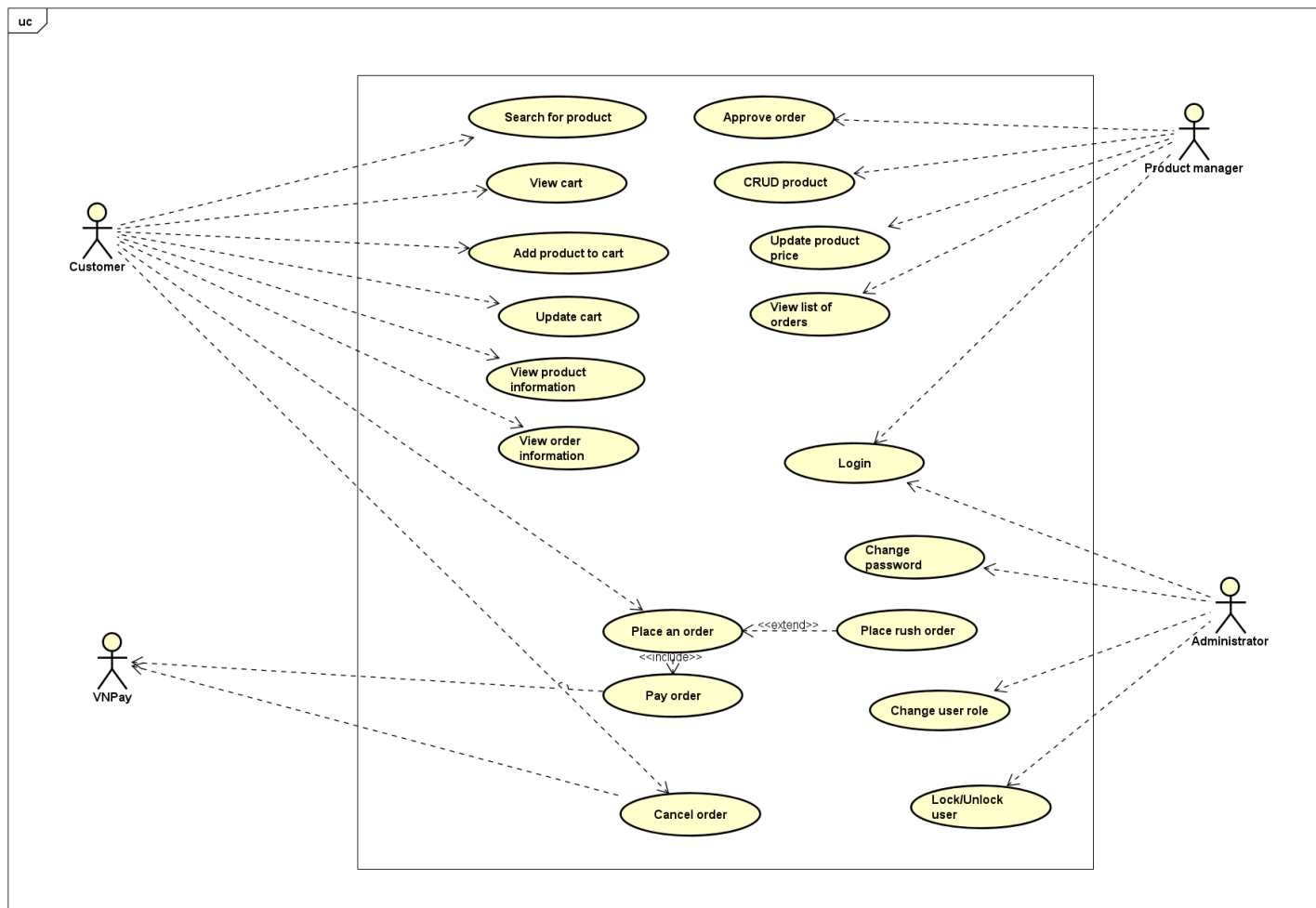## 1. Use Case diagram

2. Business process

    a.   The process of placing an order as a customer

        Firstly, the customer selects the desired products they wish to purchase. Once they have made their selections, they proceed to request placing the order in the cart. At this stage, the AIMS software steps in to verify the availability of the chosen products in the cart.Following this, the AIMS software displays a form for the customer to input their delivery information along with the order details. This information is then submitted by the customer. Once the delivery information is received, the AIMS software proceeds to calculate and display the total order cost, including shipping fees. The customer is then prompted to proceed with payment for the order. Upon the customer's request to pay the order, the AIMS software initiates the "Pay order" use case, facilitating the creation of a new order. Subsequently, the software empties the cart to prepare for new transactions. Following the successful completion of the transaction, the AIMS software sends an email notification containing order details and information to the customer, ensuring transparency and communication throughout the process. Finally, the software displays a confirmation message to the customer, providing them with details of the successful order, as well as transaction information. This step concludes the ordering process, ensuring a seamless experience for the customer from start to finish.

    b.   The process of placing a rush order as a customer

