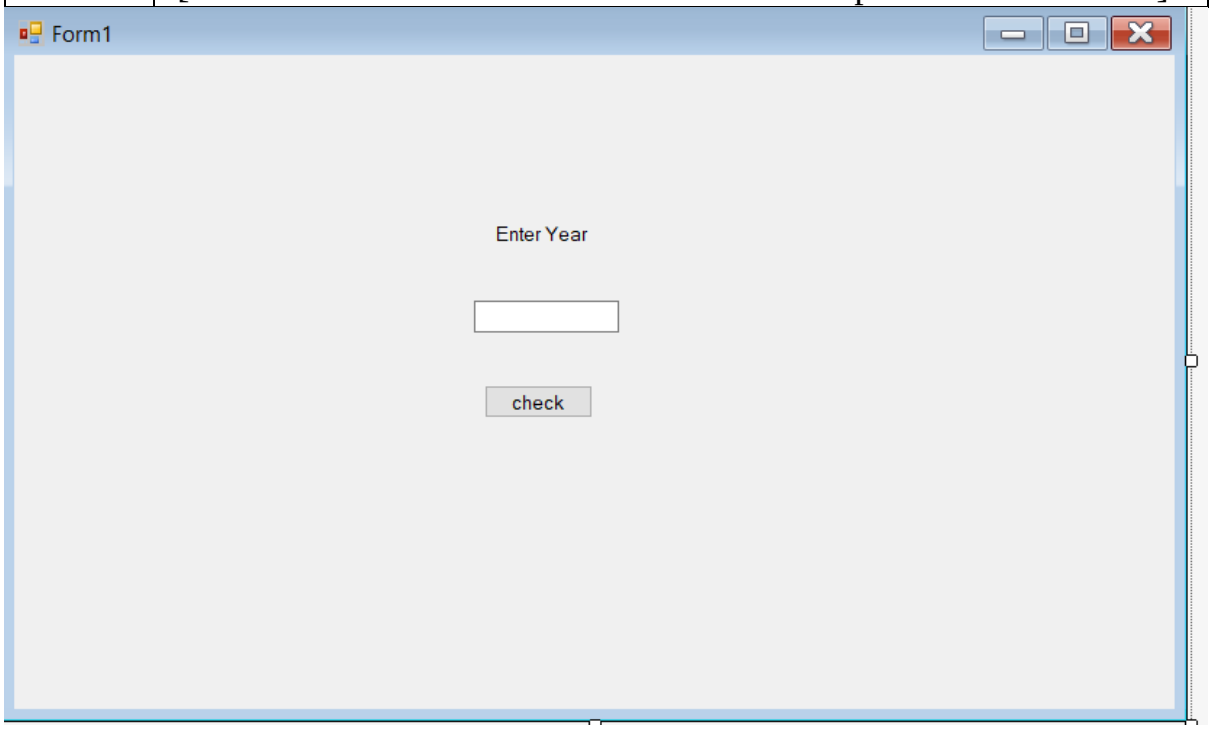
	SET-I
Q.1	Create a windows form to check whether given year is leap year or not. [Validation on text box : user cannot enter alphabets in TextBox]

