COMP433 - SOFTWARE ENGINEERING

Phase 3: project definition

Team members:

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Task 3.1 [individual task] scenario analysis:

➔ Hanen Abu El - hawa - 1210711

Scenario: Purchasing meat online(through the website)

1. **Customer selection:**
   - **Normal flow** :
     A customer visits the meat shop's website, browses through the available meat products(all the available products will be displayed), then the customer selects desired cuts(he can also add notes or any additional information) enters the quantity, and adds them to the online shopping cart.

   - **Alternative flow:**
     The customer uses the search function to quickly find specific meat cuts or filter products based on preferences such as type of meat, weight, or price range.

   - **Error flow:**
     The website experiences temporary downtime, or crashes due to bugs or maintenance, which will prevent the customers from accessing the online store. A notification message will be displayed on the screen to inform our customers to try again later and it will also provide them with information for assistance and direct them to customer service.

2. **Checkout and payment :**
   - **Normal flow :**
     after selecting the desired products, the customer proceeds to the checkout page checks that all the details are correct, and provides the delivery address and any contact information needed, then the customer selects the preferred payment method(credit/debit card, PayPal, and online banking) and enters the payment details, and finally confirm the transaction.

   - **Alternative flow:**
     If the customer has a discount code he will apply it during the checkout resulting in a reduced total amount to be paid.

     If the customer is a regular he can choose to pay using a saved payment method from their account, eliminating the need to enter payment details manually/again.

The customer selects "Cash on Delivery" as the payment method during checkout, which stops the payment transaction function and moves directly to order confirmation.

- **Error flow:**

  The customer encounters an error message during checkout due to an expired payment card. The system prompts the customer to update payment information or choose an alternative payment method "Cash on Delivery".

  The payment processing system encounters a technical issue, resulting in a failed transaction. The customer receives a notification to retry the payment or contact customer support for assistance.

3. **Order Confirmation:**
   - **Normal flow:**
     Upon successful payment, the customer receives an order confirmation email or notification with details of the purchase, estimated delivery time, and tracking information.

   - **Alternative flow:**
     The customer's email was wrong so we proceeded to manually call to confirm the order

   - **Error flow:**
     Due to a system glitch, the order confirmation email is delayed or not sent. The customer contacts customer support to confirm the order status and receives a manual confirmation.

4. **Order gets delivered:**
   - **normal flow :**

     The delivery guy arrives with a customer order, Then the delivery guy verifies the customer's identity and makes sure it was delivered to the correct address.

     checks if the order has the “cash on delivery ” option and he calls the customer to come and receive his package and make the payment if needed

     Then he thanks him and leaves

- **alternative flow:**

  The customer receives the order from the delivery guy, the delivery guy checks if the order has the “cash on delivery ” option, and calls the customer to come and receive his package and make the payment if needed,

  after the delivery guy left the customer noticed that the order was wrong and was replaced. He calls the store, and the employee corrects the error and re-prepares the correct order so it can be re-sent.

- **error:**

  If the customer's order has the “cash on delivery ” option and when the delivery arrives and he comes to pay for it he realizes that he doesn't have enough amount of money (cash) the order will get canceled and returned to the store.

  After the delivery is delivered the customer notices that the order has been replaced by another order. The customer calls the meat store to retrieve the correct order and he is surprised that the store does not answer his call because the store is closed.

➔ Yuna Nawahdah - 1211524

Scenario: special order requests (barbeque meals) and bulk purchases

- **normal flow :**

The meat shop receives online orders from customers (raw meat, cooked, or special order requests).

1. The customer opens the website to make an order and he picks meat from a specific animal type for example: cow, sheep, or chicken, and specifies the part that he wants like: beef, ribs, wings …etc. () . then the customer makes any additional notes for special requirements for example :
    - How much fat in the meat is low-fat, high-fat, and medium?
    - Cut meat in specific ways like minced, bites, pieces..etc.
    - size and number of cuts.
    - For the minced meat, there will be options for the spices, herbs, and sauce ingredients.
    - mixed types of meat, such as mixed sheep and beef.
    - Type of the animal male or female like calf and cow.
    - The customer can choose between Bone and boneless meat. And also fresh or frozen meat.
    - There will be options for the type and age of the animal for example: young local/imported animal
    - Ready-to-cook meat (marinated meat that is prepared for specific meals).

2. If the customer wants to make a special cooked order for BBQ or on-demand cooking, then he will enter detailed information about the order such as:
    - The customer can choose from different types of salad, bread, and drinks as their side dishes.
    - Type of packaging like skewers, pots, disposable plates ..etc.
    - Provide detailed information about the dish or recipe that they want.
    - If the customer has any allergies then he should notify them about it.
    - The customer gives details about the type of cooking for example: overcooked or medium rare.

❖ **Alternative:**

- If the shop has run out of some ingredients(spices or sauce) and they are not in stock the customer will be informed and also notify the meat shop so they make sure to restock it for the next day.
- The customer makes a bulk order for events or parties and the amount of meat is not available in stock
  The customer will be informed of the delay that will happen and alerted whenever the order is ready
  Or the customer can call the store and see how they can adjust the order so that it fit with the available product and satisfies the customer.
- If the shop has a power outage that leads to a meat sow cutter, and a mincing machine to stop working, so the Butcher can do it manually, and for the refrigerators they may use an electricity generator.

