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## Software Project – Phase 3

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# 1. Task: Scenario Analysis

## 1.1 Scenario 1 - Browsing Coffee Beans

**Author:** Jana Sawalmeh

### Initial Assumptions:

The customer is accessing the Coffee Beans Shop System through a standard web browser with a stable internet connection. The system database contains up-to-date information about available raw coffee beans, including brand, origin, price, and stock status. Browsing, searching, filtering, and cart functionalities are fully operational. The user may or may not be logged into the system.

### Normal Flow:

The customer opens the “*Browse Coffee Beans*” section from the main navigation menu. The system displays all available raw coffee beans in a grid layout, showing basic information such as bean name, brand, origin, price, and availability status. The customer selects a specific brand and origin, sets a preferred price range, and enables the “*Available Only*” filter. The system immediately refreshes the displayed results to match the selected criteria. The customer then sorts the results by price in ascending order and selects a coffee bean product to view its full details. On the product details page, the customer reviews additional information and clicks “*Add to Cart*.” The system adds the item to the shopping cart and displays a confirmation message indicating successful addition.

### Alternative Flow 1:

Instead of using filters, the customer enters a partial keyword (e.g., “*Ethiopian*”) into the search bar. The system provides auto-complete suggestions based on available coffee beans. The customer selects one of the suggested options, and the system displays matching products. The customer chooses a product from the results, views its detailed information, and clicks “*Add to Cart*.” The system confirms the action with a success message.

→ *Successful Output?* Yes

### Alternative Flow 2:

The customer browses coffee beans without logging into the system. The system allows full browsing, searching, filtering, and viewing of product details. However, when the customer attempts to click “*Add to Cart*,” the system prompts the user to log in or create an account before proceeding.

→ *Successful Output?* Yes

### Alternative Flow 3:

The customer clicks “*Add to Cart*” directly from the product grid without opening the product details page. The system adds the selected coffee bean to the cart immediately and updates the cart icon to reflect the new item count. A brief confirmation message is displayed.

→ *Successful Output?* Yes

### Error Flow:

The customer applies multiple filters that result in no matching coffee beans (e.g., a specific origin combined with a high price range and out-of-stock status). The system displays the message:

*"No coffee beans found. Please adjust your filters or clear some options."* The customer may remove one or more filters and retry the search. If matching products become available, the customer may continue browsing and add items to the cart. Otherwise,

the customer may leave the browsing section or contact customer support.

→ *Successful Output?* No

**System State on Completion:**

The system records browsing behavior, including search keywords, selected filters, viewed products, and cart actions, for analytics and reporting purposes. If a coffee bean product is viewed or added to the cart, the session state is updated accordingly. The system may also recommend similar or popular coffee beans. Inventory quantities remain unchanged until an order is confirmed during checkout.

## 1.2 Scenario 2 – Placing an Order

**Author:** Osaid Nur

### **Initial Assumptions:**

The user is logged into their customer account, has previously added items to their shopping cart, and is connected to the internet. The inventory contains all selected items, and the checkout interface is operational.

### **Normal Flow:**

The user accesses their shopping cart to review the selected items, ensuring that the product names, quantities, prices, and total cost are accurate. Once satisfied, the user proceeds to checkout, where they are prompted to select a delivery method. They choose home delivery and enter a valid delivery address. Following this, the user selects a payment method, such as a credit card, and provides the required payment details. The system then verifies that all items are still available in the inventory and processes the payment. If the transaction is successful, a confirmation message is displayed on the screen, a receipt is sent to the user's email address, and the order is marked as "Confirmed".

### **Alternative Flow 1 – In-Store Pickup Option:**

The user opens their shopping cart and reviews the items they previously added. After confirming the cart contents are correct, they proceed to checkout. When prompted to select a delivery method, the user chooses in-store pickup instead of home delivery. They proceed to select a payment method and enter the required payment details. The system checks inventory availability and processes the payment. If the transaction is successful, a confirmation message is shown on-screen, a receipt is sent to the user via email, and the order is recorded with the status "Confirmed".

→ *Successful Output? Yes*

### **Alternative Flow 2 – Cart Modification Before Checkout:**

The user accesses their shopping cart and reviews the selected items. Before proceeding to checkout, they decide to make changes to the cart, such as adding or removing an item, or adjusting the quantity. The system recalculates the total cost and update the quantities and prices. Once the user is satisfied, they continue to the checkout page, where they are prompted to select a delivery method. The user chooses home delivery and provides a valid delivery address. After that, they select a payment method and enter the necessary payment details. The system verifies the availability of the selected items and processes the payment. If successful, a confirmation message is displayed on screen, a receipt is sent to the user's email, and the order is marked as "Confirmed".

→ *Successful Output? Yes*

### **Error Flow 1 – Item Unavailable During Checkout:**

The user opens their shopping cart, verifies the selected items, and proceeds to checkout. After choosing a delivery method (either home delivery or in-store pickup) and entering the required address or pickup details, the user selects a payment method and provides payment information. Before finalizing the payment, the system re-checks the inventory and finds that one or more items in the cart are no longer available. As a result, the

system stops the checkout process and displays a message saying that Some items are no longer available. The user is redirected back to the cart to update it accordingly. No payment is processed and no order is created.

→ *Successful Output? No*

**Error Flow 2 – Payment Failure:**

The user accesses their shopping cart, reviews the selected products, and continues to checkout. They choose a delivery method—either home delivery with a delivery address or in-store pickup. After that, they select a payment method and enter their payment details. The system checks item availability and confirms all products are in stock. However, during the payment process, the transaction fails due to issues such as insufficient funds, expired card, or invalid information. The system displays an error message that the payment was unsuccessful .The user remains on the payment screen and is given the option to retry the transaction with corrected information or to cancel the order process entirely.

→ *Successful Output? No*

**System State on Completion:**

If successful, the system updates inventory, creates an order with status “Confirmed”, and schedules the delivery or pickup. In case of error, no order is created, and the user is prompted to fix the issue before retrying.

### **1.3 Scenario 3 – Register Account**

**Author:** Mumen Anbar

**Initial Assumptions:**

The user has a stable connection to the internet and using his desktop browser in order to log into the system, The system is prepared for giving responses and ready to serve the user registration's request. The user is using the usual registration form and has not yet registered for the system.

**Normal Flow:**

The user proceeds to the “Registration” page and enters some obligatory information: complete name, email, password, and phone number. The system carries out real-time validation (for example, checking if it's an actual email address, if the password is strong enough). After that, the user is allowed to choose interests in the products (e.g. raw coffee beans), but it's optional. After clicking “Register,” the system checks if the given email address is in use. If there's no identical account, the user gets registered, and an activation email is sent. The user is either signed in or redirected to the login page depending on the server configurations.

**Alternative Flow 1:**

On the next page, after entering their profile information, the system will pop up an optional section for choosing product interests. The user selects one or more categories or proceeds without any selection. Afterwards, the process goes on with the account creation like in the normal flow.

→ *Successful Output?* Yes

**Error Flow 1:**

The user enters an error, perhaps a typo in their email address or a short password. It flags the error, and will prevent them from registering until all mistakes are fixed.

→ *Successful Output?* No, the user must fix errors to continue.

**Error Flow 2:**

The system recognizes the user if the email address entered is already in use: “The entered email already exists. Please log in or use some different email.” Requests for the use of a different email address or for redirecting to the login page are required.

→ *Successful Output?* No, account not created with original email.

**System State on Completion:**

Then, upon the success of the registration process, the system generates a log describing the event, sends an email notification to the user to confirm the success of the process, and stores the information of the user in the system securely. Otherwise, it stores no account but logs the event. Finally, the session ends with either account creation or the termination of the session by the user.

## 1.4 Scenario 4 – Request Return or Refund

**Author:** Waleed Rimawi

### **Initial Assumptions:**

The user is logged into their account and is accessing the system via a desktop browser with a stable internet connection. The item was purchased through the platform and is still within the return window. The item is marked as returnable in the system, and the order history and return interface are fully functional.

