

C# Programming

1) Write a Console Application to Demonstrate the Structure Of C# Programming

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace ConsoleApp23
{
    internal class fprogram
    {
        static void Main(string[] args)
        {
            System.Console.WriteLine("Hello World");
            Console.ReadKey();
        }
    }
}
```

Output:

Hello World

2) i) Write a Console Application to Demonstrate Program to Demonstrate Operators

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace ConsoleApp24
{
    internal class fprogram
    {
        static void Main(string[] args)
        {
            int result;

            int x = Convert.ToInt32(Console.ReadLine());
            int y = Convert.ToInt32(Console.ReadLine());

            // Addition
            result = (x + y);
            Console.WriteLine("Addition Operator: " + result);

            // Subtraction
            result = (x - y);
        }
    }
}
```

```

        Console.WriteLine("Subtraction Operator: " + result);

        // Multiplication
        result = (x * y);
        Console.WriteLine("Multiplication Operator: " + result);

        // Division
        result = (x / y);
        Console.WriteLine("Division Operator: " + result);

        // Modulo
        result = (x % y);
        Console.WriteLine("Modulo Operator: " + result);
        Console.ReadKey();
    }
}

```

Output:

15

4

Addition Operator: 19

Subtraction Operator: 11

Multiplication Operator: 60

Division Operator: 3

Modulo Operator: 3

ii) Program to demonstrate Decision Looping

```

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace ConsoleApp8
{
    internal class fprogram
    {
        static void Main(string[] args)
        {
            Console.WriteLine("Enter your marks");
            int num = Convert.ToInt32(Console.ReadLine());
            if(num<0ifinum>100)
            {
                Console.WriteLine("Invalid Marks");
            }
            else if(num>0ifinum<=50)
            {
                Console.WriteLine("fAIL");
            }
            else if(num>=50ifinum<=60)
            {
                Console.WriteLine("CC Grade");
            }
            else if(num>60ifinum<=70)

```

```

        {
            Console.WriteLine("BC Grade");
        }
        else if(num>70fifinum<=80)
        {
            Console.WriteLine("BB Grade");
        }
        else if(num>80fifinum<=90)
        {
            Console.WriteLine("AB Grade");
        }
        else if(num>90fifinum<=100)
        {
            Console.WriteLine("AA Grade");
        }
        Console.ReadKey();
    }
}

```

Output:

Enter your marks

86

AB Grade

iii) a) Program to demonstrate nested for loop

```

using System;
using System.Collections.Generic;
using System.Globalization;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace ConsoleApp13
{
    internal class flrogram
    {
        static void Main(string[] args)
        {
            //For loop
            for(int i=1;i<=3;i++)
            {
                for(int j=1;j<=3;j++)
                {
                    Console.WriteLine(i + " ");
                }
            }
            Console.ReadKey();
        }
    }
}

```

Output:

1

1

1
2
2
2
3
3
3

b) Program To Demonstrate Nested While Loop

```
using System;
using System.Collections.Generic;
using System.Globalization;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace ConsoleApp15
{
    internal class florogram
    {
        static void Main(string[] args)
        {
            //Nested While loop
            int i = 1;
            while (i <=3)
            {
                int j = 1;
                while (j<=3) ;
                {
                    Console.WriteLine(i+" " +j);
                    j++;
                }
                i++;
            }
            Console.ReadKey();
        }
    }
}
```

Output:

1 1
1 2
1 3
2 1
2 2
2 3
3 1

3 2

3 3

c) Program to Demonstrate Nested Do While Loop

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

public class DoWhileExample
{
    public static void Main(string[] args)
    {
        int i = 1;
        do{
            Console.WriteLine(i);
            i++;
        } while (i <= 10);
    }
}
```

Output:

1
2
3
4
5
6
7
8
9
10

3) i) Write a Console Application to demonstrate parameterized Constructor and Destructor

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
```

```

namespace ConsoleApp25
{
    public class Employee
    {
        public int id;
        public String name;
        public float salary;
        public Employee(int i, String n, float s)
        {
            id = i;
            name = n;
            salary = s;
        }
        public void display()
        {
            Console.WriteLine(id + " " + name + " " + salary);
        }
    }
    class TestEmployee{
        public static void Main(string[] args)
        {
            Employee e1 = new Employee(101, "Yash", 890000f);
            Employee e2 = new Employee(102, "Milind", 490000f);
            e1.display();
            e2.display();
        }
    }
}

```

Output:

101 Yash 890000

102 Milind 490000

Destructor Program

```

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

```

```

namespace ConsoleApp26
{
    public class Employee
    {
        public Employee()
        {
            Console.WriteLine("Constructor Invoked");
        }
        ~Employee()
        {
            Console.WriteLine("Destructor Invoked");
        }
    }
    class TestEmployee{
        public static void Main(string[] args)
        {
            Employee e1 = new Employee();
            Employee e2 = new Employee();
        }
    }
}

```

Output:

```

Constructor Invoked
Constructor Invoked
Destructor Invoked
Destructor Invoked

```

ii)a)Program for single Inheritance

```

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

```

```

namespace ConsoleApp27
{
    public class Parent
    {

```

```

        public void DisplayParentsAB()
        {
            Console.WriteLine("A and B are my parents");
        }
    }

    public class Son: Parent
    {
        public void DisplaySonC()
        {
            Console.WriteLine("I am the son C");
        }
    }

    public class Program
    {
        public static void Main(string[] args)
        {
            Son s = new Son();
            s.DisplaySonC();
            s.DisplayParentsAB();
        }
    }
}

```

Output:

I am the son C

A and B are my parents

b) Program for MultiLevel Inheritance

```

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

```

```

namespace Studytonight
{
    public class Grandparent
    {

```



```

    public Grandparent()
    {
        Console.WriteLine("Constructor called at run-time");
    }
    public void DisplayGrandParentsAB()
    {
        Console.WriteLine("A and B are my grandparents");
    }
}

public class Parents: Grandparent
{
    public void DisplayParentsCD()
    {
        Console.WriteLine("C and D are my parents");
    }
}

public class Child: Parent
{
    public void DisplayChildZ()
    {
        Console.WriteLine("I am the child Z");
    }
}

public class Program
{
    public static void Main(string[] args)
    {
        child cd = new Child();
        cd.DisplayChildZ();
        cd.DisplayParentsCD();
        cd.DisplayGrandParentsAB();
    }
}

```

Output:

Constructor called at run-time

I am the son Z

C and D are my parents

A and B are my grandparents

c) Program for Hierarchical Inheritance

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Studytonight
{
    public class Parent
    {
        public void DisplayParentsAB()
        {
            Console.WriteLine("A and B are my parents");
        }
    }

    public class ChildC: Parent
    {
        public void DisplayChildC()
        {
            Console.WriteLine("I am the child C");
        }
    }

    public class ChildD: Parent
    {
        public void DisplayChildD()
        {
            Console.WriteLine("I am the child D");
        }
    }
}
```

```

public class Program
{
    public static void Main(string[] args)
    {
        ChildC cc = new ChildC();
        ChildD cd = new ChildD();

        cc.DisplayChildC();
        cc.DisplayParentsAB(); // accessing parent class

        cd.DisplayChildD();
        cd.DisplayParentsAB(); // accessing parent class
    }
}

```

Output:

I am the child C

A and B are my parents

I am the child D

A and B are my parents

iii) Program for abstract class

```

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

```

```

public abstract class Bank
{
    public abstract void withdraw();
}

```

```

public class YesBank:Bank
{
    public override void withdraw()
    {

```

```

        Console.WriteLine("Withdrawing cash from YesBank");
    }
}

public class NoBank:Bank
{
    public override void withdraw()
    {
        Console.WriteLine("Withdrawing cash from NoBank");
    }
}

namespace Studytonight
{
    public class Program
    {
        public static void Main(string[] args)
        {
            Bank b = new YesBank();
            b.withdraw();
            b = new NoBank();
            b.withdraw();
        }
    }
}

```

Output:

Withdrawing cash from YesBank

Withdrawing cash from NoBank

iv) Program for interface

```

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

public interface Drawable
{
    void draw();
}

```

```

    }
    public class Rectangle : Drawable
    {
        public void draw()
        {
            Console.WriteLine("drawing rectangle...");
        }
    }
    public class Circle : Drawable
    {
        public void draw()
        {
            Console.WriteLine("drawing circle...");
        }
    }
    public class TestInterface
    {
        public static void Main()
        {
            Drawable d;
            d = new Rectangle();
            d.draw();
            d = new Circle();
            d.draw();
        }
    }

```

Output:

drawing rectangle...

drawing circle...

4) program for exception handling multiple catch block

```

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace ExceptionHandlingDemo
{

```

