

Practical No. 1

Basic Of C#

Q.1 Design a window application to demonstrate basic and advanced controls. Create Registration form with following fields first name, middle name, surname, photo, dob, address, mobile no, username, password, gender, hobbies, city. Use appropriate controls to take inputs. And show the entered data on another form.

User Interface:

The screenshot shows a Windows application window titled "Form1". Inside the window is a "Registration Form". The form has the following fields and controls:

- First Name:** Text box with "Onkar".
- Middle Name:** Text box with "Rajan".
- Last Name:** Text box with "Malawade".
- User Name:** Text box with "Onkk".
- Password:** Text box with "On123".
- Photo:** A placeholder image of a man's face.
- Upload:** A button next to the photo.
- DOB:** A date picker showing "sday" and "May".
- City:** Text box with "Talere".
- Mobile No:** Text box with "7020767185".
- Gender:** Radio buttons for "Male" (selected) and "Female".
- Address:** Text box with "Talere".
- Hobbies:** Text box with "Coding".
- Register:** A blue button at the bottom left.
- Close:** A button at the bottom right.

Program:

Form1.cs

```
namespace PractNo1Question1
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void button1_Click(object sender, EventArgs e)
        {
            this.Close();
        }

        private void button2_Click(object sender, EventArgs e)
        {
        }
    }
}
```

```

Form2 f2 = new Form2();

f2.fname = txtfname.Text;
f2.mname = txtmname.Text;
f2.lname = txtLname.Text;
f2.dob = dtDOB.Value.ToShortDateString();
f2.add = txtAdd.Text;
f2.mob = txtMob.Text;
f2.uname = uname.Text;
f2.pass = password.Text;
f2.gen = radioBtnMale.Checked ? "Male" : "Female";
f2.hobby = txtHobby.Text;
f2.city = txtCity.Text;
f2.imgB = picBox.Image;
f2.ShowDialog();
}

private void UpBtn_Click(object sender, EventArgs e)
{
    String imageLocation = "";
    try
    {
        OpenFileDialog dialog = new OpenFileDialog();
        dialog.Filter = "Image Files (*.jpg; *.jpeg; *.png; *.gif; *.bmp)|*.jpg; *.jpeg; *.png; *.gif; *.bmp";

        if (dialog.ShowDialog() == System.Windows.Forms.DialogResult.OK)
        {
            imageLocation = dialog.FileName;

            picBox.ImageLocation = imageLocation;
        }

    } catch (Exception)
    {
        MessageBox.Show("Error:" ,
"Error", MessageBoxButtons.OK, MessageBoxIcon.Error);
    }
}
}
}

```

Form2.cs

```

namespace PractNo1Question1
{
    public partial class Form2 : Form
    {
        public string fname { get; set; }
        public string mname { get; set; }
        public string lname { get; set; }
        public string uname { get; set; }
        public string pass { get; set; }
        public string city { get; set; }
        public string add { get; set; }
        public string hobby { get; set; }
        public string mob { get; set; }
    }
}

```

```

public string dob { get; set; }
public Image imgB { get; set; }
public string gen { get; set; }

public Form2()
{
    InitializeComponent();
}
private void Form2_Load(object sender, EventArgs e)
{
    lblFname.Text = fname;
    lblMname.Text = mname;
    lblLname.Text = lname;
    lblunname.Text = unname;
    lblPass.Text = pass;
    lblCity.Text = city;
    lblAdd.Text = add;
    lblGen.Text = gen;
    lblHobby.Text = hobby;
    lblMob.Text = mob;
    lblDOB.Text = dob;
    pictureBox1.Image = imgB;
}
}
}

```

Program.cs

```

static void Main()
{
    Application.EnableVisualStyles();
    Application.SetCompatibleTextRenderingDefault(false);
    Application.Run(new Form1());
}

```

Output:

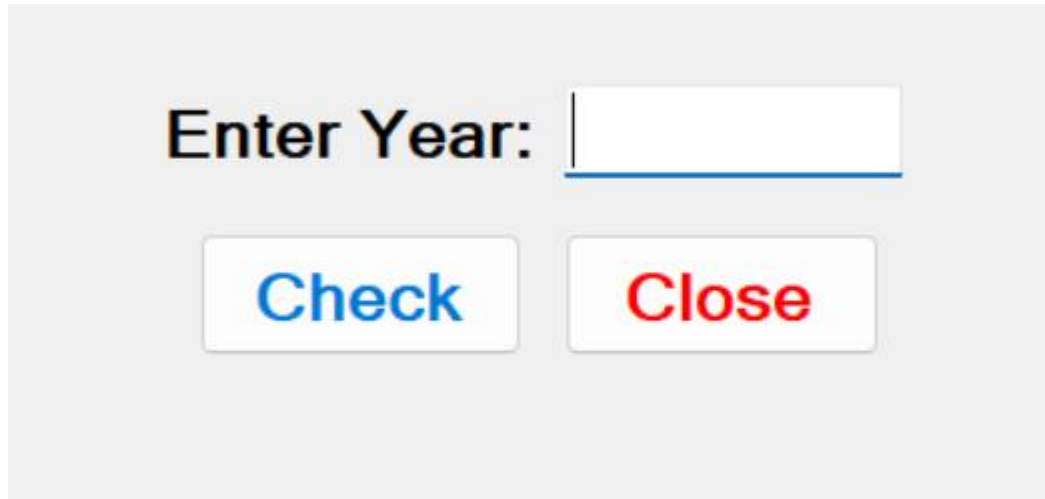


The screenshot shows a Windows application window titled "Form2". Inside the window, the text "Person Information" is displayed in a bold, dark red font at the top center. Below this, the personal details of a person are listed in a two-column format. The first column contains labels, and the second column contains the corresponding values. To the right of the text, there is a small portrait of a man with dark hair, wearing a blue shirt, against a blue sky background. The details listed are:

Name	Onkar Rajan Malawade
Date Of Birth	5/30/2000
Mobile No	7020767185
Address	Talere
User Name	Onkk
Password	On123
Gender	Male
City	Talere
Hobbies	Coding

Q.2 Design a window application in c# using objects and classes to find whether an entered year is leap year or not.

