**Trần Việt Anh – 20226012**

**Place order**

1. **Use case code:**

UC001

1. **Brief description:**

The interaction between customers and AIMS software when customer wishes to place an order.

1. **Actor**

Customer

1. **Preconditions:**

* The selected items in cart must be available.
* The cart must have at least 1 item.

1. **Basic flow:**

* Step 1: Customer selects products and request to place order
* Step 2: Software checks the product availability
* Step 3: Software displays delivery form
* Step 4: Customer provides and submits delivery information
* Step 5: Software checks the validity of the delivery information
* Step 6: Software calculates delivery fee
* Step 7: Software displays the invoice
* Step 8: Customer selects payment method and asks for payment
* Step 9: Software connects to VNPay to start the payment transaction
* Step 10: Customer performs the payment transaction with VNPay
* Step 11: Software saves the payment transaction
* Step 12: Software saves the new order
* Step 13: Software sends email to customer for the success order
* Step 14: Software makes the cart empty
* Step 15: Software displays the order and transaction information

1. **Alternative flow:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Location** | **Condition** | **Action** | **Resume location** |
| 1. | At Step 2 | If the quantity of any products is insufficient | The software will display the quantity of each product that is lacking | Use case resumes at Step 1 |
| 2. | At Step 5 | If customer chooses to place rush order delivery | The software inserts the case “Place rush order” | Use case resumes at Step 6 |
| 3. | At Step 5 | If the delivery information is invalid | The software displays error: “Invalid delivery information” | Use case resumes at Step 4 |
| 4. | At Step 10 | If the customer’s credit card is invalid | The software displays error: “Invalid credit card” | Use case resumes at Step 10 |
| 5. | At Step 10 | If the customer’s balance is insufficient | The software displays error: ”Insufficient balance” | Use case resumes at Step 10 |

1. **Input data**

Input delivery information

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No** | **Data fields** | **Description** | **Mandatory** | **Valid condition** | **Example** |
| 1 | Receiver name | Receiver's full name | Yes | Not empty, only alphabets characters | Tran Viet Anh |
| 2 | Phone Number | Phone number for contacting receiver | Yes | 10 digits | 0332870304 |
| 3 | City/Province | City or province name, choose from a list |  |  | Ha Noi |
| 4 | Address | Location to deliver to | Yes |  | Nguyen Trai Street, Thanh Xuan district |
| 5 | Shipping instructions | Special instructions for delivery | No | Predefined options (Normal/ Rush Order) | “Only receive my items after 5p.m” |
| 6 | Delivery method |  | Yes | Predefined options (Normal/ Rush Order) | Rush order |

1. **Output data**

* Output data of order information and shipping fee

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Data fields** | **Description** | **Display format** | **Example** |
| 1 | Title | Title of a product | A string | Lord of the Rings |
| 2 | Price | Price of the product | - Display in thousands dong unit  - Positive integer | 500 000 VND |
| 3 | Quantity | Quantity of the product | - Positive integer | 10 |
| 4 | Total Product Price excluding VAT | Total money of all products excluding VAT | - Display in thousands dong unit  - Positive integer | 5 000 000 VND |
| 5 | Total Product Price including VAT | Total money of all products including VAT | - Display in thousands dong unit  - Positive integer | 5 500 000 VND |
| 6 | Shipping fee | The fee for delivery | - Display in thousands dong unit  - Positive integer | 100 000 VND |
| 7 | Total | Total amounts need to pay include total product price including VAT and shipping fee | - Display in thousands dong unit  - Positive integer | 5 600 000 VND |

* Output data of general information of order and transaction information

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Data fields** | **Description** | **Display format** | **Example** |
| 1 | Customer name | Customer’s full name | Only alphabets | Tran Viet Anh |
| 2 | Phone number | Phone number for contacting receiver | 10 digits | 0332870304 |
| 3 | Address | Location to deliver to | Text | Nguyen Trai street, Thanh Xuan district |
| 4 | City/Province | City/Province of the delivery | Text | Hanoi |
| 5 | Total amount | Total cost of the order | - Display in thousands dong unit  - Positive integer | 5 600 000 VND |
| 6 | Transaction ID | Unique identifier for the transaction | Alphanumeric | T001 |
| 7 | Transaction content | Brief description of the transaction | Text | Transaction of order O001 |
| 8 | Transaction datetime | Date and time of the transaction | Text in form (YYYY-MM-DD HH:mm:ss) | 2025-02-23 20:00:00 |

1. **Postconditions**

* Software sends invoice and payment transaction information to customer’s email.
* Software records the payment transaction information and the successfully paid order.
* The cart will be empty after success paid order.

**Pay order**

1. **Use case code:**

UC002

1. **Brief description:**

Description of the interaction between software with customer and VNPay when customer processes to pay the order.

1. **Actor:**

* Customer
* VNPay

1. **Preconditions:**

* Customer has placed an order and provided delivery information

1. **Basic flow:**

* Step 1: Software displays the invoice
* Step 2: Customer asks to pay the invoice
* Step 3: Software redirects to VNPay
* Step 4: Customer provides necessary information for transaction
* Step 5: VNPay sends payment result
* Step 6: Software displays general information of the order and transaction information
* Step 7: Software saves invoice and payment transaction information
* Step 8: VNPay notifies the payment result

1. **Alternative flow:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Location** | **Condition** | **Action** | **Resume location** |
| 1 | At Step 5 | If customer adjusts delivery method or products | Software recalculates delivery fees and updates invoice | Use case resumes at Step 1 |
| 2 | At Step 7 | If the customer cancels the payment transaction | VNPay will refund full amount | Use case resumes at Step 1 |

1. **Output data**

Output data of order information and delivery fee

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Data fields** | **Description** | **Display format** | **Example** |
| 1 | Title | Title of a product | A string | Lord of the Rings |
| 2 | Price | Price of the product | - Display in thousands dong unit  - Positive integer | 500 000 VND |
| 3 | Quantity | Quantity of the product | - Positive integer | 10 |
| 4 | Amount | Total money of the product | - Display in thousands dong unit  - Positive integer | 500 000 000 VND |
| 5 | Subtotal before VAT | Total money of all product excluding VAT | - Display in thousands dong unit  - Positive integer | 5 000 000 VND |
| 6 | Subtotal | Total money of all product including VAT | - Display in thousands dong unit  - Positive integer | 5 500 000 VND |
| 7 | Shipping fee | The fee for delivery | - Display in thousands dong unit  - Positive integer | 100 000 VND |
| 8 | Total | Sum of subtotal and shipping fees | - Display in thousands dong unit  - Positive integer | 5 600 000 VND |
| 9 | Currency |  |  | VND |
| 10 | Name |  | Alphabetics | Tran Viet Anh |
| 11 | Phone Number |  | 10 digits | 0332870304 |
| 12 | Province |  |  | Hanoi |
| 13 | Address |  |  | Nguyen Trai street, Than Xuan district |
| 14 | Shipping instructions |  |  | “Do not ring the bell1” |

1. **Postconditions:**

* If payment transaction is failed or cancelled, the products remain in the cart.
* If payment transaction is success, the order will be in pending state and software will send invoice and payment transaction information to customer’s email.

**Place rush order**

1. **Use case code:**

UC003

1. **Brief description:**

Description of interaction between AIMS software and customer when customer wishes to place a rush order delivery.

1. **Actor:**

* Customer

1. **Preconditions:**

* The delivery address must be in supported area for rush delivery
* The customer must have at least 1 product in the cart

1. **Basic flow:**

* Step 1: Software checks whether delivery address supports this service and if products are eligible.
* Step 2: Software requests additional rush order delivery information from customer.
* Step 3: Customer provides delivery information
* Step 4: Software checks the validity of delivery information
* Step 5: Software calculates delivery fees and updates invoice

1. **Alternative flow:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Location** | **Condition** | **Action** | **Resume location** |
| 1 | At Step 1 | If the address is not supported or products are not eligible | The software notifies that rush delivery is unavailable | Usecase ends |
| 2 | At Step 4 | If the information delivery is invalid | The software displays invalid delivery info | Use case resumes at Step 3 |
| 3 | At Step 1 | If only certain products are eligible for rush delivery | Rush delivery products will be delivered to designated location at prearranged time; other products will be delivered as usual; software calculates fees seperately | Use case resumes at Step 2 |

1. **Input data**

Input data of delivery information

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No** | **Data fields** | **Description** | **Mandatory** | **Valid condition** | **Example** |
| 1 | Receiver name | Receiver's full name | Yes | Not empty, only alphabets characters | Tran Viet Anh |
| 2 | Phone Number | Phone number for contacting receiver | Yes | 10 digits | 0332870304 |
| 3 | City/Province | City or province name, choose from a list |  |  | Ha Noi |
| 4 | Address | Location to deliver to | Yes |  | Nguyen Trai Street, Thanh Xuan district |
| 5 | Shipping instructions | Special instructions for delivery | No | Predefined options (Normal/ Rush Order) | “Only receive my items after 5p.m” |
| 6 | Delivery method |  | Yes | Predefined options (Normal/ Rush Order) | Rush order |

1. **Output data**

* Output data of rush order information and delivery fee

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Data fields** | **Description** | **Display format** | **Example** |
| 1 | Title | Title of a product | A string | Lord of the Rings |
| 2 | Price | Price of the product | - Display in thousands dong unit  - Positive integer | 500 000 VND |
| 3 | Quantity | Quantity of the product | - Positive integer | 10 |
| 4 | Total Product Price excluding VAT | Total money of all products excluding VAT | - Display in thousands dong unit  - Positive integer | 5 000 000 VND |
| 5 | Total Product Price including VAT | Total money of all products including VAT | - Display in thousands dong unit  - Positive integer | 5 500 000 VND |
| 6 | Shipping fee | The fee for delivery | - Display in thousands dong unit  - Positive integer | 100 000 VND |
| 7 | Total | Total amounts need to pay include total product price including VAT and shipping fee | - Display in thousands dong unit  - Positive integer | 5 600 000 VND |

* General information of the rush order

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Data fields** | **Description** | **Display format** | **Example** |
| 1 | Customer name | Customer’s full name | Only alphabets | Tran Viet Anh |
| 2 | Phone number | Phone number for contacting receiver | 10 digits | 0332870304 |
| 3 | Address | Location to deliver to | Text | Nguyen Trai street, Thanh Xuan district |
| 4 | City/Province | City/Province of the delivery | Text | Hanoi |
| 5 | Total amount | Total cost of the order | - Display in thousands dong unit  - Positive integer | 5 600 000 VND |

1. **Postconditions:**

* After rush delivery is chosen, the order information is updated.