University Of Engineering and Technology Lahore

PROJECT TITLE : CAFE MANAGEMENT SYSTEM

LAB REPORT

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Submitted To:

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Course:

DataBase Systems

Cafe Management System

Summary:

Our team has successfully created a comprehensive “Cafe Management System” which efficiently stores and manages all aspects of the business, utilizing a well-designed database structure and intuitive user interface developed using SQL and C# respectively. The use of a relational database system enhances the accuracy and efficiency of the cafe's operations while improving the overall customer experience.

Objectives:

1. To create a centralized database for managing the cafe's menu items, customer orders, employees, and customer information.
2. To provide an easy-to-use interface for employees to input and track orders and inventory.
3. To generate insightful reports on sales, expenses, and employee performance for effective decision making.
4. To streamline cafe operations and improve overall efficiency and profitability.

Description :

Our cafe management system is a Desktop application that allows a cafe to manage various aspects of its business using a database. The system has **four** main tables: **customers**, **orders**, **items**, and **employee**. The customers table stores information on cafe customers, including their name, Bill and order history. The orders table stores information on each customer order, including the order ID, quantity, category and total price. The items table stores information on all menu items offered by the cafe, including their name, category and ingredients. The employees table stores information on all cafe employees, including their name, contact information, and job role. The system uses SQL to store and manage data in the database, and C# for the user interface. The objectives of the project are to

create a user-friendly interface for cafe staff to manage customer information, track orders, monitor inventory, and manage employee schedules

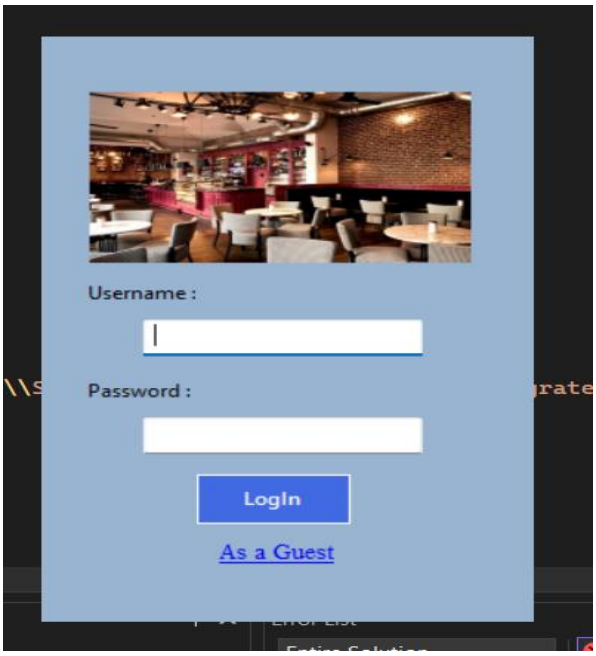
Technologies Used:

1. Visual Studio
2. .Net Framework
3. MySql

GUI:

LoginForm:

We have developed a Graphical User Interface using C# programming language. Our interface includes a secure login page where users are required to enter their username and password. Once the user's identity is authenticated, they gain access to the complete system. However, in the case of a guest user, they are only authorized to place orders and exit the program, as a security measure to protect the system's privacy.

