VANIER DESKTOP APPLICATION FINAL PROJECT DOCUMENT

DELIVERABLE 3

Project Title: Employee Management System

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1. Project Scope

The Employee Management System is designed to streamline HR and employee-related tasks within a company. The system serves two primary user groups: HR/Admin and Employees.

Users:

- **HR/Admin:** Responsible for managing employee data, payroll, and leave.
- **Employees:** Can view their personal information, payroll details, leave status, and holiday calendar.

Beneficiaries:

- **HR/Admin:** Benefit from an efficient, centralized system for managing employee records, payroll, and leave.
- **Employees:** Gain easy access to their personal information and HR-related updates.

Potential Clients:

- **Small to Medium Enterprises (SMEs)**
- **Human Resource Consulting Firms**
- **Payroll Service Providers**
- **Educational Institutions**
- **Healthcare Organizations**

2. Project Functionalities

This section details the functionalities implemented in the project, how they work, and how users interact with them.

Admin Module:

1. **Manage Employee Details:**
    - **Add Employee Information:** Admin can enter new employee information and save it to the MSSQL database.
    - **Update Employee Information:** Admin can update existing employee details based on employee ID.
    - **Delete Employee Information:** Admin can remove employee information from the database using employee ID.
    - **Load Employee Information Database:** Admin can load and view all employee information stored in the database.
2. **Leave Management:**
    - Admin can manage employee leave requests and status.
3. **Payroll Management:**
    - Admin can manage payroll information for employees, including viewing and updating salary details.

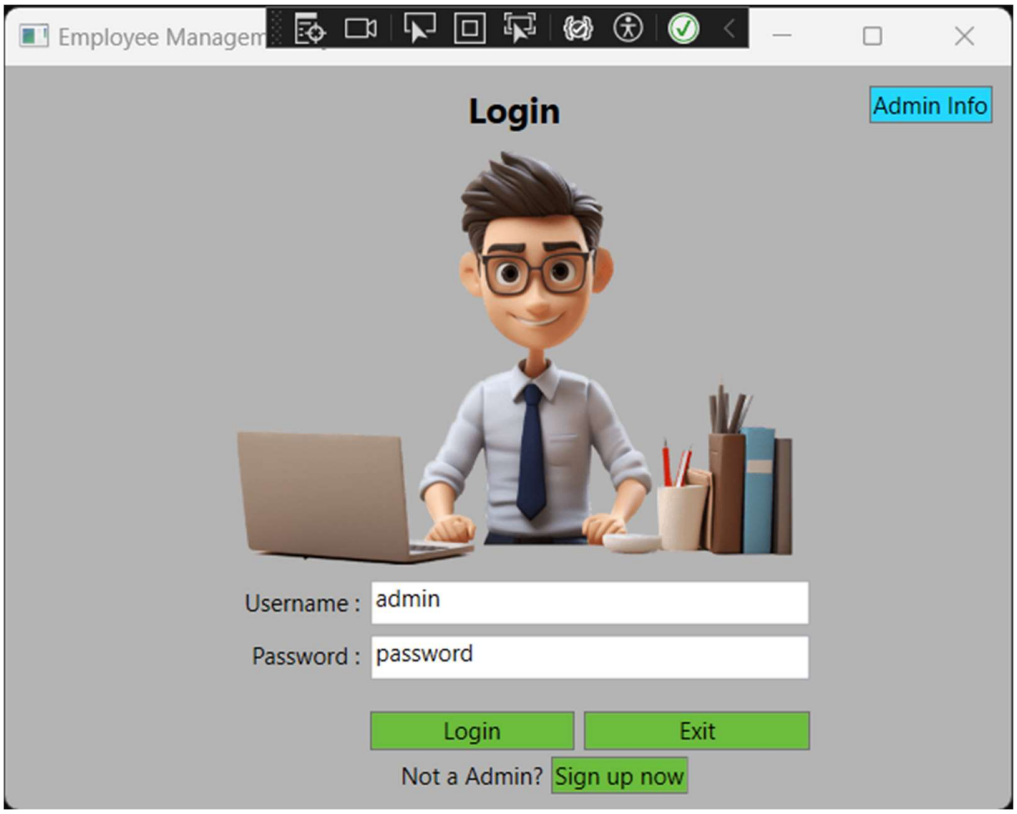
Employee Module:

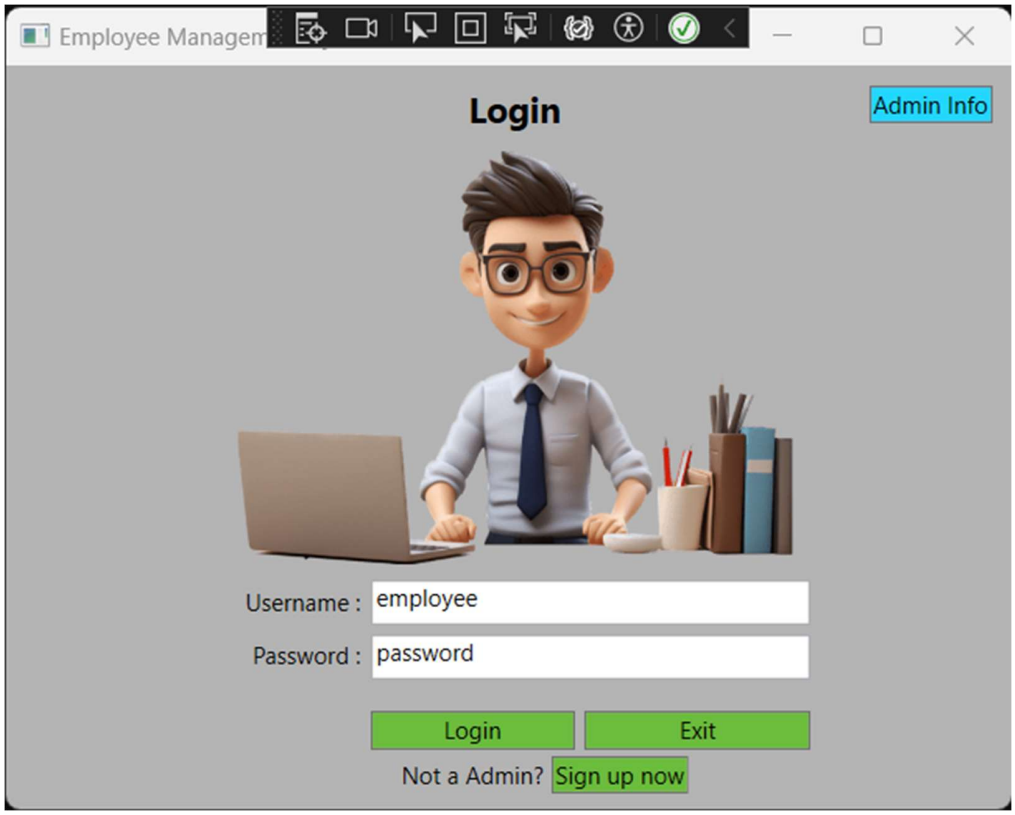
1. **View Personal Details:**
    - Employees can log in to view their personal information stored in the system.
2. **Apply for Leave and Check Leave Status:**
    - Employees can apply for leave and check the status of their leave requests.

3. **Check Payroll Information:**
    - Employees can view their salary details and payroll history.

Navigation and Screenshots:

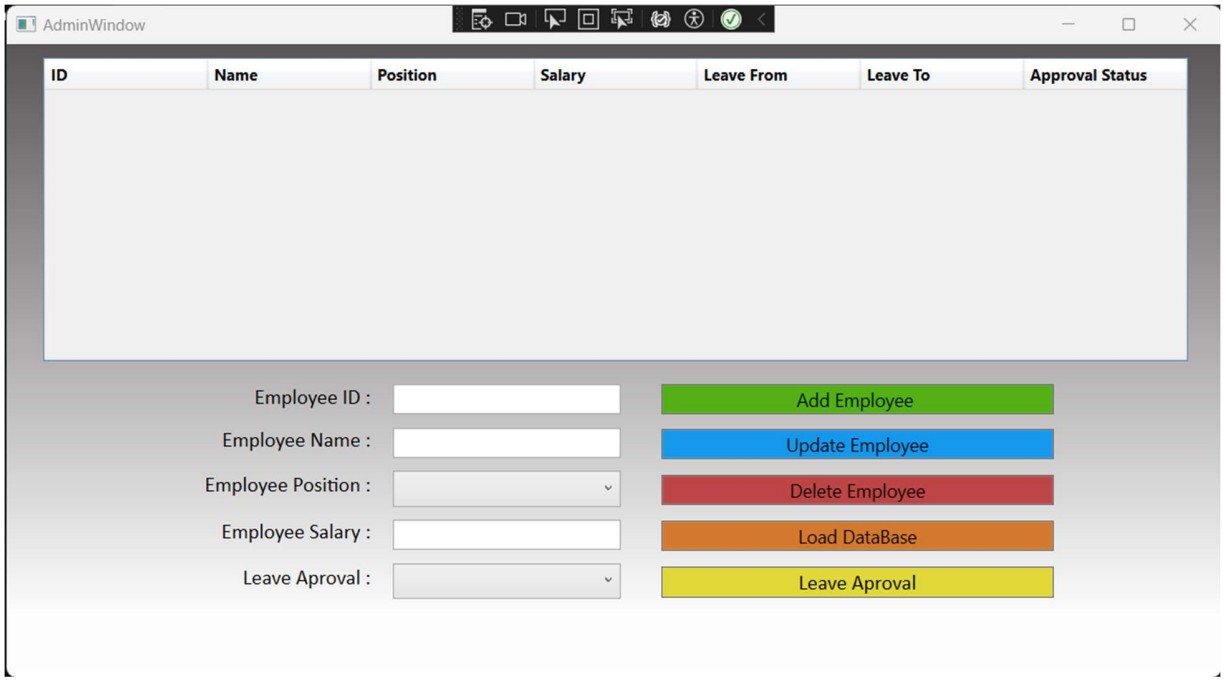
- **Main Window:**
    - On starting the application, users see the login screen where they enter their credentials.
    - Depending on the credentials, users are redirected to either the admin or employee interface.



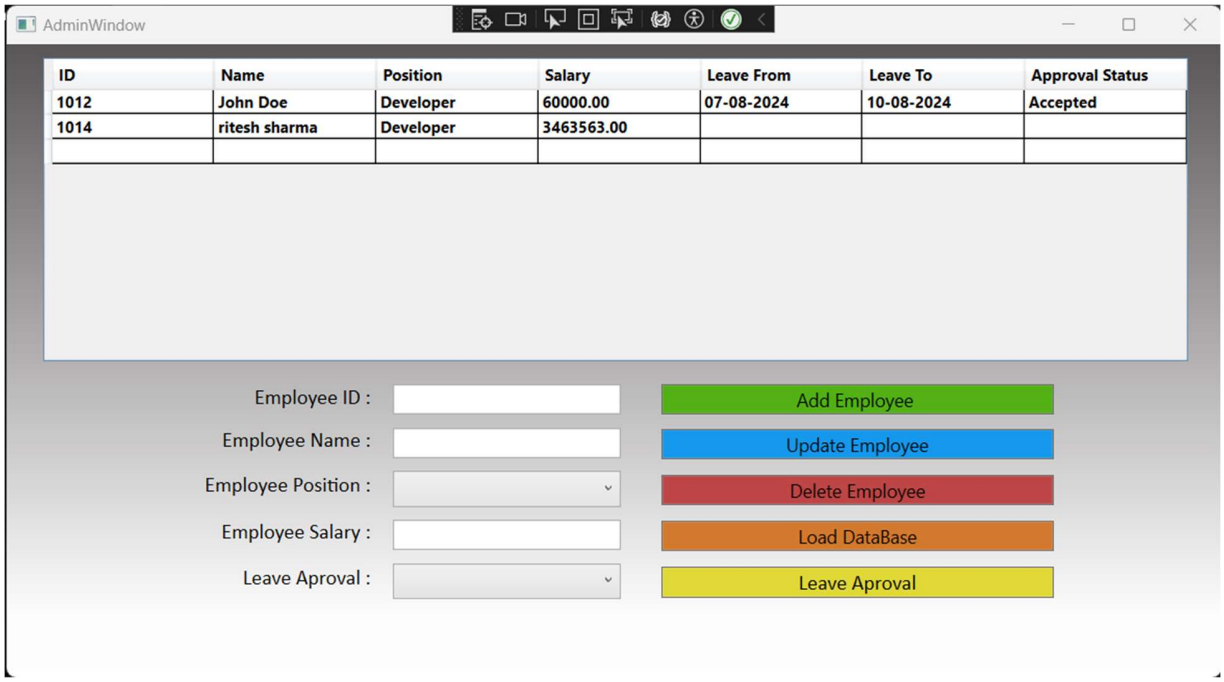


- **Admin Window:**
    - Admins can choose to add, update, delete, or load employee information from the database.
    - Separate sections for managing payroll and leave.

