



Department of Software Engineering

**SE 321/SE 305 - Software Specification and Design
FALL 2025**

Mid-Progress Report

Project Section and Number: Section #2 - Number #6

Project Name: Loomera

Date: 14.11.2025

1. Project Members and Student IDs

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2. Project Proposal

Problem Definition

The client currently manages communication with customers and product sales manually, which causes inefficiencies and miscommunication. Customers have limited access to product information such as prices, available stock, and new arrivals. Additionally, the client faces difficulties in tracking orders, updating customers about stock status, and maintaining a consistent sales channel. There is a clear need for a digital solution that simplifies customer interaction and centralizes product management.

Background Information

In today's competitive textile industry, efficient communication and transparency in product availability are crucial for success. Many clothing suppliers and manufacturers are transitioning to mobile-based systems to better connect with their customers and streamline business operations. Our client, who collaborates with factories to sell clothing items, seeks to modernize his sales and communication processes through a user-friendly mobile application. This system will act as a bridge between the client and customers, allowing instant updates on inventory and product details while supporting direct communication and order placement.

Objectives

- To design and develop a mobile application that enables 10-20 registered customers to browse and search through over 5,000 clothing products, including shirts, t-shirts, and other items.
- To provide real-time price and stock information for each product, automatically updated every 5-10 minutes from the inventory database.

- To allow direct communication between the client and customers through the messaging section for orders, feedback, and questions within an average response time of under 2 hours.
- To build an admin panel for the client to manage products, stock updates, and pricing easily.
- To improve customer satisfaction and sales efficiency by offering a modern, accessible, and transparent platform.
- To ensure the system can handle at least 100 simultaneous product views without performance issues.

3. Client Information

- **Client Name:** Umut Can Erduran
- **Company:** Erduran Co

4. Client Meeting Photo



5. System Requirements

5.1. Functional Requirements:

- 1.** The system shall allow customers to register for a new account and log in to their existing account.
- 2.** The system must provide a “reset password” feature for the users to renew their passwords.
- 3.** The application must provide search functionality allowing users to find specific products. This should include searching by name or category (e.g., "shirts," "t-shirts").
- 4.** Users must be able to scroll through a catalog of all available clothing products.
- 5.** Users must be able to select a product from the catalog to view its detailed information, including its price and available stock quantity.
- 6.** The system must include a messaging section where a customer can initiate and conduct a conversation with the client for inquiries about orders, feedback, or questions.
- 7.** The system shall allow a registered customer to add products to a shopping cart and complete the checkout process to formally place an order.
- 8.** Customers must be able to view their order history and track the real-time status of their active orders (e.g., 'Processing,' 'Shipped,' 'Delivered'), including logistics information.
- 9.** The system shall provide a login feature for our client to access the admin panel.
- 10.** Our client must be able to add, edit, and remove products from the catalog, including managing their details (name, description), price, and stock quantities, all through the admin panel.

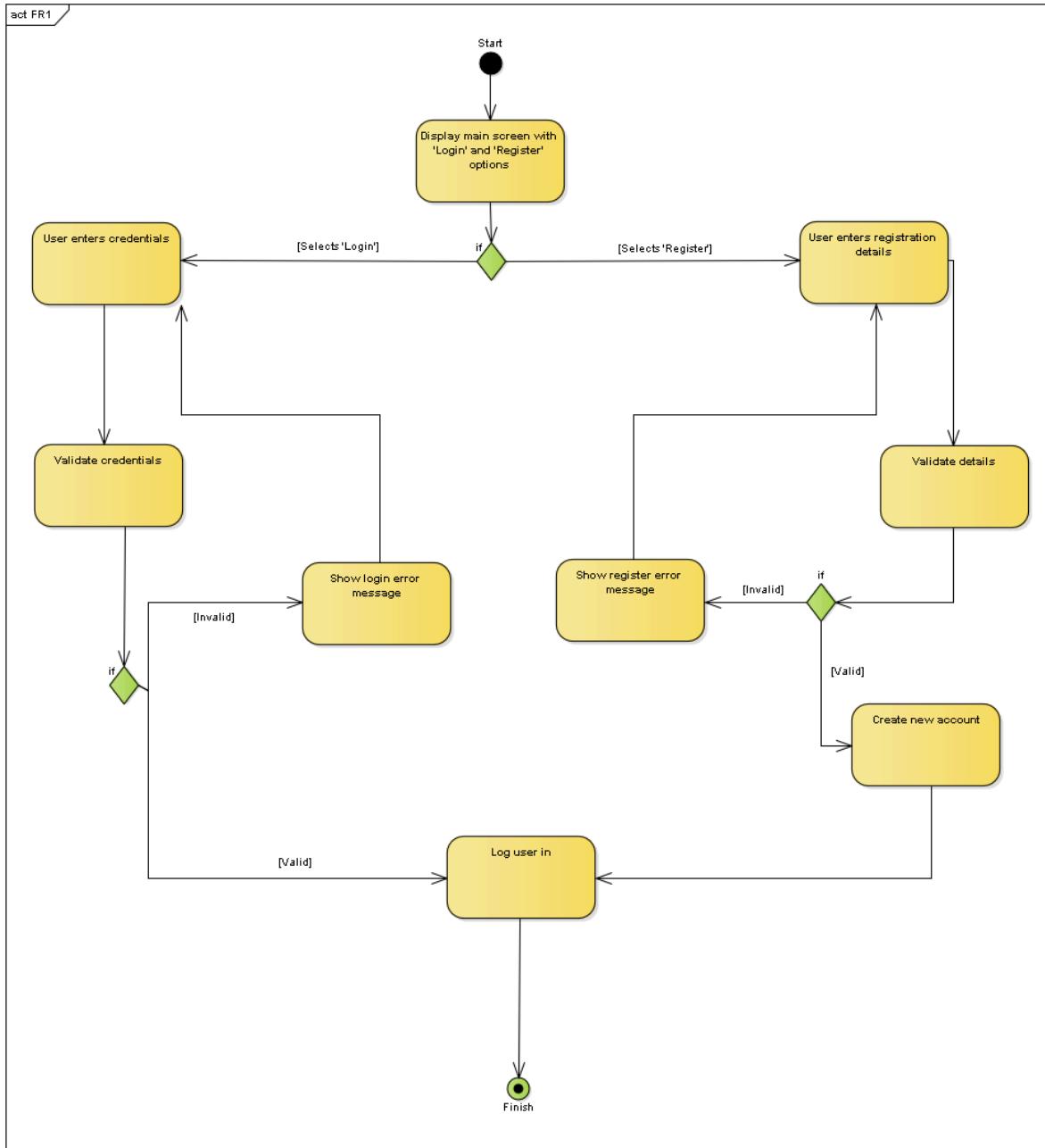
- 11.** Our client must be able to view all incoming customer orders, process them, and update their status (e.g., mark as 'shipped' and provide tracking details).
- 12.** Our client must be able to receive, view, and respond to customer messages within the admin panel.

