

Software Requirement Specification



SUPERMARKET MANAGEMENT SYSTEM

Project Partners

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Group Details:

Group number: 4

Section: B

Subject: Software Engineering

Subject Code: ESC591

PURPOSE:

Supermarket automation software is designed to streamline operations, improve efficiency, and enhance customer satisfaction. It manages inventory levels, automates the checkout process, tracks customer data for personalized offers, streamlines employee scheduling, and provides valuable analytics.

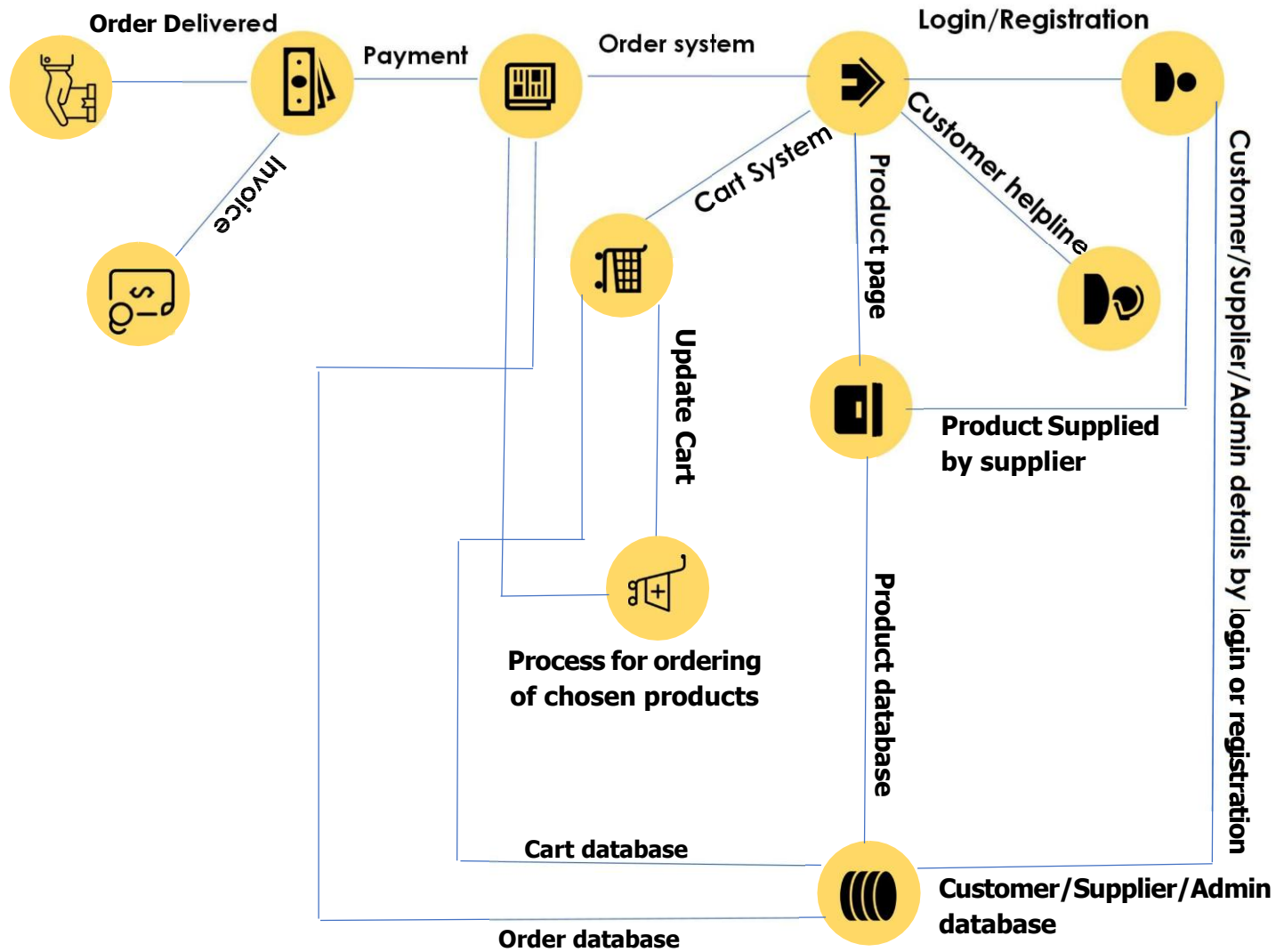
Additionally, it helps manage the supply chain, ensuring timely delivery of products. By automating various tasks, supermarkets can reduce costs, improve accuracy, and provide a better overall shopping experience.

PROJECT INTRODUCTION: SUPERMARKET AUTOMATION SOFTWARE:

This project aims to develop a comprehensive software solution to automate various operations in a supermarket. By leveraging advanced technologies, the software will streamline inventory management, optimize point-of-sale processes, enhance customer experience, and improve overall operational efficiency. The goal is to create a user-friendly and scalable system that meets the specific needs of modern supermarkets.

OBJECTIVES:

- Enhance customer experience by reducing order processing time and errors.
- Automate inventory management to prevent shortages or excess stock, including sending alerts when stock levels are insufficient.
- Streamline communication between staff and manager for better coordination.
- Provide real-time data analytics to improve decision-making.
- Processing customer orders.
- Generating bills.
- Managing accounting activities including monthly sales and profit reports.
- Allowing the admin to modify prices, add new items, and manage stock.