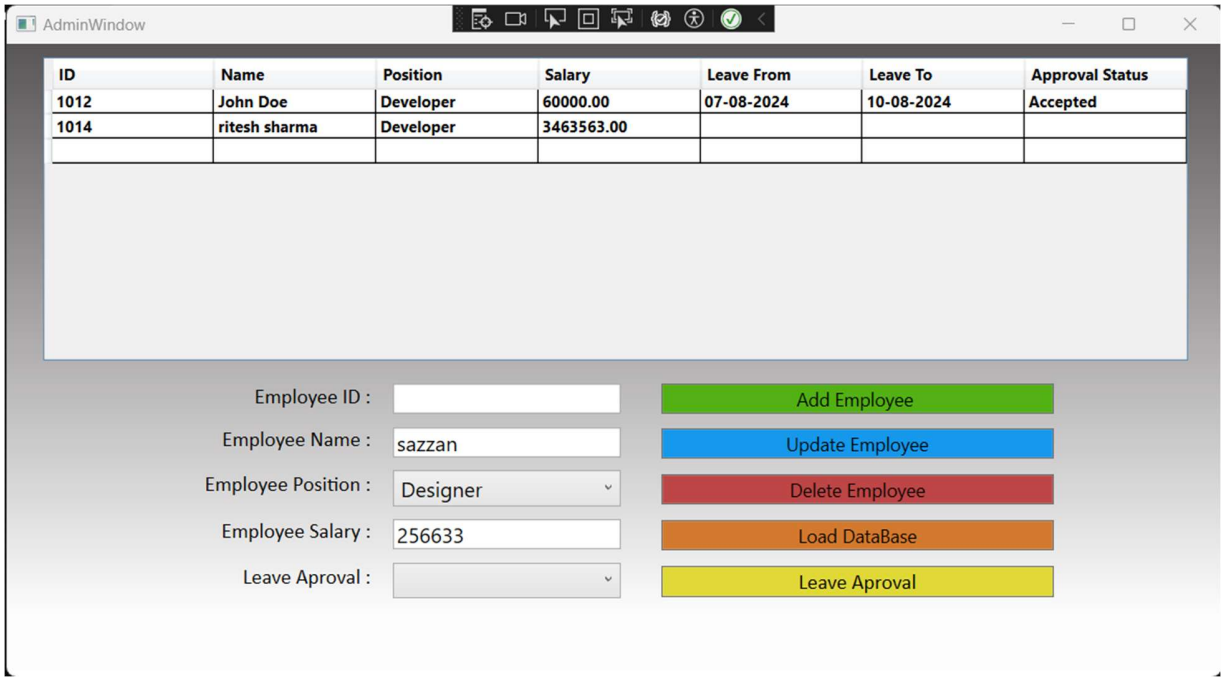
Admin Section

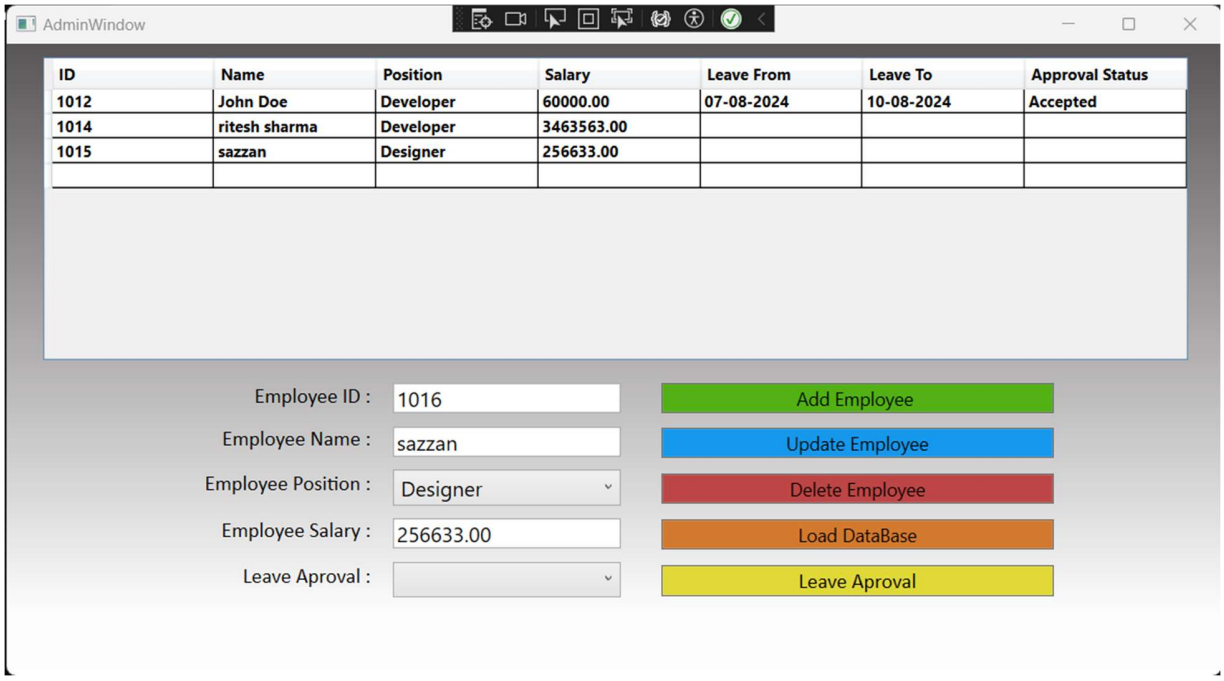


Load Section

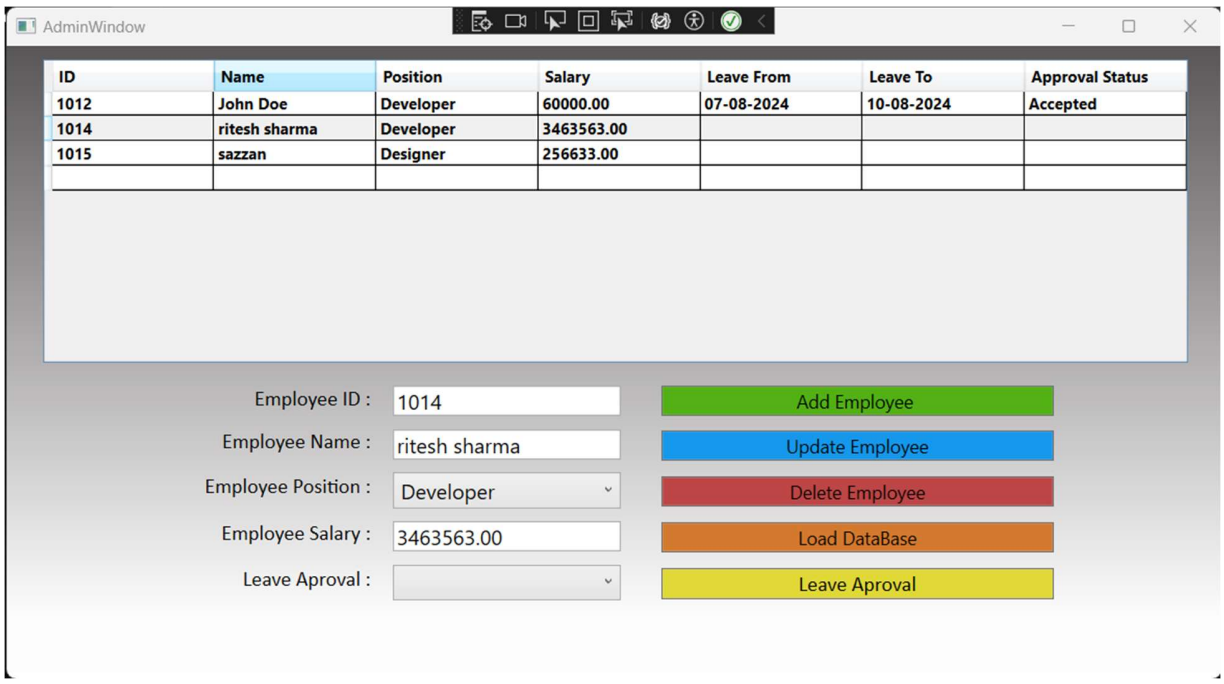


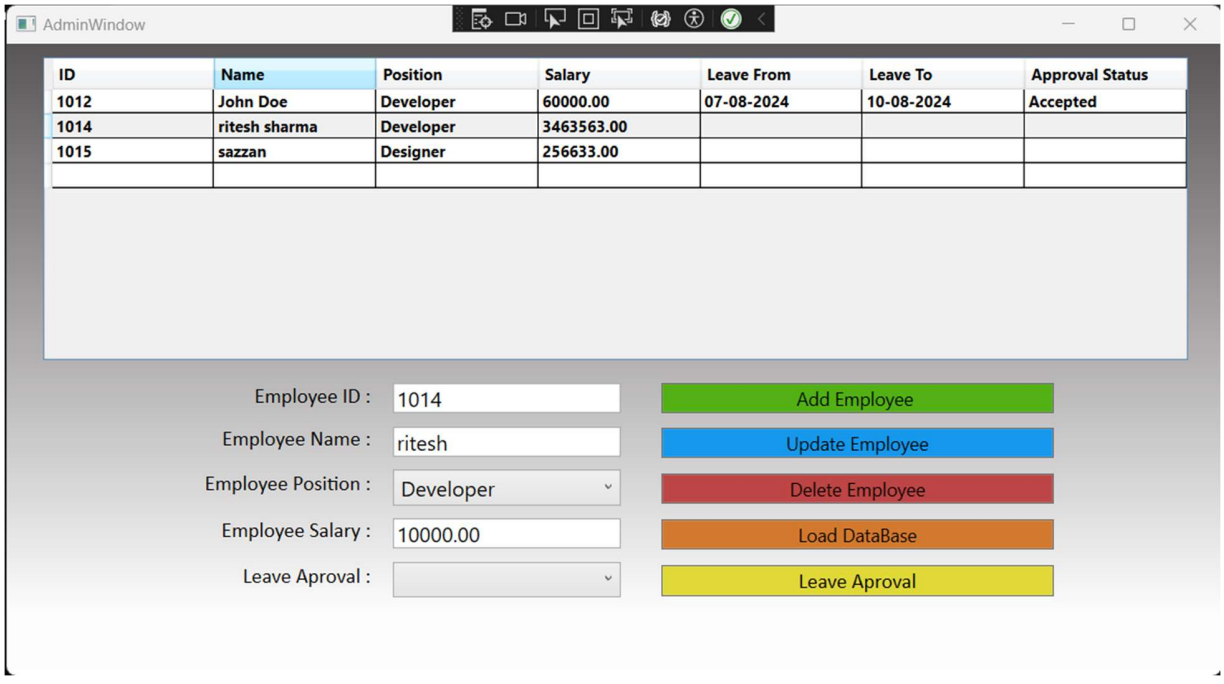
Add Section

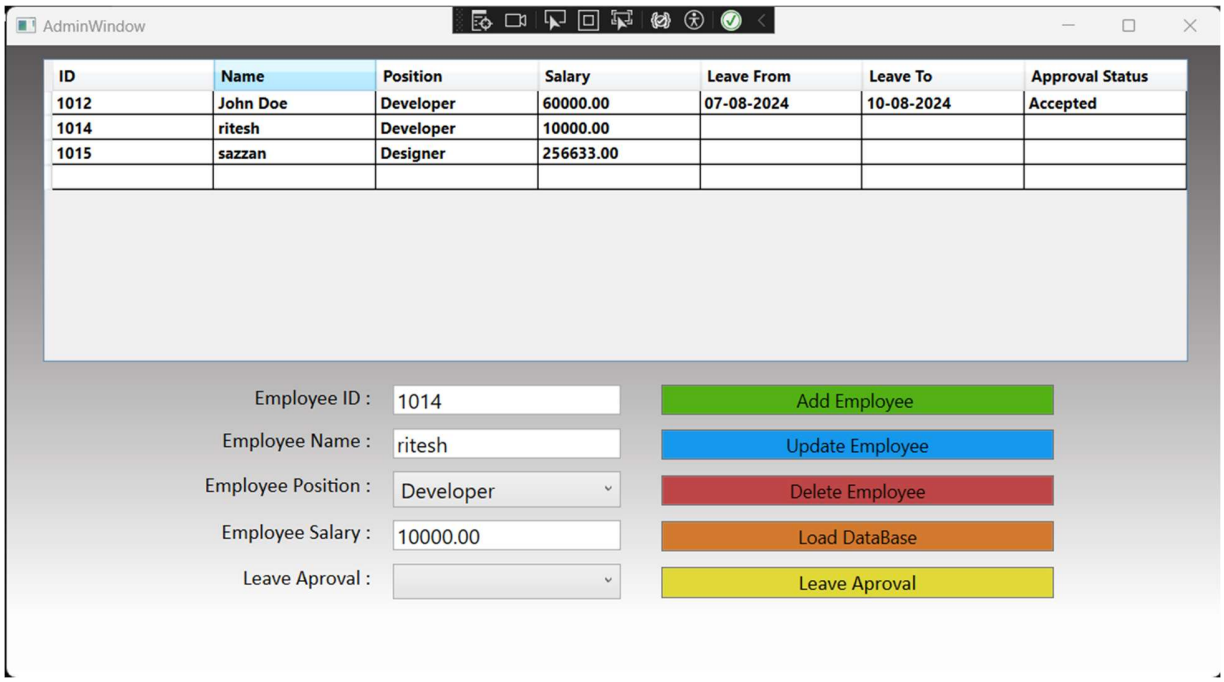

AdminWindow
ID
Name
Position
Salary
Leave From
Leave To
Approval Status
1012
John Doe
Developer
60000.00
07-08-2024
10-08-2024
Accepted
1014
ritesh sharma
Developer
3463563.00
Employee ID :
Employee Name :
sazzan
Employee Position :
Designer
Employee Salary :
256633
Leave Aproval :
Add Employee
Update Employee
Delete Employee
Load DataBase
Leave Aproval


AdminWindow
ID
Name
Position
Salary
Leave From
Leave To
Approval Status
1012
John Doe
Developer
60000.00
07-08-2024
10-08-2024
Accepted
1014
ritesh sharma
Developer
3463563.00
1015
sazzan
Designer
256633.00
Employee ID :
1016
Employee Name :
sazzan
Employee Position :
Designer
Employee Salary :
256633.00
Leave Aproval :
Add Employee
Update Employee
Delete Employee
Load DataBase
Leave Aproval

