shipping fees |  | 30,000 | |  | Total | Sum of subtotal and shipping fees |  | 2,346,000 | |  | Currency |  |  | VND |  1. **Postconditions**  * AIMS software receives notification of payment result from VNPay and AIMS software updates order status of customer  1. **Activity Diagram** |

# Supplementary specification

*<Presenting other requirements if necessary, including non-functional requirements such as performance, reliability, usability, and supportability; or other technical requirements such as database system, used technology…>*

## Functionality

*<Functional requirements that are general to many use cases>*

## Usability

<*Requirements that relate to, or affect, the usability of the system. Examples include ease-of-use requirements or training requirements that specify how readily the system can be used by its actors*>

## Reliability

*<Any requirements concerning the reliability of the system. Quantitative measures such as mean time between failure or defects per thousand lines of code should be stated>*

## Performance

*<The performance characteristics of the system. Include specific response times. Reference related use cases by name>*

## Supportability

*<Any requirements that will enhance the supportability or maintainability of the system being built>*

## Other requirements

*<Descriptions of other requirements are located here>*