**1. Factorial of a Number**

**Aim:**  
To find the factorial of a given number using C#.

**Program:**

using System;

class Factorial

{

static void Main()

{

int n, fact = 1;

Console.Write("Enter a number: ");

n = int.Parse(Console.ReadLine());

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

{

fact \*= i;

}

Console.WriteLine("Factorial of {0} is: {1}", n, fact);

}

}

**2. Fibonacci Series**

**Aim:**  
To display the Fibonacci series up to a given number of terms.

**Program:**

using System;

class Fibonacci

{

static void Main()

{

int n, a = 0, b = 1, c;

Console.Write("Enter number of terms: ");

n = int.Parse(Console.ReadLine());

Console.Write("Fibonacci Series: {0} {1}", a, b);

for (int i = 2; i < n; i++)

{

c = a + b;

Console.Write(" {0}", c);

a = b;

b = c;

}

}

}  
**3. Find Largest of Two Numbers**

**Aim:**  
To find the largest of two numbers using C#.

**Program:**

using System;

class Largest

{

static void Main()

{

int a, b;

Console.Write("Enter first number: ");

a = int.Parse(Console.ReadLine());

Console.Write("Enter second number: ");

b = int.Parse(Console.ReadLine());

if (a > b)

Console.WriteLine("{0} is larger", a);

else

Console.WriteLine("{0} is larger", b);

}

}

**4. Simple Calculator using Switch Case**

**Aim:**  
To create a simple calculator using switch case in C#.

**Program:**

using System;

class Calculator

{

static void Main()

{

double num1, num2;

char op;

Console.Write("Enter first number: ");

num1 = Convert.ToDouble(Console.ReadLine());

Console.Write("Enter an operator (+, -, \*, /): ");

op = Convert.ToChar(Console.ReadLine());

Console.Write("Enter second number: ");

num2 = Convert.ToDouble(Console.ReadLine());

switch (op)

{

case '+':

Console.WriteLine("Result = " + (num1 + num2));

break;

case '-':

Console.WriteLine("Result = " + (num1 - num2));

break;

case '\*':

Console.WriteLine("Result = " + (num1 \* num2));

break;

case '/':

Console.WriteLine("Result = " + (num1 / num2));

break;

default:

Console.WriteLine("Invalid operator!");

break;

}

}

}

**5. Student Registration Form**

**Aim:**  
To design a student registration form using ASP.NET web controls.

**Design (Default.aspx):**

<%@ Page Language="C#" %>

<!DOCTYPE html>

<html>

<head><title>Student Registration</title></head>

<body>

<form runat="server">

<h2>Student Registration Form</h2>

Name: <asp:TextBox ID="txtName" runat="server" /><br /><br />

Gender:

<asp:RadioButtonList ID="rblGender" runat="server">

<asp:ListItem>Male</asp:ListItem>

<asp:ListItem>Female</asp:ListItem>

</asp:RadioButtonList><br />

Course:

<asp:DropDownList ID="ddlCourse" runat="server">

<asp:ListItem>BCA</asp:ListItem>

<asp:ListItem>B.Sc</asp:ListItem>

<asp:ListItem>B.Com</asp:ListItem>

</asp:DropDownList><br /><br />

<asp:Button ID="btnSubmit" runat="server" Text="Register" OnClick="btnSubmit\_Click" /><br /><br />

<asp:Label ID="lblResult" runat="server" />

</form>

</body>

</html>

Code-behind (Default.aspx.cs):

using System;

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

{

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

{

lblResult.Text = "Name: " + txtName.Text + "<br/>Gender: " + rblGender.SelectedValue + "<br/>Course: " + ddlCourse.SelectedValue;

