





Final Project

ESOFT METRO CAMPUS

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I also want to thank everyone else who helped me especially my teammates. Their help was important for getting this work done.

Best regards,

K. Gynorrj.



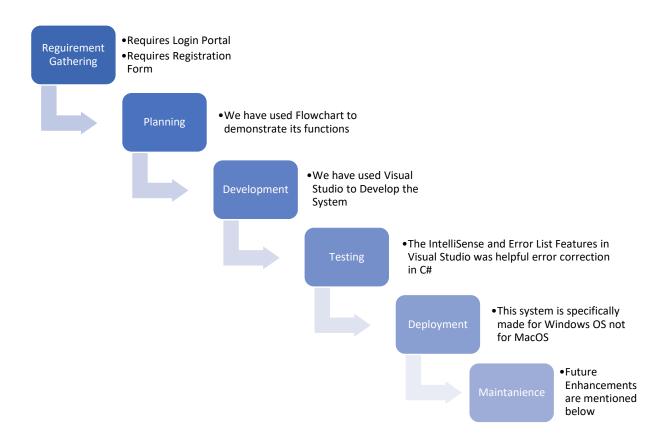


Introduction

This is an Official Document to our new Student Management System made for Student Management System for Skills Management System. The Student Management System is an application created to reduce the work load of Registration Staff. This documentation provides a fully detailed explanation of how system works and its functionalities.

Development Process

I have used waterfall model to explain the Development.



Requirement Gathering

The requirement required by the Institutes by the Student Management System are:

- 1. Should have a functioning login portal.
- 2. Ability to Save a student's data.
- 3. Ability to Update a student's details.
- 4. Ability to Delete a student detail.
- 5. Ability to Clear the details entered.





We are able to develop a system to fulfil their requirement and some additional feature to Student management system what we felt it would be useful to Registration Staff to increase their productivity:

- 1. Ability to navigate through dashboard and have more menus on it.
- 2. Ability to view the Table.
- 3. Ability to add registration member to the system.

Limitations

Even though we are able to fulfil the Clients requirement our team have found few limitations and vulnerabilities of the system:

- 1. Compatibilities Issues.
- 2. Security Risk (Risk of Being attacked by SQL Injection).
- 3. Unable to Filter the details in Data view.





