

.Net Practical (207) – Assignment-4

/*

1. Consider following database tables and create a MDI Application with Menu options to perform desired operations.

a. Course(cours_id,course_name)

b. Class (class_id, course_id, class_name)

c. Student(ernollno, rollno, name, class, course, email, mobile, dob)

Do the following operations for student data

1. Student registration with course and class should be properly selected. [use suitable controls and on selection of course suitable class only should be available for selection.

2. Update facility for email id, mobile no and dob for a specific student.

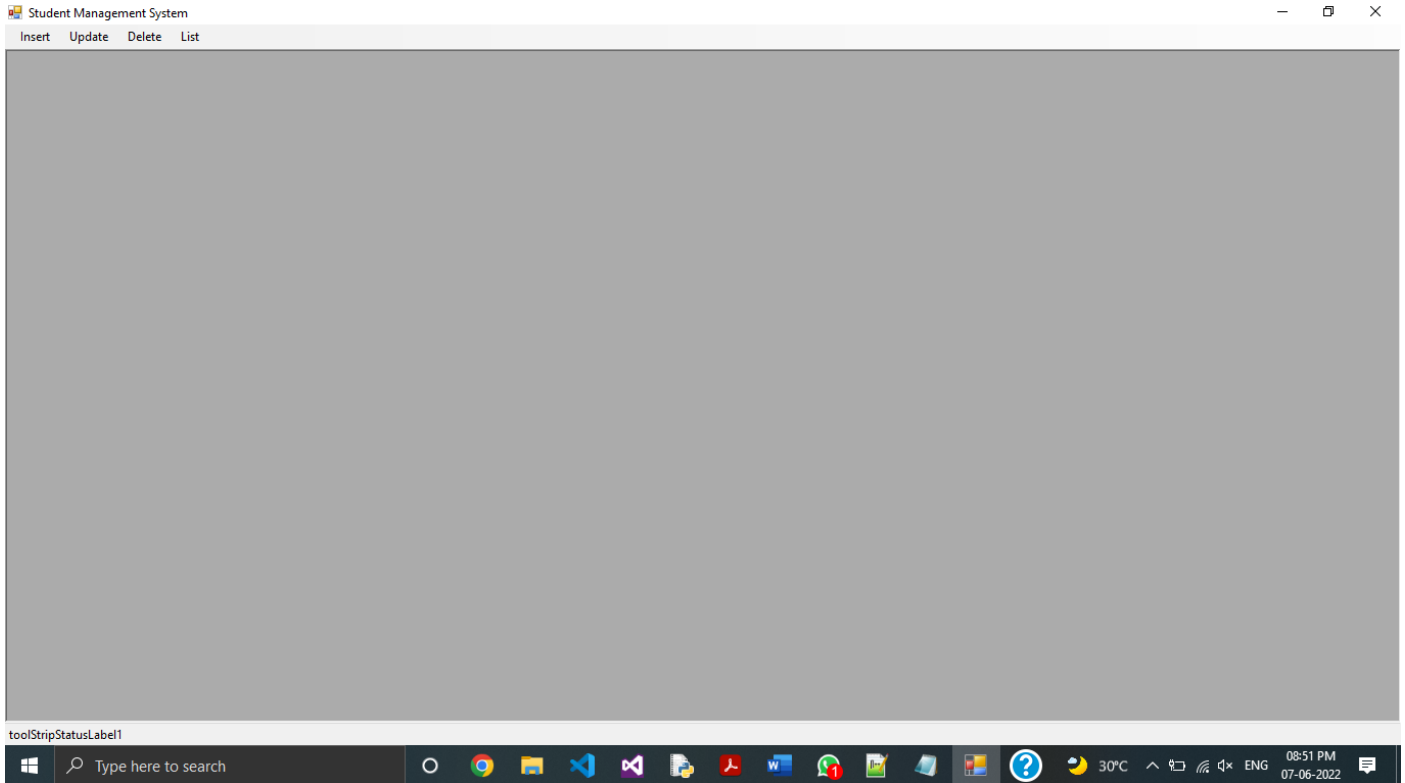
3. Delete by name , but if multiple student have same names then ask for course and then perform delete.

4. List the students whose birth date is in specific year.

Note : Demonstrate the use of various controls suitable for the operations.

***/**

----- MDIParent1.cs -----



```
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;

namespace Q1
{
    public partial class MDIParent1 : Form
    {
        private int childFormNumber = 0;

        public MDIParent1()
        {
            InitializeComponent();
        }
        Form child;
        private void courseInsertToolStripMenuItem_Click(object sender, EventArgs e)
        {
            if(childFormNumber != 0)
            {
                child.Dispose();
                childFormNumber = 0;
            }
        }
    }
}
```

```

        child = new Course_Insert_Form();
        child.MdiParent = this;
        toolStripStatusLabel1.Text = "Course Insert Form";
        child.Show();
        childFormNumber = 1;
    }

private void classInsertToolStripMenuItem_Click(object sender, EventArgs e)
{
    if (childFormNumber != 0)
    {
        child.Dispose();
        childFormNumber = 0;
    }
    child = new Class_Insert_Form();
    child.MdiParent = this;
    toolStripStatusLabel1.Text = "Class Insert Form";
    child.Show();
    childFormNumber = 1;
}

private void studentInsertToolStripMenuItem_Click(object sender, EventArgs e)
{
    if (childFormNumber != 0)
    {
        child.Dispose();
        childFormNumber = 0;
    }
    child = new Student_Insert_Form();
    child.MdiParent = this;
    toolStripStatusLabel1.Text = "Student Insert Form";
    child.Show();
    childFormNumber = 1;
}

private void studentUpdateToolStripMenuItem_Click(object sender, EventArgs e)
{
    if (childFormNumber != 0)
    {
        child.Dispose();
        childFormNumber = 0;
    }
    child = new Student_Update_Form();
    child.MdiParent = this;
    toolStripStatusLabel1.Text = "Student Update Form";
    child.Show();
    childFormNumber = 1;
}

private void studentDeleteToolStripMenuItem_Click(object sender, EventArgs e)
{
    if (childFormNumber != 0)
    {
        child.Dispose();
        childFormNumber = 0;
    }
    child = new Student_Delete_Form();
    child.MdiParent = this;
    toolStripStatusLabel1.Text = "Student Delete Form";
}

```

```
        child.Show();
        childFormNumber = 1;
    }

    private void studentListToolStripMenuItem_Click(object sender, EventArgs e)
    {
        if (childFormNumber != 0)
        {
            child.Dispose();
            childFormNumber = 0;
        }
        child = new Student_List_Form();
        child.MdiParent = this;
        toolStripStatusLabel1.Text = "Student List Form";
        child.Show();
        childFormNumber = 1;
    }

    private void courseListToolStripMenuItem_Click(object sender, EventArgs e)
    {
    }
}
}
```

----- Course_Insert_Form.cs -----

Student Management System - [Course_Insert_Form]

Insert Update Delete List

Enter Course ID :

Enter Course Name :

Add

	course_id	course_name
▶	1	BCA
	2	MCA
	3	BBA
	4	MBA
*		

Course Insert Form

```
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;

namespace Q1
{
    public partial class Course_Insert_Form : Form
    {
        SqlCommandBuilder dcmbd;
        SqlDataAdapter da;
        DataSet ds;
        string str;

        public Course_Insert_Form()
        {
            InitializeComponent();

            da = new SqlDataAdapter("select * from course", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
            dcmbd = new SqlCommandBuilder(da);
            ds = new DataSet();
            load_grid();
        }
        private void load_grid()
```

```

{
    da.Fill(ds, "course");
    dataGridViewCourse.DataSource = ds.Tables["course"];
    dataGridViewCourse.Refresh();
}
private void btnCourseAdd_Click(object sender, EventArgs e)
{
    int id;
    string name;
    try
    {
        id = Convert.ToInt32(txtCourseId.Text);
    }
    catch
    {
        MessageBox.Show("Invailid ID....");
        return;
    }
    if (txtCourseName.Text.Length > 0)
    {
        name = txtCourseName.Text;
    }
    else
    {
        MessageBox.Show("Please Enter Class Name....");
        return;
    }

    DataRow dr = ds.Tables["course"].NewRow();
    dr[0] = id;
    dr[1] = name;

    ds.Tables["course"].Rows.Add(dr);
    da.Update(ds.Tables["course"]);
    MessageBox.Show("Course Inserted Successfully");
    txtCourseId.Text = "";
    txtCourseName.Text = "";

    //load_grid();
}
}
}

```

----- Class_Insert_Form.cs -----

Student Management System - [Class_Insert_Form]

Insert Update Delete List

Enter Class ID :

Select Course ID :

Enter Class Name :

	class_id	course_id	class_name
▶	1	1	FYBCA
	2	1	SYBCA
	3	1	TYBCA
	4	3	FYBBA
	5	2	FYMCA
*			

Class Insert Form

```
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;

namespace Q1
{
    public partial class Class_Insert_Form : Form
    {
        SqlCommandBuilder dcmbd;
        SqlDataAdapter da,daCourse;
        DataSet ds,dsCourse;
        string str;

        public Class_Insert_Form()
        {
            InitializeComponent();

            da = new SqlDataAdapter("select * from class", "Data
Source=.\sqlserver;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
            dcmbd = new SqlCommandBuilder(da);
            ds = new DataSet();
            load_grid();
        }
    }
}
```

```

        daCourse = new SqlDataAdapter("select * from course", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
        dsCourse = new DataSet();
        load_course();
    }

    private void load_grid()
    {
        da.Fill(ds, "class");
        dataGridViewClass.DataSource = ds.Tables["class"];
        dataGridViewClass.Refresh();
    }
    private void load_course()
    {
        daCourse.Fill(dsCourse, "course");
        comboBoxCourse.DataSource = dsCourse.Tables["course"];
        comboBoxCourse.DisplayMember =
dsCourse.Tables["course"].Columns[1].ToString();
        comboBoxCourse.ValueMember =
dsCourse.Tables["course"].Columns[0].ToString();
        comboBoxCourse.Refresh();
    }

    private void btnClassAdd_Click(object sender, EventArgs e)
    {
        int id, courseid;
        string name;
        try
        {
            id = Convert.ToInt32(txtClassId.Text);
        }
        catch
        {
            MessageBox.Show("Invalid ID....");
            return;
        }
        try
        {
            courseid = Convert.ToInt32(comboBoxCourse.SelectedValue);
        }
        catch
        {
            MessageBox.Show("Please Select Valid Course....");
            return;
        }
        if(txtClassName.Text.Length > 0)
        {
            name = txtClassName.Text;
        }
        else
        {
            MessageBox.Show("Please Enter Class Name....");
            return;
        }

        DataRow dr = ds.Tables["class"].NewRow();
        dr[0] = id;
        dr[1] = courseid;
    }

