Visual Programming

Project : Employee Management System

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Course: Visual Programming

Employee Management System (C# Windows Forms Application)

1. Main Form Class

```
using System;
using System.Data;
using System.Data.SqlClient;
using System.Windows.Forms;

namespace EmployeeManagement
{
    public partial class MainForm : Form
    {
        private readonly string connectionString = @"Data
Source=.\SQLEXPRESS;Initial Catalog=EmployeeDB;Integrated
Security=True";

        public MainForm()
        {
            InitializeComponent();
        }

        private void MainForm_Load(object sender, EventArgs e)
        {
            LoadData();
        }
```

2. Database Operations

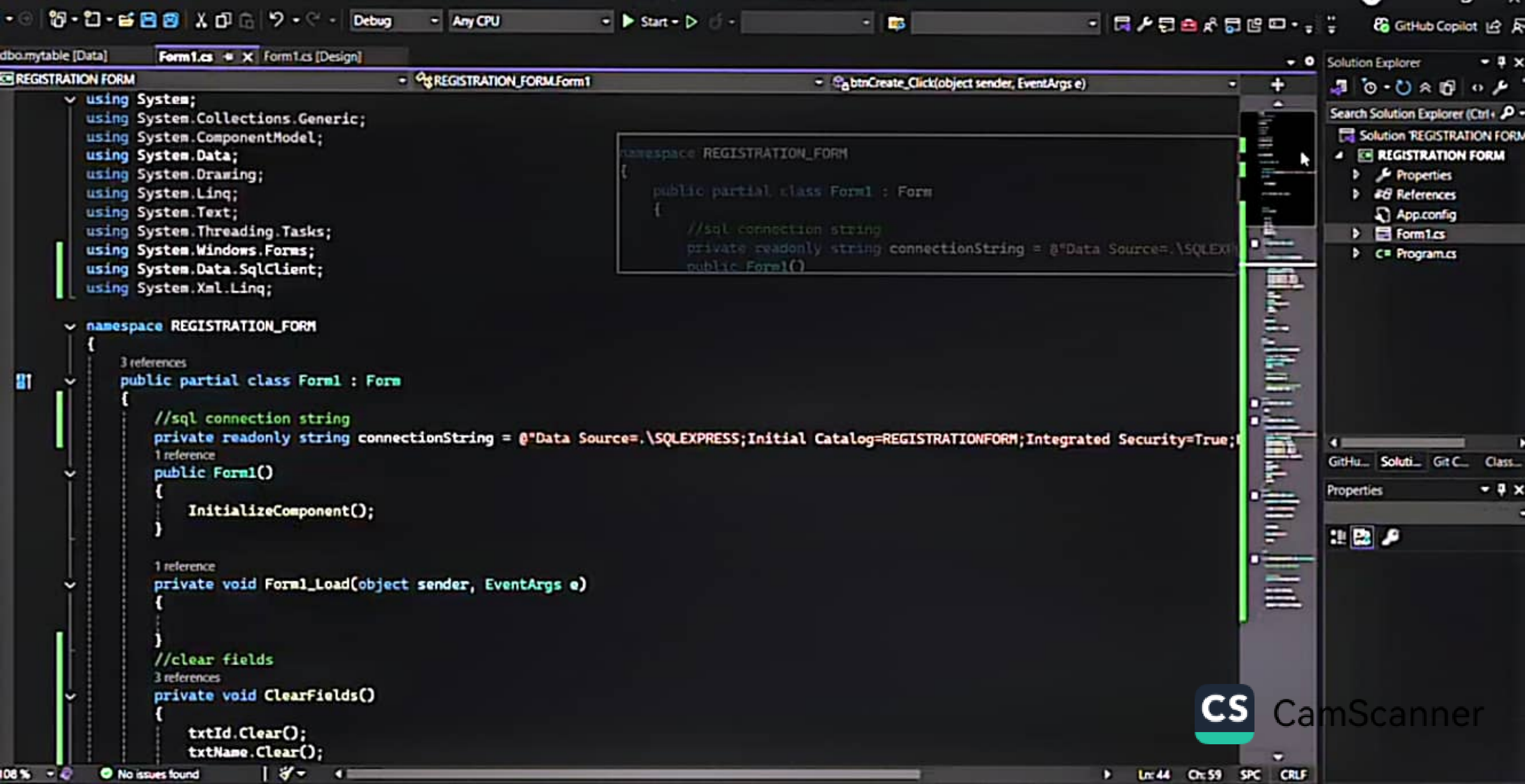
```
        private void LoadData()
        {
            using (SqlConnection con = new
SqlConnection(connectionString))
            {
                string query = "SELECT * FROM Employees";
                SqlDataAdapter da = new SqlDataAdapter(query, con);
                DataTable dt = new DataTable();
                da.Fill(dt);

                dataGridViewEmployees.DataSource = dt;
                dataGridViewEmployees.Columns["Id"].Visible = false;
            }
        }
```

3. CRUD Operations

```
        // CREATE
        private void btnCreate_Click(object sender, EventArgs e)
        {
            try
            {
                using (SqlConnection con = new
SqlConnection(connectionString))
                {
                    string query = "INSERT INTO Employees (Name, Email,