User Interface:

The image shows a simple Windows Forms application window. It has a light gray background. At the top, the text "Enter Year:" is displayed in a large, bold, black font. To the right of this text is a white text box with a blue border. Below the text box, there are two buttons. The first button is labeled "Check" in blue text on a white background. The second button is labeled "Close" in red text on a white background. Both buttons have a slight 3D effect with a gray shadow.

PractNo1Q2.cs

```
using System.Windows.Forms;
```

```
namespace PracticalNo1All
```

```
{
    public partial class Pract1Q2 : Form
    {
        Year y = null;
        public Pract1Q2()
        {
            InitializeComponent();
        }

        private void Pract1Q2_Load(object sender, EventArgs e)
        {
        }

        private void btnCheck_Click(object sender, EventArgs e)
        {
            try
            {
                int e2 = Convert.ToInt32(txtYear.Text);
                y = new Year(e2);
                MessageBox.Show(y.check());
            }
            catch (Exception ex)
            {
                MessageBox.Show("Exception Caught!!! " + ex.Message + " at line " +
ex.StackTrace);
            }
        }

        private void btnClose_Click(object sender, EventArgs e)
        {
            this.Close();
        }
    }
}
```

```

class Year
{
    int y;

    public Year()
    {

    }

    ~Year()
    {
    }

    public Year(int e)
    {
        this.y = e;
    }

    public int getY()
    {
        return y;
    }

    public string check()
    {
        if (y % 4 == 0)
        {
            return "It is Leap Year";
        }
        return "It is Not Leap Year";
    }
}

```

Program.cs

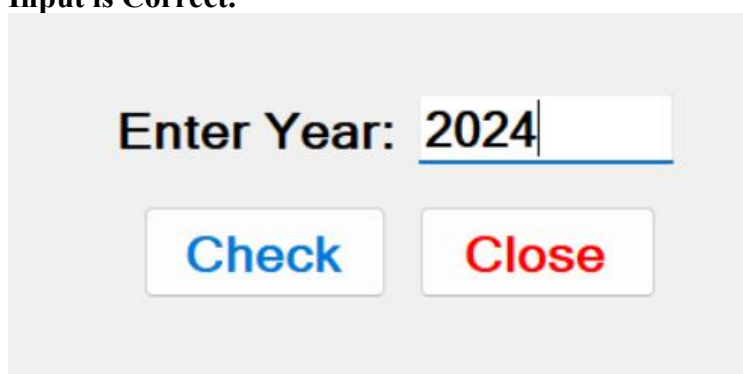
```

static void Main()
{
    Application.EnableVisualStyles();
    Application.SetCompatibleTextRenderingDefault(false);
    Application.Run(new Pract1Q2());
}

```

Output:

Input is Correct.



A screenshot of a Windows-style dialog box with a light gray background. It contains the text "Enter Year:" followed by a text input field containing "2024". Below the input field are two buttons: "Check" with blue text and "Close" with red text.



Input is Wrong.

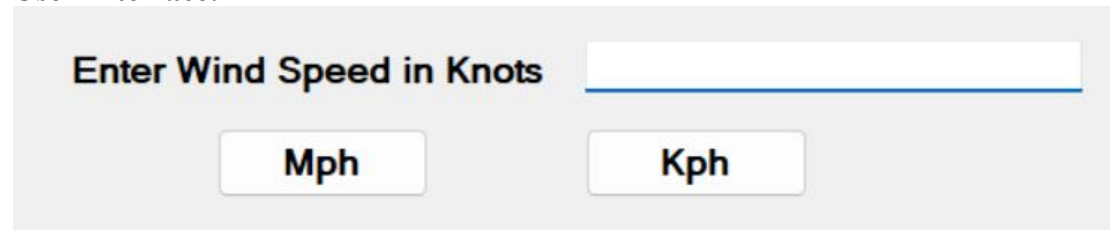
Enter Year:

×

It is Not Leap Year

Q.3 Design a Window application in c# using objects and classes for wind conversion from knots to mph, kph.

User Interface:



The user interface is a light gray rectangular window. At the top, it contains the text "Enter Wind Speed in Knots" in a bold, black font. To the right of this text is a white text input field with a blue border. Below the input field, there are two buttons: "Mph" on the left and "Kph" on the right, both with a light gray background and a thin black border.