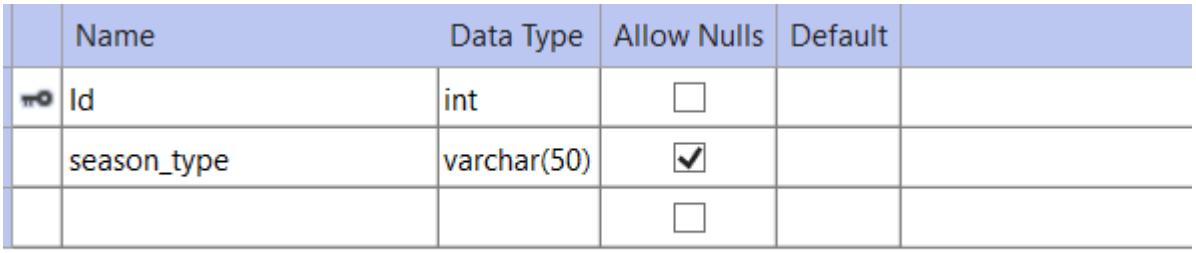



```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace WindowsFormsApp2
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void button1_Click(object sender, EventArgs e)
        {
            int year;
            year = Convert.ToInt32(textBox1.Text);
            if (year % 4 == 0)
            {
                MessageBox.Show(year.ToString() + " is a leap year");
            }
            else
            {
                MessageBox.Show(year.ToString() + " is not a leap year");
```

```
            }
        }

        private void textBox1_KeyPress(object sender, KeyPressEventArgs e)
        {
            if(!char.IsDigit(e.KeyChar) && !char.IsControl(e.KeyChar))
            {
                MessageBox.Show("please enter number only");
                e.Handled = true;
            }
        }
    }
}
```

<table>
<tr><td>Q.2 [A]</td><td>Create Table to maintain data of Customers of Club Mahendra.
(Insert Record directly in Season table)
Seasons Table
<table>
<tr><th>Column Name</th><th>Data Type</th><th>Constraints</th></tr>
<tr><td>Season_Id (PK)</td><td rowspan="2">Select appropriate data type and constraints
Seasons like : Spring, Autumn , Purple, Pink.</td></tr>
<tr><td>Season_Type</td></tr>
</table>
Customer Table
<table>
<tr><th>Column Name</th><th>Data Type</th><th>Constraints</th></tr>
<tr><td>Customer_Id (PK)</td><td rowspan="6">Select appropriate data type and constraints</td></tr>
<tr><td>Customer_Name</td></tr>
<tr><td>Customer_State</td></tr>
<tr><td>Customer_Mobileno</td></tr>
<tr><td>Customer_Emailid</td></tr>
<tr><td>Season_Id (FK)</td></tr>
</table></td></tr>
<tr><td>[B]</td><td>Insert data in Customer table by providing seasons name in combo box.</td></tr>
<tr><td>[C]</td><td>Display all the data in Datagrid.</td></tr>
<tr><td>[D]</td><td>Fill the combo box with all customer id and based on customer id selection display all data related to that id.</td></tr>
<tr><td>[E]</td><td>Update season of customer C01 from Spring to Purple.</td></tr>
</table>

Datatable



	Name	Data Type	Allow Nulls	Default	
🔑	Id	int	☐		
	season_type	varchar(50)	☑		
			☐		