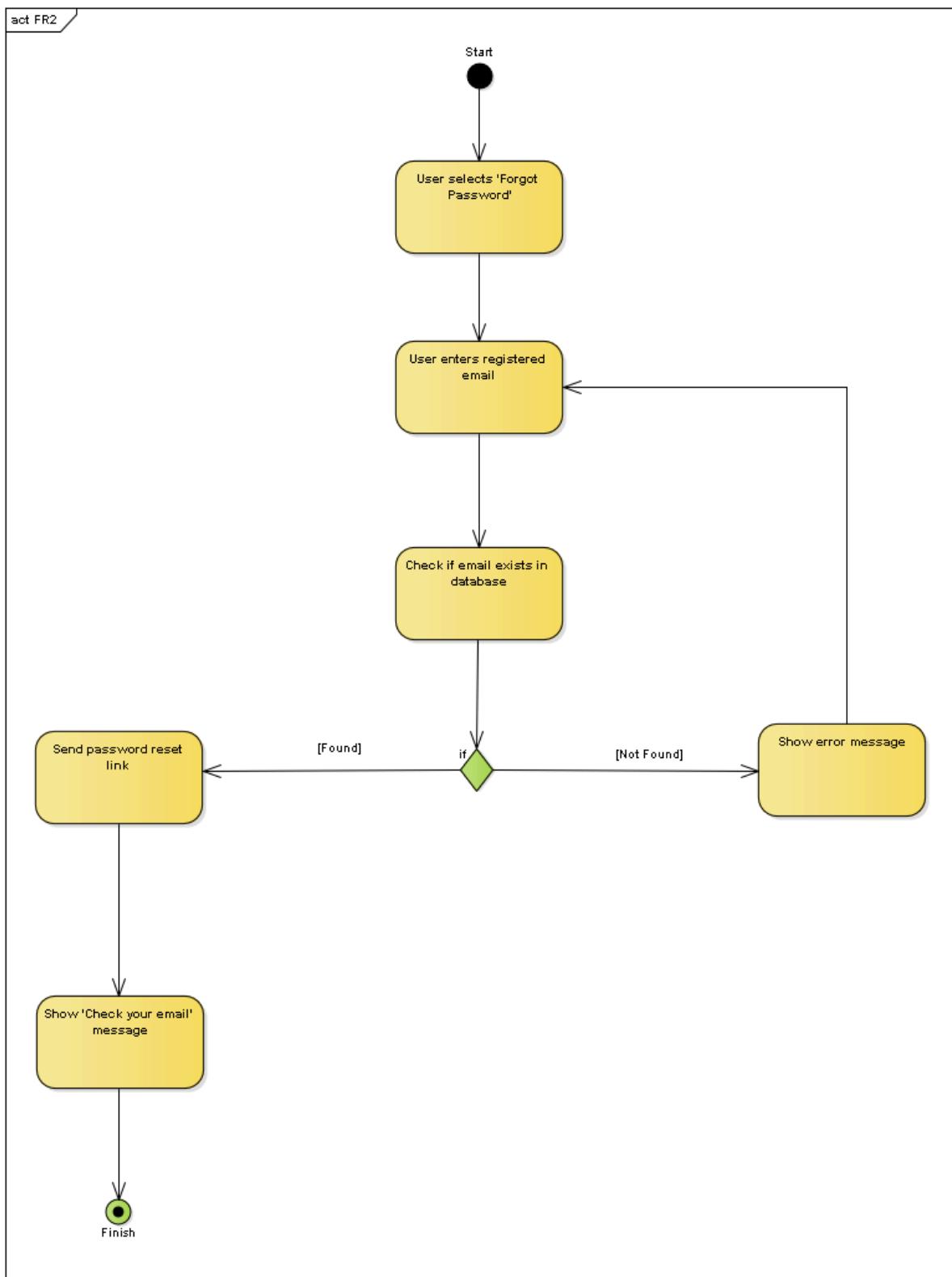
5.2. Non-Functional Requirements:

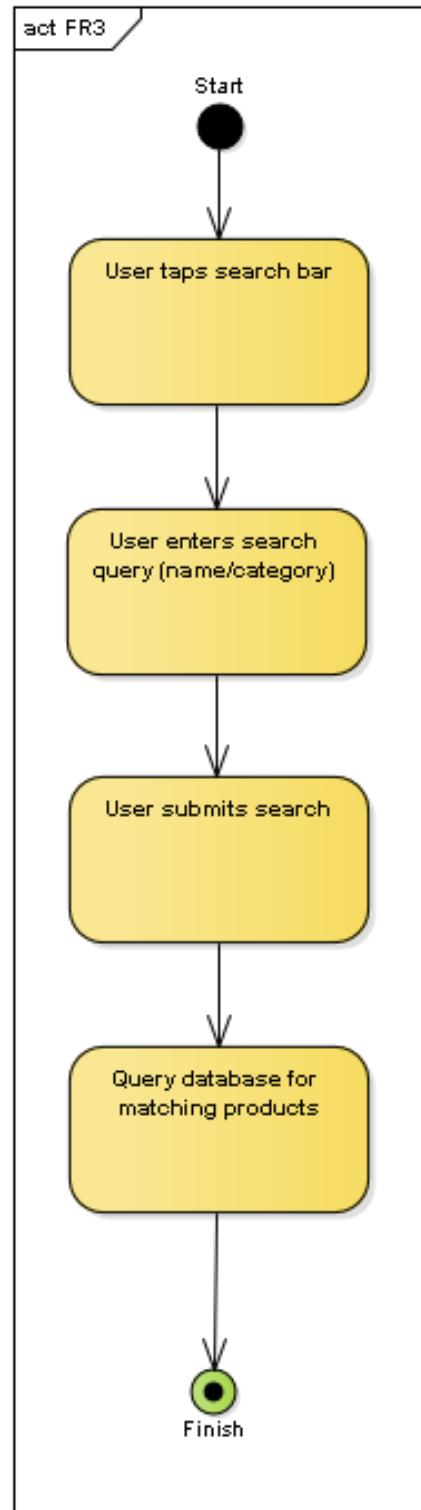
- 1.** The system must be able to support at least 100 users viewing products simultaneously (the number will be increased when our client has new customers) without any noticeable lag or performance degradation. Page load times for the product catalog should be under 3 seconds.
- 2.** The price and stock information displayed to customers in the app must be updated automatically from the inventory database every 5 to 10 minutes.
- 3.** The system shall limit API requests to ensure system stability and prevent abuse. A single IP address cannot make more than 100 requests per minute to the product catalog API.
- 4.** The mobile application must be fully functional and display correctly on devices running iOS 16+ and Android 13+.
- 5.** The system must deliver new messages from customers to the client's admin panel instantly (e.g., with push notifications) to support our client in achieving an average response time of under 2 hours.