Program.cs

```
static void Main()
{
    Application.EnableVisualStyles();
    Application.SetCompatibleTextRenderingDefault(false);
    Application.Run(new Pract1Q3());
}
```

PractNo1Q3.cs

```
using System.Windows.Forms;

namespace PracticalNo1All
{
    public partial class Pract1Q3 : Form
    {
        Wind d = null;
        public Pract1Q3()
        {
            InitializeComponent();
        }

        private void btnMPH_Click(object sender, EventArgs e)
        {
            double kn = Convert.ToDouble(txt1.Text);
            d = new Wind(kn);
            MessageBox.Show("Value of MPH:" + d.mph());
        }

        private void btnKPH_Click(object sender, EventArgs e)
        {
            double kn = Convert.ToDouble(txt1.Text);
            d = new Wind(kn);
            MessageBox.Show("Value of KPH:" + d.Kph());
        }
    }

    class Wind
    {
        double w;

        public Wind()
        {
        }

        public Wind(double p)
```

```

    {
        w = p;
    }

    ~Wind()
    {

    }

    public double getW()
    {
        return w;
    }

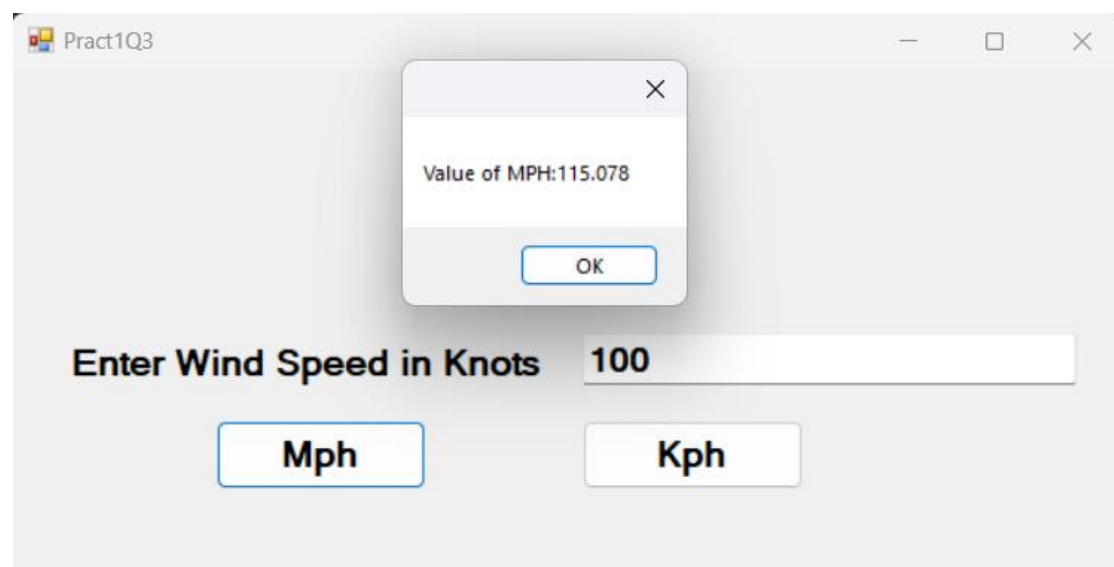
    public double mph()
    {
        return 1.15078 * w;
    }

    public double Kph()
    {
        return w * 1.852;
    }
}

```

Output:

Knots to MPH:

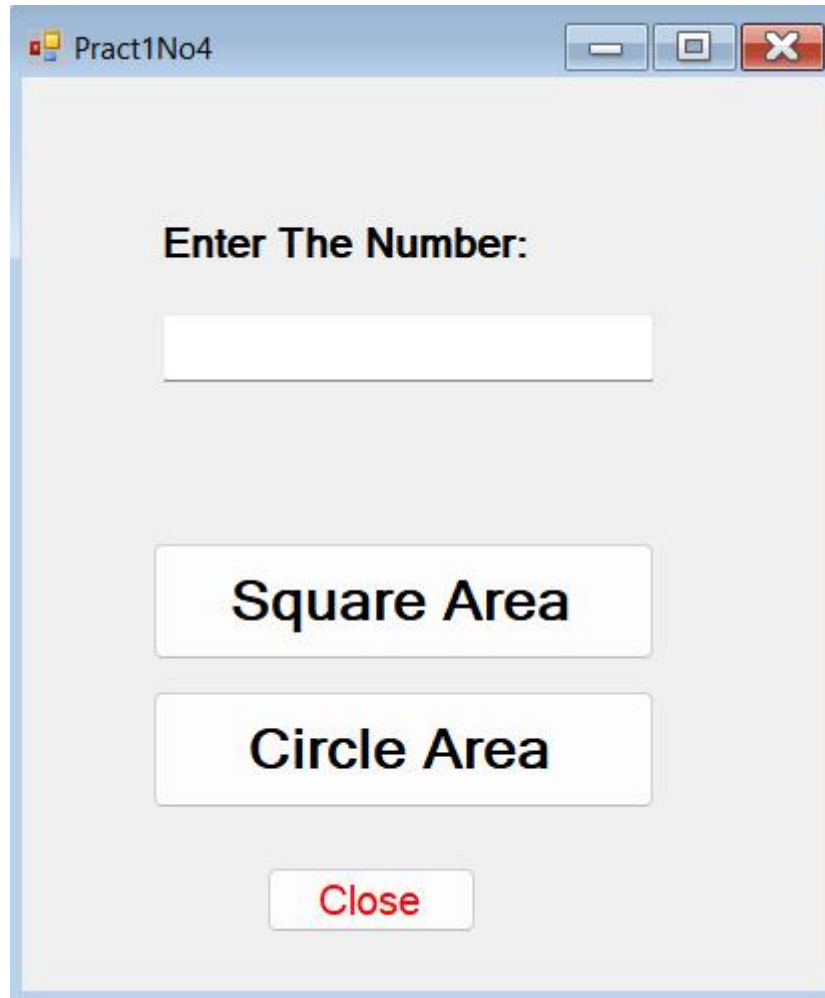


Knots to KPH:

The screenshot shows a Windows application window titled "Pract1Q3". In the center, a modal dialog box is open, displaying the text "Value of KPH:185.2" and an "OK" button. Below the dialog, the main window contains the text "Enter Wind Speed in Knots" followed by a text input field containing the number "100". At the bottom of the window, there are two buttons: "Mph" and "Kph". The "Kph" button is highlighted with a blue border, indicating it is the selected unit for conversion.