❖ **Error:**

- If the customer order is not available in stock the orders will be canceled and the customer will be notified.
- Timing-related issues for example: preparing or cooking(the specific meat or custom order can't be prepared), delivering(can't locate specific location or unreachable).
- If any of the meat machines fail or the refrigerators crash the shop will be closed until maintained.
- If the customer orders an insane amount of product the order will be immediately canceled because the capacity is not allowed.
- If the order was wrong then the order gets returned.

➔ Lama Batta - 1210922

Scenario: Customer service (meat quality):

- **Normal Flow**

  The customer buys specific types of meat from the online meat store, then cooks it at home, tastes it, expresses his admiration for the quality of the meat and its distinctive taste, and always continues to buy from the online meat store

- **Alternative Flow**

  The customer buys specific types of meat, and delivery arrives he cooks it, tastes it, and notices that the quality of the meat is not good and spoiled, so the customer contacts customer service at the meat store and submits his complaint, and the employee expresses his regret to the customer and assures him that the error will be corrected immediately, and asks him for information. About the date of purchase and the types of meat purchased, the employee offers the customer to replace the order with another, and the customer agrees to this and waits for the delivery's arrival.

- **Error Flow**

  The customer buys specific types of meat, waits for delivery, cooks them, tastes them, and notices that the quality of the meat is not good and spoiled. Hence, the customer contacts customer service at the meat store to report his complaint, but it is not possible to contact customer service. They are unable to help the customer promptly. The customer becomes fanatical and posts bad comments about the meat store on social media and advises people not to buy from the store, which leads to damage to the reputation of the meat store.

  The customer calls customer service and complains about the salesperson's manners and how rude his attitude was.

Scenario: Inventory Management

- **Normal Flow:**

  The inventory manager looks at the site's inventory management system and reviews current inventory levels, which are updated in real-time based on online sales, returns, and any manual adjustments. New inventory items are then added, such as newly released meat products with a comprehensive description of them. In terms of price and available quantities, the inventory manager ensures the accurate classification and organization of products within the system, making it easier for customers to navigate and find the required items. Then the inventory management system automatically deducts the quantities purchased by the customer via the website from the available stock, Any inventory updates or changes, such as price adjustments or new product arrivals, are immediately reflected on the website to provide customers with accurate and up-to-date information.

- **Alternative Flow:**

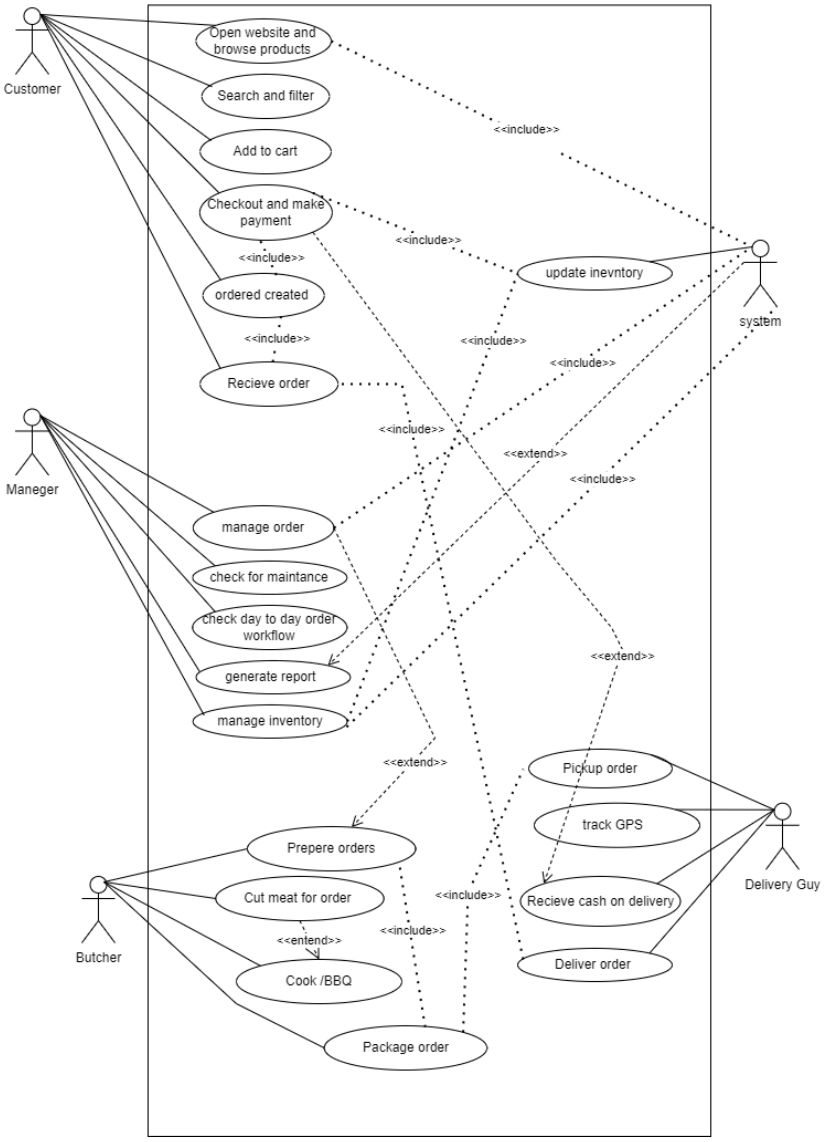
  When a delay occurs in updating the stock system due to a technical malfunction, the inventory manager notices this and investigates the reason for the delay, but if it is due to monitoring the system or confirming communication, the system implements an accuracy to manually track the inventory until the end of the system, and then the inventory manager updates the system.

