

```
1 using System.Collections.Generic;
2 using System.Windows;
3 using System.Windows.Controls;
4 using System.Windows.Media;
5
6 namespace _20220921
7 {
8     /// <summary>
9     /// Interaction logic for MainWindow.xaml
10    /// </summary>
11    public partial class MainWindow : Window
12    {
13
14        public class Triangle
15        {
16            public double SideA { get; private set; }
17            public double SideB { get; private set; }
18            public double SideC { get; private set; }
19            public bool IsTriangle { get; private set; }
20
21            public Triangle(double sideA, double sideB, double sideC)
22            {
23                SideA = sideA;
24                SideB = sideB;
25                SideC = sideC;
26                IsTriangle = CheckIfTriangle(sideA, sideB, sideC);
27            }
28
29            private bool CheckIfTriangle(double a, double b, double c)
30            {
31                return a + b > c && b + c > a && a + c > b;
32            }
33        }
34
35        private List<Triangle> triangles = new List<Triangle>();
36        public MainWindow()
37        {
38            InitializeComponent();
39        }
40
41        private void button_Click(object sender, RoutedEventArgs e)
42        {
43            textBlock.Text = "請輸入有效數值";
44            double A, B, C;
45            List<double> Triangle = new List<double>();
46            bool number = double.TryParse(textBox.Text, out A);
47            bool number1 = double.TryParse(textBox1.Text, out B);
48            bool number2 = double.TryParse(textBox2.Text, out C);
49            if (!number || A < 0 || !number1 || B < 0 || !number2 || C < 0)
50            {
51                MessageBox.Show("請輸入正數!", "Error!");
52                return;
53            }
54        }
55    }
```

```
54         Triangle triangle = new Triangle(A, B, C);
55         triangles.Add(triangle);
56         if (triangle.IsTriangle)
57         {
58             label.Background = new SolidColorBrush(Colors.Green);
59             label.Content = $"邊長 {A}, {B}, {C} 可構成三角形";
60         }
61         else
62         {
63             label.Background = new SolidColorBrush(Colors.Red);
64             label.Content = $"邊長 {A}, {B}, {C} 不可構成三角形";
65         }
66
67         UpdateTextBlock();
68     }
69     private void UpdateTextBlock()
70     {
71         textBlock.Text = "測試結果：\n";
72
73         foreach (Triangle triangle in triangles)
74         {
75             string result = triangle.IsTriangle ? "可構成" : "不可構成";
76             textBlock.Text += $"邊長 {triangle.SideA}, {triangle.SideB}, {triangle.SideC} {result}三角形\n";
77         }
78     }
79
80     private void textBox_TextChanged(object sender, TextChangedEventArgs e)
81     {
82     }
83
84
85     private void textBox1_TextChanged(object sender, TextChangedEventArgs e)
86     {
87     }
88
89
90     private void textBox2_TextChanged(object sender, TextChangedEventArgs e)
91     {
92     }
93
94 }
95 }
96
```