Q.4 Design a Window application to demonstrate multiple inheritance.

User Interface:



Program.cs

```
static void Main()
{
    Application.EnableVisualStyles();
    Application.SetCompatibleTextRenderingDefault(false);
    Application.Run(new Pract1No4());
}
```

PractNo1Q4.cs

```
using System.Windows.Forms;

namespace PracticalNo1All
{
    public partial class Pract1No4 : Form
    {
        public Pract1No4()
        {
            InitializeComponent();
        }

        private void baseClass_Click(object sender, EventArgs e)
        {
            double s1 = Convert.ToDouble(textBox1.Text);
            Shape2 s = new Shape2();
        }
    }
}
```

```

        MessageBox.Show("This is " + s.getArea(s1).ToString());
    }

    private void derClass_Click(object sender, EventArgs e)
    {
        double s1 = Convert.ToDouble(textBox1.Text);
        Shape2 s = new Shape2(s1);
        MessageBox.Show("This is " + s.AreaSqr().ToString());
    }

    private void btnClose_Click(object sender, EventArgs e)
    {
        this.Close();
    }
}

public interface circle
{
    double getArea(double s);
}

public interface square
{
    double AreaSqr();
}

class Shape2 : circle, square
{
    double size;

    public Shape2(double size)
    {
        this.size = size;
    }

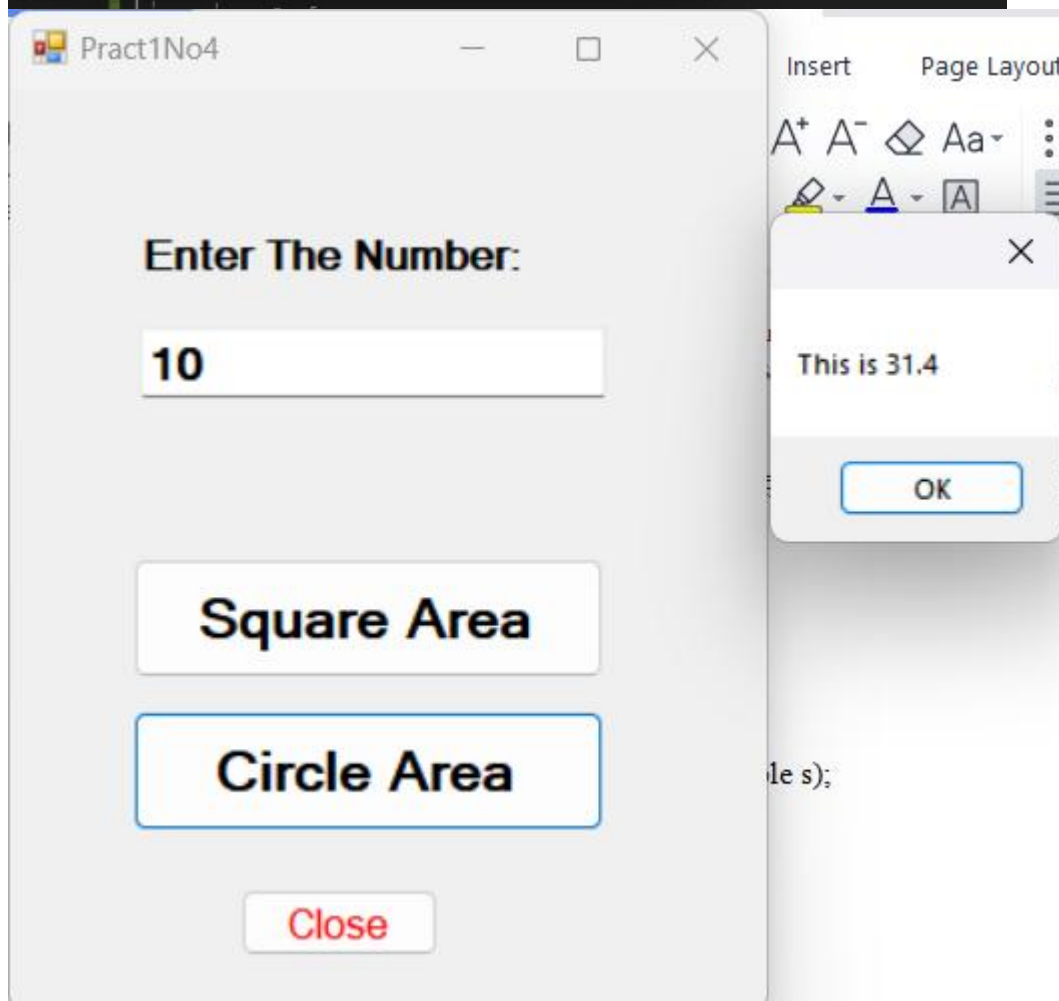
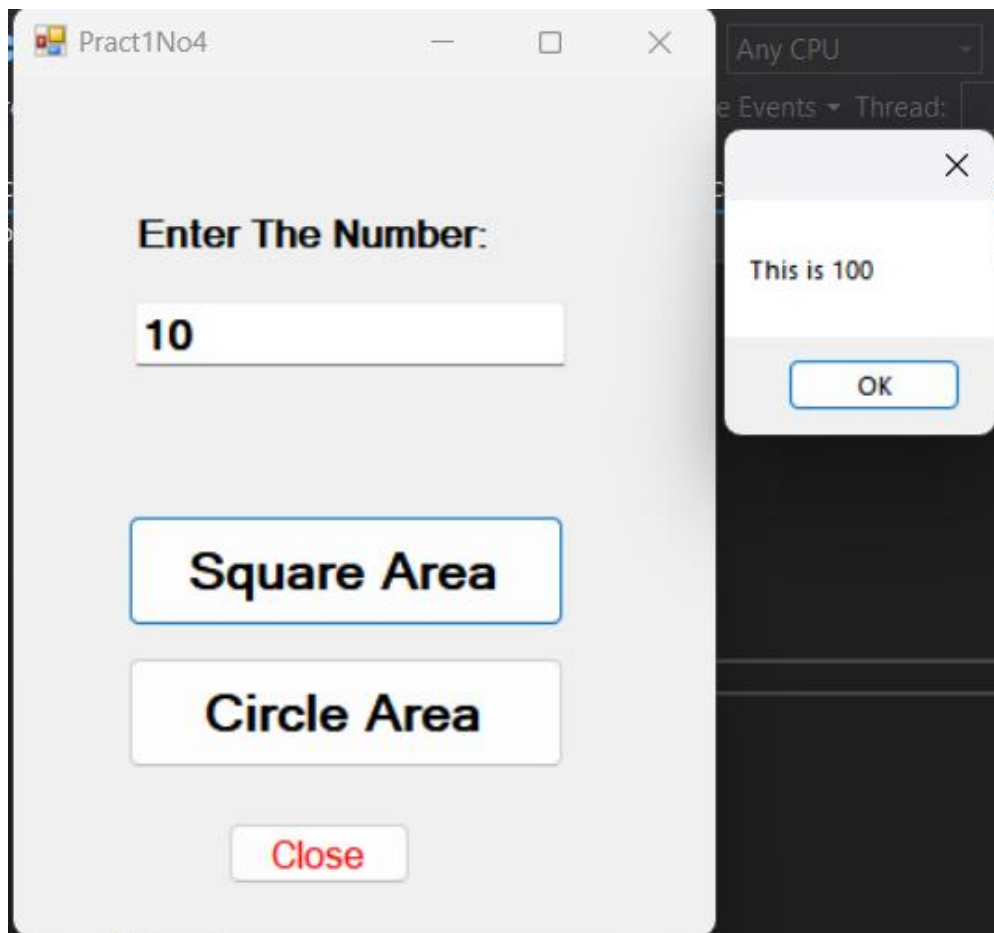
    public Shape2() { }

    public double getArea(double size)
    {
        this.size = size;
        return size * 3.14;
    }

    public double AreaSqr()
    {
        return size * size;
    }
}
}

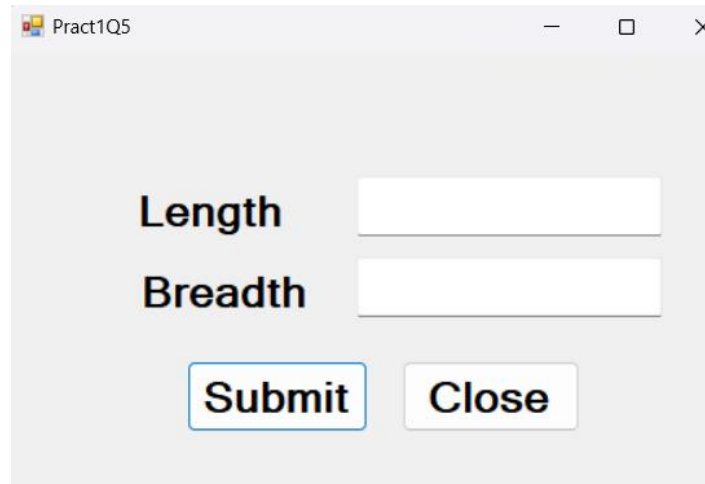
```

