



# HUMAN COMPUTER INTERACTION

“LAB 02”



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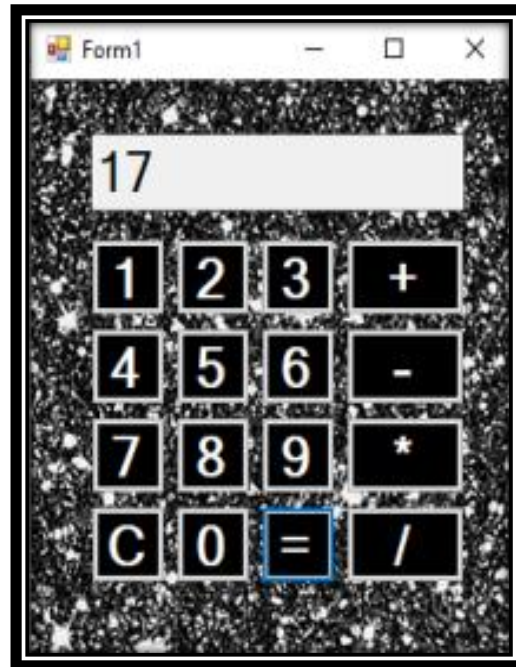
**2021-BSE-032**

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### Task1:

Create a user interface for simple calculator having basic functions (for single digit number only except 0), without using concatenation and type conversion except for output. Calculator has following buttons: 0 - 9, =, -, \*, /, C, textbox (act as screen) to display the result when user press = button then result should be displayed.

### Output:



### Code:

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;

namespace lab2
{
    public partial class Form1 : Form
    {
```

```

public String operation = "@";
public int result;
public int first;
public int second;
public Form1()
{
    InitializeComponent();
}
private void button1_Click(object sender, EventArgs e)
{
    if (operation == "@")
    {
        textBox1.Text = "1";
        first = int.Parse(textBox1.Text);
    }
    else
    {
        textBox1.Text = "1";
        second = int.Parse(textBox1.Text);
    }

}

private void button10_Click(object sender, EventArgs e)
{
    if (operation == "@")
    {
        textBox1.Text = "2";
        first = int.Parse(textBox1.Text);
    }
    else
    {
        textBox1.Text = "2";
        second = int.Parse(textBox1.Text);
    }
}

private void button9_Click(object sender, EventArgs e)
{
    if (operation == "@")
    {

```

```

        textBox1.Text = "3";
        first = int.Parse(textBox1.Text);
    }
    else
    {
        textBox1.Text = "3";
        second = int.Parse(textBox1.Text);
    }

}

private void button8_Click(object sender, EventArgs e)
{
    if (operation == "@")
    {
        textBox1.Text = "4";
        first = int.Parse(textBox1.Text);
    }
    else {
        textBox1.Text = "4";
        second = int.Parse(textBox1.Text);
    }
}

private void button7_Click(object sender, EventArgs e)
{
    if (operation == "@")
    {
        textBox1.Text = "5";
        first = int.Parse(textBox1.Text);
    }
    else {
        textBox1.Text = "5";
        second = int.Parse(textBox1.Text);
    }
}

private void button2_Click(object sender, EventArgs e)
{
    if (operation == "@")
    {
        textBox1.Text = "6";
        first = int.Parse(textBox1.Text);
    }
}

```

```

        else {
            textBox1.Text = "6";
            second = int.Parse(textBox1.Text);
        }
    }

private void button6_Click(object sender, EventArgs e)
{
    if (operation == "@")
    {
        textBox1.Text = "7";
        first = int.Parse(textBox1.Text);
    }
    else
    {
        textBox1.Text = "7";
        second = int.Parse(textBox1.Text);
    }
}

private void button5_Click(object sender, EventArgs e)
{
    if (operation == "@")
    {
        textBox1.Text = "8";
        first = int.Parse(textBox1.Text);
    }
    else
    {
        textBox1.Text = "8";
        second = int.Parse(textBox1.Text);
    }
}

private void button11_Click(object sender, EventArgs e)
{
    if (operation == "@")
    {
        textBox1.Text = "9";
        first = int.Parse(textBox1.Text);
    }
    else
    {
        textBox1.Text = "9";
        second = int.Parse(textBox1.Text);
    }
}

```