Planning

Flow chart for its functionalities

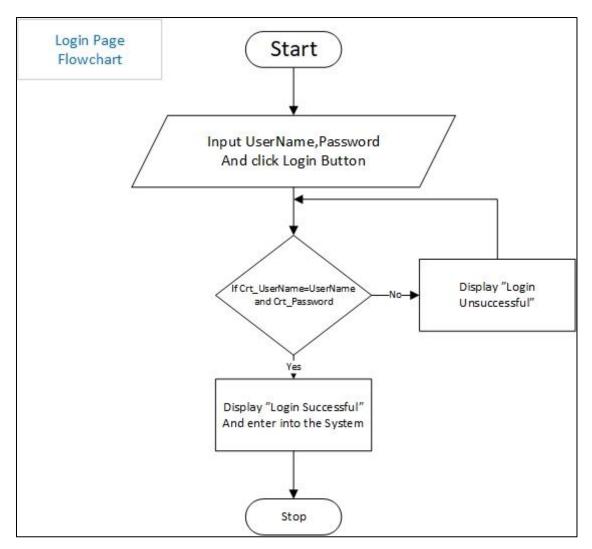


Figure 1:Login Form Flowchart





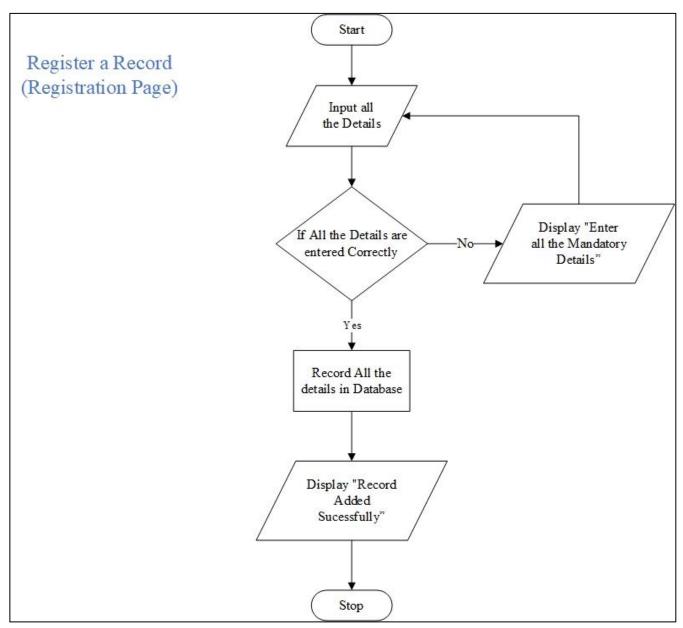


Figure 2: Registration Flowchart





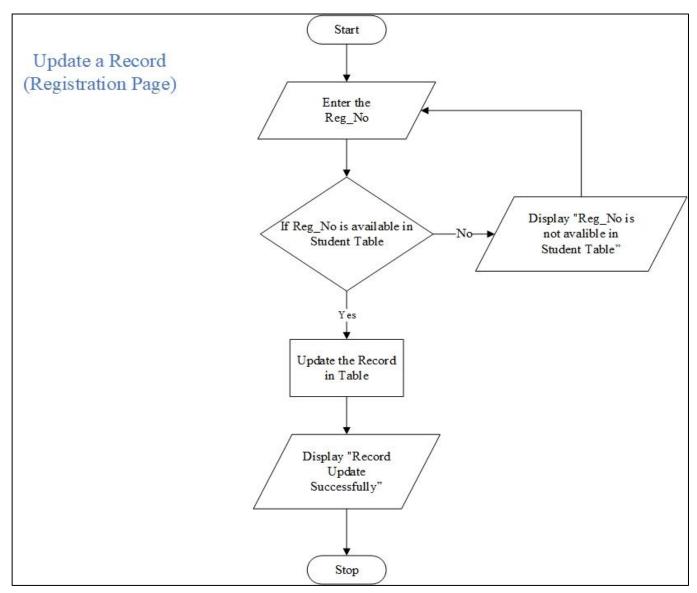


Figure 3:Update Record Flowchart





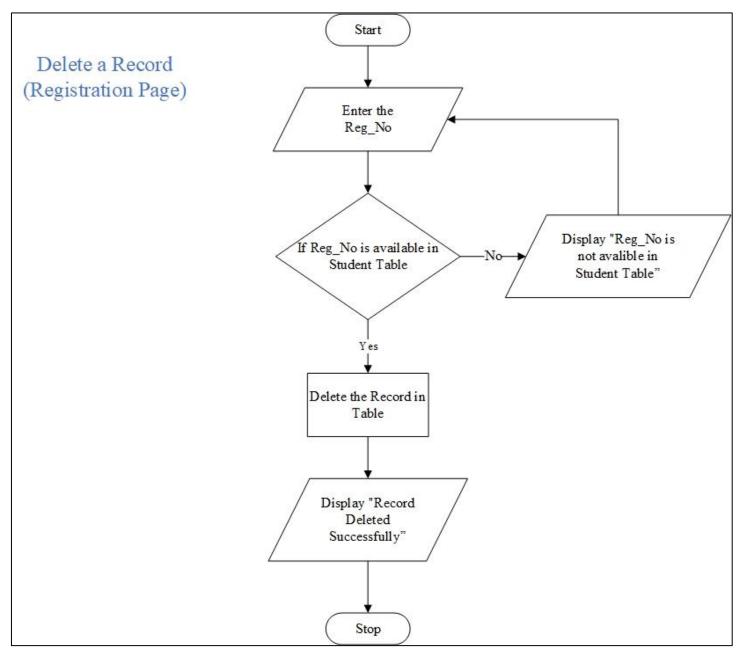


Figure 4:Delete Records Flowchart





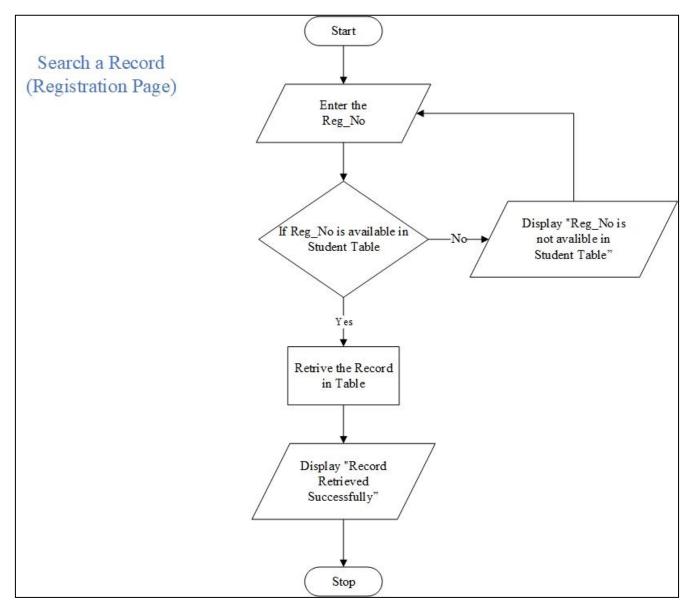


Figure 5: Search Record Flowchart





ER Diagram

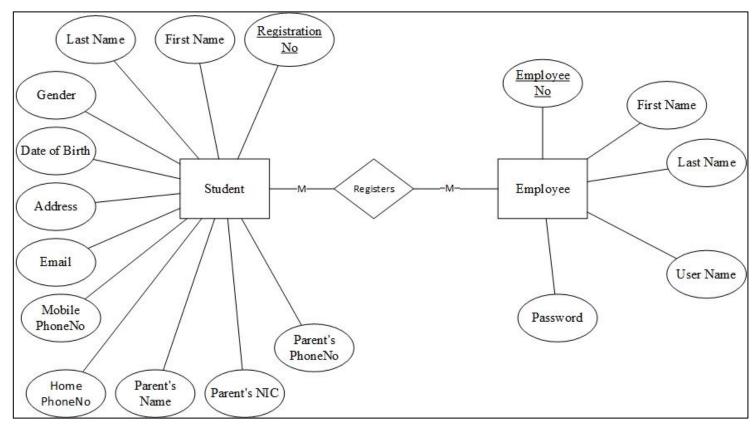


Figure 6:ER Diagram





Illustrative Diagram and Respective Codes

Login Page

Objective: To allow only Authorized people to access into system

Login Page: Illustrative Diagram



Figure 7:Login Page Illustrative Diagram

Login Page: Code

```
private void SignIn_Button_Click(object sender, EventArgs e)
    string Entered_Display_Name = UserName_TextBox.Text;
    string Entered_Password = Password_Textbox.Text;
string connectionString = @"Data Source=Code-Maestro; Initial Catalog = Student; Integrated Security=True;";
    SqlConnection Connect = new SqlConnection(connectionString);
    Connect.Open();
    string search_query = "Select * from employee where Display_Name COLLATE SQL_Latin1_General_CP1_CS_AS = '" + Entered_Display_Name + "' and Password COLLA
    SqlCommand Fetch = new SqlCommand(search_query, Connect);
    SqlDataReader row = Fetch.ExecuteReader();
    if (row.HasRows)
        //To send user name to DashBoard_Form
        UserName = UserName_TextBox.Text;
        DateTime CTime = DateTime.Now;
        Time = CTime.ToString("HH:mm:ss");
        Hour = CTime.ToString("HH");
        this.Hide();
        DashBoard Main_Page = new DashBoard();
        Main_Page.Show();
        //
        MessageBox.Show("Invalid Login Credentials, \nPlease Try Again","Invalid Login Details",MessageBoxButtons.OK,MessageBoxIcon.Error);
```

