```csharp
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 searchToSpeak
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }
```

```csharp
        private void button1_Click(object sender,
EventArgs e)
        {
            // المثال  الاول تم تقليصه الى تعليمة واحدة وتحرير ثلاثة
متغيرات لأننا لا نحتاجها

Result.Text=Convert.ToString(Convert.ToDouble(Number1.Text)
onvert.ToDouble(Number2.Text));


        }
    }
}
```

الكود الثاني مع الثالث

```csharp
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 Hw1
{
    public partial class Form1 : Form
    {
```

```csharp
public Form1()
{
    InitializeComponent();
}

private void ADD_Click(object sender,
EventArgs e)
{
    if (FirstNumber.Text == "")
    {
        MessageBox.Show("ادخل الرقم الاول");
        FirstNumber.Focus();
    }
    else if (SecondNumber.Text == "")
    {
        MessageBox.Show("ادخل الرقم الثاني");
        SecondNumber.Focus();
    }
    else
    {
        Result.Text =
(Convert.ToDouble(FirstNumber.Text) +
Convert.ToDouble(SecondNumber.Text)).ToString();
        FirstNumber.Text = SecondNumber.Text
= null;
    }
}

private void FirstNumber_KeyPress(object
sender, KeyPressEventArgs e)
{
    if ((e.KeyChar < 45 || e.KeyChar > 57) &&
(e.KeyChar != 8))
        e.Handled = true;
```

```csharp
        }

        private void SecondNumber_KeyPress(object
sender, KeyPressEventArgs e)
        {
            if ((e.KeyChar < 45 || e.KeyChar > 57) &&
(e.KeyChar != 8))
                e.Handled = true;
        }

        private void FirstNumber_TextChanged(object
sender, EventArgs e)
        {
            if (FirstNumber.Text != "" &&
SecondNumber.Text != "")
            {
                ADD.Enabled = true;
            }
            else
                ADD.Enabled = false;
        }

        private void SecondNumber_TextChanged(object
sender, EventArgs e)
        {
            if (FirstNumber.Text != "" &&
SecondNumber.Text != "")
            {
                ADD.Enabled = true;
            }
            else
                ADD.Enabled = false;
        }
```

```csharp
        private void Form1_Load(object sender,
EventArgs e)
        {
            Result.Text =
Convert.ToString(Convert.ToByte('\n'));
        }
    }
}
```

البرنامج الثاني

```csharp
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 HW1.b
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }


        private void FirstNumber_KeyPress(object sender, KeyPressEventArgs e)
        {
            if ((e.KeyChar < 45 || e.KeyChar > 57) && (e.KeyChar != 8))
                e.Handled = true;
        }

        private void SecondNumber_KeyPress(object sender, KeyPressEventArgs e)
        {
            if ((e.KeyChar < 45 || e.KeyChar > 57) && (e.KeyChar != 8))
```

```csharp
                e.Handled = true;
        }

        private void SecondNumber_TextChanged(object