        Initially, customers are provided with the option to select rush order delivery, indicating their urgency for the delivery of their purchases. Following this, the AIMS software undertakes a crucial verification process to determine whether the specified delivery addresses fall within the inner city limits of Hanoi. Once the addresses are confirmed, the software proceeds to assess the eligibility of the selected products for rush delivery. Subsequently, the AIMS software prompts customers to review and potentially update their delivery information or method. The AIMS software undertakes these calculations meticulously, reflecting any adjustments required

for rush order delivery accurately. With the recalculated fees and invoice updates in place, customers proceed seamlessly to the next step in the ordering process. The customer proceeds to Use Case "Place Order" to continue.

c. The process of paying for an order as a customer

The initiation of the payment process as the AIMS software transitions to the checkout process. Following this, the AIMS software redirects customers to VNPay, a trusted payment gateway, providing them with essential payment information. Customers with the freedom to select their preferred payment method from the options provided by VNPay. Upon selecting a payment method, VNPay displays a form for customers to fill out. This form captures essential payment information required to process the transaction securely and efficiently. Customer's active participation in the payment process as they provide the necessary information requested by VNPay. With the information provided, VNPay prompting the customer to verify their information and authorize the payment. Upon receiving authorization, the customer confirming the payment, signifying the completion of the transaction process. Subsequently, VNPay notifies the transaction result and redirects customers back to the AIMS software. The AIMS software diligently saves the payment transaction, capturing essential details for record-keeping and future reference.

