



## AMERICAN INTERNATIONAL UNIVERSITY–BANGLADESH (AIUB)

Dept. of Computer Science  
Faculty of Science and Technology

### CSC2210: OBJECT ORIENTED PROGRAMMING 2

Fall 2023-2024

Section: H

Group No: 05

### Project Report On *Employee Management System*

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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 = 15
Requirement fulfillment	Properly demonstrate a real-life scenario-based project with proper functional requirement identification for the Object-Oriented Programming project development activities.				5
Validation	Ensuring the ability of students’ proper demonstration on validation forms in their system in terms of dealing with the data.				5
Verification	Identifying if the students can verify the system data along with proper functional requirements in terms of data flow.				5

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## Chapter:01

### Introduction:

This Employee management system, which was created using the C# programming language, supports an owner and numerous manager in two separate roles. The Owner has complete control over user information, including the ability to add and remove managers. They have the ability to oversee the main features of the system. Regular managers enjoy secure login features, enabling them to search for fellow employees, view salary information, and modify their passwords. This system prioritizes robust security measures while maintaining an intuitive interface for seamless data management. Its design ensures a user-friendly experience, empowering both owner and manager to efficiently handle employee information within the organization.

## Chapter:02

### User Stories:

There are Basically Two types of users in our system. One is Owner and the other one is Manager. The Features are describing below;

#### Owner:

- 1. Login Functionality:** Owner can securely log in using a unique user ID and password. The system validates credentials and allows access upon correct input. Incorrect entries prompt error messages for wrong user ID or password.
- 2. Employee Search:** The owner possesses the ability to swiftly locate specific employees within the system by utilizing their unique identification numbers (IDs). This feature provides a convenient and efficient means of accessing precise employee information. By inputting the employee's unique ID, the owner can instantly retrieve detailed information. This streamlined search capability enhances organizational efficiency, enabling prompt access to individual employee profiles for necessary updates, reviews, or reference purposes.
- 3. Manage Employees:** Access to comprehensive employee details (Employee ID, name, salary, DOB, joining date, designation) is provided. Owner can edit and update employee information. Additionally, functionalities to add and delete users from the database are available within this module.
- 4. Leave Management:** The owner can access and manage employee leave records, including the number of days an employee has been on leave. Additionally, the owner has the authority to increase the leave day count for employees. If the total leave count surpasses 20 days, an automated penalty system is activated. For each day exceeding the 20-day threshold, the system deducts 500 takas from the employee's main salary as a fine. This automated process ensures meticulous leave tracking while enforcing adherence to leave policies, with the system seamlessly updating the database to reflect these adjustments.

**5. Salary Management:** Within this module, the owner can promote employees' positions in addition to updating their salary. Salary increases are made easy with this empowerment, as the database is instantly updated to reflect the changes. Additionally, the owner can update personnel designations, guaranteeing precise and timely changes that are in line with the organizational structure.

**6. Change Password:** This section enables the Owner to change their password securely. By entering the old password and typing a new one twice, the system ensures a smooth and secure password update process.

**7.Add User:** The Owner can add multiple users to the system by adding their User Id, User name, Role and Password.

**8. Logout Functionality:** Owner can securely log out from the system, ensuring data security and confidentiality.

These features empower the Owner with comprehensive control over employee data, allowing for seamless management of employee details, leave records, salary adjustments, and secure password management.

## **Manager:**

- 1. Login Functionality:** Managers can securely log in using their unique user ID and password. The system authenticates credentials, providing access upon correct entry. Incorrect inputs prompt error messages for wrong user ID or password.
- 2. View Employee Info:** Manager can search and access limited details of fellow employees, including names, employee IDs, contact numbers, and designations. This feature allows for information retrieval without the ability to make changes.
- 3. Change Password:** Managers can update their passwords securely. By entering the old password and typing a new one twice, the system ensures a smooth and secure password update process.
- 4. Logout Functionality:** Managers can securely log out of the system using a dedicated button, ensuring data security and confidentiality.

Managers are equipped with essential functions through these features, like reading personal information, controlling their own passwords, accessing restricted employee data, and safely exiting the system.