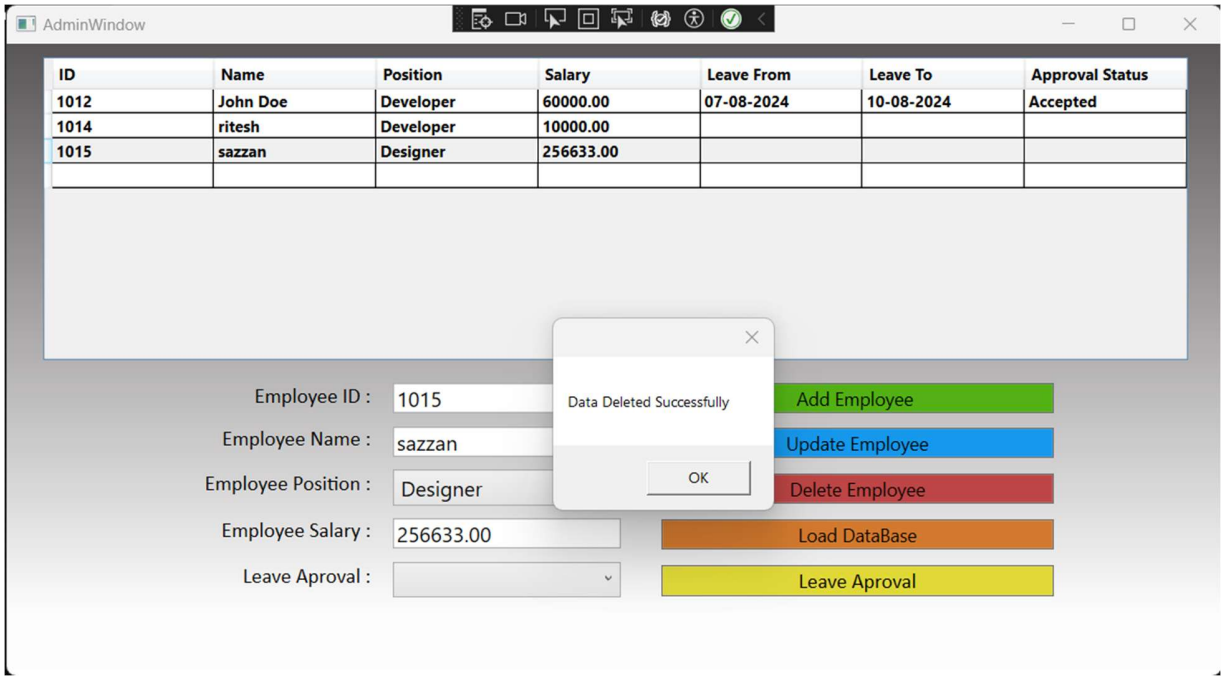
Update Section

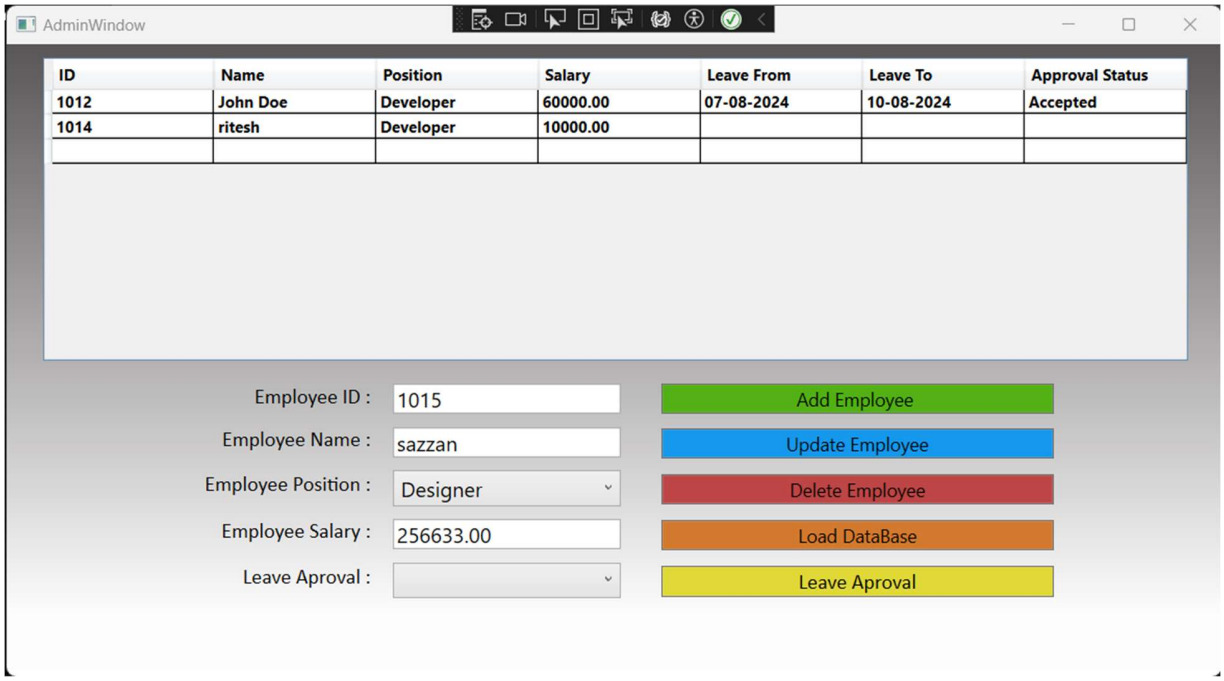




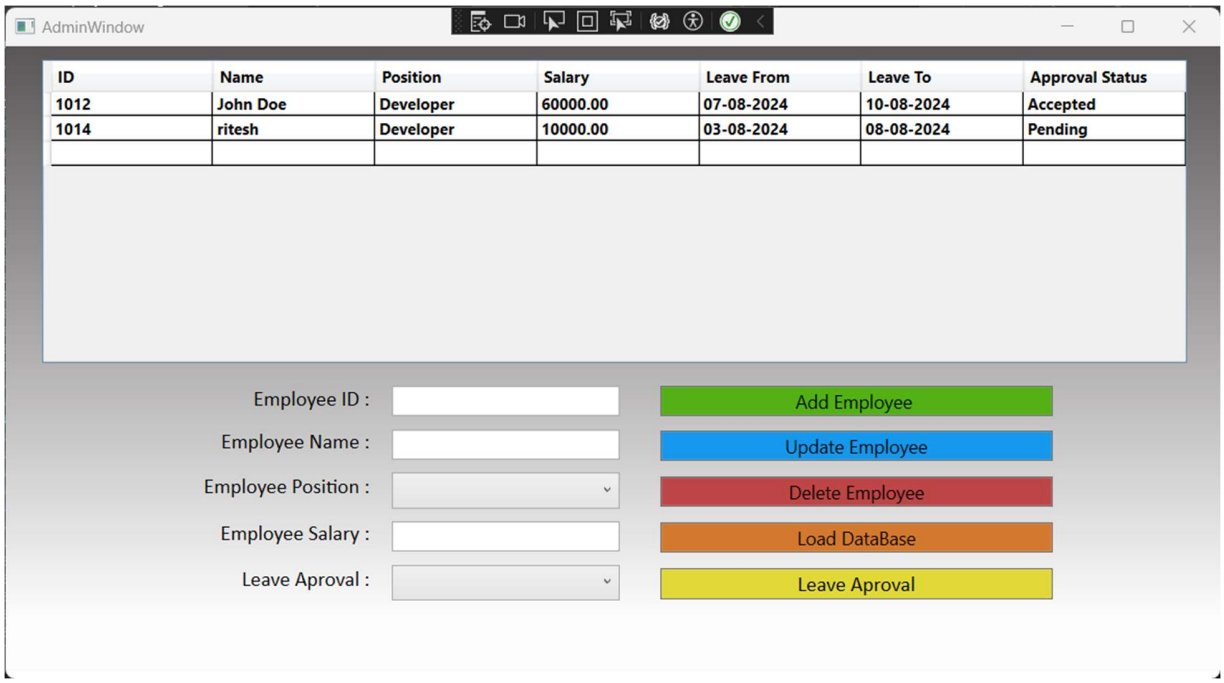


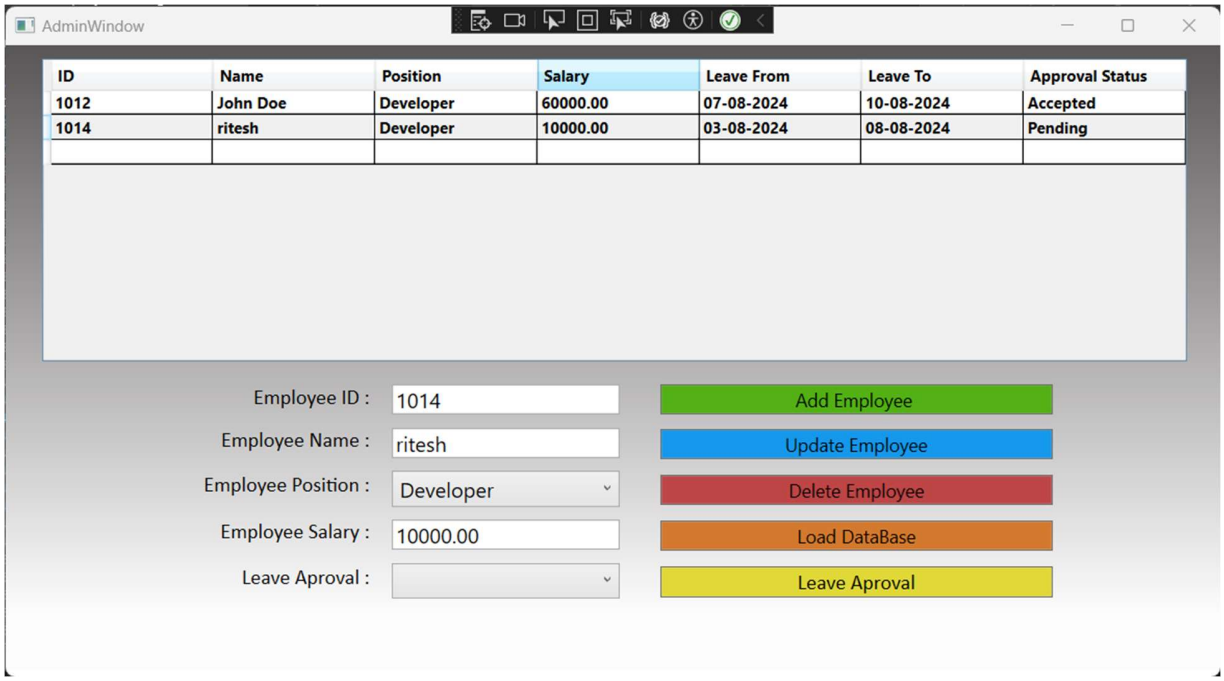
Delete Section

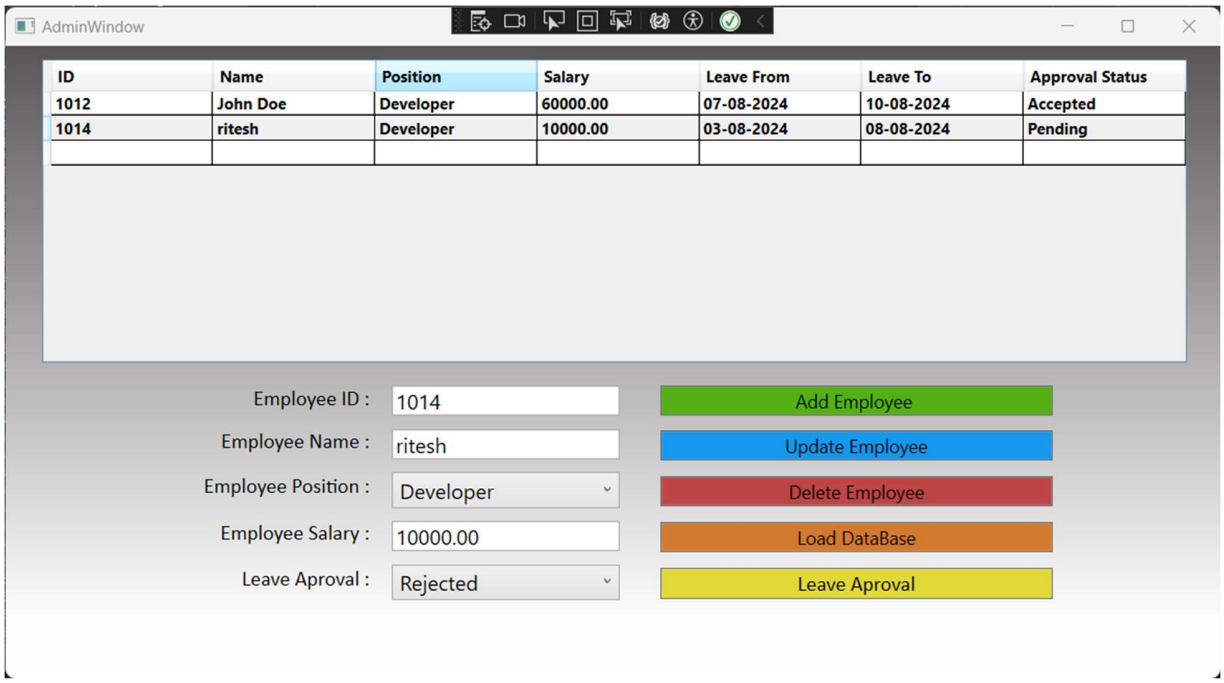


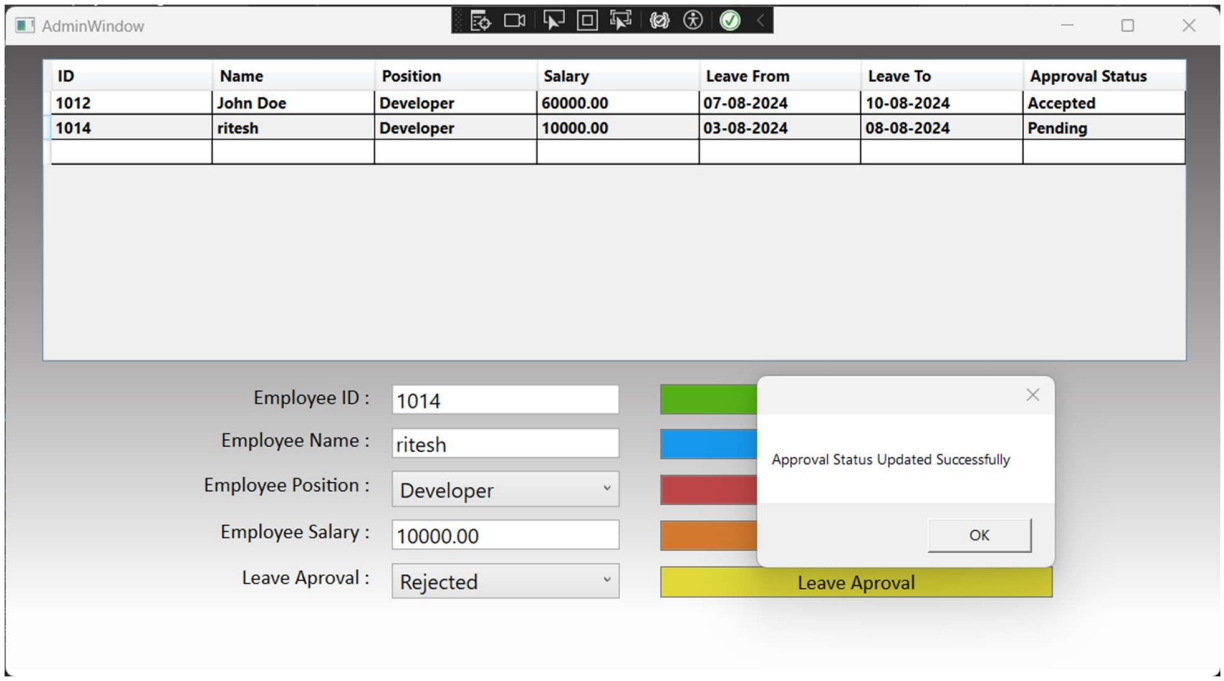


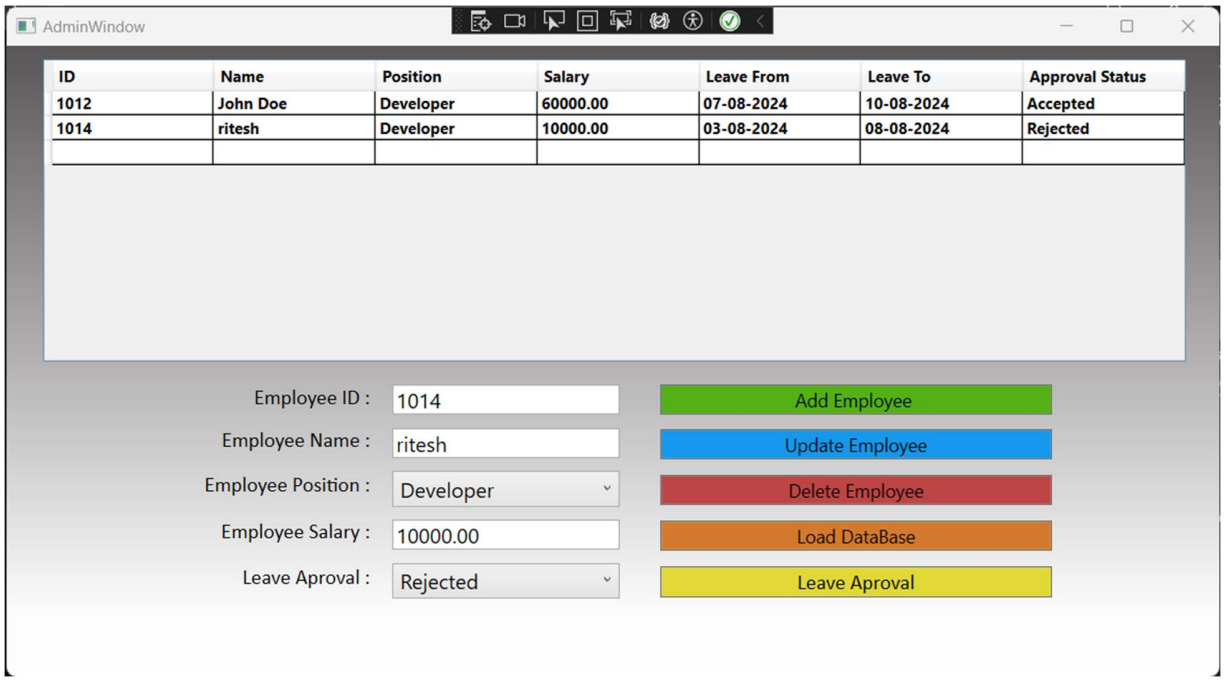
Leave Section



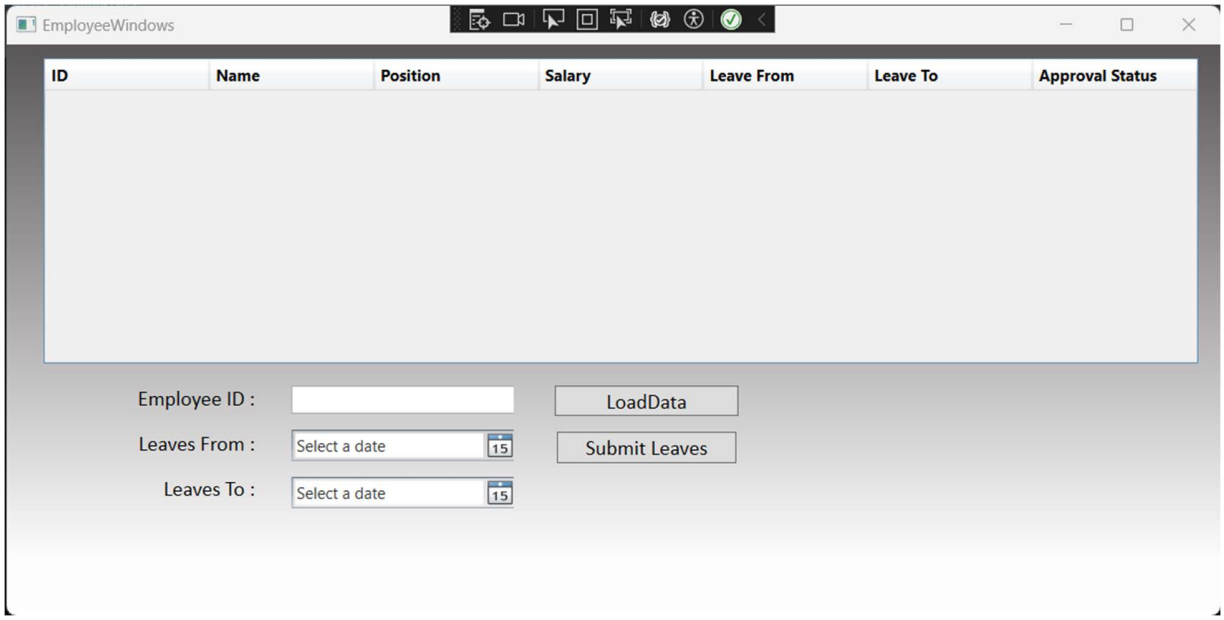

AdminWindow
ID
Name
Position
Salary
Leave From
Leave To
Approval Status
1012
John Doe
Developer
60000.00
07-08-2024
10-08-2024
Accepted
1014
ritesh
Developer
10000.00
03-08-2024
08-08-2024
Pending
Employee ID :
1014
Employee Name :
ritesh