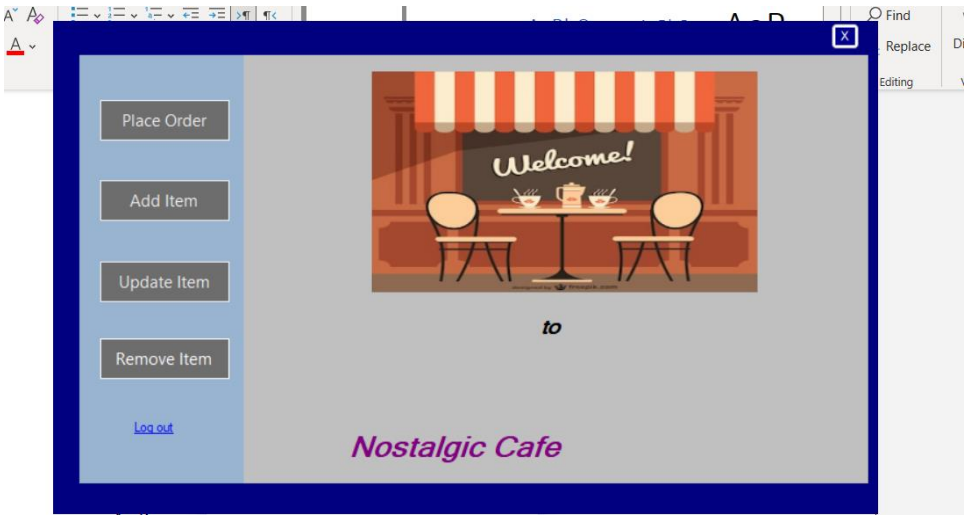


Dashboard :

Upon successful login, the user will be directed to the dashboard of our system. The dashboard provides access to four main options:

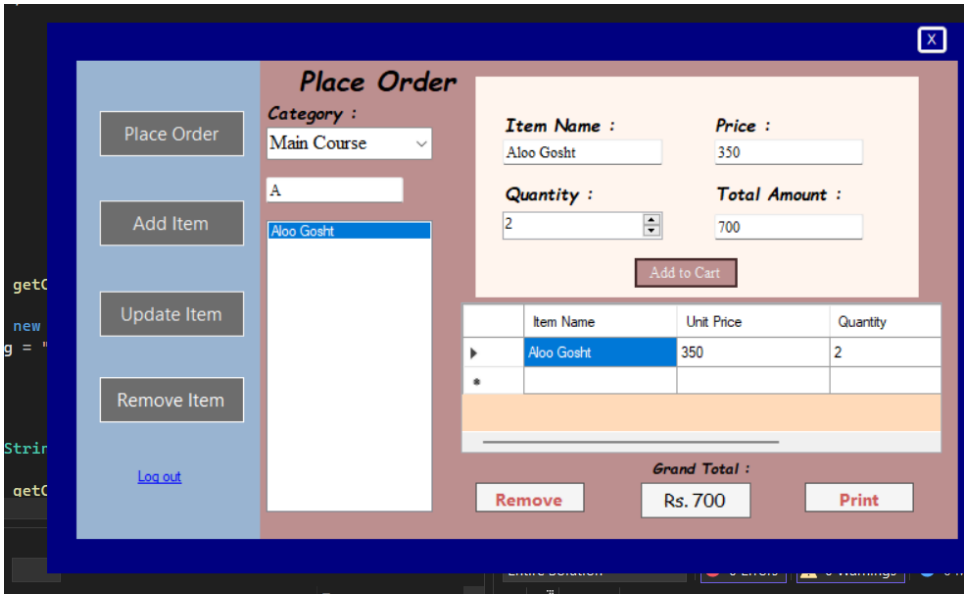
1. Place Order
2. Add Item
3. Update Item
4. Remove Item.

In addition, the user will be able to log out or close the dashboard as needed.