### **Normal Flow:**

The user opens the “Order History” section, expands the relevant order, and clicks “Return Item” next to the product. A return form appears with predefined reasons (e.g., “Damaged”, “Not as described”) and an optional comment field. After submission, the system shows return options (e.g., pickup scheduling) and a refund timeline. The user selects a method and confirms. A return confirmation is shown, and the label is provided to download or/and email. The item’s status updates to “Return in Progress” in the order history.

### **Alternative Flow 1 – Partial Return:**

The customer has several items in one order only and wishes to return one of them. They proceed to the details of the order and instead of returning the whole order, they pick the particular item they wish to return. The system is capable of handling a partial return and will create a return label only for the selected item. The remaining items in the order will be unaffected.

→ *Successful Output?* Yes

### **Alternative Flow 2 – Exchange Request:**

“Exchange” becomes the choice because of a defect. Rather than a refund, the system replaces the same merchandise. The return label is generated, and the new unit that is not damaged is sent when the merchandise arrives.

→ *Successful Output?* Yes

### **Error Flow:**

The user tries to return an item that falls outside the return timeframe or if the item does not belong to returnable categories (for example, perishables). On choosing an item and trying to initiate a return, the system prevents further processing and shows an error message with the reason. The user gets an option to click on a link to reach support staff or read return terms.

→ *Successful Output?* No

### **System State on Completion:**

The system logs the return request along with key metadata. If accepted, the item’s status updates to “Return in Progress” and is linked to a return case. Notifications are sent, and backend processes are queued for shipping, refunds, and inventory. Refunds are issued only after the item is received and verified. Failed returns are logged for analytics or support. No inventory or financial updates occur until return completion.

## 1.5 Scenario 5 – Tracking Order Status

**Author:** Salah Dawabsheh

### **Initial Assumptions:**

The customer is logged into their account and has an active session. The customer has at least one existing order stored in the system, and each order has a valid order ID / reference and an associated status (e.g., "Confirmed", "Processing", "Shipped", "Out for Delivery", "Delivered", "Cancelled"). The order tracking functionality is operational, and the system can retrieve the latest order status and available tracking updates (including ETA / pickup readiness when applicable).

### **Normal Flow:**

The customer requests to view their order history. The system displays the customer's previous orders. The customer selects a specific order to track. The system retrieves the latest status information for the selected order and displays the current order status along with the latest available tracking update. If available, the system also displays the estimated delivery date or pickup readiness information. The customer reviews the order status and completes the tracking action.

### **Alternative Flow 1 – Tracking Using Order ID / Reference:**

Instead of selecting from the order history, the customer provides an order ID / order reference (from a previous confirmation or receipt). The system validates the order ID format and verifies that the order belongs to the customer. The system retrieves the latest status information for the order and displays the current order status and tracking updates.

→ Successful Output? Yes

### **Alternative Flow 2 – Tracking Another Order:**

After viewing the status of one order, the customer selects another order to track. The system retrieves the latest status information for the newly selected order and displays the updated order status and tracking update.

→ Successful Output? Yes

### **Error Flow 1 – Order Not Found / Not Authorized:**

The customer selects an order or provides an order ID / reference. The system cannot find a matching order for this customer (invalid order ID or the order belongs to another user). The system displays an error message stating "Order not found or you do not have access to this order." No order details are displayed, and the customer may retry or select a different order.

→ Successful Output? No

### **Error Flow 2 – Tracking Service Unavailable:**

The customer selects an order to track. The system fails to retrieve the order status due to a service unavailability or timeout. The system displays an error message stating "Unable to retrieve order information at this time. Please try again later." No order details are displayed, and the customer may retry later.

→ Successful Output? No

### **System State on Completion:**

If successful, the customer views the current order status and the latest tracking update, and no order data is modified. In case of error, no sensitive order data is revealed, and the customer is prompted to retry or choose a valid order.

## **2. Task: Actor Analysis**

**Lead:** Osaid Nur

**Contributors:** Jana Sawalmeh (reviewing), Mumen Anbar (reviewing) , Salah Dawabsheh (discussion), Waleed Rimawi (discussion)

### **Actor Descriptions**

- Customer**

Represents the primary user of the Coffee Beans Shop System. Can browse coffee beans, search products, place orders online or in-store, make payments, track deliveries, initiate returns or refunds, and contact customer support.

- Manager/Owner**

Has administrative privileges to monitor users, review order history and coffee bean inventory movements, and view management reports and audit logs to oversee the business.

- Sales Assistant**

Responsible for processing in-store orders and payments for coffee beans, assisting customers during their purchases at physical store locations, and handling returns at the counter.

- Inventory Manager**

Keeps coffee bean stock up to date, updates available bean types and origins, and ensures inventory data is correct for orders and tracking.

- Delivery Staff**

Plans delivery routes, updates delivery/shipping status, and handles return pickups or drop-offs for coffee products.

- Customer Support Assistants**

Assists customers with order issues, account inquiries, returns, refunds, and general support requests, and sends technical issues to the right team when needed.

- Payment Gateway (e.g., Bank/PayPal)**

An external service responsible for processing online transactions securely for coffee bean purchases, validating payment information, and confirming payment success or failure.

- Email Notification System**

Sends transactional messages such as order confirmations, delivery updates, password recovery emails, and other system-generated notifications to users.

### 3. Task: Use Case Modelling

**Lead:** Osaid Nur

**Contributors:** Jana Sawalmeh (reviewing), Mumen Anbar (reviewing) , Waleed Rimawi (discussion), Salah Dawabsheh (discussion)

#### 3.1 Use Case List

- **UC01 – Browse Products**  
Allows the Customer to explore the available products.
- **UC02 – Search Products**  
Enables the Customer to find products by keyword or description.
- **UC03 – Filter Products**  
Lets the Customer refine product results using filters such as category, price, or brand.
- **UC04 – Place Online Order**  
The Customer selects products and completes an order through the online platform.
- **UC05 – Register Account**  
Allows a new user to create an account with necessary credentials.
- **UC06 – Log In**  
Enables any user to securely access the system with authentication.
- **UC07 – Manage Profile**  
Customers can update their personal details, delivery addresses, and coffee preferences.
- **UC08 – Contact Support**  
Customer can reach out for help through a form or messaging interface.
- **UC09 – Request Return or Refund**  
Customer can initiate a return process or ask for a refund.
- **UC10 – Track Order Status**  
Customers can track their order through multiple statuses: placed, packed, shipped, and delivered.
- **UC11 – Cancel Order**  
Customer can cancel an order before it is shipped or prepared for pickup.
- **UC12 – Approve Role Assignments**  
Managers approve or deny pending role change requests.
- **UC13 – Generate Reports / Logs**  
Manager can generate logs and reports on coffee bean inventory movements, order history, sales analytics, and system usage.  
Sales Assistant
- **UC14 – Place an Order**

The Sales Assistant helps the Customer create an order at a physical store.

- **UC15 – Check Inventory Availability**

Allows the Sales Assistant to verify if items are in stock.

- **UC16 – Verify Returned Items**

Inventory Manager confirms the condition and correctness of returned products.

- **UC17 – Reject Return Item**

Inventory Manager can deny a return request after verification.

- **UC18 – Manage Inventory**

Inventory Manager updates item stock levels and manages product data.

- **UC19 – Check Inventory Availability**

Allows the Sales Assistant to verify if items are in stock.

- **UC20 – Assign to Deliver Order**

Assigns a delivery staff member to deliver the customer's order.

- **UC21 – Assign to Collect Order**

Assigns a delivery staff member to collect items for return.

- **UC22 – Update Delivery Status**

Enables the Delivery Staff to update the progress of order delivery.

- **UC23 – Handle Support Request**

Customer Support reviews and responds to support requests from customers, providing assistance or escalating technical issues.

- **UC24 – Manage Roles**

IT Support can configure user roles and permissions within the system.

- **UC25 – Make Secure Payment**

Processes online and in-store transactions securely, validates payment information, and confirms payment success or failure for coffee bean purchases.

