AMERICAN INTERNATIONAL UNIVERSITY–BANGLADESH (AIUB)

Dept. of Computer Science

Faculty of Science and Technology

CSC2210: OBJECT ORIENTED PROGRAMMING 2

Spring 2023-2024

Section: M

Project Report On

Project Name : Restaurant Management System

Supervised By

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CO2: Display and verify the mean of a real-life Project using the concepts of C# Graphical User Interface based environment with database integration to depict a desktop-based application.

Assessment Criteria	Not Attended/ Incorrect (0)	Inadequate (1-2)	Average (3)	Good (4)	Excellent (5)
Evaluation Criteria	Evaluation Definition				Total =
Requirement fulfillment	Properly demonstrate a real-life scenario-based project with proper functional requirement identification for the Object-Oriented Programming project development activities.				
Validation	Ensuring the ability of students' proper demonstration on validation forms in their system in terms of dealing with the data.				
Verification	Identifying if the students can verify the system data along with proper functional requirements in terms of data flow.				

Project Title: Restaurant Management System

Introduction: Our project 'Restaurant Management System' is a desktop based application using C# (.NET framework) and Microsoft SQL Server. We have two types of user in our system owner and employee. The system aims for management of a restaurant providing essential functionalities for both **Owner** and **Employee**. In this system owner and employee can log into the system using user ID and Password. Owner can see food menu and add, remove, edit and delete employee details from user info. Employee can see only food menu. Owner can search user info by name. Owner and employee can search menu by item name. Owner and employee can securely logout from the system.

Case Study -

Case Study: Restaurant Management System

Background:

XYZ Restaurant is a popular eatery in the heart of the city. Over time, the restaurant has grown in popularity, leading to an increase in customers and staff. To streamline operations and enhance efficiency, the management has decided to implement a Restaurant Management System.

System Overview:

The Restaurant Management System represents a sophisticated desktop application engineered using the robust C# (.NET framework) and Microsoft SQL Server technologies. This comprehensive system serves as the nerve center for managing the myriad operations within the restaurant. It has been meticulously crafted to accommodate the diverse needs of two distinct user categories: Owners and Employees.

Authentication and Access Control:

Each user is provided with a personalized User ID and Password, ensuring secure access to the system. Upon successful authentication, users are seamlessly directed to their designated areas of operation, granting them access to functionalities tailored to their role within the restaurant ecosystem.

SQL Database:

USE [RMSystem]

GO

/****** Object: Table [dbo].[DRINKS]   Script Date: 12/21/2023 11:05:33 AM ******/

SET ANSI_NULLS ON

GO

SET QUOTED_IDENTIFIER ON

GO

SET ANSI_PADDING ON

GO

CREATE TABLE [dbo].[DRINKS](

       [ProductId] [varchar](10) NOT NULL,

       [Drinks] [varchar](30) NULL,

       [Price] [int] NOT NULL,

 CONSTRAINT [PK_DRINKS] PRIMARY KEY CLUSTERED

(

       [ProductId] ASC

)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO
SET ANSI_PADDING OFF

GO

/****** Object: Table [dbo].[FastFood]   Script Date: 12/21/2023 11:05:33 AM ******/

SET ANSI_NULLS ON

GO

SET QUOTED_IDENTIFIER ON

GO

```sql
SET ANSI_PADDING ON

GO

CREATE TABLE [dbo].[FastFood](

        [ProductCode] [varchar](20) NOT NULL,

        [Items] [varchar](30) NULL,

        [Price] [int] NOT NULL,

 CONSTRAINT [PK_FastFood] PRIMARY KEY CLUSTERED

(

        [ProductCode] ASC

)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY =
OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO
SET ANSI_PADDING OFF

GO

/****** Object:  Table [dbo].[Others]    Script Date: 12/21/2023 11:05:33 AM
******/

SET ANSI_NULLS ON

GO

SET QUOTED_IDENTIFIER ON

GO

SET ANSI_PADDING ON

GO

CREATE TABLE [dbo].[Others](

        [FoodId] [varchar](10) NOT NULL,

        [Items] [varchar](30) NULL,

        [Price] [int] NOT NULL,

 CONSTRAINT [PK_Others] PRIMARY KEY CLUSTERED

(

        [FoodId] ASC
```

```sql
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY =
OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO
SET ANSI_PADDING OFF

GO

/****** Object:  Table [dbo].[UserInfo]    Script Date: 12/21/2023 11:05:33 AM
******/

SET ANSI_NULLS ON

GO

SET QUOTED_IDENTIFIER ON

GO

SET ANSI_PADDING ON

GO

CREATE TABLE [dbo].[UserInfo](

        [ID] [varchar](10) NOT NULL,

        [Name] [varchar](30) NULL,

        [Password] [varchar](15) NOT NULL,

        [Role] [varchar](20) NULL,

        [Salary] [int] NOT NULL,

 CONSTRAINT [PK_UserInfo] PRIMARY KEY CLUSTERED

(

        [ID] ASC

)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY =
OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO
SET ANSI_PADDING OFF

GO
```

User Roles:

1. **Owners:**
2. Owners wield paramount authority within the system, empowered with a suite of functionalities essential for overseeing the restaurant's operations with finesse. From perusing the comprehensive food menu to managing the roster of employees, owners navigate through a dynamic interface designed to optimize decision-making and streamline administrative tasks.
3. **Employees:**
4. Employees, the front line workforce of the restaurant, are equipped with access to pertinent information vital for delivering exemplary service to patrons. Their designated functionalities revolve around assisting customers by providing insights into the delectable offerings showcased in the food menu.