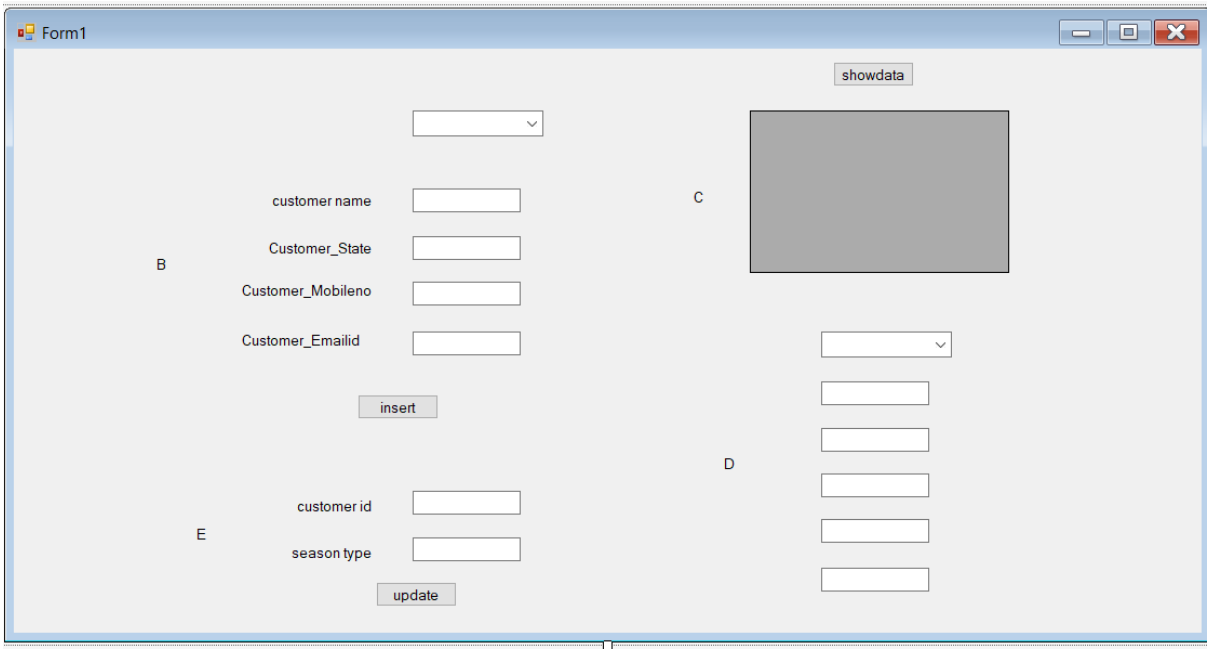
Id	season_type
1	spring
2	autumn
3	purple
4	pink
NULL	NULL

	Name	Data Type	Allow Nulls	Default
🔑	Id	int	☐	
	cname	varchar(50)	☑	
	cstate	varchar(50)	☑	
	cmobileno	varchar(50)	☑	
	cemailid	varchar(50)	☑	
	seasonid	int	☑	
			☐	

- **Keys** (1)
  - <unnamed> (Primary Key, Clustered: Id)
- **Check Constraints** (0)
- **Indexes** (0)
- **Foreign Keys** (1)
  - FK_customer_seasons (Id)
- **Triggers** (0)