```

    }

    private void button3_Click(object sender, EventArgs e)
    {
        if (operation == "@")
        {
            textBox1.Text = "0";
            first = int.Parse(textBox1.Text);
        }
        else
        {
            textBox1.Text = "0";
            second = int.Parse(textBox1.Text);
        }
    }

    private void button4_Click(object sender, EventArgs e)
    {
        textBox1.Text = null;
    }

    private void button13_Click(object sender, EventArgs e)
    {
        if (operation == "+")
        {
            result = first + second;
        }
        else
        {
            if (operation == "-")
            {
                result = first - second;
            }
            else
            {
                if (operation == "*")
                {
                    result = first * second;
                }
                else
                {
                    if (operation == "/")
                    {
                        result = first / second;
                    }
                }
            }

            textBox1.Text = result.ToString();
        }
    }

```

```

private void button15_Click(object sender, EventArgs e)
{
    textBox1.Text = null;
    operation = "+";
}
private void button16_Click(object sender, EventArgs e)
{
    textBox1.Text = null;
    operation = "-";
}

private void button14_Click(object sender, EventArgs e)
{
    textBox1.Text = null;
    operation = "*";
}

private void button12_Click(object sender, EventArgs e)
{
    textBox1.Text = null;
    operation = "/";
}
}
}

```

## **Task 2:**

*Design and Develop calculator which should work for single and multidigits having same functionality as in task # 01.*

*Type conversion and concatenation can be used where applicable.*

717 + 81



159\*357



### **CODE:**

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;

namespace lab2
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }
        float num1, ans;
        int count;
        private void button1_Click(object sender, EventArgs e)
        {
            textBox1.Text = textBox1.Text + 1;
        }
    }
}
```



```
    }

    private void button10_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text + 2;
    }

    private void button9_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text + 3;
    }

    private void button8_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text + 4;
    }

    private void button7_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text + 5;
    }

    private void button2_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text + 6;
    }

    private void button6_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text + 7;
    }

    private void button5_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text + 8;
    }

    private void button11_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text + 9;
    }

    private void button3_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text + 0;
    }
}
```

```
private void button4_Click(object sender, EventArgs e)
{
    textBox1.Clear();
count = 0;
}

private void button13_Click(object sender, EventArgs e)
{
    compute(count);
}
public void compute(int count)
{
    switch (count)
    {
        case 1:
            ans = num1 - float.Parse(textBox1.Text);
            textBox1.Text = ans.ToString();
            break;
        case 2:
            ans = num1 + float.Parse(textBox1.Text);
            textBox1.Text = ans.ToString();
            break;
        case 3:
            ans = num1 * float.Parse(textBox1.Text);
            textBox1.Text = ans.ToString();
            break;
        case 4:
            ans = num1 / float.Parse(textBox1.Text);
            textBox1.Text = ans.ToString();
            break;
        default:
            break;
    }

private void button15_Click(object sender, EventArgs e)
{
    num1 = float.Parse(textBox1.Text);
    textBox1.Clear();
    textBox1.Focus();
    count = 2;

}
```

```
private void button16_Click(object sender, EventArgs e)
{
    num1 = float.Parse(textBox1.Text);
textBox1.Clear();
textBox1.Focus();
count = 1;
}

private void button14_Click(object sender, EventArgs e)
{
    num1 = float.Parse(textBox1.Text);
textBox1.Clear();
textBox1.Focus();
count = 3;
}

private void button12_Click(object sender, EventArgs e)
{ num1 = float.Parse(textBox1.Text);
textBox1.Clear();
textBox1.Focus();
count = 4;
}

}
}
```