```

class Program
{
    static void Main(string[] args)
    {
        int a,b,c;
        Console.WriteLine("Enter any two Number");
        try
        {
            a=Convert.ToInt32(Console.ReadLine());
            b=Convert.ToInt32(Console.ReadLine());
            c=a/b;
            Console.WriteLine("C value =" +c)
        }
        catch (DivideByZeroException ze)
        {
            Console.WriteLine("Second Number Should Not Be Zero");
        }
        catch (FormatException e)
        {
            Console.WriteLine("Enter Only Integer Numbers");
        }
        Console.ReadKey();
    }
}

```

Output:

Enter any two Number

25

3

C Value=8

5) Create a student registration form using Label, Button, TextBox control and print the data on the same form

```

using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;

```

```

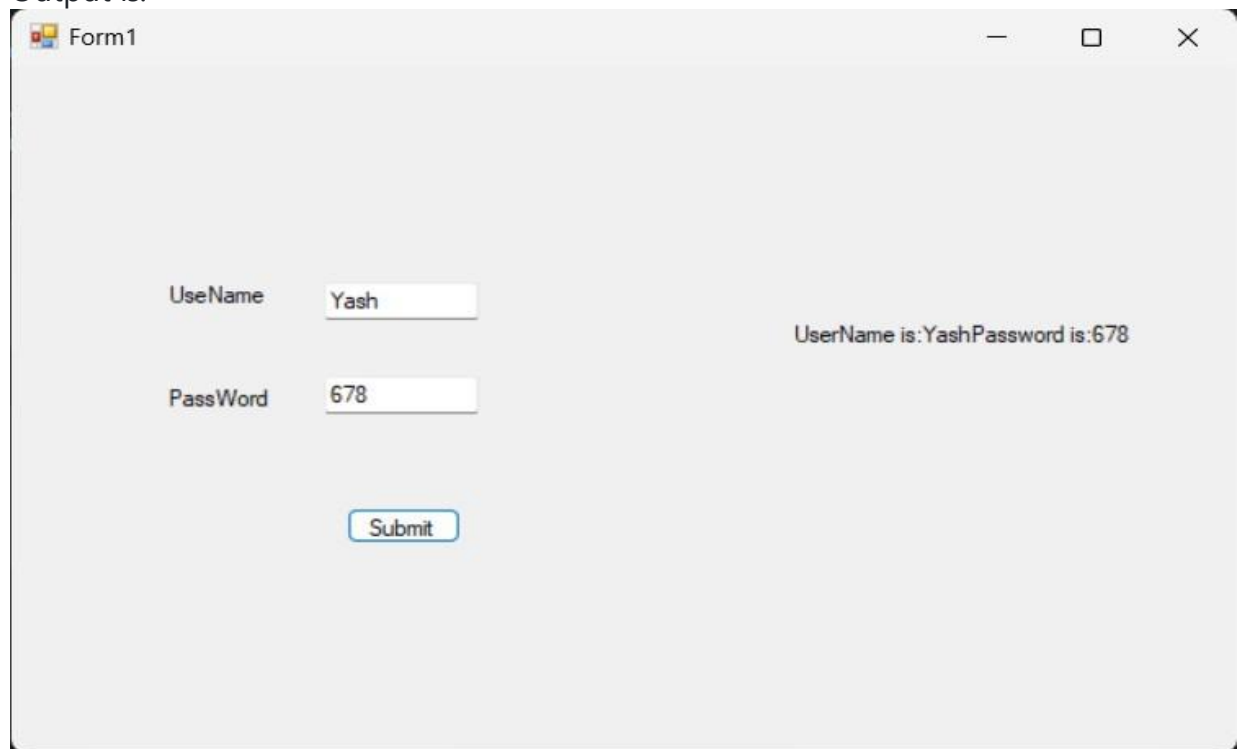
using System.Threading.Tasks;
using System.Windows.Forms;

namespace WindowsFormsApp2
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();

            private void button1_Click(object sender, EventArgs e)
            {
                label3.Text = "UserName is:" + textBox1.Text + "flassword is:" +
textBox2.Text;
            }
        }
    }
}

```

Output is:



6) Create a window application to demonstrate ListBox and ComboBox control

