INTERPOLACION

```
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 MetodosNumericos2
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }
        double x,fx,fr,de,f_xi,p=0;
        int G,i,contador=0,j;

        private void txtXi_KeyPress(object sender, KeyPressEventArgs e)
        {
            if (Char.IsLetter(e.KeyChar) || Char.IsSymbol(e.KeyChar) ||
Char.IsWhiteSpace(e.KeyChar))
            {
                e.Handled = true;

                return;

            }
        }

        private void label1_Click(object sender, EventArgs e)
        {

        }

        private void cmb_SelectedIndexChanged(object sender, EventArgs e)
        {

        }
        string[] Xs;
        string[] FXs;
        double punto,res,R,FO,R2,R3,R4,num;
        int k,t;

        double[] Xi;

        double[] Rs;


        double[,] F;


        private void Form1_Load(object sender, EventArgs e)
```

```
        {

        }

        private void button2_Click(object sender, EventArgs e)
        {
            Xs = txtXi.Text.Split(',');
            FXs = txtFX.Text.Split(',');
            int datos = Xs.Length;


            for (t = 0; t < datos; t++)
            {
                for (i = t + 1; i < datos; i++)
                {
                    if (Xs[t] == Xs[i])
                    {
                        MessageBox.Show("Hay dos elementos iguales en %d y
%d\n"+i.ToString()+" "+t.ToString());
                        return;
                    }
                }
            }



                if (txtXi.Text == " " || txtFX.Text == " " || txtPunto.Text == "")
            {

                MessageBox.Show("Llene todos los campos", "Advertencia",
MessageBoxButtons.OK, MessageBoxIcon.Warning);
                return;
            }

            if (Xs.Length != FXs.Length)
            {
                MessageBox.Show("ingrese la misma cantidad de datos", "Advertencia",
MessageBoxButtons.OK, MessageBoxIcon.Warning);
                return;


            }



            else
            {

                try
                {

                    punto = Convert.ToDouble(txtPunto.Text);
                    Xi = new double[datos];
                    F = new double[datos, datos];

                    for (i = 0; i < datos; i++)
                    {
                        Xi[i] = Convert.ToDouble(Xs[i]);
```

```
                        F[0, i] = Convert.ToDouble(FXs[i]);

                    }
                    for (j = 1; j < datos; j++)
                    {
                        for (i = 0; i < datos - j; i++)
                        {
                            F[j, i] = (F[j - 1, i + 1] - F[j - 1, i]) / (Xi[i + j] -
Xi[i]);
                        }


                    }
                }
                catch (Exception exc)
                {
                    MessageBox.Show("Ingrese los valores correctamente");
                    return;

                }

                txtR.Text = F[j - 1, i - 1].ToString();

                R4 = F[0, 0];
                MessageBox.Show("Resultado" + R4 + "dsds");
                for (i = 1; i < datos; i++)
                {

                    R = (F[i, 0]);
                    for (k = 0; k < i; k++)
                    {
                        R = R * ((punto) - (Xi[k]));


                    }

                    R4 = R4 + R;
                    MessageBox.Show("Resultado" + R4 + "dsds");

                }
                txtR2.Text = R4.ToString();

                R4 = 0;
            }


        }

        private void button1_Click(object sender, EventArgs e)
        {




            /*for (i = 0; i < G; i++)
            {
```

```
                x = Convert.ToDouble(
Microsoft.VisualBasic.Interaction.InputBox("Ingrese xi" + (i + 1)));
                Xi[i] = x;
                de =
Convert.ToDouble(Microsoft.VisualBasic.Interaction.InputBox("Ingrese f(xi)" + (i +
1)));

                F[i, i] = de;


            }*/


        }
    }
}
```