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 Calculator

{

public partial class Form1 : Form

{

public Form1()

{

InitializeComponent();

}

private int operatorType = 0;

private double fnum = 0.0;

private double snum = 0.0;

private double tempSave = 0.0;

// private Single Degree = 0;

public void operatorTypeValue( int Operation) //save the first number in a temporary memory and wait for secend number to be imported

{

if (!String.IsNullOrEmpty(txtfnum.Text))

{

operatorType = Operation;

fnum = Convert.ToDouble(txtfnum.Text);

tempSave = fnum;

txtfnum.Clear();

}

}

public double ConvToDegree( double fnum) //convert radian tyo degree to pass to math library

{

; double Degree = fnum / (180 / Math.PI);

return Degree;

}

public void EnableButton() //Enable all numeric buttons to continue

{

btn1.Enabled = true;

btn2.Enabled = true;

btn3.Enabled = true;

btn4.Enabled = true;

btn5.Enabled = true;

btn6.Enabled = true;

btn7.Enabled = true;

btn8.Enabled = true;

btn9.Enabled = true;

btn0.Enabled = true;

}

public void DisableButton() //disable all numeric buttons

{

btn1.Enabled = false;

btn2.Enabled = false;

btn3.Enabled = false;

btn4.Enabled = false;

btn5.Enabled = false;

btn6.Enabled = false;

btn7.Enabled = false;

btn8.Enabled = false;

btn9.Enabled = false;

btn0.Enabled = false;

}

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

{

switch ( operatorType )

{

case 1: //return an integer for each arithmatic symbole

snum = Convert.ToDouble(txtfnum.Text);

txtfnum.Text = Convert.ToString(MathLib.Arithmetic.Add(tempSave, snum));

lblShow.Text += "=" + txtfnum.Text;

DisableButton();

break;

case 2:

snum = Convert.ToDouble(txtfnum.Text);

txtfnum.Text = Convert.ToString(MathLib.Arithmetic.Sub(tempSave, snum)); //use Arismethic Library to calculate result

lblShow.Text += "=" + txtfnum.Text;

DisableButton();

break;

case 3:

snum = Convert.ToDouble(txtfnum.Text);

txtfnum.Text = Convert.ToString(MathLib.Arithmetic.Mult(tempSave, snum));

lblShow.Text += "=" + txtfnum.Text;

DisableButton();

break;

case 4:

snum = Convert.ToDouble(txtfnum.Text);

txtfnum.Text = Convert.ToString(MathLib.Arithmetic.Div(tempSave, snum));

lblShow.Text += "=" + txtfnum.Text;

DisableButton();

break;

case 5:

if (fnum != 90 && fnum != 270)

{

double tangant = BacsicTrigonometric.Trigonometric.Tan(fnum); //use Trigonometric Library to calculate result

txtfnum.Text = Convert.ToString(tangant);

lblShow.Text = " Tan " + fnum + "=" + txtfnum.Text;

DisableButton();

}

else

{

txtfnum.Text = "Error";

DisableButton();

}

break;

case 6:

double CtanG = ConvToDegree(fnum);

txtfnum.Text = Convert.ToString((1/Math.Tan(CtanG)));

lblShow.Text = "CotG = " + txtfnum.Text;

break;

case 7:

double sinu = BacsicTrigonometric.Trigonometric.Sin(fnum);

txtfnum.Text = Convert.ToString( sinu);

lblShow.Text = "Sin = " + txtfnum.Text;

break;

case 8:

double coSin = BacsicTrigonometric.Trigonometric.Cosin(fnum);

txtfnum.Text = Convert.ToString(coSin);

lblShow.Text = "Cos = " + txtfnum.Text;

break;

}

// txtfnum.Clear();

operatorType = 0; //reset operation type to get ready for next operatiom

}

private void btnAdd\_Click\_1(object sender, EventArgs e)

{

operatorTypeValue(1); //return value 1 for addition

lblShow.Text += "+";

EnableButton();

}

private void btnTake\_Click\_1(object sender, EventArgs e)

{

operatorTypeValue(2);//return value 2 for taking

lblShow.Text += "-";

EnableButton();

}

private void btnMult\_Click\_1(object sender, EventArgs e)

{

operatorTypeValue(3);

lblShow.Text += "\*";

EnableButton();

