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## 作業 2：判斷並記錄三角形

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# .CS

```
using System.Collections.Generic;
```

```
using System.Windows;
```

```
using System.Windows.Controls;
```

```
using System.Windows.Media;
```

```
namespace _20220921
```

```
{
```

```
///
```

```
/// Interaction logic for MainWindow.xaml
```

```
///
```

```
public partial class MainWindow : Window
```

```
{
```

```
1.     public class Triangle
```

```
2.     {
```

```
3.         public double SideA { get; private set; }
```

```
4.         public double SideB { get; private set; }
```

```
5.         public double SideC { get; private set; }
```

```
6.         public bool IsTriangle { get; private set; }
```

```
7.
```

```
8.         public Triangle(double sideA, double sideB, double sideC)
           {
10.             SideA = sideA;
11.             SideB = sideB;
12.             SideC = sideC;
13.             IsTriangle = CheckIfTriangle(sideA, sideB, sideC);
14.         }
15.
16.         private bool CheckIfTriangle(double a, double b, double c)
           {
18.             return a + b > c && b + c > a && a + c > b;
19.         }
20.     }
21.
22.     private List<Triangle> triangles = new List<Triangle>();
23.     public MainWindow()
24.     {
25.         InitializeComponent();
```

```
26.     }
27.
28.     private void button_Click(object sender, RoutedEventArgs
    e)
29.     {
30.         textBlock.Text = "請輸入有效數值";
31.         double A, B, C;
32.         List<double> Triangle = new List<double>();
33.         bool number = double.TryParse(textBox.Text, out A);
34.         bool number1 = double.TryParse(textBox1.Text, out
    B);
35.         bool number2 = double.TryParse(textBox2.Text, out
    C);
36.         if (!number || A < 0 || !number1 || B < 0 || !number
    2 || C < 0)
37.         {
38.             MessageBox.Show("請輸入正數!", "Error!");
39.             return;
40.         }
41.         Triangle triangle = new Triangle(A, B, C);
```

```
42.         triangles.Add(triangle);
43.         if (triangle.IsTriangle)
44.         {
45.             label.Background = new SolidColorBrush(Colors.Green);
46.             label.Content = $"邊長 {A}, {B}, {C} 可構成三角形";
47.         }
48.         else
49.         {
50.             label.Background = new SolidColorBrush(Colors.Red);
51.             label.Content = $"邊長 {A}, {B}, {C} 不可構成三角形";
52.         }
53.
54.         UpdateTextBlock();
55.     }
56.     private void UpdateTextBlock()
57.     {
58.         textBlock.Text = "測試結果：\n";
```

```
59.
60.     foreach (Triangle triangle in triangles)
61.     {
62.         string result = triangle.IsTriangle ? "可構成" : "不
可構成";
63.         textBlock.Text += $"邊長 {triangle.SideA}, {triangle.SideB}, {triangle.SideC} {result}三角形\n";
64.     }
65. }
66.
67. private void textBox_TextChanged(object sender, TextChangedEventArgs e)
68. {
69.
70. }
71.
72. private void textBox1_TextChanged(object sender, TextChangedEventArgs e)
73. {
74.
75. }
76.
```

```
77.     private void textBox2_TextChanged(object sender, TextCh  
        angedEventArgs e)
```

```
78.     {
```

```
79.
```

```
80.     }
```

```
81. }
```

```
}
```

# .xmal

```
<Window x:Class="_20220921.MainWindow"
        xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
        xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
        xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
        xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
        xmlns:local="clr-namespace:_20220921"
        mc:Ignorable="d"
        Title="MainWindow" Height="450" Width="800">
    <Grid>
        <Button x:Name="button" Content="運算" HorizontalAlignment="Left"
Margin="270,144,0,0" VerticalAlignment="Top" Click="button_Click" Height="43"
Width="98"/>
        <TextBlock x:Name="textBlock" HorizontalAlignment="Center"
Margin="447,0,0,0" TextWrapping="Wrap" VerticalAlignment="Center" Height="415"
Width="343" TextAlignment="Center"/>
        <TextBox x:Name="textBox" HorizontalAlignment="Left"
Margin="248,78,0,0" TextWrapping="Wrap" VerticalAlignment="Top" Width="120"
TextChanged="textBox_TextChanged"/>
        <TextBox x:Name="textBox1" HorizontalAlignment="Left"
Margin="248,100,0,0" TextWrapping="Wrap" VerticalAlignment="Top" Width="120"
TextChanged="textBox1_TextChanged"/>
        <TextBox x:Name="textBox2" HorizontalAlignment="Left"
Margin="248,122,0,0" TextWrapping="Wrap" VerticalAlignment="Top" Width="120"
TextChanged="textBox2_TextChanged"/>
        <Label x:Name="label" Content="" HorizontalAlignment="Left"
Margin="10,10,0,0" VerticalAlignment="Top" Height="83" Width="152"
HorizontalContentAlignment="Center" VerticalContentAlignment="Center"/>

    </Grid>
</Window>
```