Employee Position :
Developer
Employee Salary :
10000.00
Leave Aproval :
Add Employee
Update Employee
Delete Employee
Load DataBase
Leave Aproval

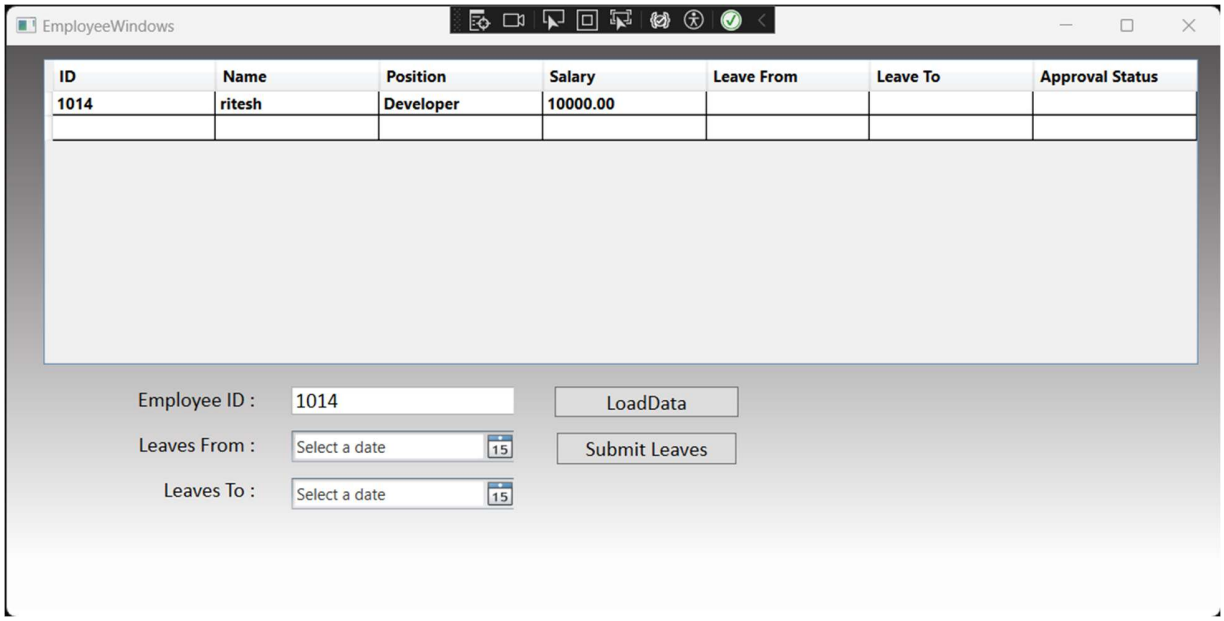

AdminWindow
ID
Name
Position
Salary
Leave From
Leave To
Approval Status
1012
John Doe
Developer
60000.00
07-08-2024
10-08-2024
Accepted
1014
ritesh
Developer
10000.00
03-08-2024
08-08-2024
Pending
Employee ID :
1014
Employee Name :
ritesh
Employee Position :
Developer
Employee Salary :
10000.00
Leave Aproval :
Rejected
Add Employee
Update Employee
Delete Employee
Load DataBase
Leave Aproval





- **Employee Window:**