Design | T-SQL

```
CREATE TABLE [dbo].[customer] (
    [Id]        INT          IDENTITY (1, 1) NOT NULL,
    [cname]     VARCHAR (50) NULL,
    [cstate]    VARCHAR (50) NULL,
    [cmobileno] VARCHAR (50) NULL,
    [cemailid]  VARCHAR (50) NULL,
    [seasonid]  INT          NULL,
    PRIMARY KEY CLUSTERED ([Id] ASC),
    CONSTRAINT [FK_customer_seasons] FOREIGN KEY ([seasonid]) REFERENCES [dbo].[seasons] ([Id])
```




```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Data.SqlClient;
using System.Drawing;
using System.Linq;
```

```
using System.Runtime.InteropServices;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using static System.Windows.Forms.VisualStyles.VisualStyleElement;

namespace WindowsFormsApp1
{
    public partial class Form1 : Form
    {
        SqlConnection con = new SqlConnection(@"Data
Source=(LocalDB)\MSSQLLocalDB;AttachDbFilename=""F:\sem 5\CA 602 - ADNF
(C#.net)\exam
set\WindowsFormsApp1\WindowsFormsApp1\database\examset.mdf"";Integrated
Security=True;Connect Timeout=30");
        public Form1()
        {
            InitializeComponent();
            cfill();
            cfill2();
        }


        //[B] Insert data in Customer table by providing seasons name in combo
box.
        public void cfill()
        {
            string q = "select season_type from seasons";
            SqlCommand cmd = new SqlCommand(q, con);
            con.Open();
            SqlDataReader sdr = cmd.ExecuteReader();
            while (sdr.Read())
            {
                comboBox1.Items.Add(sdr[0].ToString());
            }
            con.Close();
        }
        int j;
        private void comboBox1_SelectedIndexChanged(object sender, EventArgs e)
        {
            string q = "select id from seasons where season_type = @type";
            SqlCommand cmd = new SqlCommand(q, con);
            cmd.Parameters.AddWithValue("@type",
comboBox1.SelectedItem.ToString());
            con.Open();
            SqlDataReader sdr = cmd.ExecuteReader();
            sdr.Read();
            j = Convert.ToInt32(sdr[0]);
            con.Close();
            MessageBox.Show(j.ToString());
        }

        private void btn_insert_Click(object sender, EventArgs e)
        {
            string q = "insert into customer
values(@name,@state,@Mno,@email,@id)";
            SqlCommand cmd = new SqlCommand(q, con);
            cmd.Parameters.AddWithValue("@name", textBox1.Text);
            cmd.Parameters.AddWithValue("@state", textBox2.Text);
            cmd.Parameters.AddWithValue("@Mno", Convert.ToInt64(textBox3.Text));
            cmd.Parameters.AddWithValue("@email", textBox4.Text);
            cmd.Parameters.AddWithValue("@id", j);
            con.Open();
```

```
            int i = cmd.ExecuteNonQuery();
            con.Close();
            if (i > 0)
                MessageBox.Show("insert successfully");
            cfill2();
        }

        // [C]     Display all the data in Datagrid.
        private void btn_data_Click(object sender, EventArgs e)
        {
            string q = "select * from customer";
            SqlCommand cmd = new SqlCommand(q, con);
            SqlDataAdapter sda = new SqlDataAdapter(cmd);
            DataTable dt = new DataTable();
            sda.Fill(dt);
            dataGridView1.DataSource = dt;
        }

        //  [D]     Fill the combo box with all customer id and based on customer
id selection display all data related to that id.
        public void cfill2()
        {
            comboBox2.Items.Clear();
            string q = "select id from customer";
            SqlCommand cmd = new SqlCommand(q, con);
            con.Open();
            SqlDataReader sdr = cmd.ExecuteReader();
            while (sdr.Read())
            {
                comboBox2.Items.Add(sdr[0].ToString());
            }
            con.Close();
        }
        private void comboBox2_SelectedIndexChanged(object sender, EventArgs e)
        {
            string q = "select cname,cstate,cmobileno,cemailid,seasonid from
customer where id = @id";
            SqlCommand cmd = new SqlCommand(q, con);
            SqlDataReader sdr;
            cmd.Parameters.AddWithValue("@id", comboBox2.Text);
            con.Open();
            sdr = cmd.ExecuteReader();
            sdr.Read();
            textBox5.Text = sdr[0].ToString();
            textBox6.Text = sdr[1].ToString();
            textBox7.Text = sdr[2].ToString();
            textBox8.Text = sdr[3].ToString();
            textBox9.Text = sdr[4].ToString();
            con.Close();

        }

        //  [E]     Update season of customer C01 from Spring to Purple.

        private void btn_update_Click(object sender, EventArgs e)
        {
            string q = "update customer set seasonid = (select id from seasons
where season_type=@type) where id =@id ";
            SqlCommand cmd = new SqlCommand(q, con);
            cmd.Parameters.AddWithValue("@id", Convert.ToInt32(textBox10.Text));
            cmd.Parameters.AddWithValue("@type", textBox11.Text);
            con.Open();
            int z = cmd.ExecuteNonQuery();
```

```
            con.Close();
            if (z > 0)
                MessageBox.Show("update successfully");
        }
    }
}
```

SET-III

Q.2 [A] Create Table to maintain data of Visitors in Event Vrund. (Insert Record directly in **Audience Type table**)

Audience Table

Column Name	**Data Type**	**Constraints**
Audience_Type_Id (PK)	Select appropriate data type and constraints Audience type like : student, teaching staff, non-teaching staff, guest , family	
Audience_Type		

Person Info Table

Column Name	**Data Type**	**Constraints**
Person_Id (PK)	Select appropriate data type and constraints	
Person_Name		
Person_State		
Person_Mobileno		
Audience_Type_Id(FK)		

[B] Insert data in Person table by providing Audience_Type in combo box.

