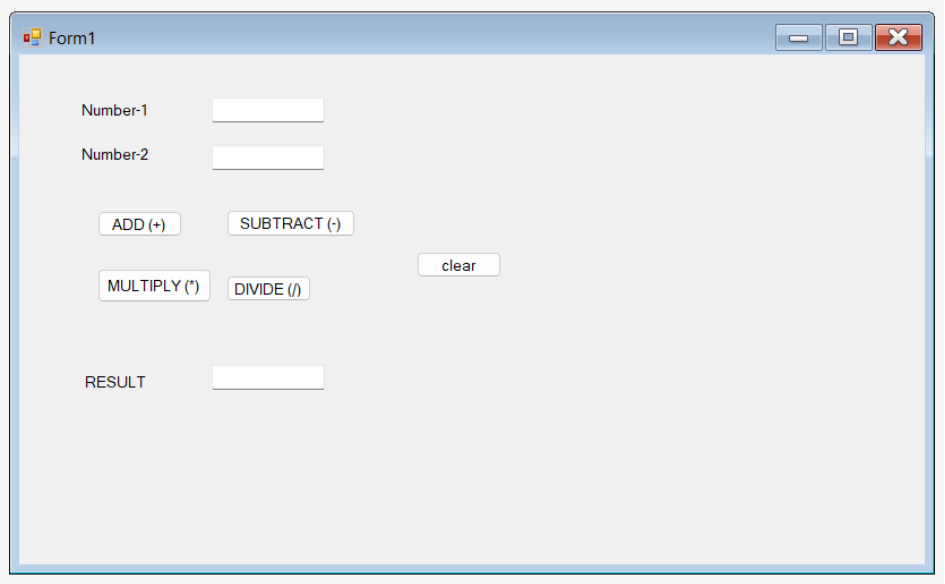
Experiment-11 Create windows form Application to design GUI for complex Calculator and develop it using C#.

```
using System;
using System.Windows.Forms;

namespace ComplexCalculator
{
   public partial class Form1 : Form
   {
      public Form1()
      {
         InitializeComponent();
      }

      private void Form1_Load(object sender, EventArgs e)
      {

      }

      private void label1_Click(object sender, EventArgs e)
      {

      }

      private int GetInput(TextBox textBox)
      {
         if (int.TryParse(textBox.Text, out int value))
            return value;
         else
            throw new Exception("Please enter valid integers.");
      }

      private void button1_Click(object sender, EventArgs e)
      {
         try
         {
            int num1 = GetInput(textBox1);
            int num2 = GetInput(textBox2);
            int result = num1 + num2;
            textBox3.Text = $"{result}";
         }
         catch (Exception ex)
```

```
    {
        MessageBox.Show(ex.Message);
    }
}

private void button2_Click(object sender, EventArgs e)
{
    try
    {
        int num1 = GetInput(textBox1);
        int num2 = GetInput(textBox2);
        int result = num1 - num2;
        textBox3.Text = $"{result}";
    }
    catch (Exception ex)
    {
        MessageBox.Show(ex.Message);
    }

}

private void button3_Click(object sender, EventArgs e)
{
    try
    {
        int num1 = GetInput(textBox1);
        int num2 = GetInput(textBox2);
        int result = num1 * num2;
        textBox3.Text = $"{result}";
    }
    catch (Exception ex)
    {
        MessageBox.Show(ex.Message);
    }
}

private void button4_Click(object sender, EventArgs e)
{
    try
    {
        int num1 = GetInput(textBox1);
        int num2 = GetInput(textBox2);
        int result = num1 / num2;
```

```
            textBox3.Text = $"{result}";
        }
        catch (Exception ex)
        {
            MessageBox.Show(ex.Message);
        }
    }

    private void button5_Click(object sender, EventArgs e)
    {
        textBox1.Clear();
        textBox2.Clear();
        textBox3.Clear();
    }
  }
}
```