Phone, Department) VALUES (@Name, @Email, @Phone, @Department)";
                    SqlCommand cmd = new SqlCommand(query, con);

                    cmd.Parameters.AddWithValue("@Name", txtName.Text);
                    cmd.Parameters.AddWithValue("@Email",
txtEmail.Text);
                    cmd.Parameters.AddWithValue("@Phone",
txtPhone.Text);
                    cmd.Parameters.AddWithValue("@Department",
txtDepartment.Text);

                    con.Open();
                    cmd.ExecuteNonQuery();
                    MessageBox.Show("Employee created!");

                    LoadData();
                    ClearFields();
                }
            }
            catch (Exception ex)
            {
                MessageBox.Show("Error: " + ex.Message);
            }
        }

        // UPDATE
        private void btnUpdate_Click(object sender, EventArgs e)
        {
            try
            {
                using (SqlConnection con = new
SqlConnection(connectionString))
                {
                    string query = "UPDATE Employees SET Name=@Name,
Email=@Email, Phone=@Phone, Department=@Department WHERE Id=@Id";
                    SqlCommand cmd = new SqlCommand(query, con);

                    cmd.Parameters.AddWithValue("@Id", txtId.Text);
                    cmd.Parameters.AddWithValue("@Name", txtName.Text);
                    cmd.Parameters.AddWithValue("@Email",
txtEmail.Text);
                    cmd.Parameters.AddWithValue("@Phone",
txtPhone.Text);