## **Technology Stack:**

**Language:** C#

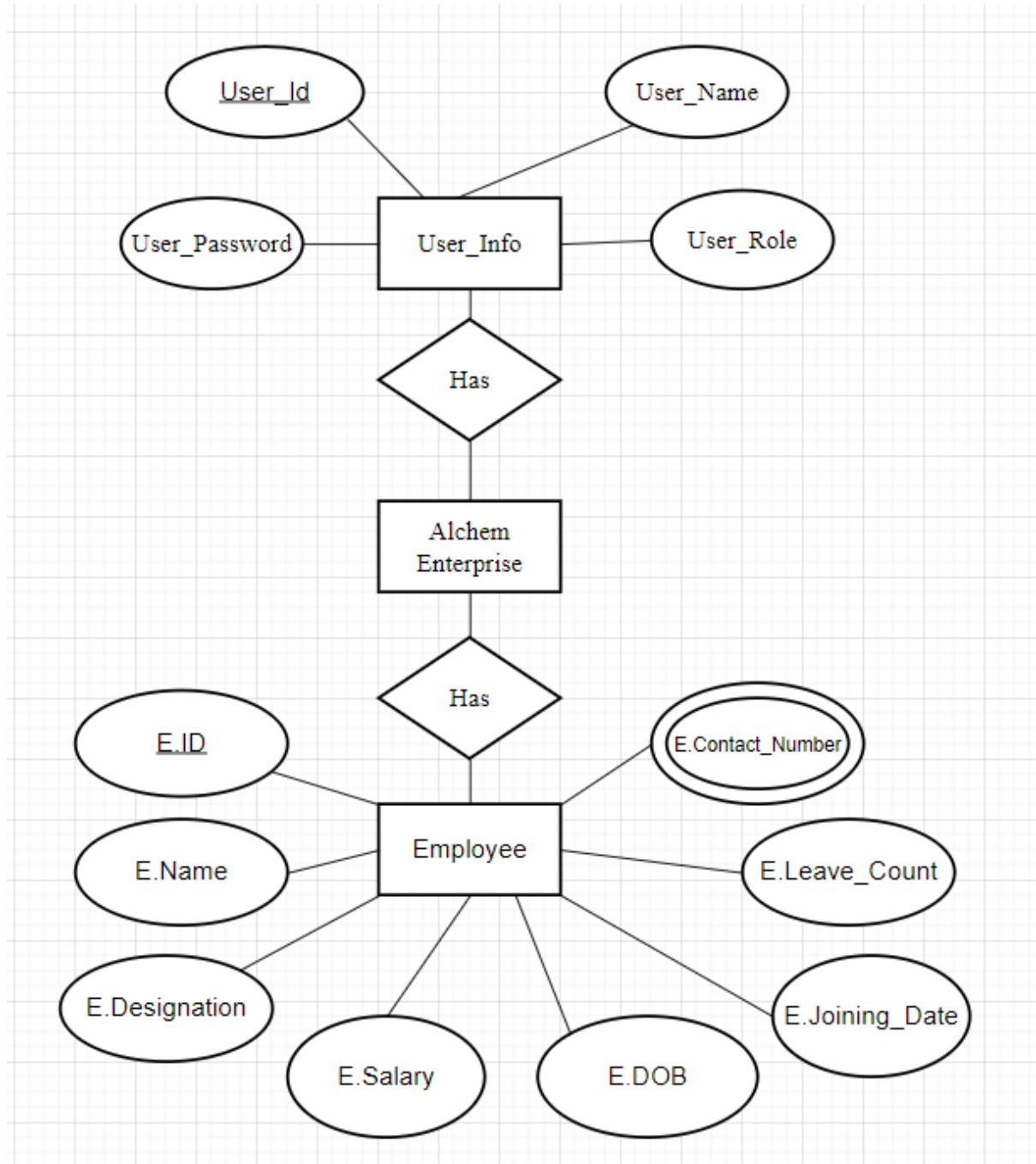
**Framework:** .NET Framework

**Database:** SQL Server

**User Interface:** Windows Forms

## Chapter:03

### ER Diagram:



**Fig: ER Diagram**

## **Normalization:**

### **Employee:**

#### **2NF:**

E.ID(Primary key), E.Name, E.Designation, E.Salary, E.DOB, E.Joining\_date, E.Leave\_Count, E.Contact\_Number

### **User:**

#### **2NF:**

User\_Id (Primary key), User\_Name, User\_Password, User\_Role

## **SQL SERVER Queries:**

### **Table Creation Query For Employee Data Table:**

```
CREATE TABLE [dbo].[EmployeeData](
    [Emp. ID] [nvarchar](10) NOT NULL,
    [Emp. Name] [nvarchar](70) NOT NULL,
    [Designation] [nvarchar](50) NOT NULL,
    [Salary] [int] NOT NULL,
    [DOB] [date] NOT NULL,
    [Contact Number] [nvarchar](11) NULL,
    [Joining Date] [date] NOT NULL,
    [Total Leave Count] [int] NULL
) ON [PRIMARY]
```

