**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»,**

**профиль «Цифровая трансформация»**

**ЛАБОРАТОРНАЯ РАБОТА №2**

**Дисциплина:** Технологии прикладного программирования

**Выполнил:** студент группы 231-337

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**Дата, подпись** 08/02/2024  ***\_\_\_\_\_\_\_\_\_\_\_***

(Дата) (Подпись)

**Проверила:** Полубояринова А.С.\_\_\_\_\_\_\_\_\_\_\_

**(Оценка)**

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

(Дата) (Подпись)

**Замечания:**

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**Москва**

**2024**

Текст задачи

Разработать калькулятор (кнопочный) выполняющий 4 простых действия:  
1. Умножение  
2. Деление  
3. Сложение  
4. Вычитание

Код вёрстки окон и код программной логики

<Window x:Class="Калькулятор.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:Калькулятор"

mc:Ignorable="d"

Title="Калькулятор" Height="600" Width="400">

<Grid ShowGridLines="False">

<Grid.RowDefinitions>

<RowDefinition/>

<RowDefinition/>

<RowDefinition/>

<RowDefinition/>

<RowDefinition/>

</Grid.RowDefinitions>

<Grid.ColumnDefinitions>

<ColumnDefinition/>

<ColumnDefinition/>

<ColumnDefinition/>

<ColumnDefinition/>

</Grid.ColumnDefinitions>

<Button x:Name="one" Grid.Column="0" Grid.Row="1" Content="1" FontSize="24" Click="Numbers"/>

<Button x:Name="two" Grid.Column="1" Grid.Row="1" Content="2" FontSize="24" Click="Numbers"/>

<Button x:Name="three" Grid.Column="2" Grid.Row="1" Content="3" FontSize="24" Click="Numbers"/>

<Button x:Name="four" Grid.Column="0" Grid.Row="2" Content="4" FontSize="24" Click="Numbers"/>

<Button x:Name="five" Grid.Column="1" Grid.Row="2" Content="5" FontSize="24" Click="Numbers"/>

<Button x:Name="six" Grid.Column="2" Grid.Row="2" Content="6" FontSize="24" Click="Numbers"/>

<Button x:Name="seven" Grid.Column="0" Grid.Row="3" Content="7" FontSize="24" Click="Numbers"/>

<Button x:Name="eight" Grid.Column="1" Grid.Row="3" Content="8" FontSize="24" Click="Numbers"/>

<Button x:Name="nine" Grid.Column="2" Grid.Row="3" Content="9" FontSize="24" Click="Numbers"/>

<Button x:Name="zero" Grid.Column="0" Grid.Row="4" Content="0" FontSize="24" Click="Numbers"/>

<Button x:Name="equals" Grid.Column="1" Grid.Row="4" Content="=" FontSize="24" Click="Result"/>

<Button x:Name="AC" Grid.Column="2" Grid.Row="4" Content="AC" FontSize="24" Click="del"/>

<Button x:Name="plus" Grid.Column="3" Grid.Row="1" Content="+" FontSize="24" Click="Action"/>

<Button x:Name="minus" Grid.Column="3" Grid.Row="2" Content="-" FontSize="24" Click="Action"/>

<Button x:Name="multi" Grid.Column="3" Grid.Row="3" Content="\*" FontSize="24" Click="Action"/>

<Button x:Name="division" Grid.Column="3" Grid.Row="4" Content="/" FontSize="24" Click="Action"/>

<TextBlock x:Name="Input\_block" Grid.Column="0" Grid.ColumnSpan="4" Text="0" FontSize="40" TextWrapping="Wrap"/>

</Grid>

</Window>

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 Калькулятор

{

public partial class MainWindow : Window

{

public MainWindow()

{

InitializeComponent();

}

float meaning = 0;

float meaning\_2 = 0;

int count = 0;

bool view = true;

bool view\_1 = true;

string action;

private void Numbers(object sender, RoutedEventArgs e)

{

if (count == 346784)

{

Input\_block.Text = "0"; count = 0;

}

// обнуление после '='

var data = sender as Button;

if (Input\_block.Text != "0" && view == true)

{

Input\_block.Text = Input\_block.Text + data.Content.ToString();

}

else

{

if (meaning != 0 && view\_1 == true)

{

Input\_block.Text = meaning.ToString() + " " + action + " " + data.Content.ToString();

view\_1 = false;

}

else if (meaning != 0 && view\_1 == false)

{

Input\_block.Text = Input\_block.Text + data.Content.ToString();

}

else

{

Input\_block.Text = data.Content.ToString();

view = true;

}

}

// работа с выводом

if (count == 0)

{

if (meaning == 0)

{

meaning = float.Parse(data.Content.ToString());

}

else

{

meaning = float.Parse(meaning.ToString() + data.Content.ToString());

}

}

else

{

if (meaning\_2 == 0)

{

meaning\_2 = float.Parse(data.Content.ToString());

}

else

{

meaning\_2 = float.Parse(meaning\_2.ToString() + data.Content.ToString());

}

}

// работа с переменными

}

private void del(object sender, RoutedEventArgs e)

{

Input\_block.Text = "0";

meaning = 0; meaning\_2 = 0; count = 0;

}

private void Result(object sender, RoutedEventArgs e)

{

Input\_block.Text = meaning.ToString();

switch(action.Substring(0, Math.Min(1, action.Length)))

{

case "+":

Input\_block.Text = (meaning + meaning\_2).ToString();

break;

case "-":

Input\_block.Text = (meaning - meaning\_2).ToString();

break;

case "\*":

Input\_block.Text = (meaning \* meaning\_2).ToString();

break;

case "/":

if (meaning\_2 == 0)

{

Input\_block.Text = "Здесь вам не пределы!";

}

else

{

Input\_block.Text = (meaning / meaning\_2).ToString();

}

break;

}

count = 346784;

meaning = 0; meaning\_2 = 0;

}

private void Action(object sender, RoutedEventArgs e)

{

var data = sender as Button;

if (count != 0)

{

switch (action.Substring(0, Math.Min(1, action.Length)))

{

case "+":

Input\_block.Text = Input\_block.Text + " = " +(meaning + meaning\_2).ToString();

meaning = meaning + meaning\_2;

meaning\_2 = 0;

break;

case "-":

Input\_block.Text = Input\_block.Text + " = " + (meaning - meaning\_2).ToString();

meaning = meaning - meaning\_2;

meaning\_2 = 0;

break;

case "\*":

Input\_block.Text = Input\_block.Text + " = " + (meaning \* meaning\_2).ToString();

meaning = meaning \* meaning\_2;

meaning\_2 = 0;

break;

case "/":

if (meaning\_2 == 0)

{

Input\_block.Text = "Здесь вам не пределы!";

}

else

{

Input\_block.Text = Input\_block.Text + " = " + (meaning / meaning\_2).ToString();

meaning = meaning / meaning\_2;

meaning\_2 = 0;

}

break;

}

view = false;

view\_1 = true;

}

else

{

Input\_block.Text = Input\_block.Text + " " + data.Content.ToString() + " ";

}

action = data.Content.ToString();

count++;

}

}

}

