Ministerul Educației al Republicii Moldova

Universitatea Tehnică a Moldovei
Facultatea CIM

Catedra Automatica și Tehnologii Informaționale

RAPORT

Lucrare de laborator Nr.3
La MIDPS

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Chișinău 2016

Lucrarea de laborator nr.3

Scopul lucrarii:

Realizarea unui simplu GUI calculator

Obiective:

Advanced Level (nota 9 || 10):

- Realizeaza un simplu GUI calculator care suporta urmatoare functii: +, -, /, *, putere, radical, InversareSemn(+/-), operatii cu numere zecimale.
- Divizare proiectului in doua module - Interfata grafica(Modul GUI) si Modulul de baza(Core Module).

Listingul Programului in limbajul C#:

```csharp
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace WindowsFormsApplication1
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();

        }

        float num,num1,ans;
        int count;
        int cnk=0,xx=0;

        private void button3_Click(object sender, EventArgs e)  //backspace
        {
            int length = textBox1.TextLength - 1;
            string text = textBox1.Text;
            textBox1.Clear();
            for (int i = 0; i < length; i++)
                textBox1.Text = textBox1.Text + text[i];

        }


        private void button8_Click(object sender, EventArgs e)
        {
```

```csharp
        textBox1.Text = textBox1.Text + 4 ;
        textBox1.ForeColor = Color.Red;
    }

    private void button11_Click(object sender, EventArgs e)
    {   if (cnk == 0)
        {
            //afisarea in text box shi press button cu rosu
            textBox1.Text = textBox1.Text + ".";
            textBox1.ForeColor = Color.Red;
            cnk++;
        }
    else { textBox1.Text = textBox1.Text + ""; }

    }

    private void button10_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text + 0;
        textBox1.ForeColor = Color.Red;
    }

    private void button9_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text + 1;
        textBox1.ForeColor = Color.Red;
    }

    private void button13_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text + 2;
        textBox1.ForeColor = Color.Red;
    }

    private void button14_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text + 3;
        textBox1.ForeColor = Color.Red;
    }

    private void button15_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text + 5;
        textBox1.ForeColor = Color.Red;
    }

    private void button16_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text + 6;
        textBox1.ForeColor = Color.Red;
    }

    private void button7_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text +7 ;
        textBox1.ForeColor = Color.Red;
    }

    private void button17_Click(object sender, EventArgs e)
    {
        textBox1.Text = textBox1.Text +8 ;
        textBox1.ForeColor = Color.Red;
```

```csharp
        }

        private void button18_Click(object sender, EventArgs e)
        {
            textBox1.Text = textBox1.Text + 9 ;
            textBox1.ForeColor = Color.Red;
        }

        private void label1_Click(object sender, EventArgs e)
        {

        }

        private void button19_Click(object sender, EventArgs e) //butonul +
        {
            cnk = 0;
            if (xx == 0)
            {
                num = float.Parse(textBox1.Text);
                textBox1.Clear();     //curatirea textboxului
                textBox1.Focus();      //focusarea asupra textbox dupa curatire
                xx = 1;
            }
            count = 1;
            label1.Text = num.ToString() + "+";  //afisarea textului in label
        }

        private void button20_Click(object sender, EventArgs e) //butonul -
        {

            cnk = 0;
            if (xx == 0)
            {
                num = float.Parse(textBox1.Text);
                textBox1.Clear();     //curatirea textboxului
                textBox1.Focus();      //focusarea asupra textbox dupa curatire
                xx = 1;
            }
            count = 2;
                label1.Text = num.ToString() + "-";  //afisarea textului in label


        }

        private void button21_Click(object sender, EventArgs e)   //butonul *
        {

            cnk = 0;
            if (xx == 0)
            {
                num = float.Parse(textBox1.Text);
                textBox1.Clear();     //curatirea textboxului
                textBox1.Focus();      //focusarea asupra textbox dupa curatire
                xx = 1;
            }
            count = 3;
            label1.Text = num.ToString() + "*";  //afisarea textului in label
        }

        private void button22_Click(object sender, EventArgs e)  //butonul /
        {
```

