D. Y. Patil College of College of Engineering and Technology, Kolhapur
Department of Computer Science & Engineering

Class: SY-A   **Subject: AOOC**

Experiment no: 15

Group No. G1   **Mini Project**

Title of Mini-Project: Restaurant Billing System

Problem Statement: In many restaurants, the process of calculating bills is done manually, which can lead to mistakes. These mistakes can cause problems like incorrect billing, confusion with customers, and even lost revenue. This project is designed to make the billing process faster and more accurate. It helps restaurant staff quickly calculate the bill based on the items ordered, apply taxes, and generate a clear receipt. It also allows saving the bill for future reference.

Introduction: The Restaurant Billing System is an easy-to-use application that helps restaurants create bills for customers. It uses a graphical interface (GUI) built with Java Swing, where staff can input the quantities of items ordered, and the system will automatically calculate the total amount, including taxes. The system shows the bill in a user-friendly format, and it also lets users save the bill to a file for record-keeping.

The goal of this project is to reduce errors in manual billing and provide an efficient way to manage customer payments.

System Architecture:

This system is built using a simple design. It includes four main parts:

1. **User Interface (UI):** The part that the user sees and interacts with. It includes fields where the user can enter item quantities, buttons to generate the bill, and a display area for the bill.
2. **Business Logic:** This is the core part of the system that does all the calculations. It takes the input data (quantities of ordered items) and calculates the total cost, taxes, and final amount to be paid.
3. **File Management:** The system can save the bill to a file for future use. It writes the bill into a text file that can be accessed later.

4. **Event Handling**: The system listens for user actions (like clicking buttons) and performs actions based on those inputs, like generating the bill or resetting fields.

Module description or working of system:

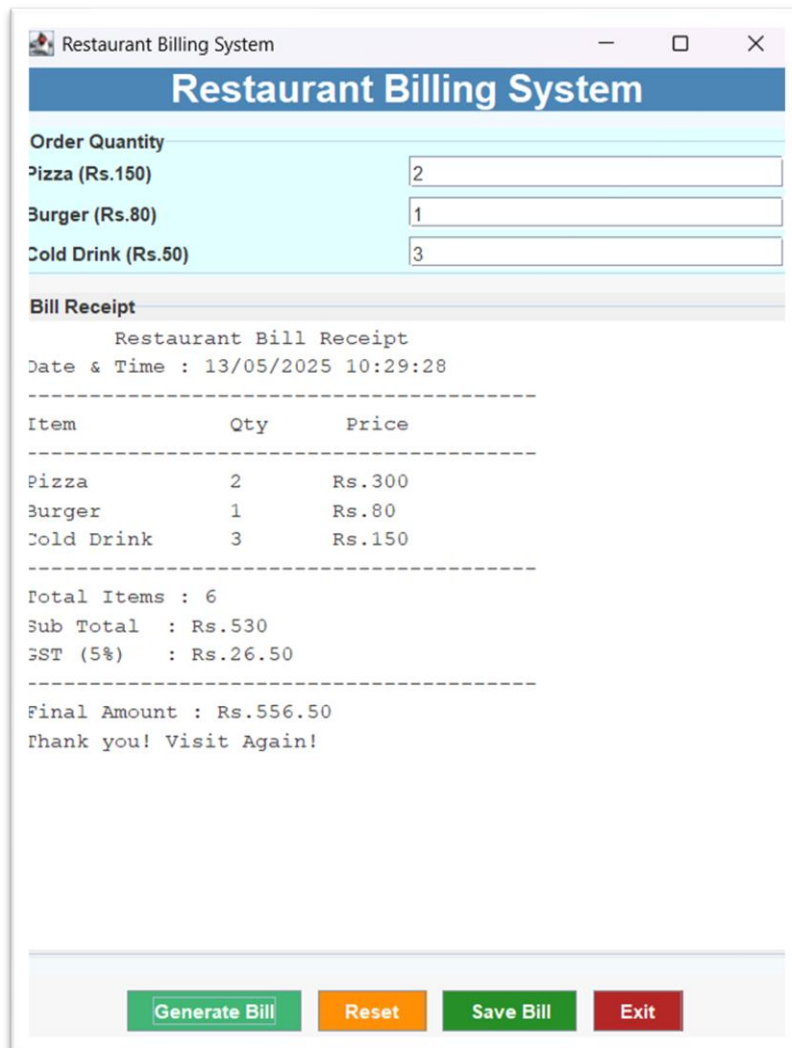The system is divided into smaller sections or modules. Each module handles a specific task:

1. Input and Display Panel:
   - Item Quantity Input: This part allows the user to enter how many items (like Pizza, Burger, and Cold Drinks) the customer has ordered.
   - Bill Display Area: Once the bill is generated, the system shows the details on the screen, including the ordered items, their quantity, price, taxes, and the final total.

2. Bill Generation:
   - This part calculates the total cost of the order by multiplying the quantity of each item by its price. The system also adds a 5% tax to the total. Once everything is calculated, the bill is displayed.

3. Buttons and Event Handling:
   - Generate Bill Button: When the user clicks this button, the system calculates and shows the total cost, taxes, and final amount.
   - Reset Button: This button clears all the fields so the user can start fresh with a new order.
   - Save Bill Button: The system can save the bill to a text file, which the user can store for records.
   - Exit Button: This button closes the application.

4. File Handling:
   - Saving the Bill: When the user clicks the "Save Bill" button, the system saves the bill as a text file. This allows the restaurant to keep records of all generated bills.

How the System Works:

1. The user enters the quantity of each item (like Pizza, Burger, and Cold Drink) in the input fields.

2. When the user clicks the "Generate Bill" button, the system calculates the total cost by multiplying the quantity of each item with its price. The tax is then added to the final amount, and the bill is displayed on the screen.

3. The user can click the "Save Bill" button to save the bill as a text file.

4. If the user needs to start a new bill, they can click the "Reset" button to clear all the fields.

5. To close the application, the user can click the "Exit" button.

Screenshots:

Group Members:

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