

Minimarket Online Sales and Delivery Management System

Members:

Martin Alejandro Cordero Viteri

Steven David Egas Jácome

Josué Daniel Guayasamín Heredia

NRC:27819

Subject: Advanced Web Programming

Group # 4

Problem

We need a web-based system that allows a local minimarket to sell its products online, manage stock efficiently, and deliver purchases to customers within the city. The system should support product browsing, online ordering, stock management, promotional campaigns, and a dashboard summarizing sales and inventory activities.

To understand what the program needs to do, it is first necessary to outline how customers, orders, and product inventories interact within the e-commerce workflow. The design will focus on the essential processes of browsing, purchasing, order tracking, and administrative control.

Overview

In the retail domain, customers, sales managers, and delivery personnel must coordinate efficiently to ensure fast, accurate, and satisfying shopping experiences. A digital platform simplifies this by centralizing product display, order management, and delivery tracking.

The goal of this application is to provide the minimarket with a digital storefront where:

- Customers can view available products, promotions, and prices.
- Orders can be placed online and tracked until delivery.
- Administrators can manage products, inventory, and promotions in real time.
- The system generates sales and inventory reports for business insights.

This web platform bridges the physical minimarket with the online marketplace, increasing visibility, customer satisfaction, and operational efficiency.

Background

Each product has its own record in the system, including name, price, category, stock

quantity, and promotional details. When customers place an order, the system creates an order record linking the customer with selected products and quantities. Orders progress through different states—such as *Pending*, *Processing*, *Out for Delivery*, or *Completed*—until the transaction is finalized.

Basic data associated with the system includes:

- Product ID and Name
- Category and Description
- Price and Stock Quantity
- Promotion or Discount Information
- Customer Name, Address, and Contact Details
- Order ID and Status
- Payment Method and Delivery Date

This structured data ensures smooth inventory management, sales tracking, and performance analysis.

System Design

The system provides tools for both customers and administrators. Customers interact through a friendly interface that allows easy browsing, searching, and purchasing. Administrators manage stock levels, track sales, and oversee promotions and deliveries.

Core Functionalities

1. **Product Catalog and Browsing** – Displays all available products organized by category (e.g., groceries, beverages, cleaning supplies). Customers can view images, descriptions, prices, and stock availability.
2. **Search and Filter System** – Allows users to search for products by name, category, or price range. Filters can also show only discounted or popular items.
3. **Shopping Cart and Online Ordering** – Customers can add items to their cart, update quantities, and confirm purchases through an intuitive checkout process.
4. **User Registration and Login** – Enables customers to create accounts, save addresses, and view their order history. Admin users log in to manage stock, orders, and reports.
5. **Stock and Inventory Management** – Administrators can add, edit, or remove products, update stock levels, and mark products as “Out of Stock.” Automatic stock alerts can notify when items are running low.

6. **Promotions and Discounts Module** – Allows the creation of promotional campaigns (e.g., “Buy 2, Get 1 Free,” or “10% off”) and displays them prominently on the homepage or product pages.
7. **Order Tracking and Delivery Management** – Orders move through clear statuses: Pending, Processing, Out for Delivery, and Completed. Delivery personnel can update order status in real time.
8. **Payment Processing Integration** – Supports secure online payment options (credit card, debit, or cash-on-delivery), ensuring convenience and trust for customers.
9. **Sales and Performance Dashboard** – Provides administrators with visual summaries: total sales, best-selling products, number of active orders, and stock statistics. This helps monitor performance and make informed business decisions.
10. **Customer Feedback and Ratings** (*optional for future expansion*) – Customers can rate products and share feedback, helping improve service and trust.

Example Data

Order ID	Customer	Product	Quantity	Status	Total (\$)	Delivery Date
ORD-001	María Torres	Milk (1L)	3	Completed	4.50	2025-05-12
ORD-002	José Andrade	Rice (5kg)	2	Out for Delivery	14.00	2025-05-13
ORD-003	Ana Pérez	Laundry Soap	1	Pending	3.00	—

Activity summaries can be computed as:

- **Total Sales per Day** = Sum of all completed order totals.
- **Top-Selling Products** = Products with the highest sales quantity.
- **Average Order Value** = (Total sales ÷ Number of completed orders).

Performance Metrics

The system provides analytical data such as:

- Total Sales per Day, Week, or Month.
- Stock Turnover Rate (how fast products sell out).
- Most Purchased Categories.
- Delivery Efficiency (average delivery time).

- Customer Retention Rate (repeat purchases).

These metrics support better planning, restocking decisions, and promotional strategies.

Conclusion

This web application serves as a complete digital marketplace for the minimarket, allowing customers to shop conveniently online while helping administrators efficiently manage products, stock, and deliveries. By combining real-time order management with automated reports and customer interaction tools, the system enhances productivity, transparency, and customer satisfaction.

Its modular and scalable design supports future features like loyalty programs, live chat support, and mobile app integration—ensuring continued growth and adaptability for the minimarket's business model.