

PROJECT PROPOSAL

“Supermart Billing System”

This document outlines the proposal for a Super Mart Billing System, a JavaFX-based application designed to streamline the billing process for a supermarket. The system aims to enhance efficiency, accuracy, and customer satisfaction by providing a user-friendly interface for cashiers and a comprehensive record-keeping system for management.



Project Objectives:

Develop a user-friendly GUI:

Create an intuitive and easy-to-navigate interface for cashiers to efficiently process customer orders.

- **Implement core billing functionalities:** Allow cashiers to add items to the cart, view and modify cart contents, calculate the total bill (including GST), and generate receipts.
- Enable users to view their order history.

Maintain user information:

Store customer details (name, contact, address) for future orders and personalized service.

Improve accuracy and efficiency:

Reduce manual errors in billing and speed up the checkout process.

Generate comprehensive reports:

Provide management with reports on sales data, inventory levels, and customer trends.

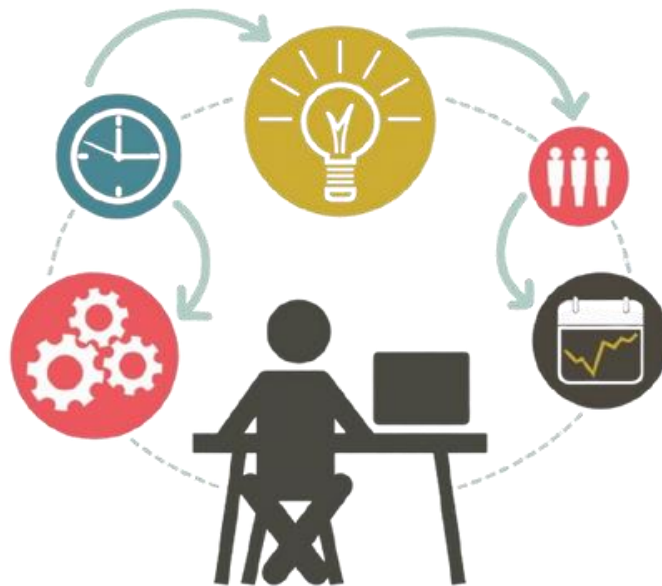
Project Scope:

Core Features:

- User interface for cashiers to add/remove items to the cart, calculate the total bill (including GST), and generate receipts.
- User input for customer details (name, contact, address).
- Display of product categories and items within each category.
- Order history for customers.

Technical Specifications:

- Programming Language: Java
- GUI Framework: JavaFX IDE:
- (e.g., IntelliJ IDEA) Operating
- System: Windows



Project Architecture:

Model-View-Controller (MVC) Pattern:

- **Model:** Represents the data (product information, customer data, cart items, etc.).
- **View:** Handles the user interface (scenes, controls, layout).
- **Controller:** Manages the interaction between the model and the view, handling user input and updating the application state.

User Interface Design:

- **User-friendly and intuitive:** Easy to navigate and understand for cashiers.
- **Clear and concise:** Information presented in a clear and organized manner.
- **Visually appealing:** Use of appropriate colors, fonts, and spacing.

Implementation Details:

Data Structures:

- Arrays and HashMaps are used to store product data, category information, and cart items.

User Input Handling:

- Input fields for user details with basic validation.
- Event handling for button clicks, list selections, and user input.

Business Logic:

- Calculation of total bill, including GST.
- Handling of cart operations (add, remove, update quantities).
- Receipt generation with itemized details.

Error Handling:

- Displaying appropriate error messages to the user.
- Input validation to prevent invalid data entry.



User Interface(UI) Screens Overview:

1. User Details Screen:

Purpose:

- This is the initial screen where customers provide their essential information.

Components:

- Labels for Name, Contact Number, Email, and Address.
- Text fields for user input.
- A "Submit" button to proceed after entering the details.

Functionality:

- Users enter their name, contact number, email, and address.
- Input validation (e.g., checking for valid email format, numeric contact numbers) can be implemented here.
- Upon clicking "Submit," the entered data is stored and the user is transitioned to the Main Menu.

2. Main Menu Screen:

Purpose:

- This is the central hub for user navigation.

Components:

- Buttons for:
 - "Browse Categories"
 - "View Cart"
 - "Checkout"
 - "Previous Orders"
 - "User Details" (to update or view existing details)

Functionality:

- Clicking "Browse Categories" takes the user to the Categories Screen.
- Clicking "View Cart" displays the current items in the shopping cart.
- Clicking "Checkout" proceeds to the Checkout Screen for order confirmation.
- Clicking "Previous Orders" displays a list of past orders.
- Clicking "User Details" allows the user to view or update their contact information.

3. Categories Screen:

Purpose:

- Allows users to select the product category they wish to browse.

Components:

- A list view displaying all available product categories (e.g., "Beverages," "Fruits and Vegetables").
- A "Go to Cart" button.
- A "Back to Main Menu" button.

Functionality:

- Users select a category from the list view.
- Clicking on a category navigates to the Items Screen for that specific category.
- "Go to Cart" takes the user directly to the Cart Screen.
- "Back to Main Menu" returns the user to the Main Menu.

4. Items Screen:

Purpose:

- Displays a list of items within the selected category.

Components:

- A list view displaying all items within the chosen category.
- A "Back to Categories" button.

Functionality:

- Users can view a list of items available within the selected category.

- Clicking on a specific item allows the user to add it to their shopping cart.
- "Back to Categories" returns the user to the Categories Screen.

5. Cart Screen:

Purpose:

- Allows users to view and manage items in their shopping cart.

Components:

- A list view displaying all items currently in the cart.
- A "Remove Item" button.
- A "Go to Checkout" button.
- A "Back to Main Menu" button.

Functionality:

- Displays a list of items added to the cart.
- "Remove Item" allows users to remove specific items from the cart.
- "Go to Checkout" proceeds to the Checkout Screen.
- "Back to Main Menu" returns the user to the Main Menu.

6. Checkout Screen:

Purpose:

- Displays order summary, allows users to confirm the order, and provides user contact information.

Components:

- Display of user contact information (Name, Contact Number, Email, Address).
- A summary of items in the cart with their respective prices.
- Calculation of total price, including GST (if applicable).
- A "Confirm Order" button.
- A "Back to Main Menu" button.

Functionality:

- Displays the order summary, including item details, total price, and user contact information.
- Clicking "Confirm Order" finalizes the purchase, stores the order details, and may display a confirmation message.
- Clicking "Back to Main Menu" returns the user to the Main Menu.

7. Previous Orders Screen:

Purpose:

- Allows users to view their past order history.

Components:

- A list view displaying past order receipts (date, items, total amount).
- A "Back to Main Menu" button.

Functionality:

- Displays a list of previous orders with their respective details.
- "Back to Main Menu" returns the user to the Main Menu.

“Visual Representation”