3. Use case specification
    a. Place order
          1. Use case code
- UC001
          2. Brief Description
- This case describes interaction between the Customer and the AIMS System when Customer wish to place an order comprising chosen items.
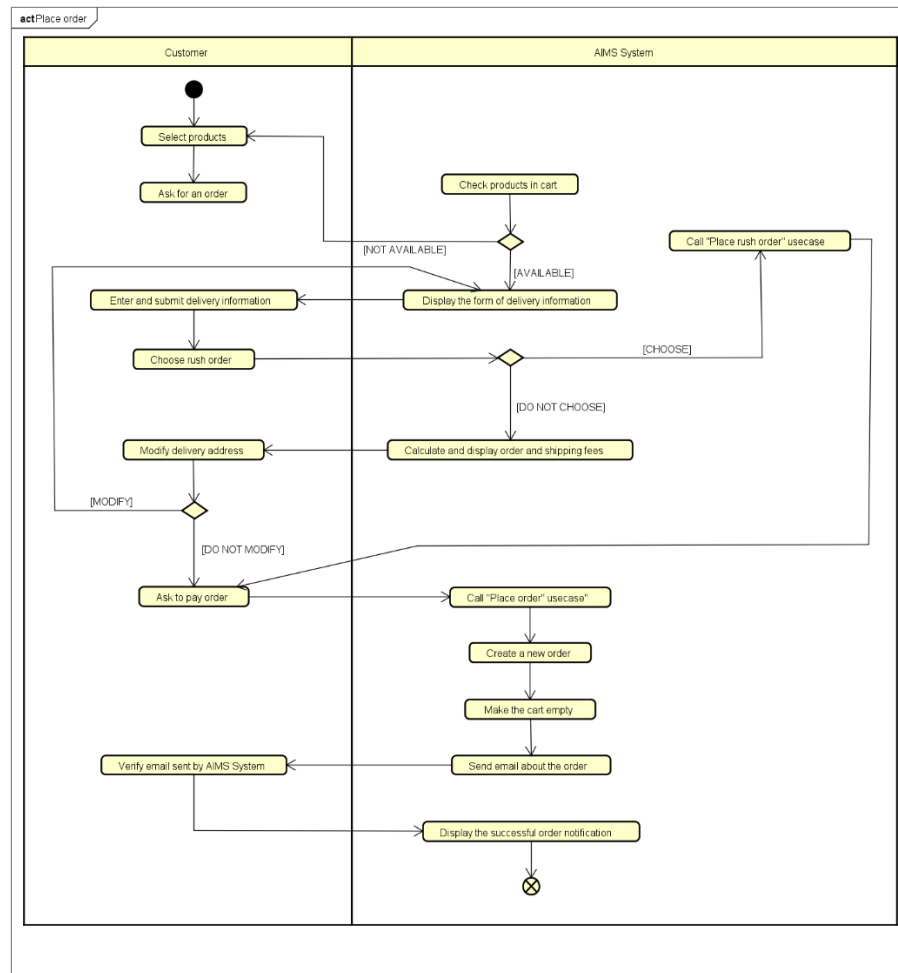   3. Actors
- Customer
- VNPay
          4. Basic Flow of Events
- Step 1: Customer selects the products they wish to purchase
- Step 2 : Customer requests to place order in the cart
- Step 3 : AIMS software checks the availability of products in the cart
- Step 4 : AIMS software displays the form of delivery information with order information
- Step 5 : Customer enters and submits delivery information
- Step 6 : AIMS software calculates and displays order and shipping fees
- Step 7 : The customer asks to pay order
- Step 8 : The AIMS software calls Use case "Pay order"
- Step 9 : The AIMS software creates a new order
- Step 10 : The AIMS software makes the cart empty
- Step 11 : The AIMS software sends email about the order notification and information
- Step 12 : The AIMS software displays the successful order notification, the order and the transaction information (see Table 4).
          5. Activity diagram

actPlace order

Customer	AIMS System

Select products

Ask for an order

Check products in cart

[NOT AVAILABLE]

[AVAILABLE]

Call "Place rush order" usecase

Enter and submit delivery information

Display the form of delivery information

Choose rush order

[CHOOSE]

[DO NOT CHOOSE]

Modify delivery address

Calculate and display order and shipping fees

[MODIFY]

[DO NOT MODIFY]

Ask to pay order

Call "Place order" usecase"

Create a new order

Make the cart empty

Verify email sent by AIMS System

Send email about the order

Display the successful order notification

6. Pre-condition
- There is at least one product in cart
- Customer wishes to place order

7. Post-conditions
- New order is created by AIMS System
- Customer can see notice from AIMS System

b. Pay order

8. Use case code
- UC003

9. Brief Description
- This use case describes the interaction between Customer and AIMS System when Customer wishes to pay order before finishing place an order.

10. Actors
- Customer
- AIMS System
- VNPay

11. Basic Flow of Events
- Step 1 : The AIMS software shifts to checkout process
- Step 2 : The AIMS software redirects to VNPay with payment information
- Step 3 : Customer selects a payment method
- Step 4 : VNPay displays a form for customers to fill out
- Step 5 : Customer provides the necessary information
- Step 6 : VNPay asks the customer to verify their information and authorize the payment
- Step 7 : Customer confirms the payment
- Step 8 : VNPay notifies the transaction result and redirects to AIMS software

