**LÊ VĂN HẬU – 20226038**

**Link Github:** [**https://github.com/lehau007/ISD-20242-20226038.LeVanHau**](https://github.com/lehau007/ISD-20242-20226038.LeVanHau)

**Problem:**

**Instructions**

Please write the use case specification for the use case **"Place Order"** and its extracted use cases (**"Pay Order", "Place Rush Order"**) following the template in **Lab&Assignment02-UseCaseSpec.pdf**.

**Submission requirements:**

* Submit a **.docx file**.
* The file must include your **Full Name** and **Student ID**.

**Note:**

* **Do not use ChatGPT** (this is easy to detect and does not match what you have learned in class).
* **Do not copy others' work** (similar submissions will receive **0 points**; getting **0 twice** means you will not be allowed to take the exam).

***Use case: Place Order***

1. **Use case code**

UCPO1

1. **Brief Description**

This scenario outlines how a customer interacts with the AIMS system to create and submit a new order for products they wish to purchase.

1. **Actors**

* Customer
* VNPAY

1. **Preconditions**

* The cart must not be empty.
* The AIMS software must have a working connection to VNPay for payment processing.
* The products in the cart must have sufficient inventory quantity.

1. **Basic flow of events**

* Step 1: Customer reviews and selects products he/she wants to purchase
* Step 2: Customer requests to place order in the cart
* Step 3: AIMS software checks the availability of products in the cart
* Step 4: AIMS software displays the form of delivery information with order information
* Step 5: Customer enters and submits delivery information
* Step 6: AIMS software checks input information validation
* Step 7: AIMS software calculates and updates order information with shipping fees
* Step 8: The customer asks to pay order
* ***Step 9: The AIMS software calls UC “Pay order”***
* Step 10: The AIMS software creates and saves a new order
* Step 11: The AIMS software makes the cart empty
* Step 12: The AIMS software sends email about the order notification and information
* Step 13: The AIMS software displays a successful order notification, the order and the transaction information

1. **Alternative flows**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Location** | **Condition** | **Action** | **Resume location** |
| **1.** | At Step 3 | If the software determines that the quantity of chosen products in cart is not enough | The software shows an error message stating "Insufficient products" and prompts the customer to modify their cart. | At Step 2 |
| **2.** | At Step 6 | If the fields of delivery information are invalid | Software displays “Error! Invalid input” | At Step 5 |
| **3.** | At Step 5 | If the customer wants to choose the rush delivery method | Software calls UC “Place Rush Order” | At Step 6 |
| **4.** | At Step 12 | If the email containing the transaction details has not yet been sent to the customer. | The software prompts the customer to verify the accuracy of the provided email address and then re-sends the email. | At Step 12 |
| **5.** | At Step 13 | If the customer wishes to cancel the order. | The software displays a dialog to confirm whether the customer is sure, then cancels the order and displays the cancellation status. | End of use cases |

1. **Input data**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No** | **Data Field** | **Description** | **Mandatory** | **Valid Condition** | **Example** |
| 1 | Receiver Name |  | Yes | Phone number | 0964873393 |
| 2 | Phone number |  | Yes | Name | Le Van Hau |
| 3 | Province | Choose from a list of Vietnamese provinces | Yes | City | Hanoi |
| 4 | Address |  | Yes | Adress | 189Q/20 TonThat Thuyet Hanoi, Vietnam |
| 5 | Shipping instructions |  | No |  |  |

1. **Output data**

Table 2 – Output data of order information and shipping fee

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Data Field** | **Description** | **Display format** | **Example** |
| 1 | Title | Title of media product |  | Album 22 |
| 2 | Price | Price of the corresponding media product | - Comma for a thousand separators.  - Positive Integer.  - Right alignment. | 50,000 |
| 3 | Quantity | Quantity of the corresponding media | - Positive integer  - Right alignment | 3 |
| 4 | Amount | Total money of the corresponding media | - Comma for thousands of separators  - Positive integer  - Right alignment | 150,000 |
| 5 | Subtotal | Total amount of all products in the order | - Comma for thousands of separators  - Positive integer  - Right alignment | 50,000 |
| 6 | Shipping fee |  | - Comma for thousands of separators  - Positive integer  - Right alignment | 0,000 |
| 7 | Total | Subtotal + shipping fee | - Comma for thousands of separators  - Positive integer  - Right alignment | 200,000 |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Data Field** | **Description** | **Display Format** | **Example** |
| 1 | Customer name |  |  | Lê Văn Hậu |
| 2 | Phone number |  | 10 digits | 0944745127 |
| 3 | Province |  |  | Thanh Hoa |
| 4 | Address |  |  | 165, Le Loi, Thanh Hoa |
| 5 | Total amount |  |  | 200,000 VND |
| 6 | Transaction ID |  |  | 2000 |
| 7 | Transaction content |  |  |  |
| 8 | Transaction content |  | mm/đd/yyyy | 02/22/2025 |

1. **Postconditions**

A new order is created, and its details are sent to the customer via email. If the payment fails, no further action is taken.

