Ministerul Educaţiei al Republicii Moldova
Universitatea Tehnică a Moldovei
Facultatea Calculatoare,Informatică și Microelectronică

Raport

Lucrarea de laborator nr.3
La disciplina MIDPS

Efectuat: st.gr. TI-143 Cheptanaru Anatolie

Verificat :Lect.univ. Cojocaru Svetlana

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Tema: Version Control Systems si modul de setare a unui server

Obiective:

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

Laboratory Requirements:

- *Basic Level* (nota 5 || 6):
  - Realizeaza un simplu GUI calculator care suporta functiile de baza: +, -, /, *.
- *Normal Level* (nota 7 || 8):
  - Realizeaza un simplu GUI calculator care suporta urmatoare functii: +, -, /, *, putere, radical, InversareSemn(+/-).
- *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).

Implementare task-uri:

- IDE: Visual Studio 2015
- Limbajul:C#
- Tehnologii: C#

Listingul Programului

Listengul programului:

```
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;
using System.Text.RegularExpressions;

namespace Calculator12
{
  public partial class Form1 : Form
  {
    public Form1()
    {
      InitializeComponent();
```

```
}
int c=1;
double a,
b,l; bool s =
true;
private void button16_Click(object sender, EventArgs e)
{
  if(s==true)
  {
    textBox1.Text = "-" +
    textBox1.Text; s = false;
  }
  else
  {
    textBox1.Text = textBox1.Text.Replace("-
    ", ""); s = true;
  }
}

private void button17_Click(object sender, EventArgs e)
{
  try
  {
    if (s == true) { textBox1.Text = textBox1.Text + ","; s = false; } else
    { textBox1.Text = textBox1.Text.Replace(",", ""); s = true; }
  }
  catch { textBox1.Text = ""; }

}

private void button18_Click(object sender, EventArgs e)
{
  textBox1.Text = textBox1.Text + "0";
}

private void button19_Click(object sender, EventArgs e)
{
  switch(c)
  {
    case 1:
      try
      {
```

```
    b = a + double.Parse(textBox1.Text);
    textBox1.Text = b.ToString();
    break;
}
```

```
  catch { textBox1.Text = "";
break; } case 2:
  try
  {
    b = a -
    double.Parse(textBox1.Text);
    textBox1.Text = b.ToString();
    break;
  }
  catch { textBox1.Text = "";
break; } case 3: try
  {
  b = a * double.Parse(textBox1.Text);
  textBox1.Text = b.ToString(); break;}

   catch { textBox1.Text = ""; break; }

case 4:
  try
  {
    if (b == 0)
    {
      textBox1.Text = "Eroare";
    }
    else
    {
      b = a / double.Parse(textBox1.Text);
      textBox1.Text = b.ToString();
    }
    break;
  }
  catch { textBox1.Text = "";
break; } case 5:
  try
  {
    if (a == 0) { textBox1.Text =
    "Eroare"; } else
    {
      b = 1 / a;
      textBox1.Text = b.ToString();
    }
    break;
```

```
   }
   catch { textBox1.Text = "";
break; } case 6: b = Math.Pow(a ,
2 );
   textBox1.Text = b.ToString();
```

```
            break;
        case 7:
            if(a<0)
            { textBox1.Text =
            "Eroare"; } else{ b =
            Math.Sqrt(a);
                textBox1.Text = b.ToString();
            }
            break;
        case 8:
            b = Math.Exp(a);
            textBox1.Text =
            b.ToString(); break;
        case 9:
            b = Math.Log(a);
            textBox1.Text =
            b.ToString(); break;
        case 10:
            b = Math.Log10(a);
            textBox1.Text =
            b.ToString(); break;
        case 11:
            b = Math.Cos(a);
            textBox1.Text =
            b.ToString(); break;
        case 15:
            b = Math.Sin(a);
            textBox1.Text =
            b.ToString(); break;
        case 16:
            b = Math.Tan(a);
            textBox1.Text =
            b.ToString(); break;

        default:
                break;
    }
    label1.Text = "";

}
```

```
private void button12_Click(object sender, EventArgs e)
{