### **Table Creation Query For User Info Table:**

```
CREATE TABLE [dbo].[UserInfo](
    [Id] [nvarchar](10) NOT NULL,
    [UserName] [nvarchar](80) NOT NULL,
    [Password] [nvarchar](80) NOT NULL,
    [Role] [nvarchar](20) NOT NULL,
    CONSTRAINT [pk_id] 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]
```

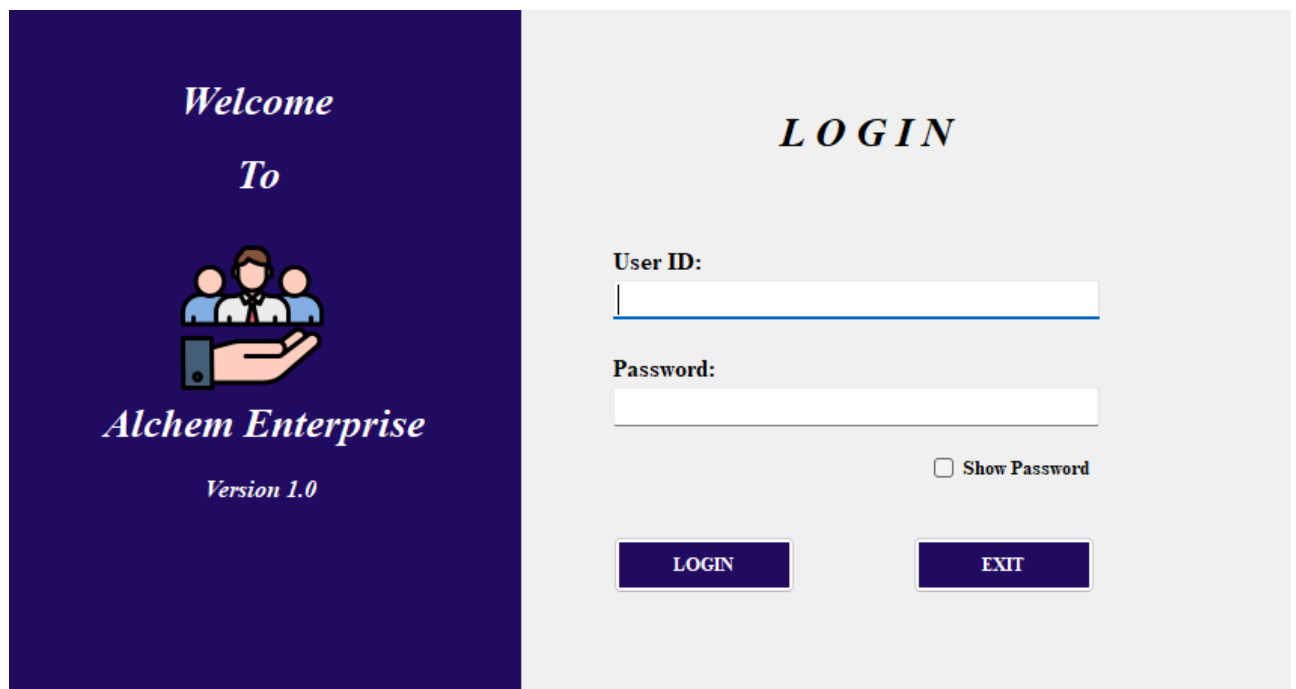
**Screenshots:**

1.



