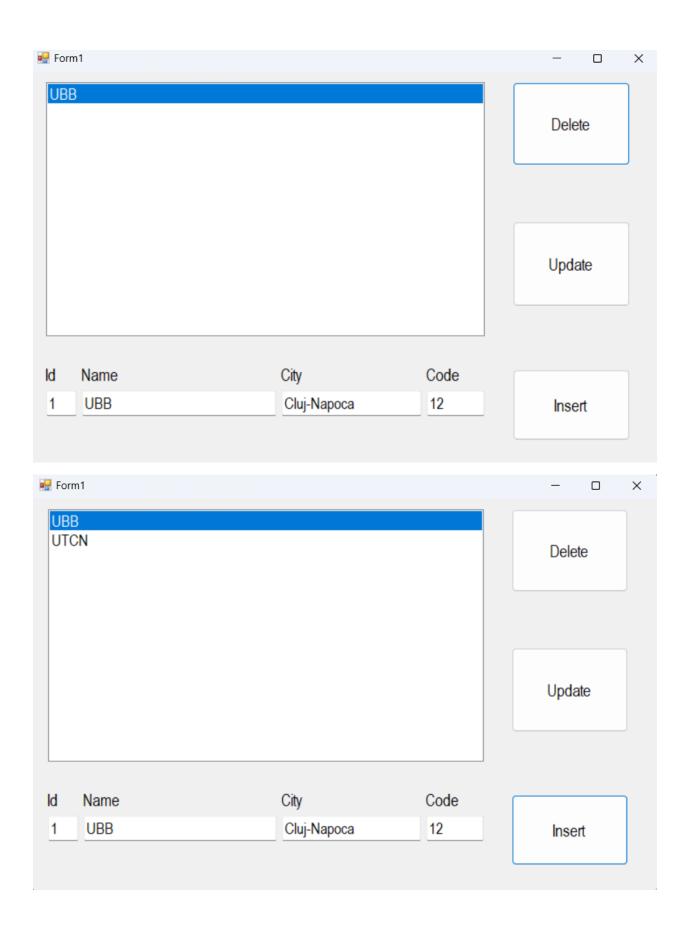All code available on github at:

Ex1:

```
1    using System;
2    using System.Data.Entity;
3    using System.Linq;
4    using System.Windows.Forms;
5    using static System.Windows.Forms.VisualStyles.VisualStyleElement;
6
7    namespace Exercise_1
8    {
         3 references
9        public partial class Form1 : Form
10       {
11           private Database1Entities1 db = new Database1Entities1();
12
             1 reference
13           public Form1()
14           {
15               InitializeComponent();
16               LoadUniversities();
17           }
18
             4 references
19           private void LoadUniversities()
20           {
21               var universities = db.Universities.ToList();
22               listBoxUniversities.DisplayMember = "NameUniv";
23               listBoxUniversities.ValueMember = "Id";
24               listBoxUniversities.DataSource = universities;
25           }
26
             1 reference
27           private void listBoxUniversities_SelectedIndexChanged(object sender, EventArgs e)
28           {
29               if (listBoxUniversities.SelectedIndex != -1)
30               {
31                   University selectedUniversity = (University)listBoxUniversities.SelectedItem;
32                   textBoxId.Text = selectedUniversity.Id.ToString();
33                   textBoxName.Text = selectedUniversity.NameUniv;
34                   textBoxCity.Text = selectedUniversity.City;
```
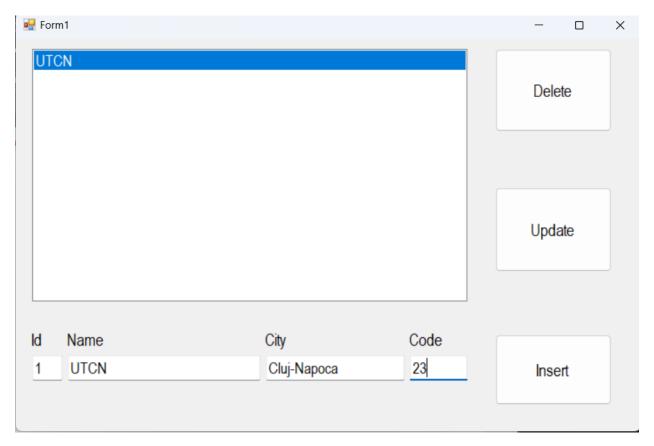
```
         1 reference
67           private void buttonUpdate_Click(object sender, EventArgs e)
68           {
69               try
70               {
71                   int code = int.Parse(textBoxCode.Text);
72                   University university = db.Universities.FirstOrDefault(u => u.Code == code);
73                   if (university != null)
74                   {
75                       university.NameUniv = textBoxName.Text;
76                       university.City = textBoxCity.Text;
77                       university.Code = int.Parse(textBoxCode.Text);
78
79                       db.Entry(university).State = EntityState.Modified;
80
81                       db.SaveChanges();
82                       MessageBox.Show("University updated successfully.");
83                       LoadUniversities();
84                   }
85                   else
86                   {
87                       MessageBox.Show("University not found.");
88                   }
89               }
90               catch (Exception ex)
91               {
92                   MessageBox.Show("Error updating university: " + ex.Message);
93
94               }
95           }
96
```

```csharp
        1 reference
        private void buttonDelete_Click(object sender, EventArgs e)
        {
            try
            {
                int code = int.Parse(textBoxCode.Text);
                University university = db.Universities.FirstOrDefault(u => u.Code == code);
                if (university != null)
                {
                    db.Universities.Remove(university);
                    db.SaveChanges();
                    MessageBox.Show("University deleted successfully.");
                    LoadUniversities();
                }
                else
                {
                    MessageBox.Show("University not found.");
                }
            }
            catch (Exception ex)
            {
                MessageBox.Show("Error deleting university: " + ex.Message);
            }
        }

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

        }
    }
}
```

```csharp
                textBoxCity.Text = selectedUniversity.City;
                textBoxCode.Text = selectedUniversity.Code.ToString();
            }
        }

        1 reference
        private void buttonInsert_Click(object sender, EventArgs e)
        {
            try
            {
                int id = int.Parse(textBoxId.Text);
                string name = textBoxName.Text;
                string city = textBoxCity.Text;
                int code = int.Parse(textBoxCode.Text);

                University university = new University
                {
                    Id = id,
                    NameUniv = name,
                    City = city,
                    Code = code
                };

                db.Universities.Add(university);
                db.SaveChanges();
                MessageBox.Show("University inserted successfully.");
                LoadUniversities();
            }
            catch (Exception ex)
            {
                MessageBox.Show("Error inserting university: " + ex.Message);
            }
        }
```