PRODUCT OVERVIEW

FUNCTIONAL REQUIREMENTS:

1. Product management

- a. There will be a well-managed and product section for the users to order.
- b. The product stock must be kept updated and a regular track must be kept.
- c. The admin will be allowed to add, remove or modify the products.

2. Cart management

- a. There will be a well-managed cart system to track the orders of a customer.
- b. The user will be able to modify the orders as per wish before placing the order.

3. Invoice System

- a. The system will generate a proper invoice based on the items ordered.
- b. The invoice will contain every details according to the order.

4. Payment system

- a. There will be multiple supported payment methods (card, cash etc.).
- b. There will be tax and service charges.
- c. Coupons and offers will be applied.

5. Sales and Profit Loss Reporting System

- a. The system will generate sales reports based on the activities.
- b. The system shall calculate the profit based on sales and expenses.

6. Admin Panel

- a. The admin shall be able to modify the price of menu items at any time.
- b. The admin shall be able to add new menu items with prices and other details.
- c. The admin shall be able to review stock levels, order history, and sales performance reports.

NON-FUNCTIONAL REQUIREMENTS

i) Performance

The system handles up to 100 concurrent transactions without any performance degradation.

Response time won't exceed 2 seconds for basic operations.

ii) Security

Role-based access control to prevent unauthorized access.

All sensitive data such as payment details are encrypted.

Daily backups of the system to ensure data recovery.

iii) Usability

Customer-facing screens at the point of sale displays clear information.

iv) Reliability and Availability

The system is available 99.9% of the time during business hours.

The system recovers from failures without data loss.

v) Scalability

The system is scalable to handle future growth in product range, number of users, and transaction volumes.

DATA FLOW DIAGRAM:

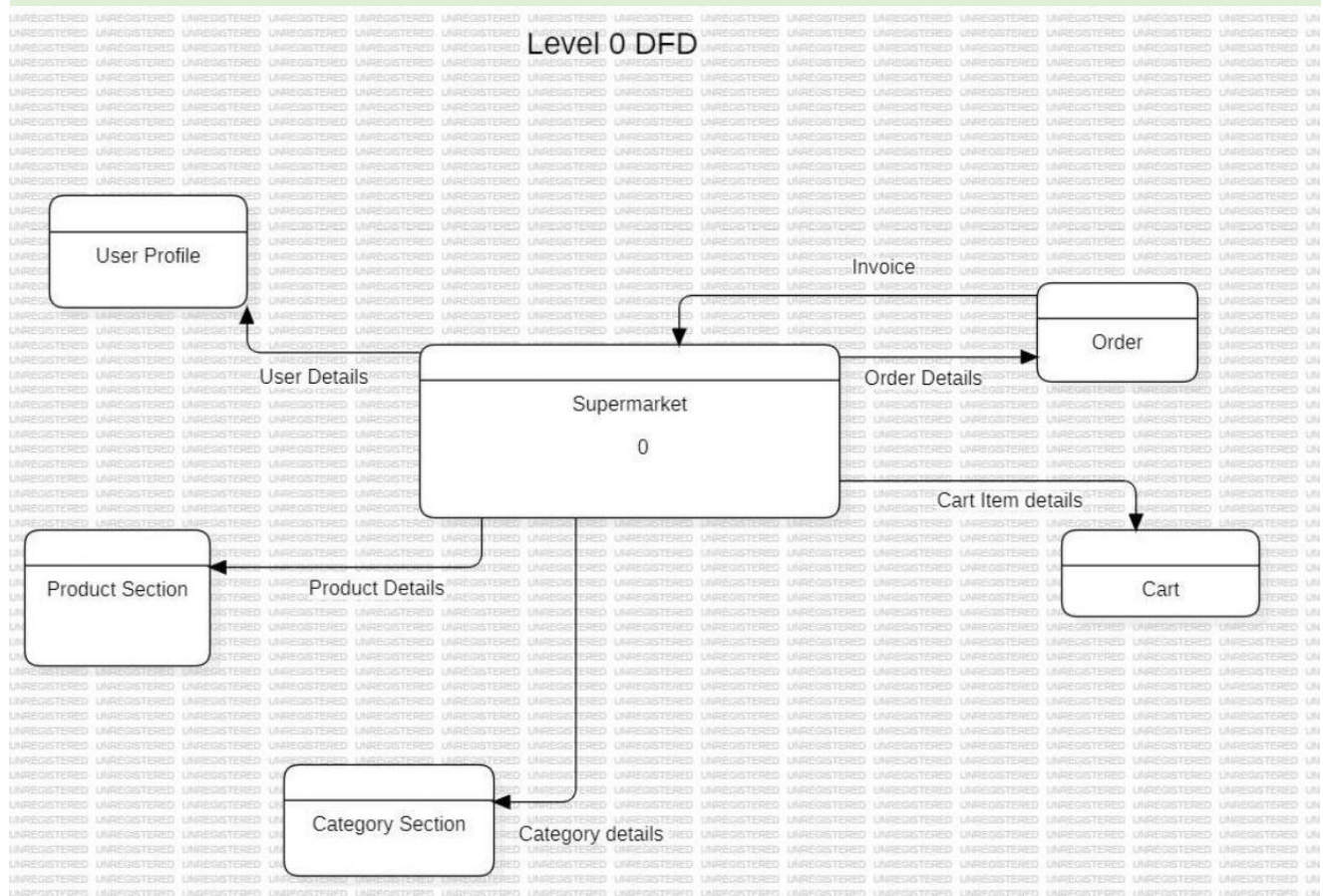


FIG 1.1

Level 1 DFD

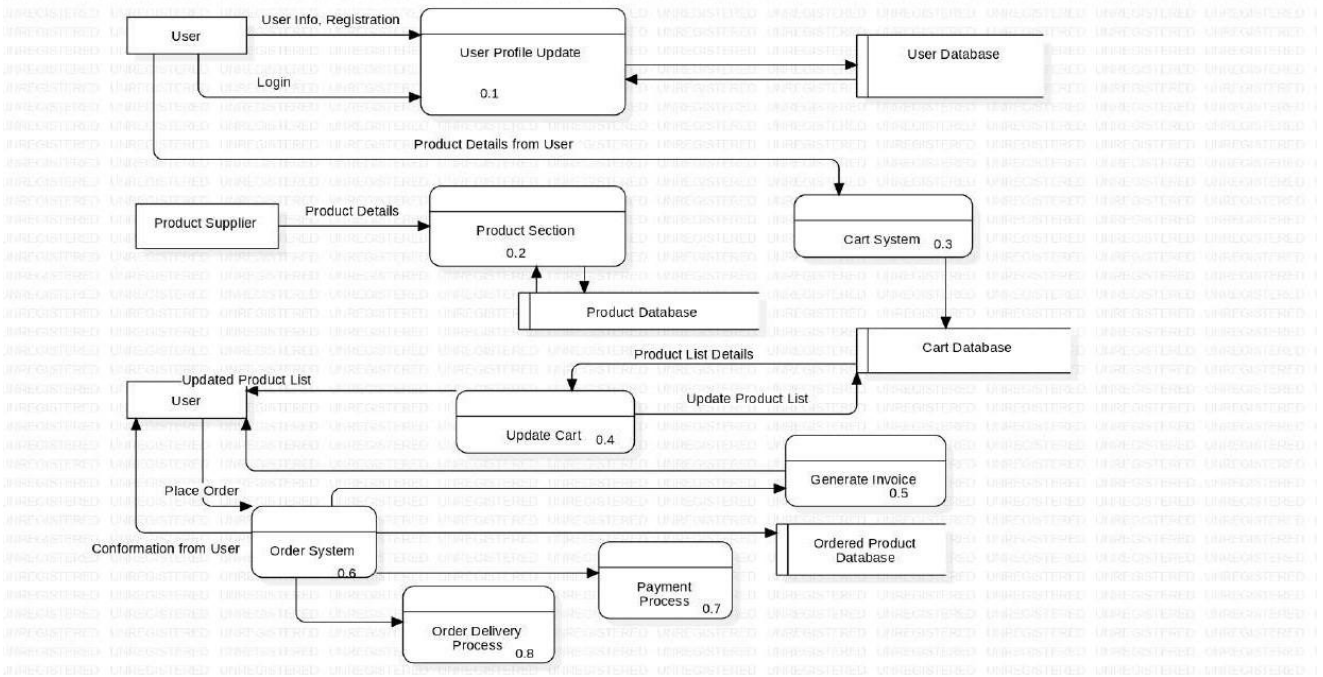


FIG-1.2

USE CASE DIAGRAM:

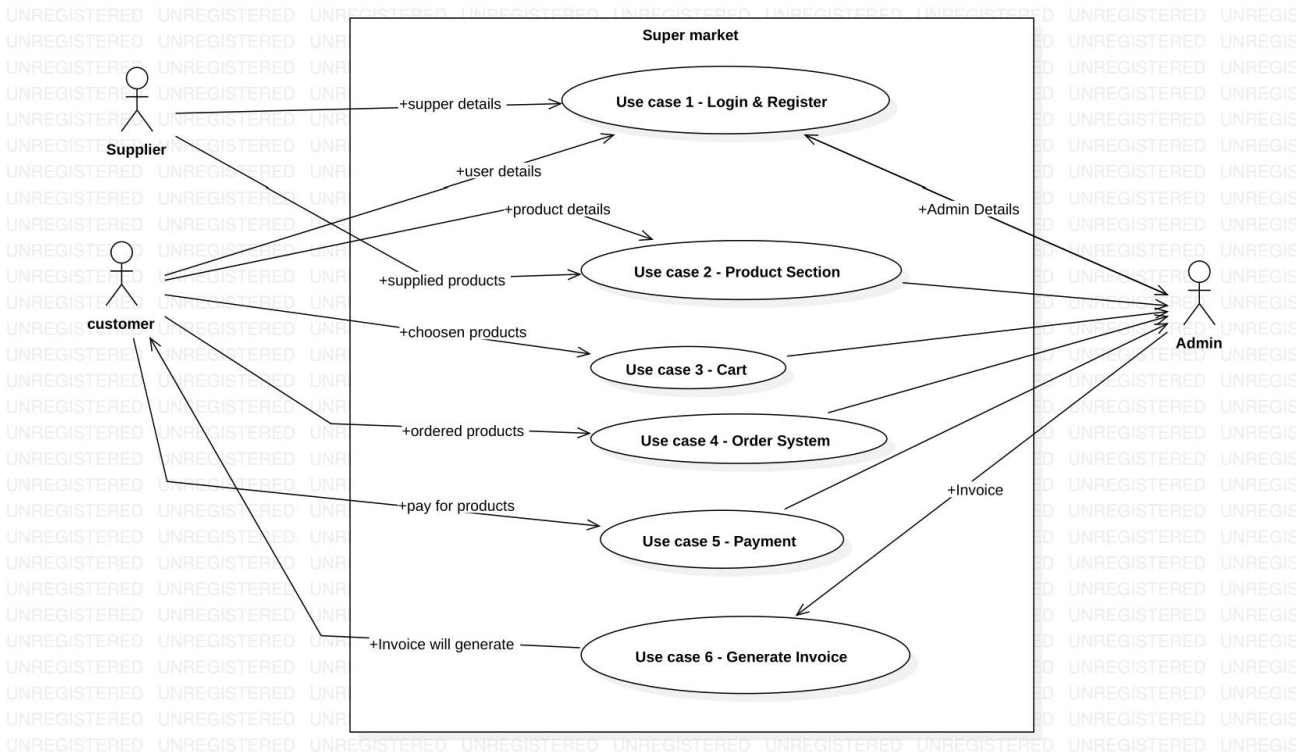


FIG 2.1

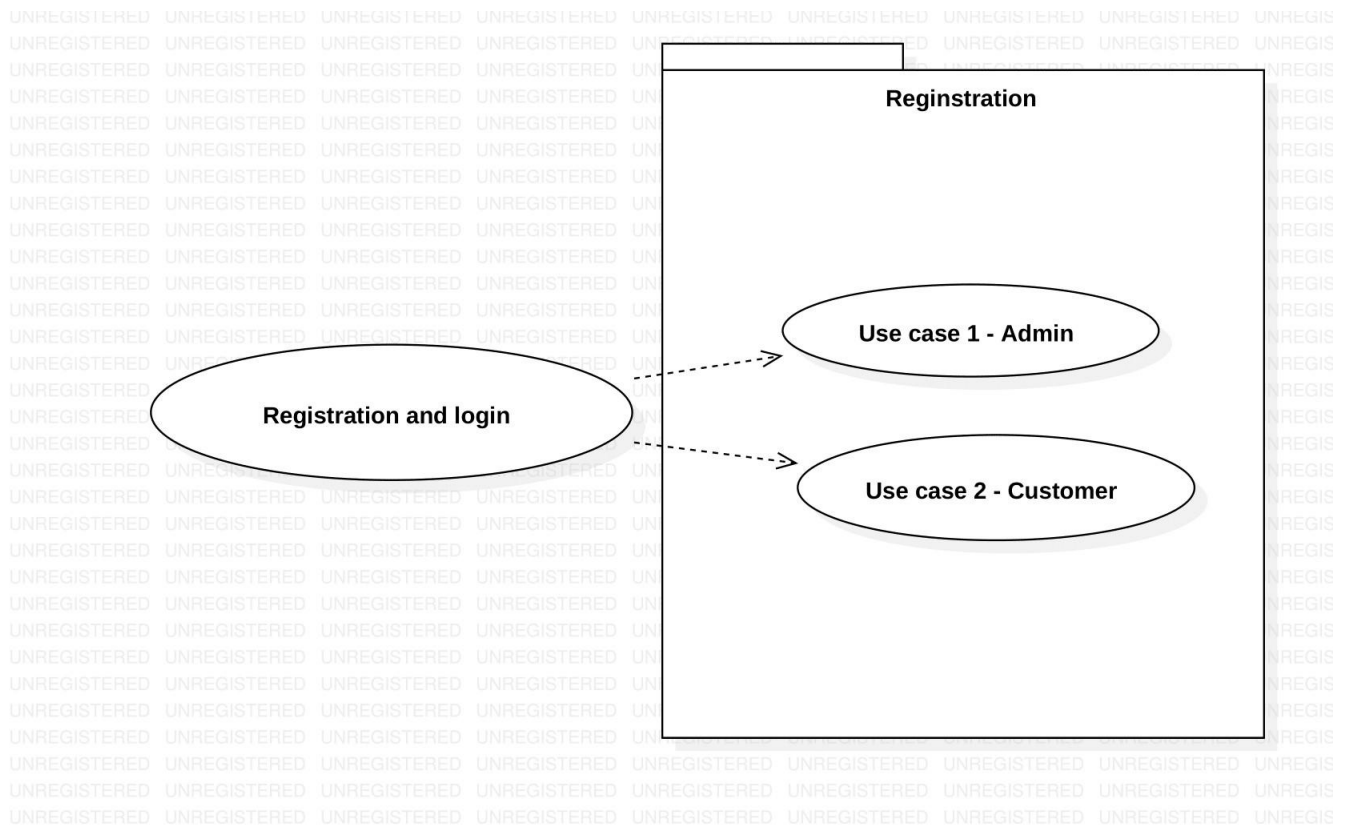


