

Practical No. 5

Q1. Create an XML Web Service to implement calculator with web methods to add, sub, multiply, divide two decimal values. Consume this service through a web client application.

WebServiceCalculator.asmx.cs:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Web.Services;

namespace WebServices1
{
    /// <summary>
    /// Summary description for WebServiceCalculator
    /// </summary>
    [WebService(Namespace = "http://tempuri.org/")]
    [WebServiceBinding(ConformsTo = WsiProfiles.BasicProfile1_1)]
    [System.ComponentModel.ToolboxItem(false)]

    // To allow this Web Service to be called from script, using ASP.NET AJAX, uncomment the
    following line.
    // [System.Web.Script.Services.ScriptService]

    public class WebServiceCalculator : System.Web.Services.WebService
    {

        [WebMethod]
        public double Add(double a, double b)
        {
            return ((double)a + b);
        }
    }
}
```

```
}  
[WebMethod]  
public double Sub(double a, double b)  
{  
    return ((double)a - b);  
}  
[WebMethod]  
public double Multi(double a, double b)  
{  
    return ((double)a * b);  
}  
[WebMethod]  
public double Div(double a, double b)  
{  
    return ((double)a / b);  
}  
}  
}
```

WebServiceCalculator

The following operations are supported. For a formal definition, please review the [Service Description](#).

- [Add](#)
- [Div](#)
- [Multi](#)
- [Sub](#)

CalculatorClientSide.aspx:

h3

Calculation of Decimal Numbers

Enter Number 1:

Enter Number 2:

[lblResultAdd]

[lblResultSub]

[lblResultMulti]

[lblResultDiv]

CalculatorClientSide.aspx.cs:

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

namespace WCFCalculatorClient
{
    public partial class CalcualtorClientSide : System.Web.UI.Page
    {
        localhost.WebSericeCalculator proxy = new localhost.WebSericeCalculator();
        protected void Page_Load(object sender, EventArgs e)
        {

        }
    }
}
```

```
protected void btnAdd_Click(object sender, EventArgs e)
{
    double num1 = Convert.ToDouble(txtNum1.Text);
    double num2 = Convert.ToDouble(txtNum2.Text);

    lblResultAdd.Text = "Addition is:    "+proxy.Add(num1, num2).ToString();
    lblResultSub.Text = "Subtraction is:  "+proxy.Sub(num1, num2).ToString();
    lblResultMulti.Text = "Multiplication is: "+proxy.Multi(num1, num2).ToString();
    lblResultDiv.Text = "Division is:     "+proxy.Div(num1, num2).ToString();

}
}
```

Output:

Calculation of Decimal Numbers

Enter Number 1:

Enter Number 2:

Addition is: 15.6
Subtraction is: 13.2
Multiplication is: 17.28
Division is: 12

Q2. Create an XML Web Service that retrieves employee details from emp_info Microsoft SQL Server Database table. Design a Web client that consumes this service.

EmployeeInfoServerSide.asmx.cs:

```
using System;
using System.Collections.Generic;
using System.Configuration;
using System.Data;
using System.Data.SqlClient;
using System.Linq;
using System.Web;
using System.Web.Services;

namespace Emp_Info_ServerSide
{
    /// <summary>
    /// Summary description for EmpInfoServerSide
    /// </summary>
    [WebService(Namespace = "http://tempuri.org/")]
    [WebServiceBinding(ConformsTo = WsiProfiles.BasicProfile1_1)]
    [System.ComponentModel.ToolboxItem(false)]
    // To allow this Web Service to be called from script, using ASP.NET AJAX, uncomment the
    // following line.
    // [System.Web.Script.Services.ScriptService]
    public class EmpInfoServerSide : System.Web.Services.WebService
    {
        static string conStr = ConfigurationManager.ConnectionStrings["EmpConStr"].ToString();
        SqlConnection conn = new SqlConnection(conStr);
        SqlCommand cmd = null;
```

```
SqlDataReader dr = null;
```

```
DataTable dt = null;
```

```
[WebMethod]
```

```
public DataTable DisplayAllRecord()
```

```
{  
    try  
    {  
        cmd = new SqlCommand("SELECT * FROM emp_info", conn);  
        if (conn.State == ConnectionState.Closed)  
        {  
            conn.Open();  
        }  
        dt = new DataTable("empTable");  
        dr = cmd.ExecuteReader();  
        dt.Load(dr);  
    }  
    catch (Exception ex)  
    {  
        // throw ex("Exception! " + ex.Message);  
    }  
    finally  
    {  
        conn.Close();  
    }  
    return dt;  
}
```

[WebMethod]

```
public string InsertRecord(int eid, string ename, int enumber, string eaddress)
{
    string msg;
    try
    {
        cmd = new SqlCommand("INSERT INTO emp_info VALUES
(@eid,@ename,@enumber,@eaddress)", conn);

        if (conn.State == ConnectionState.Closed)
        {
            conn.Open();
        }

        cmd.Parameters.AddWithValue("@eid", eid);
        cmd.Parameters.AddWithValue("@ename", ename);
        cmd.Parameters.AddWithValue("@enumber", enumber);
        cmd.Parameters.AddWithValue("@eaddress", eaddress);

        int r = cmd.ExecuteNonQuery();
        if (r != 0)
        {
            msg = "Record Inserted Sucessfully";
        }
        else
        {
            msg = "Record Not Inserted Sucessfully";
        }
    }
    catch (Exception ex)
```

```

        {
            msg = "Exception " + ex.Message;
        }
        finally
        {
            conn.Close();

        }
        return msg;
    }
}
}

```

EmpInfoServerSide

The following operations are supported. For a formal definition, please review the [Service Description](#).

