作業7：WPF選課系統 (PART 1)
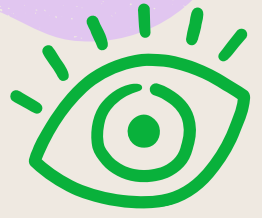
老師：陳定宏　　　　　　　　開始於：04/12/2024

請依照上課內容，設計一個學生選課系統介面，包含如下功能：

- 一個呈現學生資料的ComboBox。
- 使用一個TabControl來分別呈現「以教師分類課程」與「所有課程列表」兩種課程呈現方式：
  - 「以教師分類課程」以TreeView與來呈現兩層式課程列表。第一層為教師資料，第二層為課程資料。請自行在程式內加入三名教師，每名教師各授課三到四門課。
  - 「所有課程列表」以ListBox來呈現。將TreeView之資料內容自行安排呈現方式。

請為你的作業加上封面，將你的程式碼與程式執行畫面，輸出並彙整成一個pdf檔案來繳交，pdf檔名請以學號+作業編號方式命名，列如第一個作業檔名為A123456789ex1.pdf。請注意作業繳交要求、日期與格式。

```xml
1  <Window x:Class="_2024_WpfApp6.MainWindow"
2          xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
3          xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
4          xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
5          xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
6          xmlns:local="clr-namespace:_2024_WpfApp6"
7          mc:Ignorable="d"
8          Title="2024WPF選課系統ver1" Height="700" Width="1000">
9      <Grid>
10         <Grid.RowDefinitions>
11             <RowDefinition Height="50"/>
12             <RowDefinition Height="500*"/>
13             <RowDefinition Height="40"/>
14         </Grid.RowDefinitions>
15         <Grid.ColumnDefinitions>
16             <ColumnDefinition Width="500*"/>
17             <ColumnDefinition Width="100"/>
18             <ColumnDefinition Width="500*"/>
19         </Grid.ColumnDefinitions>
20         <StackPanel Grid.Row="0" Grid.Column="0" Grid.ColumnSpan="3"
              Orientation="Horizontal" Background="LightCyan">
21             <Label Content="學生" HorizontalAlignment="Left"
                 VerticalAlignment="Center" VerticalContentAlignment="Center"
                 FontSize="16" FontWeight="Bold" Margin="100, 0, 0, 0"/>
22             <ComboBox x:Name="cmbStudent" Width="250" Height="30"
                 HorizontalAlignment="Left" VerticalAlignment="Center"
                 VerticalContentAlignment="Center" Margin="30, 0, 0, 0"/>
23         </StackPanel>
24         <TabControl Grid.Row="1">
25             <TabItem Header="以教師分類課程">
26                 <TreeView x:Name="tvTeacher" Background="#FFFAF7E7">
27                     <TreeView.Resources>
28                         <HierarchicalDataTemplate DataType="{x:Type local:Teacher}"
                            ItemsSource="{Binding TeachingCourses}">
29                             <StackPanel Orientation="Horizontal">
30                                 <Image Width="20" Height="20" Source="/teacher.png"/>
31                                 <TextBlock Text="{Binding TeacherName}"
                                    FontWeight="Bold"/>
32                                 <TextBlock Text="("/>
33                                 <TextBlock Text="{Binding TeachingCourses.Count}"/>
34                                 <TextBlock Text=")"/>
35                             </StackPanel>
36                         </HierarchicalDataTemplate>
37                         <DataTemplate DataType="{x:Type local:Course}">
38                             <StackPanel Orientation="Horizontal">
39                                 <Image Width="20" Height="20" Source="/course.png"/>
40                                 <TextBlock Text="{Binding CourseName}"
                                    FontWeight="Bold"/>
41                                 <TextBlock Text="("/>
42                                 <TextBlock Text="{Binding Type}"/>
43                                 <TextBlock Text="{Binding Points}"/>
44                                 <TextBlock Text="學分"/>
45                                 <TextBlock Text=")"/>
```

```xaml
46                             <TextBlock Text="/"/>
47                             <TextBlock Text="{Binding OpeningClass}"
                         Background="#FFDEF6BF" />
48                         </StackPanel>
49                     </DataTemplate>
50                 </TreeView.Resources>
51             </TreeView>
52         </TabItem>
53         <TabItem Header="所有課程">
54             <ListBox x:Name="lbCourse" Background="#FFFAEBE7"/>
55         </TabItem>
56     </TabControl>
57     <StackPanel Grid.Column="1" Grid.Row="1" Background="#FFECE7E7"
         Orientation="Vertical">
58         <Button x:Name="btnAdd" Content="選課" Width="80" Height="30" Margin="0,
             50, 0, 10" FontSize="16" FontWeight="Bold"/>
59         <Button x:Name="btnDelete" Content="退選" Width="80" Height="30"