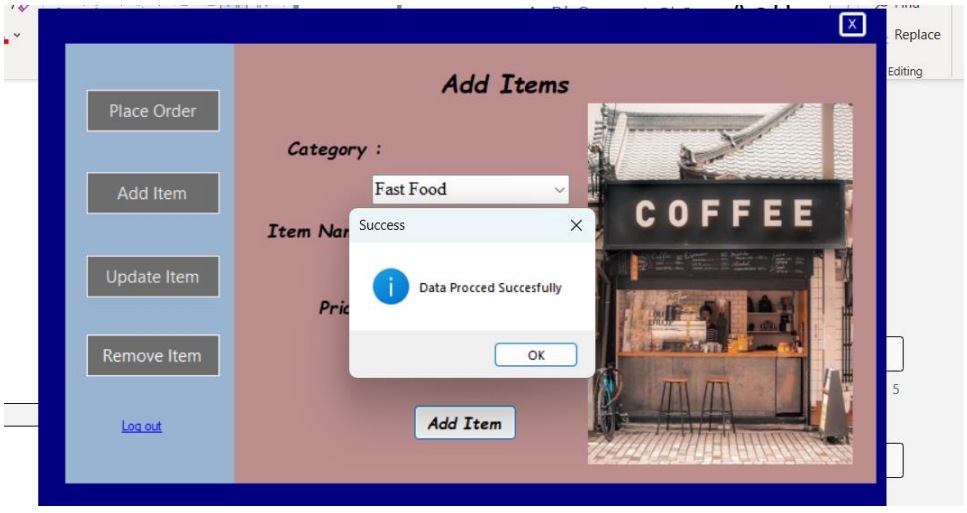
Place Order :

Upon clicking the "Place Order" button on the dashboard, the user will be redirected to a designated form where they can select a category of food from the database and utilize the search feature if necessary. Upon selecting an item, the corresponding price and name will be displayed based on information from the database. The total price will increase as the quantity of items is increased. The **"Remove"** button can be used to delete desired items from the list, and the total price will adjust accordingly. Clicking the **"Print"** button will generate and print a bill receipt for the order.



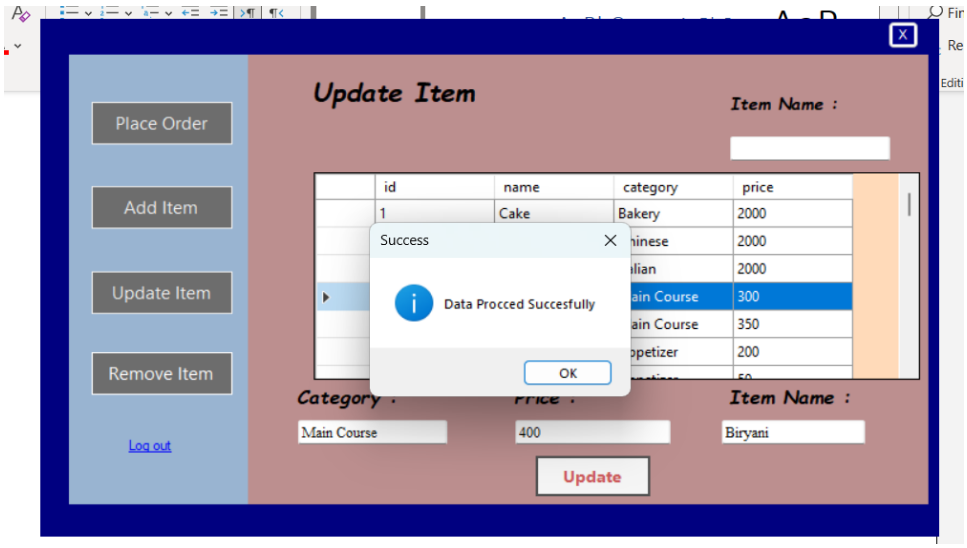
Add Item :

When the user clicks on the "Add Item" button, they will be able to add a new food item to the menu. The user can enter the category name, item name and price of the new item. After entering the details, a dialog box will appear confirming that the data has been successfully entered into the database.