## 3.2 task: Use Case Diagram

**Lead:** Jana Sawalmeh

**Contributors:** Mumen Anbar (reviewing), Osaid Nur (reviewing) , Waleed Rimawi (discussion), Salah Dawabsheh (discussion)

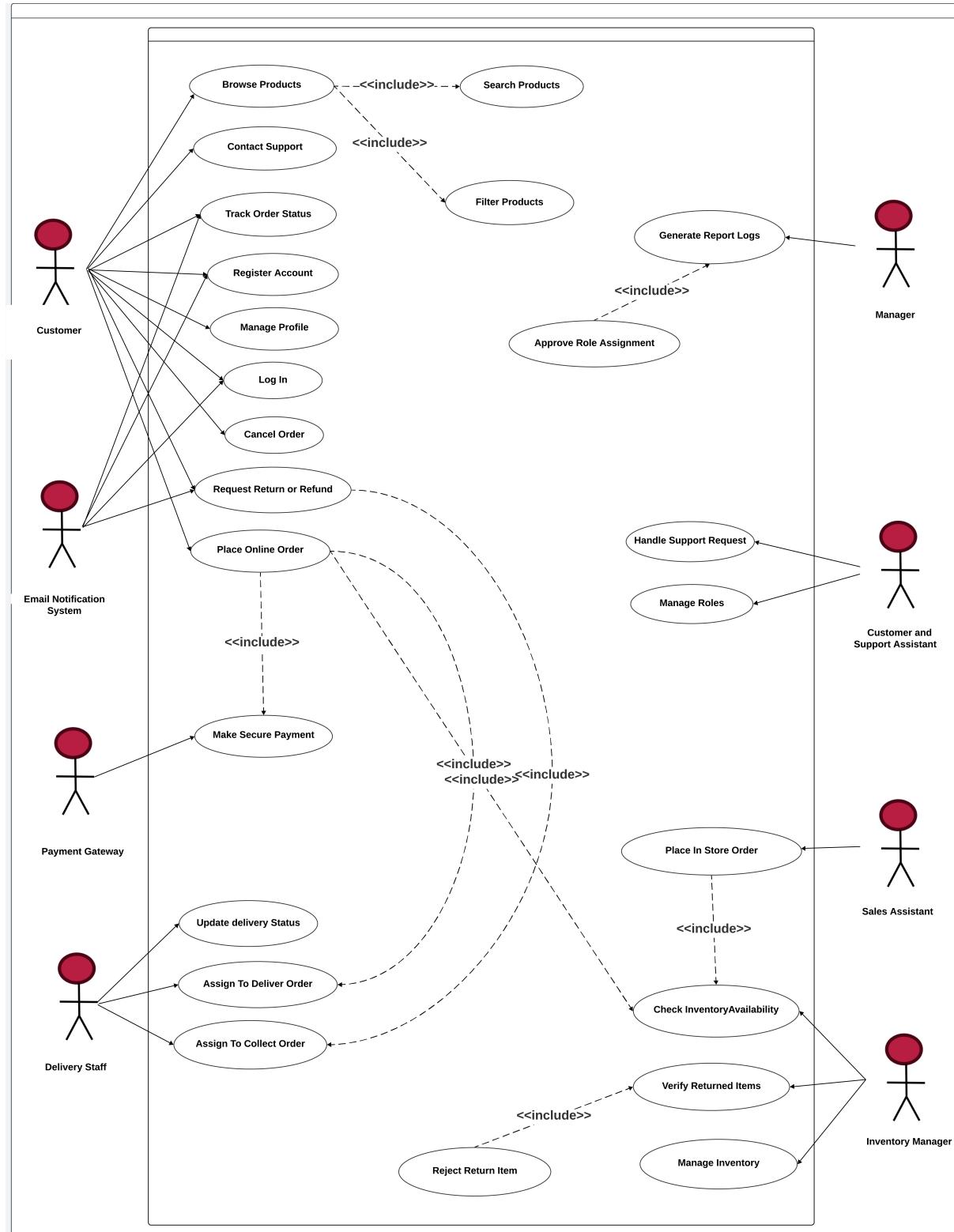


Figure 1: Use Case Diagram for Electronics Components Ordering System

## 4. Task: Use Case Specifications

### 4.1 UC01 – Browse Coffee Beans

**Author:** Jana Sawalmeh

<b>Use Case Title</b>	Browse Coffee Beans
<b>Description</b>	This use case allows customers to browse available raw coffee beans using categories or search keywords. Customers can refine results using filters such as price range, brand, origin, or availability. The system provides real-time updates to the product listings and supports viewing detailed information for each coffee bean.
<b>Actors</b>	<ul style="list-style-type: none"><li>• <b>Primary Actor:</b> Customer</li><li>• <b>Secondary Actors:</b> Inventory Manager</li></ul>
<b>Data</b>	<ul style="list-style-type: none"><li>• Coffee bean categories</li><li>• Brands and origins</li><li>• Search keywords</li><li>• Filter values (price range, availability)</li><li>• Product metadata (name, brand, origin, price, stock status)</li></ul>
<b>Stimulus / Trigger</b>	The customer navigates to the Browse Coffee Beans section or types a keyword in the search bar.
<b>Pre-Conditions</b>	<ol style="list-style-type: none"><li>1. The customer is authenticated or using guest access.</li><li>2. The coffee beans catalog is populated by the inventory manager and is accessible.</li><li>3. The filtering and search user interface is fully initialized and responsive.</li></ol>
<b>Workflow</b>	<ol style="list-style-type: none"><li>1. Customer accesses the Browse Coffee Beans page.</li><li>2. System displays all available coffee beans in a default layout.</li><li>3. Customer applies filters (e.g., price range, brand, availability).</li><li>4. System updates results based on the selected filters.</li><li>5. Customer uses sorting or the search bar to further refine results.</li><li>6. System displays the refined list and highlights matched keywords.</li><li>7. Customer clicks on a coffee bean product to view full details.</li><li>8. System logs the product view for analytics purposes.</li></ol>

	<p><b>Alternative Flow 1 – Keyword Search</b></p> <ol style="list-style-type: none"> <li>1. Customer enters a partial keyword in the search bar.</li> <li>2. System suggests matching coffee beans using auto-complete.</li> <li>3. Customer selects a suggestion, triggering a filtered results list.</li> <li>4. Customer clicks on one of the displayed coffee beans.</li> <li>5. The product detail page opens; the customer may choose to add the item to the cart.</li> <li>6. If logged in, the item is added and a confirmation message is shown.</li> </ol> <p><b>Alternative Flow 2 – Guest Browsing</b></p> <ol style="list-style-type: none"> <li>1. Customer accesses the system without logging in.</li> <li>2. System allows full coffee bean browsing but disables “Add to Cart” and checkout options.</li> <li>3. Customer may still use filters, search, and view product details.</li> </ol> <p><b>Alternative Flow 3 – Add Without Viewing Details</b></p> <ol style="list-style-type: none"> <li>1. Customer browses the product grid and finds a coffee bean of interest.</li> <li>2. Without opening the product details page, the customer clicks “Add to Cart.”</li> <li>3. If logged in, the item is added to the cart.</li> <li>4. A success message is shown, and the cart icon is updated.</li> </ol> <p><b>Error Flow – EF1: No Matching Results</b></p> <ol style="list-style-type: none"> <li>1. Customer applies filters or search criteria that yield no matching coffee beans.</li> <li>2. System displays the message: “<i>No coffee beans found. Try adjusting your filters or clearing some options.</i>”</li> <li>3. Customer clears filters or modifies the search keyword.</li> <li>4. If new results appear, the normal flow resumes; otherwise, the customer may cancel or retry.</li> </ol>
<b>Post-Conditions / Response</b>	<ul style="list-style-type: none"> <li>• Matching coffee beans are successfully displayed.</li> <li>• Product detail pages are accessible and load without error.</li> <li>• If logged in, coffee beans can be added to the cart.</li> <li>• All browsing, filtering, and viewing actions are logged for analytics.</li> <li>• If no results are found, the system provides reset or suggestion options.</li> </ul>