```



```
dr[2] = name;

ds.Tables["class"].Rows.Add(dr);
da.Update(ds.Tables["class"]);
MessageBox.Show("Class Inserted Successfully");
txtClassId.Text = "";
comboBoxCourse.SelectedValue = 1;
txtClassName.Text = "";

// load_grid();
// load_course();
    }
}
}
```

----- Student_Insert_Form.cs -----

Student Management System - [Student_Insert_Form]

Insert Update Delete List

EnrollNo : Name :

Course : Email :

Class : Mobile :

Roll No : DOB :

enrollno	courseid	classid	rollno	name	email	mobile	dob
E001	2	5	1	Chandani Si...	chandani@g...	7894561230	27-10-20

Student Insert Form

```
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;

namespace Q1
{
    public partial class Student_Insert_Form : Form
    {
        SqlCommandBuilder dcmdb;
        SqlDataAdapter da, daCourse, daClass;
        DataSet ds, dsCourse, dsClass;
        string str;
        int courseid, classid, rollno;
        string enrollno, name, email, mobile;

        DateTime dob;

        public Student_Insert_Form()
        {
            InitializeComponent();

            da = new SqlDataAdapter("select * from student", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
```

```

        dcmbd = new SqlCommandBuilder(da);
        ds = new DataSet();
        load_grid();

        daCourse = new SqlDataAdapter("select * from course", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
        dsCourse = new DataSet();
        load_course();

        courseid = Convert.ToInt32(comboBoxCourse.SelectedValue);

        // MessageBox.Show("select * from class where course_id = " + courseid);
        daClass = new SqlDataAdapter("select * from class where course_id = " +
courseid, "Data Source=.\sqlexpress;Initial Catalog=chandani;Persist Security
Info=True;User ID=sa;Password=sa123");
        dsClass = new DataSet();
        load_class();
    }

    private void comboBoxCourse_SelectedIndexChanged(object sender, EventArgs e)
    {
        courseid = Convert.ToInt32(comboBoxCourse.SelectedIndex + 1);

        // MessageBox.Show("select * from class where course_id = " + str);

        daClass = new SqlDataAdapter("select * from class where course_id = " +
courseid, "Data Source=.\sqlexpress;Initial Catalog=chandani;Persist Security
Info=True;User ID=sa;Password=sa123");
        dsClass = new DataSet();
        load_class();
    }

    /*
    private void comboBoxCourse_SelectedValueChanged(object sender, EventArgs e)
    {
        MessageBox.Show(comboBoxCourse.SelectedValue.ToString());
        courseid = Convert.ToInt32(comboBoxCourse.SelectedValue);

        MessageBox.Show("select * from class where course_id = " +
comboBoxCourse.SelectedValue.ToString());
        daClass = new SqlDataAdapter("select * from class where course_id =
"+courseid, "Data Source=.\sqlexpress;Initial Catalog=chandani;Persist Security
Info=True;User ID=sa;Password=sa123");
        dsClass = new DataSet();
        load_class();
    }
    */
    private void load_grid()
    {
        da.Fill(ds, "student");
        dataGridViewStudent.DataSource = ds.Tables["student"];
        dataGridViewStudent.Refresh();
    }
    private void load_course()
    {

```

```

        daCourse.Fill(dsCourse, "course");
        comboBoxCourse.DataSource = dsCourse.Tables["course"];
        comboBoxCourse.DisplayMember =
dsCourse.Tables["course"].Columns[1].ToString();
        comboBoxCourse.ValueMember =
dsCourse.Tables["course"].Columns[0].ToString();
        comboBoxCourse.Refresh();
    }

    private void load_class()
    {

        daClass.Fill(dsClass, "class");
        comboBoxClass.DataSource = dsClass.Tables["class"];
        comboBoxClass.DisplayMember =
dsClass.Tables["class"].Columns[2].ToString();
        comboBoxClass.ValueMember = dsClass.Tables["class"].Columns[0].ToString();
        comboBoxClass.Refresh();
    }

    private void btnStudentAdd_Click(object sender, EventArgs e)
    {
        if(txtEnrollNo.Text.Length > 0)
        {
            enrollno = txtEnrollNo.Text;
        }
        else
        {
            MessageBox.Show("Please Enter EnrollNo....");
            return;
        }

        try
        {
            courseid = Convert.ToInt32(comboBoxCourse.SelectedValue);
        }
        catch
        {
            MessageBox.Show("Please Select Valid Course....");
            return;
        }

        try
        {
            classid = Convert.ToInt32(comboBoxClass.SelectedValue);
        }
        catch
        {
            MessageBox.Show("Please Select Valid Class....");
            return;
        }

        try
        {
            rollno = Convert.ToInt32(txtRollNo.Text);
        }
        catch
    }

```

```

{
    MessageBox.Show("Invalid RollNo....");
    return;
}

if (txtName.Text.Length > 0)
{
    name = txtName.Text;
}
else
{
    MessageBox.Show("Please Enter Name....");
    return;
}

if (txtEmail.Text.Length > 0)
{
    email = txtEmail.Text;
}
else
{
    MessageBox.Show("Please Enter Email....");
    return;
}

if (txtMobile.Text.Length > 0)
{
    mobile = txtMobile.Text;
}
else
{
    MessageBox.Show("Please Enter Mobile....");
    return;
}

try
{
    dob = Convert.ToDateTime(txtDOB.Text);
}
catch
{
    MessageBox.Show("Invalid Format of DOB....");
    return;
}

DataRow dr = ds.Tables["student"].NewRow();
dr[0] = enrollno;
dr[1] = courseid;
dr[2] = classid;
dr[3] = rollno;
dr[4] = name;
dr[5] = email;
dr[6] = mobile;
dr[7] = dob;

ds.Tables["student"].Rows.Add(dr);
da.Update(ds.Tables["student"]);
MessageBox.Show("Student Inserted Successfully");
txtEnrollNo.Text = "";

```

```
comboBoxCourse.SelectedValue = 1;  
comboBoxClass.SelectedValue = 1;  
txtRollNo.Text = "";  
txtName.Text = "";  
txtEmail.Text = "";  
txtMobile.Text = "";  
txtDOB.Text = "";
```

```
// load_grid();  
// load_course();
```

```
}
```

```
}
```

```
}
```

----- Student_Update_Form.cs -----

Student Management System - [Student_Update_Form]

Insert Update Delete List

EnrollNo :

Email : Find

Mobile :

DOB : Update

enrollno	courseid	classid	rollno	name	email	mobile	dob
E001	2	5	1	Chandani Si...	chandani@g...	7894561230	27-10-20
*							

Student Update Form

```
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;

namespace Q1
{
    public partial class Student_Update_Form : Form
    {
        SqlCommandBuilder dcmbd;
        SqlDataAdapter da, daCourse, daClass;
        DataSet ds, dsCourse, dsClass;
        string str;
        int courseid, classid, rollno;
        string enrollno, name, email, mobile;
        DateTime dob;

        public Student_Update_Form()
        {
            InitializeComponent();

            da = new SqlDataAdapter("select * from student", "Data
Source=.\sqlserver;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
            dcmbd = new SqlCommandBuilder(da);
            ds = new DataSet();
        }
    }
}
```

```

        load_grid();
    }

    private void load_grid()
    {
        da.Fill(ds, "student");
        dataGridViewStudent.DataSource = ds.Tables["student"];
        dataGridViewStudent.Refresh();
    }

    private void btnStudentFind_Click(object sender, EventArgs e)
    {
        bool flag = false;
        foreach (DataRow dr in ds.Tables["student"].Rows)
        {
            if(dr[0].ToString() == txtEnrollNo.Text.ToString())
            {
                txtEmail.Text = dr[5].ToString();
                txtMobile.Text = dr[6].ToString();
                txtDOB.Text = Convert.ToDateTime(dr[7]).ToShortDateString();

                flag = true;
                break;
            }
        }
        if (flag == false)
        {
            MessageBox.Show("No Record Found...");
            txtEnrollNo.Text = "";
            return;
        }
    }

    private void btnStudentUpdate_Click(object sender, EventArgs e)
    {
        bool flag = false;
        foreach (DataRow dr in ds.Tables["student"].Rows)
        {
            if (dr[0].ToString() == txtEnrollNo.Text.ToString())
            {
                email = txtEmail.Text.ToString();
                mobile = txtMobile.Text.ToString();
                dob = Convert.ToDateTime(txtDOB.Text);
                dr[5] = email;
                dr[6] = mobile;
                dr[7] = dob;
                flag = true;
                break;
            }
        }
        if (flag == false)
        {
            MessageBox.Show("Invalid EnrollNo...");
            return;
        }
        else
        {
            MessageBox.Show("Student Updated Successfully");
            da.Update(ds.Tables["student"]);
        }
    }

```



```
    }  
    txtEnrollNo.Text = "";  
    txtEmail.Text = "";  
    txtMobile.Text = "";  
    txtDOB.Text = "";  
    }  
    }  
}
```

----- Student_Delete_Form.cs -----

Student Management System - [Student_Delete_Form]

Insert Update Delete List

Name : Find

Course : Delete

	enrollno	courseid	classid	rollno	name	email	mobile	dob
▶	E001	2	5	1	Chandani Si...	chandani@g...	7894561230	27-10-20
*								