}

}

**6. Design Employee Webpage using Web Controls**

**Aim:**  
To create an Employee Details Form using ASP.NET web controls.

**Program**

**Employee.aspx**

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

<!DOCTYPE html>

<html>

<head>

<title>Employee Details</title>

</head>

<body>

<form id="form1" runat="server">

<h2>Employee Details Form</h2>

<asp:Label ID="lblID" runat="server" Text="Employee ID:" />

<asp:TextBox ID="txtID" runat="server"></asp:TextBox><br /><br />

<asp:Label ID="lblName" runat="server" Text="Employee Name:" />

<asp:TextBox ID="txtName" runat="server"></asp:TextBox><br /><br />

<asp:Label ID="lblDept" runat="server" Text="Department:" />

<asp:TextBox ID="txtDept" runat="server"></asp:TextBox><br /><br />

<asp:Label ID="lblSalary" runat="server" Text="Salary:" />

<asp:TextBox ID="txtSalary" runat="server"></asp:TextBox><br /><br />

<asp:Button ID="btnDisplay" runat="server" Text="Display Details" OnClick="btnDisplay\_Click" /><br /><br />

<asp:Label ID="lblResult" runat="server" Font-Bold="true"></asp:Label>

</form>

</body>

</html>

Employee.aspx.cs

using System;

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

{

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

{

lblResult.Text = "<b>Employee ID:</b> " + txtID.Text + "<br/>"

+ "<b>Name:</b> " + txtName.Text + "<br/>"

+ "<b>Department:</b> " + txtDept.Text + "<br/>"

+ "<b>Salary:</b> " + txtSalary.Text;

}

}

**7. Form Validation**

**Aim:**  
To validate a registration form using ASP.NET validation controls.

**Program**

**Validation.aspx**

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

<!DOCTYPE html>

<html>

<head>

<title>Form Validation</title>

</head>

<body>

<form id="form1" runat="server">

<h2>Registration Form with Validation</h2>

Name: <asp:TextBox ID="txtName" runat="server"></asp:TextBox>

<asp:RequiredFieldValidator ID="rfvName" runat="server" ErrorMessage="Name Required" ControlToValidate="txtName" ForeColor="Red">\*</asp:RequiredFieldValidator>

<br /><br />

Age: <asp:TextBox ID="txtAge" runat="server"></asp:TextBox>

<asp:RangeValidator ID="rvAge" runat="server" ControlToValidate="txtAge" MinimumValue="18" MaximumValue="60" Type="Integer" ErrorMessage="Age must be between 18 and 60" ForeColor="Red"></asp:RangeValidator>

<br /><br />

Email: <asp:TextBox ID="txtEmail" runat="server"></asp:TextBox>

<asp:RegularExpressionValidator ID="revEmail" runat="server" ControlToValidate="txtEmail"

ErrorMessage="Invalid Email" ForeColor="Red"

ValidationExpression="\w+@[a-zA-Z\_]+?\.[a-zA-Z]{2,3}"></asp:RegularExpressionValidator>

<br /><br />

Password: <asp:TextBox ID="txtPass" runat="server" TextMode="Password"></asp:TextBox><br /><br />

Confirm Password: <asp:TextBox ID="txtConfirm" runat="server" TextMode="Password"></asp:TextBox>

<asp:CompareValidator ID="cvPass" runat="server" ControlToCompare="txtPass" ControlToValidate="txtConfirm"

ErrorMessage="Passwords do not match" ForeColor="Red"></asp:CompareValidator>

<br /><br />

<asp:ValidationSummary ID="vsSummary" runat="server" ForeColor="Red" HeaderText="Validation Errors:" />

<br />

<asp:Button ID="btnSubmit" runat="server" Text="Submit" />

</form>

</body>

</html>

**8. Display Advertisements using AdRotator Control**

**Aim:**  
To display rotating ads using AdRotator control and XML file.

**Steps:**

1. Create AdRotator.aspx page
2. Create Ads.xml in the same project folder

**AdRotator.aspx**

<%@ Page Language="C#" AutoEventWireup="true" %>

<!DOCTYPE html>

<html>

<head>

<title>AdRotator Example</title>

</head>

<body>

<form runat="server">

<h2>AdRotator Control Example</h2>

<asp:AdRotator ID="AdRotator1" runat="server" AdvertisementFile="~/Ads.xml" />

</form>

</body>

</html>

Ads.xml

<Advertisements>

<Ad>

<ImageUrl>~/Images/ad1.jpg</ImageUrl>

<NavigateUrl>https://www.microsoft.com</NavigateUrl>

<AlternateText>Microsoft</AlternateText>

<Impressions>50</Impressions>

</Ad>

<Ad>

<ImageUrl>~/Images/ad2.jpg</ImageUrl>

<NavigateUrl>https://www.google.com</NavigateUrl>

<AlternateText>Google</AlternateText>

<Impressions>50</Impressions>

</Ad>

</Advertisements>

**9. Cookie Creation and Retrieval**

**Aim:**  
To create and read cookies in ASP.NET.

**Program**

**Page1.aspx (Create Cookie)**

<%@ Page Language="C#" AutoEventWireup="true" CodeFile="Page1.aspx.cs" Inherits="Page1" %>