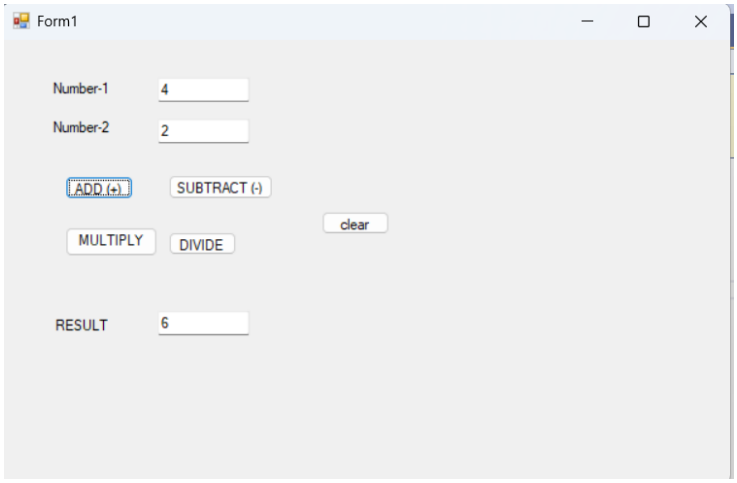


Explanation

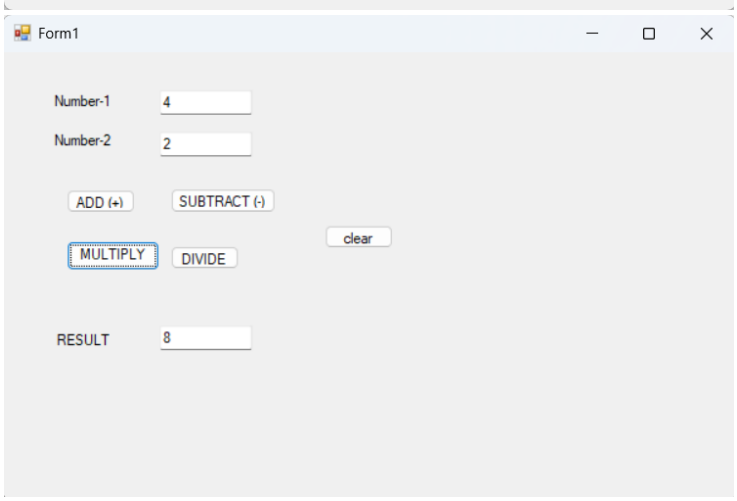
Name	**Purpose**
using System;	Includes the System namespace, which contains basic

Name	Purpose
	classes and base types (like Exception, Int32, etc.).
using System.Windows.Forms;	Imports the Windows Forms library to create GUI (Graphical User Interface) applications.
namespace ComplexCalculator	Defines a namespace named ComplexCalculator to organize and encapsulate related classes.
public partial class Form1 : Form	Declares a partial class Form1 that inherits from Form — the base class for Windows Forms. The partial keyword allows the class definition to be split across multiple files.
public Form1()	Constructor for the Form1 class. It initializes the form components by calling InitializeComponent().
private void Form1_Load(object sender, EventArgs e)	Event handler that executes when the form loads. (Currently empty but can be used to set initial values or properties.)
private void label1_Click(object sender, EventArgs e)	Event handler for when the label (likely a UI element) is clicked. (Currently empty.)
private int GetInput(TextBox textBox)	A helper method that takes a TextBox control as input, attempts to convert its text to an integer, and returns it. Throws an exception if conversion fails.
button1_Click(object sender, EventArgs e)	Event handler for the Addition button (+). It retrieves two numbers from text boxes, adds them, and displays the result in another text box.
button2_Click(object sender, EventArgs e)	Event handler for the Subtraction button (-). It retrieves two numbers, subtracts them, and shows the result.
button3_Click(object sender, EventArgs e)	Event handler for the Multiplication button (*). It retrieves two numbers, multiplies them, and displays the result.
button4_Click(object sender, EventArgs e)	Event handler for the Division button (/). It divides the first number by the second and shows the result. Handles exceptions (like divide-by-zero).
button5_Click(object sender, EventArgs e)	Event handler for the Clear button. It clears all input and output text boxes.
MessageBox.Show(ex.Message)	Displays an error message in a dialog box if an exception occurs (e.g., invalid input or division by zero).
textBox1, textBox2, textBox3	GUI elements (TextBoxes) used for user input and displaying output.

Output:


Form1
Number-1
4
Number-2
2
ADD (+)
SUBTRACT (-)
clear
MULTIPLY
DIVIDE
RESULT
6


Form1
Number-1
4
Number-2
2
ADD (+)
SUBTRACT (-)
clear
MULTIPLY
DIVIDE
RESULT
2


Form1
Number-1
4
Number-2
2
ADD (+)
SUBTRACT (-)
clear
MULTIPLY
DIVIDE
RESULT
8


Form1
Number-1
4
Number-2
2
ADD (+)
SUBTRACT (-)
clear
MULTIPLY
DIVIDE
RESULT
2