Student Delete Form

```
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;

namespace Q1
{
    public partial class Student_Delete_Form : Form
    {
        SqlCommandBuilder dcmbd;
        SqlDataAdapter da, daCourse;
        DataSet ds, dsCourse;
        string str;
        int courseid, classid, rollno;
        string enrollno, name, email, mobile;

        private void btnStudentDelete_Click(object sender, EventArgs e)
        {
            bool flag = false;
            int count = 0;
            foreach (DataRow dr in ds.Tables["student"].Rows)
            {
                if (dr[4].ToString() == txtName.Text.ToString())
                {
                    count++;

                    flag = true;
                }
            }
        }
    }
}
```

```

    }
    if (flag == true)
    {
        bool delflag = false;
        if (count == 1)
        {
            foreach (DataRow dr in ds.Tables["student"].Rows)
            {
                if (dr[4].ToString() == txtName.Text.ToString())
                {
                    ds.Tables["student"].Rows.Remove(dr);
                    delflag = true;
                }
            }
        }
        else if (count > 1)
        {
            courseid = Convert.ToInt32(comboBoxCourse.SelectedValue);
            foreach (DataRow dr in ds.Tables["student"].Rows)
            {
                if ((dr[4].ToString() == txtName.Text.ToString()) &&
(dr[1].ToString() == courseid.ToString()))
                {
                    ds.Tables["student"].Rows.Remove(dr);
                    delflag = true;
                }
            }
        }

        if (delflag == true)
        {
            MessageBox.Show("Student Record Deleted Successfully");
            txtName.Text = "";
            da.Update(ds.Tables["student"]);
            return;
        }
        else
        {
            MessageBox.Show("Invalid Course...");
            return;
        }
    }
    else
    {
        MessageBox.Show("No Record Found...");
        return;
    }
}

```

DateTime dob;

```

public Student_Delete_Form()
{
    InitializeComponent();

    da = new SqlDataAdapter("select * from student", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
    dcldb = new SqlCommandBuilder(da);
}

```

```

        ds = new DataSet();
        load_grid();

        daCourse = new SqlDataAdapter("select * from course", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
        dsCourse = new DataSet();
        load_course();
    }

    private void load_grid()
    {
        da.Fill(ds, "student");
        dataGridViewStudent.DataSource = ds.Tables["student"];
        dataGridViewStudent.Refresh();
    }
    private void load_course()
    {
        daCourse.Fill(dsCourse, "course");
        comboBoxCourse.DataSource = dsCourse.Tables["course"];
        comboBoxCourse.DisplayMember =
dsCourse.Tables["course"].Columns[1].ToString();
        comboBoxCourse.ValueMember =
dsCourse.Tables["course"].Columns[0].ToString();
        comboBoxCourse.Refresh();
    }
    private void btnStudentFind_Click(object sender, EventArgs e)
    {
        bool flag = false;
        int count = 0;
        foreach (DataRow dr in ds.Tables["student"].Rows)
        {
            if (dr[4].ToString() == txtName.Text.ToString())
            {
                count++;

                flag = true;
            }
        }
        if(flag == true)
        {
            if (count == 1)
            {
                MessageBox.Show("Student Record Found");
            }
            else if(count > 1)
            {
                MessageBox.Show("Multiple Student Record Found with this
Name...Please Select Course...");
            }
        }
        else
        {
            MessageBox.Show("No Record Found...");
            return;
        }
    }
}
}
}

```


----- Student_List_Form.cs -----

Student Management System - [Student_List_Form]

Insert Update Delete List

DOB Year : Find

	enrollno	courseid	classid	rollno	name	email	mobile	dob
▶	E001	2	5	1	Chandani Si...	chandani@g...	7894561230	27-10-2000
*								

Student List Form

```
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;

namespace Q1
{
    public partial class Student_List_Form : Form
    {
        SqlCommandBuilder dcmdb;
        SqlDataAdapter da;
        DataSet ds;
        string str;
        int dobYear;

        public Student_List_Form()
        {
            InitializeComponent();

            da = new SqlDataAdapter("select * from student", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
            dcmdb = new SqlCommandBuilder(da);
            ds = new DataSet();
            load_grid();
        }
    }
}
```

```

private void load_grid()
{
    da.Fill(ds, "student");
    dataGridViewStudent.DataSource = ds.Tables["student"];
    dataGridViewStudent.Refresh();
}

private void btnStudentFind_Click(object sender, EventArgs e)
{
    try
    {
        dobYear = Convert.ToInt32(txtDOBYear.Text);
    }
    catch
    {
        MessageBox.Show("Invalid Format of DOB....");
        return;
    }

    da = new SqlDataAdapter("select * from student where DOB BETWEEN
'" + dobYear.ToString() + "-01-01' AND '" + dobYear.ToString() + "-12-31'", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
    dcmbd = new SqlCommandBuilder(da);
    ds = new DataSet();
    load_grid();
}
}
}

```

----- **Tables** -----

USE [chandani]

GO

/***** Object: Table [dbo].[course] Script Date: 23-05-2022 10:47:21 *****/

SET ANSI_NULLS ON

GO

SET QUOTED_IDENTIFIER ON

GO

CREATE TABLE [dbo].[course](

 [course_id] [int] NOT NULL,

 [course_name] [nvarchar](20) NULL,

CONSTRAINT [PK_course] PRIMARY KEY CLUSTERED

(

 [course_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]

GO

USE [chandani]

GO

/***** Object: Table [dbo].[class] Script Date: 23-05-2022 10:48:03 *****/

SET ANSI_NULLS ON

GO

SET QUOTED_IDENTIFIER ON

GO

CREATE TABLE [dbo].[class](

[class_id] [int] NOT NULL,

[course_id] [int] NOT NULL,

[class_name] [nvarchar](20) NULL,

CONSTRAINT [PK_class] PRIMARY KEY CLUSTERED

(

[class_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]

GO

ALTER TABLE [dbo].[class] WITH CHECK ADD CONSTRAINT [FK_class_class] FOREIGN KEY([course_id])

REFERENCES [dbo].[course] ([course_id])

GO

ALTER TABLE [dbo].[class] CHECK CONSTRAINT [FK_class_class]

GO

USE [chandani]

GO

/***** Object: Table [dbo].[student] Script Date: 23-05-2022 10:48:21 *****/

SET ANSI_NULLS ON

GO

SET QUOTED_IDENTIFIER ON

GO

```
CREATE TABLE [dbo].[student](
    [enrollno] [nvarchar](20) NOT NULL,
    [courseid] [int] NOT NULL,
    [classid] [int] NOT NULL,
    [rollno] [int] NOT NULL,
    [name] [nvarchar](30) NOT NULL,
    [email] [nvarchar](50) NULL,
    [mobile] [nvarchar](20) NULL,
    [dob] [date] NOT NULL,
    CONSTRAINT [PK_student] PRIMARY KEY CLUSTERED
(
    [enrollno] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON,
ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]
```

GO

```
ALTER TABLE [dbo].[student] WITH CHECK ADD CONSTRAINT [FK_student_class] FOREIGN KEY([classid])
REFERENCES [dbo].[class] ([class_id])
```

GO

```
ALTER TABLE [dbo].[student] CHECK CONSTRAINT [FK_student_class]
```

GO

```
ALTER TABLE [dbo].[student] WITH CHECK ADD CONSTRAINT [FK_student_course] FOREIGN KEY([courseid])
REFERENCES [dbo].[course] ([course_id])
```

GO

```
ALTER TABLE [dbo].[student] CHECK CONSTRAINT [FK_student_course]
```

GO

/*

2. Consider following database tables and create a MDI Application with Menu options to perform desired operations

a. Department(dno, name, location)

b. Employee (eno, dno , name, dob, designation, salary)

Provide facility to perform following operations,

1. Employee creation (department name should be selected from combo box)

2. Search list of employees from specific department.

3. Search list of employees with working at specific location.

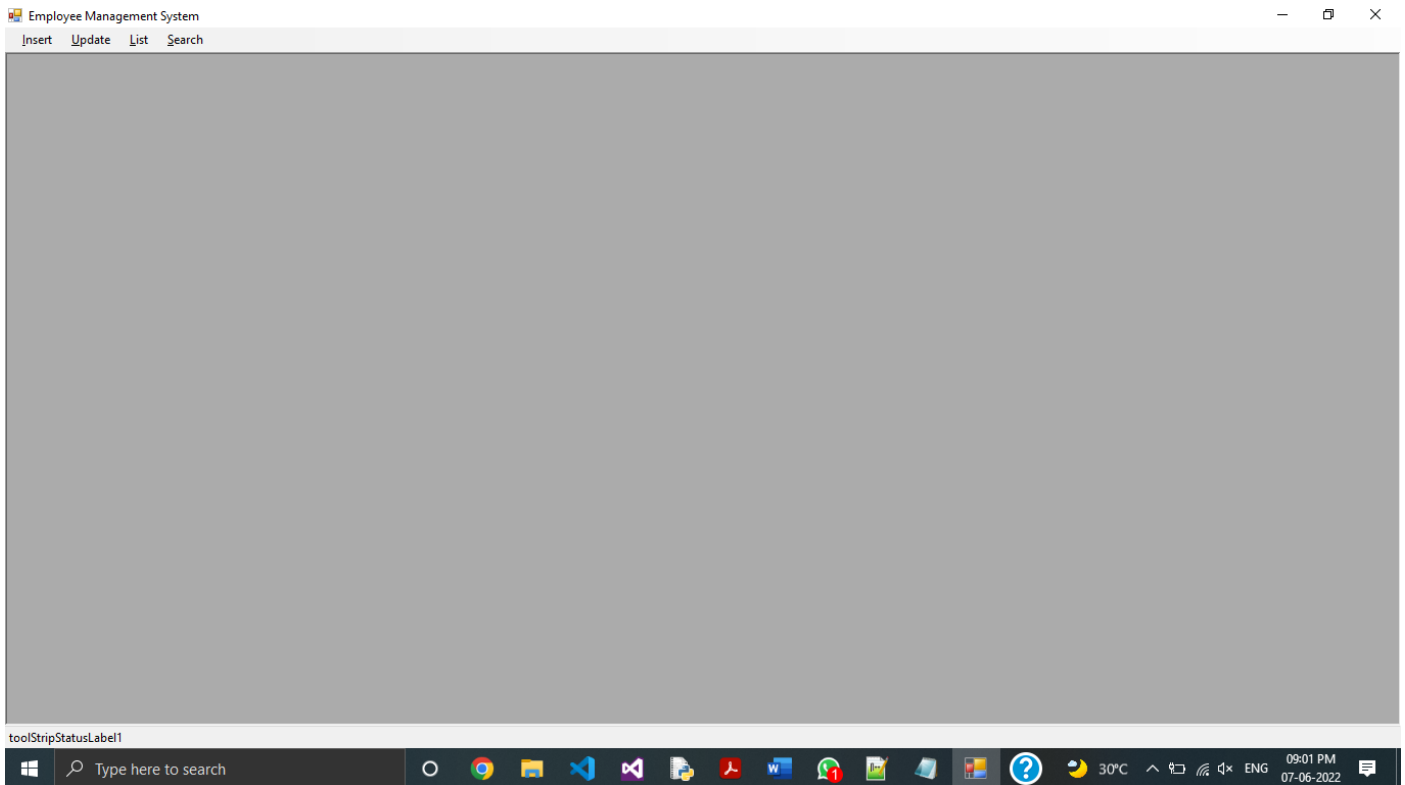
4. Search the employees whose age is more than 40 years (use dob and today's date)

5. Give increment to employees with specific designation as per given percentage.

Note : Demonstrate the use of various controls suitable for the operations.

