Logical Trees

UI Structure

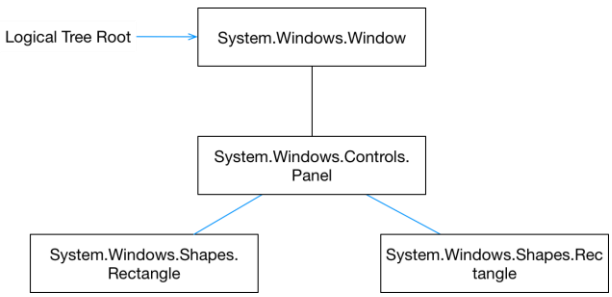
NODES WITH MORE THAN ONE CHILD

Source code

```
using System;
using System.Windows;
using System.Windows.Controls;
using System.Windows.Media;
using System.Windows.Shapes;
using System.Windows.Threading;

public class MainClass
{
    [STAThread]
    private static void Main(String[] args)
    {
        Window w = new Window() {Height=200, Width=200};
        StackPanel panel = new StackPanel()
        {
            HorizontalAlignment = HorizontalAlignment.Center,
            VerticalAlignment = VerticalAlignment.Center
        };
        Rectangle r = new Rectangle {Height=100,Width=100,Fill=Brushes.Red};
        Rectangle b = new Rectangle {Height=100,Width=100,Fill=Brushes.Blue};
        panel.Children.Add(r);
        panel.Children.Add(b);
        w.Content = panel;
        Application mainApp = new Application();
        mainApp.Run(w);
    }
}
```

Logical tree



Questions

Compare and contrast the logic and visual trees

> *The logical tree is typically defined by the XAML. A node in the logical tree is often a FrameworkElement or Control. Each node in the logical tree can map to many nodes in the visual tree. For example, a single ListBox in the logical tree is composed of many visual elements such as scrollbars, borders etc*

ContentControls have a single child. How can we add more than one child to such an object?

By using a Panel

Write code to create a single window with two rectangle children; one blue and one red.

```
public class Answer
{

    public static void CreateLogicalTree()
    {
        // Write code to create a logical tree consisting of a single
        // window with two rectangles
        Window mainWindow = new Window() {Height = 200, Width = 200};

        var p = new StackPanel()
        {
            HorizontalAlignment = HorizontalAlignment.Center,
            VerticalAlignment = VerticalAlignment.Center
        };

        var r = new Rectangle {Height = 200, Width = 200, Fill = Brushes.Red};
        var b = new Rectangle {Height = 200, Width = 200, Fill = Brushes.Blue};
        p.Children.Add(r);
        p.Children.Add(b);

        mainWindow.Content = p;

        Application mainApp = new Application();
        mainApp.Run(mainWindow);

    }
}
```

Sketch the visual and logical trees for the previous code