Figure 8: Login Page Sign-In Button





```
1 reference
private void Clear_Click(object sender, EventArgs e)
{
    UserName_TextBox.Clear();
    Password_Textbox.Clear();
    UserName_TextBox.Focus();
}
```

Figure 9: Login Page Clear Button

```
1 reference
private void Close_Button_Click(object sender, EventArgs e)
{
    var result = MessageBox.Show("Are you sure, Do you really want to exit...?", "Exit", MessageBoxButtons.YesNo, MessageBoxIcon.Question);
    if (result == DialogResult.Yes)
    {
        Application.Exit();
    }
}
```

Figure 10: Login Page Close Button

```
1 reference
private void Hide_Button_Click(object sender, EventArgs e)
{
    Password_Textbox.UseSystemPasswordChar = true;
    Show_Button.BringToFront();
}

1 reference
private void Show_Button_Click(object sender, EventArgs e)
{
    Password_Textbox.UseSystemPasswordChar = false;
    Hide_Button.BringToFront();
}
```

Figure 11: Login Page Password Show/Hide Button

Figure 12: Login Page Close Button





Dashboard Page

Objective: To easily access Multiple Menu at ease

Dashboard Page: Illustrative Diagram

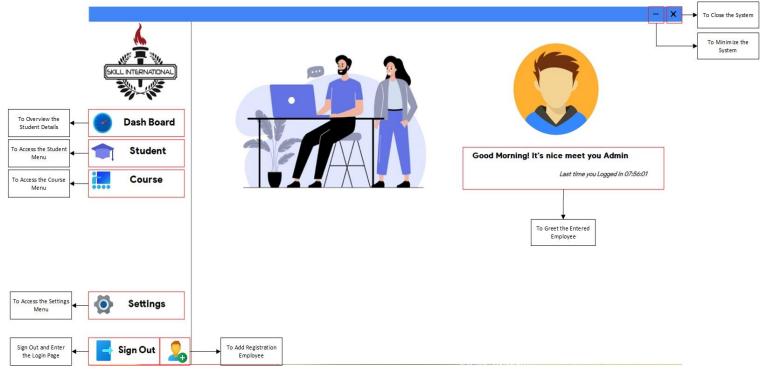


Figure 13: Dashboard Illustrative Diagram

Dashboard Page: Code

Figure 14: Dashboard Page Dashboard Menu Button

```
1 reference
private void StudentMenu_Button_Click_1(object sender, EventArgs e)
{
    this.Form_Loader.Controls.Clear();
    StudentMenu StudentMenu_Vrb = new StudentMenu() { Dock = DockStyle.Fill, TopLevel = false, TopMost = true };
    StudentMenu_Vrb.FormBorderStyle = FormBorderStyle.None;
    this.Form_Loader.Controls.Add(StudentMenu_Vrb);
    StudentMenu_Vrb.Shom();
}
```

Figure 15: Dashboard Page Student Menu Button





```
1 reference
private void Minimize_Button_Click(object sender, EventArgs e)
{
    WindowState = FormWindowState.Minimized;
}
```

Figure 16: Dashboard Page Minimize Button

```
1 reference
private void SignOut_Button_Click(object sender, EventArgs e)
{
    Login_Form SignUp_Page = new Login_Form();

    var result = MessageBox.Show("Are you sure, Do you really need to Sign Out...?", "Sign Out", MessageBoxButtons.YesNo, MessageBoxIcon.Question);
    if (result == DialogResult.Yes)
    {
        this.Close();
        SignUp_Page.Show();
    }
}
```

Figure 18: Dashboard Page Sign-Out Button

Figure 17: Dashboard Page Exit Button





Student Menu

Objective: To access all the students details and Student Table Related Functions.