FIG-2.2

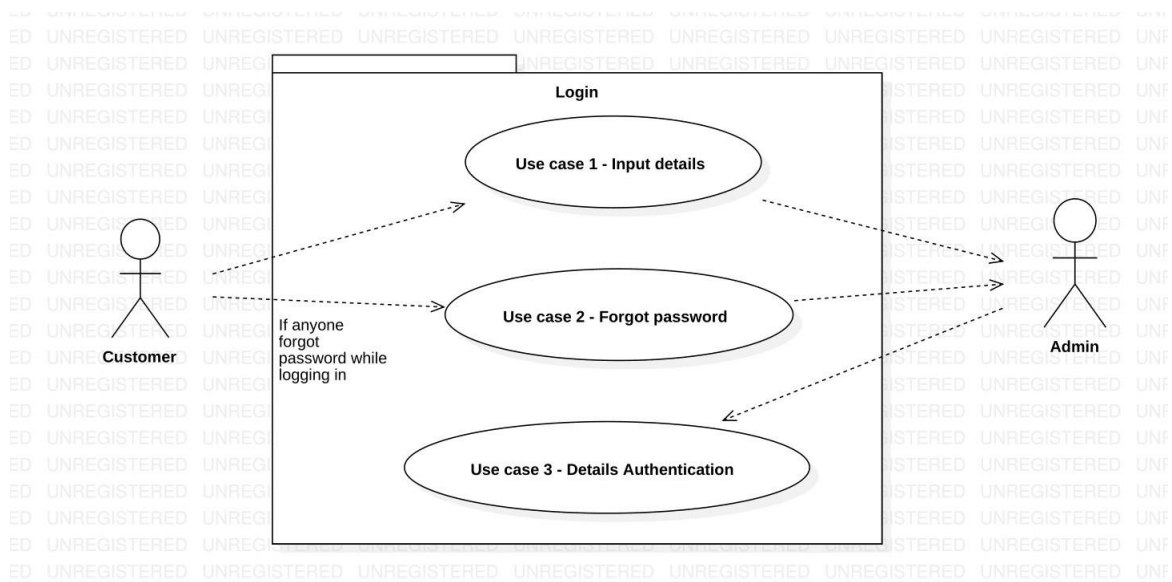


FIG-2.3

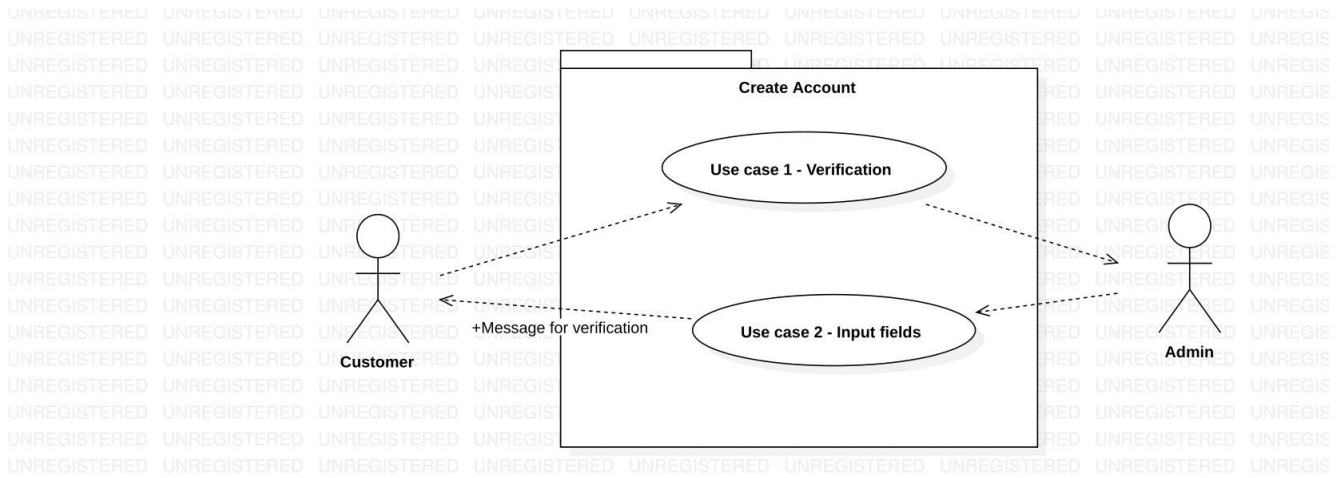