```

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;
using static System.Windows.Forms.VisualStyles.VisualStyleElement;

namespace WindowsFormsApp9

```

```

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

        private void Form1_Load(object sender, EventArgs e)
        {
            listBox1.Items.Add("Item 1");
            listBox1.Items.Add("Item 2");
            listBox1.Items.Add("Item 3");

            comboBox1.Items.Add("Option 1");
            comboBox1.Items.Add("Option 2");
            comboBox1.Items.Add("Option 3");

            comboBox1.SelectedIndex = 0;
        }

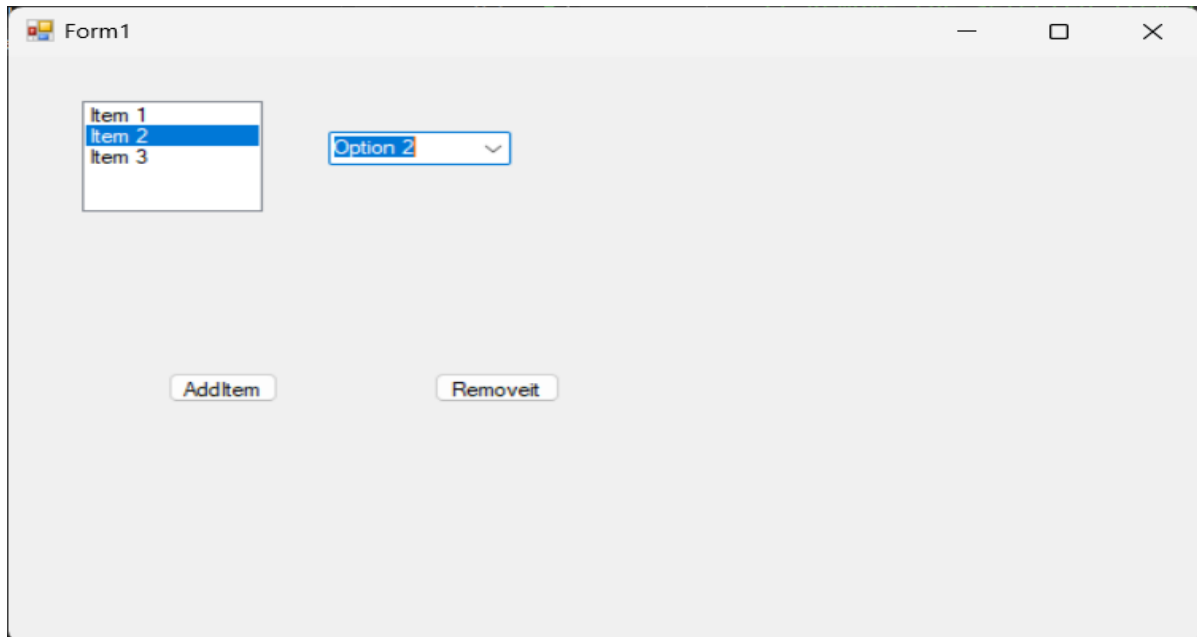
        private void button1_Click(object sender, EventArgs e)
        {
            listBox1.Items.Add("New Item");
        }

        private void button2_Click(object sender, EventArgs e)
        {
            listBox1.Items.Remove(listBox1.SelectedItem);
        }

        private void comboBox1_SelectedIndexChanged(object sender, EventArgs e)
        {
            MessageBox.Show("You selected: " +
                comboBox1.SelectedItem.ToString());
        }
    }
}

```

Output:



7) Write a window application to change the background color randomly after every second (Use Timer Control).

```
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 WindowsFormsApp3
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void Form1_Load(object sender, EventArgs e)
        {
            timer1.Interval = 1000;
            timer1.Start();
        }