                    cmd.Parameters.AddWithValue("@Department",
txtDepartment.Text);

                    con.Open();
                    cmd.ExecuteNonQuery();
                    MessageBox.Show("Employee updated!");

                    LoadData();
                    ClearFields();
                }
            }
            catch (Exception ex)
            {
                MessageBox.Show("Error: " + ex.Message);
            }
        }

        // DELETE
        private void btnDelete_Click(object sender, EventArgs e)
        {
            try
            {
                using (SqlConnection con = new
SqlConnection(connectionString))
                {
                    string query = "DELETE FROM Employees WHERE
Id=@Id";
                    SqlCommand cmd = new SqlCommand(query, con);
                    cmd.Parameters.AddWithValue("@Id", txtId.Text);

                    con.Open();
                    cmd.ExecuteNonQuery();
                    MessageBox.Show("Employee deleted!");

                    LoadData();
                    ClearFields();
                }
            }
            catch (Exception ex)
            {
                MessageBox.Show("Error: " + ex.Message);
            }
        }
```

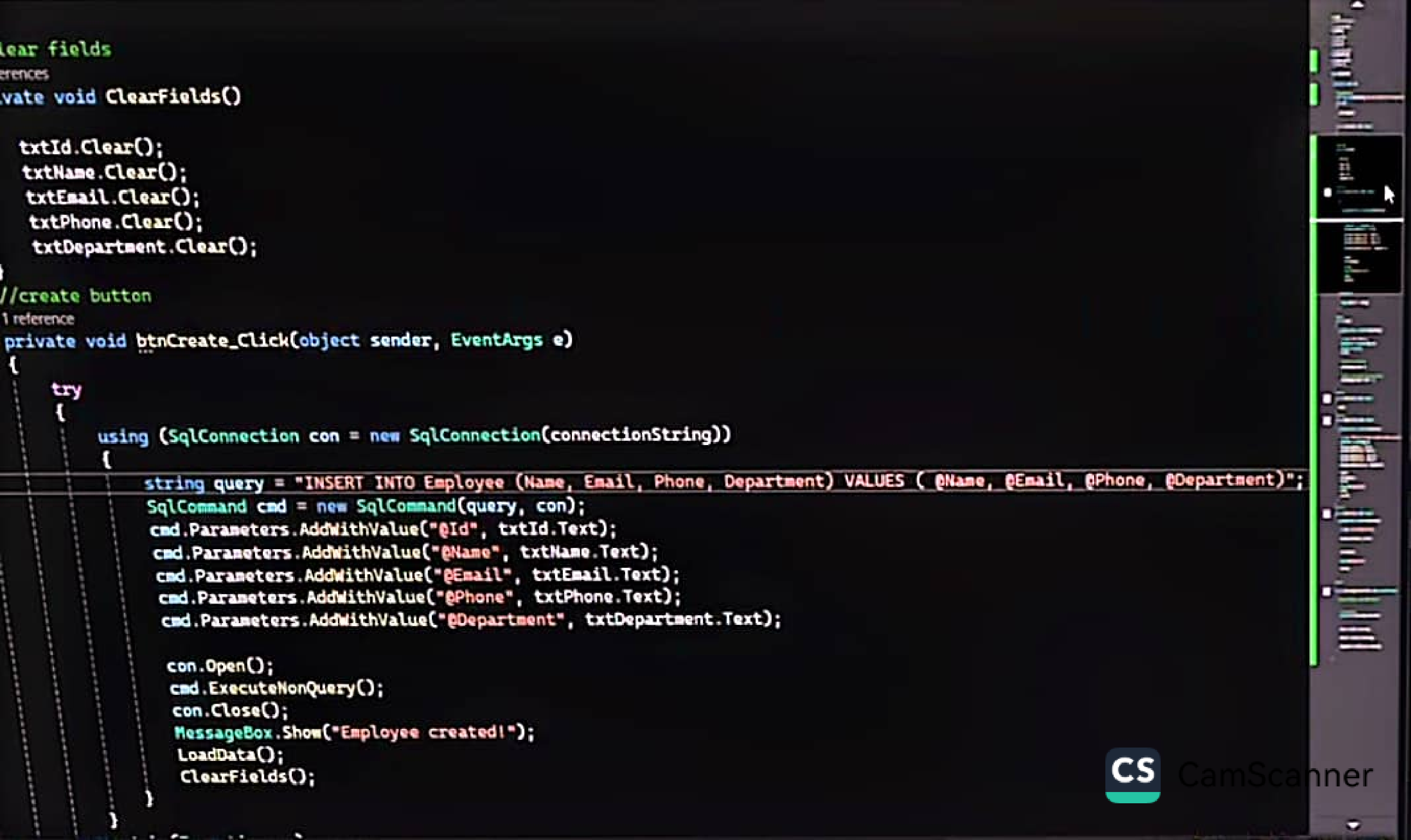
4. Helper Methods

```
        private void ClearFields()
        {
            txtId.Clear();
            txtName.Clear();
            txtEmail.Clear();
            txtPhone.Clear();
            txtDepartment.Clear();
        }

        private void dataGridViewEmployees_CellClick(object sender, 
DataGridViewCellEventArgs e)
