```
 1  using System;
 2  using System.Collections.Generic;
 3  using System.Text;
 4  using System.Windows;
 5  using System.Windows.Controls;
 6  using System.Windows.Data;
 7  using System.Windows.Documents;
 8  using System.Windows.Input;
 9  using System.Windows.Media;
10  using System.Windows.Media.Imaging;
11  using System.Windows.Navigation;
12  using System.Windows.Shapes;
13
14  namespace WPFCalculator
15  {
16      /// <summary>
17      /// Interaction logic for PageCalculate.xaml
18      /// </summary>
19      public partial class PageCalculate : Page
20      {
21          public PageCalculate()
22          {
23              InitializeComponent();
24              ClearControls();
25          }
26
27
28          //-- Calculation methods
29          private void AddButton_Click(object sender, RoutedEventArgs e)
30          {
31              var calculationData = new CalculationData();
32              calculationData = HarvestData();
33
34              var result = Arithmetic.Addition(calculationData.FirstNumber,
                  calculationData.SecondNumber);
35
36              ResultTextBlock.Text = result.ToString("#.####");
37          }
38
39          private void SubtractButton_Click(object sender, RoutedEventArgs e)
40          {
41              var calculationData = new CalculationData();
42              calculationData = HarvestData();
43
44              var result = Arithmetic.Subtraction(calculationData.FirstNumber,
                  calculationData.SecondNumber);
45
46              ResultTextBlock.Text = result.ToString("#.####");
47          }
48
49          private void MultiplyButton_Click(object sender, RoutedEventArgs e)
50          {
51              var calculationData = new CalculationData();
52              calculationData = HarvestData();
53
54              var result = Arithmetic.Multiplication
```

```
                (calculationData.FirstNumber, calculationData.SecondNumber);

            ResultTextBlock.Text = result.ToString("#.####");
        }

        private void DivideButton_Click(object sender, RoutedEventArgs e)
        {
            var calculationData = new CalculationData();
            calculationData = HarvestData();

            var result = Arithmetic.Division(calculationData.FirstNumber,
              calculationData.SecondNumber);

            ResultTextBlock.Text = result.ToString("#.####");
        }

        private void ClearButton_Click(object sender, RoutedEventArgs e)
        {
            ClearControls();
        }

        private void ExitButton_Click(object sender, RoutedEventArgs e)
        {
            Application.Current.Shutdown();
        }



        /// <summary>
        /// Clear the interface controls
        /// </summary>
        private void ClearControls()
        {
            //-- Clear control data
            FirstNumberTextBox.Text = "";
            SecondNumberTextBox.Text = "";
            ResultTextBlock.Text = "Result";

            //-- set focus to First Number
            FirstNumberTextBox.Focus();
        }

        private CalculationData HarvestData()
        {
            //-- Object to hold data while being gathered
            var tempData = new CalculationData();

            //-- Variables to hold text box string values and assign with
            //-- current values
            var firstNumberText = FirstNumberTextBox.Text;
            var secondNumberText = SecondNumberTextBox.Text;

            //-- Number variables to hold values for CalculationData object
            double firstNumber;
            double secondNumber;
```

```
109
110             //-- Check there is data
111             //-- This method has a weakness! If the user doesn't enter
112             //-- text that can be converted to a number.
113             if (!string.IsNullOrEmpty(firstNumberText))
114             {
115                 try
116                 {
117                     //-- Convert to a number
118                     firstNumber = double.Parse(firstNumberText);
119                     tempData.FirstNumber = firstNumber;
120                 }
121                 catch (FormatException e)
122                 {
123                     //-- Tell the user what happened
124                     MessageBox.Show(e.Message);
125                 }
126
127             }
128             else //-- Error
129             {
130                 MessageBox.Show("You must enter a value for First Number");
131                 //-- drop out of the method
132                 return tempData;
133             }
134
135             //-- Let's try a better method for the second number. This is
                  super-sophisticated code
136             if (Double.TryParse(secondNumberText, out secondNumber))
137             {
138                 //-- value is good to go so assign to object
139                 tempData.SecondNumber = secondNumber;
140             }
141             else //-- Error
142             {
143                 //-- Tell them the bad news
144                 MessageBox.Show($"Could not convert {secondNumberText} to a
                      number");
145                 //-- Break out of the method
146                 return tempData;
147             }
148
149             return tempData;
150
151         }
152
153     }
154 }
155
```