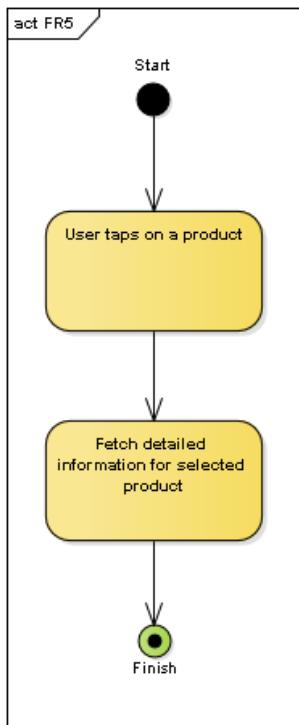
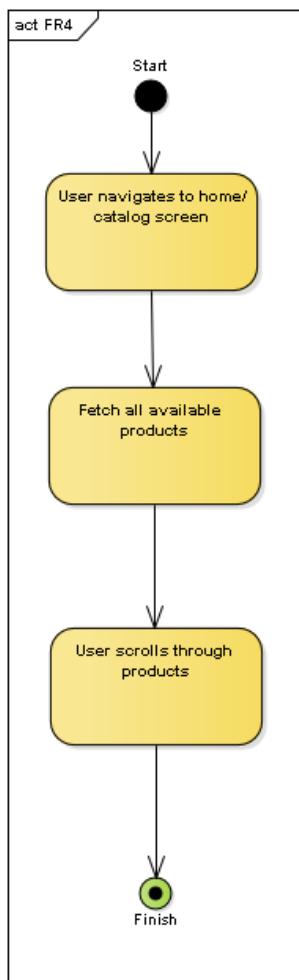
6. UML Diagrams

