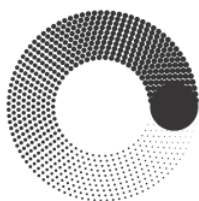


**ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ АВТОНОМНОЕ  
ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ВЫСШЕГО ОБРАЗОВАНИЯ**



**МОСКОВСКИЙ ПОЛИТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ**

**Факультет информационных технологий  
Кафедра Информатики и информационных технологий**

**направление подготовки 09.03.02 «Информационные системы и  
технологии»,**

**ЛАБОРАТОРНАЯ РАБОТА №2**

**Дисциплина:** Технология прикладного программирования

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(Оценка)

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(Дата) (Подпись)

**Замечания:**

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**Москва**

**2023**

## Задание:

Разработать калькулятор (кнопочный) выполняющий 4 простых действия:

1. Умножение
2. Деление
3. Сложение
4. Вычитание

```
<Window x:Class="_2.Calculator.MainWindow"
  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:_2.Calculator"
  mc:Ignorable="d"
  Title="Calculator" Height="500" Width="300" ResizeMode="NoResize">
  <StackPanel>
    <StackPanel Orientation="Horizontal" Margin="10">
      <Border BorderBrush="Black" BorderThickness="2">
        <TextBlock x:Name="ViewFieldTB" Text="" FontSize="30" Margin="10" Width="240"/>
      </Border>
    </StackPanel>
    <StackPanel Orientation="Horizontal" Margin="5, 0">
      <Button Content="7" Width="50" Height="50" FontSize="20" Margin="5" Click="Button_Click7"/>
      <Button Content="8" Width="50" Height="50" FontSize="20" Margin="5" Click="Button_Click8"/>
      <Button Content="9" Width="50" Height="50" FontSize="20" Margin="5" Click="Button_Click9"/>
    </StackPanel>
    <StackPanel Orientation="Horizontal" Margin="5, 0">
      <Button Content="4" Width="50" Height="50" FontSize="20" Margin="5" Click="Button_Click4"/>
      <Button Content="5" Width="50" Height="50" FontSize="20" Margin="5" Click="Button_Click5"/>
      <Button Content="6" Width="50" Height="50" FontSize="20" Margin="5" Click="Button_Click6"/>
      <Button Content="C" Width="50" Height="50" FontSize="20" Margin="5" Click="Button_ClickClear"/>
    </StackPanel>
    <StackPanel Orientation="Horizontal" Margin="5, 0">
      <Button Content="1" Width="50" Height="50" FontSize="20" Margin="5" Click="Button_Click1"/>
      <Button Content="2" Width="50" Height="50" FontSize="20" Margin="5" Click="Button_Click2"/>
      <Button Content="3" Width="50" Height="50" FontSize="20" Margin="5" Click="Button_Click3"/>
    </StackPanel>
    <StackPanel Orientation="Horizontal" Margin="5, 0">
      <Button Content="0" Width="170" Height="50" FontSize="20" Margin="5" Click="Button_Click0"/>
    </StackPanel>
    <StackPanel Orientation="Horizontal" Margin="10">
      <Button Content="+" x:Name="PlusButton" Width="50" Height="50" FontSize="20" Margin="5"
Click="Button_ClickPlus"/>
      <Button Content="-" x:Name="MinusButton" Width="50" Height="50" FontSize="20" Margin="5"
Click="Button_ClickMinus"/>
      <Button Content="*" x:Name="MultiplyButton" Width="50" Height="50" FontSize="20" Margin="5"
Click="Button_ClickMultiply"/>
      <Button Content="/" x:Name="DivideButton" Width="50" Height="50" FontSize="20" Margin="5"
Click="Button_ClickDivide"/>
    </StackPanel>
    <StackPanel>
      <Button Content="=" x:Name="EqualButton" Width="150" Height="50" FontSize="20" Margin="5"
Click="Button_ClickEqual"/>
    </StackPanel>
  </StackPanel>
</Window>
```

```

using System.Windows;

namespace _2.Calculator
{
    /// <summary>
    /// Interaction logic for MainWindow.xaml
    /// </summary>
    public partial class MainWindow : Window
    {
        bool isRightSide = false;

        bool isPlus = false;
        bool isMinus = false;
        bool isMultiply = false;
        bool isDivide = false;

        float Result
        {
            get
            {
                if (float.TryParse(leftPart, out float left) && float.TryParse(rightPart, out float right))
                {
                    if (isPlus) return left + right;
                    if (isMinus) return left - right;
                    if (isMultiply) return left * right;
                    if (isDivide) return left / right;
                }

                return 0;
            }
        }
        string leftPart = "";
        string rightPart = "";

        public MainWindow()
        {
            InitializeComponent();
        }
        private void Button_Click0(object sender, RoutedEventArgs e)
        {
            ViewFieldTB.Text += "0";
            if (isRightSide) rightPart += "0";
            else leftPart += "0";
        }
        private void Button_Click1(object sender, RoutedEventArgs e)
        {
            ViewFieldTB.Text += "1";
            if (isRightSide) rightPart += "1";
            else leftPart += "1";
        }
        private void Button_Click2(object sender, RoutedEventArgs e)
        {
            ViewFieldTB.Text += "2";
            if (isRightSide) rightPart += "2";
            else leftPart += "2";
        }
        private void Button_Click3(object sender, RoutedEventArgs e)
        {
            ViewFieldTB.Text += "3";
            if (isRightSide) rightPart += "3";
            else leftPart += "3";
        }
        private void Button_Click4(object sender, RoutedEventArgs e)