    - Employees can view their personal details and leave status.


EmployeeWindows
ID
Name
Position
Salary
Leave From
Leave To
Approval Status
Employee ID :
LoadData
Leaves From :
Select a date
Submit Leaves
Leaves To :
Select a date


EmployeeWindows
ID
Name
Position
Salary
Leave From
Leave To
Approval Status
1014
ritesh
Developer
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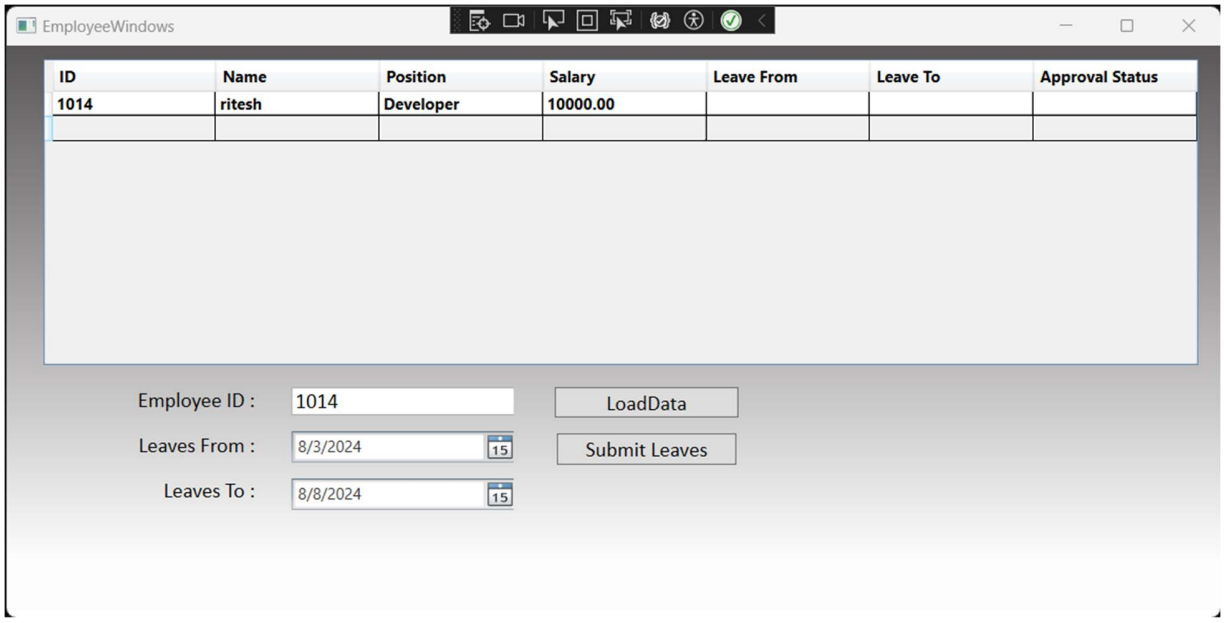
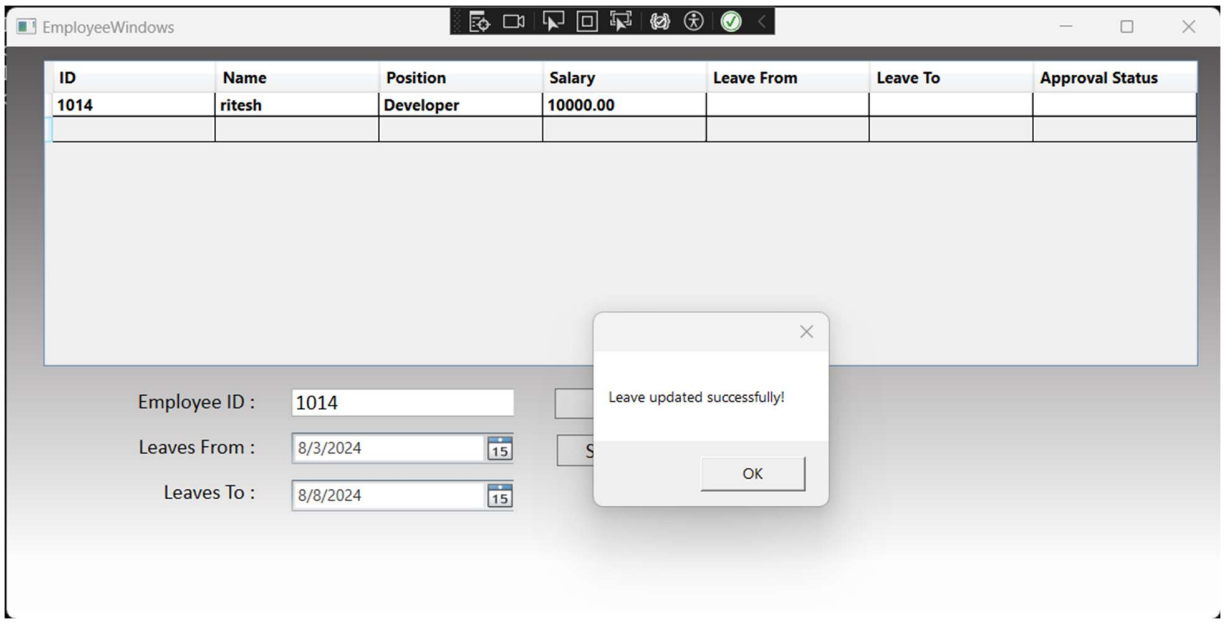
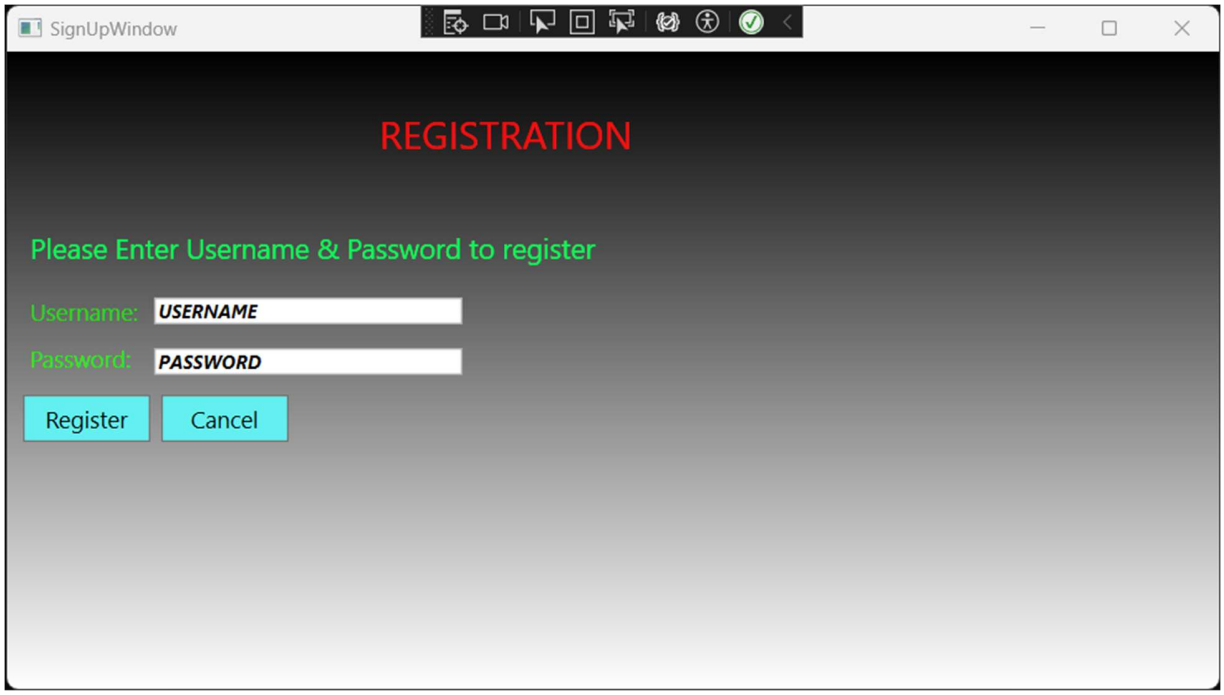
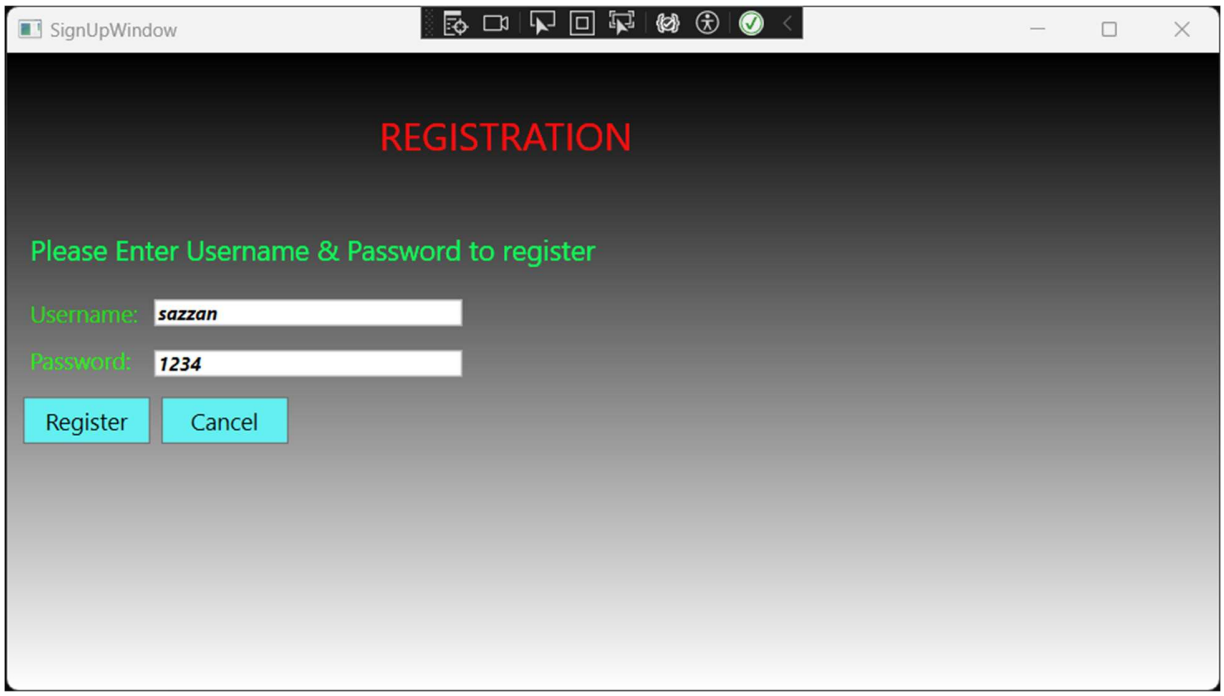
Employee ID :
1014
LoadData
Leaves From :
Select a date
Submit Leaves
Leaves To :
Select a date