<b>Comments</b>	<ul style="list-style-type: none"><li>• Logged-in customers may receive recommendations based on browsing history.</li><li>• The system should ensure fast response times for search and filtering.</li><li>• Add-to-cart from the list improves efficiency for frequent customers.</li><li>• Future improvement: filtering by roast level or flavor profile.</li></ul>
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## 4.2 UC04 – Place an Order

**Author:** Osaid Nur

<b>Use Case Title</b>	Place an Online Order
<b>Description</b>	A customer places an online order by reviewing their cart, selecting delivery and payment methods, verifying item availability, and completing the transaction. The system checks both item stock and payment details before confirming the order. Upon success, a confirmation is displayed, the delivery or pickup is scheduled based on the selected option, and a receipt is sent to the customer via email.
<b>Actors</b>	<ul style="list-style-type: none"> <li>• <b>Primary Actor:</b> Customer</li> <li>• <b>Secondary Actors:</b> Inventory System, Payment Gateway System.</li> </ul>
<b>Data</b>	<ul style="list-style-type: none"> <li>• List of selected items (Coffee Beans)</li> <li>• Cart total price</li> <li>• Delivery information</li> <li>• Payment method and details</li> <li>• Order confirmation status</li> </ul>
<b>Stimulus / Trigger</b>	The customer selects "Place Order" from the cart interface.
<b>Pre-Conditions</b>	<ol style="list-style-type: none"> <li>1. The user is authenticated and has an active session.</li> <li>2. The user's shopping cart contains at least one valid item with up-to-date pricing.</li> <li>3. Delivery options (e.g., home delivery, in-store pickup) are currently available based on the user's location.</li> <li>4. The payment service is operational and can accept transactions.</li> <li>5. The inventory system is online, and selected items are marked as "in stock."</li> </ol>

## Workflow

1. Customer opens their cart and reviews the selected items.
2. System displays item details including name, quantity, price, and total cost.
3. Customer selects home delivery as the delivery method.
4. Customer enters the required delivery address.
5. Customer selects a payment method and provides payment details.
6. System checks the availability of all items in the inventory.
7. If all items are available, the system processes the payment via the payment gateway.
8. System confirms the payment and generates an order record.
9. System schedules the delivery to the provided address.
10. System displays an on-screen confirmation and sends a receipt via email.

### Alt Flow 1 – In-Store Pickup

1. Customer opens cart and reviews selected items.
2. System displays item details including name, quantity, price, and total cost.
3. Customer selects in-store pickup as delivery method.
4. Customer selects payment method and provides payment details.
5. System checks availability of all items in inventory.
6. If all items are available, system processes payment via payment gateway.
7. System confirms payment and generates order record.
8. System schedules the order.
9. System displays on-screen confirmation and sends receipt via email.

### Alt Flow 2 – Modifying Cart

1. Customer opens cart and reviews selected items.
2. Before proceeding, customer modifies cart (changes quantity, adds or removes items).
3. System updates cart and recalculates total price.
4. Customer reviews updated item list.
5. System displays item details including name, quantity, price, and total cost.
6. Customer selects home delivery as delivery method.
7. Customer enters required delivery address.
8. Customer selects payment method and provides payment details.
9. System checks availability of all items in inventory.
10. If all items are available, system processes payment via payment gateway.
11. System confirms payment and generates order record.
12. System schedules delivery and displays confirmation with receipt via email.

<b>Error Flows</b>	<p><b>EF1 – Payment Failure</b></p> <ol style="list-style-type: none"> <li>1. Customer opens cart and reviews selected items.</li> <li>2. System displays item details including name, quantity, price, and total cost.</li> <li>3. Customer selects home delivery as delivery method.</li> <li>4. Customer enters required delivery address.</li> <li>5. Customer selects payment method and provides payment details.</li> <li>6. System attempts to process payment using provided method.</li> <li>7. Payment fails due to insufficient funds, expired card, or timeout.</li> <li>8. System displays: <i>"Payment unsuccessful. Please verify your card or try a different method."</i></li> <li>9. Customer is given option to retry or cancel order.</li> </ol> <p><b>EF2 – Item Unavailable During Checkout</b></p> <ol style="list-style-type: none"> <li>1. Customer opens cart and reviews selected items.</li> <li>2. System displays item details including name, quantity, price, and total cost.</li> <li>3. Customer selects home delivery as delivery method.</li> <li>4. Customer enters required delivery address.</li> <li>5. Customer selects payment method and provides payment details.</li> <li>6. System checks inventory and detects one or more items are no longer available.</li> <li>7. System stops order process and displays: <i>"Some items are no longer available. Please adjust your cart."</i></li> <li>8. Customer is redirected to cart to modify order.</li> </ol>
<b>Post-Conditions / Response</b>	<ul style="list-style-type: none"> <li>• <b>If successful:</b> <ul style="list-style-type: none"> <li>– Order is created with status “Confirmed”</li> <li>– Inventory quantities have been updated accordingly.</li> <li>– A successful payment transaction is logged and associated with the order.</li> <li>– The system is ready to proceed with fulfillment or allow the user to track their order.</li> </ul> </li> <li>• <b>If unsuccessful:</b> <ul style="list-style-type: none"> <li>– No order has been created or stored in the system.</li> <li>– Inventory remains unchanged.</li> <li>– The user remains at the checkout or cart state, awaiting a corrective action.</li> <li>– The system is prepared to handle a retry attempt or a modified order.</li> </ul> </li> </ul>

<b>Comments</b>	<ul style="list-style-type: none"><li>• Order cannot be modified after confirmation.</li><li>• Payment and stock must be validated before final confirmation.</li><li>• Delivery and payment options depend on system configuration.</li></ul>
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### 4.3 UC14 – Register Account

**Author:** Mumen Anbar

<b>Use Case Title</b>	Register Account
<b>Description</b>	A new customer opens an account with the help of the browser. A common form is given for account opening, the entries are checked for the given criteria (for example, the username must be different and the password must satisfy certain requirements), and based on the criteria, an account can be made or the submission can be rejected with proper reasons.
<b>Actors</b>	<ul style="list-style-type: none"><li>• <b>Primary Actor:</b> Customer</li><li>• <b>Secondary Actors:</b> Email Notification System</li></ul>
<b>Data</b>	<ul style="list-style-type: none"><li>• Full name</li><li>• Email address</li><li>• Username</li><li>• Password</li><li>• Phone number</li></ul>
<b>Stimulus / Trigger</b>	The user chooses "Register".
<b>Pre-Conditions</b>	<ol style="list-style-type: none"><li>1. The user has no registered accounts with the desired email.</li><li>2. The system is able to give responses to the registration request.</li><li>3. The Registration interface is functional.</li><li>4. Internet connection is stable.</li></ol>

<p><b>Workflow</b></p>	<ol style="list-style-type: none"> <li>1. System shows need to fill fields such as: Full name, email, username, and password.</li> <li>2. User provides correct data in all fields.</li> <li>3. Different validations are applied like username and email uniqueness, password strength, and email format.</li> <li>4. User submits registration request.</li> <li>5. A new user profile is created and safely stored.</li> <li>6. A confirmation message is displayed.</li> <li>7. A Confirmation email will be sent to the user for confirmation.</li> <li>8. According to the user's choice, either login or redirect him to the page for login.</li> </ol> <p><b>Alternative Flow 1</b></p> <ol style="list-style-type: none"> <li>1. Following step 2 in the normal flow, the system displays an Optional section for interest selection.</li> <li>2. The user may pass on this step.</li> <li>3. The process now continues from step 3 in the usual flow process.</li> </ol> <p><b>Error Flows:</b></p> <p><b>EF1 – Invalid Input:</b></p> <ol style="list-style-type: none"> <li>1. Enters incorrect information (e.g., short password or malformed email)</li> <li>2. System identifies incorrect fields and displays appropriate validation messages, such as “Password must be at least 8 characters”</li> <li>3. The process of registration is hindered pending resolution of issues.</li> </ol>
	<p><b>EF2 – Email Already Exists:</b></p> <ol style="list-style-type: none"> <li>1. User submits a form with an already existing email associated with existing account.</li> <li>2. System displays an appropriate message (for example, “An account with this email already exists.”) that the email address has already been linked through an existing account.</li> <li>3. The user will be asked to log in with the existing account or provide a different email address to sign up.</li> </ol>