[C] Display all the data in Datagrid with selection of Audience Type. Eg. If user select audience type is staff from the combo box only information related to staff will display in grid.

[D] Update any person from audience type staff to non-teaching staffa.

Data table

Name	Data Type	Allow Nulls	Default
Id	int	☐	
audience_type	varchar(50)	☑	
		☐	

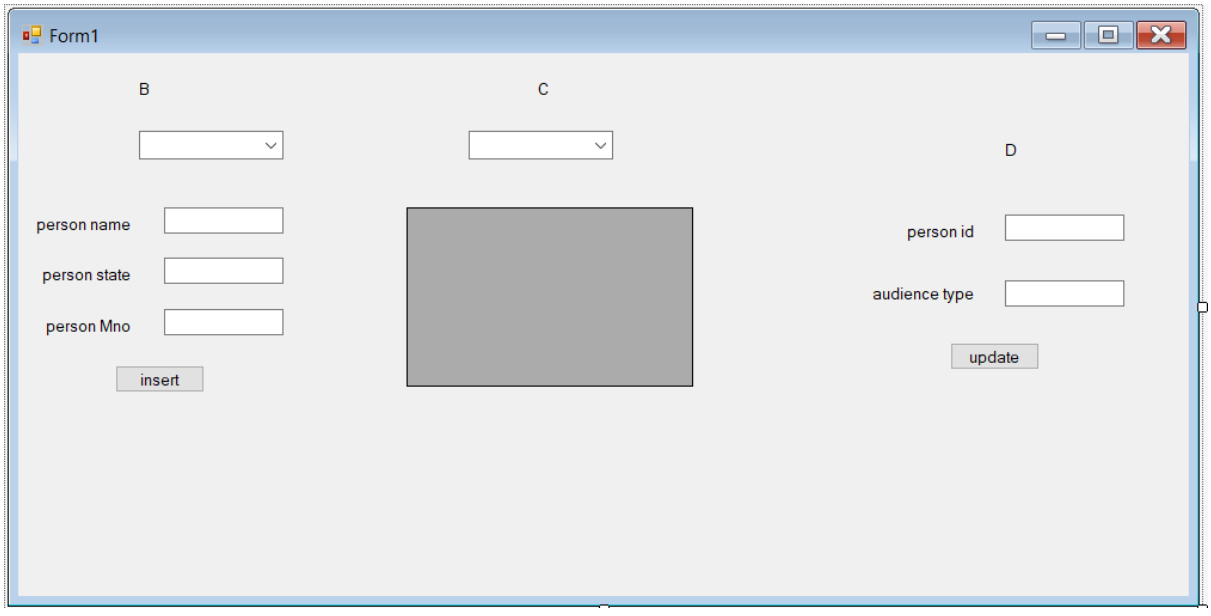
Id	audience_type
1	student
2	teaching-staff
3	non-teaching st...
4	guest
5	family

	Name	Data Type	Allow Nulls	Default
🔑	Id	int	☐	
	p_name	varchar(50)	☑	
	p_state	varchar(50)	☑	
	p_mobileno	int	☑	
	aid	int	☑	
			☐	

- **Keys** (1)
  - <unnamed> (Primary Key, Clustered: Id)
- **Check Constraints** (0)
- **Indexes** (0)
- **Foreign Keys** (1)
  - FK_person_audience (Id)
- **Triggers** (0)