        {
            if (e.RowIndex >= 0)
            {
                DataGridViewRow row = 
dataGridViewEmployees.Rows[e.RowIndex];

                txtId.Text = row.Cells["Id"].Value.ToString();
                txtName.Text = row.Cells["Name"].Value.ToString();
                txtEmail.Text = row.Cells["Email"].Value.ToString();
                txtPhone.Text = row.Cells["Phone"].Value.ToString();
                txtDepartment.Text = 
row.Cells["Department"].Value.ToString();
            }
        }
    }
}
```

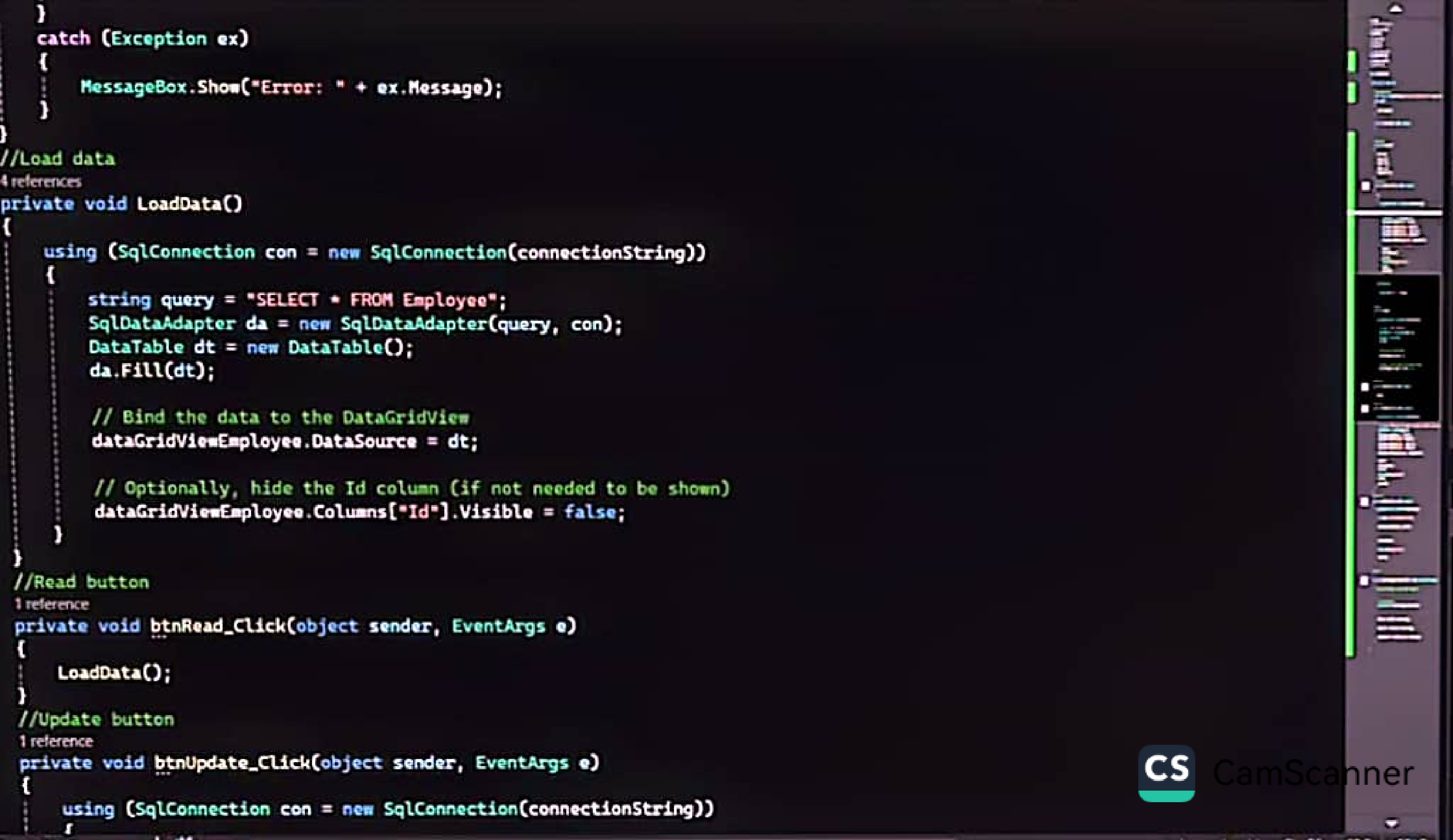


```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using System.Data.SqlClient;
using System.Xml.Linq;

namespace REGISTRATION_FORM
{
    3 references
    public partial class Form1 : Form
    {
        //sql connection string
        private readonly string connectionString = @"Data Source=.\SQLEXPRESS;Initial Catalog=REGISTRATIONFORM;Integrated Security=True;
        1 reference
        public Form1()
        {
            InitializeComponent();
        }

        1 reference
        private void Form1_Load(object sender, EventArgs e)
        {

        }
        //clear fields
        3 references
        private void ClearFields()
        {
            txtId.Clear();
            txtName.Clear();
```

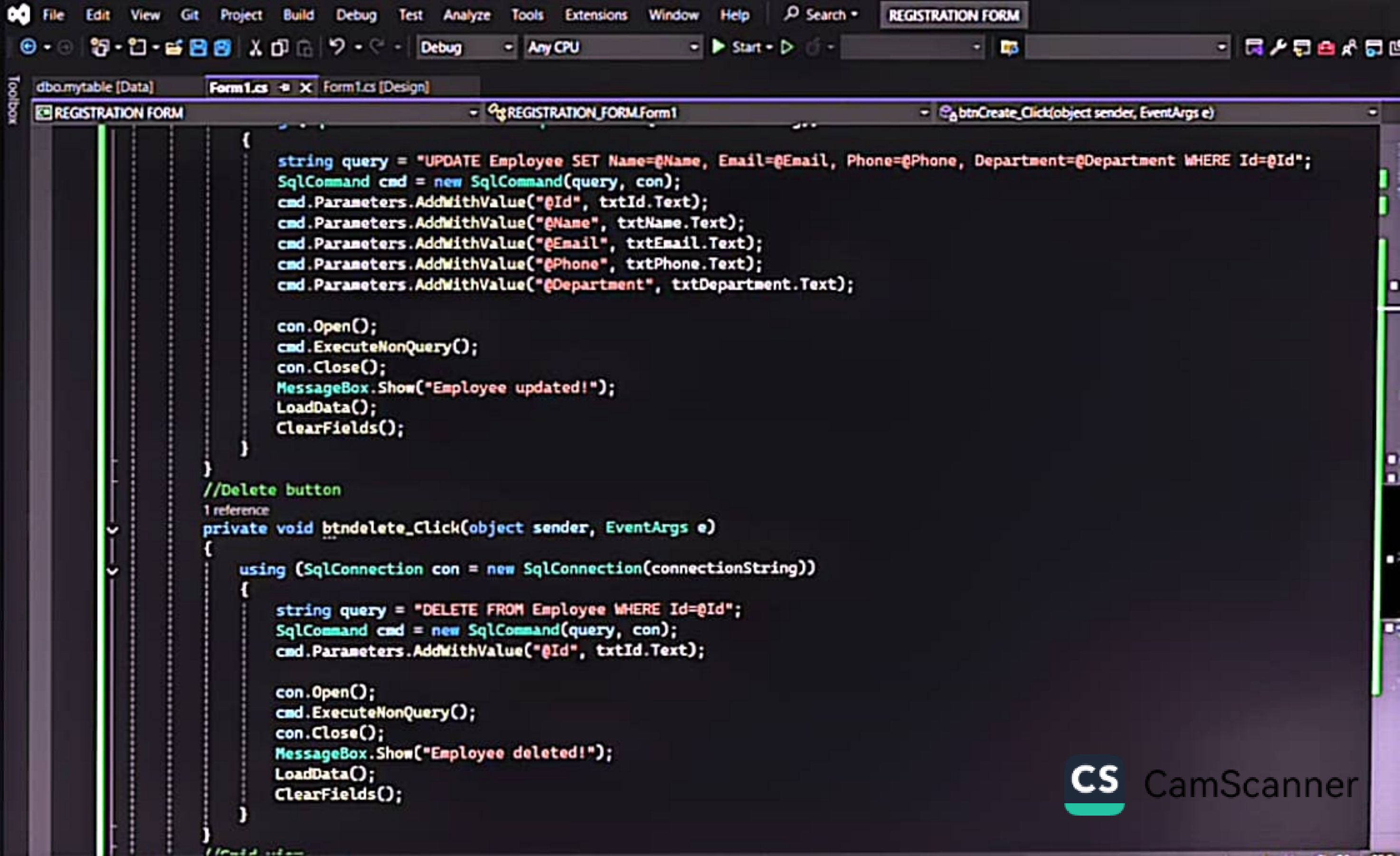
```
namespace REGISTRATION_FORM
{
    public partial class Form1 : Form
    {
        //sql connection string
        private readonly string connectionString = @"Data Source=.\SQLEX
        public Form1()
```