             Margin="0, 20, 0, 10" FontSize="16" FontWeight="Bold"/>
60         <Button x:Name="btnSave" Content="儲存紀錄" Width="80" Height="30"
             Margin="0, 20, 0, 10" FontSize="16" FontWeight="Bold"/>
61     </StackPanel>
62     <ListView Grid.Column="2" Grid.Row="1" d:ItemsSource="{d:SampleData
         ItemCount=5}" Background="#FFEEF7DF">
63         <ListView.View>
64             <GridView>
65                 <GridViewColumn/>
66             </GridView>
67         </ListView.View>
68     </ListView>
69     <StatusBar Grid.Row="2" Grid.ColumnSpan="3" Background="#FFC7C2C2">
70         <StatusBarItem>
71             <Label x:Name="labelStatus" Content="Ready" Margin="100,0,0,0"/>
72         </StatusBarItem>
73     </StatusBar>
74     </Grid>
75 </Window>
76
```

```csharp
 1  using System.Windows;
 2
 3  namespace _2024_WpfApp6
 4  {
 5      /// <summary>
 6      /// Interaction logic for MainWindow.xaml
 7      /// </summary>
 8      public partial class MainWindow : Window
 9      {
10          List<Student> students = new List<Student>();
11          List<Course> courses = new List<Course>();
12          List<Teacher> teachers = new List<Teacher>();
13          public MainWindow()
14          {
15              InitializeComponent();
16              InitializeData();
17
18              // 將學生資料填入cmbStudent
19              cmbStudent.ItemsSource = students;
20              cmbStudent.SelectedIndex = 0;
21
22              // 將以教師分類之課程填入tvTeacher
23              tvTeacher.ItemsSource = teachers;
24          }
25
26          private void InitializeData()
27          {
28              // 新增學生資料
29              students.Add(new Student { StudentId = "S001", StudentName= "陳小明" });
30              students.Add(new Student { StudentId = "S002", StudentName = "林小華" });
31              students.Add(new Student { StudentId = "S003", StudentName = "張小英" });
32              students.Add(new Student { StudentId = "S004", StudentName = "王小強" });
33
34              // 新增老師資料
35              Teacher teacher1 = new Teacher("陳定宏");
36              teacher1.TeachingCourses.Add(new Course(teacher1) { CourseId = "C001",
                  CourseName = "視窗程式設計", CourseDescription = "本課程使用WPF類別庫和
                  C#語言來設計桌面視窗應用程式", Type = "必修", Points = 6, OpeningClass =
                  "五專資工三甲" });
37              teacher1.TeachingCourses.Add(new Course(teacher1) { CourseId = "C002",
                  CourseName = "視窗程式設計", CourseDescription = "本課程使用WPF類別庫和
                  C#語言來設計桌面視窗應用程式", Type = "選修", Points = 3, OpeningClass =
                  "四技資工二甲" });
38              teacher1.TeachingCourses.Add(new Course(teacher1) { CourseId = "C003",
                  CourseName = "計算機程式", CourseDescription = "程式設計是資訊工程學生的
                  基礎課程，本課程主要希望帶領學生能夠瞭解並開始學習程式設計，此課成主要教
                  授以C語言為主。", Type = "必修", Points = 2, OpeningClass = "四技資工一
                  丙" });
39
40              Teacher teacher2 = new Teacher("張鴻德");
41              teacher2.TeachingCourses.Add(new Course(teacher2) { CourseId = "C004",
                  CourseName = "網頁程式設計", CourseDescription = "本課程使用HTML5、
                  CSS3、JavaScript、jQuery、Bootstrap等技術來設計網頁程式", Type = "必修",
```

```
                    Points = 6, OpeningClass = "五專資工三甲" });
42          teacher2.TeachingCourses.Add(new Course(teacher2) { CourseId = "C005",
                CourseName = "網頁程式設計", CourseDescription = "本課程使用HTML5、
                CSS3、JavaScript、jQuery、Bootstrap等技術來設計網頁程式", Type = "選修",
                Points = 3, OpeningClass = "四技資工二甲" });
43
44          Teacher teacher3 = new Teacher("洪國鈞");
45          teacher3.TeachingCourses.Add(new Course(teacher3) { CourseId = "C006",
                CourseName = "資料庫程式設計", CourseDescription = "本課程使用SQL Server
                資料庫和C#語言來設計資料庫應用程式", Type = "必修", Points = 6,
                OpeningClass = "五專資工三甲" });
46          teacher3.TeachingCourses.Add(new Course(teacher3) { CourseId = "C007",
                CourseName = "智慧型系統應用", CourseDescription = "本課程完整而淺顯地介
                紹研習人工智慧技術、智慧型系統與相關機電資領域所需的專業基礎，並詳細探討
                各種新進的智慧型系統應用技術。", Type = "選修", Points = 3, OpeningClass
                = "四技控晶四甲，四技控晶四乙" });
47          teachers.AddRange(new Teacher[] { teacher1, teacher2, teacher3 });
48      }
49    }
50 }
```

學生　　　　S001 陳小明

以教師分類課程　| 所有課程

▷ 陳定宏(3)
▷ 張鴻德(2)
▷ 洪國鈞(2)

選課

退選

儲存紀錄

Ready