Design | T-SQL

```
CREATE TABLE [dbo].[person] (
    [Id]         INT          IDENTITY (1, 1) NOT NULL,
    [p_name]     VARCHAR (50) NULL,
    [p_state]    VARCHAR (50) NULL,
    [p_mobileno] INT          NULL,
    [aid]        INT          NULL,
    PRIMARY KEY CLUSTERED ([Id] ASC),
    CONSTRAINT [FK_person_audience] FOREIGN KEY ([aid]) REFERENCES [dbo].[audience] ([Id])
);
```




```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Data.SqlClient;
using System.Drawing;
```

```
using System.Linq;
using System.Runtime.InteropServices;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using static System.Windows.Forms.VisualStyles.VisualStyleElement;

namespace WindowsFormsApp3
{
    public partial class Form1 : Form
    {
        SqlConnection con = new SqlConnection(@"Data
Source=(LocalDB)\MSSQLLocalDB;AttachDbFilename=""F:\sem 5\CA 602 - ADNF
(C#.net)\exam
set\WindowsFormsApp3\WindowsFormsApp3\dataset\vrund.mdf"";Integrated
Security=True;Connect Timeout=30");
        public Form1()
        {
            InitializeComponent();
            cfill();
        }

        //  [B]    Insert data in Person table by providing Audience_Type  in
combo box.
        public void cfill()
        {
            string q = "select audience_type from audience";
            SqlCommand cmd = new SqlCommand(q, con);
            con.Open();
            SqlDataReader sdr = cmd.ExecuteReader();
            while (sdr.Read())
            {
                comboBox1.Items.Add(sdr[0].ToString()); //combobox1 fill thase
                comboBox2.Items.Add(sdr[0].ToString()); //combobox2 fill thase it
is 1st part of C question
            }
            con.Close();
        }

        int j;
        private void comboBox1_SelectedIndexChanged(object sender, EventArgs e)
        {
            string q = "select id from audience where audience_type = @type";
            SqlCommand cmd = new SqlCommand(q, con);
            cmd.Parameters.AddWithValue("@type",
comboBox1.SelectedItem.ToString());
            con.Open();
            SqlDataReader sdr = cmd.ExecuteReader();
            sdr.Read();
            j = Convert.ToInt32(sdr[0]);
            con.Close();
            MessageBox.Show(j.ToString());
        }

        private void btn_insert_Click(object sender, EventArgs e)
        {
            string q = "insert into person values(@name,@state,@mno,@id)";
            SqlCommand cmd = new SqlCommand(q, con);
            cmd.Parameters.AddWithValue("@name", textBox1.Text);
            cmd.Parameters.AddWithValue("@state", textBox2.Text);
            cmd.Parameters.AddWithValue("@mno", Convert.ToInt32(textBox3.Text));
            cmd.Parameters.AddWithValue("@id", j);
            con.Open();
```

```
            int i = cmd.ExecuteNonQuery();
            con.Close();
            if (i > 0)
                MessageBox.Show("insert successfully");
        }

        //[C] Display all the data in Datagrid with selection of Audience
Type.Eg.If user select audience type is staff from the combo box only information
related to staff will display in grid.
        private void comboBox2_SelectedIndexChanged(object sender, EventArgs e)
        {
            string q = "select p_name,p_state,p_mobileno from person where aid =
(select id from audience where audience_type=@type)";
            SqlCommand cmd = new SqlCommand(q, con);
            cmd.Parameters.AddWithValue("@type",
comboBox2.SelectedItem.ToString());
            SqlDataAdapter sda = new SqlDataAdapter(cmd);
            DataTable dt = new DataTable();
            sda.Fill(dt);
            dataGridView1.DataSource = dt;
        }

        //  [D]    Update any person from audience type staff to non-teaching
staffa.
        private void btn_update_Click(object sender, EventArgs e)
        {
            string q = "update person set aid = (select id from audience where
audience_type=@type) where id =@id ";
            SqlCommand cmd = new SqlCommand(q, con);
            cmd.Parameters.AddWithValue("@id", Convert.ToInt32(textBox4.Text));
            cmd.Parameters.AddWithValue("@type", textBox5.Text);
            con.Open();
            int z = cmd.ExecuteNonQuery();
            con.Close();
            if (z > 0)
                MessageBox.Show("update successfully");
        }

    }
}
```