Student Menu: Illustrative Diagram



Figure 19: Student Menu Illustrative Diagram

Student Menu: Code

```
Inference
private void Registration_Button_Click(object sender, EventArgs e)
{
    Registration_Button.Visible = false;
    Search_Button.Visible = false;
    this.Student_Loader.Controls.Clear();
    Registration_Form Registration_Form_New = new Registration_Form() { Dock = DockStyle.Fill, TopLevel = false, TopMost = true };
    Registration_Form_New.FormBorderStyle = FormBorderStyle.None;
    this.Student_Loader.Controls.Add(Registration_Form_New);
    Registration_Form_New.Show();
}
```

Figure 20: Student Menu Registration Button

```
reference
private void Search_Button_Click(object sender, EventArgs e)
{
    Registration_Button.Visible = false;
    Search_Button.Visible = false;
    this.Student_Loader.Controls.Clear();
    Search_Form_Search_Form_New = new Search_Form() { Dock = DockStyle.Fill, TopLevel = false, TopMost = true };
    Search_Form_New.FormBorderStyle = FormBorderStyle.None;
    this.Student_Loader.Controls.Add(Search_Form_New);
    Search_Form_New.Show();
}
```

Figure 21: Student Menu Search Button





Registration Page

Objective: To register, update and delete the records of students.

Registration Page: Illustration Diagram

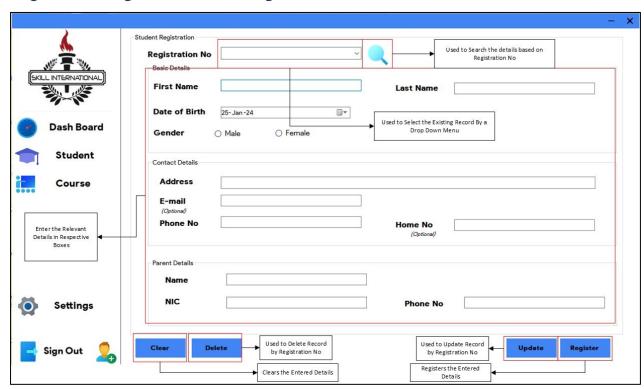


Figure 22: Registration Page Illustrative Diagram

Registration Page: Code

Figure 23: Registration Page Delete Button





```
1 reference
private void Clear_Button_Click(object sender, EventArgs e)
    Registration_ComboBox.Text = "";
    FName_TextBox.Clear();
    LName_TextBox.Clear();
    DateTime This_Day = DateTime.Today;
    DOB_Picker.Text = This_Day.ToString();
    Male_RBtn.Checked = false;
    Female_RBtn.Checked = false;
    Address_TextBox.Clear();
    EMail_Textbox.Clear();
    PhoneNo_Textbox.Clear();
    HomeNo_Textbox.Clear();
    PName_Textbox.Clear();
    PNIC_Textbox.Clear();
    PPhoneNo_Textbox.Clear();
    FName_TextBox.Focus();
```

Figure 24: Registration Page Clear Button





Figure 25: Registration Page Search Button 1

```
DOB_Picker.CustomFormat = "yyyy/MM/dd";
                    DOB_Picker.Text = reader["Date_Of_Birth"].ToString();
                    if (reader["Gender"].ToString() == "Male")
                        Male_RBtn.Checked = true;
                    else
                    {
                        Female_RBtn.Checked = true;
                    Address_TextBox.Text = reader["Address"].ToString();
                    EMail_Textbox.Text = reader["Email"].ToString();
                    PhoneNo_Textbox.Text = reader["MobilePhoneNo"].ToString();
                    HomeNo_Textbox.Text = reader["HomePhoneNo"].ToString();
                    PName_Textbox.Text = reader["Parent_Name"].ToString();
                    PNIC_Textbox.Text = reader["Parent_NIC"].ToString();
                    PPhoneNo_Textbox.Text = reader["Parent_ContactNo"].ToString();
                else
                {
                    MessageBox.Show("No record found for the given registration number.");
        }
}
```

