

```
1 using System;
2 using System.Collections.Generic;
3 using System.Windows.Forms;
4
5 namespace Week04Homework
6 {
7     public partial class FormManager : Form
8     {
9         Department[] departments;
10        List<Professor> professors;
11
12        public FormManager()
13        {
14            InitializeComponent();
15
16            departments = new Department[100];
17            professors = new List<Professor>();
18
19            for (int i = 1; i <= 4; i++) {
20                cmbYear.Items.Add(i);
21            }
22
23            cmbClass.Items.AddRange(new object[] { "A", "B", "C" });
24
25            cmbRegStatus.Items.Add("재학");
26            cmbRegStatus.Items.Add("졸업");
27        }
28
29        private void btnRegisterDepartment_Click(object sender, EventArgs e)
30        {
31            if (string.IsNullOrEmpty(tbxDepartmentCode.Text)) {
32                MessageBox.Show("학과코드 입력");
33                tbxDepartmentCode.Focus();
34                return;
35            }
36
37            if (string.IsNullOrEmpty(tbxDepartmentName.Text)) {
38                MessageBox.Show("학과이름 입력");
39                tbxDepartmentName.Focus();
40                return;
41            }
42
43            int index = -1;
44            for (int i = 0; i < departments.Length; i++) {
45                if (departments[i] == null) {
46                    if (index < 0) {
47                        index = i;
48                    }
49                    //break;
50                } else {
51                    if (departments[i].Code == tbxDepartmentCode.Text) {
52                        MessageBox.Show("중복 학과코드");
53                        tbxDepartmentCode.Focus();
54                        return;
55                    }
56                }
57            }
58        }
59    }
60 }
```

```
57     }
58
59     if (index < 0) {
60         MessageBox.Show("신규 학과를 개설할 수 없습니다.");
61         return;
62     }
63
64     Department dept = new Department();
65     dept.Code = tbxDepartmentCode.Text;
66     dept.Name = tbxDepartmentName.Text;
67
68     departments[index] = dept;
69
70     lbxDepartment.Items.Add(dept);
71 }
72
73 private void btnRemoveDepartment_Click(object sender, EventArgs e)
74 {
75     if (lbxDepartment.SelectedIndex < 0) {
76         MessageBox.Show("삭제할 학과를 선택");
77         return;
78     }
79
80     if (lbxDepartment.SelectedItem is Department) {
81         var target = (Department)lbxDepartment.SelectedItem;
82
83         for (int i = 0; i < departments.Length; i++) {
84             if (departments[i] != null && departments[i] == target) {
85                 departments[i] = null;
86                 break;
87             }
88         }
89
90         lbxDepartment.Items.RemoveAt(lbxDepartment.SelectedIndex);
91         lbxDepartment.SelectedIndex = -1;
92     }
93 }
94
95 private void tabMain_SelectedIndexChanged(object sender, EventArgs e)
96 {
97     switch (tabMain.SelectedIndex) {
98         case 0:
99             break;
100        case 1:
101            cmbProfessorDepartment.Items.Clear();
102            foreach (var department in departments) {
103                if (department != null) {
104                    cmbProfessorDepartment.Items.Add(department);
105                }
106            }
107
108            cmbProfessorDepartment.SelectedIndex = -1;
109            lbxProfessor.Items.Clear();
110            break;
111        case 2:
112            cmbDepartment.Items.Clear();
```

```

113         foreach (var department in departments) {
114             if (department != null) {
115                 cmbDepartment.Items.Add(department);
116             }
117         }
118
119         ClearStudentInfo();
120         break;
121     default:
122         break;
123     }
124 }
125
126 private void cmbProfessorDepartment_SelectedIndexChanged(object sender, EventArgs e)
127 {
128     if (cmbProfessorDepartment.SelectedIndex < 0) {
129         //(주의)실제로 메세지 띄우는 것은 좋지 않은 것으로 보인다.