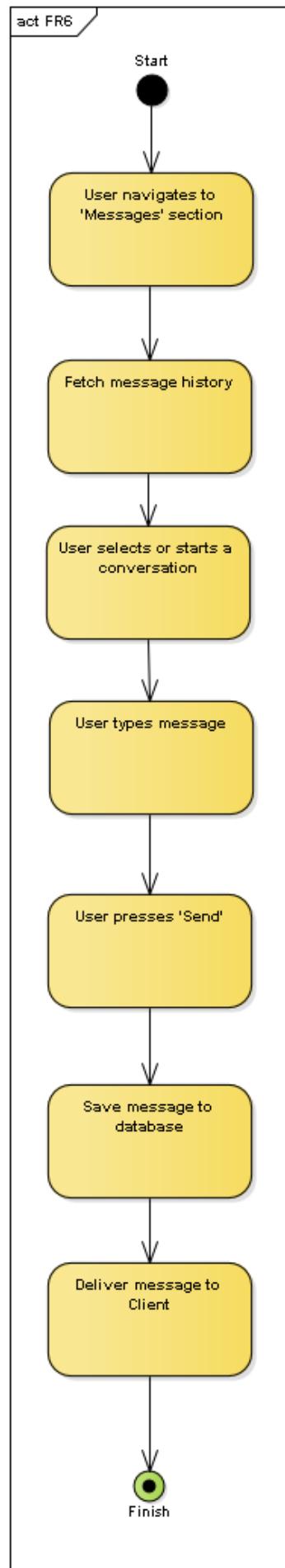
6.1 Activity Diagrams

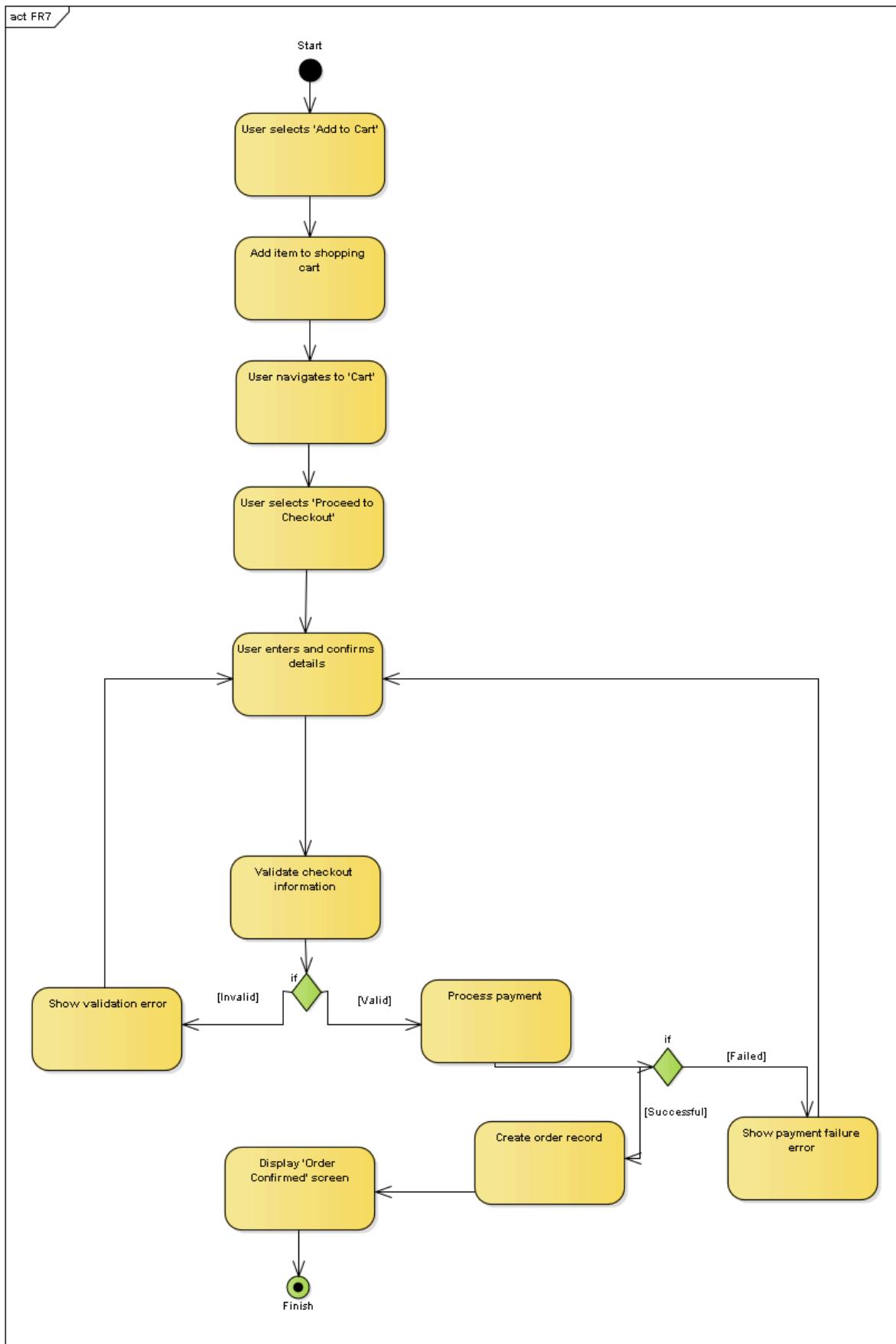


