

Министерство науки и высшего образования Российской Федерации  
Муромский институт (филиал)  
Федерального государственного бюджетного образовательного учреждения  
высшего образования  
«Владимирский государственный университет  
имени Александра Григорьевича и Николая Григорьевича Столетовых»

Факультет \_\_\_\_\_ ФИТР \_\_\_\_\_

Кафедра \_\_\_\_\_ ПИН \_\_\_\_\_

## ***ЛАБОРАТОРНАЯ РАБОТА №8***

По \_\_\_\_\_ Объектно-ориентированному программированию \_\_\_\_\_

Тема \_\_\_\_\_ Создание простого приложения Windows Forms \_\_\_\_\_

Руководитель

Привезенцев Д.Г.

\_\_\_\_\_  
(фамилия, инициалы)

\_\_\_\_\_  
(подпись)

\_\_\_\_\_  
(дата)

Студент \_\_\_\_\_ ПИН - 121 \_\_\_\_\_

(группа)

Ермилов М.В.

\_\_\_\_\_  
(фамилия, инициалы)

\_\_\_\_\_  
(подпись)

\_\_\_\_\_  
(дата)

Муром 2022

## Лабораторная работа №6

**Тема:** Создание простого приложения Windows Forms

### Ход работы:

#### Задание:

Добавить в описанный калькулятор функцию  $\text{Atan}(x)$  «Функция арктангенса»

#### Код приложения:

```
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 WindowsFormsApp2
{
    public partial class LWP02Main : Form
    {
        Boolean Operation1 = false;

        Boolean Operation2 = false;

        Boolean Operation3 = false;

        Boolean Operation4 = false;

        Boolean Operation5 = false;
```

					МИВУ 09.02.03 – N.00n	Лист
Изм.	Лист	№ докум.	Подпись	Дата		2

Boolean Clear = false;

Double A;

Double B;

Double Result;

Boolean Dot = false;

public LWP02Main()

```
{  
    InitializeComponent();  
}
```

private void LWP02Main\_Load(object sender, EventArgs e)

```
{  
  
}
```

private void NumericSpecial\_Click(object sender, EventArgs e)

```
{  
  
}
```

private void BResult\_Click(object sender, EventArgs e)

```
{  
    if (Operation1 == true)  
        Result = A + B;  
    if (Operation2 == true)  
        Result = A - B;
```

					МИВУ 09.02.03 – N.00n	Лист
						3
Изм.	Лист	№ докум.	Подпись	Дата		

```

if (Operation3 == true)
    Result = A * B;
if (Operation4 == true)
    Result = A / B;
if (Operation5 == true)
    Result = Math.Atan(A);
ResultBox.Text = Result.ToString();

Operation1 = false;
Operation2 = false;
Operation3 = false;
Operation4 = false;
Operation5 = false;
Clear = true;
}

private void BC_Click(object sender, EventArgs e)
{
    ResultBox.Clear();
    Operation1 = false;
    Operation2 = false;
    Operation3 = false;
    Operation4 = false;
    Clear = false;
    A = 0;
    B = 0;
    Result = 0;
    Dot = false;

```

					МИВУ 09.02.03 – N.00n	Лист
						4
Изм.	Лист	№ докум.	Подпись	Дата		

```

    }

private void B1_Click(object sender, EventArgs e)
{
    if (Clear == true)
    {
        ResultBox.Clear();
        Clear = false;
        Dot = false;
    }

    if (Operation1 == false && Operation2 == false && Operation3 == false &&
Operation4 == false && Operation5 == false)
    {
        ResultBox.AppendText("1");
        A = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
    }
    else
    {
        ResultBox.AppendText("1");
        B = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
    }
}

private void BOperation1_Click(object sender, EventArgs e)
{
    Operation1 = true;

```

```

        Operation2 = false;
        Operation3 = false;
        Operation4 = false;
        Operation5 = false;
        ResultBox.Clear();

    }

private void BD_Click(object sender, EventArgs e)
{
    if (Clear == true)
    {
        ResultBox.Clear();
        Clear = false;
        Dot = false;
    }

    if (Operation1 == false && Operation2 == false && Operation3 == false
    && Operation4 == false && Operation5 == false)
    {
        if (Dot == false)
        {
            ResultBox.AppendText(",");
            Dot = true;
        }
    }

    else
    {