*/

----- MDIParent1.cs -----



```
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;

namespace Q2
{
    public partial class MDIParent1 : Form
    {
        private int childFormNumber = 0;

        public MDIParent1()
        {
            InitializeComponent();
        }
        Form child;
        private void departmentInsertToolStripMenuItem_Click(object sender, EventArgs
e)
        {
            if (childFormNumber != 0)
            {
                child.Dispose();
                childFormNumber = 0;
            }
            child = new Department_Insert_Form();
            child.MdiParent = this;
            toolStripStatusLabel1.Text = "Department Insert Form";
            child.Show();
            childFormNumber = 1;
        }
    }
}
```

```

}

private void employeeInsertToolStripMenuItem_Click(object sender, EventArgs e)
{
    if (childFormNumber != 0)
    {
        child.Dispose();
        childFormNumber = 0;
    }
    child = new Employee_Insert_Form();
    child.MdiParent = this;
    toolStripStatusLabel1.Text = "Employee Insert Form";
    child.Show();
    childFormNumber = 1;
}

```

```

private void salaryUpdateToolStripMenuItem_Click(object sender, EventArgs e)
{
    if (childFormNumber != 0)
    {
        child.Dispose();
        childFormNumber = 0;
    }
    child = new Salary_Update_Form();
    child.MdiParent = this;
    toolStripStatusLabel1.Text = "Salary Update Form";
    child.Show();
    childFormNumber = 1;
}

```

e)

```

private void allDepartmentListToolStripMenuItem_Click(object sender, EventArgs
{
    if (childFormNumber != 0)
    {
        child.Dispose();
        childFormNumber = 0;
    }
    child = new Department_List_Form();
    child.MdiParent = this;
    toolStripStatusLabel1.Text = "Department List Form";
    child.Show();
    childFormNumber = 1;
}

```

e)

```

private void allEmployeeListToolStripMenuItem_Click(object sender, EventArgs
{
    if (childFormNumber != 0)
    {
        child.Dispose();
        childFormNumber = 0;
    }
    child = new Employee_List_Form();
    child.MdiParent = this;
    toolStripStatusLabel1.Text = "Employee List Form";
    child.Show();
    childFormNumber = 1;
}

```

```

        private void searchByDepartmentToolStripMenuItem_Click(object sender,
EventArgs e)
        {
            if (childFormNumber != 0)
            {
                child.Dispose();
                childFormNumber = 0;
            }
            child = new Search_By_Department_Form();
            child.MdiParent = this;
            toolStripStatusLabel1.Text = "Search By Department Form";
            child.Show();
            childFormNumber = 1;
        }

        private void searchByLocationToolStripMenuItem_Click(object sender, EventArgs
e)
        {
            if (childFormNumber != 0)
            {
                child.Dispose();
                childFormNumber = 0;
            }
            child = new Search_By_Location_Form();
            child.MdiParent = this;
            toolStripStatusLabel1.Text = "Search By Location Form";
            child.Show();
            childFormNumber = 1;
        }

        private void searchByAgeToolStripMenuItem_Click(object sender, EventArgs e)
        {
            if (childFormNumber != 0)
            {
                child.Dispose();
                childFormNumber = 0;
            }
            child = new Search_By_Age_Form();
            child.MdiParent = this;
            toolStripStatusLabel1.Text = "Search By Age Form";
            child.Show();
            childFormNumber = 1;
        }
    }
}

```

----- Department_Insert_Form.cs -----

Employee Management System - [Department_Insert_Form]

Insert Update List Search

Department No :

Department Name :

Department Location :

	dno	dname	location
▶	1	HR	Surat
	2	Management	Surat
	3	Sales	Mumbai
*			

Department Insert Form

```
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;

namespace Q2
{
    public partial class Department_Insert_Form : Form
    {
        SqlCommandBuilder dcmbd;
        SqlDataAdapter da;
        DataSet ds;
        string str;

        public Department_Insert_Form()
        {
            InitializeComponent();

            da = new SqlDataAdapter("select * from dept", "Data
Source=.\sqlserver;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
            dcmbd = new SqlCommandBuilder(da);
            ds = new DataSet();
            load_grid();
        }
        private void load_grid()
        {
            da.Fill(ds, "dept");
        }
    }
}
```

```

        dataGridViewDept.DataSource = ds.Tables["dept"];
        dataGridViewDept.Refresh();
    }

    private void btnDeptAdd_Click(object sender, EventArgs e)
    {
        int dno;
        string dname, location;

        try
        {
            dno = Convert.ToInt32(txtDeptNo.Text);
        }
        catch
        {
            MessageBox.Show("Invailid Dept No....");
            return;
        }

        if (txtDeptName.Text.Length > 0)
        {
            dname = txtDeptName.Text;
        }
        else
        {
            MessageBox.Show("Please Enter Dept Name....");
            return;
        }

        if (txtDeptLocation.Text.Length > 0)
        {
            location = txtDeptLocation.Text;
        }
        else
        {
            MessageBox.Show("Please Enter Dept Location....");
            return;
        }

        DataRow dr = ds.Tables["dept"].NewRow();
        dr[0] = dno;
        dr[1] = dname;
        dr[2] = location;

        ds.Tables["dept"].Rows.Add(dr);
        da.Update(ds.Tables["dept"]);
        MessageBox.Show("Dept Inserted Successfully");
        txtDeptNo.Text = "";
        txtDeptName.Text = "";
        txtDeptLocation.Text = "";

        load_grid();
    }
}

```


----- Employee_Insert_Form.cs -----

Employee Management System - [Employee_Insert_Form]

Insert Update List Search

Employee No : DOB :

Department No : Designation :

Name : Salary :

Add

	eno	dno	name	dob	desig	salary
▶	1	1	Sumit	29-11-1997	CEO	110000
	2	2	Chandani	27-10-2000	Manager	22000
	3	1	Aman	26-08-1997	Manager	110000
	4	3	Khushboo	11-05-2000	Sales	10000
*						

Employee Insert Form

```
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;

namespace Q2
{
    public partial class Employee_Insert_Form : Form
    {
        SqlCommandBuilder dcmbd;
        SqlDataAdapter da,daDept;
        DataSet ds,dsDept;
        string str;
        int eno, dno;
        string name, desig;
        double salary;
        DateTime dob;

        public Employee_Insert_Form()
        {
            InitializeComponent();

            da = new SqlDataAdapter("select * from emp", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
            dcmbd = new SqlCommandBuilder(da);
            ds = new DataSet();
            load_grid();
        }
    }
}
```

```

        daDept = new SqlDataAdapter("select * from dept", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
        dsDept = new DataSet();
        load_dept();
    }
    private void load_grid()
    {
        da.Fill(ds, "emp");
        dataGridViewEmp.DataSource = ds.Tables["emp"];
        dataGridViewEmp.Refresh();
    }

    private void load_dept()
    {
        daDept.Fill(dsDept, "dept");
        comboBoxDept.DataSource = dsDept.Tables["dept"];
        comboBoxDept.DisplayMember = dsDept.Tables["dept"].Columns[1].ToString();
        comboBoxDept.ValueMember = dsDept.Tables["dept"].Columns[0].ToString();
        comboBoxDept.Refresh();
    }

    private void btnEmpAdd_Click(object sender, EventArgs e)
    {
        try
        {
            eno = Convert.ToInt32(txtEmpNo.Text);
        }
        catch
        {
            MessageBox.Show("Invailid Emp No....");
            return;
        }

        try
        {
            dno = Convert.ToInt32(comboBoxDept.SelectedValue);
        }
        catch
        {
            MessageBox.Show("Please Select Valid Dept....");
            return;
        }

        if (txtName.Text.Length > 0)
        {
            name = txtName.Text;
        }
        else
        {
            MessageBox.Show("Please Enter Dept Name....");
            return;
        }

        try
        {
            dob = Convert.ToDateTime(txtDOB.Text);
        }
    }

