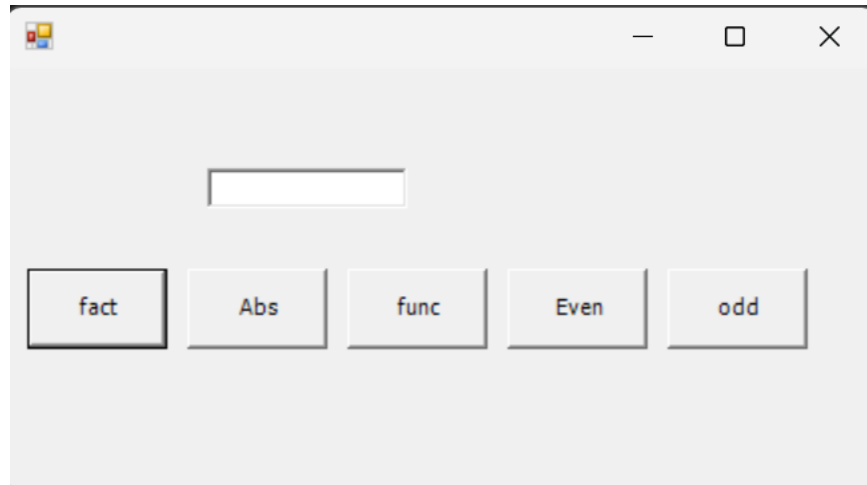


# Lect3

## Advance programming

### Level 3 IT

#### IBB UN



```
using System;
using System.Windows.Forms;
using System.Drawing;
namespace lect3
{
    public delegate long FactDeleg(int x);

    class Program : Form
    {
        delegate void del();
        delegate void del2(String s);
        delegate bool check(int num);
        delegate void del4(Delagate control);
        private Button []b=new Button[5];
        static Button b2 = new Button();
        static Button b3 = new Button();
        static TextBox t1 = new TextBox();
        static del2 msg = (s) => MessageBox.Show(s);
        Func<int> getRandomNumber = () => new Random().Next(1, 100); //
        Program()
        {
```

```

this.Size = new Size( 450,250);
this.ResumeLayout(false);
t1.Bounds = new Rectangle(100, 50, 100, 40);
string[] str = { "fact", "Abs", "func", "Even", "odd" };
for (int i = 0; i < 5; i++)
{
    b[i] = new Button();
    b[i].Bounds = new Rectangle((80*i)+10, 100, 70, 40);
    b[i].Text = str[i];
    b[i].Click += call;
    b[i].UseVisualStyleBackColor = true;
    Controls.Add(b[i]);

}
Controls.Add(t1);
t1.KeyPress += (s, e) =>
{
    if (e.KeyChar != 8 && !char.IsNumber(e.KeyChar))
        // e.KeyChar = (char)0;
        e.Handled = false;
};
}
public static void shmsg() { MessageBox.Show("g"); }
public static void shmsg2(String s) { MessageBox.Show(s); }
public long fact(int x) { return (x > 1) ? x * fact(x - 1) : 1; }
public long AbsX(int x) { return (x >= 0) ? x : (x * -1); }
public void call(object s, EventArgs e)
{ Button b = (Button)s;

    if (t1.Text.Trim() != "")
    {
        FactDeleg fd;
        if (b.Text == "fact")
        {
            fd = new FactDeleg(fact);
            msg(fd(int.Parse(t1.Text)).ToString());
        }
    }
}