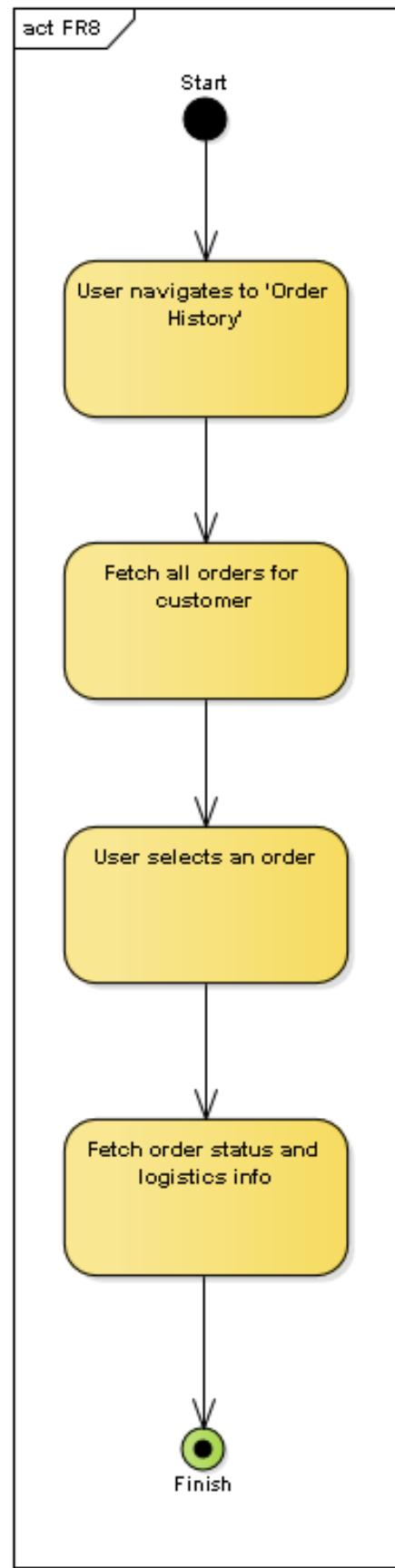


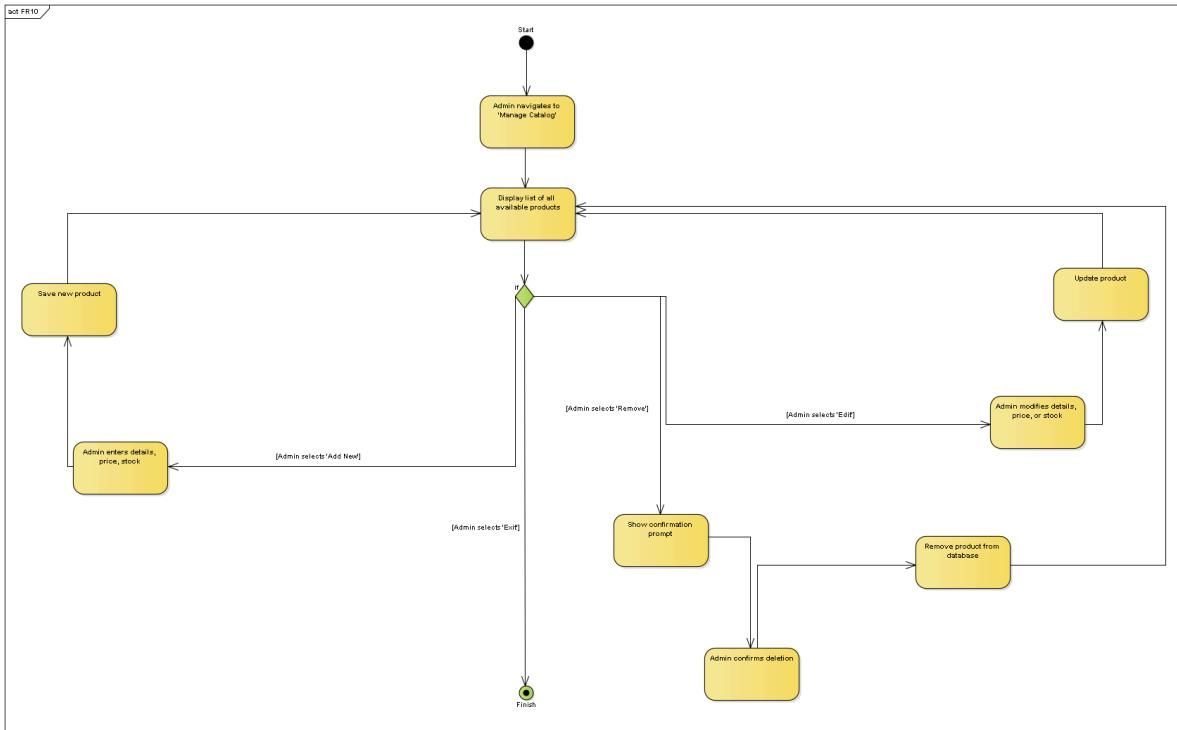
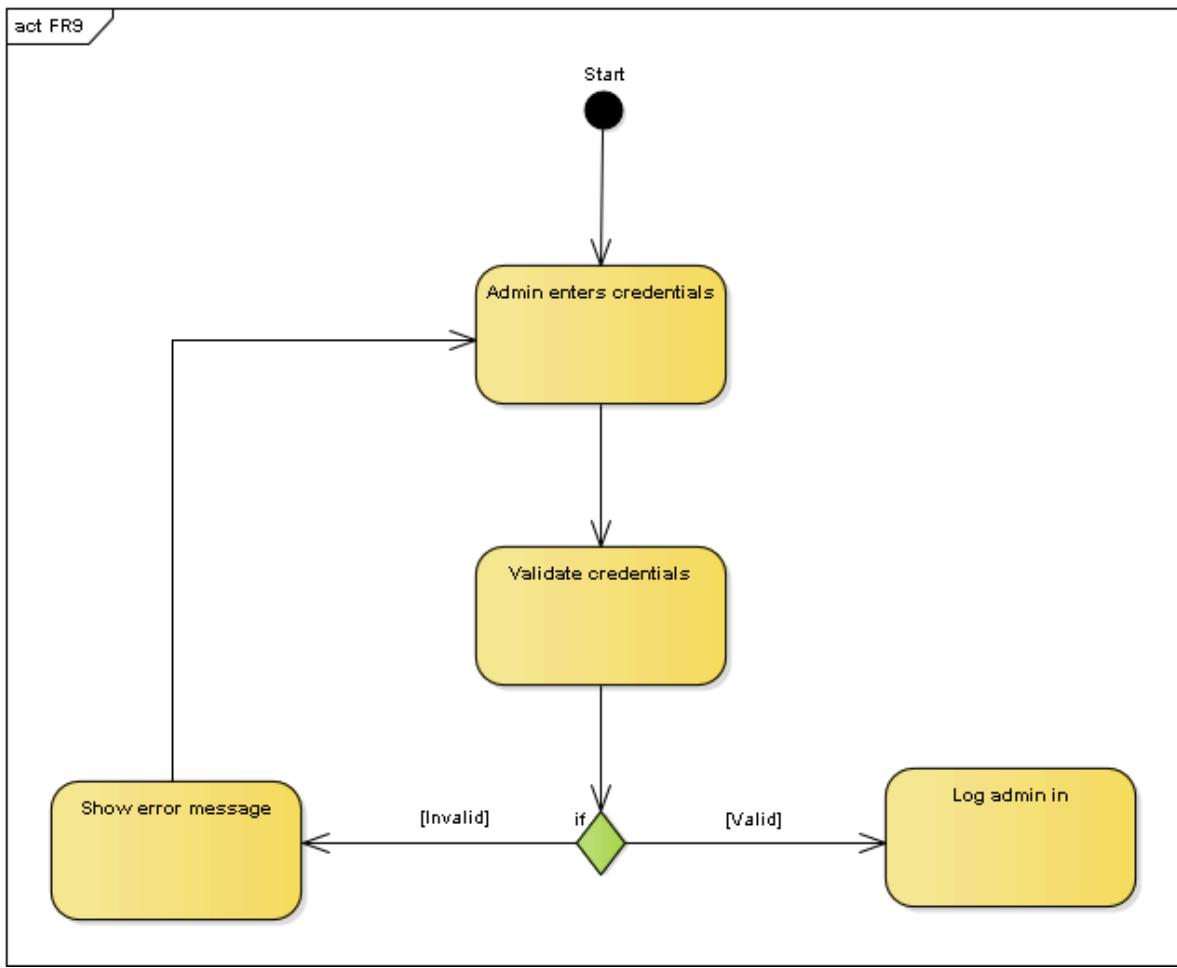