<b>Post-Conditions / Response</b>	<ul style="list-style-type: none"> <li>• <b>If successful:</b> <ul style="list-style-type: none"> <li>– A new user profile is created</li> <li>– When the user boots</li> <li>– A confirmation email has been sent</li> <li>– The user is logged in or redirected</li> </ul> </li> <li>• <b>If unsuccessful:</b> <ul style="list-style-type: none"> <li>– No data is stored</li> <li>– Error messages are displayed</li> <li>– Efforts were noted</li> </ul> </li> </ul>
<b>Comments</b>	<ul style="list-style-type: none"> <li>• The system should enforce robust validation to secure an account.</li> <li>• There should be no duplicate accounts for the same email.</li> <li>• System behavior after registration (login/redirect) is configuration-dependent</li> </ul>

## 4.4 UC09 – Request Return or Refund

**Author:** Waleed Rimawi

<b>Use Case Title</b>	Returning a Delivered Item
<b>Description</b>	Use case: Customers can request the return or refund of goods ordered through the system using this use case. The eligibility of goods to be returned (based on time, product type, etc.), complete or partial returns, pick-ups, deliveries, and return mail are managed by the system, after which a refund or exchange can be made.
<b>Actors</b>	<b>Primary Actor:</b> Customer <b>Secondary Actors:</b> Email Notification System, Delivery Staff, Inventory Manager
<b>Data</b>	<ul style="list-style-type: none"> <li>• Order History</li> <li>• Reason for return (e.g. damaged, not as described)</li> <li>• Optional comment</li> <li>• Pickup/drop-off selection</li> <li>• Refund Timeline</li> <li>• Return label (Download/Email)</li> </ul>
<b>Stimulus / Trigger</b>	The customer selects “Return Item” for a previously purchased item from their order history.
<b>Pre-Conditions</b>	<ol style="list-style-type: none"> <li>1. A customer is logged into their account.</li> <li>2. It is acquired through the system.</li> <li>3. The item is still within the return period.</li> <li>4. The merchandise can be returned.</li> <li>5. The return interface and email service are available.</li> </ol>
<b>Workflow</b>	<ol style="list-style-type: none"> <li>1. Customer navigates to ”Order History.”</li> <li>2. Expands an order and clicks “Return Item.”</li> <li>3. System displays returned form along with reasons and comments.</li> <li>4. The customer submits the form.</li> <li>5. System eligibility verification and return options display.</li> <li>6. Customer picks the mode (pickup/drop-off).</li> <li>7. System generates and sends return label (email/download).</li> <li>8. Order status update to "Return in Progress."</li> <li>9. The notifications will be sent to the "Delivery Staff" as well as "Inventory Manager".</li> </ol>

<b>Alternative Flow 1 – Partial Return</b>	<ol style="list-style-type: none"> <li>Customer picks only one item that was ordered with multiple items.</li> <li>System processes partial return, adjusts refund, and generates a return label.</li> </ol>
<b>Alternative Flow 2 – Exchange Instead of Refund</b>	<ol style="list-style-type: none"> <li>Customer selects “Exchange” due to a defect.</li> <li>System initiates replacement process.</li> <li>Return label is issued.</li> <li>Replacement item is sent after arrival of the return.</li> </ol>
<b>Error Flow – EF1: Invalid Return Attempt</b>	<ol style="list-style-type: none"> <li>Customer picks an item outside the return window or an item marked non-returnable.</li> <li>System doesn’t allow to return, shows response: This item cannot be returned. Please see our return policy or contact support.</li> </ol>
<b>Post-Conditions</b>	<p><b>If successful:</b></p> <ul style="list-style-type: none"> <li>The return request is recorded</li> <li>Status changed to “Return in Progress”</li> <li>Case allocated to Delivery Staff &amp; Inventory Manager</li> <li>Notification sent</li> <li>Refund or replacement after verification</li> </ul> <p><b>If unsuccessful:</b></p> <ul style="list-style-type: none"> <li>Return request not created</li> <li>Failures reported</li> <li>User is notified</li> </ul>
<b>Comments</b>	<ul style="list-style-type: none"> <li>Partial return options can benefit customers</li> <li>Return status updates build trust between business and consumer.</li> <li>Future: ability to upload pictures of damaged products</li> </ul>

## 4.5 UC10 – Track Order Status

**Author:** Salah Dawabeheh

<b>Use Case Title</b>	Track Order Status
<b>Description</b>	A customer tracks the status of a previously placed order. The system retrieves and displays the current order status (e.g., “Confirmed”, “Processing”, “Shipped”, “Out for Delivery”, “Delivered”, “Cancelled”) along with the latest available tracking update. The customer can access tracking through their order history or by using an order ID / reference.
<b>Actors</b>	<ul style="list-style-type: none"> <li>• <b>Primary Actor:</b> Customer</li> <li>• <b>Secondary Actors:</b> Order Management System, Delivery / Pickup Service (if applicable)</li> </ul>
<b>Data</b>	<ul style="list-style-type: none"> <li>• Customer account session</li> <li>• Order list (order history)</li> <li>• Order ID / order reference</li> <li>• Current order status</li> <li>• Delivery info</li> <li>• Tracking update / last status update time</li> <li>• Estimated delivery date / pickup readiness</li> </ul>
<b>Stimulus / Trigger</b>	The customer selects “Track Order Status” / selects an order from their order history, or enters an order ID to view its status.
<b>Pre-Conditions</b>	<ol style="list-style-type: none"> <li>1. Customer is authenticated and has an active session.</li> <li>2. Customer has at least one existing order stored in the system.</li> <li>3. The order tracking functionality is operational and can retrieve the latest order status.</li> <li>4. Order records are available in the database.</li> </ol>

<p><b>Workflow</b></p>	<ol style="list-style-type: none"> <li>1. Customer requests to view their order history.</li> <li>2. System displays the customer's previous orders.</li> <li>3. Customer selects a specific order to track.</li> <li>4. System retrieves the latest status information for the selected order from the Order Management System.</li> <li>5. System displays the current order status and the latest available tracking update (and ETA / pickup readiness if available).</li> </ol> <p><b>Alternative Flow 1 – Tracking Using Order ID / Reference</b></p> <ol style="list-style-type: none"> <li>1. Customer provides an order ID / order reference (from a previous confirmation or receipt).</li> <li>2. System validates the order ID format.</li> <li>3. System searches for the order and verifies it belongs to the customer.</li> <li>4. System retrieves the latest status for the order.</li> <li>5. System displays the current order status and tracking updates.</li> </ol> <p><b>Alternative Flow 2 – Tracking Another Order</b></p> <ol style="list-style-type: none"> <li>1. After viewing one order status, the customer selects another order to track.</li> <li>2. System retrieves the latest status information for the newly selected order.</li> <li>3. System displays the updated order status and tracking update.</li> </ol> <p><b>Error Flows:</b></p> <p><b>EF1 – Order Not Found / Not Authorized:</b></p> <ol style="list-style-type: none"> <li>1. Customer selects an order or provides an order ID.</li> <li>2. System cannot find a matching order for this customer (invalid ID or belongs to another user).</li> <li>3. System displays: “Order not found or you do not have access to this order.”</li> </ol> <p><b>EF2 – Tracking Service Unavailable:</b></p> <ol style="list-style-type: none"> <li>1. Customer selects an order to track.</li> <li>2. System fails to retrieve order status due to timeout / database connection issue / service unavailability.</li> <li>3. System displays: “Unable to retrieve order information at this time. Please try again later.”</li> </ol>
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<b>Post-Conditions / Response</b>	<ul style="list-style-type: none"> <li>• If successful:           <ul style="list-style-type: none"> <li>– Customer views the current order status and latest tracking update.</li> <li>– No order data is modified.</li> </ul> </li> <li>• If unsuccessful:           <ul style="list-style-type: none"> <li>– An appropriate error message is displayed.</li> <li>– No sensitive order data is revealed.</li> </ul> </li> </ul>
<b>Comments</b>	<ul style="list-style-type: none"> <li>• Only the owner of the order can track its status.</li> <li>• Order status is read-only in this use case.</li> <li>• Tracking details (e.g., ETA / pickup readiness) depend on the availability of fulfillment updates.</li> </ul>

