

FACULTATEA CALCULATOARE, INFORMATICA SI
MICROELECTRONICA

UNIVERSITATEA TEHNICA A MOLDOVEI

MEDII INTERACTIVE DE DEZVOLTARE A
PRODUSELOR SOFT

LUCRAREA DE LABORATOR#2

GUI Developement

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1 Obiectivele laboratorului

Realizeaza un simplu GUI Calculator si divizare proiectului in doua module
- Interfata grafica(Modul GUI) si Modulul de baza(Core Module).

2 Lista de tascuri implementate

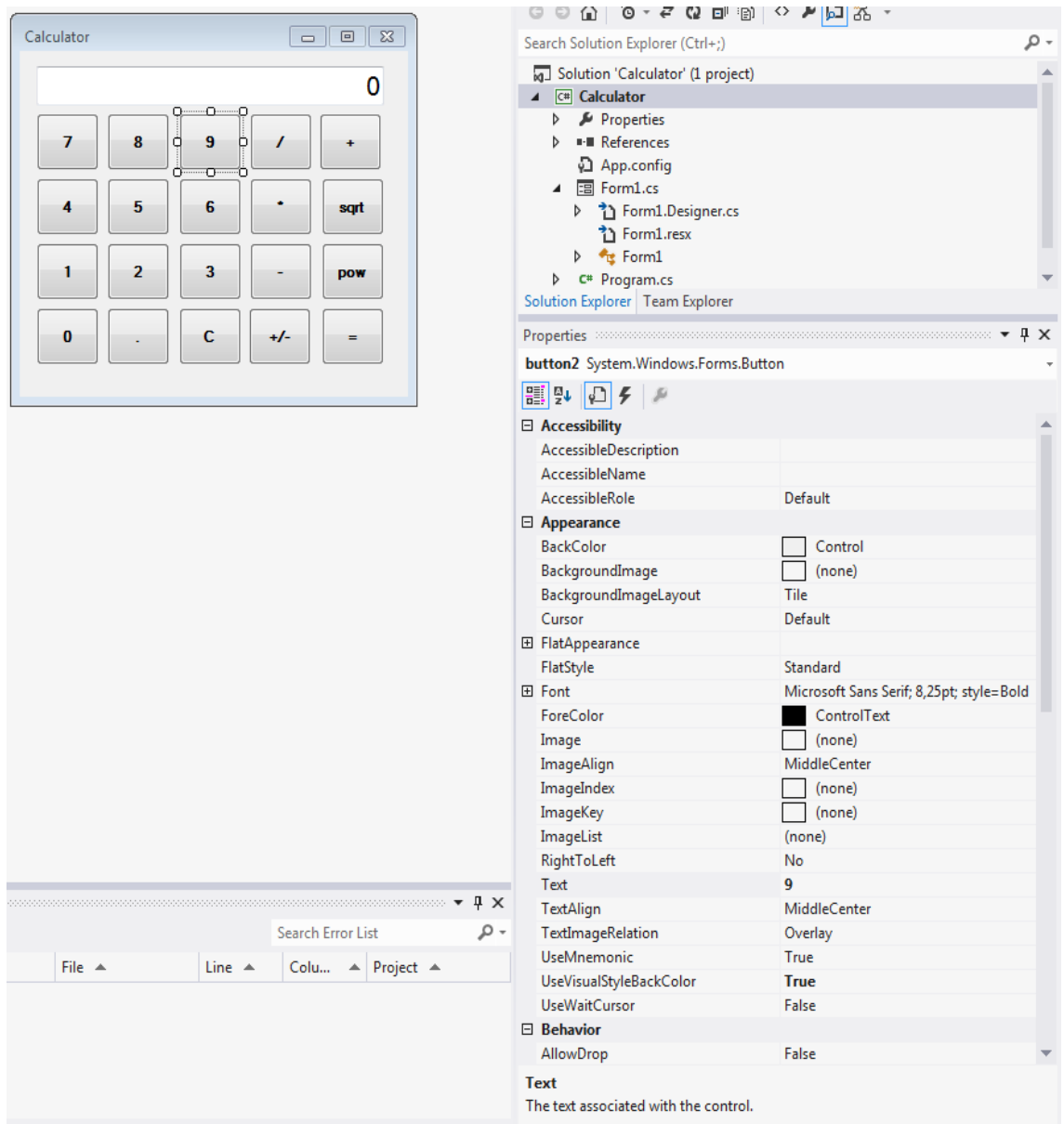
1. Realizeaza un simplu GUI calculator care suporta urmatoare functii:
+, -, /, *, putere, radical, InversareSemn(+/-), operatii cu numere zecimale.
2. Divizare proiectului in doua module - Interfata grafica(Modul GUI) si Modulul de baza(Core Module).