sender, EventArgs e)
        {
            ADD.Enabled = Sub.Enabled =
Multiply.Enabled = Division.Enabled =
(FirstNumber.Text != "" && SecondNumber.Text != "");
        }

        private void Form1_Load(object sender,
EventArgs e)
        {
            this.Size = new Size(280, 280);
            FirstNumber.Size = SecondNumber.Size =
Result.Size = new Size(120, 24);
            FirstNumber.Left = SecondNumber.Left =
Result.Left = 20;

            FirstNumber.Top = label1.Top = 20;
            SecondNumber.Top = label2.Top = 50;
            Result.Top = label3.Top = 80;

            label1.AutoSize = label2.AutoSize =
label3.AutoSize = false;
            label1.Size = label2.Size = label3.Size =
new Size(80, 24);
            label1.Left = label2.Left = label3.Left =
150;

            ADD.Size = Division.Size = Multiply.Size =
Sub.Size = new Size(100, 40);
```

```csharp
            ADD.Left = Division.Left = 20;
            Sub.Left = Multiply.Left = 140;

            ADD.Top = Sub.Top = 120;
            Division.Top = Multiply.Top = 180;


            ADD.Enabled = Division.Enabled =
Sub.Enabled = Multiply.Enabled = false;
            Result.ReadOnly = true;
            Result.BackColor = Color.Yellow;
            this.Text = "آلة حاسبة";
            ADD.BackColor = Color.Green;

        }

        private void ADD_Click(object sender,
EventArgs e)
        {
            Result.Text =
(Convert.ToDouble(FirstNumber.Text) +
Convert.ToDouble(SecondNumber.Text)).ToString();
            FirstNumber.Text = SecondNumber.Text =
null;
        }

        // زر الظرب
        private void button3_Click(object sender,
EventArgs e)
        {
            Result.Text =
(Convert.ToDouble(FirstNumber.Text) *
Convert.ToDouble(SecondNumber.Text)).ToString();
```
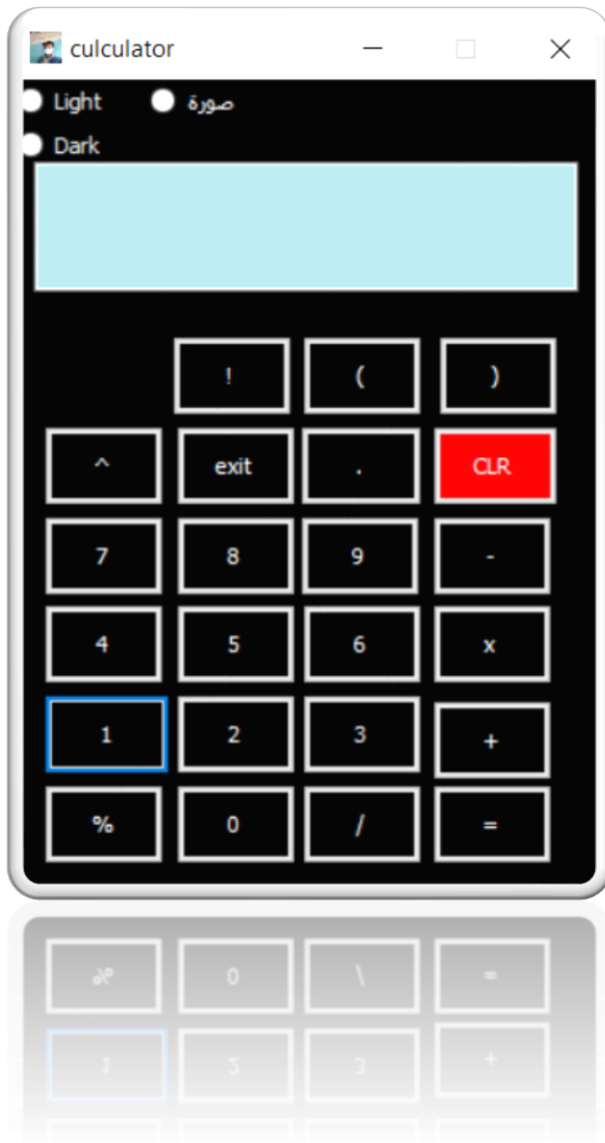
```csharp
            FirstNumber.Text = SecondNumber.Text =
null;
        }

        private void Sub_Click(object sender,
EventArgs e)
        {
            Result.Text =
(Convert.ToDouble(FirstNumber.Text) -
Convert.ToDouble(SecondNumber.Text)).ToString();
            FirstNumber.Text = SecondNumber.Text =
null;
        }

        private void Division_Click(object sender,
EventArgs e)
        {
            if(Convert.ToDouble(SecondNumber.Text) ==
0 )
            {
                MessageBox.Show("لايمكن القسمة على الصفر");
                SecondNumber.Focus();
            }
            else
                Result.Text =
(Convert.ToDouble(FirstNumber.Text) /
Convert.ToDouble(SecondNumber.Text)).ToString();
            FirstNumber.Text = SecondNumber.Text =
null;
        }
    }
}
```

```csharp
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
```

```csharp
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace culculator
{
    /* */

    public partial class Form1 : Form
    {
        class node
        {