## 5. Task: Activity Modelling

**Lead:** Jana Sawalmeh

**Contributors:** Salah Dawabsheh (modelling), Osaid Nur (validation), Mumen Anbar (design), Waleed Rimawi (reviewing)

**Activity Diagram (Link):** Open the Main Activity Diagram

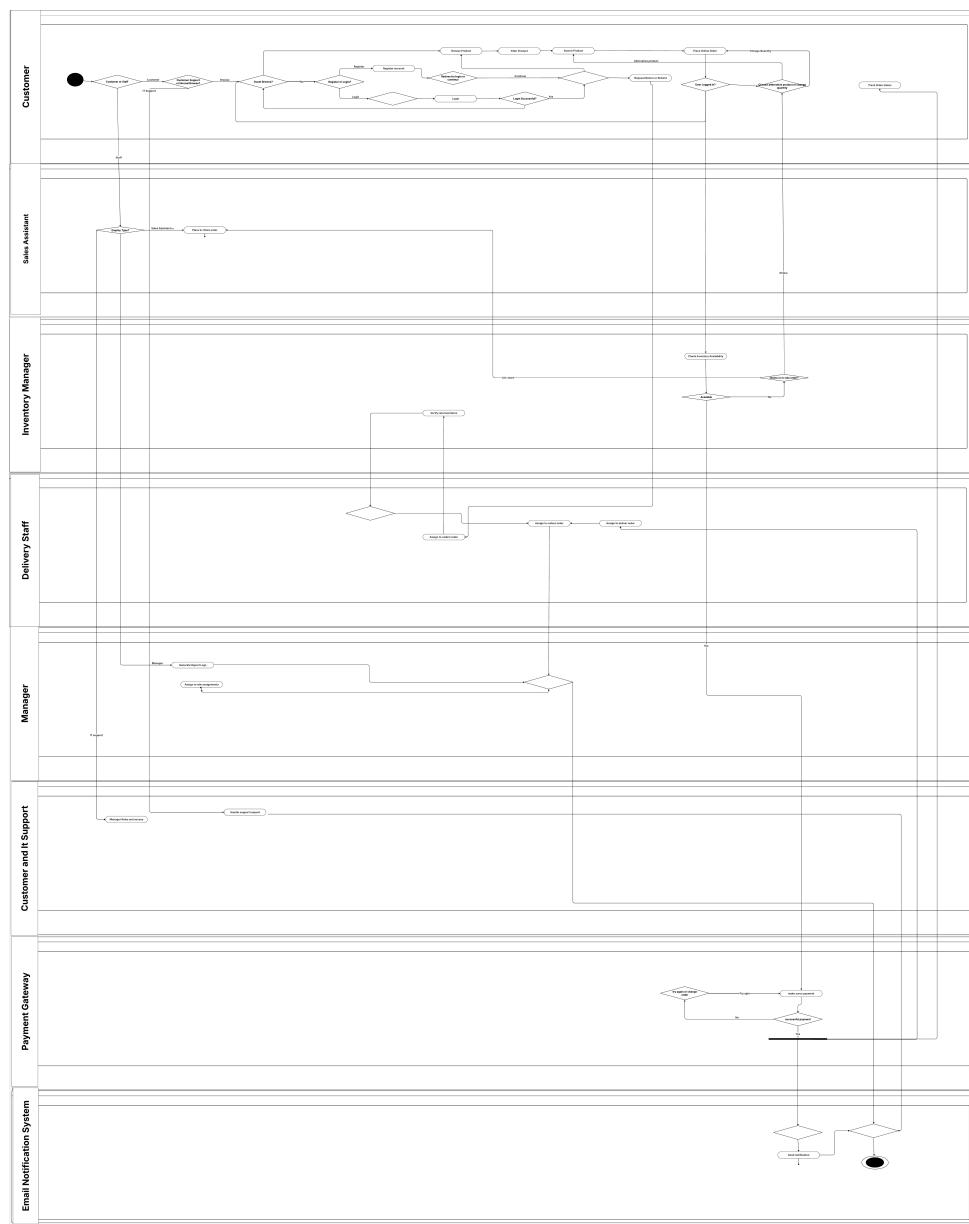


Figure 2: Group Activity Diagram for Use Case Integration