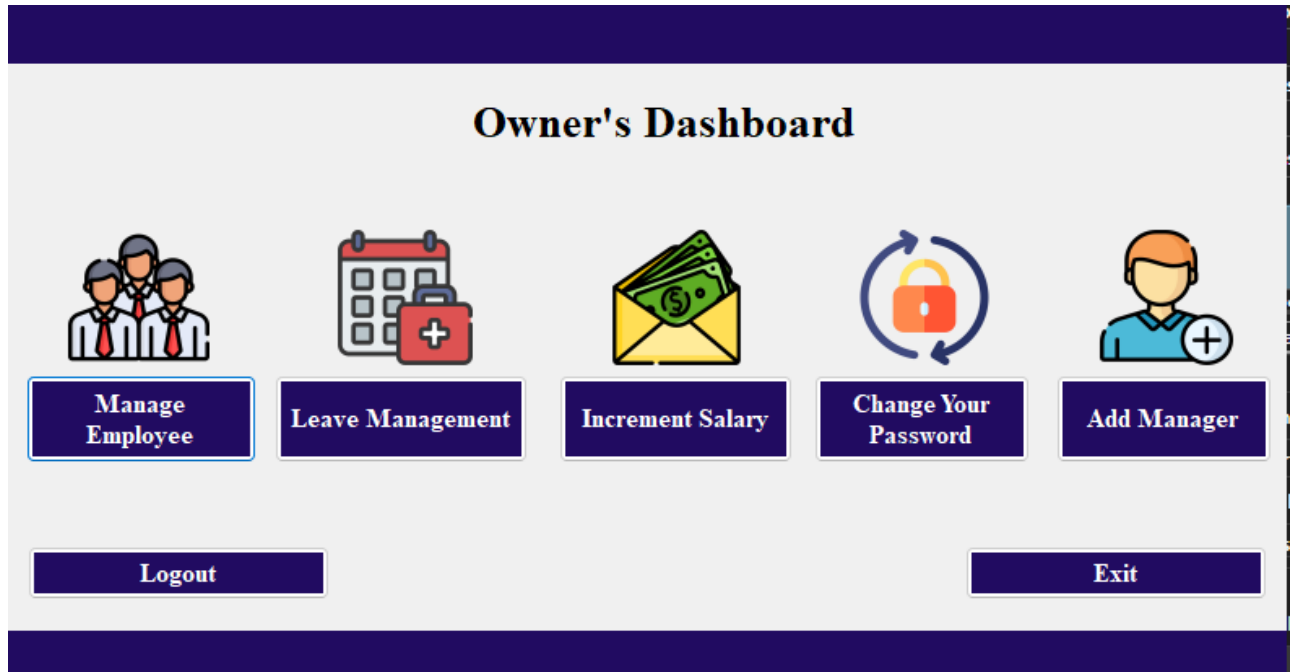
**Fig: Loading Form**

2.

A screenshot of a login interface for "Alchem Enterprise". The interface is split into two panels. The left panel has a dark blue background and contains the text "Welcome To" in white, an icon of a hand holding a tablet with three people on it, the text "Alchem Enterprise" in a white serif font, and "Version 1.0" below it. The right panel has a light gray background and is titled "LOGIN" in a bold, italicized serif font. It contains two input fields: "User ID:" and "Password:". Below the password field is a checkbox labeled "Show Password". At the bottom, there are two buttons: "LOGIN" and "EXIT", both in white text on a dark blue background.

**Fig: Login Form**

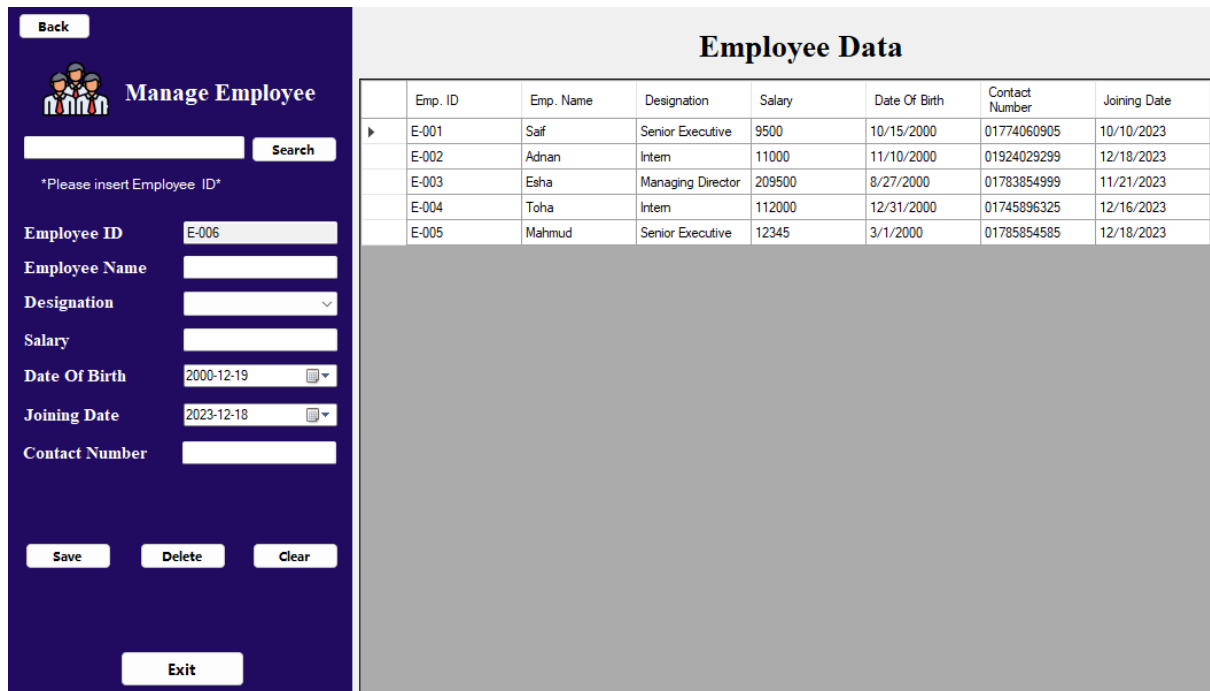
3.