```

```

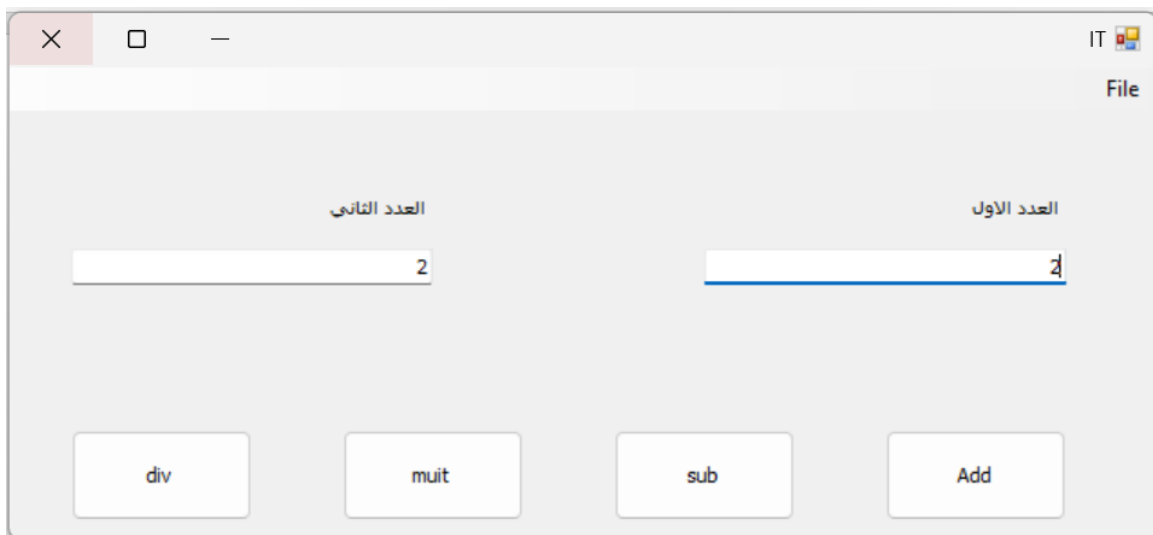
else if ((b.Text == "Abs"))
{
    fd = new FactDeleg(AbsX);
    msg(fd(int.Parse(t1.Text)).ToString());
}
else if ((b.Text == "func"))
{
    Func<int, int> f = ((int a) => a * a);
    // msg(f(int.Parse(t1.Text)).ToString());
    //msg(getRandomNumber().ToString());
}
else if ((b.Text == "Even"))
{
    msg(count(new int[] { 1, 2, 3, 4, 5, 6 }, (x) => x % 2 ==
0).ToString());
}
else if ((b.Text == "odd"))
{
    msg(count(new int[] { 1, 2, 3, 4, 5, 6 }, (x) => x % 2 !=
0).ToString());
}
}

}
static int count(int[] l,check ch)
{
    int c = 0;
    foreach (int x in l)
        if (ch(x))
            c++;
    return c;
}
static void Main()
{
    //del2 del2 = (string s) => MessageBox.Show(s);
    // msg("u");

```

**Eng: Eissa AL-Gumaei**

```
Application.Run(new Program());  
}  
}  
}
```



```

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 WindowFormsApp
{
    public delegate void Drowis(Control f, Rectangle r, string txt, Control
frm_parint);
    public class myform : Form
    {
        Button[] arrbtn;
        TextBox[] arrtxt;
        MenuStrip ms;
        ToolStripMenuItem tsmi;
        formshow[] arrform;
        Label [] arrl;
        void start()
        {
            this.Size = new Size(650, 300);
            this.Text = "IT";
            this.StartPosition = FormStartPosition.CenterScreen;
            this.RightToLeft = RightToLeft.Yes ;
            this.RightToLeftLayout = true;
            //// menustrip
            ms = new MenuStrip();
            this.MainMenuStrip = ms;
            this.Controls.Add(ms);
            tsmi = new ToolStripMenuItem();
            tsmi.Text = "File";
            ms.Items.Add(tsmi);
            tsmi.DropDownItems.Add("close"); tsmi.DropDownItems[0].Click +=
DropDownItems_tsm;

```

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```

        tsmi.DropDownItems.Add("CloseAll"); tsmi.DropDownItems[1].Click
+= DropDownItems_tsm;
        tsmi.DropDownItems.Add("Exit"); tsmi.DropDownItems[2].Click +=
DropDownItems_tsm;
        arrform = new formshow[4];
        arrtxt = new TextBox[2];
        arrl = new Label[2];
        for (int i = 0; i < 2; i++)
        { string[] lblname = { "العدد الثاني", "العدد الاول" };
            Drowcontrol(arrtxt[i] = new TextBox(), new Rectangle(50 + 350 * i,
100, 200, 50), "", this);
            Drowcontrol(arrl[i] = new Label(), new Rectangle(50 + 350 * i, 70,
200, 50), lblname[i], this);