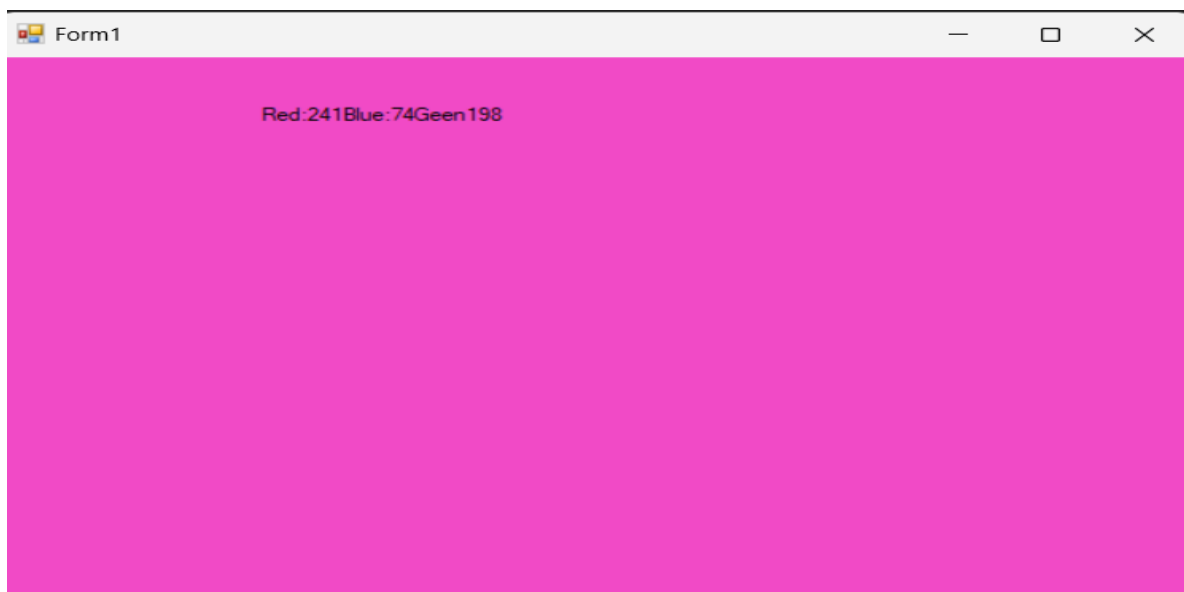
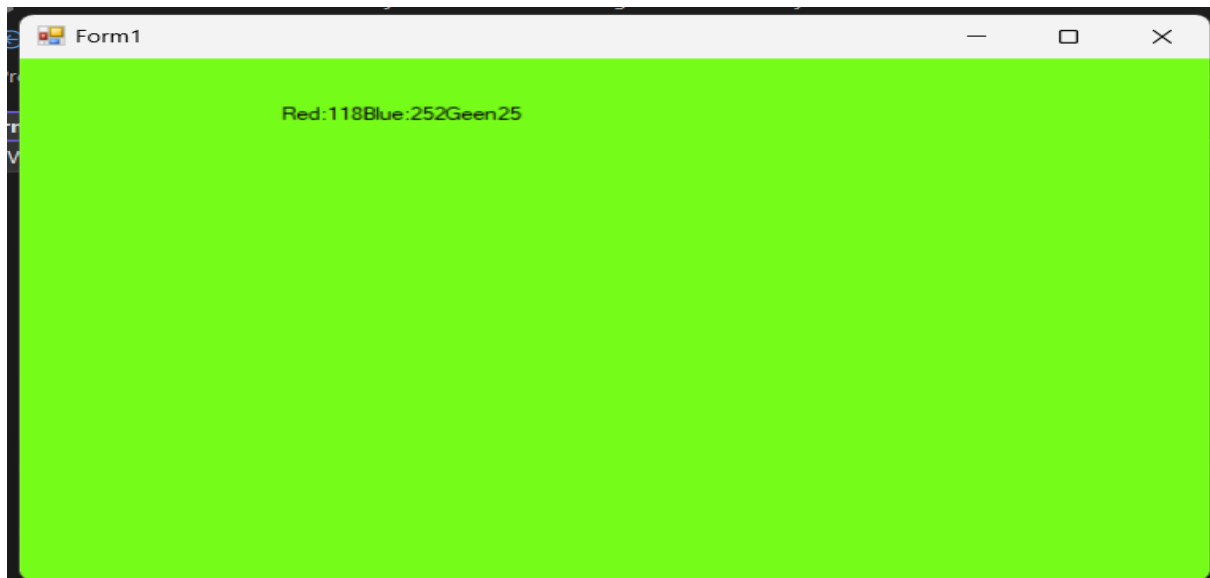
        private void timer1_Tick(object sender, EventArgs e)
        {
            Random rn= new Random();
            int R, B, G;
            R=rn.Next(0,255);
            B = rn.Next(0,255);
            G = rn.Next(0,255);
            label1.Text = "Red:" + R + "Blue:" + B + "Green" + G;
            BackColor=Color.FromArgb(R, B, G);
        }
    }
}
```

```

    }
}

```

Output:



8) Write a Window Application to demonstrate MDI (Multiple Document Interface) Create Main form with Menu-Form1, Form2 and Form3, and open respective form whenever user click on respective Menu option