Figure 26: Registration Page Search Button 2





```
string Query_update = "UPDATE Registration SET " +
    "First_Name = "" + First_Name + "", " +
    "Last_Name = "" + Last_Name + "", " +
    "Date_Of_Birth = "" + Date_Of_Birth = "", " +
    "Cender = "" + Gender + "", " +
    "Gender = "" + Gender + "", " +
    "RobitePhoneNo = "" + MobilePhoneNo + "", " +
    "RobitePhoneNo = "" + MobilePhoneNo + "", " +
    "Parent_Name = "" + Parent_Name + "", " +
    "Parent_NIC = "" + Parent_Name + "", " +
    "Parent_NIC = "" + Parent_Name + "", " +
    "Parent_ContactNo = "" + Parent_ContactNo + "" +
    "Parent_OntactNo = "" + Registration_No + "";
if (string.IsNullOrEmpty(Registration_No)) {
    MessageBox.Show("Enter a Registration No to update the record", "Enter Registration No", MessageBoxButtons.OK, MessageBoxIcon.Exclamation);
} else
    if (First_Name == "" || Last_Name == "" || Date_Of_Birth == "" || Gender == "" || Address == "" || MobilePhoneNo == "" || Parent_Name == "" || Parent_N
```

Figure 27: Registration Page Update Button 1

Figure 28: Registration Page Update Button 2





```
l reference
private void Register_Button_Click(object sender, EventArgs e)
{
    try
    {
        string Registration_No = Registration_ComboBox.Text;
        string First_Name = FName_TextBox.Text;
        string Last_Name = LName_TextBox.Text;
        DOB_Picker.Format = DateTiamePickerFormat.Custom;
        DOB_Picker.CustomFormat = "yyyy/MM/dd";
        string Date_Of_Birth = DOB_Picker.Text;
        string Gender;
    if (Male_RBtn.Checked)
    {
            Gender = "Male";
        }
        else if(Female_RBtn.Checked)
        {
            Gender = "Female";
        }
        else
        string Address = Address_TextBox.Text;
        string Bail = EMail_Textbox.Text;
        string MobilePhoneNo = PhoneNo_Textbox.Text;
        string Parent_Name = PName_Textbox.Text;
        string Parent_ContactNo = PPhoneNo_Textbox.Text;
        string Parent_ContactNo = PPhoneNo_Textbox.Text;
```

Figure 29: Registration Page Register Button 1

Figure 30: Registration Page Register Button 2

Figure 31: Registration Page Register Button 3





```
//-
// joisable IDENTITY_INSERT
string disableIdentityInsertCommand = new SqlCommand(disableIdentityInsertQuery, con))
{
    disableIdentityInsertCommand.ExecuteNonQuery();
    }
    string Registration_No_Store = Registration_ComboBox.Text;
    SqlCommand command = new SqlCommand("Select (Registration_No)from Registration", con);
    SqlDataReader reader;
    reader = command_ExecuteReader();
    DataTable table = new DataTable();
    table.Columns.Add("Registration_No", typeof(int));
    table.Load(reader);
    Registration_ComboBox.ValueMember = "Registration_NO";
    Registration_ComboBox.DataSource = table;
    con.Close();
    Registration_ComboBox.Text = Registration_NO_Store.ToString();
}

catch (SqlException ex)
{
    string message = "Insert Error:";
    message += ex.Message;
    MessageBox.Show(message);
    con.Close();
}
```