            char ch;
            double dig;
            public node next;

            public node()
            {
                this.ch = '\0';
                this.dig = 0;
                this.next = null;
            }
            public node(char ch)
            {
                this.ch = ch;
                this.next = null;
            }

            public node(double dg)
            {
                this.dig = dg;
                this.next = null;
            }
        }
```

```csharp
        public char getch()
        {
            return this.ch;
        }
        public double getdig()
        {
            return this.dig;
        }
}

class stack
{
    node top = new node();
    node top2 = new node();
    int s1 = 0;
    int s2 = 0;
    public stack()
    {
        this.top = null;
        this.top2 = null;
    }
    // دالة اختبار اذا كان مكدس العمليات فارغ
    public bool isempty()
    {
        return this.top == null;
    }
    // دالة اختبار اذا كان مكدس الاعداد فارغ
    public bool isempty2()
    {
        return this.top2 == null;
    }
    // دالة ادخال العمليات
    public void push(char ch)
```

```java
{
    node cuurent = new node(ch);
    if (this.top == null)
    {
        this.top = cuurent;
        this.top.next = null;
        cuurent = null;
    }
    else
    {

        cuurent.next = this.top;
        this.top = cuurent;
        cuurent = null;
    }
    s1++;
}
// دالة ادخال الاعداد
public void push2(double dg)
{
    node cuurent = new node(dg);
    if (this.top2 == null)
    {
        this.top2 = cuurent;
        this.top2.next = null;
    }
    else
    {

        cuurent.next = this.top2;
        this.top2 = cuurent;
    }
    cuurent = null;
    s2++;
```

```java
}
// دالة حذف العنصر الاخير من مكدس العملية
public char pop()
{
    if (!isempty())
    {
        node ch = top;
        top = top.next;
        char c = ch.getch();
        ch = null;
        s1--;
        return c;
    }
    return '\0';
}
// دالة حذف العنصر الاخير من مكدس الاعداد
public double pop2()
{
    if (!isempty2())
    {
        node diget = top2;
        top2 = top2.next;
        double f = diget.getdig();
        diget = null;
        s2--;
        return f;
    }
    return 0;
}
// دالة ارجاع طول  مكدس العملية
public int len()
{
    return s1;
}
```

```csharp
// دالة ارجاع طول  مكدس الاعداد
    public int len2()
    {
        return s2;
    }
// دالة ارجاع العنصر الاخير من  مكدس العملية
    public char getTop()
    {
        if (!isempty())
            return this.top.getch();
        else
            return '\0';
    }
// دالة ارجاع العنصر الاخير من  مكدس الاعداد
    public double getTopval()
    {
        if (this.len2() != 0)
            return this.top2.getdig();
        else return 0;
    }

}
public Form1()
{
    InitializeComponent();
}
int s = 0; // عداد للتقيد لكي لا يقبل اكثر من .