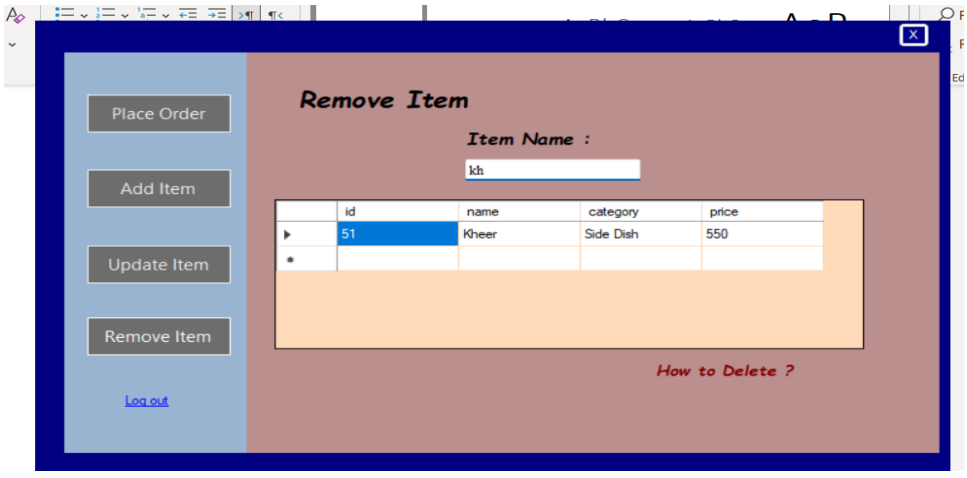
Update Item :

When the user clicks on the "Update Item" button, they will be able to update items in the menu. In the "Update Item" form, all the data from the database will be displayed in a table. If the user wishes to update any item in the menu, they can simply edit the category, item name, and price, and then update it in the database. A dialog box will appear, indicating that the data has been successfully entered in the database.



Remove Item :

When he/she will click on Remove Item button then he/she will be able to remove item from the menu. There is the list in which he/she will select item from the list and then remove it by clicking on the item. If user click on how to delete then it will tell you the way how to delete item from the menu.



Database Design:

1. Introduction:

This provides an overview of the database design for the cafe project. The database is implemented in **SQL** and consists of 4 tables to store information about items, orders, employees, and customers. This documentation describes the structure of the database, the relationships between tables and views to retrieve relevant data.

2. Database Structure:

Our cafe database includes the following tables:

a) items: Stores information about menu items, including their unique identifier, name, category, price, employee ID, and customer ID.
b) orderrs: Contains details about individual orders, such as the order ID, name, price, quantity, total, employee ID, customer ID, and item ID.
c) employe: Stores information about employees, including their employee ID, name, department, and salary.
d) customerr: Contains information about customers, including their customer ID, name, total bill, and date of purchase.

3. Relationships:

The database includes the following relationships between tables:

The items table has a foreign key reference to the customer table based on the customer_id column, establishing a relationship between menu items and customers.
The items table also has a foreign key reference to the employee table based on the employee_id column, establishing a relationship between menu items and employees.
The orderrs table has foreign key references to the item table (based on the item_id column), employee table (based on the employee_id column), and customer table (based on the customer_id column), establishing relationships between orders, menu items, employees, and customers.

4. Views:

The database encompasses a multiple views, ensuring effortless access to specific information. These views include:

a) vw_customer_history: A view that displays customers with their total bill and latest date of purchase.
b) vw_employee_info: A view that displays employees with their departments and salaries.
c) order_items_view: A view that combines the orderrs and items tables to display order details along with corresponding item information.

5. Triggers:

Our database includes triggers to automate certain actions:

a) tr_insert_order: A trigger that automatically assigns employee IDs, item IDs, and customer IDs to new orders.
b) tr_update_item_price: A trigger that updates the price and total in the orderrs table when the price of an item in the items table is updated.

These triggers help maintain data consistency and automate processes within the database.

This documentation provides an overview of the database design for our cafe project. It describes the table structure, relationships ,views, and triggers used in our database. The provided information will assist in understanding and working with the cafe database effectively.

Conclusion :

In conclusion, the cafe management database system will enable effective management of the many activities of the cafe, including the management of the menu items, orders, employee and Customer data. The all four tables, their connections, and the information contained in them will improve decision-making and streamline corporate operations. Overall, the system will improve the cafe's capacity for high-quality service and boost its financial success. This database system has the potential to be a significant asset for the cafe's long-term success with proper deployment and upkeep.

ERD Diagram For Cafe Mangement System