## 6. Task: Instance Activity diagrams

### 6.1 UC01 – Browse Coffee Beans (Jana Sawalmeh)

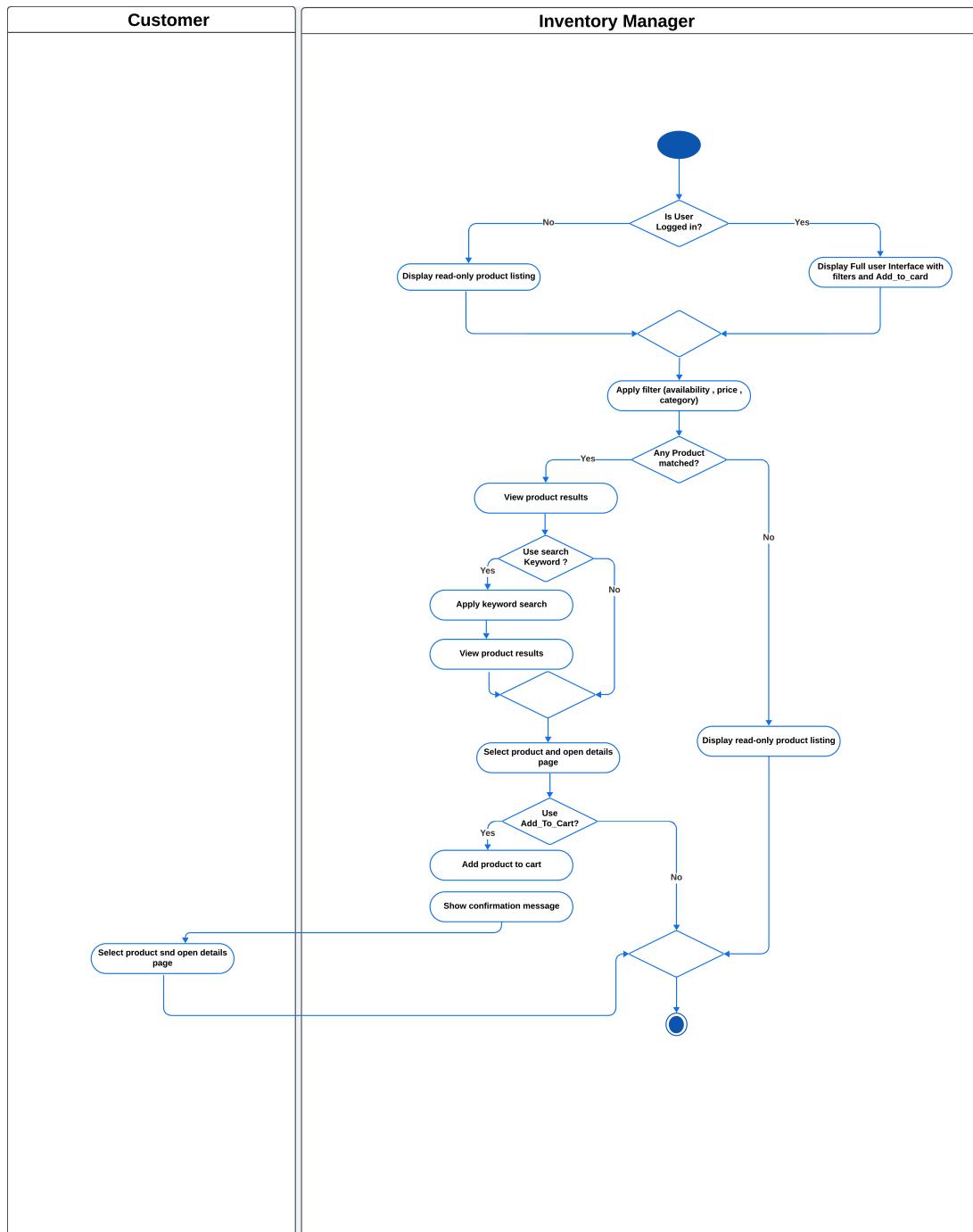


Figure 3: Activity Diagram for UC01 – Browse Coffee Beans

## 6.2 UC04 – Place an Order (Osaid Nur)

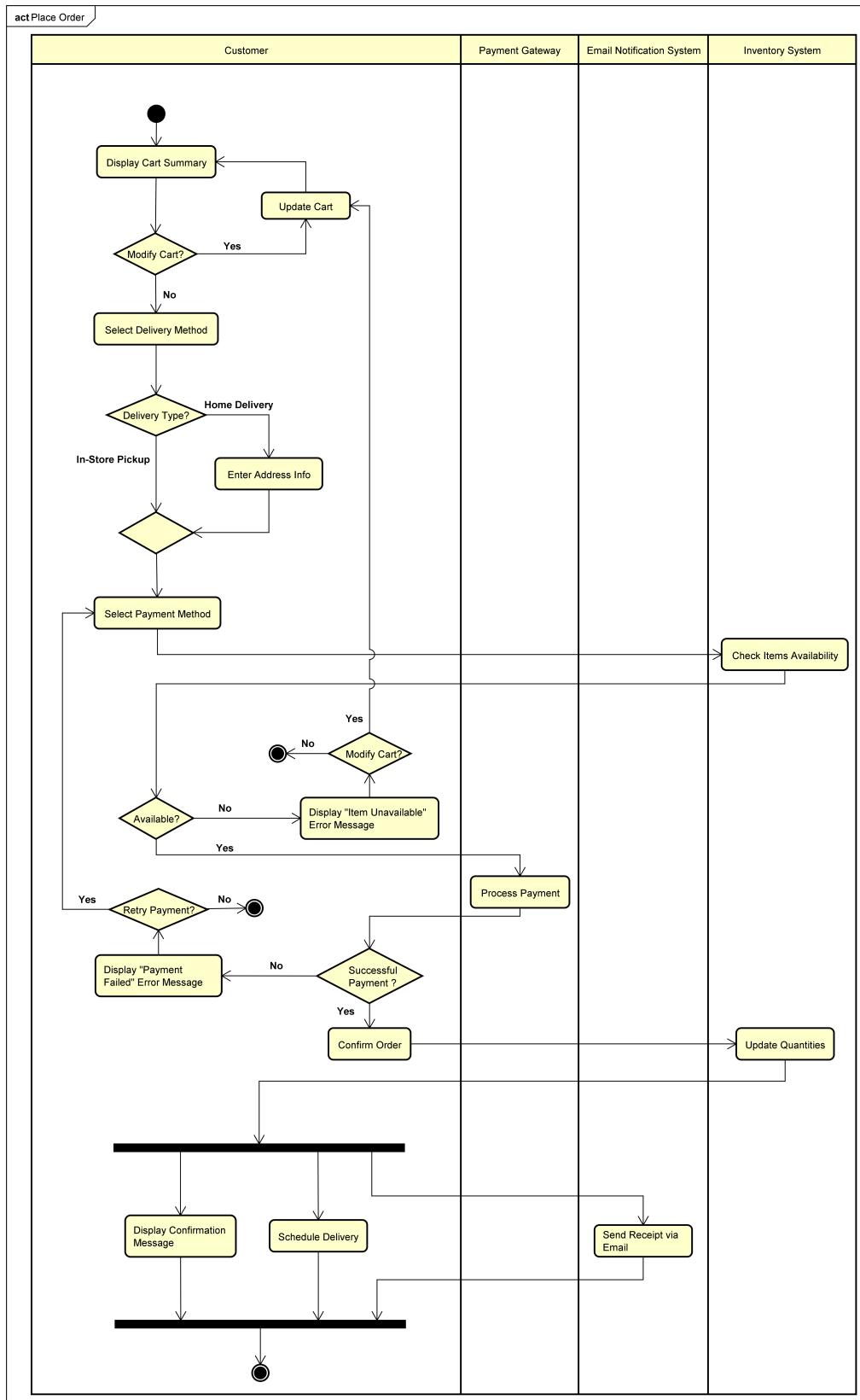


Figure 4: Activity Diagram for UC06 – Place an Order

### 6.3 UC05 – Register Account (Mumen Anbar)

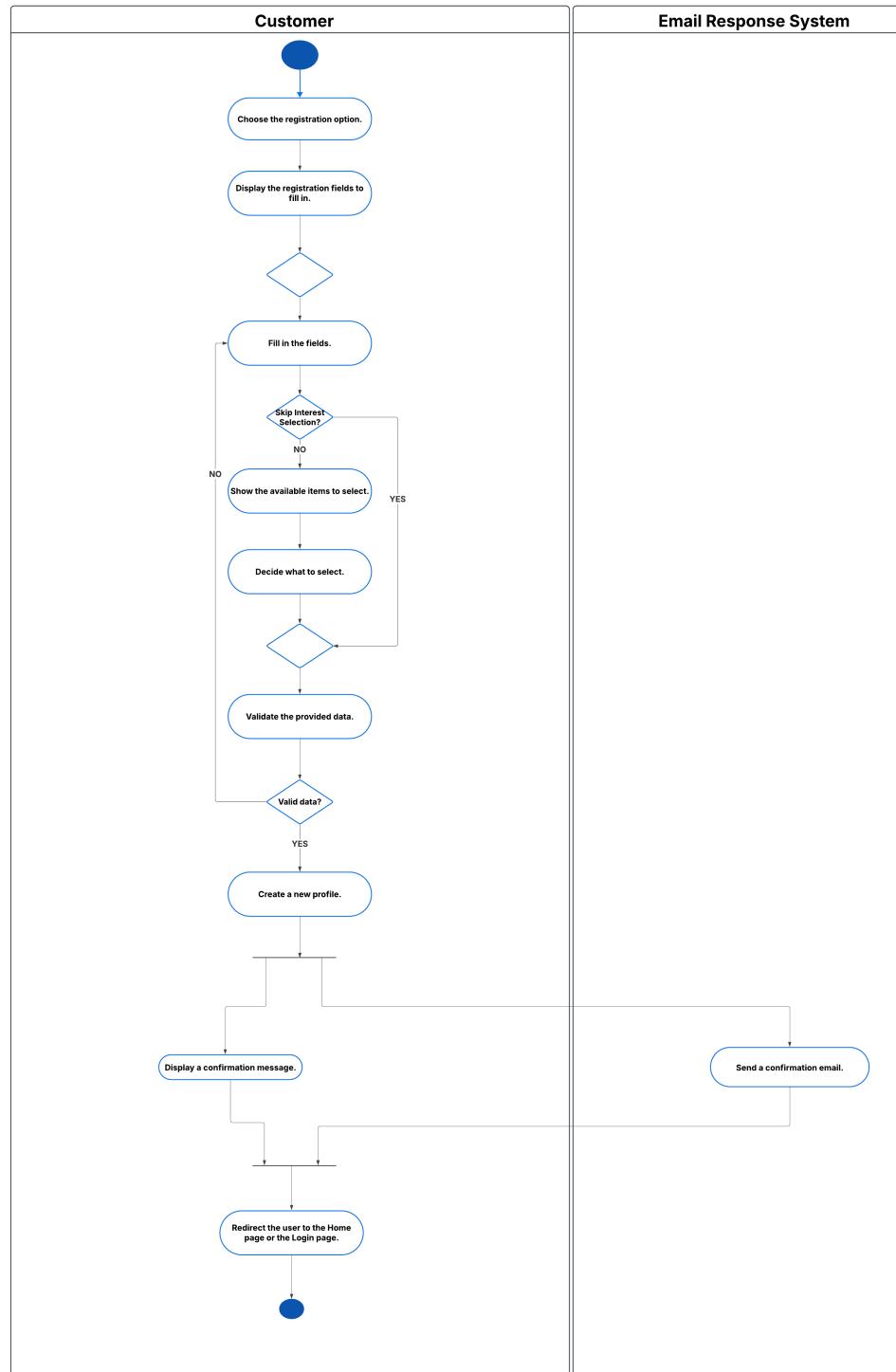


