

```
1 using CsvHelper;
2 using hw10;
3 using Microsoft.Win32;
4 using System;
5 using System.Collections.Generic;
6 using System.Globalization;
7 using System.IO;
8 using System.IOEnumeration;
9 using System.Linq;
10 using System.Security.Cryptography;
11 using System.Text;
12 using System.Text.Encodings.Web;
13 using System.Text.Json;
14 using System.Text.Json.Serialization;
15 using System.Text.Unicode;
16 using System.Threading.Tasks;
17 using System.Windows;
18 using System.Windows.Controls;
19 using System.Windows.Controls.Primitives;
20 using System.Windows.Data;
21 using System.Windows.Documents;
22 using System.Windows.Input;
23 using System.Windows.Media;
24 using System.Windows.Media.Imaging;
25 using System.Windows.Media.Media3D;
26 using System.Windows.Navigation;
27 using System.Windows.Shapes;
28 using System.Xml.Linq;
29
30 namespace hw10
31 {
32     /// <summary>
33     /// Interaction logic for MainWindow.xaml
34     /// </summary>
35     public partial class MainWindow : Window
36     {
37         List<Teacher> teachers = new List<Teacher>();
38         List<Course> courses = new List<Course>();
39         List<Student> students = new List<Student>();
40         List<Record> records = new List<Record>();
41
42         Student? selectedStudent = null;
43         Teacher? selectedTeacher = null;
44         Course? selectedCourse = null;
45         Record? selectedRecord = null;
46
47         public MainWindow()
48         {
49             InitializeComponent();
```

```
50         InitializeCourse();
51         InitializeStudent(students);
52     }
53     private void InitializeStudent(List<Student> mystudent)
54     {
55         OpenFileDialog fileDialog = new OpenFileDialog();
56         fileDialog.Filter = "Json文件|*.json|Csv文件|*.csv|所有檔案|*.*";
57         fileDialog.Title = "讀取學生檔案";
58
59         if (fileDialog.ShowDialog() == true)
60         {
61             string jsonDocument = File.ReadAllText(fileDialog.FileName);
62             students = JsonSerializer.Deserialize<List<Student>>(jsonDocument);
63         }
64
65         cmbStudent.ItemsSource = students;
66         cmbStudent.SelectedIndex = 0;
67     }
68     private void InitializeCourse()
69     {
70         //建立測試資料
71         Teacher teacher1 = new Teacher("陳定宏");
72         //Course coursela = new Course(teacher1) {CourseNmae="視窗程式設計",OpeningClass="五專三甲",Point=3,Type="必修" };
73         //teacher1.TeachingCourses.Add(coursela);
74         teacher1.TeachingCourses.Add(new Course(teacher1) { CourseName = "視窗程式設計", OpeningClass = "五專三甲", Point = 3, Type = "必修" });
75         teacher1.TeachingCourses.Add(new Course(teacher1) { CourseName = "視窗程式設計", OpeningClass = "四技二甲", Point = 3, Type = "必修" });
76         teacher1.TeachingCourses.Add(new Course(teacher1) { CourseName = "視窗程式設計", OpeningClass = "四技三乙", Point = 3, Type = "必修" });
77         teacher1.TeachingCourses.Add(new Course(teacher1) { CourseName = "視窗程式設計", OpeningClass = "四技三丙", Point = 3, Type = "必修" });
78
79         teachers.Add(teacher1);
80
81         Teacher teacher2 = new Teacher("杜俊育");
82         teacher2.TeachingCourses.Add(new Course(teacher2) { CourseName = "行動無線通訊", OpeningClass = "碩研資工一甲等合開", Point = 3, Type = "選修" });
83         teacher2.TeachingCourses.Add(new Course(teacher2) { CourseName = "行動電信網路應用", OpeningClass = "四技資工三甲等合開", Point = 3, Type = "選修" });
84         teacher2.TeachingCourses.Add(new Course(teacher2) { CourseName = "雲端人工智慧運算實務", OpeningClass = "四技資工四甲等合開", Point = 3, Type = "選修" });
85
86     }
```

```
87         teachers.Add(teacher2);
88
89         Teacher teacher3 = new Teacher("許子衡");
90         teacher3.TeachingCourses.Add(new Course(teacher3) { CourseName = "網頁
          設計(A)", OpeningClass = "四技資工一甲等合開", Point = 3, Type = "選
          修" });
91         teacher3.TeachingCourses.Add(new Course(teacher3) { CourseName = "網站
          開發專題", OpeningClass = "四技資工四甲等合開", Point = 3, Type =
          "選修" });
92         teacher3.TeachingCourses.Add(new Course(teacher3) { CourseName = "網路
          程式設計", OpeningClass = "四技資工三甲等合開", Point = 3, Type =