Output:



Q.5 Design a Window application to demonstrate abstract class.

User Interface:



Program.cs

```
static void Main()
{
    Application.EnableVisualStyles();
    Application.SetCompatibleTextRenderingDefault(false);
    Application.Run(new Pract1Q5());
}
```

PractNo1Q5.cs

```
using System.Windows.Forms;

namespace PracticalNo1All
{
    public partial class Pract1Q5 : Form
    {
        Rectangle rect = null;
        public Pract1Q5()
        {
            InitializeComponent();
        }

        private void btnSubmit_Click(object sender, EventArgs e)
        {
            int a = Convert.ToInt32(txtLength.Text);
            int b = Convert.ToInt32(txtBreadth.Text);
            if (b == 0)
            {
                rect = new Rectangle(a, a);

                MessageBox.Show("This is Area of Square " + rect.area());
            }
            else
            {
                rect = new Rectangle(a, b);

                MessageBox.Show("This is Area of Rectangle " + rect.area());
            }
        }

        private void btnClose_Click(object sender, EventArgs e)
        {
            // Close button logic
        }
    }
}
```

```

        this.Close();
    }
}

abstract class Shape
{
    public abstract int area();
}
class Rectangle : Shape
{
    private int length;
    private int width;
    public Rectangle(int a, int b)
    {
        length = a;
        width = b;
    }
    public override int area()
    {
        return length * width;
    }
}
}