```

```

catch
{
    MessageBox.Show("Invalid Format of DOB....");
    return;
}

if (txtDesignation.Text.Length > 0)
{
    desig = txtDesignation.Text;
}
else
{
    MessageBox.Show("Please Enter Designation....");
    return;
}

try
{
    salary = Convert.ToDouble(txtSalary.Text);
}
catch
{
    MessageBox.Show("Please Enter Salary....");
    return;
}

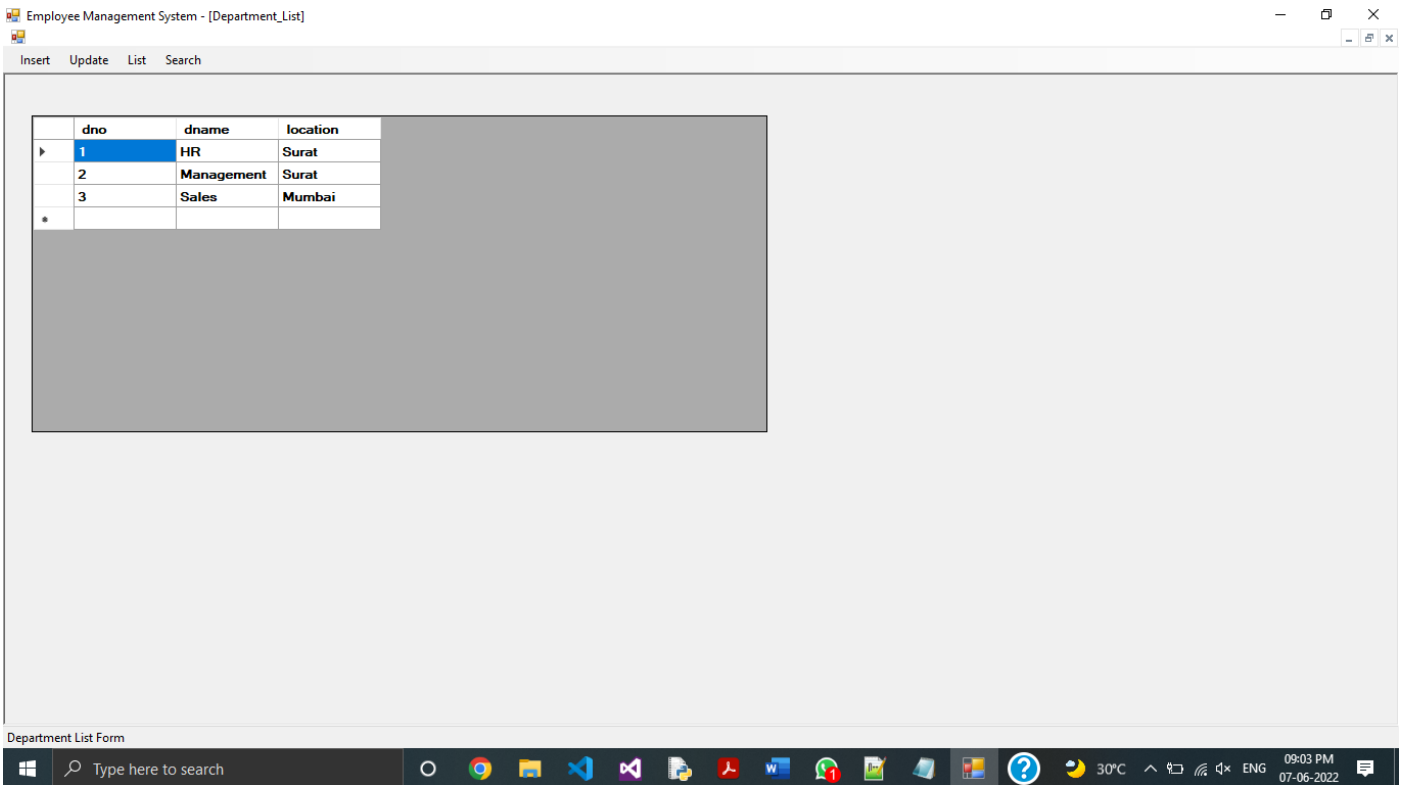
DataRow dr = ds.Tables["emp"].NewRow();
dr[0] = eno;
dr[1] = dno;
dr[2] = name;
dr[3] = dob;
dr[4] = desig;
dr[5] = salary;

ds.Tables["emp"].Rows.Add(dr);
da.Update(ds.Tables["emp"]);
MessageBox.Show("Emp Inserted Successfully");
txtEmpNo.Text = "";
comboBoxDept.SelectedValue = 1;
txtName.Text = "";
txtDOB.Text = "";
txtDesignation.Text = "";
txtSalary.Text = "";

load_grid();
load_dept();
}
}
}

```

----- Department_List_Form.cs -----



```
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;

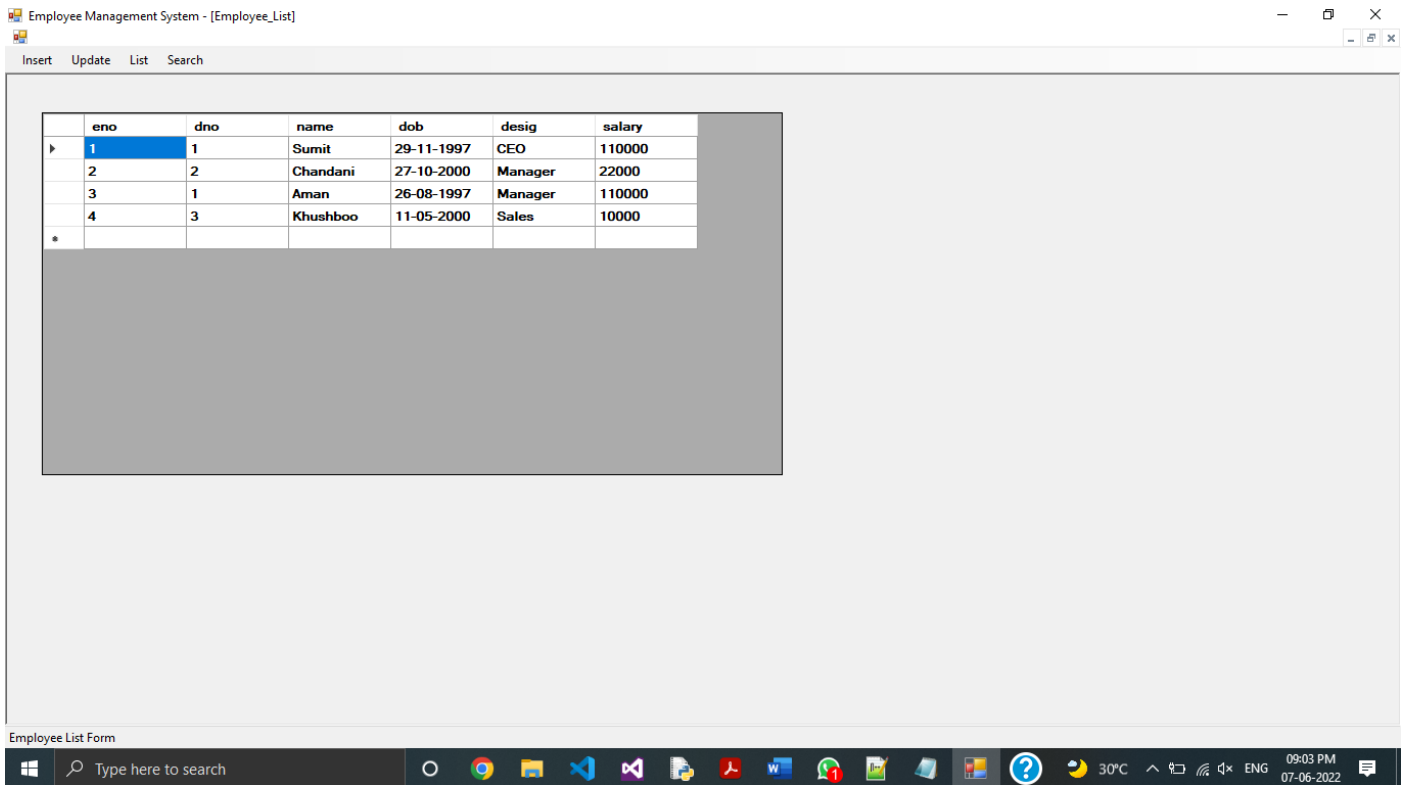
namespace Q2
{
    public partial class Department_List_Form : Form
    {
        SqlCommandBuilder dcmbd;
        SqlDataAdapter da;
        DataSet ds;
        string str;

        public Department_List_Form()
        {
            InitializeComponent();

            da = new SqlDataAdapter("select * from dept", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
            dcmbd = new SqlCommandBuilder(da);
            ds = new DataSet();
            load_grid();
        }
        private void load_grid()
        {
            da.Fill(ds, "dept");
        }
    }
}
```

```
dataGridViewDept.DataSource = ds.Tables["dept"];
dataGridViewDept.Refresh();
    }
}
```

----- Employee_List_Form.cs -----



```
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;

namespace Q2
{
    public partial class Employee_List_Form : Form
    {
        SqlCommandBuilder dcmbd;
        SqlDataAdapter da;
        DataSet ds;
        string str;

        public Employee_List_Form()
        {
            InitializeComponent();

            da = new SqlDataAdapter("select * from emp", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
            dcmbd = new SqlCommandBuilder(da);
            ds = new DataSet();
            load_grid();
        }
        private void load_grid()
        {
            da.Fill(ds, "emp");
        }
    }
}
```

```
dataGridViewEmp.DataSource = ds.Tables["emp"];
dataGridViewEmp.Refresh();
```

```
}
}
}
```

----- Salary_Update_Form.cs -----

Employee Management System - [Salary_Update_Form]

Insert Update List Search

Designation : Find

Increment Percentage : Update

	eno	dno	name	dob	desig	salary
▶	1	1	Sumit	29-11-1997	CEO	110000
	2	2	Chandani	27-10-2000	Manager	22000
	3	1	Aman	26-08-1997	Manager	110000
	4	3	Khushboo	11-05-2000	Sales	10000
*						

Salary Update Form

```
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;

namespace Q2
{
    public partial class Salary_Update_Form : Form
    {
        SqlCommandBuilder dcldb;
        SqlDataAdapter da;
        DataSet ds;
        string str;
        string location;
        string desig;
        double incper,salary;

        public Salary_Update_Form()
        {
            InitializeComponent();
        }
    }
}
```

```

        da = new SqlDataAdapter("select * from emp", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
        dcldb = new SqlCommandBuilder(da);
        ds = new DataSet();
        load_grid();
    }
    private void load_grid()
    {
        da.Fill(ds, "emp");
        dataGridViewEmp.DataSource = ds.Tables["emp"];
        dataGridViewEmp.Refresh();
    }

    private void btnDesigFind_Click(object sender, EventArgs e)
    {
        if(txtDesigation.Text.Length > 0)
        {
            bool flag = false;
            foreach (DataRow dr in ds.Tables["emp"].Rows)
            {
                if (dr[4].ToString() == txtDesigation.Text.ToString())
                {
                    flag = true;
                    break;
                }
            }
            if (flag == false)
            {
                MessageBox.Show("No Record Found...");
                // txtDesigation.Text = "";
                return;
            }
            else
            {
                MessageBox.Show("Record Found...");

                da = new SqlDataAdapter("select * from emp where desig = '" +
desig + "'", "Data Source=.\sqlexpress;Initial Catalog=chandani;Persist Security
Info=True;User ID=sa;Password=sa123");
                dcldb = new SqlCommandBuilder(da);
                ds = new DataSet();
                load_grid();
            }
        }
    }

    private void btnSalaryUpdate_Click(object sender, EventArgs e)
    {
        if (txtDesigation.Text.Length > 0)
        {
            desig = txtDesigation.Text.ToString();
            try
            {
                incper = Convert.ToDouble(txtIncPer.Text);
                MessageBox.Show(incper.ToString());
            }
            catch