Ex2

```
1    using System;
2    using System.Collections.Generic;
3    using System.ComponentModel;
4    using System.Data;
5    using System.Drawing;
6    using System.Linq;
7    using System.Text;
8    using System.Threading.Tasks;
9    using System.Windows.Forms;
10   using static System.Windows.Forms.VisualStyles.VisualStyleElement;
11
12   namespace Exercise_2
13   {
         3 references
14       public partial class Form1 : Form
15       {
16           private Database1Entities db = new Database1Entities();
17
             1 reference
18           public Form1()
19           {
20               InitializeComponent();
21               InitializeDataGridView();
22           }
23
             3 references
24           private void InitializeDataGridView()
25           {
26
27               dataGridViewFaculties.DataSource = db.Faculties.ToList();
28           }
```

```csharp
29
        1 reference
30      private void buttonInsert_Click(object sender, EventArgs e)
31      {
32          try
33          {
34              int id = int.Parse(textBoxId.Text);
35              int code = int.Parse(textBoxCode.Text);
36              string name = textBoxName.Text;
37
38              Faculty faculty = new Faculty
39              {
40                  Id = id,
41                  Code = code,
42                  NameFac = name
43              };
44
45              db.Faculties.Add(faculty);
46              db.SaveChanges();
47              MessageBox.Show("Faculty inserted successfully.");
48              InitializeDataGridView();
49          }
50          catch (Exception ex)
51          {
52              MessageBox.Show("Error inserting faculty: " + ex.Message);
53          }
54      }
55
        1 reference
56      private void buttonDelete_Click(object sender, EventArgs e)
57      {
58          if (dataGridViewFaculties.SelectedRows.Count > 0)
59          {
60              DataGridViewRow selectedRow = dataGridViewFaculties.SelectedRows[0];
61
62              int facultyId = (int)selectedRow.Cells["Id"].Value;
63              Faculty facultyToDelete = db.Faculties.Find(facultyId);
64
64
65              if (facultyToDelete != null)
66              {
67                  db.Faculties.Remove(facultyToDelete);
68                  db.SaveChanges();
69
70                  InitializeDataGridView();
71              }
72          }
73      }
74  }
75  }
76
```

Form1

	Id	Code	NameFac
✎	d	55	Automation
	2	56	Medicine
	3	55	Electrical

Delete

Id	Code	Name

Insert

Form1

	Id	Code	NameFac
▶	1	55	Automation
	3	55	Electrical

Delete

Id	Code	Name

Insert

Form1

	Id	Code	NameFac
▶	1	55	Automation
	3	55	Electrical
	5	12	Mechatroni...

Delete

Id   Code   Name

5   12   Mechatronics

Insert