- Step 9 : AIMS software saves the payment transaction
    12. Activity diagrams
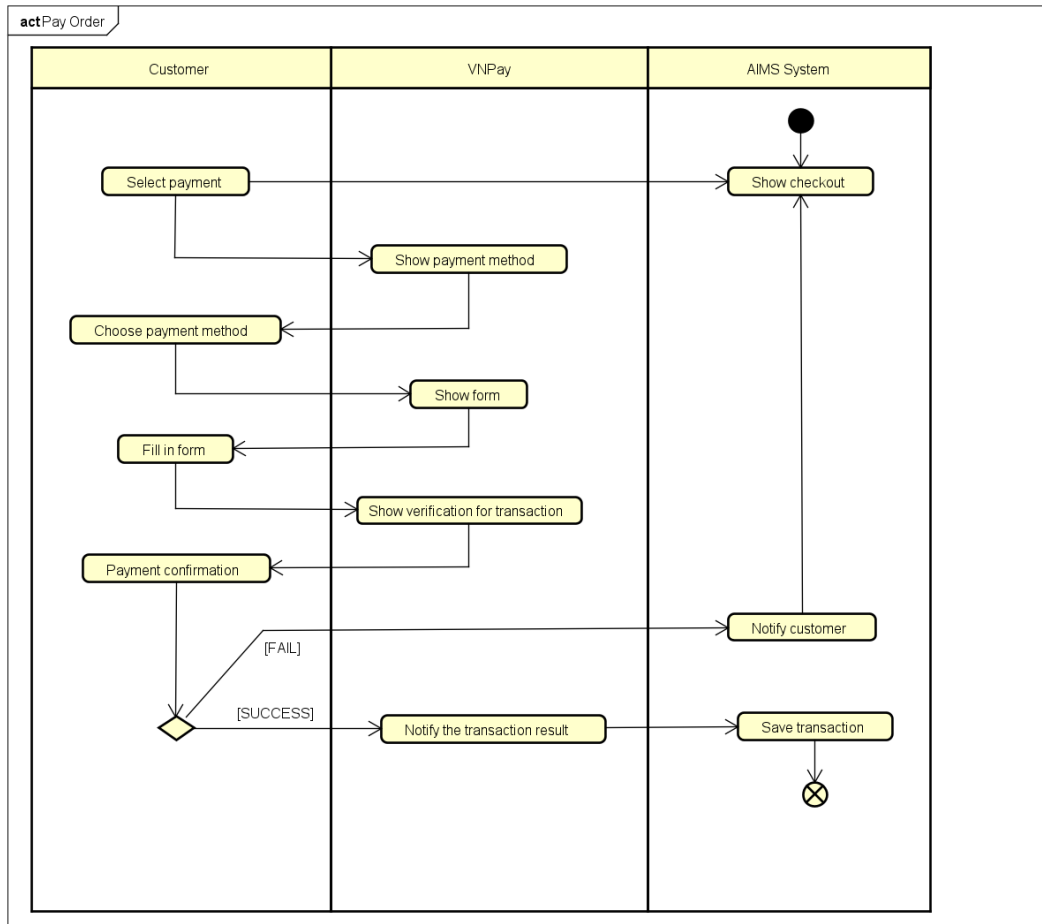
        13. Pre-condition
- Customer has already furnished delivery information(or rush delivery).
        14. Post-condition
- Customer's available online balance exceeds the total fees
c. Place rush order
    15. Use case code
        - UC002
    16. Brief Description
        - This use case describes the interaction between Customer and AIMS System when Customer wishes to place an rush order with the confirmed items.
   17. Actors
        - Customer
        - AIMS System
    18. Basic Flow of Events
        - Step 1: Customer selects rush order delivery
        - Step 2 : The AIMS software verifies whether addresses are located within the inner city of Hanoi or not
        - Step 3 : The AIMS software checks product eligibility
        - Step 4 : The AIMS software prompts the customer to update the delivery information or delivery method
        - Step 5 : Customer completes all procedure that software request
        - Step 6: The AIMS software recalculates the delivery fees and updates the corresponding invoice
        - Step 7: The customer proceeds to Step 8 – Use Case "Place Order"