    textBox1.Text = textBox1.Text + "1";
```

```
}

private void button13_Click(object sender, EventArgs e)
{

   textBox1.Text = textBox1.Text + "2";
}

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

private void button8_Click(object sender,
EventArgs e)
{
   textBox1.Text = textBox1.Text + "4";
}

private void button9_Click(object sender,
EventArgs e)
{
   textBox1.Text = textBox1.Text + "5";
}

private void button10_Click(object sender, EventArgs e)
{
   textBox1.Text = textBox1.Text + "6";
}

private void button4_Click(object sender,
EventArgs e)
{
   textBox1.Text = textBox1.Text + "7";
}

private void button5_Click(object sender,
EventArgs e)
{
   textBox1.Text = textBox1.Text + "8";
}
```

```
private void button6_Click(object sender,
EventArgs e)
{


   textBox1.Text = textBox1.Text + "9";
```

```
    }

    private void button15_Click(object sender, EventArgs e)
    {

      try
      {
        c = 1;
        a = double.Parse(textBox1.Text);
       label1.Text = a.ToString() + "+";
       textBox1.Clear();
      }
      catch
      {
textBox1.Text ="";
      }
    }

    private void button11_Click(object sender, EventArgs e)
    {
      try
      {
        a = double.Parse(textBox1.Text);
       textBox1.Clear();
        c = 2;
       label1.Text = a.ToString() + "-";
      }
      catch { textBox1.Text = ""; }
    }

    private void button7_Click(object sender,
    EventArgs e)
    {
      try
      {
        a = double.Parse(textBox1.Text);
       textBox1.Clear();
        c = 3;
        label1.Text = a.ToString() + "x";
      }
      catch { textBox1.Text = ""; }

    }
```

```
private void button3_Click(object sender,
EventArgs e)
{
```

```
    try
    {
        a = double.Parse(textBox1.Text);
       textBox1.Clear();
        c = 4;
        label1.Text = a.ToString() + "÷";
    }
    catch
    {
        textBox1.Text = "";
    }
}

private void button1_Click(object sender,
EventArgs e)
{
  textBox1.Clear(
   ); label1.Text =
   "" ;
}

private void button2_Click(object sender,
EventArgs e)
{
   int lenght = textBox1.Text.Length
   -1; string text = textBox1.Text;
   textBox1.Clear();
   for(int i=0; i<lenght;i++)
   {
      textBox1.Text = textBox1.Text + text[i];
   }
}
private void button21_Click(object sender, EventArgs e)
{
   try
   {
      a = double.Parse(textBox1.Text);
      textBox1.Text = "1/" + textBox1.Text;

      c = 5;

      label1.Text = "1/"+a.ToString();
   }
```

```
    catch { textBox1.Text = ""; }
}
private void button22_Click(object sender, EventArgs e)
{
    try
    {
```

```
      a = double.Parse(textBox1.Text);
      textBox1.Text = textBox1.Text +
      "^2"; c = 6;
      label1.Text = a.ToString() + "^2";
   }
   catch { textBox1.Text = ""; }
}
private void button20_Click(object sender, EventArgs e)
{
   try
   {
         a = double.Parse(textBox1.Text);
         textBox1.Text = "√" +
         textBox1.Text; c = 7;
         label1.Text = "√" + a.ToString();
   }
   catch { textBox1.Text = ""; }
}
private void button32_Click(object sender, EventArgs e)
{
   try
   {
      a = double.Parse(textBox1.Text);
      textBox1.Text = "e^" +
      textBox1.Text; c = 8;
      label1.Text = "e^"+ a.ToString() ;
   }
   catch { textBox1.Text = ""; }
}

private void button31_Click(object sender, EventArgs e)
{
   try
   {
      a = double.Parse(textBox1.Text);
      textBox1.Text = "log " +
      textBox1.Text; c = 9;
      label1.Text ="log "+ a.ToString() ;
   }
   catch { textBox1.Text = ""; }
}
```

```
private void button28_Click(object sender, EventArgs e)
{
   try
```

```
        {
          a = double.Parse(textBox1.Text);
          textBox1.Text = "log10 " +
          textBox1.Text; c = 10;
          label1.Text ="log10"+"("+ a.ToString()+")" ;
        }
        catch { textBox1.Text = ""; }
      }

      private void button26_Click(object sender, EventArgs e)
      {
        try
        {
          a = double.Parse(textBox1.Text);
          textBox1.Text = "Cos " +
          textBox1.Text; c = 11;
          label1.Text ="Cos "+ a.ToString() ;
        }
        catch { textBox1.Text = ""; }
      }

      private void button27_Click(object sender, EventArgs e)
      {
        try
        {
          a = double.Parse(textBox1.Text);
          textBox1.Text = "Sin " +
          textBox1.Text; c = 15;
          label1.Text ="Sin "+ a.ToString() ;
        }
        catch { textBox1.Text = ""; }
      }
      private void button25_Click(object sender, EventArgs e)
      {
try
        {
{
            a = double.Parse(textBox1.Text);
            textBox1.Text = "tg " +
            textBox1.Text; c = 16;
            label1.Text ="tg "+ a.ToString() ;
          }}
```

```
            catch { textBox1.Text = ""; }
        }
    private void textBox1_KeyPress(object sender, KeyPressEventArgs e)
```

```
{
   if (e.KeyChar == 44 && textBox1.Text.Contains(',')) e.Handled = true; if ((e.KeyChar
   < 48 || e.KeyChar > 57) && e.KeyChar != 44)
      e.Handled = true;
   if (e.KeyChar == 47) button3_Click(sender, e); if (e.KeyChar == 43)
   button15_Click(sender, e); if (e.KeyChar == 45) button11_Click(sender, e);
   if (e.KeyChar == 42) button7_Click(sender, e); if (e.KeyChar == 13)
   button19_Click(sender, e); if (e.KeyChar == 8) button2_Click(sender, e);
}}}
```

```
}
int c=1;
double a,
b,l; bool s =
true;
private void button16_Click(object sender, EventArgs e)
{
  if(s==true)
  {
    textBox1.Text = "-" +
    textBox1.Text; s = false;
  }
  else
  {
    textBox1.Text = textBox1.Text.Replace("-
    ", ""); s = true;
  }
}

private void button17_Click(object sender, EventArgs e)
{
  try
  {
    if (s == true) { textBox1.Text = textBox1.Text + ","; s = false; } else
    { textBox1.Text = textBox1.Text.Replace(",", ""); s = true; }
  }
  catch { textBox1.Text = ""; }

}

private void button18_Click(object sender, EventArgs e)
{
  textBox1.Text = textBox1.Text + "0";
}

private void button19_Click(object sender, EventArgs e)
{
  switch(c)
  {
    case 1:
      try
      {
```

```
    b = a + double.Parse(textBox1.Text);
    textBox1.Text = b.ToString();
    break;
}
```

```
  catch { textBox1.Text = "";
break; } case 2:
  try
  {
    b = a -
    double.Parse(textBox1.Text);
    textBox1.Text = b.ToString();
    break;
  }
  catch { textBox1.Text = "";
break; } case 3: try
  {
  b = a * double.Parse(textBox1.Text);
  textBox1.Text = b.ToString(); break;}

   catch { textBox1.Text = ""; break; }

case 4:
  try
  {
    if (b == 0)
    {
      textBox1.Text = "Eroare";
    }
    else
    {
      b = a / double.Parse(textBox1.Text);
      textBox1.Text = b.ToString();
    }
    break;
  }
  catch { textBox1.Text = "";
break; } case 5:
  try
  {
    if (a == 0) { textBox1.Text =
    "Eroare"; } else
    {
      b = 1 / a;
      textBox1.Text = b.ToString();
    }
    break;
```

```
   }
   catch { textBox1.Text = "";
break; } case 6: b = Math.Pow(a ,
2 );
   textBox1.Text = b.ToString();
```

```
            break;
        case 7:
            if(a<0)
            { textBox1.Text =
            "Eroare"; } else{ b =
            Math.Sqrt(a);
                textBox1.Text = b.ToString();
            }
            break;
        case 8:
            b = Math.Exp(a);
            textBox1.Text =
            b.ToString(); break;
        case 9:
            b = Math.Log(a);
            textBox1.Text =
            b.ToString(); break;
        case 10:
            b = Math.Log10(a);
            textBox1.Text =
            b.ToString(); break;
        case 11:
            b = Math.Cos(a);
            textBox1.Text =
            b.ToString(); break;
        case 15:
            b = Math.Sin(a);
            textBox1.Text =
            b.ToString(); break;