Figure 32: Registration Page Register Button 4





Search Page

Objective: To View the Student's Table

Search Page: Illustration Page

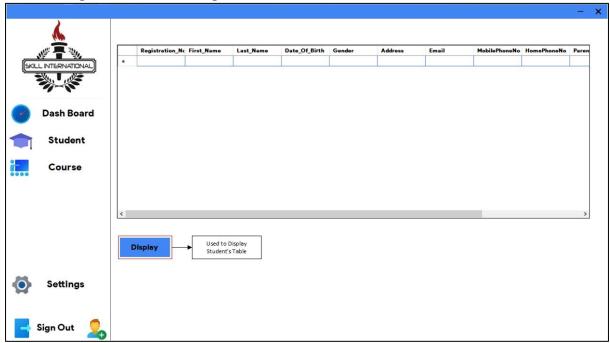


Figure 33: Search Page Illustrative Diagram

Search Page: Code

```
private void Display_Click(object sender, EventArgs e)
{
    try
    {
        using (SqlConnection sqlCon = new SqlConnection(connectionString))
        {
            sqlCon.Open();
            SqlDataAdapter sqlDa = new SqlDataAdapter("SELECT * FROM Registration", sqlCon);
            DataTable dtbl = new DataTable();
            sqlDa.Fill(dtbl);

            Student_DGV.DataSource = dtbl;
        }
        catch (Exception ex)
        {
            MessageBox.Show("Error: " + ex.Message);
        }
}
```

Figure 34: Search Page Display Button





Add Member Page

Objective: Ability to Add Staff Members to Student Management System.

Add Member Page: Illustration Diagram

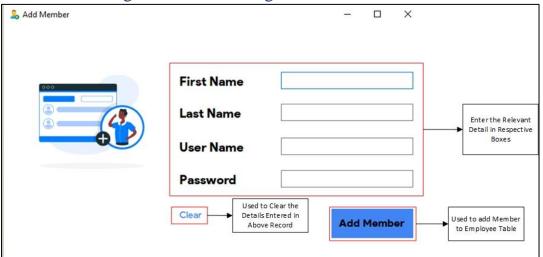


Figure 35: Add Member Page Illustrative Diagram

Add Member Page: Code

```
1 reference
private void Add_Button_Click(object sender, EventArgs e)
{
    string First_Name = FirstName_TextBox.Text;
    string Last_Name = LastName_TextBox.Text;
    string Desr_Name = UserName_TextBox.Text;
    string Password = Password_Textbox.Text;
    if (First_Name == "" || Last_Name == "" || User_Name == "" || Password == "")
    {
        MessageBox.Show("Enter All The Details", "Enter Details", MessageBoxButtons.OK, MessageBoxIcon.Exclamation);
    }
    else
    {
        string Query_Add = "Insert into Employee ( First_Name, Last_Name, Display_Name , Password)" +
        "Values("" + First_Name + "',"" + Last_Name + "',"" + User_Name + "',"" + Password + "')";
        con.Open();
        SqlCommand Add = new SqlCommand(Query_Add, con);
        Add.ExecuteNonQuery();
        MessageBox.Show("Record Added SucessFully", "Add Employee", MessageBoxButtons.OK, MessageBoxIcon.Information);
        con.Close();
    }
}
```

Figure 36: Add Member Page Add Button

```
1 reference
private void Clear_Click(object sender, EventArgs e)
{
    FirstName_TextBox.Clear();
    LastName_TextBox.Clear();
    UserName_Textbox.Clear();
    Password_Textbox.Clear();
    FirstName_TextBox.Focus();
}
```

Figure 37: Add Member Page Clear Button





Development Process

Why did we used Visual Studio?

To build the Student Management System our team members have used Visual Studio because it has support to multiple programming language and supports drag and drop feature to create an GUI windows form with less effort.