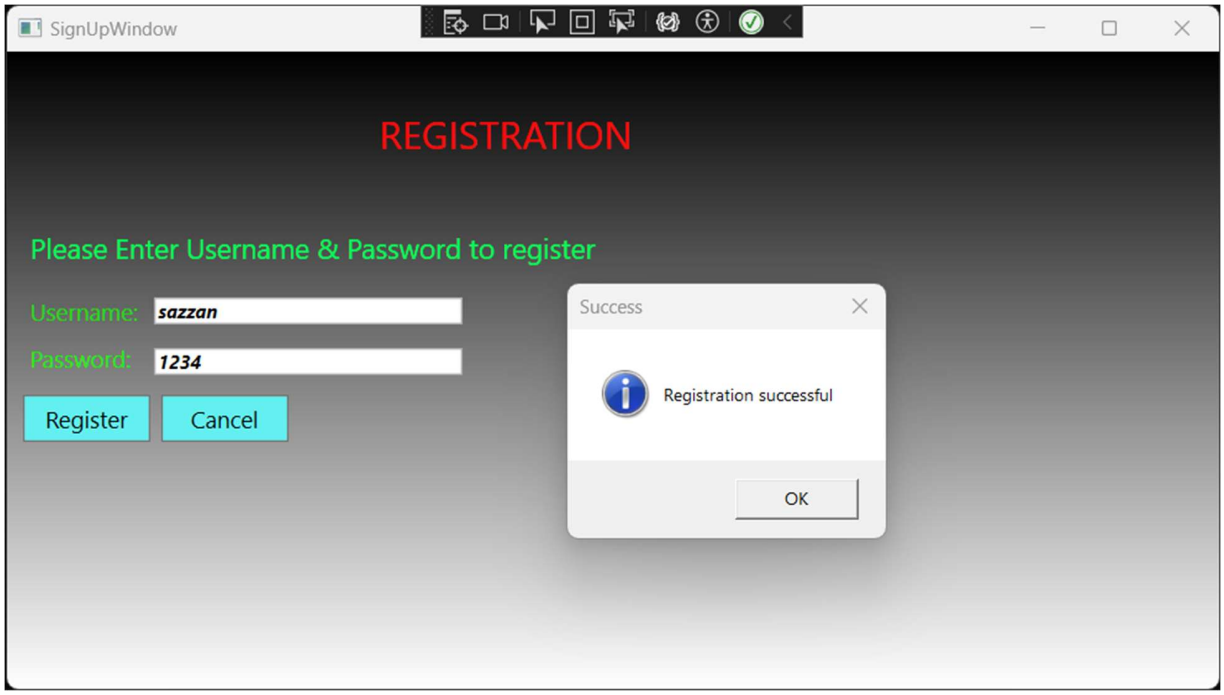




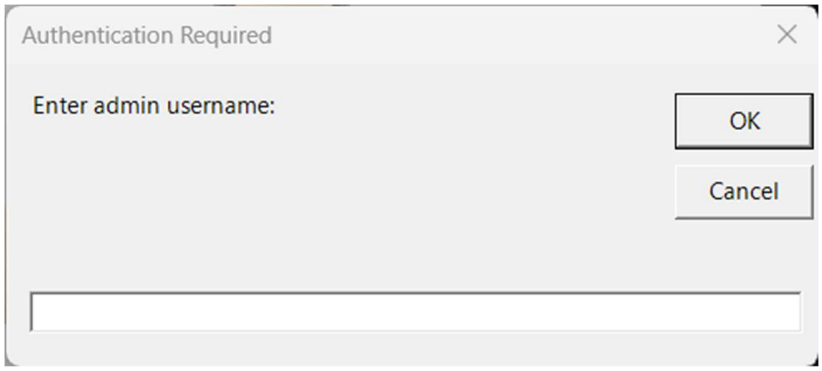
- **SignUp Window**
    - Separate section for signing up as a admin
    - One can sign up as a admin for accessing the admin windows to do any respective operations

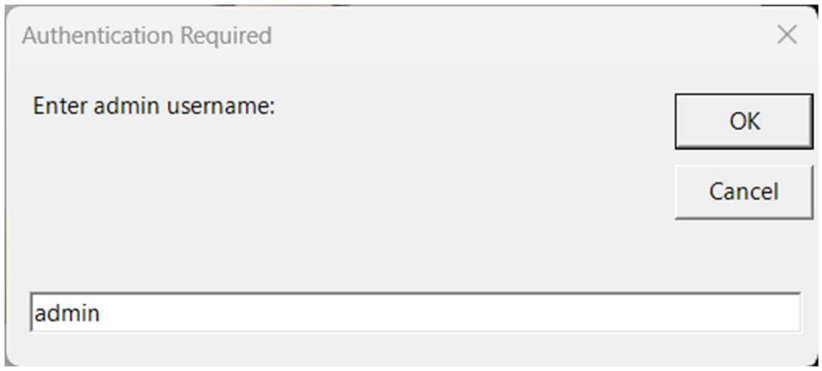

SignUpWindow
REGISTRATION
Please Enter Username & Password to register
Username:
USERNAME
Password:
PASSWORD
Register
Cancel

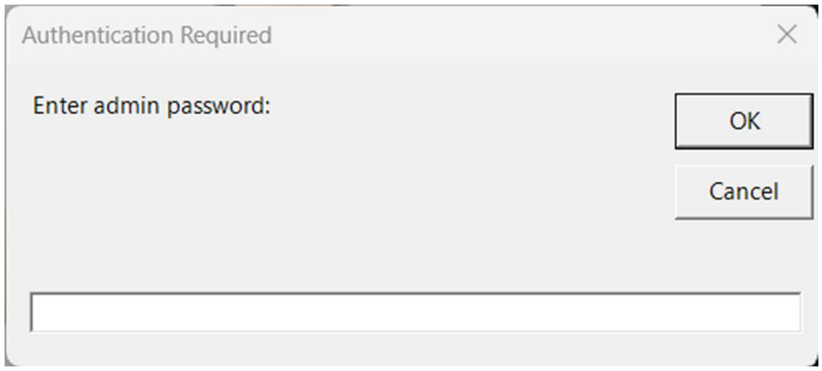

SignUpWindow
REGISTRATION
Please Enter Username & Password to register
Username:
sazzan
Password:
1234
Register
Cancel

