DCCO

FINVORY

Second Semester

Team 4 “The POOwer Rangers of Programming”

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Feature 1 - Inventory Management

Duration: 1 week.

Goal: Establish physical and logical control of products, including returns and location mapping.

Tasks
1. Create Supplier Management Implement supplier registration and management to store and maintain supplier information and ensure proper association with products.
2. Create Customer Management with Type (VIP, STANDARD, PREMIUM) Develop customer management allowing classification by customer type, which will be used later for pricing and discount application.
3. Create Products Implement product creation and management, including basic product data required for inventory and billing processes.
4. Create Inventory and Assign Specific Location Develop the inventory system and assign each product to a specific physical location to improve stock organization and traceability.
5. Develop Reassignment Algorithm Create the logic to transfer items between different inventory states.
6. Implement Obsolete Inventory Logic Handle returned or damaged products by placing them in an obsolete inventory state, allowing reassignment or disposal without exceeding available stock.
7. Implement Logical Deletion (Soft Delete) Ensure that deleted products remain in the system with zero stock to preserve historical sales data.
8. Persistence Management Update the persistence layer to guarantee data integrity and historical record preservation during system synchronization.
9. **Implement CRUD operations for Customer:** Develop the full Create, Read, Update, and Delete cycle for client management.

Feature 2 - Billing

Duration: 1 week.

Goal: Automate the sales process with multi-tier pricing and tax calculations.

Tasks
1. Search Client by Name or ID Enable client search by name or ID to automatically fill invoice data.
2. Develop Automated Client Indexing Implement an indexing mechanism to quickly retrieve client information and auto-complete invoice headers.
3. Implement Pricing Algorithm Logic Develop pricing logic that applies Standard, Premium, or VIP prices based on the customer type.
4. Develop Rules Configuration Allow administrative configuration of profit margins and discount percentages used in price calculations.
5. Implement Dynamic Tax Configuration Enable dynamic configuration of VAT rates to ensure legal compliance in all sales.
6. Develop Automated Calculation Logic Automate invoice calculations, including subtotal generation, tax application, and final total calculation.
7. Product Search and Selection Allow products to be added to the invoice by searching them by ID or name.
8. Customer-Based Price Display Display the corresponding product price based on the selected customer type.
9. Invoice Number Formatting Generate invoices using a standardized and sequential invoice number format.
10. Inventory Selection and Stock Validation Require inventory selection when adding products and validate available stock before confirming the sale.

Feature 3 - Reports

Duration: 1 week.

Goal: Develop a data processing engine for real-time financial monitoring and automated strategic reporting.

Tasks
1. Implement income aggregation logic Develop services that filter invoices with “COMPLETED” status to calculate daily and cumulative gross revenue.
2. Develop period-based filtering Implement logic to filter reports by specific date ranges using start and end dates.
3. Implement gross sales report generation Generate gross sales reports including total invoices, gross amount, net amount, and total with tax.
4. Implement customer sales report Generate reports based on customer activity, including number of purchases and total sales amount.
5. Implement supplier performance report Generate reports that analyze supplier-related sales data based on products sold and invoice records.
6. Implement product sales analysis Analyze product demand using invoice line data to identify best-selling and low-rotation products.
7. Implement trend analysis algorithm Develop logic to track product sales frequency over time and detect demand patterns.
8. Implement data export engine Develop services to export reports into CSV or PDF format.
9. Configure character encoding Ensure exported files correctly handle special characters for compatibility with external tools.

Feature 4 - Offline Synchronization & Personal Account

Duration: 1 week.

Goal: Ensure system resilience through hybrid offline-online synchronization and secure personal account access.

Tasks
1. Implement local persistence engine Develop automatic data storage using JSON files when connection loss is detected.
2. Develop connection status logic Program a verification service (ping) to determine whether the system operates in Online or Offline mode.
3. Implement deferred synchronization algorithm Develop logic to detect pending data uploads and synchronize them with MongoDB once the connection is restored.
4. Develop conflict resolution logic Program rules to manage version conflicts between local data and cloud data.
5. Implement restricted visibility rules Program security filters to hide internal prices and profit margins when data is accessed from a personal account.
6. Develop direct communication logic Implement a service that links company profiles with external communication channels such as WhatsApp.