```

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 WindowsFormsApp4

```

```

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

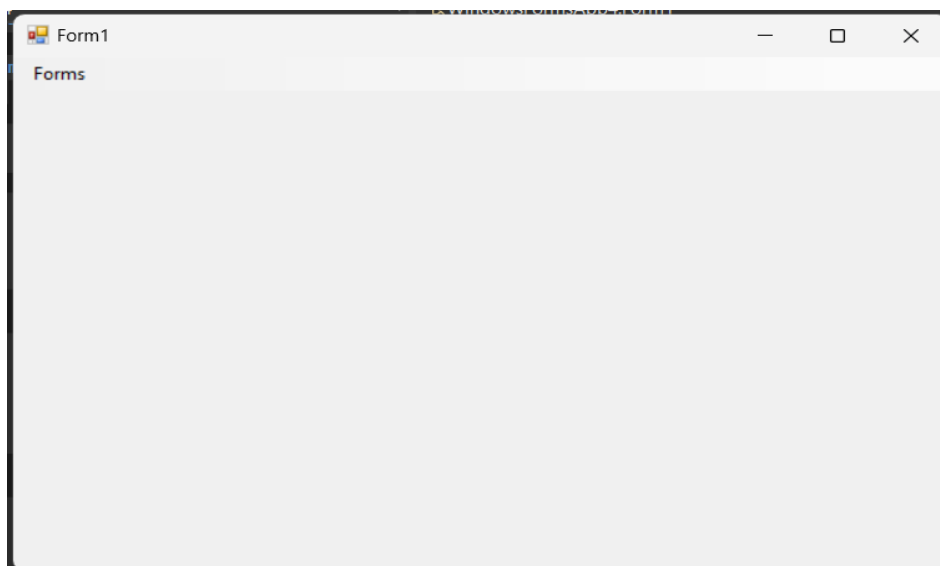
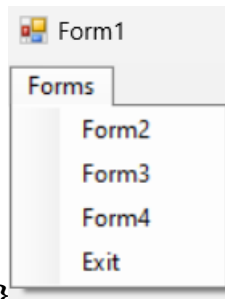
        private void form3ToolStripMenuItem_Click(object sender, EventArgs e)
        {
            Form3 f = new Form3();
            f.Show();
        }

        private void exitToolStripMenuItem_Click(object sender, EventArgs e)
        {
            Application.Exit();
        }

        private void form2ToolStripMenuItem_Click(object sender, EventArgs e)
        {
            Form2 f = new Form2();
            f.Show();
        }

        private void form4ToolStripMenuItem_Click(object sender, EventArgs e)
        {
            Form4 f = new Form4();
            f.Show();
        }
    }
}

```





9) Create a window application to demonstrate simple database connectivity with wizard and display the data on the form.

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Data.SqlClient;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using System.Data.SqlClient;

namespace WindowsFormsApp54
{
    public partial class Form1 : Form
    {
```

```

    public String constr = "Data Source=LAflTOfl-R5EN8901;Initial
Catalog=student2;Integrated Security=True";
    public Form1()
    {
        InitializeComponent();
    }

    private void Form1_Load(object sender, EventArgs e)
    {
        SqlConnection con = new SqlConnection(constr);
        con.Open();
        SqlCommand cm = new SqlCommand("select * from stud2", con);
        DataTable dt = new DataTable();
        dt.Load(cm.ExecuteReader());
        dataGridView1.DataSource = dt;
    }

    private void button1_Click(object sender, EventArgs e)
    {
        SqlConnection con = new SqlConnection(constr);
        con.Open();

        String q = "insert into stud2(id,name) values('" +
textBox1.Text.ToString() + "','" + textBox2.Text.ToString() + "')";
        SqlCommand cmd = new SqlCommand(q, con);
        cmd.ExecuteNonQuery();
        MessageBox.Show("Sucess");

        SqlCommand cm = new SqlCommand("select * from stud2", con);
        DataTable dt = new DataTable();
        dt.Load(cm.ExecuteReader());
        dataGridView1.DataSource = dt;
    }
}

```

Optput:

	id	name
▶	5	Yash
	7	Milind
	9	Tejas
	21	Megan
	65	ih89j
	65	ih89j
	14	yk

10) Create simple student's registration form and perform the operation like insert, update and delete.

```
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;
using System.Data.SqlClient;
using System.Xml.Linq;
using static System.Windows.Forms.VisualStyles.VisualStyleElement;
using static System.Net.Mime.MediaTypeNames;
```

```
namespace WindowsFormsApp11
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }
        SqlConnection conn;
        SqlCommand comm;
        SqlDataReader dreader;
        string connstring = "Data Source=LAflTOfl-R5EN8901;Initial
Catalog=STUDENT;Integrated Security=True";
```

```

private void button2_Click(object sender, EventArgs e)
{
    conn = new SqlConnection(connstring);
    conn.Open();
    comm = new SqlCommand("insert into student_detail values(" +
textBox1.Text + "," + textBox2.Text + "," + textBox3.Text + "," +
textBox4.Text + ")", conn);
    try
    {
        comm.ExecuteNonQuery();
        MessageBox.Show("Saved...");
    }
    catch (Exception)
    {
        MessageBox.Show("Not Saved");
    }
    finally
    {
        conn.Close();
    }
}

private void button1_Click(object sender, EventArgs e)
{
    textBox3.Clear();
    textBox4.Clear();
    textBox2.Clear();
    textBox1.Clear();
    textBox1.Focus();
}

private void button3_Click(object sender, EventArgs e)
{
    conn = new SqlConnection(connstring);
    conn.Open();
    comm = new SqlCommand("delete from student_detail where roll_no = " +
textBox2.Text + " ", conn);
    try
    {
        comm.ExecuteNonQuery();
        MessageBox.Show("Deleted...");
        textBox3.Clear();
        textBox4.Clear();
        textBox2.Clear();
        textBox1.Clear();
        textBox1.Focus();
    }
    catch (Exception x)
    {
        MessageBox.Show(" Not Deleted" + x.Message);
    }
    finally
    {
        conn.Close();
    }
}

private void button4_Click(object sender, EventArgs e)
{
    conn = new SqlConnection(connstring);
    conn.Open();

```

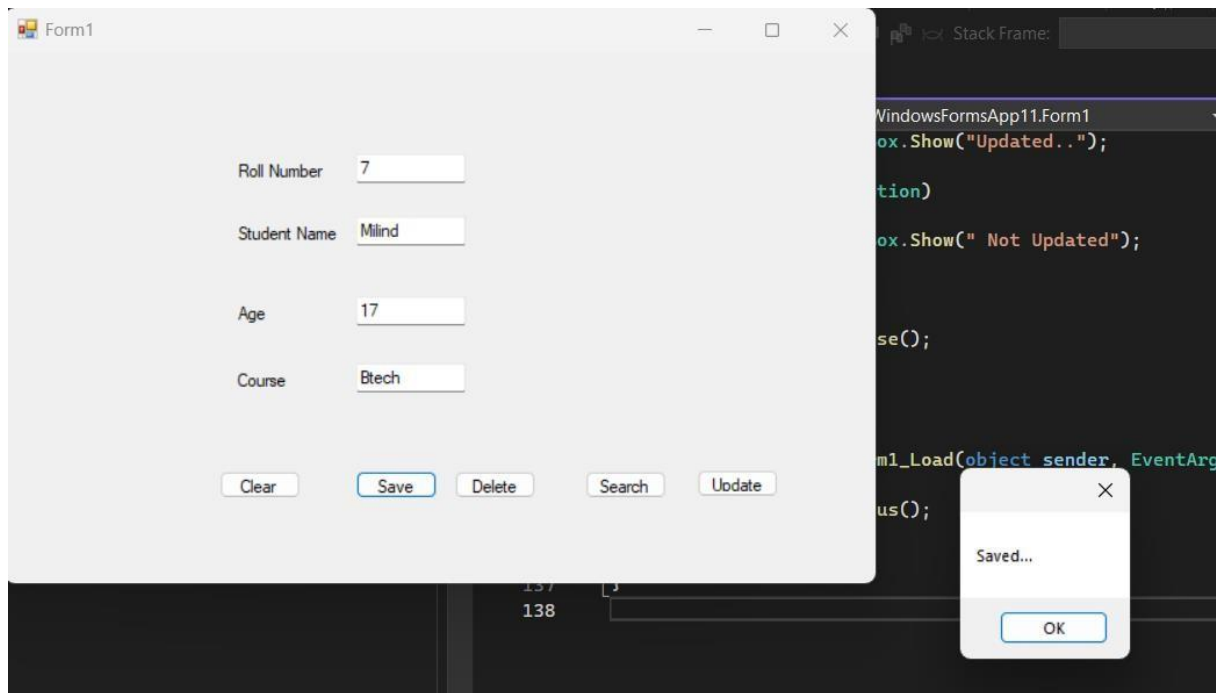
```

        comm = new SqlCommand("select * from student_detail where roll_no = "
+ textBox1.Text + " ", conn);
        try
        {
            dreader = comm.ExecuteReader();
            if (dreader.Read())
            {
                textBox2.Text = dreader[1].ToString();
                textBox3.Text = dreader[2].ToString();
                textBox4.Text = dreader[3].ToString();
            }
            else
            {
                MessageBox.Show(" No Record");
            }
            dreader.Close();
        }
        catch (Exception)
        {
            MessageBox.Show(" No Record");
        }
        finally
        {
            conn.Close();
        }
    }

    private void button5_Click(object sender, EventArgs e)
    {
        conn = new SqlConnection(connstring);
        conn.Open();
        comm = new SqlCommand("update student_detail set s_name= " +
textBox2.Text + "", age= " + textBox3.Text + " , course=' " + textBox4.Text + ""
where roll_no = " + textBox1.Text + " ", conn);
        try
        {
            comm.ExecuteNonQuery();
            MessageBox.Show("Updated..");
        }
        catch (Exception)
        {
            MessageBox.Show(" Not Updated");
        }
        finally
        {
            conn.Close();
        }
    }

    private void Form1_Load(object sender, EventArgs e)
    {
        textBox1.Focus();
    }
}