3 Analiza lucrarii de laborator

Repozitoriul pe Github

3.1 Realizeaza un simplu GUI calculator

Pentru a dezvolta un GUI calculator am folosit limbajul C# si Visual Studio 2012 ca IDE ,deoarece este foarte simplu de aranjat partea grafica a calculatorului (adaugarea butonurilor, TextBoxului) si respectiv modificarea setarilor fiecarui element grafic.



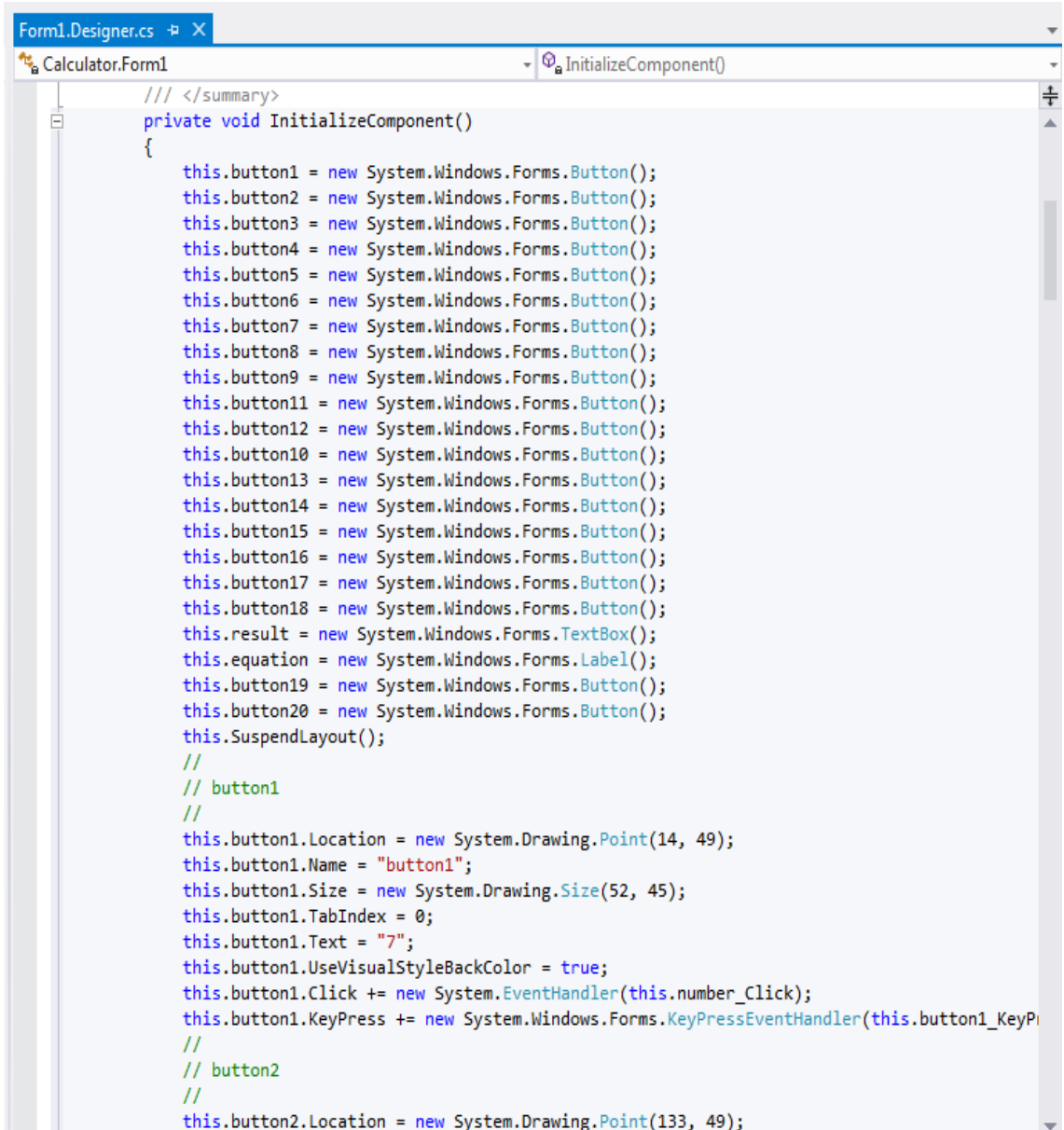
Visual Studio automat genereaza listening la butoane prin crearea unui corp de functie. Noua ne ramine doar sa scriem logica programului in aceasta functie.

```
private void label1_Click(object sender, EventArgs e)
{
}
}
```