          "選修" });
93
94         teachers.Add(teacher3);
95
96         trvteacher.ItemsSource = teachers;
97
98         foreach (Teacher teacher in teachers)
99         {
100             foreach (Course course in teacher.TeachingCourses)
101             {
102                 courses.Add(course);
103             }
104         }
105
106         lbCourse.ItemsSource = courses;
107     }
108
109     private void cmbStudent_SelectionChanged(object sender,           ↗
        SelectionChangedEventArgs e)
110     {
111         selectedStudent = (Student)cmbStudent.SelectedItem;
112         statusLabel.Content = "選擇學生：" + selectedStudent;
113     }
114
115
116     private void trvteacher_SelectedItemChanged(object sender,       ↗
        RoutedPropertyChangedEventArgs<object> e)
117     {
118         if (trvteacher.SelectedItem is Teacher)
119         {
120             selectedTeacher = trvteacher.SelectedItem as Teacher;
121             statusLabel.Content = "選擇老師：" + selectedTeacher;
122         }
123         if (trvteacher.SelectedItem is Course)
124         {
125             selectedCourse = trvteacher.SelectedItem as Course;
126             statusLabel.Content = "選擇課程：" + selectedCourse;
127         }
```

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128     }
129
130     private void lbCourse_SelectionChanged(object sender, SelectionChangedEventArgs e) ↗
131     {
132         selectedCourse = lbCourse.SelectedItem as Course;
133         statusLabel.Content = "選擇課程：" + selectedCourse;
134     }
135
136     private void registerButton(object sender, RoutedEventArgs e)
137     {
138         if (selectedStudent == null || selectedCourse == null)
139         {
140             MessageBox.Show("請選擇學生或課程", "資料不足");
141         }
142         else
143         {
144             Record currentRecord = new Record()
145             {
146                 SelectedStudent = selectedStudent,
147                 SelectedCourse = selectedCourse
148             };
149
150             foreach (Record r in records)
151             {
152                 if (r.Equals(currentRecord))
153                 {
154                     MessageBox.Show($"{selectedStudent.StudentName}已選擇 ↗
155                         {selectedCourse.CourseName}課程了");
156                     return;
157                 }
158                 records.Add(currentRecord);
159                 lvRecord.ItemsSource = records;
160                 lvRecord.Items.Refresh();
161             }
162         }
163     private void lvRecord_SelectionChanged(object sender, SelectionChangedEventArgs e) ↗
164     {
165         if (lvRecord.SelectedItem != null)
166         {
167             selectedRecord = lvRecord.SelectedItem as Record;
168             statusLabel.Content = selectedRecord;
169         }
170     }
171     private void wuthdrawButton(object sender, RoutedEventArgs e)
172     {
173         if (selectedRecord != null)
```

```
174         {
175             records.Remove(selectedRecord);
176             lvRecord.ItemsSource = records;
177             lvRecord.Items.Refresh();
178         }
179         else
180         {
181             MessageBox.Show("請選擇要退選的紀錄");
182         }
183     }
184
185     private void save_select(object sender, RoutedEventArgs e)
186     {
187         save_file(records);
188     }
189
190     private void save_file(List<Record> myrecord)
191     {
192         SaveFileDialog fileDialog = new SaveFileDialog();
193         fileDialog.Filter = "Json文件|*.json";
194         fileDialog.Title = "儲存選課紀錄";
195
196         if (fileDialog.ShowDialog() == true)
197         {
198             JsonSerializerOptions options = new()
199             {
200                 Encoder = JavaScriptEncoder.Create(UnicodeRanges.All),
201                 ReferenceHandler = ReferenceHandler.Preserve,
202                 WriteIndented = true
203             };
204             string jsonDocument = JsonSerializer.Serialize<List<Record>>(records, options);
205             File.WriteAllText(fileDialog.FileName, jsonDocument);
206         }
207     }
208 }
209 }
210
```