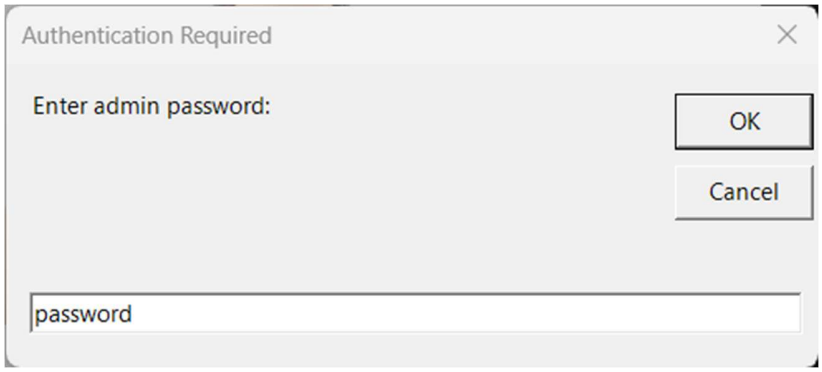


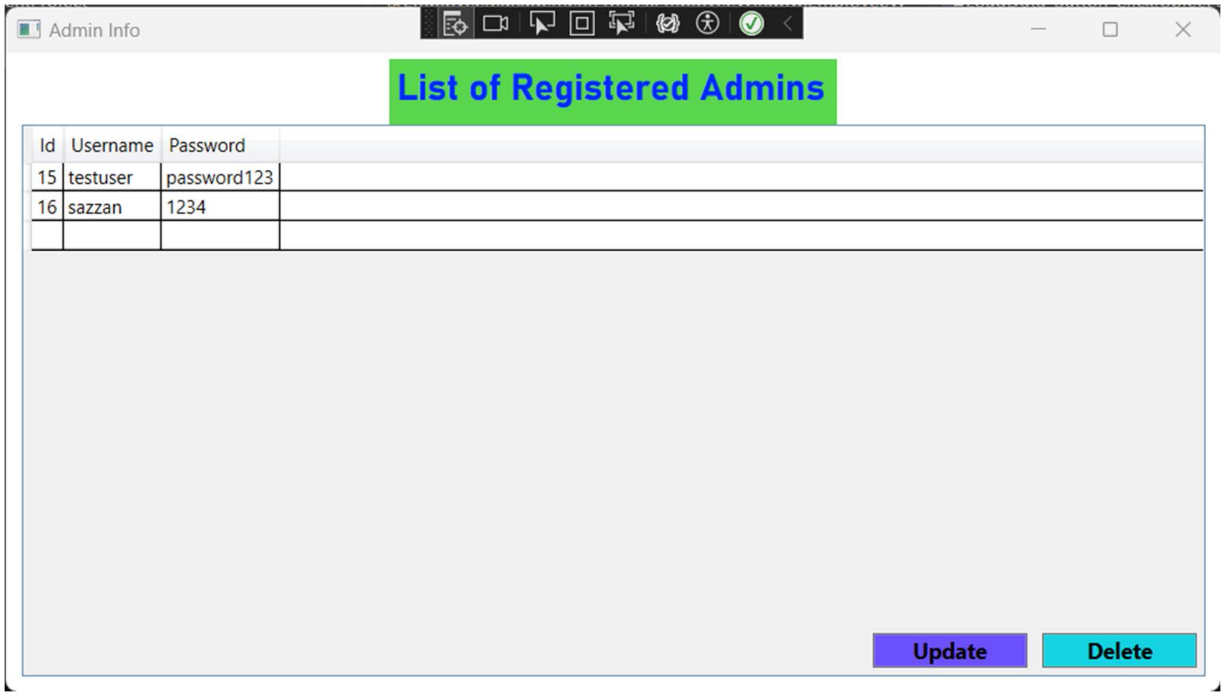
- **AdminView Windows**
  - Only the head of HR can view this window with their credentials
  - Has access to all the data of registered admins.
  - Can change the usename of registered admin or delete them completely

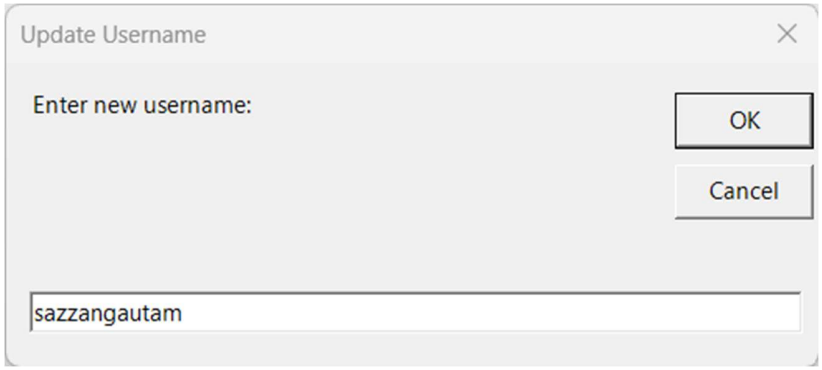


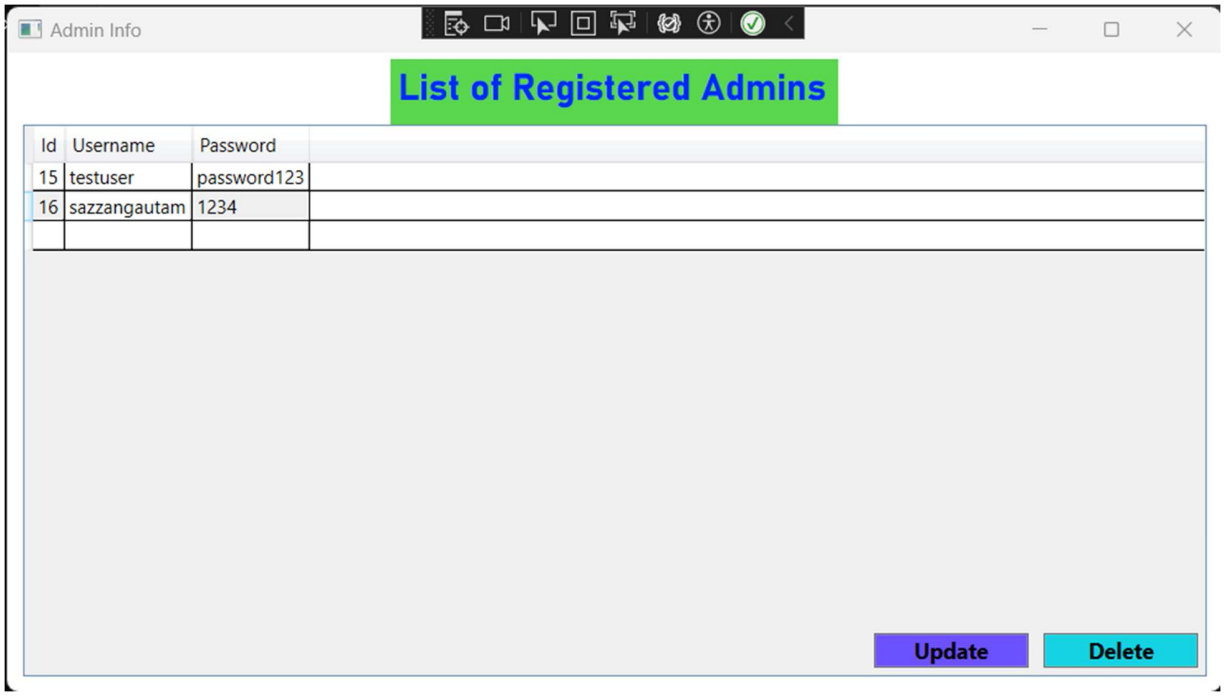

Authentication Required
Enter admin username:
OK
Cancel
admin

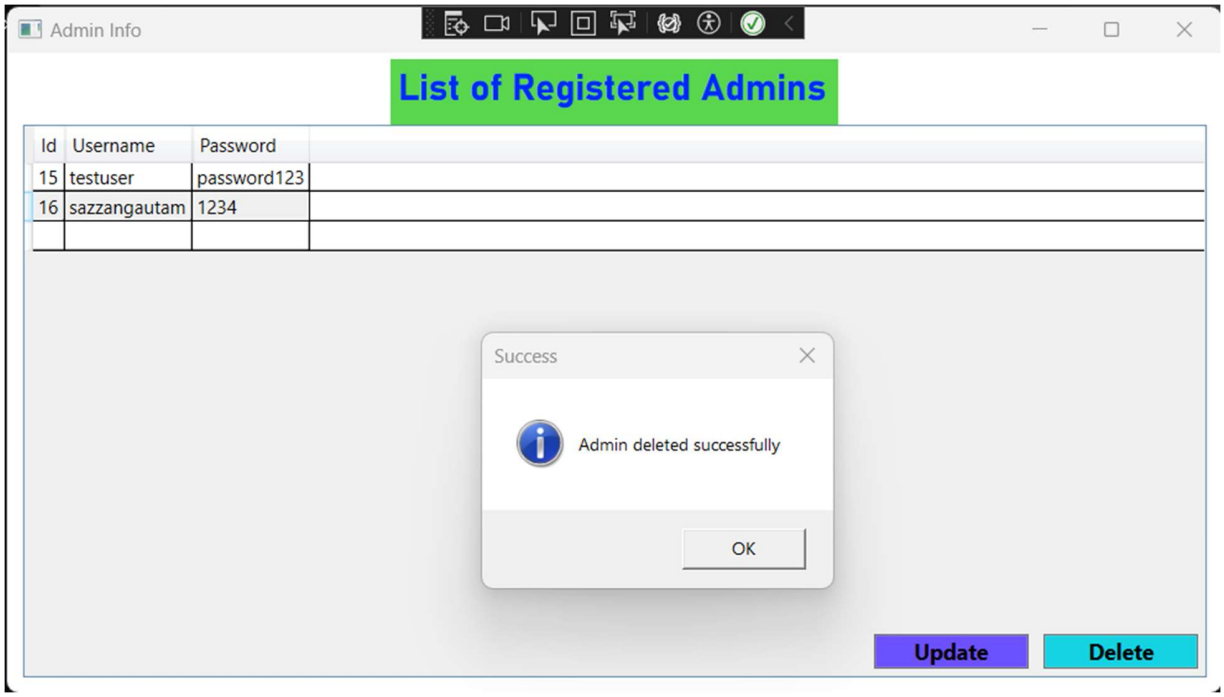

Authentication Required
Enter admin password:
OK
Cancel

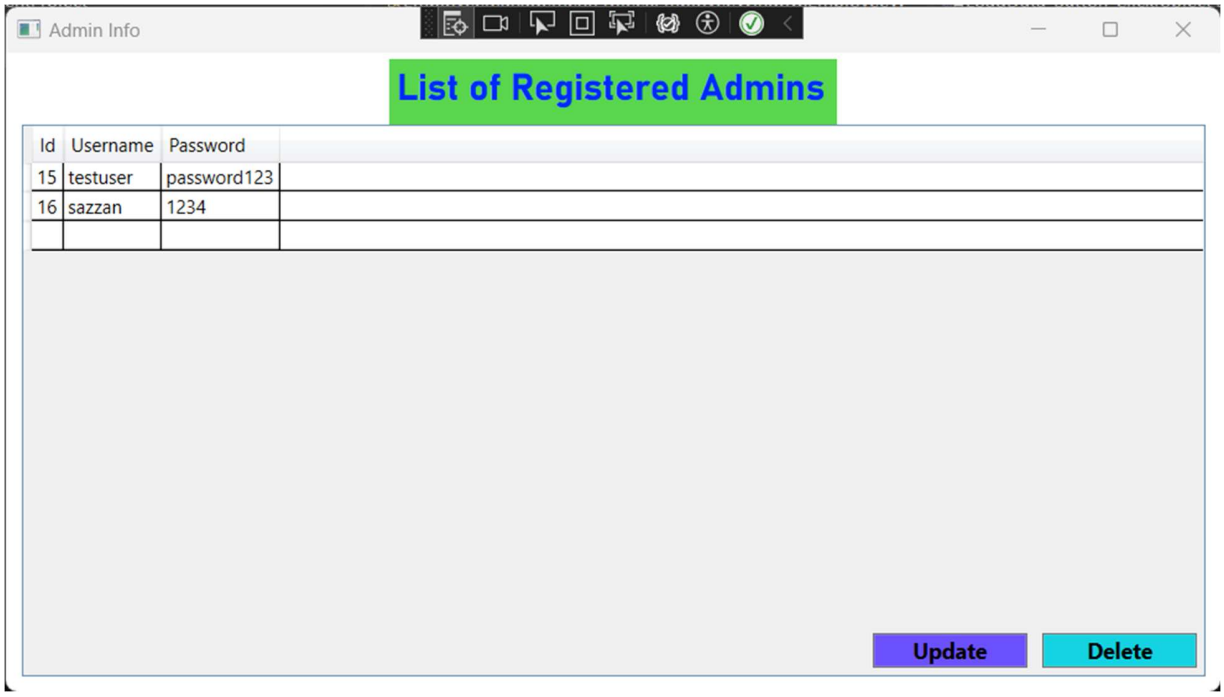

Authentication Required
Enter admin password:
OK
Cancel
password


Admin Info
List of Registered Admins
Id
Username
Password
15
testuser
password123
16
sazzan
1234
Update
Delete