- **Error Flow:**

  The inventory manager notices his inability to access the inventory data in the system, so he confirms that a malfunction has occurred in the system due to a technical malfunction or communication problems, and due to the failure of the inventory system to update, which causes problems in the purchasing process. Then the inventory manager realizes the situation and decides to shut down the entire system and stop purchasing operations to stop any future errors until the system is fixed.

Task 3.2:[Group Task] Actors and Use Case (Diagram) Analysis & Modelling

3.2.1 use case diagram



Note: please see the attached PDF version(with the submission) of this use case diagram for a more clear result. Here is the link:

https://drive.google.com/file/d/1BWuKgqAcZNvsky1MZvQXjLg1LEG3qg_y/view?usp=sharing

3.2.2 Actor’s Role

1. Customer → this actor represents the one who enters the system(website). The customer can browse the website or search for specific products to filter them, also he can add the items to the cart and check out.

2. Manager → this actor will take the lead in monitoring and managing the orders like view, confirm, and reject. He has the ability to add new meat products, update details of existing products, and manage the inventory in general. He can also generate weekly/monthly reports. Moreover, he is responsible for keeping the maintenance up-to-date.

3. Butcher → this actor is responsible for preparing, cooking, cutting, and packaging meat products according to the customer's orders. Inspect meat for quality and freshness, to ensure all products are up to the safety standards.

4. System → this actor controls and supports all the functionality required by customer managers and delivery personnel. the system also updates the inventory system on the database based on the sales and the restocks

5. Delivery Guy → this actor is the one who will pick up the orders from the shop and deliver them to the customers.

Task 3.3: [Individual Task] Use case Description

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Version 1.0

date	version	description	author
may/16/2024	draft	Draft version	H. Abu el hawa
may/17/2024	Version 1.0	Major corrections based on grammar and facts	H. Abu el hawa

Use case: Manage inventory In a meat shop

1. Brief Description

This use case allows the shopkeeper of the meat shop (our manager) to manage the inventory effectively. His job includes adding new meat products, updating existing product details, and removing products that are no longer available.

The actor for this use case is the manager.

2. Flow of Events

The use case begins when the manager selects the “inventory” activity from the website.

2.1 Basic Flow – add meat product:

1. The shopkeeper(manager) selects the” add product” option from the inventory management interface.

2. The system displays a form to input product details like product name, type of meat, quantity, price, expiration date ..etc.

3. Then the shopkeeper(manager) enters all the required information for the new meat product and confirms the process by selecting the ‘add button’.

4. The systems validate the entered data and add the new product to the inventory.

5. steps 1-4 above are repeated for each new product to be added.

2.2 Alternative Flows

2.2.1 *update existing meat product*

1. the shopkeeper (manager) selects the ‘update product’ option from the inventory management interface.

2. the system shows a list of existing meat products so the manager is able to select one of the products to update

3. the shopkeeper (manager) chooses the product, then he modifies the specific details he wants such as quantity, price…..etc.

4. after making the necessary changes the shopkeeper confirms by selecting the “save changes button.

5. the system validates the updated information details in the inventory

6. Steps 1-5 are repeated for each product requiring updates.

2.2.2 *remove meat product*

1. the shopkeeper (manager) selects the ‘remove product’ option from the inventory management interface.

2. The system displays a list of all the existing products with the option to select which one ,or the manager searches for a specific product using product id.

3. The shopkeeper chooses the product to be removed and confirms the deletion.

4. The system displays a delete verification and confirmation to ensure that the manager wants to delete the product.

5. The manager selects "yes."

6. The product is then deleted from the system

7. Steps 1-6 are repeated for each product to be removed.

When the manager is finished deleting the specific meat product from the system the use case ends.

2.2.3 *meat products already exist*

If in the "Add product" sub-flow the system finds an existing product with the same name an error message is displayed "product Already Exists". The manager can either change the name, create a new product with the same name, or cancel the operation at which point the use case ends.

3. Special Requirements

- ➔ The system must provide real-time updates on inventory levels to prevent shortages and overstocking.
- ➔ Notifications should be sent when a meat product is approaching its expiration date to the manager so they can figure out what to do (timely sales or disposal).

4. Entry Conditions

4.1 Log In

The shopkeeper(manager) must be logged into the inventory management system before any inventory management task

5. Exit Conditions

There are no postconditions associated with this use case.

Use case: delivery In meat shop

1. Brief Description

This use case enables the delivery person at the meat shop to manage the delivery process of meat products to customers. It involves picking up scheduled orders, updating delivery status, and handling any issues that may acure during the delivery process.

The actors for this use case are the delivery guys.