FIG-2.4

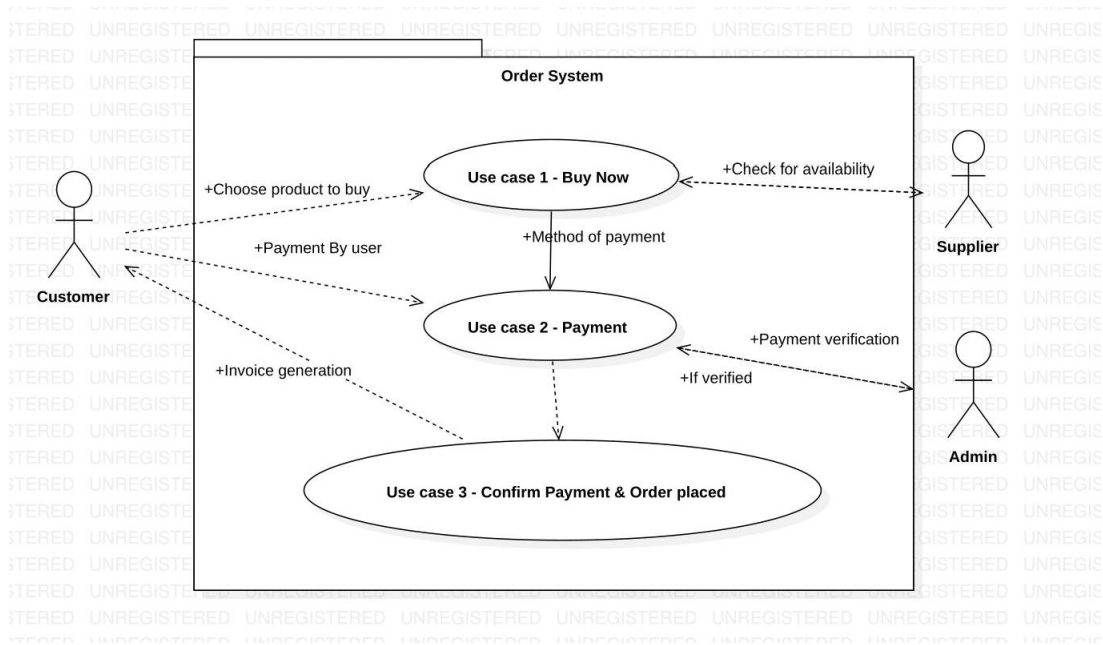


FIG-2.5

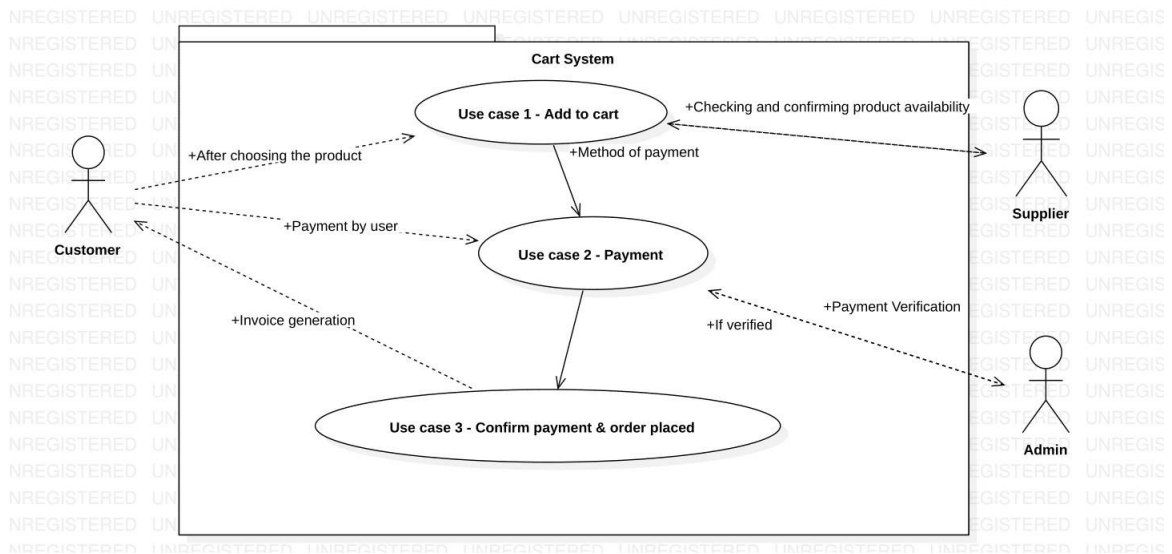