```

Output:

Length 5

Breadth 6

Submit Close

This is Area of Rectangle 30

OK

Length 5

Breadth 0

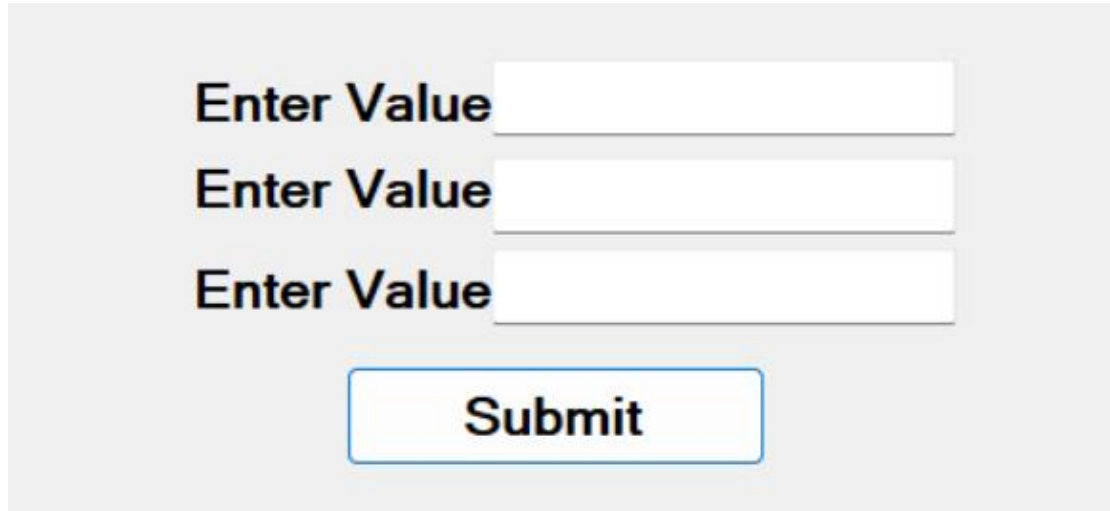
Submit Close

This is Area of Square 25

OK

Q.6 Design a Window application to demonstrate Indexer.

User Interface:



Enter Value

Enter Value

Enter Value

Program.cs

```
static void Main()
{
    Application.EnableVisualStyles();
    Application.SetCompatibleTextRenderingDefault(false);
    Application.Run(new Pract1Q6());
}
```

PractNo1Q6.cs

```
using System.Windows.Forms;

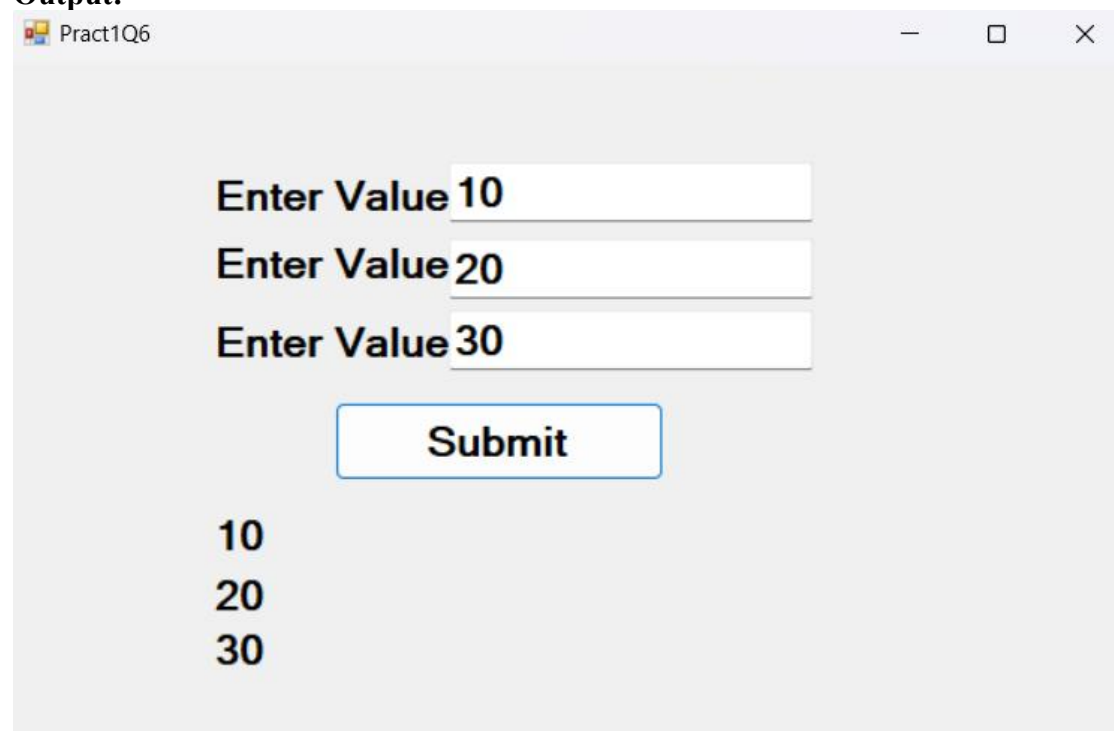
namespace PracticalNo1All
{
    public partial class Pract1Q6 : Form
    {
        IndexerClass team = null;
        public Pract1Q6()
        {
            InitializeComponent();
        }

        private void button1_Click(object sender, EventArgs e)
        {
            try
            {
                team = new IndexerClass();
                team[0] = textBox1.Text;
                team[1] = textBox2.Text;
                team[2] = textBox3.Text;

                label4.Text = team[0];
                label5.Text = team[1];
                label6.Text = team[2];
            }
            catch (Exception ex)
            {
                MessageBox.Show("Error : " + ex);
            }
        }
    }
}
```

```
class IndexerClass
{
    private string[] names = new string[3];
    public string this[int i]
    {
        get
        {
            return names[i];
        }
        set
        {
            names[i] = value;
        }
    }
}
```