        case 16:
            b = Math.Tan(a);
            textBox1.Text =
            b.ToString(); break;

        default:
                break;
    }
    label1.Text = "";

}
```

```
private void button12_Click(object sender, EventArgs e)
{

    textBox1.Text = textBox1.Text + "1";
```

```
}

private void button13_Click(object sender, EventArgs e)
{

   textBox1.Text = textBox1.Text + "2";
}

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

private void button8_Click(object sender,
EventArgs e)
{
   textBox1.Text = textBox1.Text + "4";
}

private void button9_Click(object sender,
EventArgs e)
{
   textBox1.Text = textBox1.Text + "5";
}

private void button10_Click(object sender, EventArgs e)
{
   textBox1.Text = textBox1.Text + "6";
}

private void button4_Click(object sender,
EventArgs e)
{
   textBox1.Text = textBox1.Text + "7";
}

private void button5_Click(object sender,
EventArgs e)
{
   textBox1.Text = textBox1.Text + "8";
}
```

```
private void button6_Click(object sender,
EventArgs e)
{


   textBox1.Text = textBox1.Text + "9";
```

```
    }

    private void button15_Click(object sender, EventArgs e)
    {

      try
      {
        c = 1;
        a = double.Parse(textBox1.Text);
       label1.Text = a.ToString() + "+";
       textBox1.Clear();
      }
      catch
      {
textBox1.Text ="";
      }
    }

    private void button11_Click(object sender, EventArgs e)
    {
      try
      {
        a = double.Parse(textBox1.Text);
       textBox1.Clear();
        c = 2;
       label1.Text = a.ToString() + "-";
      }
      catch { textBox1.Text = ""; }
    }

    private void button7_Click(object sender,
    EventArgs e)
    {
      try
      {
        a = double.Parse(textBox1.Text);
       textBox1.Clear();
        c = 3;
        label1.Text = a.ToString() + "x";
      }
      catch { textBox1.Text = ""; }

    }
```

```
private void button3_Click(object sender,
EventArgs e)
{
```

```
    try
    {
        a = double.Parse(textBox1.Text);
       textBox1.Clear();
        c = 4;
        label1.Text = a.ToString() + "÷";
    }
    catch
    {
        textBox1.Text = "";
    }
}

private void button1_Click(object sender,
EventArgs e)
{
  textBox1.Clear(
   ); label1.Text =
   "" ;
}

private void button2_Click(object sender,
EventArgs e)
{
   int lenght = textBox1.Text.Length
   -1; string text = textBox1.Text;
   textBox1.Clear();
   for(int i=0; i<lenght;i++)
   {
      textBox1.Text = textBox1.Text + text[i];
   }
}
private void button21_Click(object sender, EventArgs e)
{
   try
   {
      a = double.Parse(textBox1.Text);
      textBox1.Text = "1/" + textBox1.Text;

      c = 5;

      label1.Text = "1/"+a.ToString();
   }
```

```
    catch { textBox1.Text = ""; }
}
private void button22_Click(object sender, EventArgs e)
{
    try
    {
```

```
      a = double.Parse(textBox1.Text);
      textBox1.Text = textBox1.Text +
      "^2"; c = 6;
      label1.Text = a.ToString() + "^2";
   }
   catch { textBox1.Text = ""; }
}
private void button20_Click(object sender, EventArgs e)
{
   try
   {
         a = double.Parse(textBox1.Text);
         textBox1.Text = "√" +
         textBox1.Text; c = 7;
         label1.Text = "√" + a.ToString();
   }
   catch { textBox1.Text = ""; }
}
private void button32_Click(object sender, EventArgs e)
{
   try
   {
      a = double.Parse(textBox1.Text);
      textBox1.Text = "e^" +
      textBox1.Text; c = 8;
      label1.Text = "e^"+ a.ToString() ;
   }
   catch { textBox1.Text = ""; }
}

private void button31_Click(object sender, EventArgs e)
{
   try
   {
      a = double.Parse(textBox1.Text);
      textBox1.Text = "log " +
      textBox1.Text; c = 9;
      label1.Text ="log "+ a.ToString() ;
   }
   catch { textBox1.Text = ""; }
}
```

```
private void button28_Click(object sender, EventArgs e)
{
    tr
```