Testing Process

The System have been tested and received response in form of messages



Figure 38:Login Page invalid Credentials

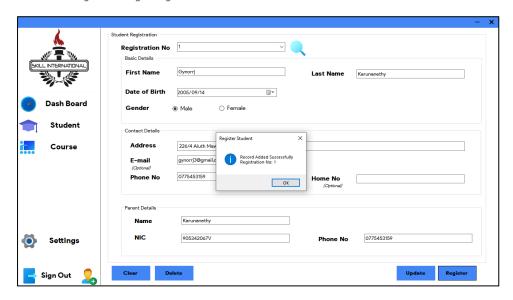


Figure 39: Registration Successful

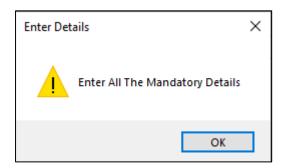


Figure 40: Registration was unsuccessful





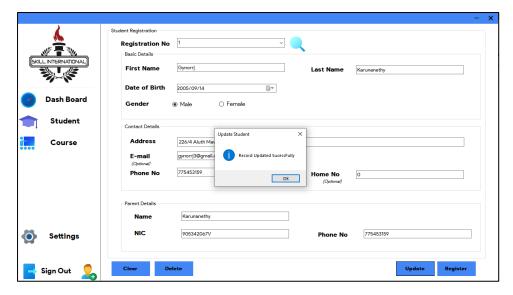


Figure 41: Update was Successful

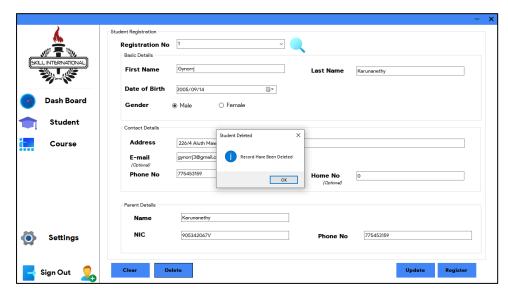


Figure 42:Record Deleted Successful

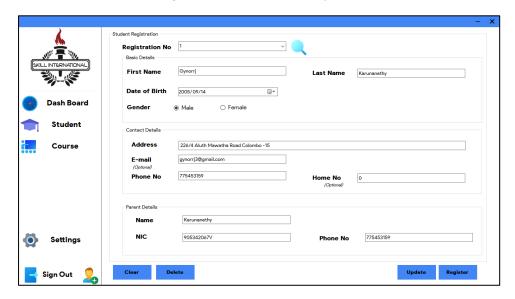


Figure 43:Searching record is Successful





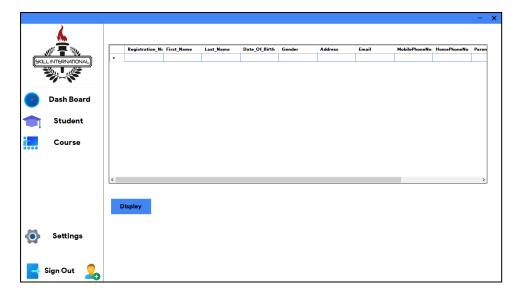


Figure 44:Searching Table is Successful

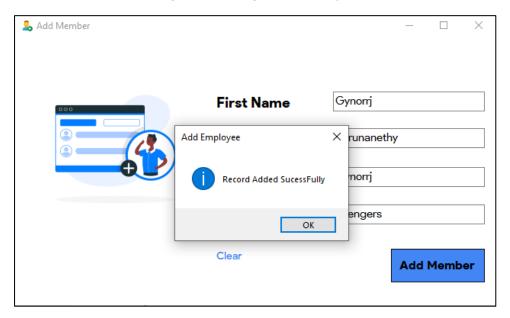


Figure 45: Adding Member is Successful





Future Implementation

1. Better Login Portal:

➤ Better Login Portal with restricted entry for each role (Principal, Teachers and Registers).

2. Access More Option:

➤ Ability to access more option like Print, Filter Option in Database View.

3. More Menus:

➤ Ability to access more Menus like Setting and Course.

4. More Customizations:

- ➤ Ability to change the Font Size, Font Color.
- ➤ The Ability to Switch between Light and Night Mode.

5. Del_RegistrationNo Table:

Additional Table to record all the deleted Registration no (in case if the record is deleted that registration number will be empty so to reuse it, we have to implement another table for it.)