The Owner's Dashboard is a web interface with a dark blue header and footer. The main content area is light gray and features a central title "Owner's Dashboard" in bold black text. Below the title, there are five large, rounded rectangular buttons arranged horizontally, each with an icon and a label: "Manage Employee" (icon of three people), "Leave Management" (icon of a calendar with a red plus sign), "Increment Salary" (icon of a yellow envelope with money), "Change Your Password" (icon of a padlock with a circular arrow), and "Add Manager" (icon of a person with a plus sign). At the bottom of the dashboard, there are two more buttons: "Logout" on the left and "Exit" on the right, both in dark blue with white text.

Fig: Owner Dashboard Form

4.



The Manage Employees Form is a web interface with a dark blue header and footer. The main content area is light gray and features a central title "Employee Data" in bold black text. On the left side, there is a dark blue sidebar with a "Back" button at the top. Below it, there is a "Manage Employee" section with a search bar and a "Search" button. The search bar has a placeholder text "\*Please insert Employee ID\*". Below the search bar, there are several input fields for employee information: "Employee ID" (with the value "E-006"), "Employee Name", "Designation" (a dropdown menu), "Salary", "Date Of Birth" (a date picker with the value "2000-12-19"), "Joining Date" (a date picker with the value "2023-12-18"), and "Contact Number". At the bottom of the sidebar, there are three buttons: "Save", "Delete", and "Clear", and an "Exit" button at the very bottom. The main content area on the right contains a table with the following data:

Emp. ID	Emp. Name	Designation	Salary	Date Of Birth	Contact Number	Joining Date
E-001	Saf	Senior Executive	9500	10/15/2000	01774060905	10/10/2023
E-002	Adnan	Intern	11000	11/10/2000	01924029299	12/18/2023
E-003	Esha	Managing Director	209500	8/27/2000	01783854999	11/21/2023
E-004	Toha	Intern	112000	12/31/2000	01745896325	12/16/2023
E-005	Mahmud	Senior Executive	12345	3/1/2000	01785854585	12/18/2023

Fig: Manage Employees Form



5.

Back

## Manage Leave

Search

\*Please insert Employee ID\*

Employee ID

Employee Name

Designation

▼

Total Leave Count

Leave Increase Day

\*The total leave count is 20 per year,  
After each day, 500 taka salary will be deducted.\*

Save
Clear

Exit

### Employee Data

	Emp. ID	Emp. Name	Designation	Total Leave Count
▶	E-001	Saif	Senior Executive	18
	E-002	Adnan	Intern	20
	E-003	Esha	Managing Director	24
	E-004	Toha	Intern	22
	E-005	Mahmud	Senior Executive	10

**Fig: Manage Leave Form**

6.

Back

## Update Salary

Search

\*Please insert Employee ID\*

Employee ID

Employee Name

Designation

▼

Current Salary

Increment Amount

Save
Clear

Exit


### Employee Data

	Emp. ID	Emp. Name	Designation	Salary
▶	E-001	Saif	Senior Executive	9500
	E-002	Adnan	Intern	11000
	E-003	Esha	Managing Director	209500
	E-004	Toha	Intern	112000
	E-005	Mahmud	Senior Executive	12345

**Fig: Update Salary Form**

7.