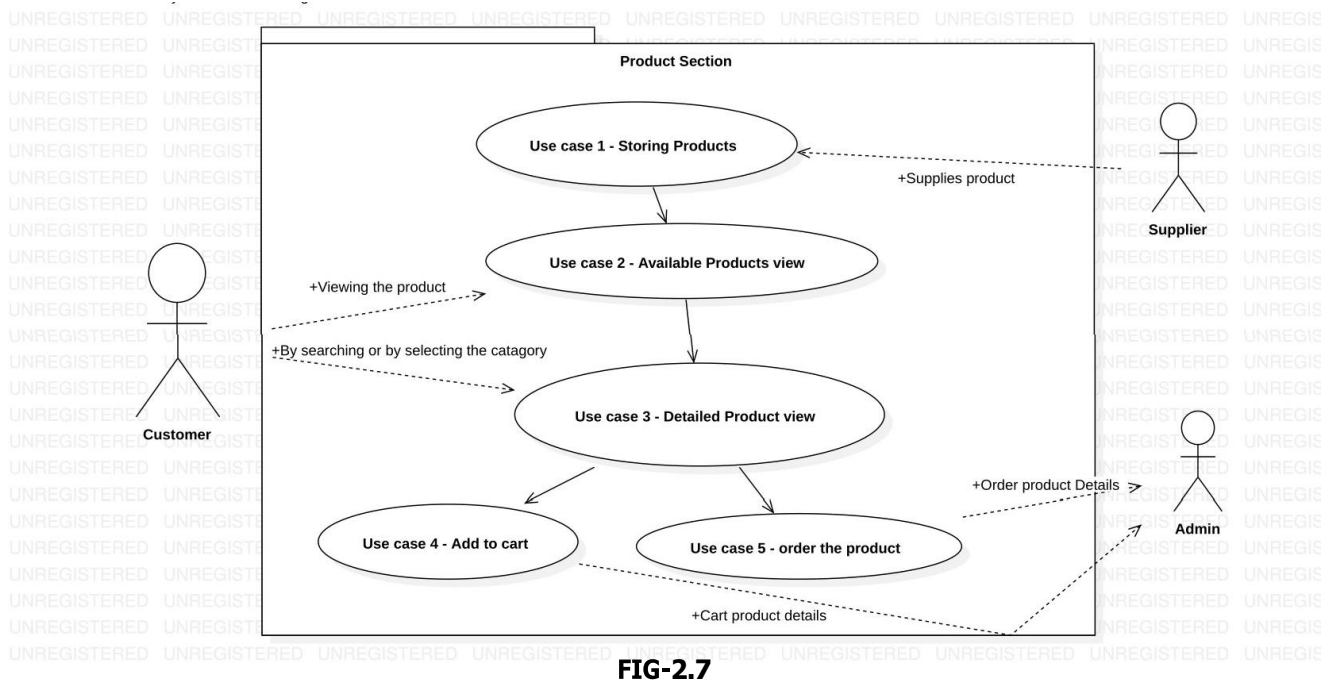
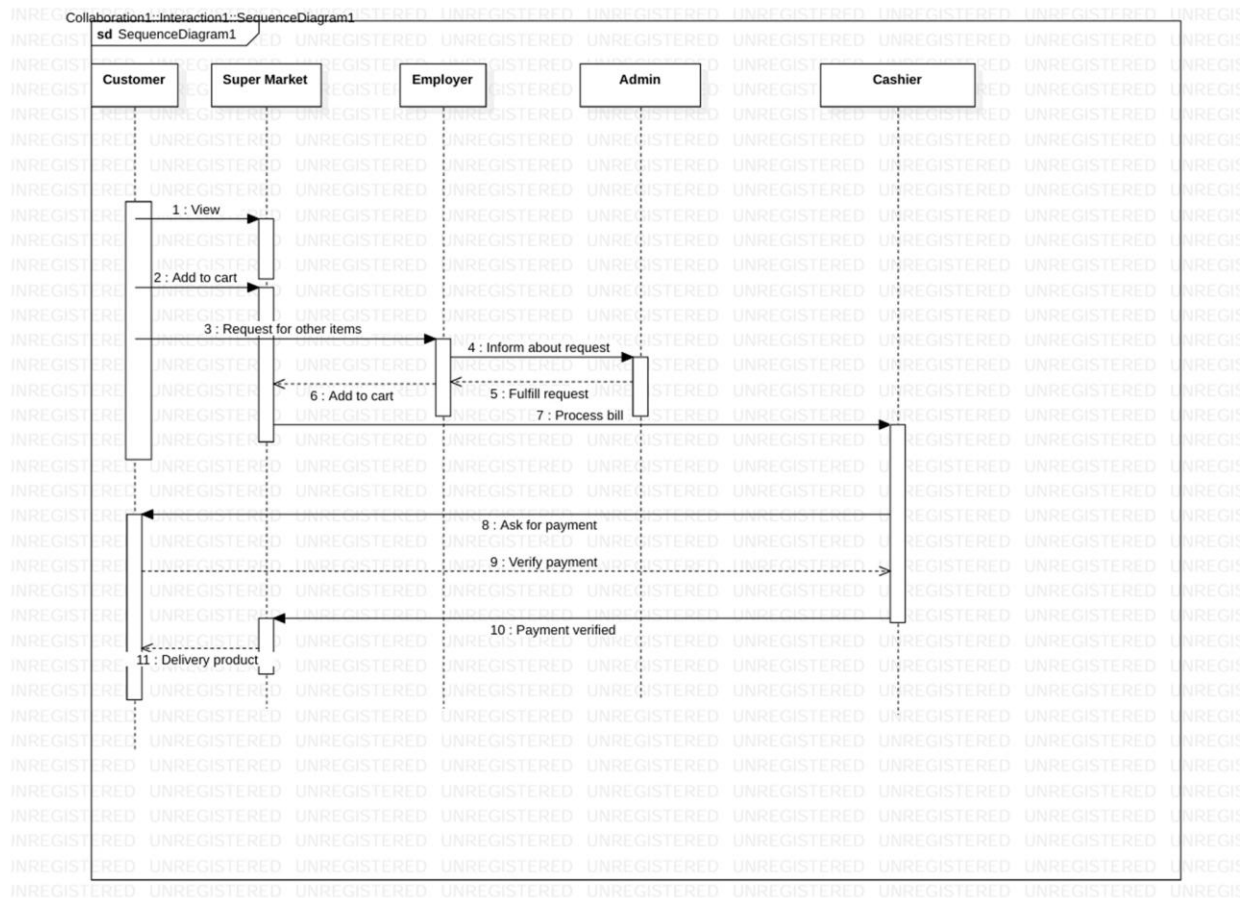