```

					МИВУ 09.02.03 – N.00n	Лист
						6
Изм.	Лист	№ докум.	Подпись	Дата		

```

        if (Dot == true)
        {
            ResultBox.AppendText(",");
            Dot = false;
        }
    }
}

```

```

private void BOperation3_Click(object sender, EventArgs e)
{
    Operation1 = false;
    Operation2 = false;
    Operation3 = true;
    Operation4 = false;
    Operation5 = false;
    Dot = true;
    ResultBox.Clear();
}

```

```

private void BOperation4_Click(object sender, EventArgs e)
{
    Operation1 = false;
    Operation2 = false;
    Operation3 = false;
    Operation4 = true;
    Operation5 = false;
    Dot = true;
}

```

					МИВУ 09.02.03 – N.00n	Лист
						7
Изм.	Лист	№ докум.	Подпись	Дата		

```

        ResultBox.Clear();
    }

    private void BSpecial_Click(object sender, EventArgs e)
    {
        SByte d = Convert.ToSByte(NumericSpecial.Value);
        ResultBox.Text = Convert.ToString(Math.Round(Result, d));
    }

    private void B2_Click(object sender, EventArgs e)
    {
        if (Clear == true)
        {
            ResultBox.Clear();
            Clear = false;
            Dot = false;
        }

        if (Operation1 == false && Operation2 == false && Operation3 == false
            && Operation4 == false && Operation5 == false)
        {
            ResultBox.AppendText("2");
            A = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
        }
        else
        {
            ResultBox.AppendText("2");

```



```

        B = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
    }

}

private void B3_Click(object sender, EventArgs e)
{
    if (Clear == true)
    {
        ResultBox.Clear();
        Clear = false;
        Dot = false;
    }

    if (Operation1 == false && Operation2 == false && Operation3 == false
        && Operation4 == false && Operation5 == false)
    {
        ResultBox.AppendText("3");
        A = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
    }
    else
    {
        ResultBox.AppendText("3");
        B = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
    }
}
}

```

```

private void B4_Click(object sender, EventArgs e)
{
    if (Clear == true)
    {
        ResultBox.Clear();
        Clear = false;
        Dot = false;
    }

    if (Operation1 == false && Operation2 == false && Operation3 == false
    && Operation4 == false && Operation5 == false)
    {
        ResultBox.AppendText("4");
        A = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
    }
    else
    {
        ResultBox.AppendText("4");
        B = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
    }
}

```

```

private void B5_Click(object sender, EventArgs e)
{
    if (Clear == true)
    {
        ResultBox.Clear();
    }
}

```

```

        Clear = false;
        Dot = false;
    }

    if (Operation1 == false && Operation2 == false && Operation3 == false
    && Operation4 == false && Operation5 == false)
    {
        ResultBox.AppendText("5");
        A = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
    }
    else
    {
        ResultBox.AppendText("5");
        B = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
    }
}

private void B6_Click(object sender, EventArgs e)
{
    if (Clear == true)
    {
        ResultBox.Clear();
        Clear = false;
        Dot = false;
    }

    if (Operation1 == false && Operation2 == false && Operation3 == false
    && Operation4 == false && Operation5 == false)

```

```

{
    ResultBox.AppendText("6");
    A = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
}
else
{
    ResultBox.AppendText("6");
    B = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
}

}

private void B7_Click(object sender, EventArgs e)
{
    if (Clear == true)
    {
        ResultBox.Clear();
        Clear = false;
        Dot = false;
    }

    if (Operation1 == false && Operation2 == false && Operation3 == false
    && Operation4 == false && Operation5 == false)
    {
        ResultBox.AppendText("7");
        A = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
    }
    else

