## федеральное государственное автономное образовательное учреждение высшего образования

МОСКОВСКИЙ ПОЛИТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ (ВЫСШАЯ ШКОЛА ПЕЧАТИ И МЕДИАИНДУСТРИИ) (Факультет информационных технологий)

(Институт Принтмедиа и информационных технологий) Кафедра Информатики и информационных технологий

направление подготовки 09.03.02 «Информационные системы и технологии»

## ЛАБОРАТОРНАЯ РАБОТА № 2

Дисциплина: Технология прикладного программирования

**Тема**: Калькулятор

Выполнил(а): студент(ка) группы 221-377

Ежов Тимофей Алексеевич (Фамилия И.О.)

	<b>Дата, подпись</b> 14.02.2023		
	Проверил:_		
	(Фамилия И	О., степень, звание)	(Оценка)
	Дата, подпись _		_
		(Дата)	(Подпись)
Вамечания:			

## Лабораторная работа №2 Листинг:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows;
using System.Windows.Controls;
using System.Windows.Data;
using System.Windows.Documents;
using System.Windows.Input;
using System.Windows.Media;
using System.Windows.Media.Imaging;
using System.Windows.Navigation;
using System.Windows.Shapes;
namespace LAB_2
   /// <summary>
    /// Interaction logic for MainWindow.xaml
    /// </summary>
    public partial class MainWindow : Window
        public MainWindow()
            InitializeComponent();
            textBox1.Clear();
        private void Form1_Load(object sender, EventArgs e)
        private void button15_Click(object sender, EventArgs e)
            this.textBox1.AppendText("1");
        private void button18_Click(object sender, EventArgs e)
            Random rnd = new Random();
            foreach (Button item in grid1.Children.OfType<Button>())
                item.Background = new
SolidColorBrush(Color.FromArgb(Convert.ToByte(rnd.Next(1, 255)),
Convert.ToByte(rnd.Next(1, 255)), Convert.ToByte(rnd.Next(1, 255)),
Convert.ToByte(rnd.Next(1, 255))));
```

```
private void button16_Click(object sender, EventArgs e)
   this.textBox1.AppendText("2");
private void button17_Click(object sender, EventArgs e)
   this.textBox1.AppendText("3");
private void button12_Click(object sender, EventArgs e)
    this.textBox1.AppendText("4");
private void button13_Click(object sender, EventArgs e)
    this.textBox1.AppendText("5");
private void button14_Click(object sender, EventArgs e)
    this.textBox1.AppendText("6");
private void button8_Click(object sender, EventArgs e)
   this.textBox1.AppendText("7");
private void button10_Click(object sender, EventArgs e)
    this.textBox1.AppendText("8");
private void button11_Click(object sender, EventArgs e)
    this.textBox1.AppendText("9");
private void button9_Click(object sender, EventArgs e)
    this.textBox1.AppendText("0");
private void button1_Click(object sender, EventArgs e)
{
    this.textBox1.Clear();
```

```
private void button2_Click(object sender, EventArgs e)
            textBox1.Text = textBox1.Text.Remove(textBox1.Text.Length - 1);
        private void button6_Click(object sender, EventArgs e)
            if (textBox1.Text.Length == 0 || textBox1.Text.Length == 1 &&
!Char.IsDigit(textBox1.Text[textBox1.Text.Length - 1]))
                this.textBox1.AppendText("");
            else if (Char.IsDigit(textBox1.Text[textBox1.Text.Length - 1]) &&
textBox1.Text.Length >= 1)
                this.textBox1.AppendText("*");
            else
            {
                textBox1.Text = textBox1.Text.Substring(0, textBox1.Text.Length -
1);
                this.textBox1.AppendText("*");
        private void button7_Click(object sender, EventArgs e)
            if (textBox1.Text.Length == 0 || textBox1.Text.Length == 1 &&
!Char.IsDigit(textBox1.Text[textBox1.Text.Length - 1]))
                this.textBox1.AppendText("");
            else if (Char.IsDigit(textBox1.Text[textBox1.Text.Length - 1]) &&
textBox1.Text.Length >= 1)
                this.textBox1.AppendText("/");
            else
            {
                textBox1.Text = textBox1.Text.Substring(0, textBox1.Text.Length -
1);
                this.textBox1.AppendText("/");
        private void button3_Click(object sender, EventArgs e)
            if (textBox1.Text.Length == 0 || textBox1.Text.Length == 1 &&
!Char.IsDigit(textBox1.Text[textBox1.Text.Length - 1]))
```

```
this.textBox1.AppendText("");
            else if (Char.IsDigit(textBox1.Text[textBox1.Text.Length - 1]) &&
textBox1.Text.Length >= 1)
                this.textBox1.AppendText("+");
            else
            {
                textBox1.Text = textBox1.Text.Substring(0, textBox1.Text.Length -
1);
                this.textBox1.AppendText("+");
        private void button4_Click(object sender, EventArgs e)
            if (textBox1.Text.Length == 0)
                this.textBox1.AppendText("-");
            else if (textBox1.Text.Length == 1 &&
!Char.IsDigit(textBox1.Text[textBox1.Text.Length - 1]))
                textBox1.Text = textBox1.Text.Substring(0, textBox1.Text.Length -
1);
                this.textBox1.AppendText("-");
            else if (textBox1.Text.Length == 1)
                this.textBox1.AppendText("-");
            else if (textBox1.Text.Length == 2 &&
Char.IsDigit(textBox1.Text[textBox1.Text.Length - 1]))
                this.textBox1.AppendText("-");
            else if (Char.IsDigit(textBox1.Text[textBox1.Text.Length - 2]) &&
textBox1.Text.Length >= 2)
                this.textBox1.AppendText("-");
            }
            else
                textBox1.Text = textBox1.Text.Substring(0, textBox1.Text.Length -
1);
                this.textBox1.AppendText("-");
```

