**ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ АВТОНОМНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ВЫСШЕГО ОБРАЗОВАНИЯ**

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**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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Шаура И. М.

**Дата, подпись** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  ***\_\_\_\_\_\_\_\_\_\_\_***

(Дата) (Подпись)

**Проверил:** ст. преп.Калмыков Е. А.\_\_\_\_\_\_\_\_\_\_\_

**(Оценка)**

**Дата, подпись** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  ***\_\_\_\_\_\_\_\_\_\_\_***

(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

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| --- |
| <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;  }  }  } |

