实验三 Windows 应用程序开发

**一、实验目的**

1. 掌握窗口控件的使用方法；

2. 掌握 Windows 的编程基础。

**二、实验要求**

根据要求，编写 C#程序，并将程序代码和运行结果写入实验报告。

**三、实验内容**

1．编写一个计算器，练习在窗体上添加控件、调整控件的布局，设置或修改控件属性， 编写事件处理程序的方法。

(1)新建 windows 应用程序。在窗体 Form 上拖放一个 TextBox 控件、十六个 Button 控 件，整个窗体布局如下图所示。

(2)打开代码窗口，添加如下全局变量：

double a = 0;

double b = 0;

bool c = false;

string d;

(3)双击”1”按钮，添加如下事件处理程序：

private void button1\_Click(object sender, EventArgs e)

{

if (c == true)

{

textBox1.Text = "";

c = false;

}

textBox1.Text += "1";

}

(4)双击”2”按钮，添加如下事件处理程序：

private void button2\_Click(object sender, EventArgs e)

{

if (c == true)

{

textBox2.Text = "";

c = false;

}

textBox1.Text += "2";

}

(5)双击”3”按钮，添加如下事件处理程序：

private void button3\_Click(object sender, EventArgs e)

{

if (c == true)

{ textBox3.Text = "";

c = false;

}

textBox1.Text += "3";

}

(6)双击”4”按钮，添加如下事件处理程序：

private void button4\_Click(object sender, EventArgs e)

{

if (c == true)

{

textBox1.Text = "";

c = false;

3 }

textBox1.Text += "4";

}

(7)双击”5”按钮，添加如下事件处理程序：

private void button5\_Click(object sender, EventArgs e)

{

if (c == true)

{

textBox1.Text = "";

c = false;

}

textBox1.Text += "5"; }

(8)双击”6”按钮，添加如下事件处理程序：

private void button6\_Click(object sender, EventArgs e)

{

if (c == true)

{

textBox1.Text = "";

c = false;

}

textBox1.Text += "6"; }

(8)双击”7”按钮，添加如下事件处理程序：

private void button7\_Click(object sender, EventArgs e)

{

if (c == true)

{

textBox1.Text = "";

c = false;

}

textBox1.Text += "7";

}

(10)双击”8”按钮，添加如下事件处理程序：

4 private void button8\_Click(object sender, EventArgs e)

{

if (c == true)

{

textBox1.Text = "";

c = false;

}

textBox1.Text += "8";

}

(11)双击”9”按钮，添加如下事件处理程序：

private void button9\_Click(object sender, EventArgs e)

{

if (c == true)

{

textBox1.Text = "";

c = false;

}

textBox1.Text += "9";

}

(12)双击”0”按钮，添加如下事件处理程序：

private void button12\_Click(object sender, EventArgs e)

{

if (c == true)

{

textBox1.Text = "";

c = false;

}

textBox1.Text += "0";

if (d == "/")

{ textBox1.Clear();

MessageBox.Show("除数不能为零", "错误提示", MessageBoxButtons.OK, MessageBoxIcon.Warning);

} 5 }

(13)双击”+”按钮，添加如下事件处理程序：

private void button13\_Click(object sender, EventArgs e)

{ c = true;

b = double.Parse(textBox1.Text);

d = "+";

}

(14)双击”-”按钮，添加如下事件处理程序：

private void button16\_Click(object sender, EventArgs e)

{ c = true;

b = double.Parse(textBox1.Text);

d = "-";

}

(15)双击”\*”按钮，添加如下事件处理程序：

private void button15\_Click(object sender, EventArgs e)

{ c = true;

b = double.Parse(textBox1.Text);

d = "\*";

}

(16)双击”/”按钮，添加如下事件处理程序：

private void button14\_Click(object sender, EventArgs e)

{

c = true;

b = double.Parse(textBox1.Text);

d = "/";

}

(17)双击”=”按钮，添加如下事件处理程序：

private void button17\_Click(object sender, EventArgs e) { switch (d) { 6 case "+": a = b + double.Parse(textBox1.Text); break; case "-": a = b - double.Parse(textBox1.Text); break; case "\*": a = b \* double.Parse(textBox1.Text); break; case "/": a = b / double.Parse(textBox1.Text); break; } textBox1.Text = a + ""; c = true; }

(18)双击”c”按钮，添加如下事件处理程序： private void button18\_Click(object sender, EventArgs e) { textBox1.Text = ""; }

(19)单击启动调试工具，运行计算器。

(20)在计算器中，增加四个功能键：x 2，sqrt，log, ln 四个键，分别计算求平方，开方， log，ln 值，将增加的代码写入实验报告。

程序源代码：

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 test3.\_1

{

public partial class Form1 : Form

{

double a = 0;

double b = 0;

bool c = false;

string d;

public Form1()

{

InitializeComponent();

}

private void ShowWindows\_TextChanged(object sender, EventArgs e)

{

}

private void count1\_Click(object sender, EventArgs e)

{

if(c==true)

{

ShowWindows.Text = "";

c=false;

}

ShowWindows.Text += "1";

}

private void button12\_Click(object sender, EventArgs e)

{

if (c == true)

{

ShowWindows.Text = "";

c = false;

}

ShowWindows.Text += "2";

}

private void count3\_Click(object sender, EventArgs e)

{

if (c == true)

{

ShowWindows.Text = "";

c = false;

}

ShowWindows.Text += "3";

}

private void count4\_Click(object sender, EventArgs e)

{

if (c == true)

{

ShowWindows.Text = "";

c = false;

}

ShowWindows.Text += "4";

}

private void button9\_Click(object sender, EventArgs e)

{

if (c == true)

{

ShowWindows.Text = "";

c = false;