}

private void btnDiv\_Click\_1(object sender, EventArgs e)

{

operatorTypeValue(4);

lblShow.Text += "/";

EnableButton();

}

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

{

txtfnum.Clear();

lblShow.Text = "";

EnableButton();

}

private void btntan\_Click\_1(object sender, EventArgs e)

{

lblShow.Text = "Tan " + txtfnum.Text;

operatorTypeValue(5);

}

private void btncotn\_Click\_1(object sender, EventArgs e)

{

operatorTypeValue(6);

}

private void btnsin\_Click\_1(object sender, EventArgs e)

{

operatorTypeValue(7);

}

private void btncos\_Click\_1(object sender, EventArgs e)

{

operatorTypeValue(8);

}

private void btn1\_Click(object sender, EventArgs e)

{

txtfnum.Text = txtfnum.Text + "1";

lblShow.Text += "1";

}

private void btn2\_Click(object sender, EventArgs e)

{

txtfnum.Text = txtfnum.Text + "2";

lblShow.Text += "2";

}

private void btn3\_Click(object sender, EventArgs e)

{

txtfnum.Text = txtfnum.Text + "3";

lblShow.Text += "3";

}

private void btn4\_Click(object sender, EventArgs e)

{

txtfnum.Text = txtfnum.Text + "4";

lblShow.Text += "4";

}

private void btn5\_Click(object sender, EventArgs e)

{

txtfnum.Text = txtfnum.Text + "5";

lblShow.Text += "5";

}

private void btn6\_Click(object sender, EventArgs e)

{

txtfnum.Text = txtfnum.Text + "6";

lblShow.Text += "6";

}

private void btn7\_Click(object sender, EventArgs e)

{

txtfnum.Text = txtfnum.Text + "7";

lblShow.Text += "7";

}

private void btn8\_Click(object sender, EventArgs e)

{

txtfnum.Text = txtfnum.Text + "8";

lblShow.Text += "8";

}

private void btn9\_Click(object sender, EventArgs e)

{

txtfnum.Text = txtfnum.Text + "9";

lblShow.Text += "9";

}

private void btn0\_Click(object sender, EventArgs e)

{

txtfnum.Text = txtfnum.Text + "0";

lblShow.Text += "0";

}

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

{

if ( ! txtfnum.Text.Contains(".")) //check if text field contains dot

{

txtfnum.Text = txtfnum.Text + ".";

lblShow.Text += ".";

}

}

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

{

if ( ! String.IsNullOrEmpty(txtfnum.Text))

{

double num = double.Parse(txtfnum.Text);

if(tempSave == 0.0)

lblShow.Text = "";

txtfnum.Text = Convert.ToString(-num);

if (operatorType == 2)

lblShow.Text = Convert.ToString(tempSave) + "-" + Convert.ToString(num);

else

lblShow.Text += Convert.ToString(-num);

}

}

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

{

}

private void Form1\_Load(object sender, EventArgs e)

{

}

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

{

if(!String.IsNullOrEmpty(txtfnum.Text))

{

double num = double.Parse(txtfnum.Text);

num = BasicAlgebraic.Algebraic.Square(num); //use Algebraic Library to calculate result

txtfnum.Text = Convert.ToString(num);

lblShow.Text = txtfnum.Text;

DisableButton();

}

}

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

{

if (!String.IsNullOrEmpty(txtfnum.Text))

{

double num = double.Parse(txtfnum.Text);

num = BasicAlgebraic.Algebraic.Cube(num);

txtfnum.Text = Convert.ToString(num);

lblShow.Text = txtfnum.Text;

DisableButton();

}

}

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

{

if (!String.IsNullOrEmpty(txtfnum.Text))

{

double num = double.Parse(txtfnum.Text);

num = BasicAlgebraic.Algebraic.Inbvert(num);

txtfnum.Text = Convert.ToString(num);

lblShow.Text = txtfnum.Text;

DisableButton();

}

}

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

{

ActiveForm.ResetText(); //reset the name of form

ActiveForm.Text = "Standars";//assign new name to form

ActiveForm.Size = new Size(350,353);

}

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

{

ActiveForm.ResetText(); //reset the name of form

ActiveForm.Text = "Scientific";//assign new name to form

ActiveForm.Size = new Size(433, 353);

}

}

}