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```csharp
        cnk = 0;
        if (xx == 0)
        {
            num = float.Parse(textBox1.Text);
            textBox1.Clear();    //curatirea textboxului
            textBox1.Focus();      //focusarea asupra textbox dupa curatire
            xx = 1;
        }
        count = 4;
        label1.Text = num.ToString() + "/";  //afisarea textului in label
    }

    private void button12_Click(object sender, EventArgs e)  //butonul =
    {

        cnk = 0;
        compute(); //apelam functia
        label1.Text = ""; //curatim labelu
        xx = 0;
    }

    private void button4_Click(object sender, EventArgs e) // C
    {
        xx = 0;
        cnk = 0;
        textBox1.Text = "";
        label1.Text = "";
    }

    private void Form1_Load(object sender, EventArgs e)
    {

    }

    private void textBox1_TextChanged(object sender, EventArgs e)
    {
            }

    private void button5_Click(object sender, EventArgs e) //butonul sqrt
    {

        cnk = 0;
        if (xx == 0)
        {
            num = float.Parse(textBox1.Text);
            textBox1.Clear();    //curatirea textboxului
            textBox1.Focus();      //focusarea asupra textbox dupa curatire
            xx = 1;
        }
        textBox1.Text = Math.Sqrt(num).ToString();

    }

    private void button24_Click(object sender, EventArgs e)  //butonul x^2
    {
         cnk = 0;
        if (xx == 0)
        {
            num = float.Parse(textBox1.Text);
            textBox1.Clear();    //curatirea textboxului
            textBox1.Focus();      //focusarea asupra textbox dupa curatire
            xx = 1;
```

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```csharp
        }
        textBox1.Text = (num * num).ToString();
    }

    private void button23_Click(object sender, EventArgs e)  // +/-
    {

        cnk = 0;
        num1 = float.Parse(textBox1.Text);
        textBox1.Clear();     //curatirea textboxului
        textBox1.Focus();      //focusarea asupra textbox dupa curatire
        textBox1.Text = (num1*(-1)).ToString();
    }

    private void button1_Click(object sender, EventArgs e)  // 1/x
    {

        cnk = 0;
        if (xx == 0)
        {
            num = float.Parse(textBox1.Text);
            textBox1.Clear();     //curatirea textboxului
            textBox1.Focus();      //focusarea asupra textbox dupa curatire
            xx = 1;
        }
        textBox1.Text = (1/num).ToString();
    }

    public void compute()

    {

        switch (count)
        {
            case 1: ans = num + float.Parse(textBox1.Text);   //adunarea
                textBox1.Text = ans.ToString(); //convert float in string
                break;

            case 2:
                ans = num - float.Parse(textBox1.Text);   //scaderea
                textBox1.Text = ans.ToString(); //convert float in string
                break;

            case 3:
                ans = num * float.Parse(textBox1.Text);   //inmultirea
                textBox1.Text = ans.ToString(); //convert float in string
                break;

            case 4:
                ans = num / float.Parse(textBox1.Text);   //impartirea
                textBox1.Text = ans.ToString(); //convert float in string
                break;

             case 5:

                break;
            default: break;
        }


    }
}}
```
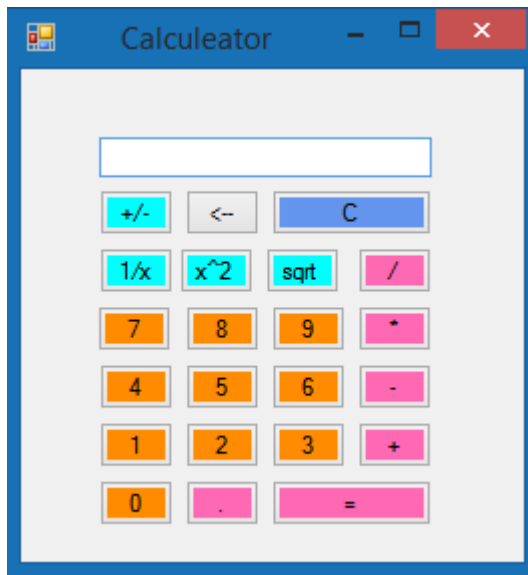
Concluzie

In urma acestei lucrari de laborator am facut cunostinta cu modulul GDI al programului VisualStudio, si am creat un simplu calculator in limbajul C# care efectueaza urmatoarele operatii: adunare, scadere, inmultire, impartire,ridicare la patrat,radical ,1/x si schimabre de semn.

Efectuind aceasta lucrare am creat deprinderi cu limbajui C# care usor ne-a ajutat sa construim un calculator cu citeva butoane si casete text!