

## Practical No. 1

**Aim: Write C# programs for understanding C# basics involving:**

**a. Variables and Data Types**

**b. Object-Based Manipulation**

**c. Conditional Logic**

**d. Loops**

**e. Methods**

### **a. Variables and Data Types**

#### **Program:**

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

namespace ConsoleApplication1
{
    class Program
    {
        static void Main(string[] args)
        {
            int a = 20;
            bool b = true;
            double c = 5.5D;
            float d = 5.5F;
            string val = "Hello World";
            Console.WriteLine("Integer: " + a);
            Console.WriteLine("Boolean Value: " + b);
            Console.WriteLine("Decimal Value: " + c);
            Console.WriteLine("Float Value: " + d);
            Console.WriteLine("String Value: " + val);
            Console.ReadKey();
        }
    }
}
```

### **b. Object-Based Manipulation**

#### **Program:**

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

namespace ConsoleApplication1
{
    class Program
    {
        static void Main(string[] args)
        {
            string mystring;
            int a = 100;
            Console.WriteLine("Convert Number to String");
            mystring = a.ToString();
        }
    }
}
```

```
Console.WriteLine("String is " + mystring);

string s = "  This is test string";

Console.WriteLine("\nBefore Trim() Method: " + s);
s = s.Trim();
Console.WriteLine("\nAfter Trim() Method: " + s);

s = s.Substring(0, 4);
Console.WriteLine("\nSubstring() Method: " + s);

s = s.ToUpper();
Console.WriteLine("\nUppercase String: " + s);

s = s.Replace("IS", "AT");
Console.WriteLine("\nReplace String: " + s);

int length = s.Length;
Console.WriteLine("\nLength of String is: " + length);

Console.WriteLine("\n*****");

Console.WriteLine("\nDateTime Object");
DateTime myDate = DateTime.Now;
Console.WriteLine("Today's date is: " + myDate);

myDate = myDate.AddDays(100);
Console.WriteLine("\nAfter 100 Days the Date is: " + myDate);

string dateString = myDate.Year.ToString();
Console.WriteLine("\nYear in String is: " + dateString);

DateTime myDate1 = DateTime.Now;
DateTime myDate2 = DateTime.Now.AddHours(3000);
Console.WriteLine("\nDate 1 : " + myDate1);
Console.WriteLine("\nDate 2 : " + myDate2);

TimeSpan difference;
difference = myDate2.Subtract(myDate1);
Console.WriteLine("\nDifference between 2 Dates: " + difference.Days.ToString()+" Days");

double numberOfMinutes;
numberOfMinutes = difference.TotalMinutes;
Console.WriteLine("\nNumber of Minutes: " + numberOfMinutes);

Console.WriteLine("\n*****");

Console.WriteLine("\nThe Array Type:");
int[] myArray = { 1, 2, 3, 4, 5 };
int numberOfElements;
numberOfElements = myArray.Length;
Console.WriteLine("\nTotal Elements in array:" + numberOfElements);
```

```
        Console.ReadKey();
    }
}
}
```

## c. Conditional Logic

### 1. If...Else Condition

#### Program:

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

namespace ConsoleApplication1
{
    class Program
    {
        static void Main(string[] args)
        {
            double percentage;
            Console.WriteLine("Enter your Percetage: ");
            percentage = Convert.ToDouble(Console.ReadLine());

            if (percentage >= 80.00)
            {
                Console.WriteLine("You get 'O' Grade.");
            }
            else if (percentage <= 79.99 && percentage >= 75.00)
            {
                Console.WriteLine("You get 'A' Grade.");
            }
            else if (percentage <= 74.99 && percentage >= 70.00)
            {
                Console.WriteLine("You get 'B' Grade.");
            }
            else if (percentage <= 69.99 && percentage >= 60.00)
            {
                Console.WriteLine("You get 'C' Grade.");
            }
            else if (percentage <= 59.99 && percentage >= 50.00)
            {
                Console.WriteLine("You get 'D' Grade.");
            }
            else if (percentage <= 49.99 && percentage >= 40.00)
            {
                Console.WriteLine("You get 'E' Grade.");
            }
            else
            {
                Console.WriteLine("You get 'F' Grade.");
            }
            Console.ReadKey();
        }
    }
}
```

```
}  
}  
}
```

## 2. Switch Case

### Program:

```
using System;  
using System.Collections.Generic;  
using System.Linq;  
using System.Text;  
  
namespace ConsoleApplication1  
{  
    class Program  
    {  
        static void Main(string[] args)  
        {  
            char op;  
            int first, second, result;  
  