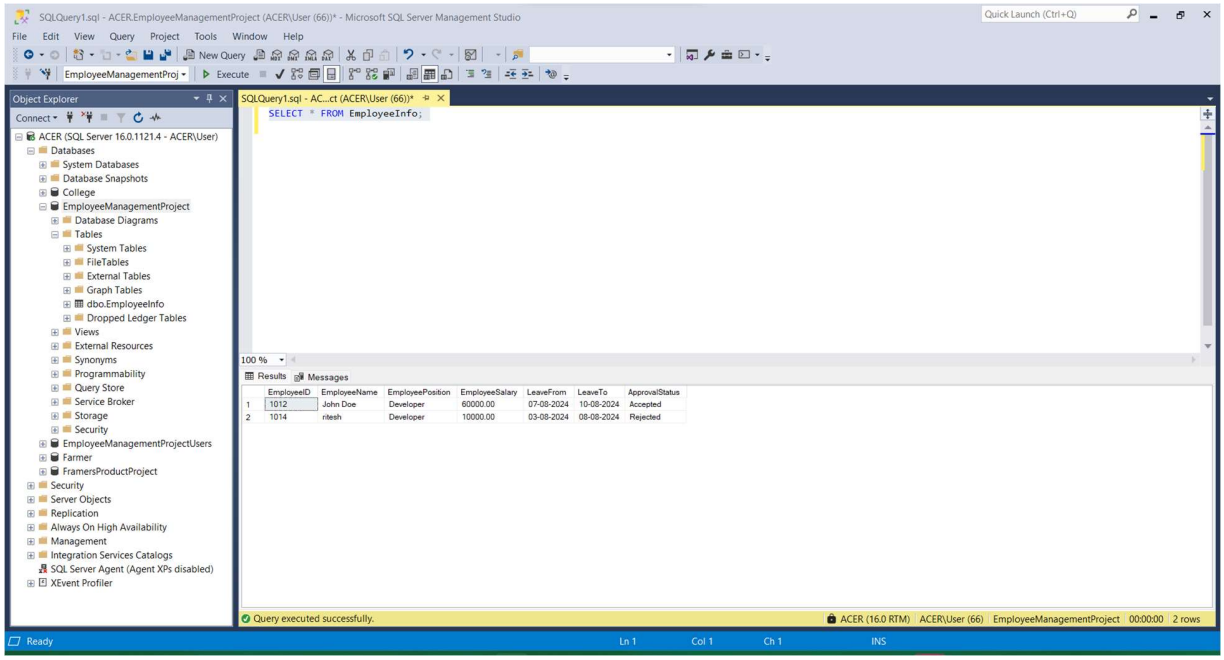

Update Username
Enter new username:
OK
Cancel
sazzangautam

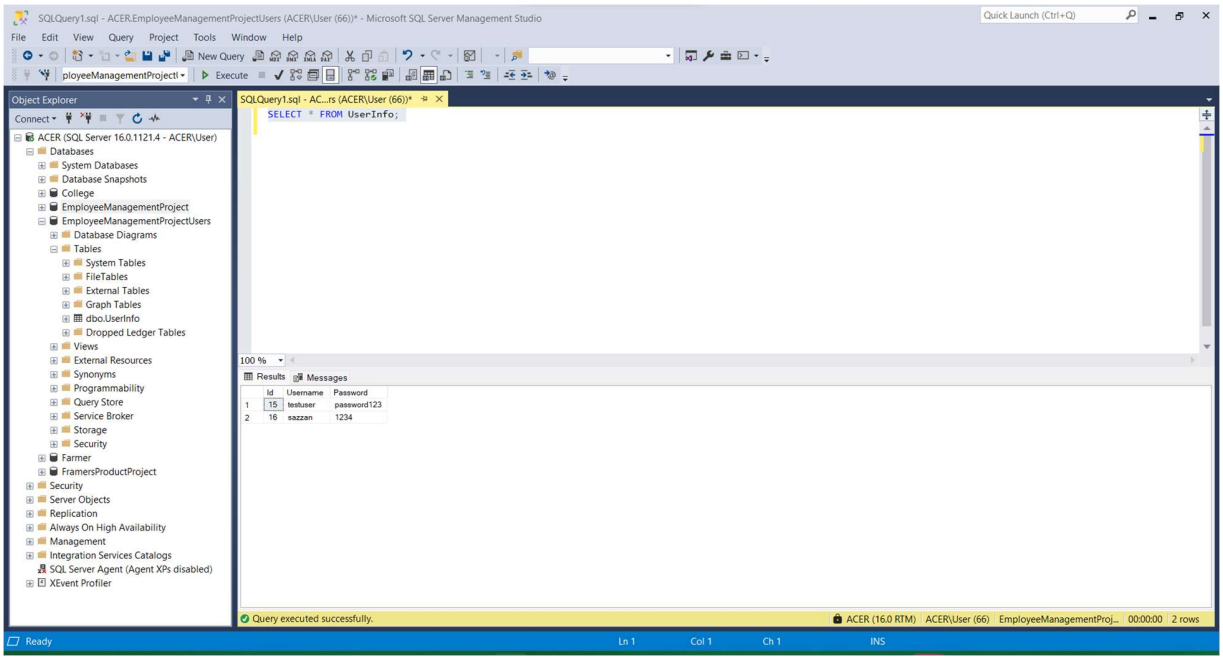

Admin Info
List of Registered Admins
Id
Username
Password
15
testuser
password123
16
sazzangautam
1234
Update
Delete


Admin Info
List of Registered Admins
Id
Username
Password
15
testuser
password123
16
sazzangautam
1234
Success
Admin deleted successfully
OK
Update
Delete



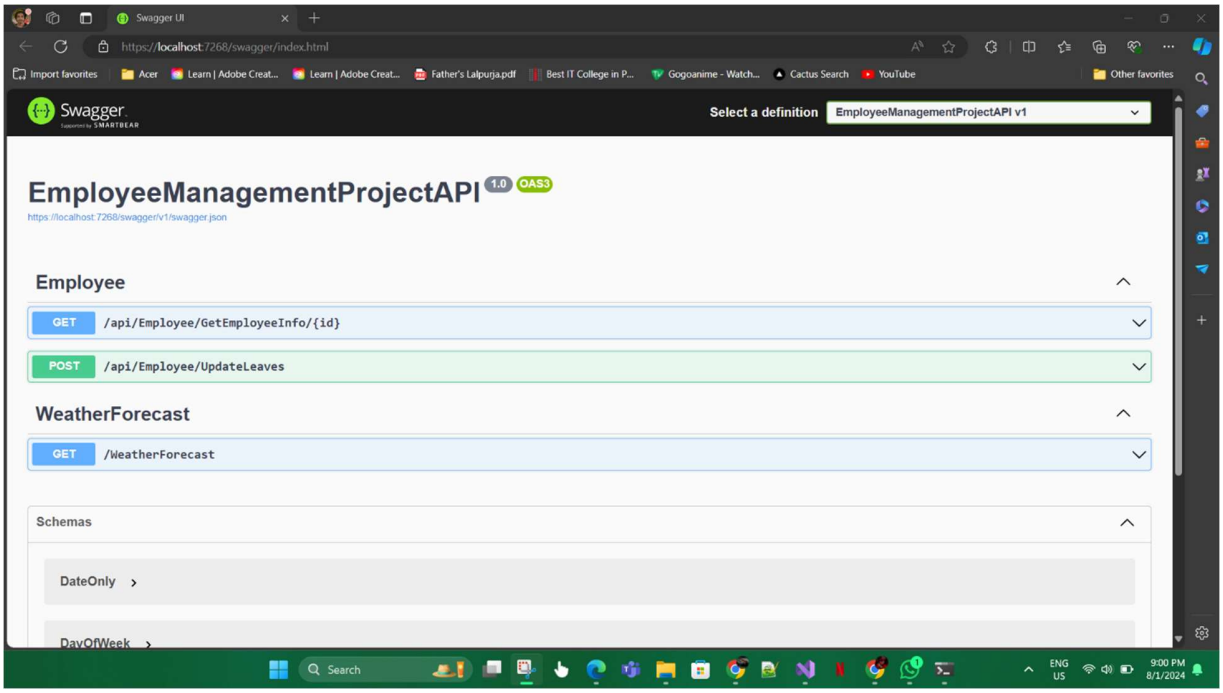
- **Database Integrations**
  - Database connection to store the registered data of admins & employees including payroll, leave, id, name, salary.





REST API Integration:

- Implemented a REST API using ASP.NET Core Web API for managing data operations.
- API endpoints handle CRUD operations for employee data, payroll, leave, and holiday management.



Updates from Mid-Term Evaluation:

- Integrated employee authentication and authorization mechanisms.
- Added data validation and error handling.
- Migrated the database to REST API-based architecture.
- Generated test programs for application testing and debugging.

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3. Project Setup

To set up the project, follow these steps:

Prerequisites:

- **Database:** SQL Server 2022 (Version: 16.0.1000.6)
- **IDE:** Visual Studio 2022

Steps:

1. **Clone the Repository:**

git clone https://github.com/Desktop-App-Dev-Intl-Summer-2024/Employee-Management-System.git

2. **Open the Solution:**
    - Open EmployeeManagementProject.sln and EmployeeManagementProjectAPI.sln in Visual Studio.
3. **Set Up the Database:**
    - Restore the database using the provided backup file (EmployeeManagementProject_LogBackup_2024-07-15_23-07-48.bak) & (EmployeeManagementProjectUsers_Backup)
4. **Configure API:**
    - Update appsettings.json with your database connection string.
    - Build and run the API project to ensure the endpoints are accessible.
5. **Run the Application:**
    - Build and run the main application from Visual Studio.
    - Ensure the application connects to the API and database correctly.

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4. Work Progress in Future

Future Enhancements:

1. **Enhanced Reporting:**
    - Implement detailed reporting features for payroll, leave, and employee performance.
2. **Role-Based Access Control:**
    - Add more granular access control based on user roles and permissions.
3. **Mobile Application:**

- Develop a mobile version of the application for Android and iOS platforms.

4. **Advanced Data Analytics:**
    - Integrate data analytics tools to provide insights into employee performance, attendance, and other HR metrics.
5. **Automated Notifications:**
    - Implement automated notifications for important events such as payroll updates, leave approvals, and holiday announcements.
6. **Integration with Third-Party Services:**
    - Integrate with third-party payroll and leave management services for seamless data exchange.

This document outlines the scope, functionalities, setup instructions, and future work for the Employee Management System project. The system aims to streamline HR processes, improve data accessibility, and provide a user-friendly interface for both HR/Admin and employees.