```

```

    {
        ResultBox.AppendText("7");
        B = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
    }

}

private void B8_Click(object sender, EventArgs e)
{
    if (Clear == true)
    {
        ResultBox.Clear();
        Clear = false;
        Dot = false;
    }

    if (Operation1 == false && Operation2 == false && Operation3 == false
        && Operation4 == false && Operation5 == false)
    {
        ResultBox.AppendText("8");
        A = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
    }
    else
    {
        ResultBox.AppendText("8");
        B = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
    }
}

```

```

}

private void B9_Click(object sender, EventArgs e)
{
    if (Clear == true)
    {
        ResultBox.Clear();
        Clear = false;
        Dot = false;
    }

    if (Operation1 == false && Operation2 == false && Operation3 == false
    && Operation4 == false && Operation5 == false)
    {
        ResultBox.AppendText("9");
        A = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
    }
    else
    {
        ResultBox.AppendText("9");
        B = Convert.ToDouble(ResultBox.Text.Replace(".", ","));
    }
}

private void B0_Click(object sender, EventArgs e)
{
    if (Clear == true)

```

```

{
    ResultBox.Clear();

    Clear = false;

    Dot = false;

}

if (Operation1 == false && Operation2 == false && Operation3 == false
&& Operation4 == false && Operation5 == false)
{
    ResultBox.AppendText("0");

    A = Convert.ToDouble(ResultBox.Text.Replace(".", ","));

}

else
{
    ResultBox.AppendText("0");

    B = Convert.ToDouble(ResultBox.Text.Replace(".", ","));

}

}

```

```

private void BOperation5_Click(object sender, EventArgs e)

```

```

{
    Operation1 = false;

    Operation2 = false;

    Operation3 = false;

    Operation4 = false;

    Operation5 = true;

    ResultBox.Clear();

```

```

    }

    private void BOperation2_Click(object sender, EventArgs e)
    {
        Operation1 = false;
        Operation2 = true;
        Operation3 = false;
        Operation4 = false;
        Operation5 = false;
        Dot = true;
        ResultBox.Clear();
    }
}
}

```

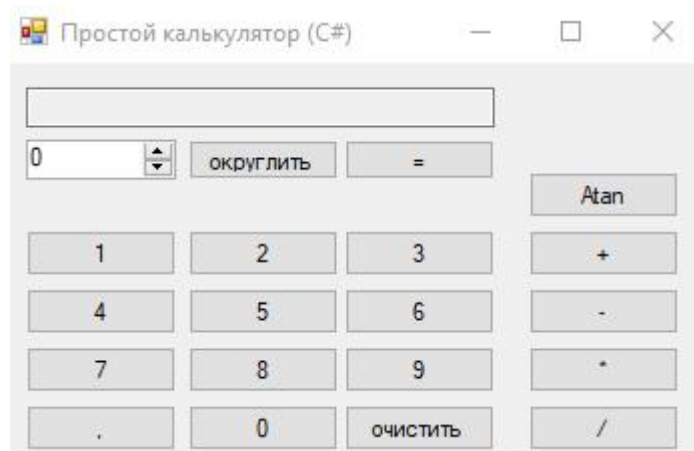


Рис. 1 - интерфейс программы



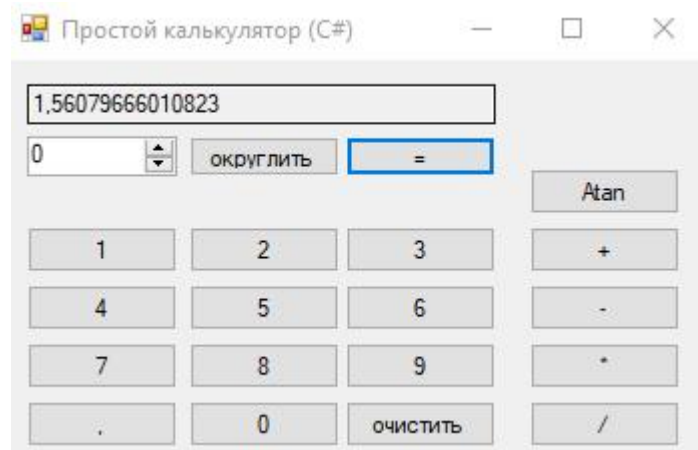


Рис. 2 – пример работы программы ( $\text{Atan}(100)$ )