            Console.Write("Enter first number: ");  
            first = Convert.ToInt32(Console.ReadLine());  
            Console.Write("\nEnter second number: ");  
            second = Convert.ToInt32(Console.ReadLine());  
            Console.Write("\nEnter operator (+, -, *, /): ");  
            op = (char)Console.Read();  
  
            switch (op)  
            {  
                case '+':  
                    result = first + second;  
                    Console.WriteLine("\n" + first + " + " + second + " = " + result);  
                    break;  
  
                case '-':  
                    result = first - second;  
                    Console.WriteLine("\n" + first + " - " + second + " = " + result);  
                    break;  
  
                case '*':  
                    result = first * second;  
                    Console.WriteLine("\n" + first + " * " + second + " = " + result);  
                    break;  
  
                case '/':  
                    result = first / second;  
                    Console.WriteLine("\n" + first + " / " + second + " = " + result);  
                    break;  
  
                default:  
                    Console.WriteLine("Invalid Operator");  
                    break;  
            }  
        }  
    }  
}
```

```

    }
    Console.ReadKey();
}
}
}

```

## d. Loops

### 1. For Loop

#### Program:

```

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

namespace ConsoleApplication1
{
    class Program
    {
        static void Main(string[] args)
        {
            int n = 10, sum = 0;
            for (int i = 1; i <= n; i++)
            {
                sum = sum + i;
            }
            Console.WriteLine("Sum of first {0} natural numbers = {1}", n, sum);
            Console.ReadKey();
        }
    }
}

```

### 2. While Loop

#### Program:

```

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

namespace ConsoleApplication1
{
    class Program
    {
        static void Main(string[] args)
        {
            int n = 10, sum = 0, i = 1;

            while (i <= n)
            {
                sum = sum + i;
                i++;
            }
        }
    }
}

```

```

        Console.WriteLine("Sum of first {0} natural numbers = {1}", n, sum);
        Console.ReadKey();
    }
}
}

```

### 3. Foreach Loop

#### Program:

```

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

namespace ConsoleApplication1
{
    class Program
    {
        static void Main(string[] args)
        {
            int sum = 0;
            int[] n = { 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 };

            foreach (int number in n)
            {
                sum = sum + number;
            }
            Console.WriteLine("Sum of first {0} natural numbers = {1}", n.Length.ToString(), sum);
            Console.ReadKey();
        }
    }
}

```

## e. Methods

### 1. Method Overloading

#### Program:

```

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

namespace ConsoleApplication1
{
    class Program
    {
        void calculate(int r)
        {
            double area, pi=3.14;
            area = pi * r * r;
            Console.WriteLine("Area of Circle: " + area);
        }
        void calculate(int l, int b)

```

```
{
    double area;
    area = l * b;
    Console.WriteLine("Area of Rectangle " + area);
}
static void Main(string[] args)
{
    Program p = new Program();

    int r, l, b;

    Console.WriteLine("Enter radius: ");
    r = Convert.ToInt32(Console.ReadLine());
    p.calculate(r);
    Console.WriteLine("\n-----\n");

    Console.WriteLine("Enter Length: ");
    l = Convert.ToInt32(Console.ReadLine());
    Console.WriteLine("Enter Breadth: ");
    b = Convert.ToInt32(Console.ReadLine());
    p.calculate(l, b);
    Console.WriteLine("\n-----\n");

    Console.ReadKey();
}
}
```

## Practical No. 2

**Aim: Write C# programs for Object oriented concepts of C# such as:**

**a. Program using classes**

**b. Constructor and Function Overloading**

**c. Inheritance**

**d. Namespaces**

### a. Program using Classes

**Program:**

```
using System;
namespace sycs
{
    class Employee
    {
        public string name;
        public void work(string work)
        {
            Console.WriteLine("Work: " + work);
        }
    }

    class EmployeeDrive
    {
        static void Main(string[] args)
        {
            // create Employee object
            Employee e1 = new Employee();

            Console.WriteLine("Employee 1");

            // set name of the Employee
            e1.name = "Gloria";
            Console.WriteLine("Name: " + e1.name);

            //call method of the Employee
            e1.work("Coding");

            Console.ReadLine();
        }
    }
}
```

### b. Constructor and Function Overloading

#### 1. Constructor Overloading

**Program:**

```
using System;
namespace sycs
{
    class gamescore
    {
        string user;
        int age;
        //Default Constructor
```



```

public gamescore()
{
    user = "John";
    age = 25;
    Console.WriteLine("\nPrevious User {0} and he was {1} year old", user, age);
}

//Parameterized Constructor
public gamescore(string name, int age1)
{
    user = name;
    age = age1;
    Console.WriteLine("\nCurrent User {0} and he is {1} year old", user, age);
}
}

class sycs
{
    static void Main(string[] args)
    {
        //Default Constructor Called
        gamescore gs = new gamescore();

        //Overloaded Constructor.
        gamescore gs1 = new gamescore("Ram", 30);
        Console.ReadLine();
    }
}
}

```

### **Output:**

Previous User John and he was 25 year old

Current User Ram and he is 30 year old

## **2. Function Overloading**

### **Program:**

```

using System;
namespace sycs
{
    class shape
    {
        public void Area(int side)
        {
            int square_area = side * side;
            Console.WriteLine("\nThe Area of Square is : " + square_area);
        }
        public void Area(int length, int breadth)
        {

```

```

        int rect_area = length * breadth;
        Console.WriteLine("\nThe Area of Rectangle is : " + rect_area);
    }

    public void Area(double radius)
    {
        double circle_area = 3.14 * radius * radius;
        Console.WriteLine("\nThe Area of Circle is : " + circle_area);
    }
}
class sycs
{
    static void Main(string[] args)
    {
        shape s = new shape();
        s.Area(10);
        s.Area(10, 20);
        s.Area(10.8);
        Console.ReadKey();
    }
}
}

```

### c. Inheritance:

#### Program:

```

using System;
namespace sycs
{
    class sycs
    {
        static void Main(string[] args)
        {
            Scooter sc = new Scooter();
            sc.ScooterType();

            Car c = new Car();
            c.CarType();

            Console.ReadKey();
        }
    }

    //Creating Base Class
    class Tyre
    {
        protected void TyreType()
        {
            Console.WriteLine("This is Tubeless Tyre");
        }
    }

    //Creating Child Class
    class Scooter : Tyre

```

```

{
    public void ScooterType()
    {
        Console.WriteLine("\nScooter Color is Red");
        TyreType();
    }
}
//Creating Child Class
class Car : Tyre
{
    public void CarType()
    {
        Console.WriteLine("\n\nCar Type : Ferrari");
        TyreType();
    }
}
}

```

Output:

Scooter Color is Red  
This is Tubeless Tyre

Car Type : Ferrari  
This is Tubeless Tyre

#### d. Namespaces:

**1. Example of namespace in C# where one namespace program accesses another namespace program.**

**Program:**

```

using System;
namespace First
{
    public class Hello
    {
        public void sayHello()
        {
            Console.WriteLine("Hello First Namespace");
        }
    }
}
namespace Second
{
    public class Hello
    {
        public void sayHello()
        {
            Console.WriteLine("Hello Second Namespace");
        }
    }
}
public class TestNamespace

```

```

{
    public static void Main(String[] args)
    {
        First.Hello h1 = new First.Hello();
        Second.Hello h2 = new Second.Hello();
        h1.sayHello();
        h2.sayHello();
    }
}

```

## 2. Example of namespace where we are using "using" keyword so that we don't have to use a complete name for accessing a namespace program.

### Program:

```

using System;
using First;
using Second;
namespace First
{
    public class Hello
    {
        public void sayHello()
        {
            Console.WriteLine("Hello Namespace");
        }
    }
}
namespace Second
{
    public class Welcome
    {
        public void sayWelcome()
        {
            Console.WriteLine("Welcome Namespace");
        }
    }
}
public class TestNamespace
{
    public static void Main(String[] args)
    {
        Hello h1 = new Hello();
        Welcome w1 = new Welcome();
        h1.sayHello();
        w1.sayWelcome();
    }
}

```

## **Aim: Design ASP.NET Pages with Server Controls**

```
</form>
```

```
</body>
```

```
</html>
```

### Default.aspx.cs Page:

```
using System;
```

```
using System.Collections.Generic;
```

```
using System.Linq;
```

```
using System.Web;
```

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

```
using System.Web.UI.WebControls;
```

```
public partial class _Default : System.Web.UI.Page
```

```
{
```

```
    protected void Page_Load(object sender, EventArgs e)
```

```
    {
```

```
        protected void Button1_Click(object sender, EventArgs e)
```

```
        {
```

```
            double number1, number2, output;
```

```
            number1 = Convert.ToDouble(TextBox1.Text);
```

```
            number2 = Convert.ToDouble(TextBox2.Text);
```

```
            string s;
```

```
            s = RadioButtonList1.SelectedValue.ToString();
```

```
            if (s == "Add")
```

```
            {
```

```
                output = number1 + number2;
```

```
                TextBox3.Text = output.ToString();
```

```
            }
```

```
            else if (s == "Subtract")
```

```
            {
```

```
                output = number1 - number2;
```

```
                TextBox3.Text = output.ToString();
```

```
            }
```

```
            else if (s == "Multiply")
```

```
            {
```

```
                output = number1 * number2;
```

```
                TextBox3.Text = output.ToString();
```

```
            }
```

```
            else if (s == "Division")
```

```
            {
```

```
                output = number1 / number2;
```

```
                TextBox3.Text = output.ToString();
```

```
            }
```

```
        }
```

```
    }
```

Output:

localhost:49637/WebSite7/Defau x +

localhost:49637/WebSite7/Default.aspx

# Calculator

**Number 1 :**

**Number 2 :**

**Output :**

☒ Add ( + )      ☐ Subtract ( - )

☐ Multiply ( \* )      ☐ Division ( / )

**Calculate**

## Practical No. 4

**Aim: Design ASP.NET Pages with Web controls and demonstrate the use of AutoPostBack.**

### Default.aspx Page:

```
<%@ Page Language="C#" AutoEventWireup="true" CodeFile="Default.aspx.cs" Inherits="_Default" %>

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">    <title></title>    </head>
<body>
    <form id="form1" runat="server">
        <div align="center" style="border: medium groove #FF0000; width: 600px; height: 300px;">
            <p align="center">
                <asp:Label ID="Label1" runat="server" Text="Calculator" Font-Bold="True" Font-Italic="True" Font-
Names="Lucida Calligraphy" Font-Size="30pt" Font-Underline="True" ForeColor="#33CC33"></asp:Label>
            </p>
            <asp:Label ID="Label2" runat="server" Text="Number 1 : " Font-Bold="True"
                Font-Italic="True" Font-Names="Century Schoolbook" Font-Size="15pt"></asp:Label>
            <asp:TextBox ID="TextBox1" runat="server" Font-Names="Century Schoolbook"
                Font-Size="15pt"></asp:TextBox>
            <br /><br />
            <asp:Label ID="Label3" runat="server" Text="Number 2 : " Font-Bold="True"
                Font-Italic="True" Font-Names="Century Schoolbook" Font-Size="15pt"></asp:Label>
            <asp:TextBox ID="TextBox2" runat="server" Font-Names="Century Schoolbook"
                Font-Size="15pt" AutoPostBack="True" ontextchanged="TextBox2_TextChanged"></asp:TextBox>
            <br /><br />
            <asp:Label ID="Label4" runat="server" Text="" Font-Bold="True"
                Font-Italic="True" Font-Names="Century Schoolbook" Font-Size="15pt"></asp:Label>
        </div>
    </form>
</body>
</html>
```

### Default.aspx.CS Page:

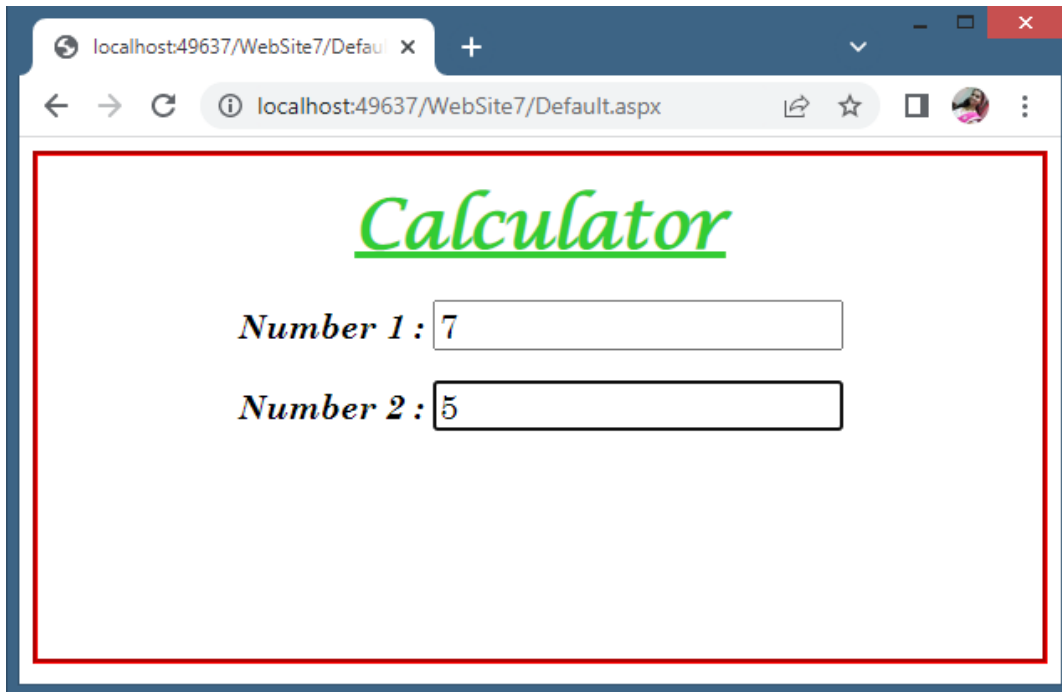
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Web.UI;
using System.Web.UI.WebControls;

public partial class _Default : System.Web.UI.Page
{
    protected void Page_Load(object sender, EventArgs e)
```



```
{  
}  
protected void TextBox2_TextChanged(object sender, EventArgs e)  
{  
    int sum = Convert.ToInt32(TextBox1.Text) + Convert.ToInt32(TextBox2.Text);  
    Label4.Text = "The Sum = " + sum.ToString();  
    TextBox1.Text = "";  
    TextBox2.Text = "";  
}  
}
```

## Output:

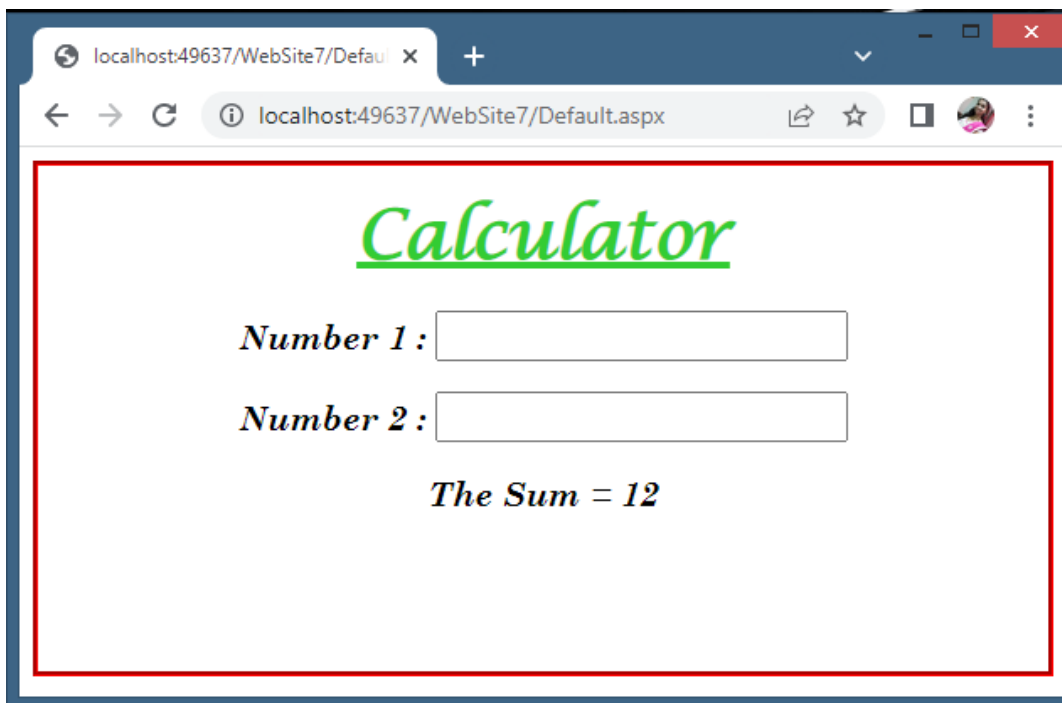


localhost:49637/WebSite7/Default.aspx

Calculator

Number 1 : 7

Number 2 : 5



localhost:49637/WebSite7/Default.aspx

Calculator

Number 1 :

Number 2 :

The Sum = 12

## Practical No. 5

### Aim: Design ASP.NET Pages with Rich Controls (Calendar Control)

#### Default.aspx Page:

```
<%@ Page Language="C#" AutoEventWireup="true" CodeFile="Default2.aspx.cs" Inherits="Default2" %>

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">    <title></title>    </head>
<body>
    <form id="form1" runat="server">
        <div>
            <asp:Label ID="Label1" runat="server" Text="Rich Controls (Calendar)"
                Font-Bold="True" Font-Italic="True" Font-Families="Century Schoolbook"
                Font-Size="20pt" Font-Underline="True" ForeColor="#336600"></asp:Label>
            <br /><br />
            <asp:Calendar ID="Calendar1" runat="server" BackColor="White"
                BorderColor="Black" BorderStyle="Solid" CellSpacing="1" Font-Families="Verdana"
                Font-Size="12pt" ForeColor="Black" Height="250px" NextPrevFormat="ShortMonth" Width="330px">
                <DayHeaderStyle Font-Bold="True" Font-Size="8pt" ForeColor="#333333" Height="8pt" />
                <DayStyle BackColor="#CCCCCC" />
                <NextPrevStyle Font-Bold="True" Font-Size="8pt" ForeColor="White" />
                <OtherMonthDayStyle ForeColor="#999999" />
                <SelectedDayStyle BackColor="#333399" ForeColor="White" />
                <TitleStyle BackColor="#333399" BorderStyle="Solid" Font-Bold="True"
                    Font-Size="12pt" ForeColor="White" Height="12pt" />
                <TodayDayStyle BackColor="#999999" ForeColor="White" />
            </asp:Calendar>
            <br />
            <asp:Label ID="Label2" runat="server" Font-Families="Times New Roman" Font-Size="15pt" Text = "Todays
Date: "></asp:Label>
            <br /><br />
            <asp:Label ID="Label3" runat="server" Font-Families="Times New Roman" Font-Size="15pt"
Text="Select Your Birth Date: "></asp:Label>
            <br /><br />
            <asp:Label ID="Label4" runat="server" Font-Families="Times New Roman" Font-Size="15pt" Text="Days
remaining for Yor Birthday: "></asp:Label>
            <br /><br />
            <asp:Label ID="Label5" runat="server" Font-Families="Times New Roman" Font-Size="15pt" Text="Days
Remaining for NEW YEAR: "></asp:Label>
            <br /><br />
            <asp:Button ID="Button1" runat="server" Text="Result" Font-Italic="False"
                Font-Families="Times New Roman" Font-Size="15pt" Font-Bold="True"
```

```
<asp:Button ID="Button2" runat="server" Text="Reset" Font-Italic="False"
    Font-Names="Times New Roman" Font-Size="15pt" Font-Bold="True"
    Height="34px" onclick="Button2_Click" />
<br />
</div>
</form>
</body>
</html>
```

Default.aspx.cs Page:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Web.UI;
using System.Web.UI.WebControls;

public partial class Default2 : System.Web.UI.Page
{
    protected void Page_Load(object sender, EventArgs e)
    {
    }
    protected void Button1_Click(object sender, EventArgs e)
    {
        //Current Date
        Label2.Text = Label2.Text + " " + Calendar1.TodaysDate.ToShortDateString();

        //Birthday
        Label3.Text = Label3.Text + " " + Calendar1.SelectedDate.Date.ToShortDateString();

        //Calculation
        int year = Calendar1.SelectedDate.Year;
        int month = Calendar1.SelectedDate.Month;
        int day = Calendar1.SelectedDate.Day;
        TimeSpan d = new DateTime(year, month, day) - DateTime.Now;
        Label4.Text = Label4.Text + " " + d.Days.ToString() + " Days";

        //New Year
        TimeSpan d1 = new DateTime(2023, 12, 31) - DateTime.Now;
        Label5.Text = Label5.Text + " " + d1.Days.ToString() + " Days";
    }
    protected void Button2_Click(object sender, EventArgs e)
    {
        Response.Redirect("http://localhost:49637/WebSite7/Default2.aspx");
    }
}
```

## Output:

localhost:49637/WebSite7/Default.aspx

### Rich Controls (Calendar)

January 2023						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
25	26	27	28	29	30	31
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

Todays Date:

Select Your Birth Date:

Days remaining for Yor Birthday:

Days Remaining for NEW YEAR:

**Result** **Reset**

localhost:49637/WebSite7/Default.aspx

### Rich Controls (Calendar)

January 2023						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
25	26	27	28	29	30	31
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

Todays Date: 12-Jan-23

Select Your Birth Date: 31-Jan-23

Days remaining for Yor Birthday: 18 Days

Days Remaining for NEW YEAR: 352 Days

**Result** **Reset**