Retail management system

Objective:

Create a comprehensive retail management system using JavaScript that incorporates more complex relationships between data entities.

Project Overview

In this project, learners will enhance the retail management system by adding features such as inventory tracking, sales reports, and promotional management by establishing strong relationships between products, customers, and orders.

Key Components

Data Structures:

- Use arrays and objects to store product, customer, and order information.

Classes:

- Product Class: Enhanced with properties like stock, isOnSale, and methods for applying promotions.
- Customer Class: Includes properties for preferences and methods for managing preferences.
- Order Class: Links customers to products with properties for status, order date, and total amount.
- Promotion Class: Manages promotions with properties for productId, discountPercentage, startDate, and endDate.

Relationships:

- A Customer can have multiple Orders.
- An Order can contain multiple Products.
- A Product can have multiple Promotions.

Functions:

- Implement CRUD operations for products, customers, orders, and promotions.
- Add functions to track inventory levels and check stock.
- Implement reporting functions to analyze sales data.

Libraries:

- Use a library likeJQuery/ Lodash for utility functions.
- Consider using a UI library (like jQuery or Bootstrap) for a responsive front-end interface.

More specific features

- Inventory Notifications: Notify when stock is below a threshold.
- Promotion Validation: Check if promotions are valid based on date.
- Enhanced UI: Build a simple front-end using HTML/CSS and JavaScript with forms to interact with the system, displaying relationships (e.g., customer orders, product promotions).
- There are existing products and customers in the system.
- Customer orders are created, updated, or deleted as necessary.
- Inventory is updated based on the orders placed.
- User can see details like product name, price, and stock level.
- User can selects one or more products to add to the order.
- The system calculates the total amount based on selected products and any active promotions.
- If needed, the user can delete an order. The system prompts for confirmation before deletion. If confirmed, the order is removed from the system.

Deliverables

- Source code with comments explaining each part.
- A short report (1-2 pages) describing the project structure, how to run it, and potential improvements.
- This project will provide learners with a deeper understanding of JavaScript, object-oriented programming, and real-world application scenarios in retail management, emphasizing the relationships between data entities.