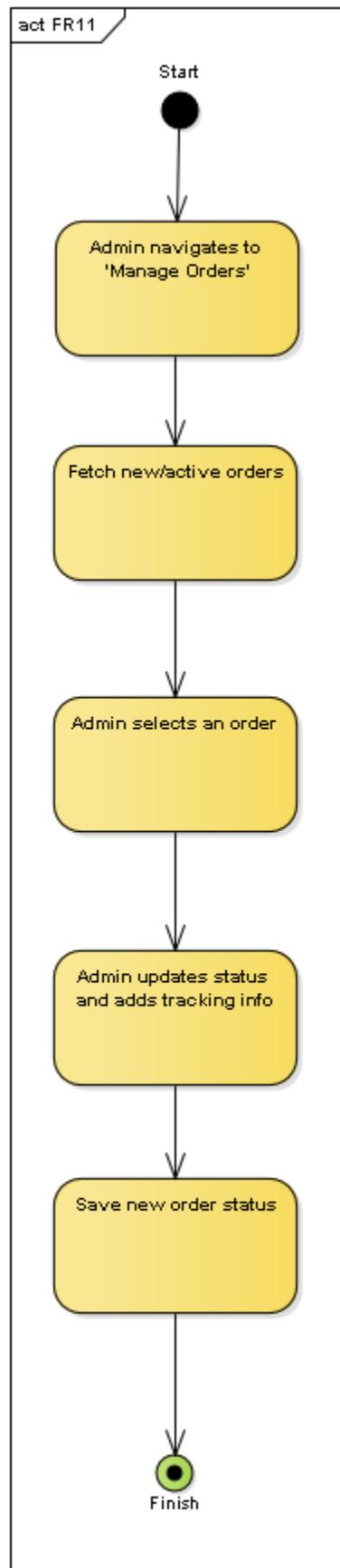


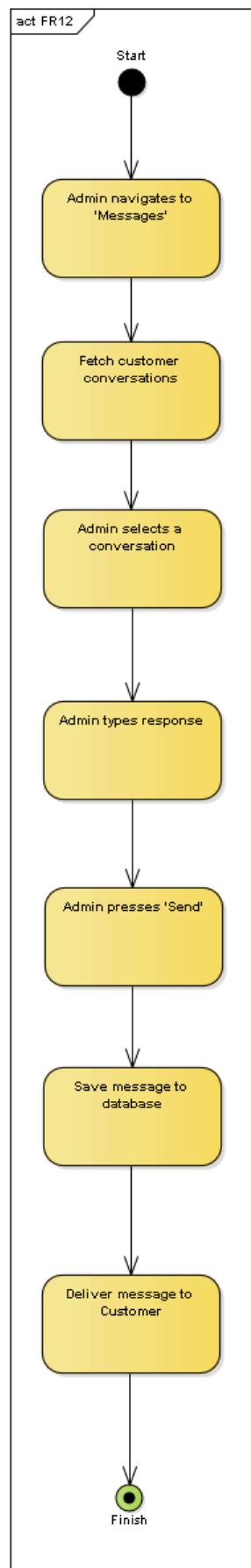




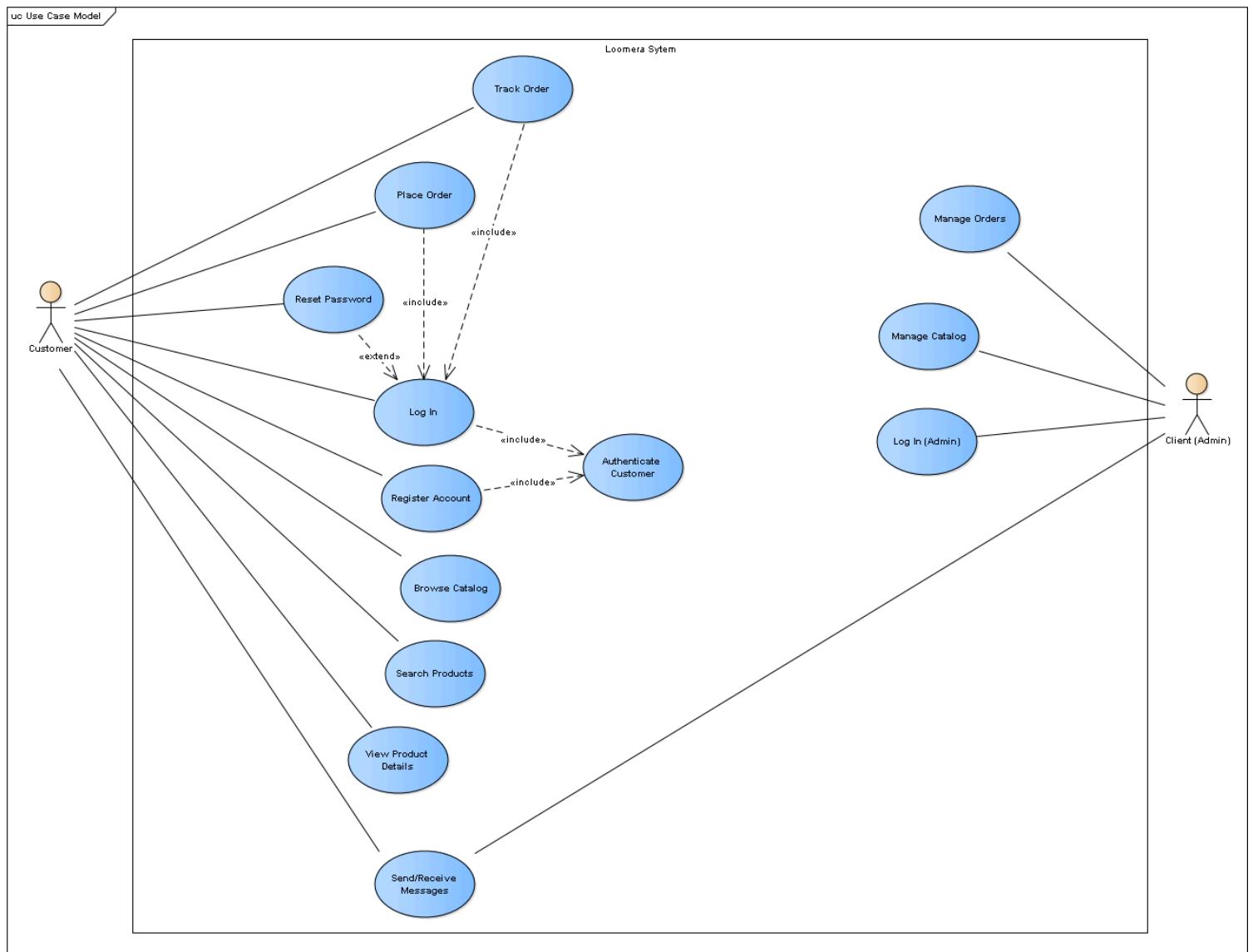




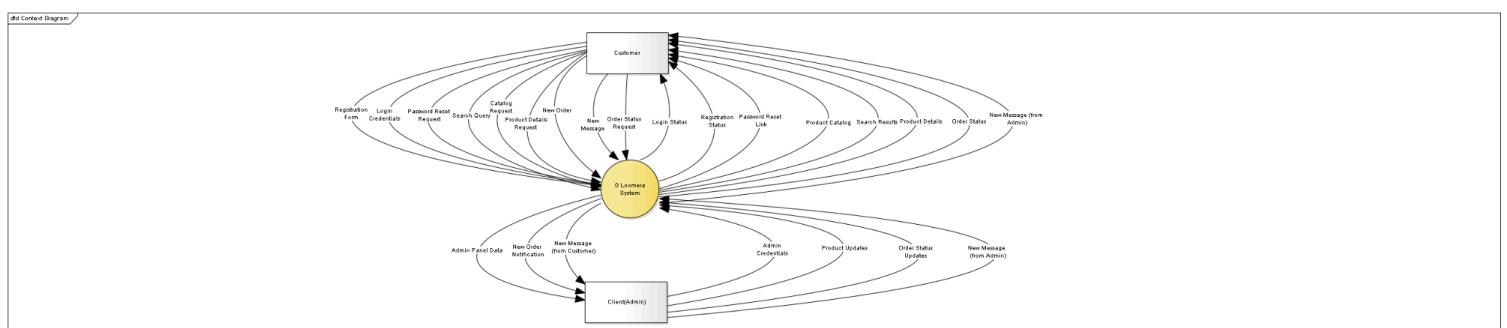




