Assignment 2

C# and .Net framework

1.Design and implement a **Student Registration** form using C# and Windows Forms. The form should allow users to input and save student details into a database.

**Requirements:**

1. The registration form should include the following fields:
   * **Student ID** (Auto-generated or entered manually)
   * **First Name**
   * **Last Name**
   * **Date of Birth**
   * **Email**
   * **Phone Number**
   * **Course Enrolled**
2. Implement the following features:
   * **Form Validation**: Ensure that all required fields (e.g., Student ID, First Name, Last Name, Email) are properly validated (e.g., email format, required fields, etc.).
   * **Save Data**: Connect the form to a database (SQL Server, MySQL, or any other relational database of your choice) using ADO.NET to save the student data.
   * **Reset Form**: Provide a "Clear" button to reset all the input fields.
   * **Display Students**: Optionally, include a DataGridView control to display all registered students after submission.

**2.** Design and implement a **Student Fee Payment System** using C# and Windows Forms. The application should allow students to enter their details, pay their fees, and generate a bill with a unique bill number.

**Requirements:**

1. **Form Design**:
   * The form should include the following fields:
     + **Student Name**
     + **Roll Number**
     + **Year of Study** (Dropdown or input field)
     + **Hostel/Day Scholar** (Radio buttons or dropdown selection)
     + **Due Date for Fee Payment** (Date Picker)
2. **Fee Payment and Bill Generation**:
   * When the student fills in the required details and clicks the "Pay Fee" button:
     + **Calculate the total fees** based on whether the student is a **Hostel Resident** or a **Day Scholar** (apply appropriate fees based on your assumption).
     + If the payment is made **after the due date**, apply a **late fee of Rs. 100 per day**.
     + Generate a **Bill** with a unique bill number, and display it along with the student's details (name, roll number, year of study, total fees, and any late fees applied).

3. Design and implement a **Web Service** using C# and ASP.NET to expose functionality for client applications to consume. The web service should provide a specific set of operations, such as retrieving data or performing a calculation.

**Implementation Steps:**

**Define the Service Requirements**:

* + Identify the functionality that the web service will provide (e.g., retrieving student information, performing fee calculations, etc.).
  + Specify the input parameters and return types for each operation that the web service will expose.

**Create the Web Service**:

* + In Visual Studio, create a new **ASP.NET Web Service** project.
  + Define a service class by inheriting from System.Web.Services.WebService.
  + Decorate the class with the [WebService] attribute and each method with the [WebMethod] attribute to expose them as web service operations.
  + Implement the required service methods (e.g., retrieving student data or calculating fees).

4. our college is organizing an **Alumni Meet** on **May 5, 2024**. The alumni cell is in the process of creating a database to store a list of registered alumni who will attend the event. You are tasked with designing a registration form and implementing it using ADO.NET.

**Requirements:**

1. **Design the Registration Form**:
   * Create a Windows Forms application that includes the following controls:
     + **TextBox** for entering the **Alumni Name**
     + **TextBox** for entering the **Email**
     + **TextBox** for entering the **Phone Number**
     + **ComboBox** for selecting the **Department** (e.g., Computer Science, Business, Arts)
     + **Button** to **Register** alumni
     + **Button** to **Display** registered alumni
     + **DataGridView** control to display the list of registered alumni from the selected department
2. **Implement Functionality Using ADO.NET**:
   * **Register Button**:
     + When the **Register** button is clicked, validate the input fields.
     + If the inputs are valid, insert the entered details into the database using ADO.NET. Handle any database exceptions that may occur.
   * **Display Button**:
     + When the **Display** button is clicked, retrieve all registered alumni for the selected department from the ComboBox.
     + Display the results in the **DataGridView** control.