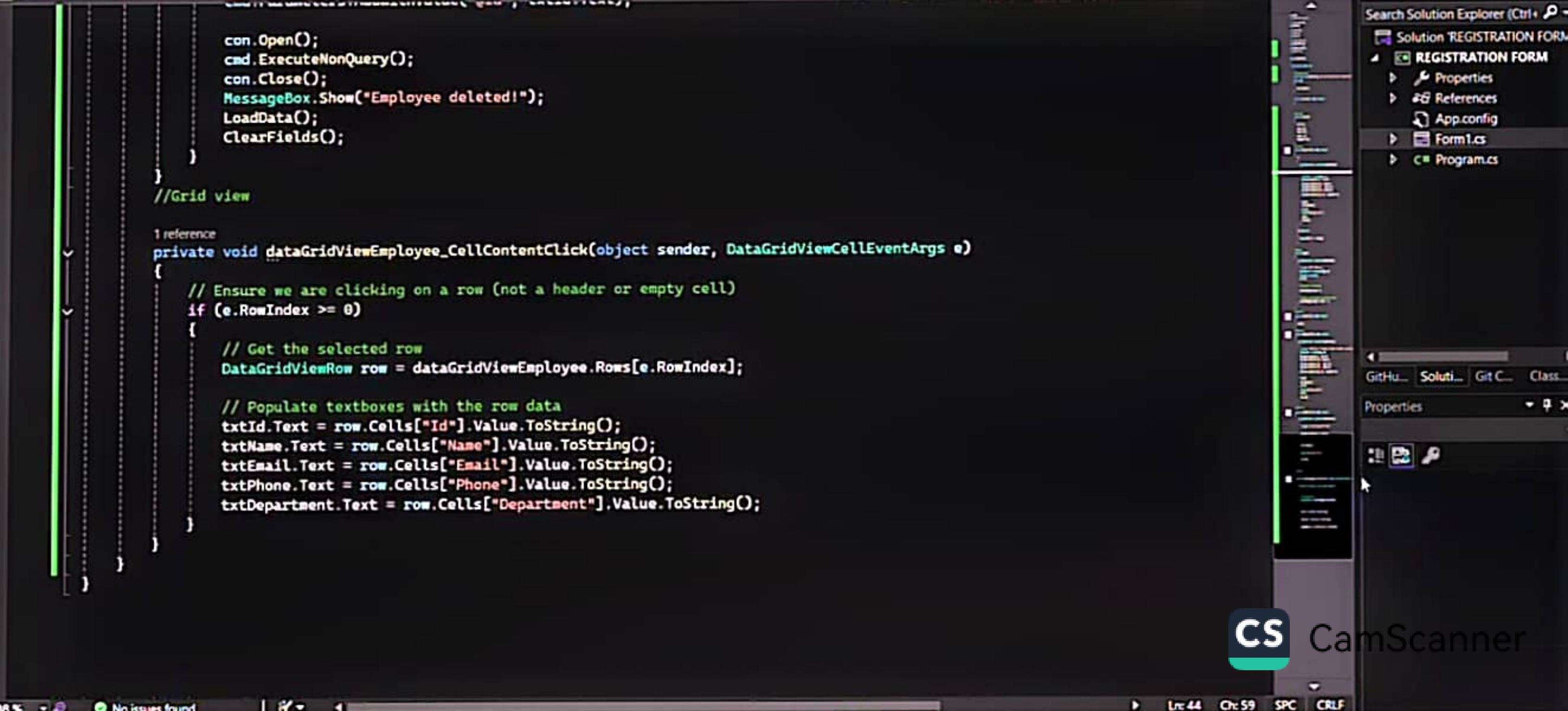
```
lear fields
erences
vate void ClearFields()

    txtId.Clear();
    txtName.Clear();
    txtEmail.Clear();
    txtPhone.Clear();
    txtDepartment.Clear();
}
//create button
1 reference
private void btnCreate_Click(object sender, EventArgs e)
{
    try
    {
        using (SqlConnection con = new SqlConnection(connectionString))
        {
            string query = "INSERT INTO Employee (Name, Email, Phone, Department) VALUES ( @Name, @Email, @Phone, @Department)";
            SqlCommand cmd = new SqlCommand(query, con);
            cmd.Parameters.AddWithValue("@Id", txtId.Text);
            cmd.Parameters.AddWithValue("@Name", txtName.Text);
            cmd.Parameters.AddWithValue("@Email", txtEmail.Text);
            cmd.Parameters.AddWithValue("@Phone", txtPhone.Text);
            cmd.Parameters.AddWithValue("@Department", txtDepartment.Text);

            con.Open();
            cmd.ExecuteNonQuery();
            con.Close();
            MessageBox.Show("Employee created!");
            LoadData();
            ClearFields();
        }
    }
```



```
    }
    catch (Exception ex)
    {
        MessageBox.Show("Error: " + ex.Message);
    }
}
//Load data
4 references
private void LoadData()
{
    using (SqlConnection con = new SqlConnection(connectionString))
    {
        string query = "SELECT * FROM Employee";
        SqlDataAdapter da = new SqlDataAdapter(query, con);
        DataTable dt = new DataTable();
        da.Fill(dt);

        // Bind the data to the DataGridView
        dataGridViewEmployee.DataSource = dt;