```



```

{
    MessageBox.Show("Invalid Increament Percentage...");
    //txtIncPer.Text = "";
    return;
}

bool flag = false;
foreach (DataRow dr in ds.Tables["emp"].Rows)
{
    if (dr[4].ToString() == txtDesignation.Text.ToString())
    {
        salary = Convert.ToDouble(dr[5].ToString());
        salary = salary + (salary * incper);

        flag = true;
        dr[5] = salary.ToString();

    }
}

if (flag == false)
{
    MessageBox.Show("Designation Not Found...");
    return;
}
else
{
    MessageBox.Show("Salary Record Updated Successfully...");
    txtDesignation.Text = "";
    da.Update(ds.Tables["emp"]);

    da = new SqlDataAdapter("select * from emp", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
    dcmbd = new SqlCommandBuilder(da);
    ds = new DataSet();
    load_grid();
}
}
}
}
}

```

----- Search_By_Department_Form.cs -----

Employee Management System - [Search_By_Department_Form]

Insert Update List Search

Department No :

	eno	dno	name	dob	desig	salary
▶	1	1	Sumit	29-11-1997	CEO	110000
	2	2	Chandani	27-10-2000	Manager	22000
	3	1	Aman	26-08-1997	Manager	110000
	4	3	Khushboo	11-05-2000	Sales	10000
*						

Search By Department Form

```
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;

namespace Q2
{
    public partial class Search_By_Department_Form : Form
    {
        SqlCommandBuilder dcmbd;
        SqlDataAdapter da,daDept;
        DataSet ds,dsDept;
        string str;
        int deptno;

        public Search_By_Department_Form()
        {
            InitializeComponent();

            da = new SqlDataAdapter("select * from emp", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
            dcmbd = new SqlCommandBuilder(da);
            ds = new DataSet();
            load_grid();
        }
    }
}
```

```

        daDept = new SqlDataAdapter("select * from dept", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
        dsDept = new DataSet();
        load_dept();
    }
    private void load_grid()
    {
        da.Fill(ds, "emp");
        dataGridViewEmp.DataSource = ds.Tables["emp"];
        dataGridViewEmp.Refresh();
    }

    private void load_dept()
    {
        daDept.Fill(dsDept, "dept");
        comboBoxDeptNo.DataSource = dsDept.Tables["dept"];
        comboBoxDeptNo.DisplayMember =
dsDept.Tables["dept"].Columns[1].ToString();
        comboBoxDeptNo.ValueMember = dsDept.Tables["dept"].Columns[0].ToString();
        comboBoxDeptNo.Refresh();
    }

    private void btnSearchByDept_Click(object sender, EventArgs e)
    {
        try
        {
            deptno = Convert.ToInt32(comboBoxDeptNo.SelectedValue.ToString());
        }
        catch
        {
            MessageBox.Show("Invalid Dept No....");
            return;
        }
        da = new SqlDataAdapter("select * from emp where dno = "+deptno, "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
        dcmbdb = new SqlCommandBuilder(da);
        ds = new DataSet();
        load_grid();
    }
}

```

----- Search_By_Location_Form.cs -----

Employee Management System - [Search_By_Location_Form]

Insert Update List Search

Location :

	eno	dno	name	dob	desig	salary
▶	1	1	Sumit	29-11-1997	CEO	110000
	2	2	Chandani	27-10-2000	Manager	22000
	3	1	Aman	26-08-1997	Manager	110000
	4	3	Khushboo	11-05-2000	Sales	10000
*						

Search By Location Form

```
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;

namespace Q2
{
    public partial class Search_By_Location_Form : Form
    {
        SqlCommandBuilder dcmbd;
        SqlDataAdapter da;
        DataSet ds;
        string str;
        string location;

        public Search_By_Location_Form()
        {
            InitializeComponent();

            da = new SqlDataAdapter("select * from emp", "Data
Source=.\sqlserver;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
            dcmbd = new SqlCommandBuilder(da);
            ds = new DataSet();
            load_grid();
        }
        private void load_grid()
        {
```

```

        da.Fill(ds, "emp");
        dataGridViewEmp.DataSource = ds.Tables["emp"];
        dataGridViewEmp.Refresh();
    }

    private void btnSearchByLoc_Click(object sender, EventArgs e)
    {
        if(txtLocation.Text.Length > 0)
        {
            location = txtLocation.Text.ToString();
        }
        else
        {
            MessageBox.Show("Please Enter Location....");
            return;
        }
        da = new SqlDataAdapter("select e.* from emp e,dept d where d.dno = e.dno
and d.location = '"+location+"'", "Data Source=.\sqlexpress;Initial
Catalog=chandani;Persist Security Info=True;User ID=sa;Password=sa123");
        dcmbd = new SqlCommandBuilder(da);
        ds = new DataSet();
        load_grid();
    }
}
}

```

----- Search_By_Age_Form.cs -----

Employee Management System - [Search_By_Age_Form]

Insert Update List Search

Age :

	eno	dno	name	dob	desig	salary
▶	1	1	Sumit	29-11-1997	CEO	110000
	2	2	Chandani	27-10-2000	Manager	22000
	3	1	Aman	26-08-1997	Manager	110000
	4	3	Khushboo	11-05-2000	Sales	10000
*						

Search By Age Form

```
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;

namespace Q2
{
    public partial class Search_By_Age_Form : Form
    {
        SqlCommandBuilder dcmbd;
        SqlDataAdapter da;
        DataSet ds;
        string str;
        string location;
        int age;

        public Search_By_Age_Form()
        {
            InitializeComponent();

            da = new SqlDataAdapter("select * from emp", "Data
Source=.\sqlexpress;Initial Catalog=chandani;Persist Security Info=True;User
ID=sa;Password=sa123");
            dcmbd = new SqlCommandBuilder(da);
            ds = new DataSet();
            load_grid();
        }
        private void load_grid()
```

```

{
    da.Fill(ds, "emp");
    dataGridViewEmp.DataSource = ds.Tables["emp"];
    dataGridViewEmp.Refresh();
}

private void btnSearchByAge_Click(object sender, EventArgs e)
{
    try
    {
        age = Convert.ToInt32(txtAge.Text);
    }
    catch
    {
        MessageBox.Show("Invalid Age....");
        return;
    }

    MessageBox.Show("select * from emp where FLOOR(DATEDIFF(DAY,
dob,getdate()) / 365.25) > " + age);
    da = new SqlDataAdapter("select * from emp where FLOOR(DATEDIFF(DAY,
dob,getdate()) / 365.25) > " + age, "Data Source=.\sqlexpress;Initial
Catalog=chandani;Persist Security Info=True;User ID=sa;Password=sa123");
    dcmb = new SqlCommandBuilder(da);
    ds = new DataSet();
    load_grid();
}
}
}

```

----- Tables -----

USE [chandani]

GO

/***** Object: Table [dbo].[dept] Script Date: 23-05-2022 12:01:53 *****/

SET ANSI_NULLS ON

GO

SET QUOTED_IDENTIFIER ON

GO

CREATE TABLE [dbo].[dept](

[dno] [int] NOT NULL,

[dname] [nvarchar](20) NOT NULL,

[location] [nvarchar](30) NULL,

CONSTRAINT [PK_dept] PRIMARY KEY CLUSTERED

(

[dno] ASC

)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO

USE [chandani]

GO

/***** Object: Table [dbo].[emp] Script Date: 23-05-2022 12:02:10 *****/

SET ANSI_NULLS ON

GO

SET QUOTED_IDENTIFIER ON

GO

CREATE TABLE [dbo].[emp](

[eno] [int] NOT NULL,

[dno] [int] NOT NULL,

[name] [nvarchar](30) NOT NULL,

[dob] [date] NOT NULL,

[desig] [nvarchar](30) NOT NULL,

[salary] [nvarchar](10) NOT NULL,

CONSTRAINT [PK_emp] PRIMARY KEY CLUSTERED

(

[eno] ASC

)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO

ALTER TABLE [dbo].[emp] WITH CHECK ADD CONSTRAINT [FK_emp_dept] FOREIGN KEY([dno])

REFERENCES [dbo].[dept] ([dno])

GO

ALTER TABLE [dbo].[emp] CHECK CONSTRAINT [FK_emp_dept]

GO

/*

3. Consider the following database table and perform the operations using LINQ.

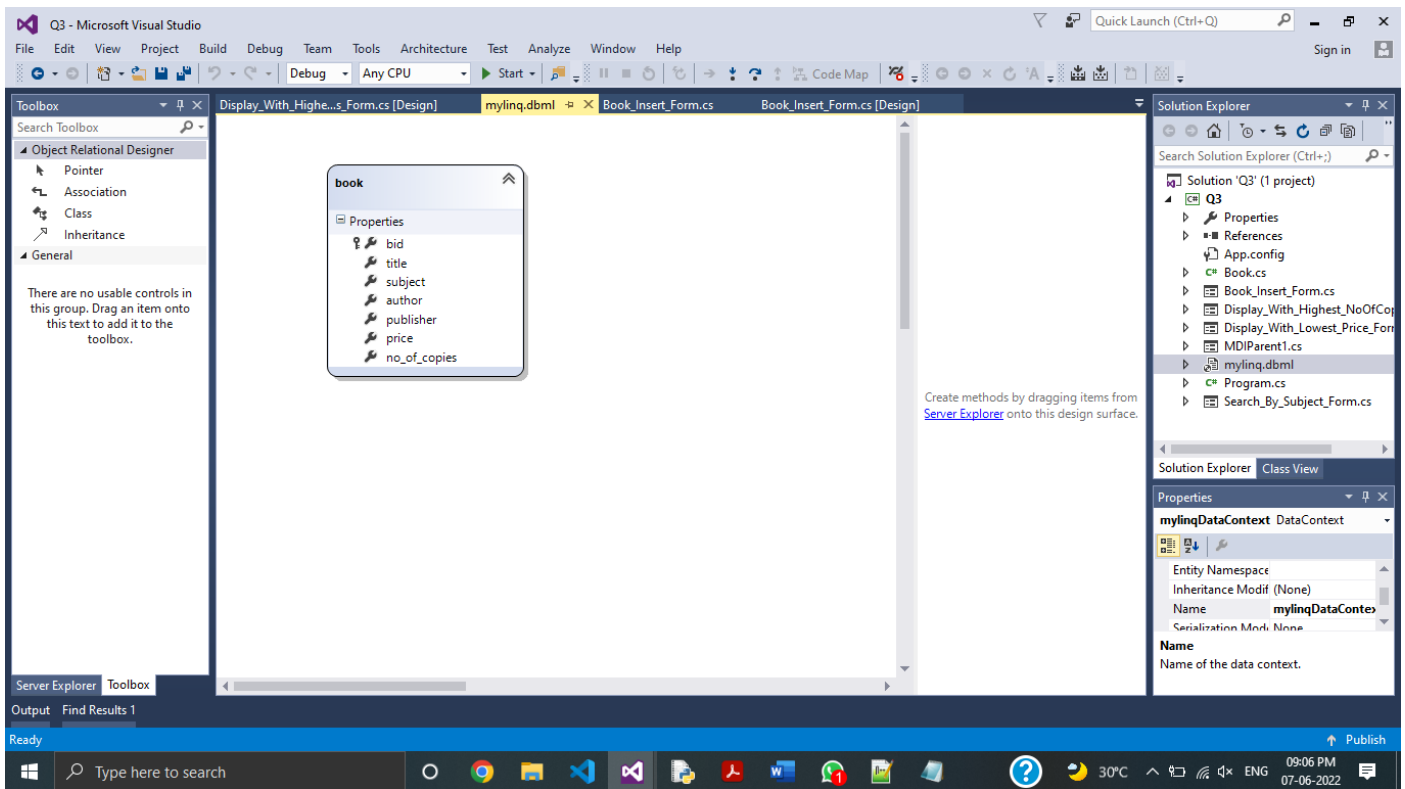
Book (bid, title, subject, author, publisher, price, no_of_copies)

1. New book entry
2. Search book list by subject.
3. Display the top five books with lowest prices.
4. Display the top five books with highest no of copies.