3.2 Divizare proiectului in doua module

Aici tot lucrul practic a fost realizat de insasi IDE, Visual Studio automat a creat mai multe file-uri.

File Designer.cs contine declararea tuturor elemente de GUI si respectiv proprietatile lor (dimensiunea, locatia, stilul).



```
Form1.Designer.cs
Calculator.Form1
InitializeComponent()

/// </summary>
private void InitializeComponent()
{
    this.button1 = new System.Windows.Forms.Button();
    this.button2 = new System.Windows.Forms.Button();
    this.button3 = new System.Windows.Forms.Button();
    this.button4 = new System.Windows.Forms.Button();
    this.button5 = new System.Windows.Forms.Button();
    this.button6 = new System.Windows.Forms.Button();
    this.button7 = new System.Windows.Forms.Button();
    this.button8 = new System.Windows.Forms.Button();
    this.button9 = new System.Windows.Forms.Button();
    this.button11 = new System.Windows.Forms.Button();
    this.button12 = new System.Windows.Forms.Button();
    this.button10 = new System.Windows.Forms.Button();
    this.button13 = new System.Windows.Forms.Button();
    this.button14 = new System.Windows.Forms.Button();
    this.button15 = new System.Windows.Forms.Button();
    this.button16 = new System.Windows.Forms.Button();
    this.button17 = new System.Windows.Forms.Button();
    this.button18 = new System.Windows.Forms.Button();
    this.result = new System.Windows.Forms.TextBox();
    this.equation = new System.Windows.Forms.Label();
    this.button19 = new System.Windows.Forms.Button();
    this.button20 = new System.Windows.Forms.Button();
    this.SuspendLayout();
    //
    // button1
    //
    this.button1.Location = new System.Drawing.Point(14, 49);
    this.button1.Name = "button1";
    this.button1.Size = new System.Drawing.Size(52, 45);
    this.button1.TabIndex = 0;
    this.button1.Text = "7";
    this.button1.UseVisualStyleBackColor = true;
    this.button1.Click += new System.EventHandler(this.number_Click);
    this.button1.KeyPress += new System.Windows.Forms.KeyPressEventHandler(this.button1_KeyP
    //
    // button2
    //
    this.button2.Location = new System.Drawing.Point(133, 49);
```

File Form1.cs include logica programului , calcularea rezultatului si managmentul erorilor.

```
Form1.cs  X
Calculator.Form1  operation_pressed

using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace Calculator
{
    public partial class Form1 : Form
    {
        Double value = 0;
        String operation = "";
        Boolean err = false;
        bool operation_pressed = false;

        public Form1()
        {
            InitializeComponent();
        }

        private void number_Click(object sender, EventArgs e)
        {
            if (result.Text == "0" || err)
            {
                result.Clear();
                //operation_pressed = false;
                err = false;
                Button button = (Button) sender;
                if (button.Text == ".")
                {
                    if (result.Text == "")
                        result.Text = "0,";
                    else if (!result.Text.Contains(","))
                        result.Text = result.Text + ",";
                }
                else if (result.Text.Length <= 15)
                    result.Text = result.Text + button.Text;
            }
        }

        private void button18_Click(object sender, EventArgs e)
```

4 Concluzie

In urma acestui laborator am facut cunostinta cu Window Forms si cu elemente de baza din C#.Am insusit cum pot adauga elemente grafice cu usurinta in aplicatia mea, si am inteles cum pot modifica majoritatea din proprietatile fiecarui element. Utilizarea unui limbaj nou nu a creat dificultati din cauza banalitatii functionalului aplicatiei ,si datorita faptului ca acest limbaj se aseamana tare cu toate limbajele din familia C.