2. Flow of Events

2.1 Basic Flow – pick up and deliver order

1. The delivery person logs into the delivery management account.

2. The delivery person accesses a list of scheduled deliveries made for the day

3. The delivery person heads to the shop to pick up some of the orders to deliver

4. The system provides details of the order which includes the customer's name, all the contact information needed and the location

5. The delivery person updates the status to “out for delivery” in the system which notifies the customer by sending them a message that the delivery is on its way

6. The delivery person starts the drive to reach the destination

7. Upon reaching the destination the delivery person calls the customer so they can come pick up their order.

8. The delivery person checked that everything was complete and took the money for the order if it wasn’t prepaid by (visa)meaning the customer had picked the “cash on delivery “ option

9. The delivery person updates the status to “delivered ”

10 . The system validates the status update and updates the delivery status in the system

11. steps 5-10 are repeated until all the picked-up orders are delivered and steps 1-4 are repeated until the end of the day or if there are no more scheduled deliveries to be made.

2.2 Alternative Flows

2.1.1 Handle delivery issues

1. The delivery person encounters an issue such as an incorrect address, unavailable recipient, or damaged products.

2. The delivery person contacts the customer to resolve the issue, offering alternatives such as rescheduling the delivery, redirecting the delivery to a different address, or providing a refund or replacement for damaged products.

3. Once the issue is resolved, the delivery person updates the delivery status and any relevant information in the system.

4. The system records the resolution of the delivery issue and updates the delivery status accordingly.

3. Special Requirements

- ➔ The system must provide real-time updates on delivery status to keep customers informed about the progress of their deliveries
- ➔ Use a GPS tracking system that tracks the delivery guys' vehicle location for delivery efficiency

4. Entry Conditions

the delivery person must be logged into the delivery management system to initiate and manage delivery-related tasks.

5. Exit Conditions

There are no postconditions associated with this use case.

The delivery process is considered complete once all deliveries for the day are either successfully delivered or appropriately handled in case of issues.

➔ Yuna Nawahdah - 1211524

Version 1.0

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may/16/2024	draft	Draft version	Yuna Nawahdah
may/17/2024	Version 1.0	Major corrections based on grammar and facts	Yuna Nawahdah

Use Case: Manage Order for Online Meat Shop

1. Brief Description:

This use case lets the Manager look after the customer's orders in the system(website) by viewing, confirming, and rejecting orders from the system. Also, manage the inventory by keeping track of the availability of meat resources.

The actor for this use case is the Manager.

2. Flow of Events

The use case starts when the Manager chooses the "Customer order management" activity from the main system management page.

2.1 Basic Flow – View Order

1. The Manager opens the system to the "view orders" option.
2. The system displays all the user's orders.
3. The Manager scrolls through the orders to see them.
4. The Manager chooses a specific order to see its full details.
5. The system retrieves the order information and displays it on the screen.
6. The Manager views the order details to decide the action that he will take and manage.
7. Steps 2-6 are repeated for each order added the Manager wants to view. When all views are complete, the use case ends.

2.2 Alternative Flows

2.2.1 Confirm an Order

1. The Manager chooses to select the "confirm orders" option.
2. The system displays all the user's orders.
3. The Manager chose a specific order for confirmation.
4. The system retrieves the order information and displays it on the screen.
5. The Manager looks at the order details and selects "confirm the order."
6. The system updates the customer order status to appear as confirmed. And also notify the customer that the order has been accepted.
7. Steps 2-6 are repeated for each customer order that the Manager wants to confirm. When all confirmations are complete, the use case ends.

2.2.2 Reject an Order

1. The Manager selects the "reject orders" option.
2. The system displays all the user's orders.
3. The Manager chooses a specific order for rejection.
4. The system retrieves the order information and displays it on the screen.
5. The Manager reviews the order details and selects "reject the order."
6. The system updates the order status to appear as rejected. And also notify the customer that the order has been rejected.
7. Steps 2-6 are repeated for each order the Manager wants to reject. When all rejections are complete, the use case ends.

2.2.3 Order Not Found

If in the "view orders", "confirm orders" or "reject orders" subprocess, the order name or information is not located, the system displays an error message, "Order Not Found !" The Manager can then type in a different order name or information temporarily or cancel the operation at which point the use case ends.

3. Special Requirements

- When searching for an order, the system shall retrieve the order record in no more than 2 seconds**.**
- When confirming or rejecting an order, the system shall update the inventory management system and the website in parallel in no more than 4 seconds**.**

4. Entry Conditions

4.1 Log In

Before this use case starts, the Manager has to log onto the system.

5. Exit Conditions

After each operation, the system displays a success notification.

Use Case: Check Out and Make Payment for Online Meat Shop

1. Brief Description:

This use case is to help the customer in the online meat shop to complete the purchase process. It includes checking out the chosen items from the shopping cart, making payments, and completing the order.

The actor for this use case is the Customer.

2. Flow of Events

The use case starts when the customer decides to go ahead with the checkout and payment process.

2.1 Basic Flow – Check Out and Make Payment

The customer goes across to the shopping cart and selects the "Check Out" option.

1. The system provides and displays the summary page that contains the details of the selected order items like quantities, prices, and the total amount.

2. The customer will then enter the delivery location and contact information.

3. The customer checks the order summary and verifies whether the items and their quantity are correct. When the customer confirms the order he will select the option "proceed to payment."

4. The system will offer the customer different payment methods such as credit or debit card, or PayPal or Cash-on-Delivery.

5. The customer will choose a preferred payment method, if the customer chooses to pay online he is required to enter the important payment details like card number, expiration date, and CVV. And if he selects the cash-on-delivery it will update the status to "paid-removeOnDelivery"

6. After the customer enters the payment information, he will confirm it.

7. The system then will process the payment transaction securely transaction through the selected payment gateway.

8. when a successful payment is processed, the system will update the order status to "paid" status and generate an order confirmation.