<!DOCTYPE html>

<html>

<head><title>Cookie Creation</title></head>

<body>

<form runat="server">

Enter Name: <asp:TextBox ID="txtName" runat="server"></asp:TextBox><br /><br />

<asp:Button ID="btnSave" runat="server" Text="Save Cookie" OnClick="btnSave\_Click" />

</form>

</body>

</html>

Page1.aspx.cs

using System;

public partial class Page1 : System.Web.UI.Page

{

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

{

Response.Cookies["user"]["name"] = txtName.Text;

Response.Cookies["user"].Expires = DateTime.Now.AddMinutes(5);

Response.Redirect("Page2.aspx");

}

}

Page2.aspx (Retrieve Cookie)

<%@ Page Language="C#" AutoEventWireup="true" CodeFile="Page2.aspx.cs" Inherits="Page2" %>

<!DOCTYPE html>

<html>

<head><title>Cookie Retrieval</title></head>

<body>

<form runat="server">

<asp:Label ID="lblName" runat="server"></asp:Label>

</form>

</body>

</html>

Page2.aspx.cs

using System;

public partial class Page2 : System.Web.UI.Page

{

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

{

if (Request.Cookies["user"] != null)

{

lblName.Text = "Welcome, " + Request.Cookies["user"]["name"];

}

}

}

**10. Query String Example**

**Aim:**  
To pass values between pages using Query String.

**Program**

**FirstPage.aspx**

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

<!DOCTYPE html>

<html>

<head><title>Query String Example</title></head>

<body>

<form runat="server">

Enter Name: <asp:TextBox ID="txtName" runat="server"></asp:TextBox><br /><br />

<asp:Button ID="btnSend" runat="server" Text="Send" OnClick="btnSend\_Click" />

</form>

</body>

</html>

FirstPage.aspx.cs

using System;

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

{

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

{

Response.Redirect("SecondPage.aspx?name=" + txtName.Text);

}

}

SecondPage.aspx

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

<!DOCTYPE html>

<html>

<head><title>Receive Query String</title></head>

<body>

<form runat="server">

<asp:Label ID="lblResult" runat="server"></asp:Label>

</form>

</body>

</html>

SecondPage.aspx.cs

using System;

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

{

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

{

lblResult.Text = "Hello, " + Request.QueryString["name"];

}

}

**11. Session State Management**

**Aim:**  
To store and retrieve values using ASP.NET Session.

**Program**

**SessionPage1.aspx**

<%@ Page Language="C#" AutoEventWireup="true" CodeFile="SessionPage1.aspx.cs" Inherits="SessionPage1" %>

<!DOCTYPE html>

<html>

<head><title>Session Example</title></head>

<body>

<form runat="server">

Enter Username: <asp:TextBox ID="txtUser" runat="server"></asp:TextBox><br /><br />

<asp:Button ID="btnNext" runat="server" Text="Save and Next" OnClick="btnNext\_Click" />

</form>

</body>

</html>

SessionPage1.aspx.cs

using System;

public partial class SessionPage1 : System.Web.UI.Page

{

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

{

Session["username"] = txtUser.Text;

Response.Redirect("SessionPage2.aspx");

}

}

SessionPage2.aspx

<%@ Page Language="C#" AutoEventWireup="true" CodeFile="SessionPage2.aspx.cs" Inherits="SessionPage2" %>

<!DOCTYPE html>

<html>

<head><title>Session Data</title></head>

<body>

<form runat="server">

<asp:Label ID="lblUser" runat="server"></asp:Label>

</form>

</body>

</html>

SessionPage2.aspx.cs

using System;

public partial class SessionPage2 : System.Web.UI.Page

{

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

{

if (Session["username"] != null)

lblUser.Text = "Welcome, " + Session["username"].ToString();

}

}

a