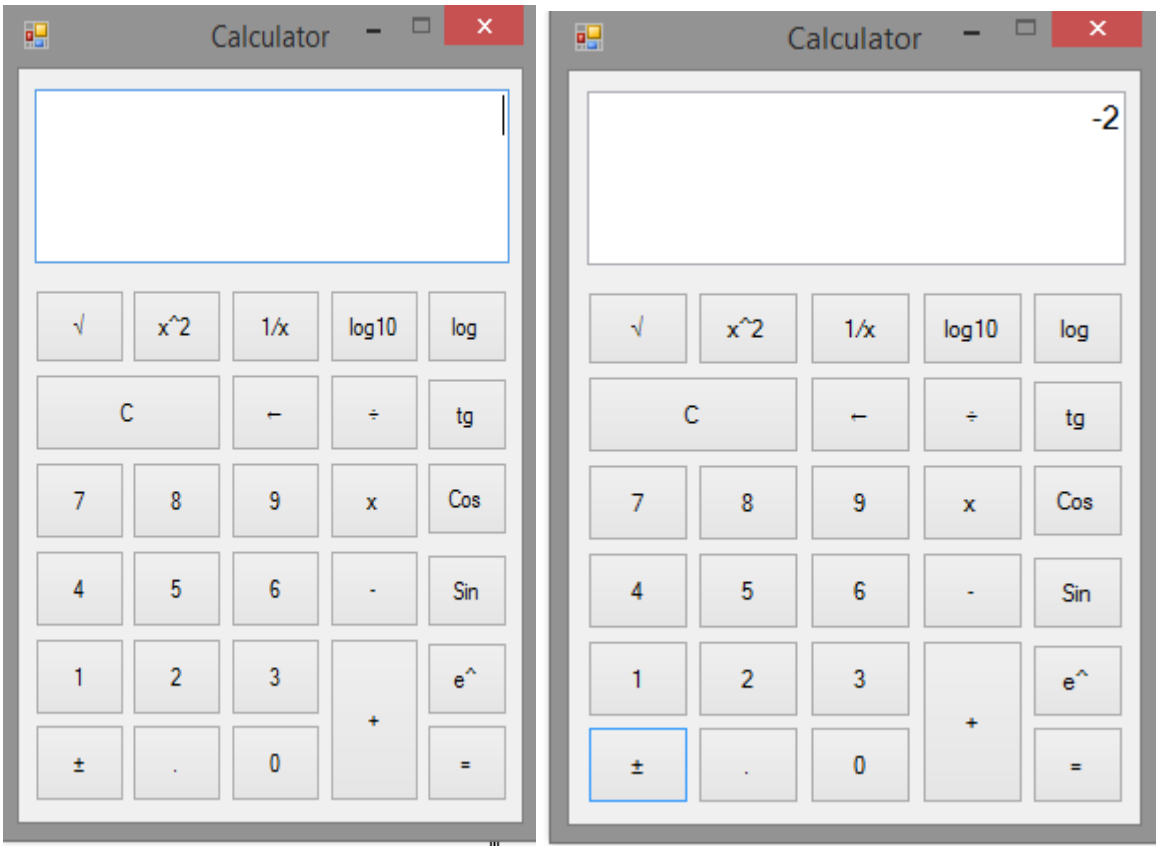
```
{
            a = double.Parse(textBox1.Text);
            textBox1.Text = "log10 " +
            textBox1.Text; c = 10;
            label1.Text ="log10"+"("+ a.ToString()+")" ;
          }
          catch { textBox1.Text = ""; }
        }

        private void button26_Click(object sender, EventArgs e)
        {
          try
          {
            a = double.Parse(textBox1.Text);
            textBox1.Text = "Cos " +
            textBox1.Text; c = 11;
            label1.Text ="Cos "+ a.ToString() ;
          }
          catch { textBox1.Text = ""; }
        }

        private void button27_Click(object sender, EventArgs e)
        {
          try
          {
            a = double.Parse(textBox1.Text);
            textBox1.Text = "Sin " +
            textBox1.Text; c = 15;
            label1.Text ="Sin "+ a.ToString() ;
          }
          catch { textBox1.Text = ""; }
        }
        private void button25_Click(object sender, EventArgs e)
        {
try
          {
{
              a = double.Parse(textBox1.Text);
              textBox1.Text = "tg " +
              textBox1.Text; c = 16;
              label1.Text ="tg "+ a.ToString() ;
            }}
```

```
            catch { textBox1.Text = ""; }
        }
    private void textBox1_KeyPress(object sender, KeyPressEventArgs e)
```

```
{
    if (e.KeyChar == 44 && textBox1.Text.Contains(',')) e.Handled = true; if ((e.KeyChar < 48
    || e.KeyChar > 57) && e.KeyChar != 44)
      e.Handled = true;
    if (e.KeyChar == 47) button3_Click(sender, e); if (e.KeyChar == 43)
    button15_Click(sender, e); if (e.KeyChar == 45) button11_Click(sender, e); if
    (e.KeyChar == 42) button7_Click(sender, e); if (e.KeyChar == 13)
    button19_Click(sender, e); if (e.KeyChar == 8) button2_Click(sender, e);
  }}}
```



Concluzie:
In aceasta lucrare de laborator am capatat deprinderi practice in lucrul cu limbajul C#, la aplicatia aceasta, am invatat sa creez rapid si comod interfata grafica in limbajul C#.
La finisarea laboratorului au fost atinse toate scopurile, a fost realizat un calculator care permite efectuarea atit a operatiilor de baza cu numere zecimale si intregi cit si a unor operatii adaugatoare(ridicarea la putere, rsdacina patrata,etc.).