9. The system sends a customer an email notification or SMS to confirm the order and provide him with a receipt.

10. at the same time, the system going to update the inventory database to send back the purchased items and their available quantities.

11. When the customer receives the order confirmation and payment receipt, the use case ends.

2.2 Alternative Flows

2.2.1 Payment Failure

1. If the payment while processing faces an error or fails like not enough funds or invalid card details, the system will notify the customer.

2. The customer is required to retry the payment with the corrected information or to choose a different payment method.
3. The Customer may decide to cancel the transaction or to try again.

4. When the payment process fails continuously, the Customer may choose to cancel the purchase, and the use case ends.

2.2.2 Modify Order

1. At any spot before the payment is confirmed, the customer will have the option to update the order.

2. The system lets the customer return to the shopping cart to make modifications to the selected items or quantities.

3. After the changes are made, the customer proceeds to check again, and the flow restarts from step 2 of the basic flow.

3. Special Requirements

- The payment processing must have very high-security protocols to protect the customer data.
- The system must ensure seamless integration with selected payment gateways to facilitate smooth transaction processing.
- Continuous updates for the inventory records and order status with the system.

4. Entry Conditions

Cart items: The shopping cart must contain at least one item for the checkout process.

5. Exit Conditions

There are no postconditions associated with this use case.

➔ Lama Batta - 1210922

Version 1.0

date	version	description	author
may/16/2024	draft	Draft version	Lama Batta
may/17/2024	Version 1.0	Major corrections based on grammar and facts	Lama Batta
June/5/2024	Version 2.0	Update Basic flow part 3-8	Lama Batta

Use Case: Prepare Order

1. **Brief Description:**

   This use case allows the butcher to prepare customer orders in the meat shop. This includes receiving order details, cutting meat, packaging, and updating the order status in the system.

   The actor for this use case is the Butcher.

2. **Flow of Events:**

   The use case begins when the butcher receives a notification of a new order from the order management system.

   2.1. Basic Flow - Order Preparation:

   1. The butcher receives notification of the order via the order management system.

   2. The system displays the order details, including items, quantities, and any special instructions.

   3. After the butcher reviews the order details, any changes or confirmations are made within the system, updating the order status at the same time.

   4. The system informs the butcher of the available meat products and their quantities.

   5. The system may provide templates for packaging labels, automatically generating labels with order numbers, customer names, and contents.

6. The system tracks each order, from preparation to delivery, providing visibility to both the butcher and the customer.

7. Once the order is prepared and checked for accuracy by the butcher, the system automatically sends notifications to the customer via the system itself, informing them that their order is ready for pickup or has been sent for delivery.

8. After all orders are prepared, the system updates the order status as complete

9. Steps 1 through 8 are repeated for each order the butcher prepares. When all orders are prepared, the use case ends.

2.2 Alternative Flows:

2.2.1. **Order Cancellation:**

1.1 If the order is canceled during preparation, the butcher stops the preparation process.

1.2 The butcher tells the manager to update the order status to cancel in the system.

2.2.2 **Special Instructions Handling:**

2.1 If the order includes special instructions that cannot be met (eg .. specific cuts, ingredients, not available), the butcher contacts the customer to discuss alternatives.

2.2 The customer decides whether to proceed with the alternatives or cancel the order.

2.3 The system is updated accordingly.

2.2.3. **Insufficient Inventory:**

3.1 The butcher discovers that an item in the order is out of stock.

3.2 The butcher contacts the manager to discuss alternatives.

3.3 The manager updates the order and informs the customer, suggesting substitutions or refunds.

3.4 The system is updated to reflect the changes.]

3. **Special Requirements:**

   The order management system must provide real-time updates and be accessible to all relevant staff.

   The inventory system must accurately track stock levels to prevent issues during order preparation.

4. Entry Conditions

4.1 Log In:

Before this use case begins, the butcher makes sure there are orders to be prepared.

5. Exit Conditions:

There are no specific postconditions associated with this use case beyond the successful preparation of the order.

Task 3.4: [Group Task] Activity Model/Diagram Analysis & Modelling

The PDF version is attached with the reply message.

Here is the drow.io link:

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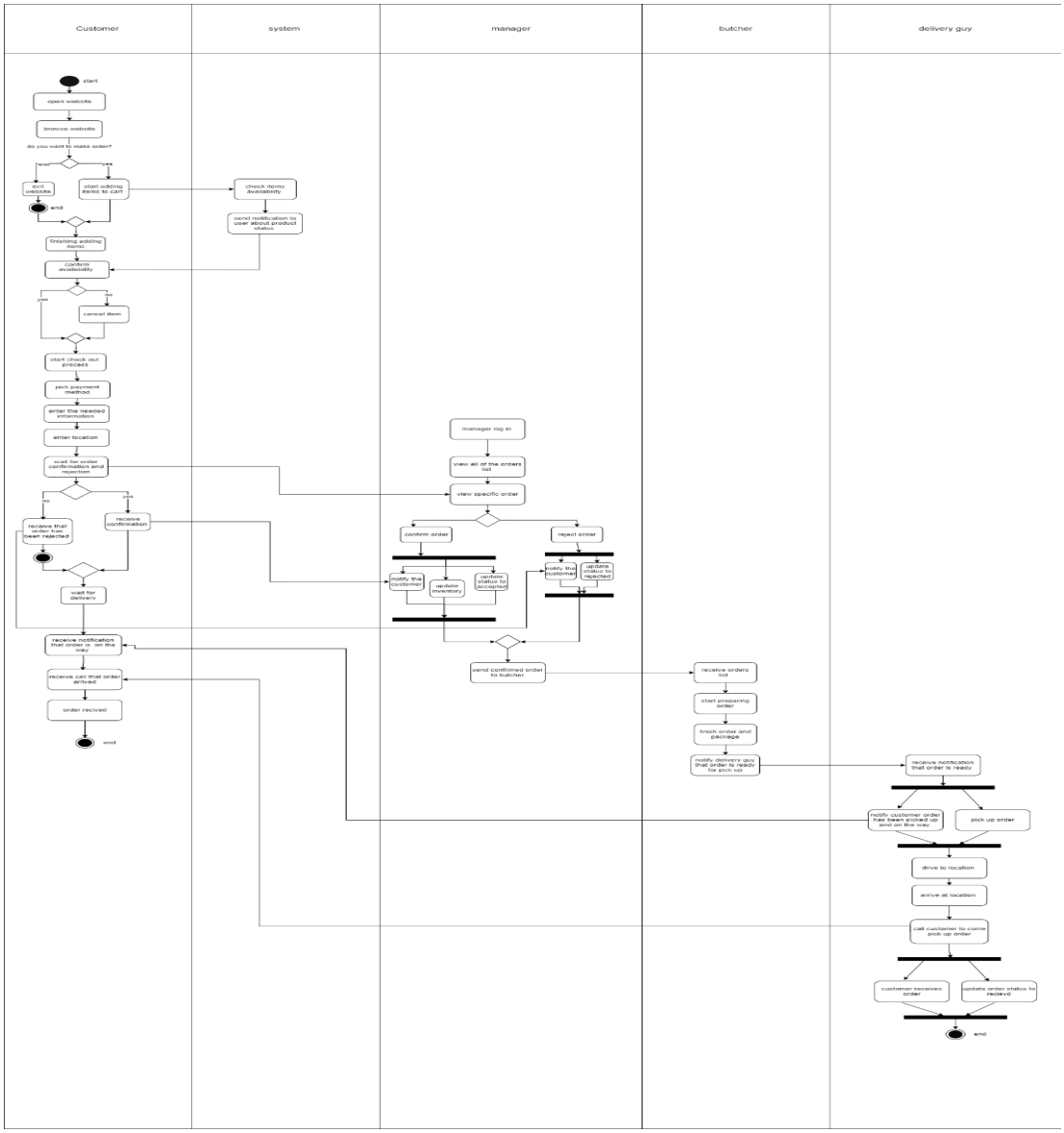

Task 3.5: [Individual Task] Instance Activity Diagrams

➔ Hanen Abu El - hawa - 1210711

- ➔ USE-CASE : Manage inventory
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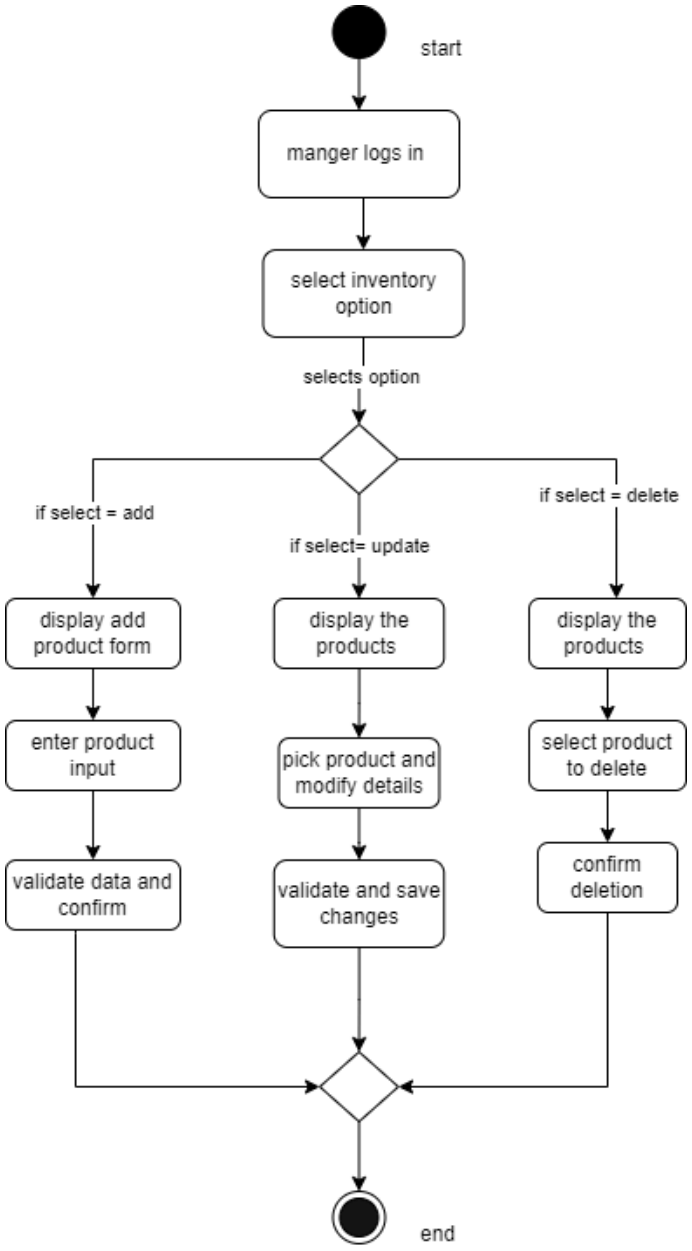