```
private void button5_Click(object sender, EventArgs e)
        {
            string first = "";
            string second = "";
            char x = '0';
            bool flag = true;
            bool flag2 = true;
            foreach (char ch in textBox1.Text)
                if ((Char.IsDigit(ch) || ch == '-' && flag2) && flag)
                    first += ch;
                    flag2 = false;
                else if (!Char.IsDigit(ch) && flag)
                    x = ch;
                    flag = false;
                else
                    second += ch;
            if (x == '+')
                textBox1.Text = Convert.ToString(Convert.ToInt32(first) +
Convert.ToInt32(second));
            else if (x == '-')
                textBox1.Text = Convert.ToString(Convert.ToInt32(first) -
Convert.ToInt32(second));
            else if (x == '/')
                textBox1.Text = Convert.ToString(Convert.ToInt32(first) /
Convert.ToInt32(second));
            }
            else if (x == '*')
                textBox1.Text = Convert.ToString(Convert.ToInt32(first) *
Convert.ToInt32(second));
        }
    }
```

```
<Window x:Class="LAB 2.MainWindow"</pre>
        xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
        xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
        xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
        xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
        xmlns:local="clr-namespace:LAB_2"
        mc:Ignorable="d"
        Title="Калькулятор KGBT++" Height="568" Width="725"
Icon="/cover1 w820.jpg" FontSize="26">
    <Grid x:Name="grid1" Height="558" VerticalAlignment="Top">
        <Button x:Name="button1" Content="C" HorizontalAlignment="Left"</pre>
Margin="582,104,0,0" VerticalAlignment="Top" Height="95" Width="125"
Click="button1 Click"/>
        <Button x:Name="button2" Content="2" HorizontalAlignment="Left"</pre>
Margin="582,217,0,0" VerticalAlignment="Top" Height="95" Width="125"
Click="button2 Click"/>
        <Button x:Name="button3" Content="+" HorizontalAlignment="Left"</pre>
Margin="582,330,0,0" VerticalAlignment="Top" Height="95" Width="125"
Click="button3 Click"/>
        <Button x:Name="button4" Content="-" HorizontalAlignment="Left"</pre>
Margin="582,443,0,0" VerticalAlignment="Top" Height="95" Width="125"
Click="button4 Click"/>
        <TextBox x:Name="textBox1" HorizontalAlignment="Left" Margin="10,10,0,0"</pre>
Text="TextBox" TextWrapping="Wrap" VerticalAlignment="Top" Width="697"
Height="73"/>
        <Button x:Name="button5" Content="=" HorizontalAlignment="Left"</pre>
Margin="441,443,0,0" VerticalAlignment="Top" Height="95" Width="125"
Click="button5 Click"/>
        <Button x:Name="button6" Content="/" HorizontalAlignment="Left"</pre>
Margin="441,104,0,0" VerticalAlignment="Top" Height="95" Width="125"
Click="button6 Click"/>
        <Button x:Name="button7" Content="X" HorizontalAlignment="Left"</pre>
Margin="441,217,0,0" VerticalAlignment="Top" Height="95" Width="125"
Click="button7 Click"/>
        <Button x:Name="button18" Content="Кнопка&#xD;&#xA;Веселья"
HorizontalAlignment="Left" Margin="441,330,0,0" VerticalAlignment="Top" Height="95"
Width="125" Click="button18 Click"/>
        <Button x:Name="button8" Content="7" HorizontalAlignment="Left"</pre>
Margin="10,104,0,0" VerticalAlignment="Top" Height="95" Width="125"
Click="button8 Click"/>
        <Button x:Name="button9" Content="0" HorizontalAlignment="Left"</pre>
Margin="10,443,0,0" VerticalAlignment="Top" Height="95" Width="404"
Click="button9 Click"/>
        <Button x:Name="button10" Content="8" HorizontalAlignment="Left"</pre>
Margin="150,104,0,0" VerticalAlignment="Top" Height="95" Width="124"
Click="button10 Click"/>
        <Button x:Name="button11" Content="9" HorizontalAlignment="Left"</pre>
Margin="290,104,0,0" VerticalAlignment="Top" Height="95" Width="124"
Click="button11 Click" />
```

```
<Button x:Name="button12" Content="4" HorizontalAlignment="Left"</pre>
Margin="10,217,0,0" VerticalAlignment="Top" Height="95" Width="125"
Click="button12_Click"/>
        <Button x:Name="button13" Content="5" HorizontalAlignment="Left"</pre>
Margin="150,217,0,0" VerticalAlignment="Top" Height="95" Width="124"
Click="button13_Click"/>
        <Button x:Name="button14" Content="6" HorizontalAlignment="Left"</pre>
Margin="290,217,0,0" VerticalAlignment="Top" Height="95" Width="124"
Click="button14_Click" />
        <Button x:Name="button15" Content="1" HorizontalAlignment="Left"</pre>
Margin="10,330,0,0" VerticalAlignment="Top" Height="95" Width="125"
Click="button15_Click"/>
        <Button x:Name="button16" Content="2" HorizontalAlignment="Left"</pre>
Margin="150,330,0,0" VerticalAlignment="Top" Height="95" Width="124"
Click="button16_Click"/>
        <Button x:Name="button17" Content="3" HorizontalAlignment="Left"</pre>
Margin="290,330,0,0" VerticalAlignment="Top" Height="95" Width="124"
Click="button17_Click"/>
    </Grid>
</Window>
```

## Пример работы:











