Practical no.02

**Working with Object Oriented C# and ASP .NET**

**Aim:**

**a.) Create simple application to perform following operations**

**i. Finding factorial Value ii. Money Conversion**

**iii. Quadratic Equation iv. Temperature Conversion**

**b.) Create simple application to demonstrate use of following concepts**

**i. Function Overloading ii. Inheritance (all types)**

**iii. Constructor overloading iv. Interfaces**

**c.) Create simple application to demonstrate use of following concepts**

**i. Using Delegates and events ii. Exception handling**

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**Aim:**

**a.) Create simple application to perform following operations**

**i. Finding factorial Value ii. Money Conversion iii. Quadratic Equation**

**iv. Temperature Conversion**

1. **Finding factorial Value Code:**

using System;

using System.Collections.Generic; using System.Linq;

using System.Web; using System.Web.UI;

using System.Web.UI.WebControls; class fact

{

public int n, f; public fact()

{

f = 1;

}

public void cal()

{

int i;

for(i=1; i<=n; i++)

{ f = f \* i;

}

}

}

namespace practical2a1.Properties

{

public partial class WebForm1 : System.Web.UI.Page

{

protected void Page\_Load(object sender, EventArgs e)

{

}

protected void Button1\_Click(object sender, EventArgs e) {

fact f1 = new fact();

f1.n = int.Parse(TextBox1.Text); f1.cal();

Label2.Text = f1.f.ToString();

}

}

}

**Output:**

Graphical user interface, text, application

Description automatically generated

1. **Money Conversion Code:**

using System;

using System.Collections.Generic; using System.Linq;

using System.Web; using System.Web.UI;

using System.Web.UI.WebControls; public class Class1

{

public double r, e, d; public Class1()

{

r = 0;

e = 0;

d = 0;

}

public void convertdtor()

{

r = d \* 78;

}

public void convertetor()

{

r = e \* 80;

}

public void convertrtod()

{

d = r / 78;

}

public void convertrtoe()

{

e = r / 80;

}

}

namespace practical2a1

{

public partial class WebForm1 : System.Web.UI.Page

{

Class1 f1;

protected void Page\_Load(object sender, EventArgs e)

{

f1 = new Class1();

}

protected void RadioButton1\_CheckedChanged(object sender, EventArgs e) {

if (RadioButton1.Checked == true) ;

{

f1.d = Convert.ToInt16(TextBox1.Text); f1.convertdtor();

Response.Write(f1.d + "Dollar" + "=Rs" + f1.r);

}

}

protected void RadioButton2\_CheckedChanged(object sender, EventArgs e) {

if (RadioButton2.Checked == true) ;

{

f1.d = Convert.ToInt16(TextBox1.Text); f1.convertetor();

Response.Write(f1.r + "Rupee" + "=$" + f1.d);

}

}

protected void RadioButton3\_CheckedChanged(object sender, EventArgs e) {

if (RadioButton3.Checked == true) ;

{

f1.d = Convert.ToInt16(TextBox1.Text); f1.convertrtod();

Response.Write(f1.e + "Euro" + "=Rs." + f1.r);

}

}

protected void RadioButton4\_CheckedChanged(object sender, EventArgs e) {

if (RadioButton4.Checked == true) ;

{

f1.d = Convert.ToInt16(TextBox1.Text); f1.convertrtoe();

Response.Write(f1.r + "=Rs to Euro" + f1.e);

}

}

}

}

**Output:**

Graphical user interface, application

Description automatically generated

1. **Quadratic Equation Code:**

using System;

using System.Collections.Generic; using System.Linq;

using System.Web; using System.Web.UI;

using System.Web.UI.WebControls; class Quadraticroots

{

public double a, b, c, r1, r2; public double compute()

{

double d1;

d1 = b \* b - 4 \* a \* c; if(d1 == 0)

{

r1 = r2 = (-b) / (2 \* a); return d1;

}

else if (d1 > 0)

{

r1 = (-b + Math.Sqrt(d1)) / (2 \* a); return d1;

}

else

{

r1 = (-b) / (2 \* a);

r2= Math.Sqrt(-d1) / (2 \* a); return d1;

}

}

}

namespace practical2a1.Properties

{

public partial class WebForm2 : System.Web.UI.Page {

Quadraticroots q;

protected void Page\_Load(object sender, EventArgs e) {

q= new Quadraticroots();

}

protected void Button1\_Click(object sender, EventArgs e) {

q.a = Convert.ToInt16(TextBox1.Text);

q.b = Convert.ToInt16(TextBox2.Text);

q.c = Convert.ToInt16(TextBox3.Text); double d = q.compute();

if(d==0)

{

Response.Write("\n Roots are Real and Equal

<br>"); Response.Write("First and Second Root is:"+ q.r1); }

else if(d < 0)

{

Response.Write("\n Roots are Real and Distinct

<br>"); Response.Write("\nFirst Root is:" + q.r1 + "<br>"); Response.Write("\nSecond Root is:" + q.r2 + "<br>"); }

else

{

Response.Write("\n Roots are Real and Imaginary<br>"); Response.Write("\nFirst Root is:" + q.r1 + "<br>"); Response.Write("\nSecond Root is:" + q.r2 + "<br>");

}

}

}

}

**Output:**

Graphical user interface, application

Description automatically generated

1. **Temperature Conversion Code:**

using System;

using System.Collections.Generic; using System.Linq;

using System.Web; using System.Web.UI;

using System.Web.UI.WebControls; class converttemp

{

public float celsius, faren;

public converttemp()

{

celsius = 0;

faren = 0;

}

public void converttofaren()

{

faren = ((celsius \* 9.0f / 5.0f) + 32.0f);

}

public void converttocel()

{

celsius = (faren - 32) \* (5.0f / 9.0f);

}

}

namespace practical2a1

{

public partial class WebForm2 : System.Web.UI.Page {

converttemp c;

protected void Page\_Load(object sender, EventArgs e) {

c = new converttemp();

}

protected void Button1\_Click(object sender, EventArgs e) {

char ch;

ch = Convert.ToChar(TextBox1.Text); if (ch == 'c')

{

c.celsius = float.Parse(TextBox2.Text); c.converttofaren();

Label2.Text = "celsius to farenheit:" + c.faren;

}

else

{

c.celsius = float.Parse(TextBox1.Text); c.converttocel();

Label2.Text = "farenheit to celsius:" + c.celsius; }

}

}

}

**Output:**

Graphical user interface, text, application, email

Description automatically generated

**Aim:**

**b.) Create simple application to demonstrate use of following concepts**

**i. Function Overloading ii. Inheritance (all types)**

**iii. Constructor overloading iv. Interfaces**

1. **Function Overloading Code:**

using System;

using System.Collections.Generic; using System.Linq;

using System.Web; using System.Web.UI;

using System.Web.UI.WebControls; class overloding

{

public int sum(int a, int b)

{

int x;

return x = a + b;

}

public int sum(int a , int b , int c)

{

int y;

return y = a + b + c;

}

public float sum(float a , float b)

{

float u;

return u = a + b;

}

public float sum(float a, float b, float c)

{

float v;

return v = a + b + c;

}

}

namespace prac2b

{

public partial class WebForm1 : System.Web.UI.Page

{

overloding o;

protected void Page\_Load(object sender, EventArgs e)

{

o = new overloding();

}

protected void Button1\_Click(object sender, EventArgs e)

{

Label1.Text = Convert.ToString(o.sum(10, 20)); Label2.Text = Convert.ToString(o.sum(10, 20, 30));

Label3.Text = Convert.ToString(o.sum(23.1f, 32.5f));

Label4.Text = Convert.ToString(o.sum(12.0f , 23.1f, 32.5f)); }

}

}

**Output:**

Graphical user interface, text, application

Description automatically generated

1. **Inheritance (all types) 1.SingleLevel inheritance**

**Code:**

using System;

using System.Collections.Generic; using System.Linq;

using System.Web; using System.Web.UI; using

System.Web.UI.WebControls;

public class basec

{

public int d;

public string basemethod()

{

string p = "This a base class method"; return p;

}

}

public class derived : basec

{

public string derivedmethod()

{

string s = "This derivedclass method"; return s;

}

}

namespace prac2b

{

public partial class WebForm2 : System.Web.UI.Page

{

protected void Page\_Load(object sender, EventArgs e)

{

}

protected void Button1\_Click(object sender, EventArgs e)

{

basec b = new basec(); derived d = new derived();

Response.Write("Calling from the base class object" + b.basemethod()); Response.Write("<br> Calling from the derived class method:<br>" + d.basemethod()); Response.Write("<br>" + d.derivedmethod());

}

}

}

**Output:**

Text

Description automatically generated

1. **Multilevel inheritance Code:**

using System;

using System.Collections.Generic; using System.Linq;

using System.Web; using System.Web.UI;

using System.Web.UI.WebControls; class A

{

public string show()

{

return ("First base class");

}

}

class B : A

{

public string display()

{

return ("second base class");

}

}

class C : B

{

public string show1()

{

return ("child class");

}

}

namespace prac2b

{

public partial class WebForm3 : System.Web.UI.Page {

protected void Page\_Load(object sender, EventArgs e) {

}

protected void Button1\_Click(object sender, EventArgs e)

{

C obj = new C(); Response.Write(obj.show() + "<br>"); Response.Write(obj.display() + "<br>"); Response.Write(obj.show1() + "<br>");

}

}

}

**Output:**

Graphical user interface, text, application

Description automatically generated

1. **Hierarchical Inheritance Code:**

using System;

using System.Collections.Generic; using System.Linq;

using System.Web; using System.Web.UI;

using System.Web.UI.WebControls; class D

{

public string Show()

{

return ("Welcome");

}

}

class E : D

{

public string Display()

{

return ("to the world");

}

}

class F : D

{

public string Show1()

{

return(" of programming");

}

}

namespace prac2b

{

public partial class WebForm4 : System.Web.UI.Page {

protected void Page\_Load(object sender, EventArgs e) {

}

protected void Button1\_Click(object sender, EventArgs e) {

F d1 = new F();

E e1 = new E();

string s = ""; s += d1.Show(); s += e1.Display(); s += d1.Show1();

Label1.Text = s;

}

}

}

**Output:**

Graphical user interface, text, application

Description automatically generated

1. **Constructor overloading Code:**

using System;

using System.Collections.Generic; using System.Linq;

using System.Web; using System.Web.UI;

using System.Web.UI.WebControls; class marksheet

{

public float m1, m2, m3; string name;

public marksheet()

{

m1 = 20;

m2 = 40;

m3 = 40;

}

public marksheet (float ms)

{

m1= ms;

}

public marksheet(float ms1 , float ms2)

{

m1= ms1; m2= ms2;

}

public marksheet(float ms1, float ms2, float ms3) {

m1=ms1; m2=ms2; m3=ms3;

}

public float tot()

{

float t = m1 + m2 + m3; return t;

}

}

namespace prac2b

{

public partial class WebForm5 : System.Web.UI.Page {

protected void Page\_Load(object sender, EventArgs e) {

}

protected void Button1\_Click(object sender, EventArgs e) {

marksheet a = new marksheet(); marksheet b = new marksheet(90); marksheet c = new marksheet(88, 60); marksheet d = new marksheet(70, 90, 55); Response.Write("in marksheet 1:"); Response.Write(a.tot() + "<br>"); Response.Write("in marksheet 2:"); Response.Write(b.tot() + "<br>"); Response.Write("in marksheet 3:"); Response.Write(c.tot() + "<br>"); Response.Write("in marksheet 4:"); Response.Write(d.tot() + "<br>");

}

}

}

**Output:**

Text

Description automatically generated

1. **Interfaces Code:**

using System;

using System.Collections.Generic; using System.Linq;

using System.Web; using System.Web.UI;

using System.Web.UI.WebControls; class shape

{

public int side;

public void setside(int s)

{ side = s;

}

}

public interface cost

{

int getCost(int area);

}

class square : shape, cost

{

public int getArea()

{

return (side \* side);

}

public int getCost(int area)

{

return (area \* 10);

}

}

namespace prac2b

{

public partial class WebForm6 : System.Web.UI.Page {

protected void Page\_Load(object sender, EventArgs e) {

}

protected void Button1\_Click(object sender, EventArgs e) {

square sq = new square(); int area;

sq.setside(15);

area = sq.getArea(); Label1.Text = "Area:" + area; int c = sq.getCost(area); Label2.Text = "cost is Rs:" + c;

}

}

}

**Output:**

Graphical user interface, text, application

Description automatically generated

**Aim:**

**c.) Create a simple application to demonstrate use of following concepts i.**

**Using Delegates and events ii. Exception handling**

1. **Using Delegates and events Code:**

using System;

using System.Collections.Generic; using System.Linq;

using System.Web; using System.Web.UI;

using System.Web.UI.WebControls;

namespace practical2c1

{

public partial class WebForm1 : System.Web.UI.Page

{

public delegate void simpledelegate();

public void callingfunction()

{

Response.Write("First function called. <br>");

}

public void secfunction()

{

Response.Write("Second function called. <br>");

}

protected void Page\_Load(object sender, EventArgs e)

{

}

protected void Button1\_Click(object sender, EventArgs e)

{

simpledelegate sd = new simpledelegate(callingfunction); sd();

sd += new simpledelegate(secfunction); sd();

}

}

}

**Output:**

Graphical user interface, text, application

Description automatically generated

1. **Exception handling Code:**

using System;

using System.Collections.Generic; using System.Linq;

using System.Web; using System.Web.UI;

using System.Web.UI.WebControls; class negativeException : Exception

{

public negativeException(string msg): base(msg)

{

}

}

namespace practical2c1

{

public partial class WebForm2 : System.Web.UI.Page {

protected void Page\_Load(object sender, EventArgs e) {

}

protected void Button1\_Click(object sender, EventArgs

e) {

int num; try

{

num = int.Parse(TextBox1.Text); if (num < 0)

throw new negativeException("Negative Number"); else

Response.Write("Positive Number");

}

catch(negativeException en)

{

Response.Write(en.Message);

}

}

}

}

**Output:**

Graphical user interface, text, application

Description automatically generated