130         return;
131     }
132
133     lbxProfessor.Items.Clear();
134
135     var department = cmbProfessorDepartment.SelectedItem as
136         Department;
137
138     if (department != null) {
139         foreach (var professor in professors) {
140             if (professor != null && professor.DepartmentCode ==
141                 department.Code) {
142                 lbxProfessor.Items.Add(professor);
143             }
144         }
145     }
146
147     private void btnRegisterProfessor_Click(object sender, EventArgs e)
148     {
149         if (cmbProfessorDepartment.SelectedIndex < 0) {
150             MessageBox.Show("학과를 선택");
151             cmbProfessorDepartment.Focus();
152             return;
153         }
154
155         if (false == cmbProfessorDepartment.SelectedItem is Department
156             dept) {
157             MessageBox.Show("학과정보에 이상 발생");
158             cmbProfessorDepartment.Focus();
159             return;
160         }
161
162         if (string.IsNullOrEmpty(tbxProfessorNumber.Text)) {
163             MessageBox.Show("교수번호 입력");
164             tbxProfessorNumber.Focus();
165             return;
166         }

```

```

165
166         if (string.IsNullOrEmpty(tbxProfessorName.Text)) {
167             MessageBox.Show("교수이름 입력");
168             tbxProfessorName.Focus();
169             return;
170         }
171
172         for (int i = 0; i < professors.Count; i++) {
173             if (professors[i].Number == tbxProfessorNumber.Text) {
174                 MessageBox.Show("중복 교수코드");
175                 tbxProfessorNumber.Focus();
176                 return;
177             }
178         }
179
180         Professor professor = new Professor();
181         professor.DepartmentCode = dept.Code;
182         professor.Number = tbxProfessorNumber.Text;
183         professor.Name = tbxProfessorName.Text;
184
185         professors.Add(professor);
186         lbxProfessor.Items.Add(professor);
187     }
188
189     private void btnRemoveProfessor_Click(object sender, EventArgs e)
190     {
191         if (lbxProfessor.SelectedIndex < 0) {
192             MessageBox.Show("삭제할 교수를 선택");
193             return;
194         }
195
196         //is 연산자 , 타입 확인용으로 사용.
197         if (lbxProfessor.SelectedItem is Professor) {
198             var target = (Professor)lbxProfessor.SelectedItem;
199
200             for (int i = 0; i < professors.Count; i++) {
201                 if (professors[i] != null && professors[i] == target) {
202                     professors.RemoveAt(i);
203                     break;
204                 }
205             }
206
207             lbxProfessor.Items.Remove(target);
208             lbxProfessor.SelectedIndex = -1;
209         }
210     }
211
212     private void cmbDepartment_SelectedIndexChanged(object sender,
213         EventArgs e)
214     {
215         cmbAdvisor.Items.Clear();
216
217         if (cmbDepartment.SelectedIndex < 0) {
218             return;
219         }

```

```
220         if (false == cmbDepartment.SelectedItem is Department dept) {
221             return;
222         }
223
224         foreach (var professor in professors) {
225             if (professor != null && professor.DepartmentCode ==
                dept.Code) {
226                 cmbAdvisor.Items.Add(professor);
227             }
228         }
229
230         cmbAdvisor.SelectedIndex = -1;
231     }
232
233     private void btnNew_Click(object sender, EventArgs e)
234     {
235         ClearStudentInfo();
236     }
237
238     private void ClearStudentInfo()
239     {
240         tbxNumber.Text = "20";
241         tbxName.Text = string.Empty;
242         tbxBirthYear.Text = "20";
243         tbxBirthMonth.Text = "";
244         tbxBirthDay.Text = "";
245         cmbDepartment.SelectedIndex = -1;
246         cmbAdvisor.SelectedIndex = -1;
247         cmbYear.SelectedIndex = -1;
248         cmbClass.SelectedIndex = -1;
249         cmbRegStatus.SelectedIndex = -1;
250         tbxAddress.Text = string.Empty;
251         tbxContact.Text = string.Empty;
252     }
253 }
254 }
255
```