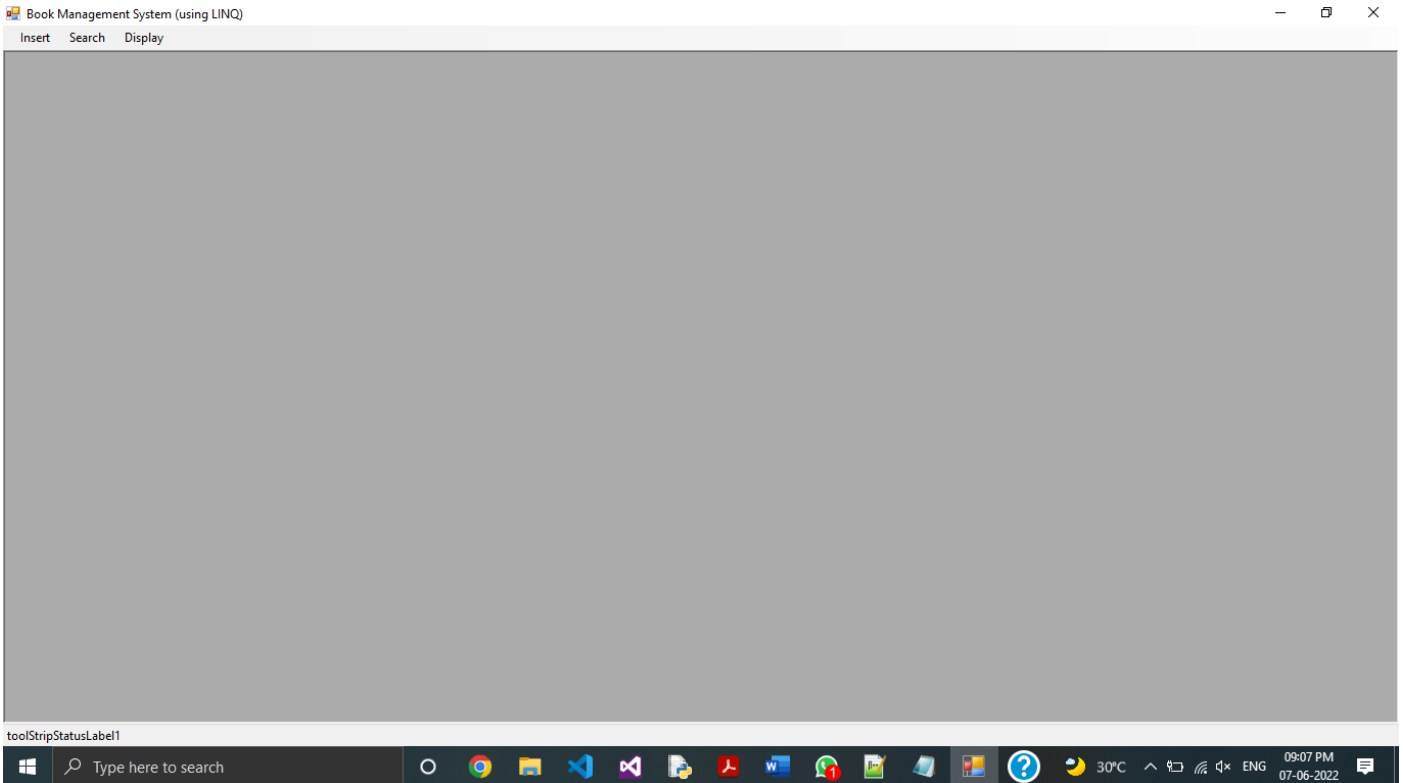
*/

----- mylinq.dbml -----

Get Database table drag and drop



----- MDIParent1.cs -----



```
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;

namespace Q3
{
    public partial class MDIParent1 : Form
    {
        private int childFormNumber = 0;

        public MDIParent1()
        {
            InitializeComponent();
        }
        Form child;

        private void bookInsertToolStripMenuItem_Click(object sender, EventArgs e)
        {
            if (childFormNumber != 0)
            {
                child.Dispose();
                childFormNumber = 0;
            }
            child = new Book_Insert_Form();
            child.MdiParent = this;
            toolStripStatusLabel1.Text = "Book Insert Form";
            child.Show();
            childFormNumber = 1;
        }
    }
}
```

```

    }

    private void searchBySubjectToolStripMenuItem_Click(object sender, EventArgs
e)
    {
        if (childFormNumber != 0)
        {
            child.Dispose();
            childFormNumber = 0;
        }
        child = new Search_By_Subject_Form();
        child.MdiParent = this;
        toolStripStatusLabel1.Text = "Search_By_Subject Form";
        child.Show();
        childFormNumber = 1;
    }

    private void displayWithLowestPriceToolStripMenuItem_Click(object sender,
EventArgs e)
    {
        if (childFormNumber != 0)
        {
            child.Dispose();
            childFormNumber = 0;
        }
        child = new Display_With_Lowest_Price_Form();
        child.MdiParent = this;
        toolStripStatusLabel1.Text = "Display_With_Lowest_Price_Form";
        child.Show();
        childFormNumber = 1;
    }

    private void displayWithToolStripMenuItem_Click(object sender, EventArgs e)
    {
        if (childFormNumber != 0)
        {
            child.Dispose();
            childFormNumber = 0;
        }
        child = new Display_With_Highest_NoOfCopies_Form();
        child.MdiParent = this;
        toolStripStatusLabel1.Text = "Display_With_Highest_NoOfCopies_Form";
        child.Show();
        childFormNumber = 1;
    }
}
}
}

```

----- Book_Insert_Form.cs -----

Book Management System (using LINQ) - [Book_Insert_Form]

Insert Search Display

Book ID : Publisher :

Title : Price :

Subject : No of Copies :

Author :

bid	title	subject	author	publisher	price	no_of_copies
1	C# Beginners	C#	Chandani	ABC	200	20
2	C++ Beginn...	C++	Chandani	ABC	200	20
3	abc	abc	abc	ABC	100	10
4	abc2	abc2	abc2	ABC	1000	10
6	abc3	abc3	abc3	abc3	1200	32
7	abc34	abc34	abc34	abc34	120	50
8	abc344	abc344	abc344	abc34	1100	50
*						

Book Insert Form

```
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;

namespace Q3
{
    public partial class Book_Insert_Form : Form
    {
        mylinqDataContext m;

        int bid, no_of_copies;
        string title, subject, author, publisher;
        float price;
        public Book_Insert_Form()
        {
            InitializeComponent();

            m = new mylinqDataContext();
            load_grid();
        }

        private void load_grid()
        {
            var v = from b in m.books
                    select b;

            dataGridViewBook.DataSource = v;
            dataGridViewBook.Refresh();
        }
    }
}
```

```

}
private void btnBookAdd_Click(object sender, EventArgs e)
{
    try
    {
        bid = Convert.ToInt32(txtBid.Text);
    }
    catch
    {
        MessageBox.Show("Invalid Book ID...");
        return;
    }

    if(txtTitle.Text.Length > 0)
    {
        title = txtTitle.Text.ToString();
    }
    else
    {
        MessageBox.Show("Please Enter Title...");
        return;
    }

    if (txtSubject.Text.Length > 0)
    {
        subject = txtSubject.Text.ToString();
    }
    else
    {
        MessageBox.Show("Please Enter Subject...");
        return;
    }

    if (txtAuthor.Text.Length > 0)
    {
        author = txtAuthor.Text.ToString();
    }
    else
    {
        MessageBox.Show("Please Enter Author...");
        return;
    }

    if (txtPublisher.Text.Length > 0)
    {
        publisher = txtPublisher.Text.ToString();
    }
    else
    {
        MessageBox.Show("Please Enter Publisher...");
        return;
    }

    try
    {
        price = float.Parse(txtPrice.Text);
    }
    catch
    {

```

```

        MessageBox.Show("Invalid Price...");
        return;
    }

    try
    {
        no_of_copies = Convert.ToInt32(txtNoOfCopies.Text);
    }
    catch
    {
        MessageBox.Show("Invalid No Of Copies...");
        return;
    }

    book b = new book();
    b.bid = bid;
    b.title = title;
    b.subject = subject;
    b.author = author;
    b.publisher = publisher;
    b.price = price;
    b.no_of_copies = no_of_copies;

    m.books.InsertOnSubmit(b);
    m.SubmitChanges();
    load_grid();
}
}
}

```

----- Search_By_Subject_Form.cs -----

Book Management System (using LINQ) - [Search_By_Subject_Form]

Insert Search Display

Subject :

	bid	title	subject	author	publisher	price	no_of_copies
▶	1	C# Beginners	C#	Chandani	ABC	200	20
	2	C++ Beginn...	C++	Chandani	ABC	200	20
	3	abc	abc	abc	ABC	100	10
	4	abc2	abc2	abc2	ABC	1000	10
	6	abc3	abc3	abc3	abc3	1200	32
	7	abc34	abc34	abc34	abc34	120	50
	8	abc344	abc344	abc344	abc34	1100	50
*							