}

ShowWindows.Text += "5";

}

private void count6\_Click(object sender, EventArgs e)

{

if (c == true)

{

ShowWindows.Text = "";

c = false;

}

ShowWindows.Text += "6";

}

private void count7\_Click(object sender, EventArgs e)

{

if (c == true)

{

ShowWindows.Text = "";

c = false;

}

ShowWindows.Text += "7";

}

private void count8\_Click(object sender, EventArgs e)

{

if (c == true)

{

ShowWindows.Text = "";

c = false;

}

ShowWindows.Text += "8";

}

private void count9\_Click(object sender, EventArgs e)

{

if (c == true)

{

ShowWindows.Text = "";

c = false;

}

ShowWindows.Text += "9";

}

private void count0\_Click(object sender, EventArgs e)

{

if (c == true)

{

ShowWindows.Text = "";

c = false;

}

ShowWindows.Text += "0";

if (d == "/")

{

ShowWindows.Clear();

MessageBox.Show("除数不能为零", "错误提示", MessageBoxButtons.OK, MessageBoxIcon.Warning);

}

}

private void counts1\_Click(object sender, EventArgs e)

{

c = true;

b = double.Parse(ShowWindows.Text);

d = "+";

}

private void counts2\_Click(object sender, EventArgs e)

{

c = true;

b = double.Parse(ShowWindows.Text);

d = "-";

}

private void counts3\_Click(object sender, EventArgs e)

{

c = true;

b = double.Parse(ShowWindows.Text);

d = "\*";

}

private void counts4\_Click(object sender, EventArgs e)

{

c = true;

b = double.Parse(ShowWindows.Text);

d = "/";

}

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

{

switch (d)

{

case "+": a = b + double.Parse(ShowWindows.Text); break;

case "-": a = b - double.Parse(ShowWindows.Text); break;

case "\*": a = b \* double.Parse(ShowWindows.Text); break;

case "/": a = b / double.Parse(ShowWindows.Text); break;

case "x^2": a = double.Parse(ShowWindows.Text) \* double.Parse(ShowWindows.Text); break;

case "sqrt": a = Math.Sqrt(double.Parse(ShowWindows.Text)); break;

case "log": a = Math.Log(double.Parse(ShowWindows.Text),b); break;

case "ln": a = Math.Log(double.Parse(ShowWindows.Text)); break;

}

ShowWindows.Text = a + "";

c = true;

}

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

{

ShowWindows.Text = "";

}

private void button4\_Click(object sender, EventArgs e)

{

c = true;

b = double.Parse(ShowWindows.Text);

d = "x^2";

}

private void counts6\_Click(object sender, EventArgs e)

{

c = true;

b = double.Parse(ShowWindows.Text);

d = "sqrt";

}

private void counts7\_Click(object sender, EventArgs e)

{

c = true;

b = double.Parse(ShowWindows.Text);

d = "log";

}

private void counts8\_Click(object sender, EventArgs e)

{

c = true;

b = double.Parse(ShowWindows.Text);

d = "ln";

}

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

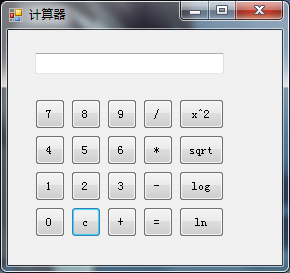
{

}

}

}

程序结果截图：



2．自己设计并编写一个 Windows 应用程序，要求至少用到 TextBox、GroupBox、 RadioButton、CheckBox、ComboBox、ListBox 控件。将程序功能、界面布局和运行结果 的截图与事件代码写在实验报告中。

源代码：

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 test3.\_2

{

public partial class Form1 : Form

{

public Form1()

{

InitializeComponent();

}

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

{

major.DropDownStyle = ComboBoxStyle.DropDownList;

major.Items.Add("软件工程");

major.Items.Add("计算机科学与技术");

major.Items.Add("网络工程");

major.Items.Add("数字媒体");

}

private void groupBox1\_Enter(object sender, EventArgs e)

{

}

private void button1\_Click(object sender, EventArgs e)

{

show.Items.Add(name.Text.Trim());

show.Items.Add(num.Text.Trim());

if (man.Checked == true)

{

show.Items.Add(man.Text.Trim());

}

else if (woman.Checked == true)

{

show.Items.Add(woman.Text.Trim());

}

if (sing.CheckState == CheckState.Checked)

{

show.Items.Add(sing.Text.Trim());

}

if (dance.CheckState == CheckState.Checked)

{

show.Items.Add(dance.Text.Trim());

}

if (study.CheckState == CheckState.Checked)

{

show.Items.Add(study.Text.Trim());

}

show.Items.Add(major.Text.Trim());

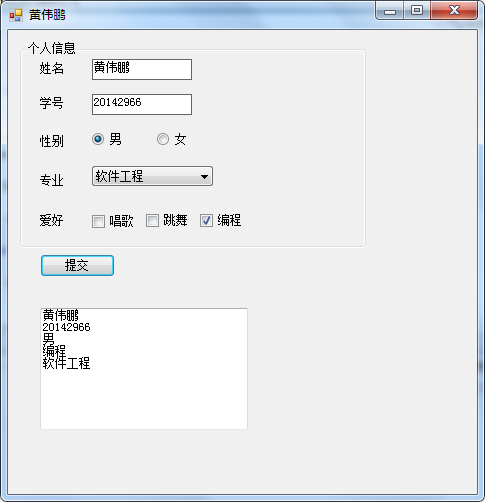
}

}

}

程序功能：修改的个人信息

程序结果截图：



**四、实验总结**

通过本次试验，我了解到了程序的基本控件的用法，了解到了自身的不足之处，通过本次试验，发现控件十分方便，要努力学会使用它。