        // Optionally, hide the Id column (if not needed to be shown)
        dataGridViewEmployee.Columns["Id"].Visible = false;
    }
}
//Read button
1 reference
private void btnRead_Click(object sender, EventArgs e)
{
    LoadData();
}
//Update button
1 reference
private void btnUpdate_Click(object sender, EventArgs e)
{
    using (SqlConnection con = new SqlConnection(connectionString))
    {
```



```
            {
                string query = "UPDATE Employee SET Name=@Name, Email=@Email, Phone=@Phone, Department=@Department WHERE Id=@Id";
                SqlCommand cmd = new SqlCommand(query, con);
                cmd.Parameters.AddWithValue("@Id", txtId.Text);
                cmd.Parameters.AddWithValue("@Name", txtName.Text);
                cmd.Parameters.AddWithValue("@Email", txtEmail.Text);
                cmd.Parameters.AddWithValue("@Phone", txtPhone.Text);
                cmd.Parameters.AddWithValue("@Department", txtDepartment.Text);

                con.Open();
                cmd.ExecuteNonQuery();
                con.Close();
                MessageBox.Show("Employee updated!");
                LoadData();
                ClearFields();
            }
        }
        //Delete button
        1 reference
        private void btndelete_Click(object sender, EventArgs e)
        {
            using (SqlConnection con = new SqlConnection(connectionString))
            {
                string query = "DELETE FROM Employee WHERE Id=@Id";
                SqlCommand cmd = new SqlCommand(query, con);