➔ USE-CASE : Delivery
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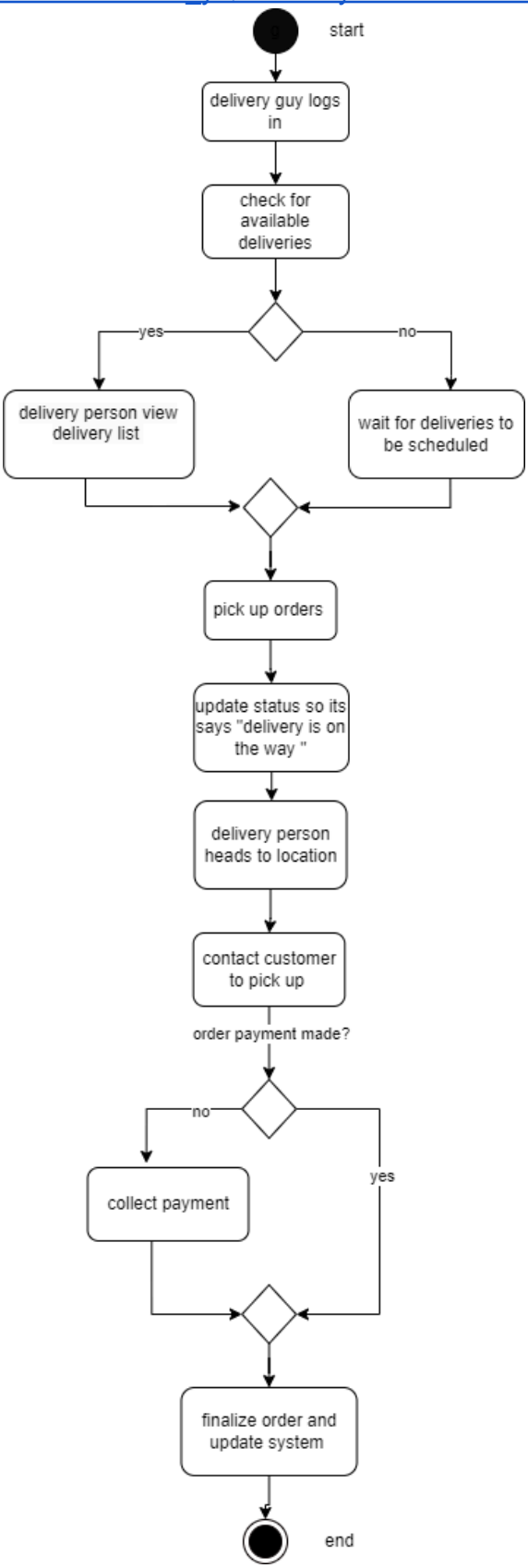

➔ Yuna Nawahdah - 1211524

- ➔ USE-CASE : Manage order
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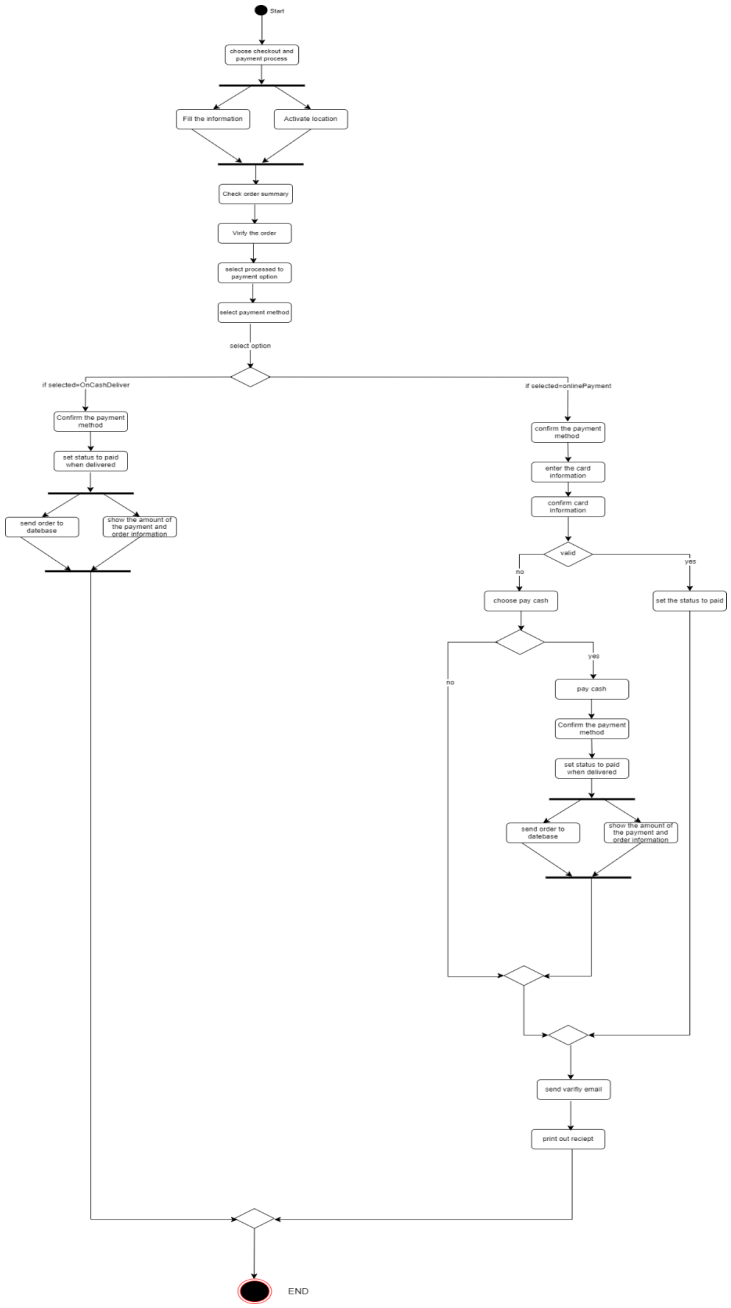