            arrtxt[i].KeyPress += KeyPress_txt;
            arrtxt[i].TextChanged += TextChanged_txt;
        }
        arrbtn = new Button[4];
        string[] textbtn = { "Add", "sub", "muit", "div" };
        for (int i = 0; i < 4; i++)
        {
            Drowcontrol(arrbtn[i] = new Button(), new Rectangle(50 + 150 * i,
200, 100, 50), textbtn[i], this);
            arrbtn[i].Enabled = false;
            arrbtn[i].Click += Click_btn;
        }
    }

    public myform()
    {
        start();
    }
    void DropDownItems_tsm(object s, EventArgs e)
    {
        if (tsmi.DropDownItems[2] == s)
            Application.Exit();
        else if (tsmi.DropDownItems[1] == s)

```

```

        while (Application.OpenForms.Count > 1)
            Application.OpenForms[1].Close();
    else
    {
        int k = Application.OpenForms.Count;
        if (k > 1) Application.OpenForms[k - 1].Close();
    }
}

void Drawcontrol(Control f, Rectangle r, string txt, Control frm_parint)
{
    f.Bounds = r;
    f.Text = txt;
    frm_parint.Controls.Add(f);
}

void KeyPress_txt(object s, KeyPressEventArgs e)
{
    TextBox t = (TextBox)s;
    if (((e.KeyChar < '0' || e.KeyChar > '9') && e.KeyChar != 8 &&
e.KeyChar != '.' && e.KeyChar != '-')
        ||
        ((e.KeyChar == '.' && t.Text.Contains('.') == true) || (e.KeyChar ==
'-' && t.Text != "")))
        e.KeyChar = (char)0; // e.Handled = true;
}

void TextChanged_txt(object s, EventArgs e)
{
    bool IsEnabled = true;
    for (int i = 0; i < arrtxt.Length; i++)
        if (Ischeek(arrtxt[i].Text.Trim(), "") || Ischeek(arrtxt[i].Text, ".") ||
Ischeek(arrtxt[i].Text, "-"))
            { IsEnabled = false; break; }
    for (int i = 0; i < arrbtn.Length; i++)
        arrbtn[i].Enabled = IsEnabled;
}

bool Ischeek(string txt1, string txt2)
{
    if (txt1 == txt2) return true;
}

```

**Eng: Eissa AL-Gumaei**

```

        return false;
    }
    void Click_btn(object s, EventArgs e)
    {
        int index = 0;
        for (int i = 0; i < arrbtn.Length; i++)
            if (s == arrbtn[i])
                { index = i; break; }
        if (arrform[index] == null || arrform[index].IsDisposed)
        {
            char[] ops = { '+', '-', '*', '/' };
            arrform[index] = new formshow(ops[index], Drowcontrol);
            arrform[index].Text = arrbtn[index].Text;
            arrform[index].Size = new Size(450, 200);
        }
        arrform[index].ShowData(Convert.ToDouble(arrtxt[0].Text),
Convert.ToDouble(arrtxt[1].Text));
        arrform[index].Show();
        for (int i = 0; i < arrtxt.Length; i++)
            arrtxt[i].Text = "";
    }
    static public void Main(string[] args)
    {
        Application.Run(new myform());
    }
}
public class formshow : Form
{
    Label[] arrlbl;
    public formshow(char op, Drowis Drs)
    {
        this.Size = new Size(800, 250);
        arrlbl = new Label[5];
        string[] txts = { "", op + "", "", "=", "" };
        for (int i = 0; i < 5; i++)
            Drs(arrlbl[i] = new Label(), new Rectangle( 100 * i,
100, 100, 50), txts[i], this);
    }
}

```

**Eng: Eissa AL-Gumaei**



```

    }
    public void ShowData(double x, double y)
    {
        char op = arrlbl[1].Text[0];
        string ruslt;
        if (op == '+') ruslt = (x + y).ToString();
        else if (op == '-') ruslt = (x - y).ToString();
        else if (op == '*') ruslt = (x * y).ToString();
        else ruslt = (y != 0) ? (x / y).ToString() : "لا يقبل القسمة على صفر";
        arrlbl[0].Text = x.ToString();
        arrlbl[2].Text = y.ToString();
        arrlbl[4].Text = ruslt;
        this.Focus();
    }
}

```