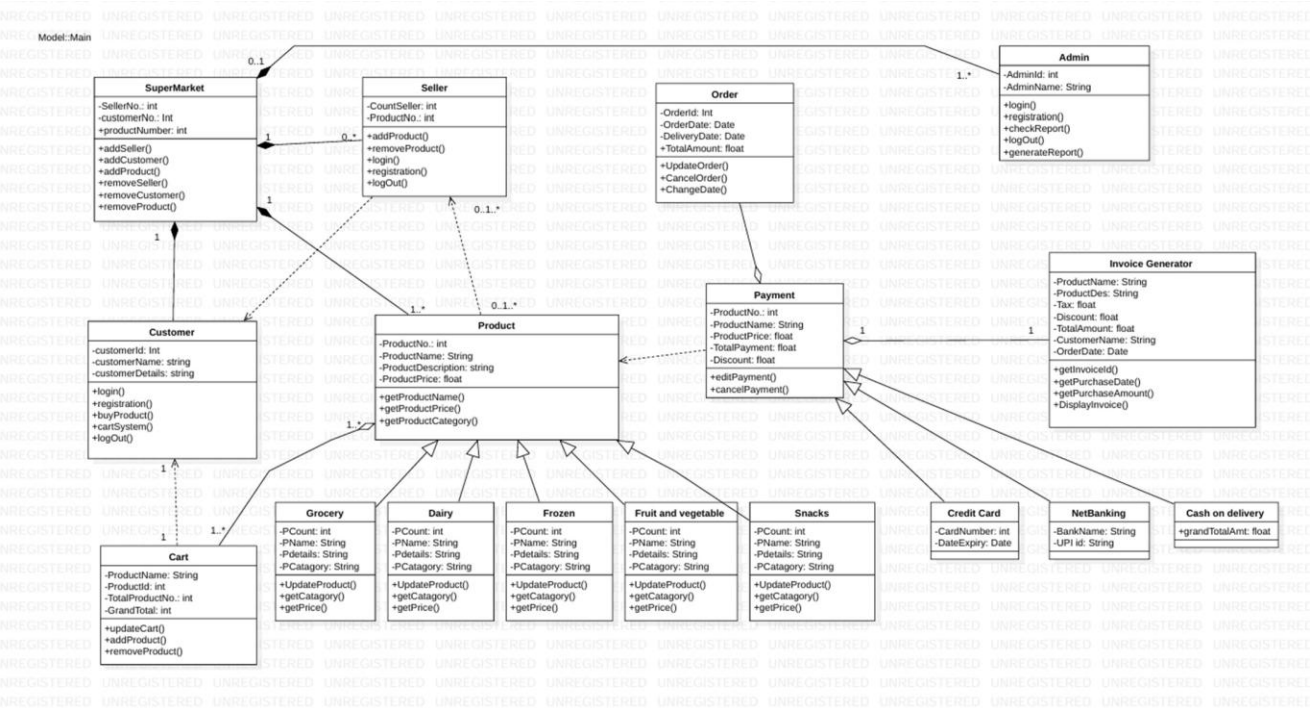
FIG-2.6



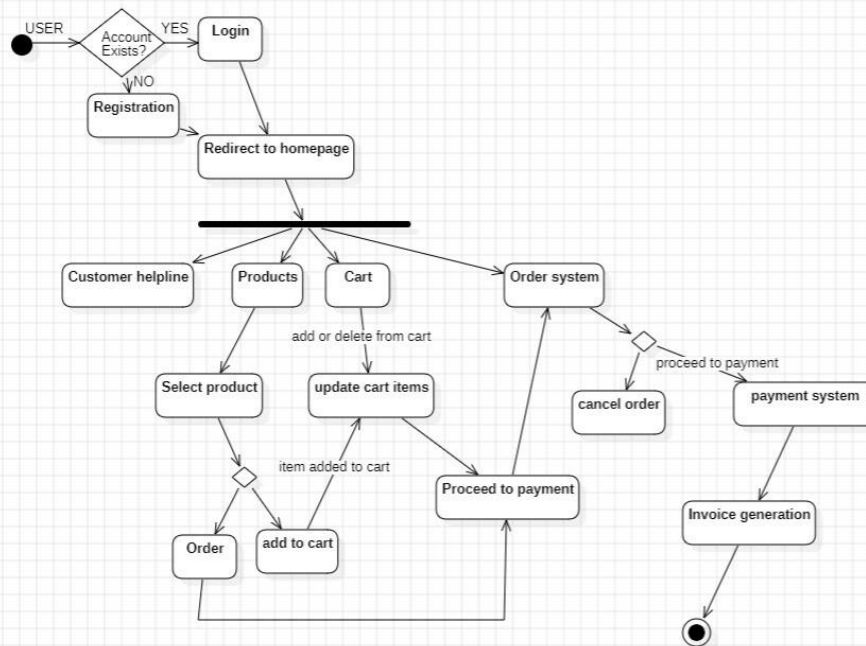
SEQUENCE DIAGRAM:



CLASS DIAGRAM:



ACTIVITY DIAGRAM:



THANK YOU