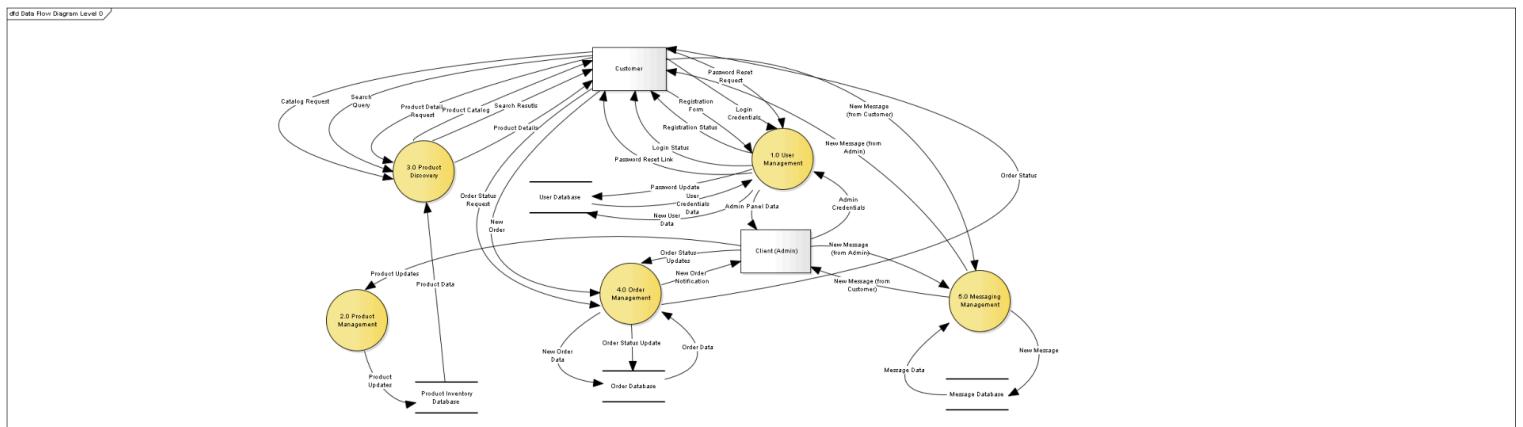
6.2 Use Case Diagram



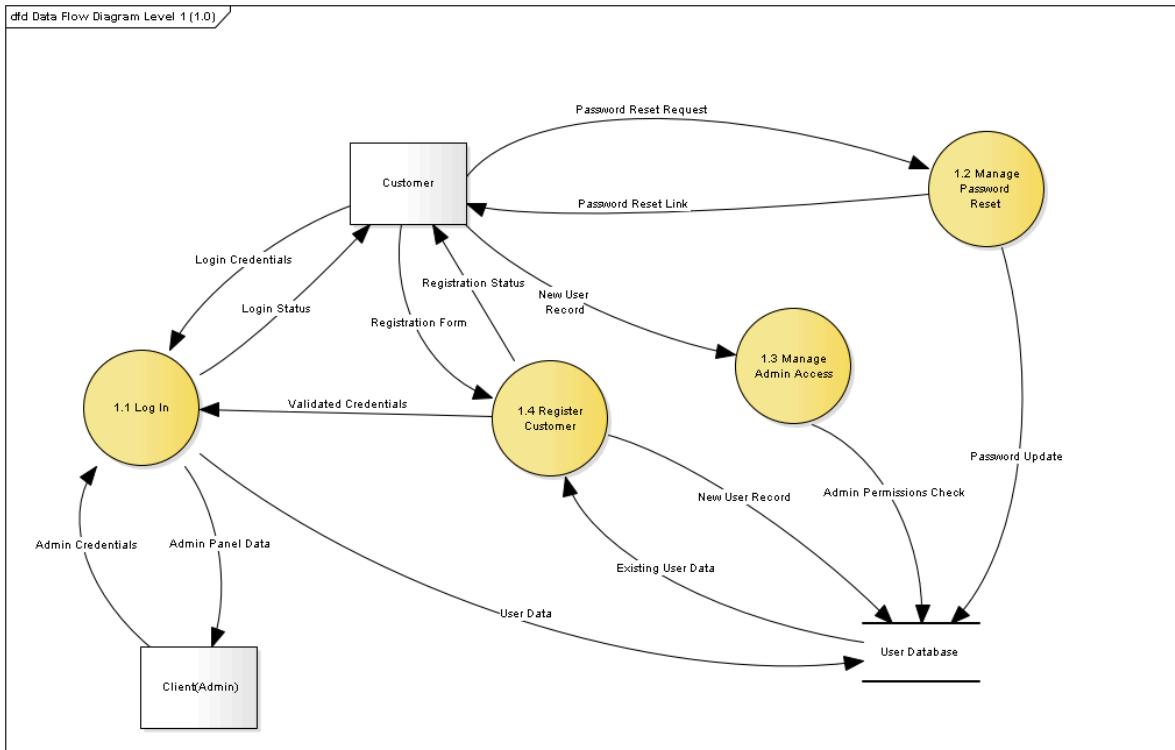
6.3 Context Diagram

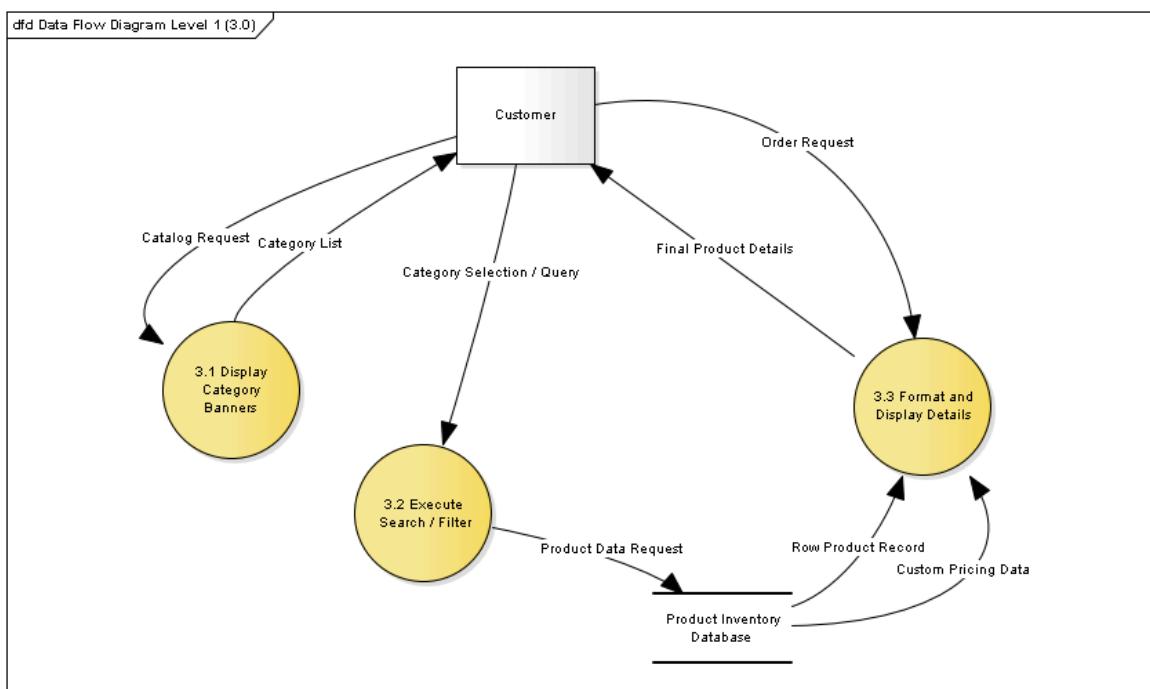
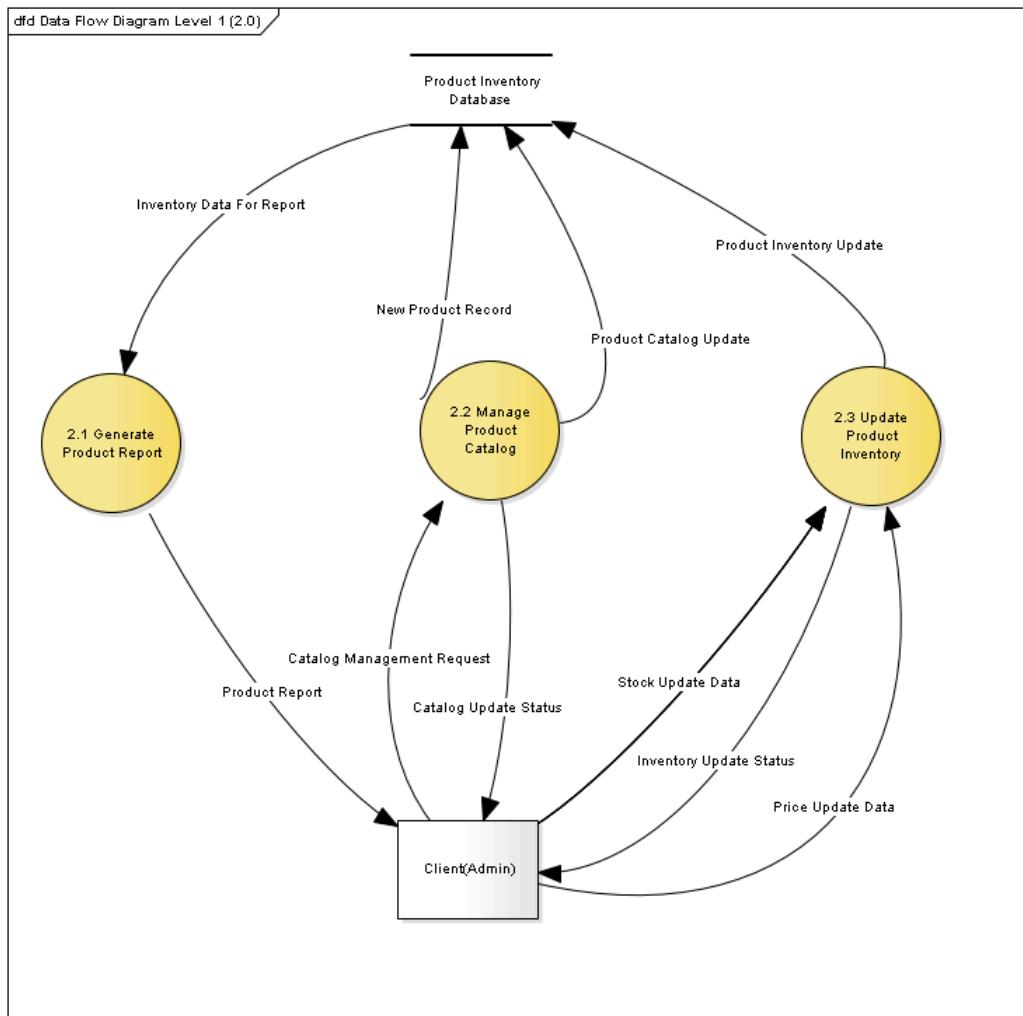