Back



**Want to Change your Password?**  
Changing your Password is a good initiative!

User ID:

Old Password:


New Password:

Re-Type New Password:

**Fig:Owner Change Password Form**

8.

Back



**Welcome!**

**\*To Add an User, Please Provide the informations Below.\***

User ID:

User Name:

Role:

New Password:

Re-Type New Password:

**Fig: Add User Form**

9.



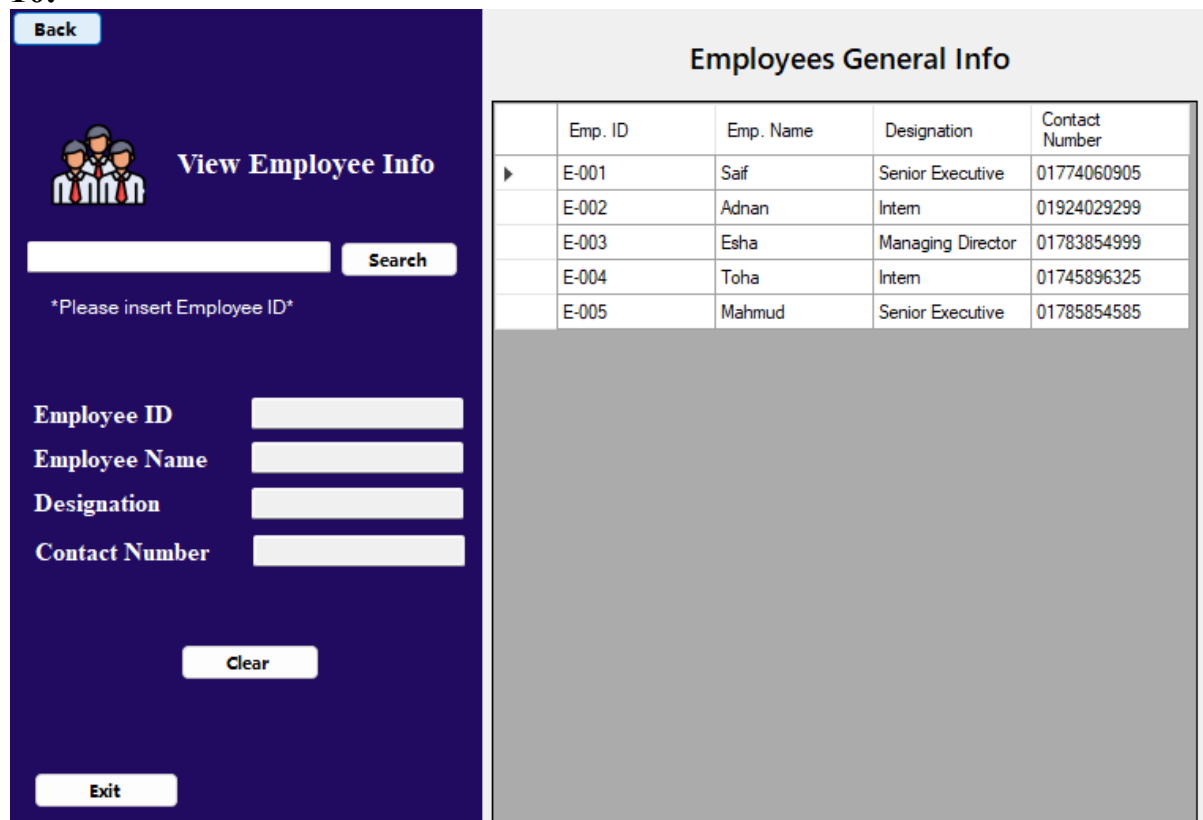
**Manager's Dashboard**

View Employees Change Password

Logout Exit

**Fig: Manager Dashboard Form**

10.



**View Employee Info**

Back

Search

\*Please insert Employee ID\*

Employee ID

Employee Name

Designation

Contact Number

Clear


Exit

**Employees General Info**

	Emp. ID	Emp. Name	Designation	Contact Number
▶	E-001	Saif	Senior Executive	01774060905
	E-002	Adnan	Intern	01924029299
	E-003	Esha	Managing Director	01783854999
	E-004	Toha	Intern	01745896325
	E-005	Mahmud	Senior Executive	01785854585

**Fig: View Employees Form**

11.



**Want to Change your Password?**  
Changing your Password is a good initiative!

User ID:

Old Password:

New Password:

Re-Type New Password:

**Fig: Manager Change Password**