➔ USE-CASE : Check out and Make payment

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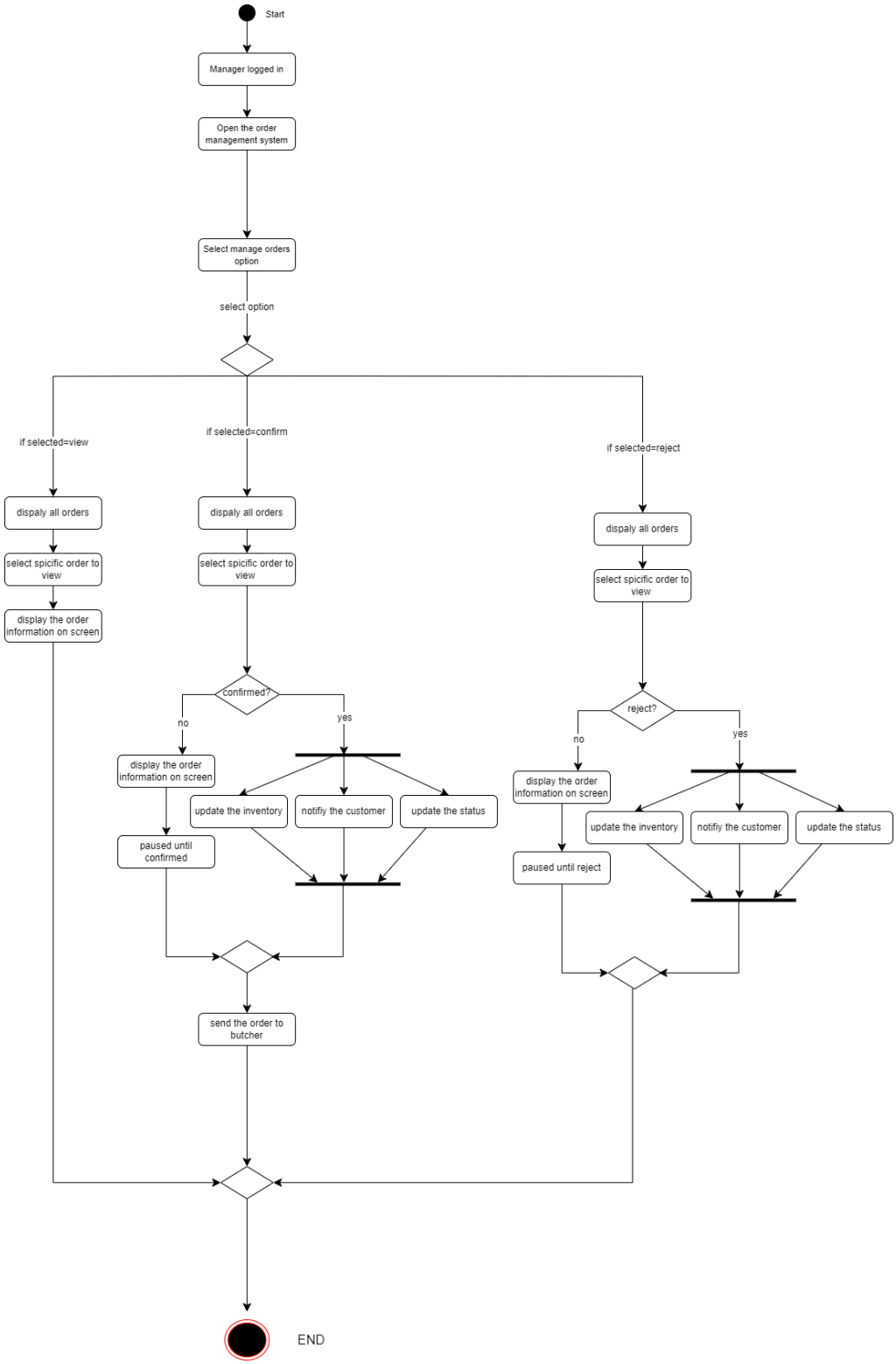

➔ Lama Batta - 1210922

➔ USE-CASE : Prepare Order
https://drive.google.com/file/d/1gVc0qnkv2thU4YZ4XneWu6_zQWHbPlJu/view?usp=sharing