Output:

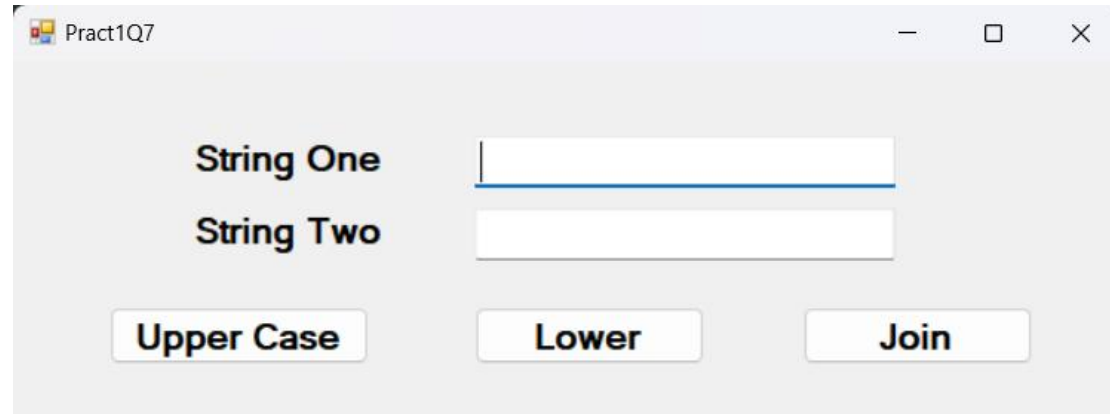


The screenshot shows a web application window titled "Pract1Q6". It contains three input fields, each preceded by the text "Enter Value". The first field contains "10", the second contains "20", and the third contains "30". Below these fields is a "Submit" button. After clicking the button, the values "10", "20", and "30" are displayed in a list on the left side of the window.

Input	Output
10	10
20	20
30	30

Q.7 Design a Window application to demonstrate string manipulations.

User Interface:

The image shows a screenshot of a Windows application window titled "Pract1Q7". The window has a standard Windows title bar with minimize, maximize, and close buttons. The main content area is light gray and contains two text input fields. The first field is labeled "String One" and the second is labeled "String Two". Below these fields are three buttons: "Upper Case", "Lower", and "Join". The buttons are rectangular with a light gray background and a thin border.

Program.cs

```
static void Main()
{
    Application.EnableVisualStyles();
    Application.SetCompatibleTextRenderingDefault(false);
    Application.Run(new Pract1Q7());
}
```