                cmd.Parameters.AddWithValue("@Id", txtId.Text);

                con.Open();
                cmd.ExecuteNonQuery();
                con.Close();
                MessageBox.Show("Employee deleted!");
                LoadData();
                ClearFields();
            }
        }
        //Grid view
```



```
                    cmd.Parameters.AddWithValue("@Id", txtId.Text);

                    con.Open();
                    cmd.ExecuteNonQuery();
                    con.Close();
                    MessageBox.Show("Employee deleted!");
                    LoadData();
                    ClearFields();
                }
            }
            //Grid view

            1 reference
            private void dataGridViewEmployee_CellContentClick(object sender, DataGridViewCellEventArgs e)
            {
                // Ensure we are clicking on a row (not a header or empty cell)
                if (e.RowIndex >= 0)
                {
                    // Get the selected row
                    DataGridViewRow row = dataGridViewEmployee.Rows[e.RowIndex];

                    // Populate textboxes with the row data
                    txtId.Text = row.Cells["Id"].Value.ToString();
                    txtName.Text = row.Cells["Name"].Value.ToString();
                    txtEmail.Text = row.Cells["Email"].Value.ToString();
                    txtPhone.Text = row.Cells["Phone"].Value.ToString();
                    txtDepartment.Text = row.Cells["Department"].Value.ToString();
                }
            }
        }
    }
```