```

```

{
    ViewFieldTB.Text += "4";
    if (isRightSide) rightPart += "4";
    else leftPart += "4";
}
private void Button_Click5(object sender, RoutedEventArgs e)
{
    ViewFieldTB.Text += "5";
    if (isRightSide) rightPart += "5";
    else leftPart += "5";
}
private void Button_Click6(object sender, RoutedEventArgs e)
{
    ViewFieldTB.Text += "6";
    if (isRightSide) rightPart += "6";
    else leftPart += "6";
}
private void Button_Click7(object sender, RoutedEventArgs e)
{
    ViewFieldTB.Text += "7";
    if (isRightSide) rightPart += "7";
    else leftPart += "7";
}
private void Button_Click8(object sender, RoutedEventArgs e)
{
    ViewFieldTB.Text += "8";
    if (isRightSide) rightPart += "8";
    else leftPart += "8";
}
private void Button_Click9(object sender, RoutedEventArgs e)
{
    ViewFieldTB.Text += "9";
    if (isRightSide) rightPart += "9";
    else leftPart += "9";
}
private void Button_ClickPlus(object sender, RoutedEventArgs e)
{
    if (!isRightSide)
    {
        isRightSide = true;
        leftPart = ViewFieldTB.Text;
    }
    else
    {
        leftPart = Result.ToString();
        rightPart = "";
    }
    ViewFieldTB.Text += "+";

    isPlus = true;
    isMinus = false;
    isMultiply = false;
    isDivide = false;

    SetButtonsInactive();
}
private void Button_ClickMinus(object sender, RoutedEventArgs e)
{
    if (!isRightSide)
    {
        isRightSide = true;
        leftPart = ViewFieldTB.Text;
    }
}

```

```

else
{
    leftPart = Result.ToString();
    rightPart = "";
}
ViewFieldTB.Text += "-";

isPlus = false;
isMinus = true;
isMultiply = false;
isDivide = false;

SetButtonsInactive();
}
private void Button_ClickMultiply(object sender, RoutedEventArgs e)
{
    if (!isRightSide)
    {
        isRightSide = true;
        leftPart = ViewFieldTB.Text;
    }
    else
    {
        leftPart = Result.ToString();
        rightPart = "";
    }
    ViewFieldTB.Text += "*";

    isPlus = false;
    isMinus = false;
    isMultiply = true;
    isDivide = false;

    SetButtonsInactive();
}
private void Button_ClickDivide(object sender, RoutedEventArgs e)
{
    if (!isRightSide)
    {
        isRightSide = true;
        leftPart = ViewFieldTB.Text;
    }
    else
    {
        leftPart = Result.ToString();
        rightPart = "";
    }
    ViewFieldTB.Text += "/";

    isPlus = false;
    isMinus = false;
    isMultiply = false;
    isDivide = true;

    SetButtonsInactive();
}
private void Button_ClickEqual(object sender, RoutedEventArgs e)
{
    ViewFieldTB.Text = Result.ToString();
    leftPart = Result.ToString();
    rightPart = "";
    isRightSide = false;

```

```

        SetButtonsActive();
    }
    private void Button_ClickClear(object sender, RoutedEventArgs e)
    {
        ViewFieldTB.Text = "";
        leftPart = "";
        rightPart = "";
        isRightSide = false;

        SetButtonsActive();
    }

    private void SetButtonsInactive()
    {
        PlusButton.IsEnabled = false;
        MinusButton.IsEnabled = false;
        MultiplyButton.IsEnabled = false;
        DivideButton.IsEnabled = false;
    }

    private void SetButtonsActive()
    {
        PlusButton.IsEnabled = true;
        MinusButton.IsEnabled = true;
        MultiplyButton.IsEnabled = true;
        DivideButton.IsEnabled = true;
    }
}
}

```