PractNo1Q7.cs

```
using System.Windows.Forms;

namespace PracticalNo1All
{
    public partial class Pract1Q7 : Form
    {
        public Pract1Q7()
        {
            InitializeComponent();
        }

        private void button1_Click(object sender, EventArgs e)
        {
            string s1 = textBox1.Text;
            string s2 = textBox2.Text;
            string p = s1.ToUpper();
            string q = s2.ToUpper();
            label3.Text = p;
            label4.Text = q;
        }

        private void button2_Click(object sender, EventArgs e)
        {
            string s1 = textBox1.Text;
            string s2 = textBox2.Text;
            string p = s1.ToLower();
            string q = s2.ToLower();
            label3.Text = p;
            label4.Text = q;
        }

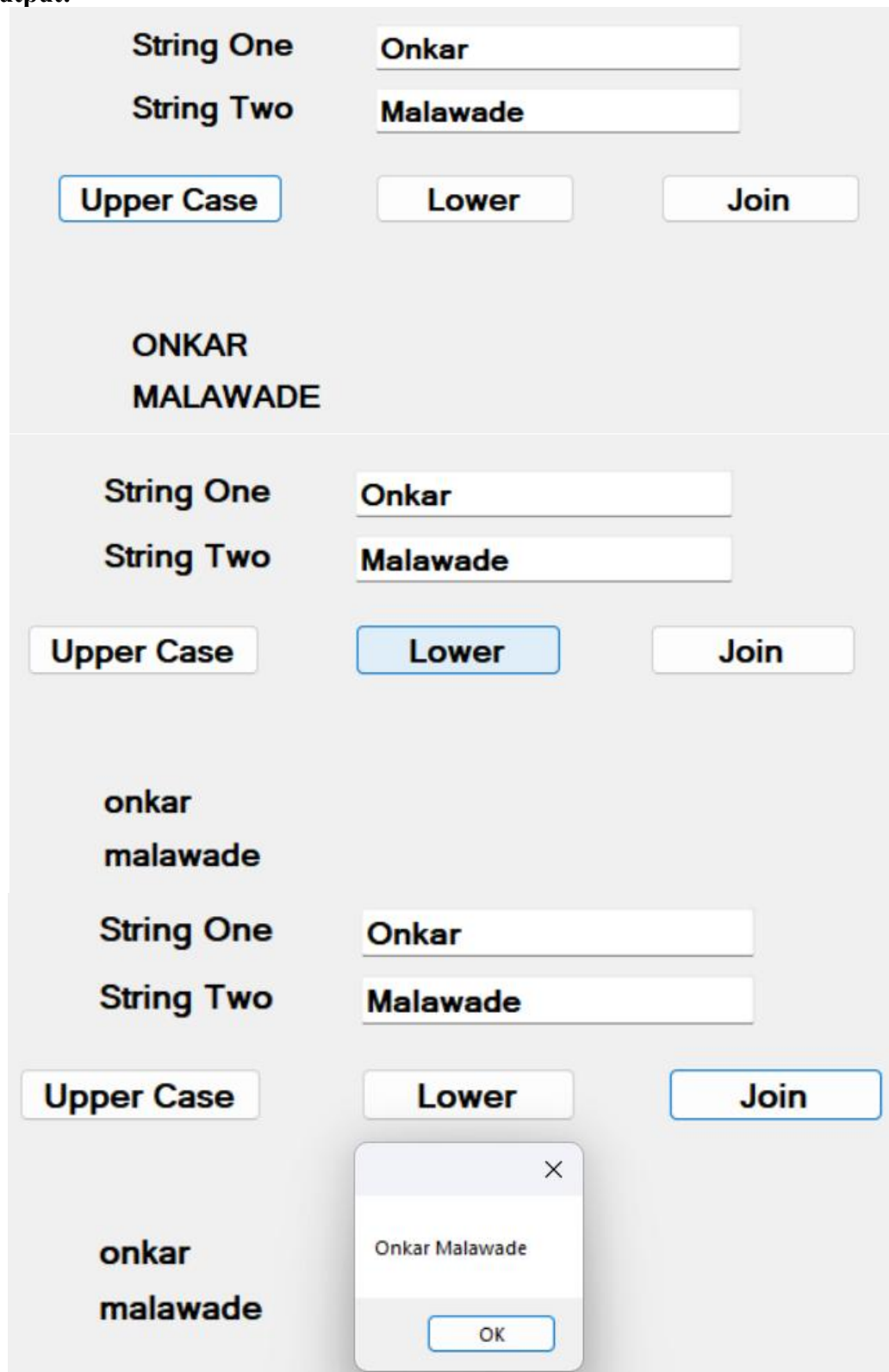
        private void button3_Click(object sender, EventArgs e)
        {
            // Implementation for the Join button
        }
    }
}
```

```

string s1 = textBox1.Text;
string s2 = textBox2.Text;
MessageBox.Show(s1 + " " + s2);
    }
}
}

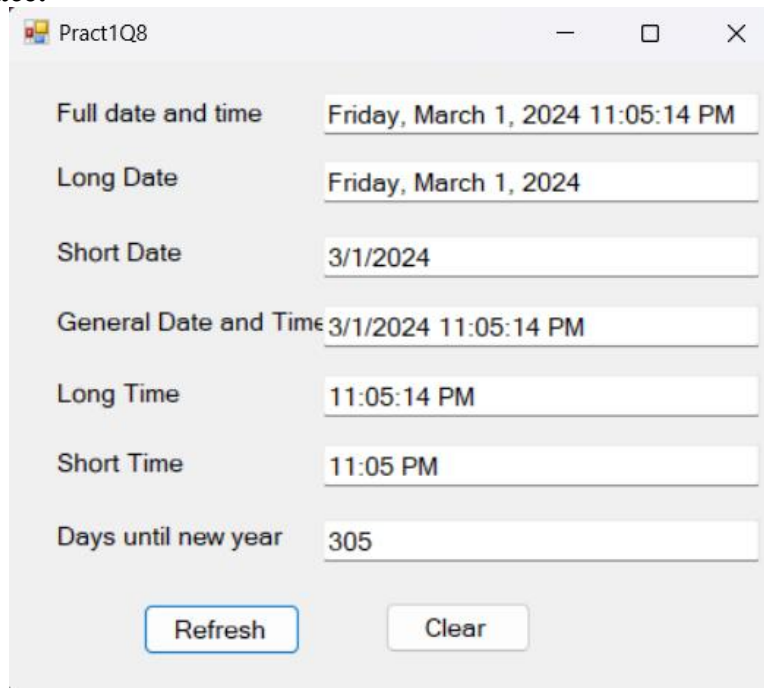
```

Output:



Q.8 Design a window application to show following output.

User Interface:



Program.cs

```
static void Main()
{
    Application.EnableVisualStyles();
    Application.SetCompatibleTextRenderingDefault(false);
    Application.Run(new Pract1Q8());
}
```

PractNo1Q8.cs

```
using System.Windows.Forms;

namespace PracticalNo1All
{
    public partial class Pract1Q8 : Form
    {
        DateTime date = DateTime.Now;
        public Pract1Q8()
        {
            InitializeComponent();
        }

        private void button2_Click(object sender, EventArgs e)
        {
            this.Close();
        }

        private void button1_Click(object sender, EventArgs e)
        {
            this.Refresh();
        }

        private void Pract1Q8_Load(object sender, EventArgs e)
        {
            textBox1.Text = date.ToString("F");
            textBox2.Text = date.ToString("D");
        }
    }
}
```

```
        textBox3.Text = date.ToString("d");
        textBox4.Text = date.ToString("G");
        textBox5.Text = date.ToString("T");
        textBox6.Text = date.ToString("t");
        textBox7.Text = (date.Year % 4 == 0) ? (366 - date.DayOfYear).ToString():
(365 - date.DayOfYear).ToString();
    }
}
}
```