Key Features:

1. **User Management:**

    1. **Owners:** Exercise meticulous control over the workforce by seamlessly adding, removing, editing, or deleting employee details from the system's repository.
    2. **Employees:** Seamlessly view and update their profile information, ensuring accuracy and relevance.

2. **Menu Navigation:**

    1. **Owners:** Effortlessly peruse the extensive food menu, armed with the ability to make additions, deletions, or modifications as per evolving culinary trends and customer preferences.
    2. **Employees:** Navigate the intuitive food menu interface to assist customers in making informed choices, thereby enhancing their overall dining experience.

3. **Search Functionality:**

    1. **Owners:** Leverage advanced search capabilities to swiftly retrieve employee details by name, facilitating efficient workforce management.
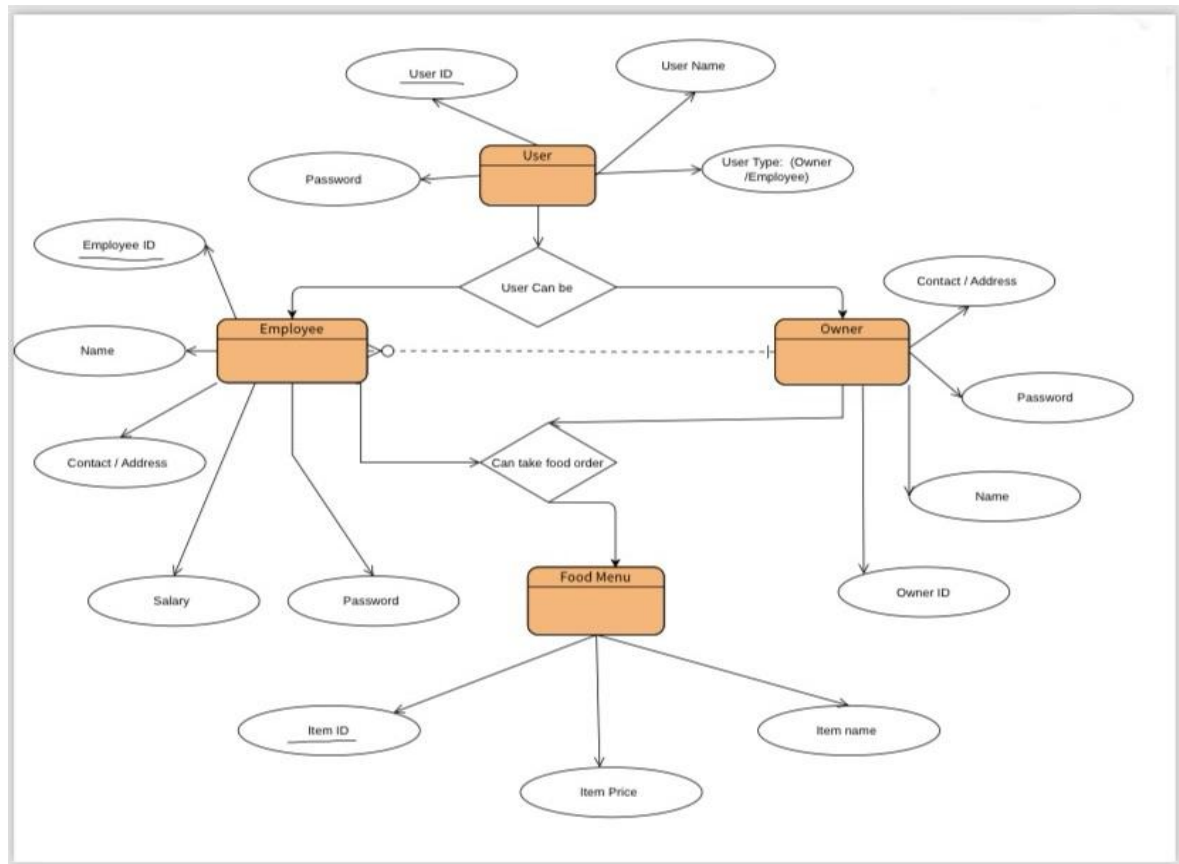
2. **Owners and Employees:** Access the search functionality to quickly locate menu items by name, enhancing operational efficiency and customer service.