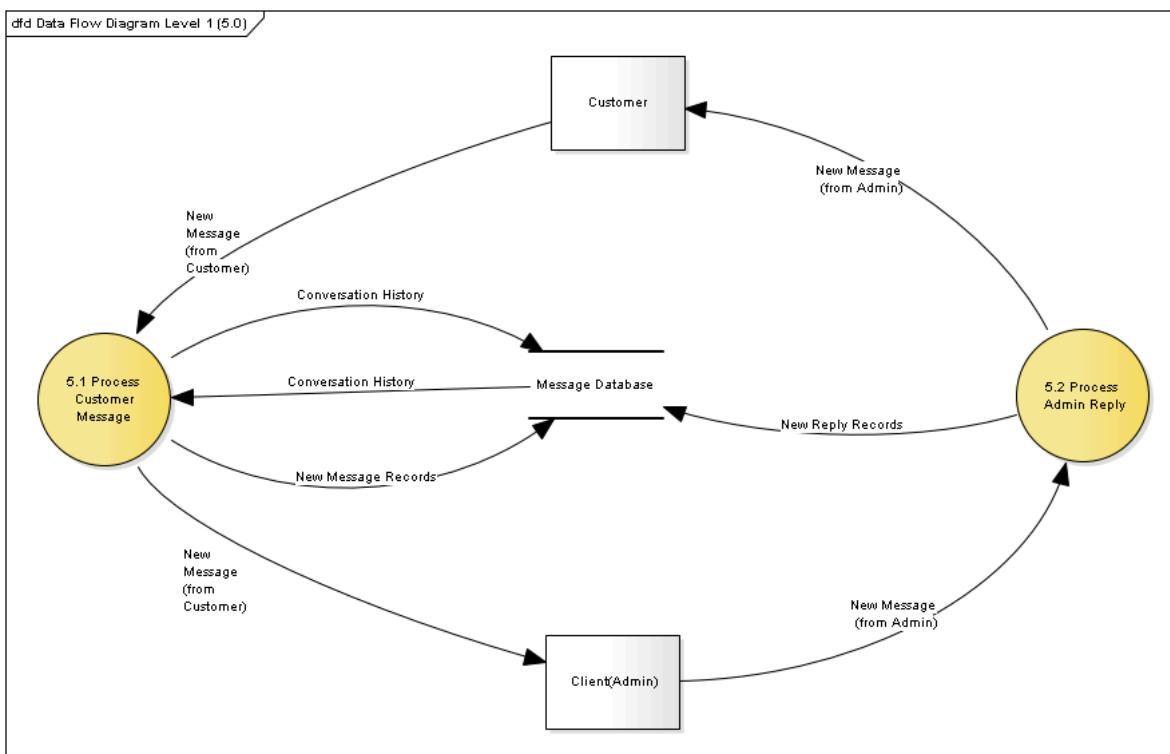
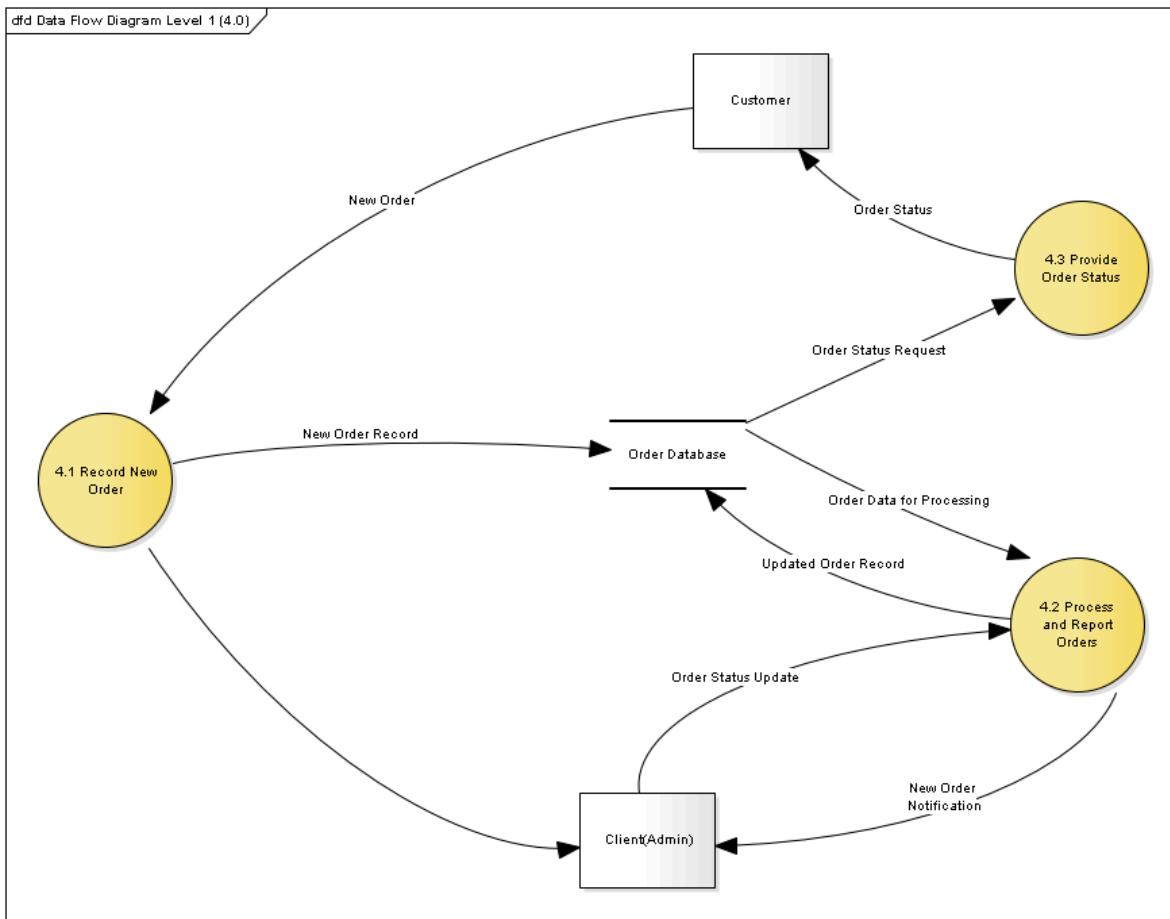
6.4 DFD Level 0



6.5 DFD Level 1







7. Current Status

We have completed the Analysis and System Modeling phase of the "Loomera" project. This mid-progress report contains our work to date, including the Project Proposal and the complete set of system analysis models (Use Case Diagram, Activity Diagrams, Context Diagram, and Data Flow Diagrams).

With the system analysis and modeling complete, we are planning to move on to the UI/UX design of the application. Our focus will be on designing the user interface and user experience for the application. This will allow us to deliver a complete visual design that is directly based on the functional requirements and system flows defined in this report.