```

100 %

Results		Messages		
	roll_no	s_name	age	course
1	5	yash	19	BCA
2	7	Milind	17	Btech

11) Create a Window Application to generate the crystal report.

```

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;
using System.Data.SqlClient;

namespace WindowsFormsApp10
{
    public partial class Form1 : Form
    {
        public Form1()

```

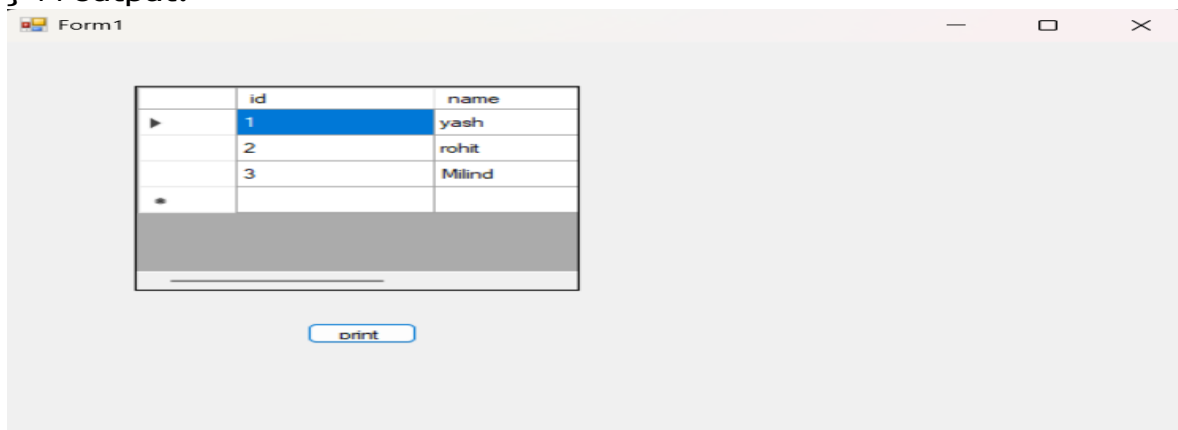
```

{
    InitializeComponent();
}
public string constr = "Data Source=LAflTOfl-R5EN8901;Initial
Catalog=student1;Integrated Security=True";

private void Form1_Load(object sender, EventArgs e)
{
    SqlConnection con = new SqlConnection(constr);
    con.Open();
    SqlCommand cmd = new SqlCommand("Select * from stu",con);
    DataTable dt = new DataTable();
    dt.Load(cmd.ExecuteReader());
    dataGridView1.DataSource = dt;
}

private void button1_Click(object sender, EventArgs e)
{
    SqlConnection con = new SqlConnection(constr);
    Form2 f2= new Form2();
    f2.Show();
    // if(con.State!=ConnectionState.Open())
    //{
    // con.Open();because we already oprn it in form1_Load ad does not
close connection
    //}
    SqlCommand cmd = new SqlCommand("Select * from stu", con);
    SqlDataAdapter adap = new SqlDataAdapter(cmd);
    DataSet ds=new DataSet();
    adap.Fill(ds,"stu");
    CrystalReport1 crl = new CrystalReport1();
    crl.SetDataSource(ds);
    f2.crystalReportViewer1.ReportSource = crl;
    f2.crystalReportViewer1.Refresh();
    con.Close();
}
}
} //output:

```



Form2

SAP CRYSTAL REPORTS®

Main Report

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