4. **Secure Authentication:**
5. Employ cutting-edge encryption protocols to ensure the integrity and confidentiality of user credentials, safeguarding sensitive information against unauthorized access.
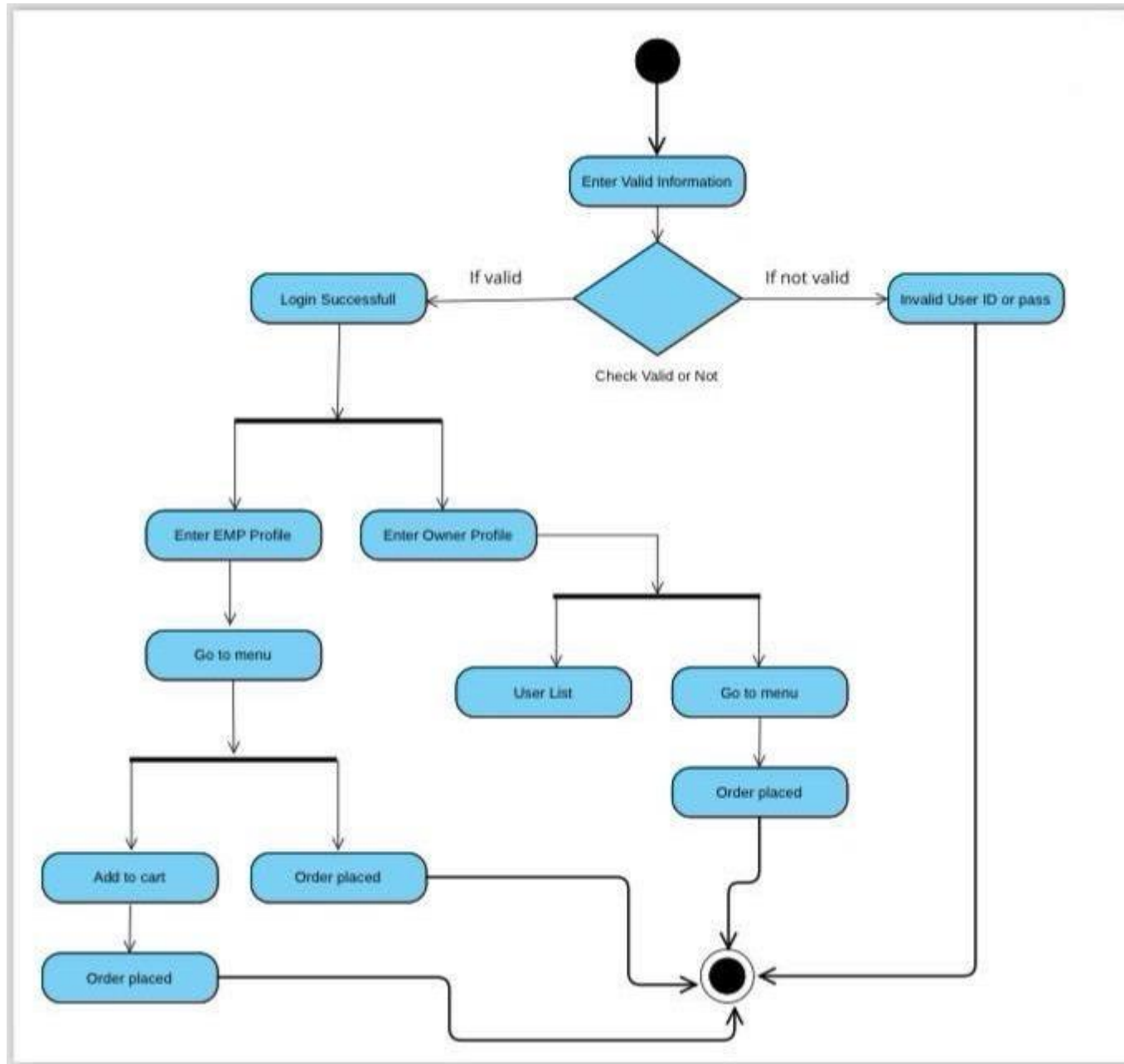
Database Schema:

E-R Diagram:

Activity
Diagram :

Picture: Login Form

Picture: Owner Form

Picture: Employee Form

Picture: User List Form

Picture: Order Form

Picture: Fast Food Form

Product Id	Drinks	Price
d-001	coca-cola	60
d-002	sprite	60
d-003	pepsi	60
d-004	fanta	50
d-005	rc-cola	35
d-006	mojo	40
d-007	water	25

Drinks Items	Drinks Price
fanta	50
fanta	50
rc-cola	35

Double Click For Add Drinks

Back

Show

Search By Drinks

Picture: Drinks Form

Picture: Others Form

Conclusion:

By harnessing the unparalleled capabilities of C# (.NET framework) and Microsoft SQL Server, the Restaurant Management System emerges as a quintessential tool for optimizing restaurant operations. Seamlessly tailored to accommodate the distinct needs of Owners and Employees, this comprehensive solution sets the stage for enhanced efficiency, informed decision-making, and unparalleled customer satisfaction within the culinary realm.