int x = 0; // يحسب عدد الاقواس في المكدس
String  z; // متغير يأخذ القيم من الازرار
stack ss = new stack(); // مكدس

// دالة تعمل عملية الحساب
void culcl(stack s)
{
```

```csharp
                double f2 = s.pop2(), f = s.pop2();
                switch (s.getTop())
                {

                    case '+':
                        s.push2(f + f2);
                        break;
                    case '-':
                        s.push2(f - f2);
                        break;
                    case '*':
                        s.push2(f * f2);
                        break;
                    case '/':
                        if (f2 != 0)
                            s.push2(f / f2);
                        else
                            MessageBox.Show("لا يمكن القسمة عبى الصفر");

                        break;
                    case '^':
                        if (f2 == 0)
                            f = 1;
                        else
                        {
                            double n = f;
                            for (int i = 1; i < f2; i++)
                                f *= n;
                        }
                        s.push2(f);
                        break;
                }
                s.pop();
            }
```

```csharp
        // number2
        private void button2_Click(object sender,
EventArgs e)
        {
            textBox1.Text = textBox1.Text + "2" ;
            z = z + Convert.ToString("2");
        }

        // number 4
        private void button4_Click(object sender,
EventArgs e)
        {
            textBox1.Text = textBox1.Text + "4";
            z = z + Convert.ToString("4");
        }

        // number 1
        private void button1_Click(object sender,
EventArgs e)
        {
            textBox1.Text = textBox1.Text + "1";
            z = z + Convert.ToString("1");
        }

        // numbeer 3
        private void button3_Click(object sender,
EventArgs e)
        {
            textBox1.Text = textBox1.Text + "3";
            z = z + Convert.ToString("3");
        }

        // number 5
```

```csharp
        private void button5_Click(object sender,
EventArgs e)
        {
            textBox1.Text = textBox1.Text + "5";
            z = z + Convert.ToString("5");
        }

        // number 6
        private void button6_Click(object sender,
EventArgs e)
        {
            textBox1.Text = textBox1.Text + "6";
            z = z + Convert.ToString("6");
        }

        //number 7
        private void button7_Click(object sender,
EventArgs e)
        {
            textBox1.Text = textBox1.Text + "7";
            z = z + Convert.ToString("7");
        }

        // number 8
        private void button8_Click(object sender,
EventArgs e)
        {
            textBox1.Text = textBox1.Text + "8";
            z = z + Convert.ToString("8");
        }

        // number 9
        private void button9_Click(object sender,
EventArgs e)
```

```csharp
        {
            textBox1.Text = textBox1.Text + "9";
            z = z + Convert.ToString("9");


        }

        // number 0
        private void button10_Click(object sender,
EventArgs e)
        {
            textBox1.Text = textBox1.Text + "0";
            z = z + Convert.ToString("0");
        }

        // button of sum +
        private void button12_Click(object sender,
EventArgs e)
        {
            s = 0;
            if(z!=null)
                ss.push2(Convert.ToDouble(z));
                z = null;
            if (ss.isempty() || ss.getTop() == '(')
            {
                ss.push('+');
                textBox1.Text = textBox1.Text + "+";
            }
            else
            {
                while (!ss.isempty() && ss.getTop()
!= '(')
                    culcl(ss);
                ss.push('+');
                textBox1.Text = textBox1.Text + "+";
```

```csharp
            }
        }


        // button of minus -
        private void button13_Click(object sender,
EventArgs e)
        {
            s = 0;

                textBox1.Text = textBox1.Text + "-";
                if(z!=null)
                    ss.push2(Convert.ToDouble(z));
                z = null;
                if (ss.isempty() || ss.getTop() ==
'(')

                    ss.push('-');
                else
                {
                while (!ss.isempty() && ss.getTop()
!= '(')

                    culcl(ss);
                ss.push('-');
                }
        }

        // button of multiply x
        private void button16_Click(object sender,
EventArgs e)
        {
            s = 0;

                textBox1.Text = textBox1.Text + "x";
                ss.push2(Convert.ToDouble(z));
```

```csharp
                z = null;
                if (ss.isempty() || (ss.getTop() !=
'*' && ss.getTop() != '/' && ss.getTop() != '^') ||
ss.getTop() == '(')
                    ss.push('*');
                else
                {
                textBox1.Text = "here";
                    culcl(ss);
                    ss.push('*');
                }
            }