***Use case: Pay Order***

1. **Use case code**

UCPO2

1. **Brief Description**

This use case describes the interactions between the AIMS software with the customer and VNPay when the customer desires to pay order

1. **Actors**

* Customer
* VNPAY

1. **Preconditions**

* The balance of the customer must be enough to execute the payment action
* The VNPay credit card must be valid

1. **Basic flow of events**

* Step 1: AIMS software displays the invoice
* Step 2: Customer asks to pay the invoice
* Step 3: AIMS software redirects to VNPay
* Step 4: VNPay sends payment result to VNPay
* Step 5: AIMS software saves invoice and payment transaction
* Step 6: VNPay notifies the payment results

1. **Alternative flows**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Location** | **Condition** | **Action** | **Resume location** |
| **1.** | At Step 5 | If the customer cancels the payment transaction | Software refunds the full amount of the payment for this order through VNPay | At Step 1 |

1. **Input data**

The AIMS requirements do not specify detailed input data for the VNPay transaction method, stating only that customers must provide all required information and follow the steps outlined by VNPay to complete the transaction successfully.

1. **Output data**

Table 2 – Output data of invoice

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Data Field** | **Description** | **Display format** | **Example** |
| 1 | Title | Title of media product |  | Marvel End Game 4K |
| 2 | Price | Price of the corresponding media product | - Comma for a thousand separators.  - Positive Integer.  - Right alignment. | 200,000 |
| 3 | Quantity | Quantity of the corresponding media | - Positive integer  - Right alignment | 1 |
| 4 | Amount | Total money of the corresponding media | - Comma for thousands of separators  - Positive integer  - Right alignment | 300,000 |
| 5 | Subtotal before VAT | Total amount of all products in the order | - Comma for thousands of separators  - Positive integer  - Right alignment | 100,000 |
| 6 | Subtotal | Total amount of all products in the order | - Comma for thousands of separators  - Positive integer  - Right alignment | 400,000 |
| 7 | Shipping fee |  | - Comma for thousands of separators  - Positive integer  - Right alignment | 0,000 |
| 8 | Total | Subtotal + shipping fee | - Comma for thousands of separators  - Positive integer  - Right alignment | 400,000 |
| 9 | Currency |  |  | Viet Nam |
| 10 | Customer name |  |  | Le Van Hau |
| 11 | Phone number |  |  | 0989467897 |
| 12 | Province |  |  | Thanh Hoa |
| 13 | Address |  |  | 125, Le Loi, Thanh Hoa |
| 14 | Shipping instructions |  |  |  |

1. **Postconditions**

The software will display payment results if the transaction is cancelled, the full amount of money for this order will be refunded to the customer through VNPay.

***Use case: Place Rush Order***

1. **Use case code**

UCPRO

1. **Brief Description**

This use case outlines the interactions between the AIMS software and the customer when the customer intends to place a rush order.

1. **Actors**

* Customer

1. **Preconditions**

* Customer has entered their delivery address
* Customer has items in their cart

1. **Basic flow of events**

* Step 1: Customer choose rush order delivery option
* Step 2: AIMS checks if delivery address is within the inner city of Hanoi
* Step 3: AIMS checks which products are eligible for rush order delivery
* Step 4: AIMS display eligible products and rush delivery information
* Step 5: AIMS displays prompt and asks the customer to enter delivery time and delivery instruction
* Step 6: AIMS calculates and displays updated invoices
* Step 7: Customer confirms rush order selection

1. **Alternative flows**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Location** | **Condition** | **Action** | **Resume location** |
| **1.** | At Step 2 | If the software identifies that the delivery address is outside inner-city Hanoi. | The software informs the customer that rush delivery is not available for their specified address. | At Step 1 |
| **2.** | At Step 3 | If the software detects that no products qualify for rush delivery. | The software displays the message "No products supported with rush delivery" and asks the customer to either update their product selection or proceed with regular delivery. | At Step 2 |
| **3.** | At Step 3 | If software identifies some products are eligible for rush delivery | Software displays “Some products are not supported” and asks customer to update the cart | At Step 2 |

1. **Input data**

Table – Output data of rush delivery

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Data Field** | **Description** | **Display format** | **Example** |
| 1 | Delivery Address | Address for rush order delivery | Number, street, district, province | 129, Minh Khai, Hai Ba Trung, Ha Noi |
| 2 | Delivery Time | Delivery time for rush order | 24-hour format (HH:mm) | 15:00 |
| 3 | Delivery Instructions | Instructions for delivery |  |  |
| 4 | Product List | List of products in cart to consider for rush delivery | - List of products | Album 22th, Marvel End Game |

1. **Output data**

Table – Output data of rush delivery

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Data Field** | **Description** | **Display format** | **Example** |
| 1 | Rush Eligible Products | List of products eligible for rush delivery |  | Anh la ngoai le cua em MP3, Cham hoa MP3, Chung ta cua tuong lai MP3 |
| 2 | Regular Delivery Products | List of products for standard delivery |  | Infinity war ticket, Single Dung lam trai tim anh dau |
| 3 | Rush Delivery Fee | Fee for rush delivery items | - Comma for thousands of separators  - Positive integer  - Right alignment | 900,000 |
| 4 | Regular Delivery Fee | Fee for standard delivery items | - Comma for thousands of separators  - Positive integer  - Right alignment | 0,000 |
| 5 | Total Amount | Total amount including all fees | - Comma for thousands of separators  - Positive integer  - Right alignment | 900,000 |

1. **Postconditions**

* Rush order delivery is applied to eligible products.
* Delivery fees are adjusted to include rush order charges.
* Delivery details now reflect rush order information.