Order Processing System (OPS)

Project Requirement:

1. Implement the three use cases (Process Order, Ship Order, View Stock) in the Order Processing System (OPS). Describe your classes using the UML class diagram notation.
2. Implement the View Order use case, an additional use case in the COS. Describe your classes using the UML class diagram notation.
3. Develop a graphical user interface for the COS and OPS.

Project Description:

The Order Processing System (OPS) processes customer orders, delivers the ordered items to customers, and views warehouse inventory. The OPS extends the Customer Order System (COS) developed in Project#1. The OPS provides suppliers with three services described as use cases as follows:

Use Case: Process Order
Summary: Supplier checks that the items are available to fulfill an order and processes the order.
Actor: Supplier
Precondition: Supplier has logged in. (Supplier can create an account using the Create Account use case in the COS and log into the system using the Log On use case in the COS.)
Main sequence:

1. The supplier requests orders.
2. The system displays customer orders and their items to the supplier.
3. The supplier selects an order.
4. The system checks if the warehouse has the items in stock.
5. If the items are in stock, the system reserves the order's items and changes the order status from "ordered" to "ready."
6. The system updates the number of available and reserved items in the warehouse. The total of items in the warehouse is a summation of available items and reserved items.
7. The system displays a message that the items have been reserved.

Alternative sequence:

- Step 5: If an item(s) is out of stock, the system displays that the item(s) needs to be refilled.

Postcondition: The supplier has processed an order.

Use Case: Ship Order
Summary: The supplier ships an order's items manually and then confirms the order sent to a customer.
Actor: Supplier
Precondition: An order's items were reserved, and the supplier logged in.

Main sequence:

1. The supplier requests customer orders in “ready” status.
2. The system displays the customer orders and items in “ready” status.
3. The supplier selects a customer order and ships the order’s items manually to the customer.
4. The supplier changes the customer order status to “shipped’ status.
5. The system updates the number of reserved items in stock.
6. The system displays the order’s status to the supplier.

Alternative sequence: None
Postcondition: Supplier has shipped a customer order.

Use Case: View Stock
Summary: The supplier views items in stock.
Actor: Supplier
Precondition: The supplier logged in.
Main sequence:

1. The supplier requests items in stock.
2. The system displays all items in stock regarding item name, item quantity, available item quantity, and reserved item quantity.

Alternative sequence: None
Postcondition: Supplier has viewed items in stock.

As the OPD extends the Customer Order System (COS) developed in Project#1, the COS provides customers with the View Order Status service:

Use Case: View Order
Summary: Customer views the order status.
Actor: Customer
Precondition: Customer has logged in.
Main sequence:

1. The customer requests the orders made by the customer.
2. The system displays the customer orders.
3. The customer selects an order(s).
4. The system displays the order detail (items and quantities) and order status.

Alternative sequence: None
Postcondition: Customer has viewed order status.

A supplier creates the account using the Create Account use case (developed in COS), where a supplier does not require to add a credit card number. Also, a supplier can log on to the system using the Log On use case developed in the COS.