        // button of division /
        private void button15_Click(object sender,
EventArgs e)
        {
            s = 0;

                textBox1.Text = textBox1.Text + "/";
                ss.push2(Convert.ToDouble(z));
                z = null;
                if (ss.isempty() || (ss.getTop() !=
'*' && ss.getTop() != '/' && ss.getTop() != '^') ||
ss.getTop() == '(')
                    ss.push('/');
                else
                {
                    culcl(ss);
                    ss.push('/');
                }
            }
```

```csharp
        //button of Equals =
        private void button11_Click(object sender,
EventArgs e)
        {
            s = 0;
                if (z != null)
                ss.push2(Convert.ToDouble(z));
            while(!ss.isempty())
            {

                culcl(ss);
            }
                z = ss.pop2().ToString();
                textBox1.Text = z;
         }

        // buttton of exit
        private void button17_Click(object sender,
EventArgs e)
        {
            this.Close();
        }

        private void label1_Click(object sender,
EventArgs e)
        {

        }

        private void Form1_Load(object sender,
EventArgs e)
        {

        }
```

```csharp
        // button of CLC delet
        private void button18_Click(object sender,
EventArgs e)
        {
                    s = 0;
            textBox1.Text = z = null;

            while (!ss.isempty() || !ss.isempty2())
            {
                ss.pop();
                ss.pop2();
            }

        }

        // Button of power ^
        private void button19_Click(object sender,
EventArgs e)
        {
            s = 0;

                textBox1.Text = textBox1.Text + "^";
                ss.push2(Convert.ToDouble(z));
                z = null;
                if (ss.isempty() || (ss.getTop() !=
'^') || ss.getTop() == '(')
                    ss.push('^');
                else
                {
                    culcl(ss);
                    ss.push('^');
                }
```

```csharp
        }

        // button of mode %
        private void button14_Click(object sender,
EventArgs e)
        {
            s = 0;

                textBox1.Text = textBox1.Text + "%";
                ss.push2(Convert.ToDouble(z));
                z = null;
                if (ss.isempty() || (ss.getTop() !=
'^') || ss.getTop() == '(')
                    ss.push('^');
                else
                {
                    culcl(ss);
                    ss.push('^');
                }
        }

        //button of dot .
        private void button20_Click(object sender,
EventArgs e)
        {
            if (s == 0)
            {
                s++;
                textBox1.Text = textBox1.Text + ".";
                z = z + ".";
            }
        }
```

```csharp
        private void textBox1_TextChanged(object
sender, EventArgs e)
        {

        }

        // buttom of change background  to white
        private void
radioButton1_CheckedChanged(object sender, EventArgs
e)
        {
            this.BackColor = Color.White;
            Light.ForeColor = Color.Black;
            Dark.ForeColor = Color.Black;
            photo.ForeColor = Color.Black;
        }

        // buttom of change background  to black
        private void
radioButton2_CheckedChanged(object sender, EventArgs
e)
        {
            this.BackColor = Color.Black;
            Dark.ForeColor = Color.White;
            Light.ForeColor = Color.White;
            photo.ForeColor = Color.White;
        }

        // button of (
        private void button22_Click(object sender,
EventArgs e)
        {
            textBox1.Text = textBox1.Text + "(";
```

```csharp
            x++;
                ss.push('(');
        }

        // button of )
        private void button21_Click(object sender,
EventArgs e)
        {

            if (x > 0)
            {
                textBox1.Text = textBox1.Text + ")";
                if(z!=null)
                ss.push2(Convert.ToDouble(z));
                z = null;

                while (ss.getTop() != '(')
                {
                    culcl(ss);
                }

                ss.pop();
                z = ss.pop2().ToString();
                x--;
            }
            else
                MessageBox.Show("العملية خاطئة");

        }

        // buttom of change background  to image
        private void
radioButton1_CheckedChanged_1(object sender,
EventArgs e)
```

```csharp
        {
            this.BackgroundImage =
Image.FromFile("C:\\Users\\Owner\\Desktop\\filework\\
IMG-20220424-WA0004.jpg");
            this.BackgroundImageLayout =
System.Windows.Forms.ImageLayout.Stretch;
        }

        // زر المضروب
        private void button23_Click(object sender,
EventArgs e)
        {
            s = 0;
            textBox1.Text = textBox1.Text + "!";
            int n = Convert.ToInt32(z);
            for (int i = n-1; i > 1; i--)
                n *= i;
            z = n.ToString();
        }
    }
}
```