Figure 5: Activity Diagram for UC14 – Register Account

## 6.4 UC09 – Request Return or Refund (Waleed Rimawi)

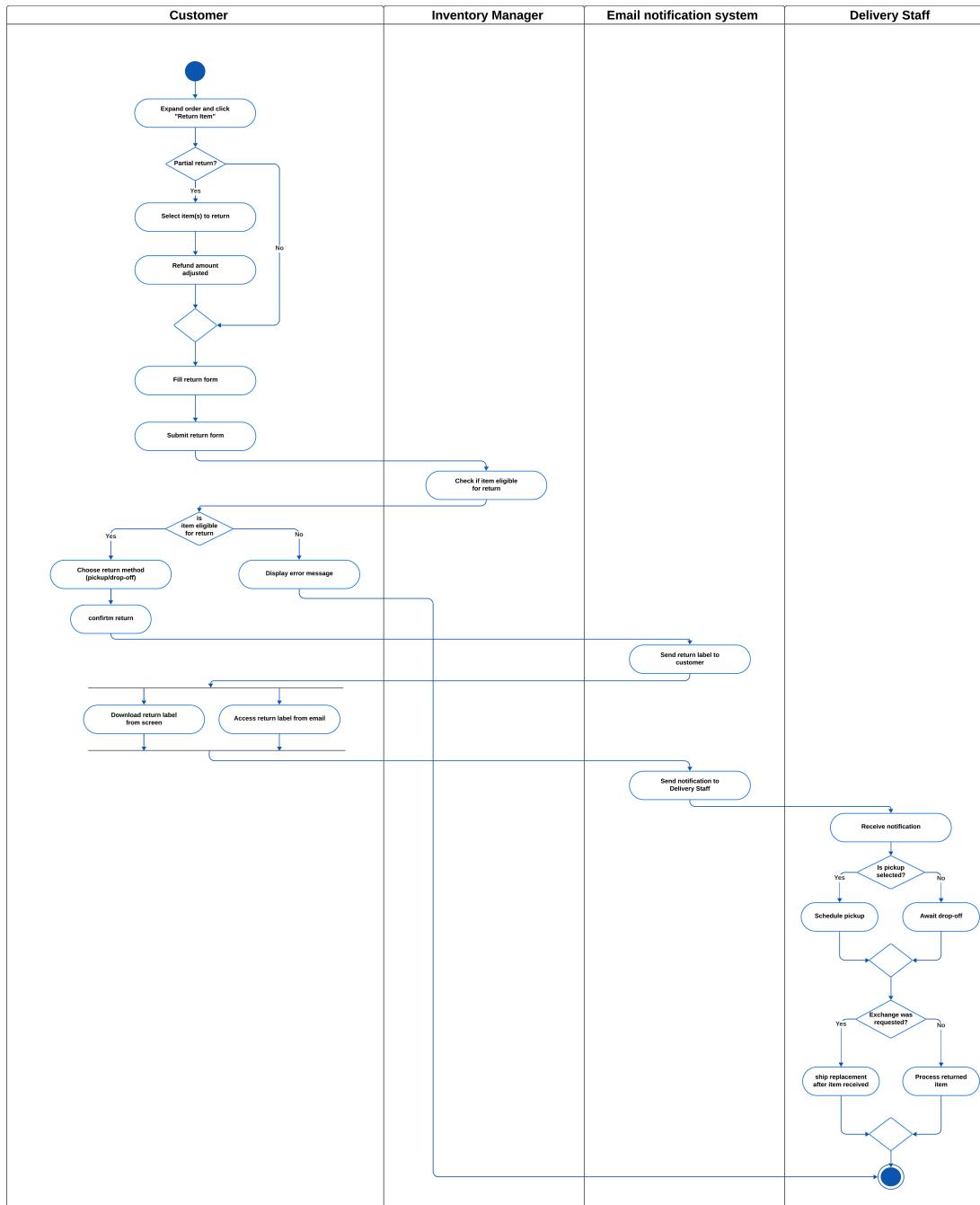


Figure 6: Activity Diagram for UC23 – Request Return or Refund

## 6.5 UC10 – Track Order Status (Salah Dawabsheh)

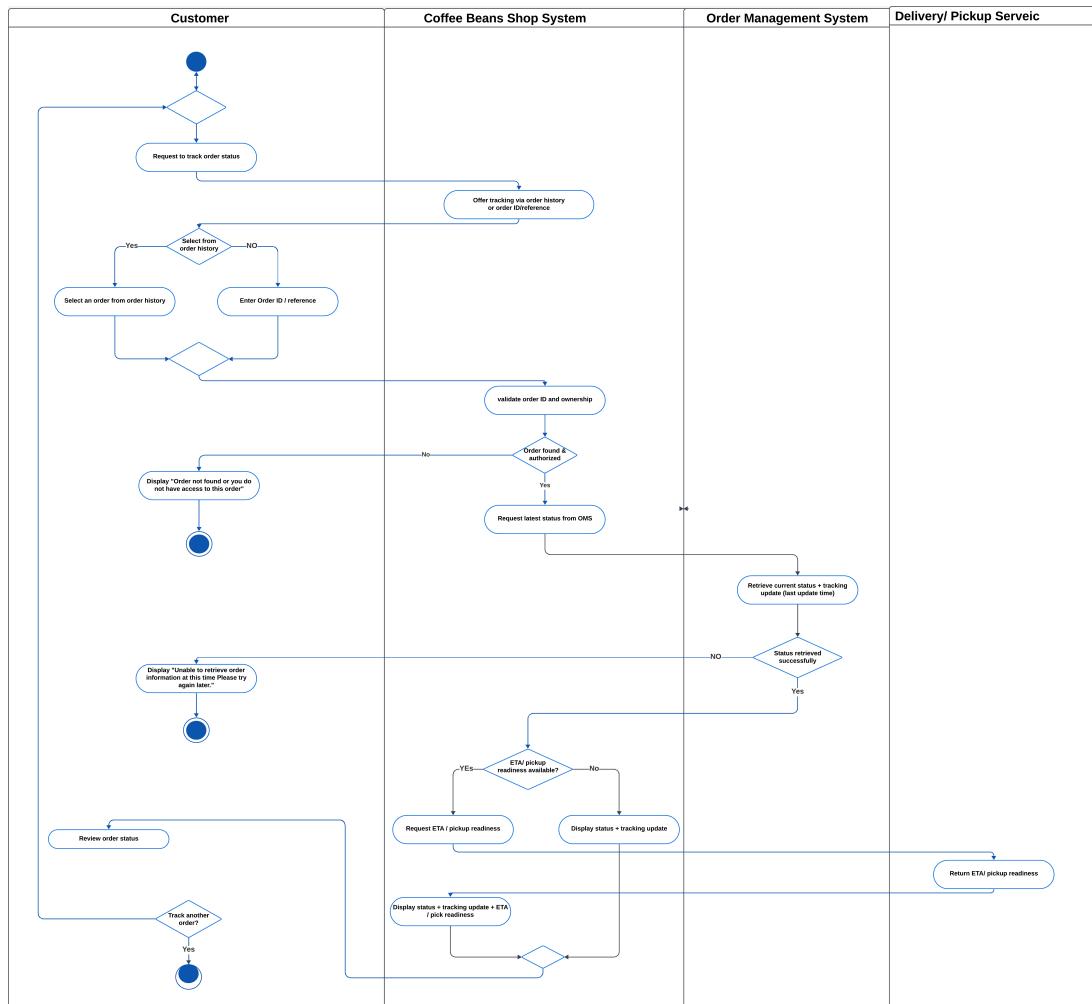


Figure 7: Activity Diagram for UC24 – Track Order Status