Search_By_Subject Form

```
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;

namespace Q3
{
    public partial class Search_By_Subject_Form : Form
    {
        mylinqDataContext m;
        string subject;
        public Search_By_Subject_Form()
        {
            InitializeComponent();

            m = new mylinqDataContext();
            load_grid();
        }

        private void load_grid()
        {
            var v = from b in m.books
                    select b;

            dataGridViewBook.DataSource = v;
            dataGridViewBook.Refresh();
        }

        private void btnSearchBySubject_Click(object sender, EventArgs e)
```



```

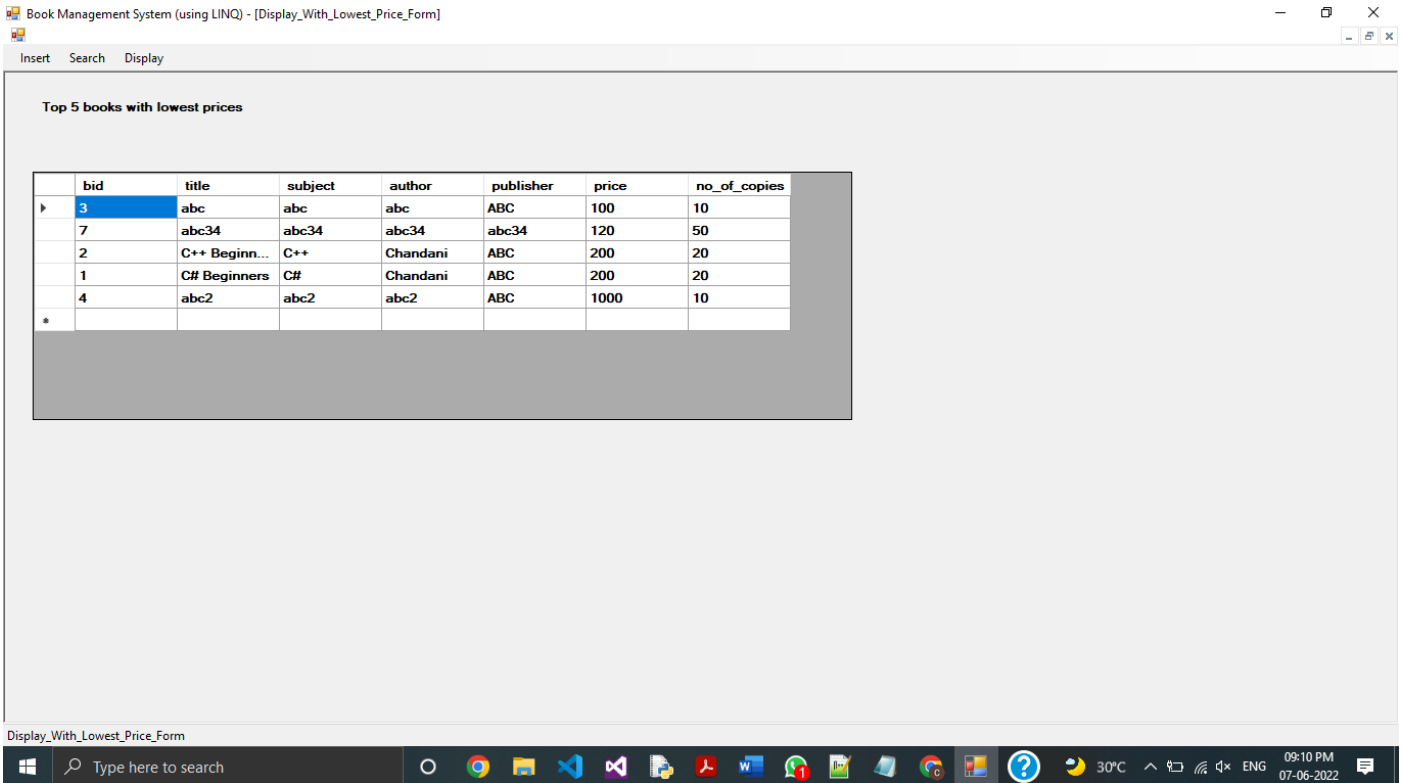
{
    if (txtSubject.Text.Length > 0)
    {
        subject = txtSubject.Text.ToString();

        var v = from b in m.books
                 where b.subject == subject.ToString()
                 select b;

        List<book> b1 = new List<book>(v);
        if(b1.Count == 0)
        {
            MessageBox.Show("Book with this Subject Not Found...");
            return;
        }
        else
        {
            dataGridviewBook.DataSource = v;
            dataGridviewBook.Refresh();
            MessageBox.Show("Book with this Subject Found...");
            return;
        }
    }
    else
    {
        MessageBox.Show("Please Enter Subject...");
        return;
    }
}
}
}
}

```

----- Display_With_Lowest_Price_Form.cs -----



```
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;

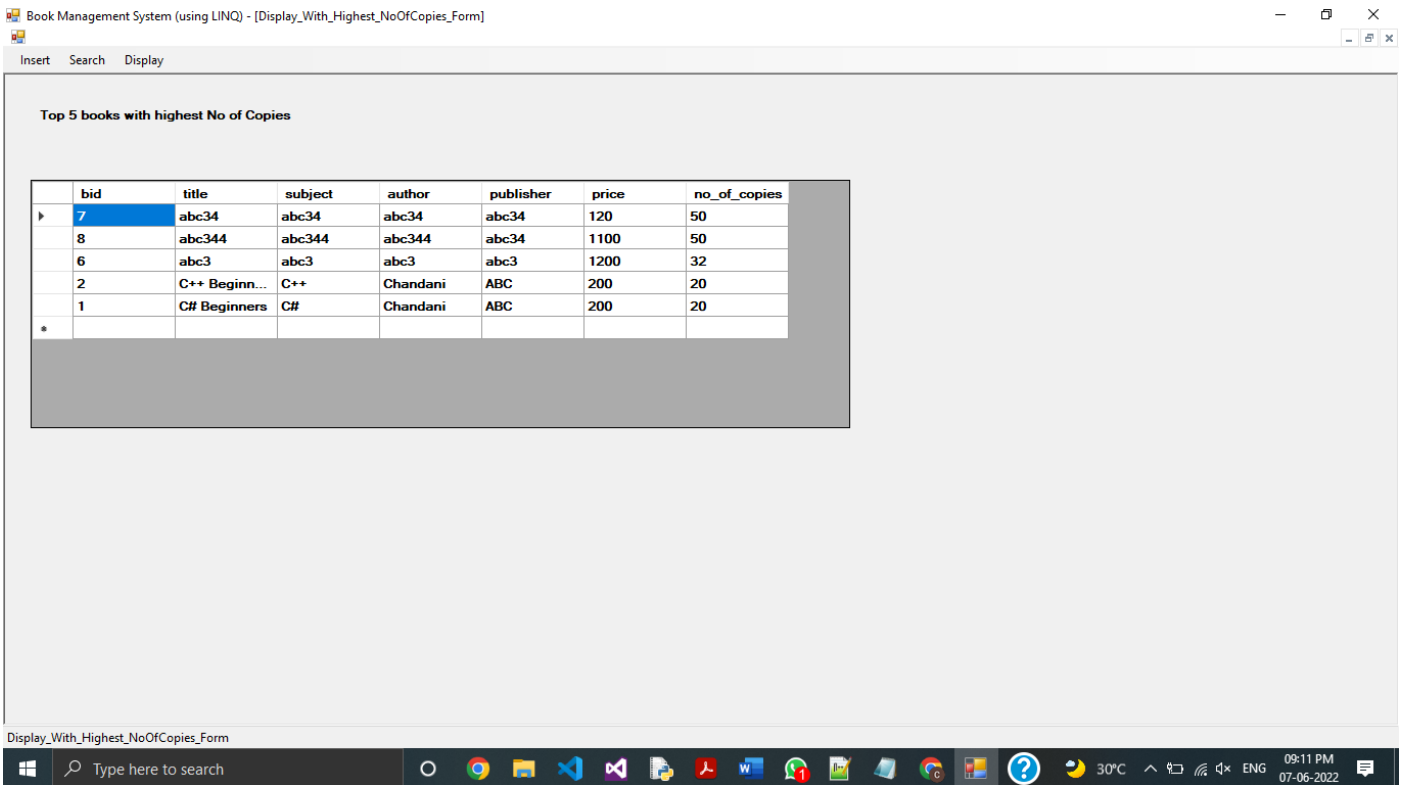
namespace Q3
{
    public partial class Display_With_Lowest_Price_Form : Form
    {
        mylinqDataContext m;
        public Display_With_Lowest_Price_Form()
        {
            InitializeComponent();

            m = new mylinqDataContext();
            load_grid();
        }

        private void load_grid()
        {
            var v = (from b in m.books
                    orderby b.price
                    select b).Take(5);

            dataGridViewBook.DataSource = v;
            dataGridViewBook.Refresh();
        }
    }
}
```


-----Display_With_Highest_NoOfCopies_Form.cs-----



```
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;

namespace Q3
{
    public partial class Display_With_Highest_NoOfCopies_Form : Form
    {
        mylinqDataContext m;
        public Display_With_Highest_NoOfCopies_Form()
        {
            InitializeComponent();

            m = new mylinqDataContext();
            load_grid();
        }

        private void load_grid()
        {
            var v = (from b in m.books
                    orderby b.no_of_copies descending
                    select b).Take(5);

            dataGridViewBook.DataSource = v;
            dataGridViewBook.Refresh();
        }
    }
}
```


----- Tables -----

USE [chandani]

GO

/***** Object: Table [dbo].[book] Script Date: 23-05-2022 12:50:26 *****/

SET ANSI_NULLS ON

GO

SET QUOTED_IDENTIFIER ON

GO

CREATE TABLE [dbo].[book](

[bid] [int] NOT NULL,

[title] [nvarchar](30) NOT NULL,

[subject] [nvarchar](30) NOT NULL,

[author] [nvarchar](30) NOT NULL,

[publisher] [nvarchar](30) NOT NULL,

[price] [real] NOT NULL,

[no_of_copies] [int] NOT NULL,

CONSTRAINT [PK_book] PRIMARY KEY CLUSTERED

(

[bid] ASC

)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]

) ON [PRIMARY]

GO