19. Activity diagram
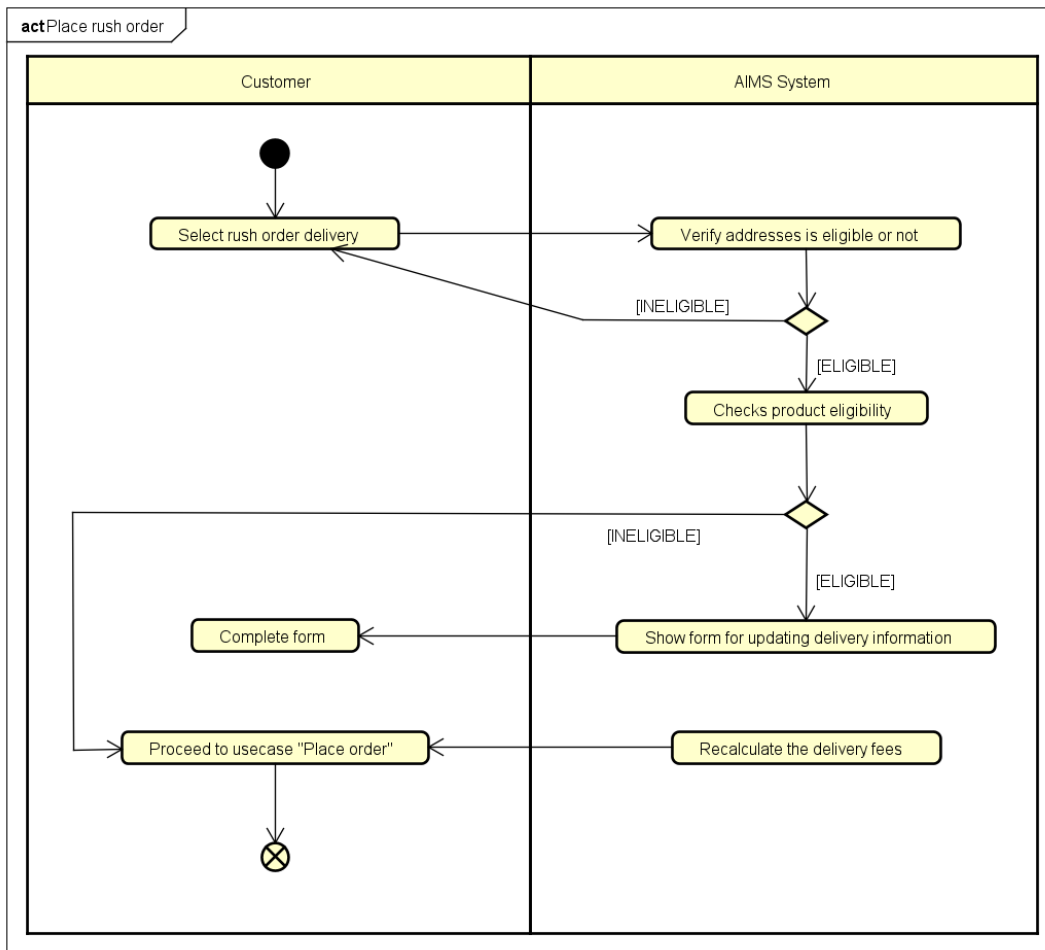
20. Pre-condition
- Customer has already selected products
- Customer has completed the delivery information

21. Post-condition
- AIMS System sends information about rush delivery order to Customer
- Customer can see notice from AIMS System

4. Supplementary requirement

a. Functionality

The AIMS Project functions as a desktop e-commerce application, guaranteeing continuous operation and facilitating smooth introduction for inexperienced users.

b. Usability

The software is designed with user-friendliness in mind, allowing new users to easily familiarize themselves with its features and capabilities.

c. Reliability

AIMS demonstrates exceptional reliability, capable of accommodating up to 1,000 concurrent customers without experiencing notable performance decline. It boasts continuous operation for up to 300 hours without interruption, and in the event of an incident, it can resume normal functionality within a maximum of 1 hour.

d. Performance

Under regular conditions, the software consistently maintains a maximum response time of 2 seconds. Additionally, it is equipped to manage peak loads, ensuring efficient performance even during periods of high traffic, with a maximum response time of 5 seconds.

    e.   Supportability

The AIMS platform is backed by a robust technical infrastructure, facilitating easy maintenance and updates. This ensures uninterrupted service and enables the platform to adapt seamlessly to evolving requirements.

    f.   Other

Additional requirements encompass the integration capabilities with the VNPay payment gateway service.

5. Glossary
- CRUD : The four primary operations on an object : Create, Read, Update, and Delete.
- Administrator : A team of individuals tasked with management responsibilities.