# Operation Contracts for Use Case F

## detectLowStockItems()

### Preconditions

- Inventory monitoring system is active

- Minimum threshold values are defined for all items

### Postconditions

- Returns a list of item IDs where currentQuantity < minimumThreshold

- If no such items exist, returns an empty list

## getSuppliersForItem(itemID)

### Preconditions

- itemID is valid and exists in the inventory system

- Supplier agreement data is available in the system via Supplier module

### Postconditions

- Returns a list of suppliers who can provide the item

- Each supplier entry includes item price

- If no supplier is found, returns an empty list

## selectOptimalSupplier(suppliersList)

### Preconditions

- suppliersList is not null and contains at least one supplier with valid pricing

### Postconditions

- Returns the supplier with the lowest valid price for the item

- If multiple suppliers have equal pricing, applies tie-breaking logic (e.g., random selection)

## createAndSendOrder(itemID, supplierID)

### Preconditions

- itemID and supplierID are valid and mapped through an existing agreement

- A delivery quantity is determined based on item need and restocking policy

### Postconditions

- A new order record is created in the system

- The order is sent to the specified supplier

- Order status is marked as 'Pending Delivery'

## updateInventoryAfterDelivery(itemID, quantity)

### Preconditions

- The delivery for itemID has been marked as received

- quantity is a positive integer matching the delivery amount

### Postconditions

- The inventory level for itemID is increased by quantity

- Order status is updated to 'Completed'