- [DisplayAllRecord](#)
- [InsertRecord](#)

EmployeeInfoClientSide.aspx:

Employee Information

Column0	Column1	Column2
abc	abc	abc
abc	abc	abc
abc	abc	abc
abc	abc	abc
abc	abc	abc

Show

EmployeeInfoClientSide.aspx.cs:

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

namespace Emp_Info_ClientSide
{
    public partial class EmpInfoClientSide : System.Web.UI.Page
    {
        localhost.EmpInfoServerSide proxy = new localhost.EmpInfoServerSide();
        DataTable dt = null;

        protected void Page_Load(object sender, EventArgs e)
        {

        }

        protected void btnInsert_Click(object sender, EventArgs e)
        {
            int Id = Convert.ToInt32(txtID.Text);
            string Name = txtName.Text;
            int Number = Convert.ToInt32(txtNumber.Text);
            string Address = txtAddress.Text;

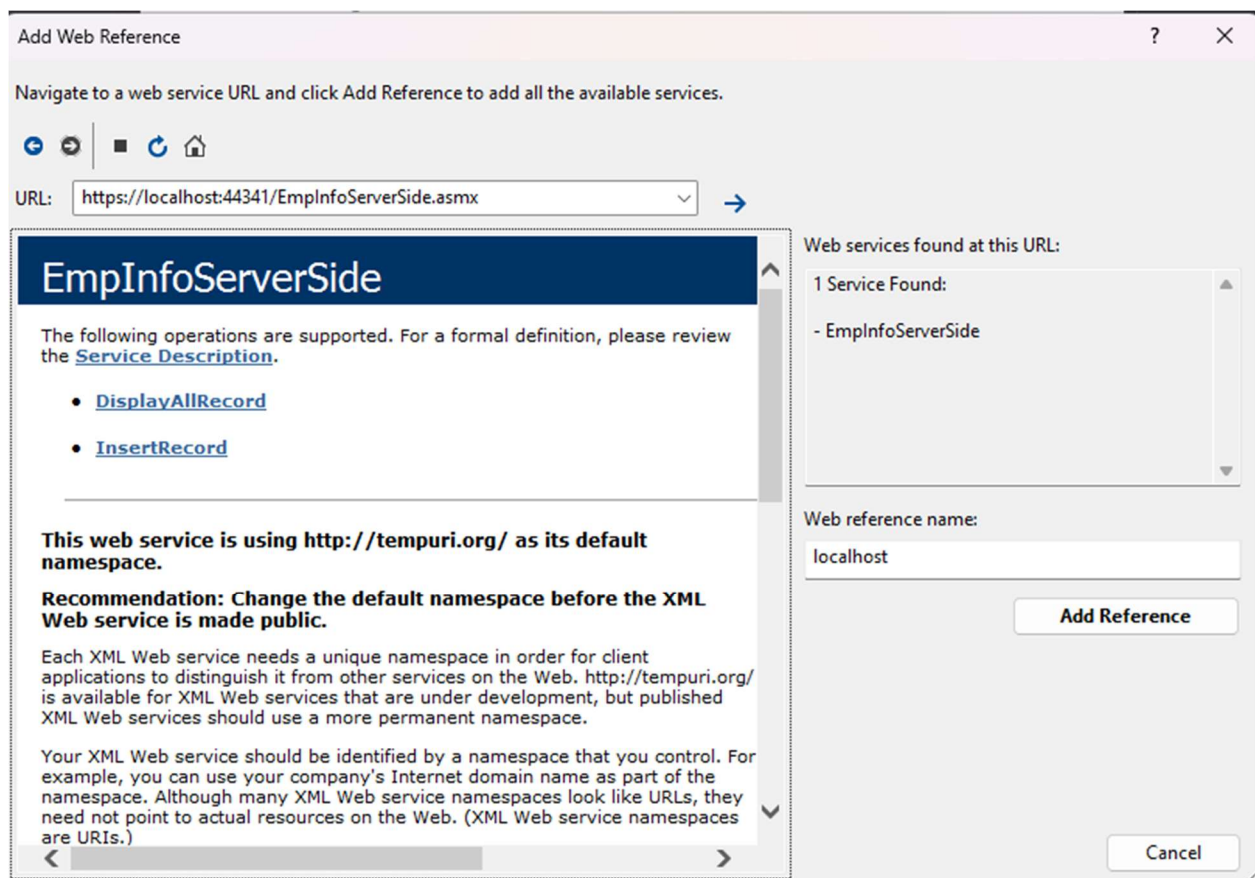
            lblMessage.Text = proxy.InsertRecord(Id, Name, Number, Address);
        }
    }
}
```

```

    }

    protected void btnShow_Click(object sender, EventArgs e)
    {
        dt = proxy.DisplayAllRecord();
        GVEmployeeInfo.DataSource = dt;
        GVEmployeeInfo.DataBind();
    }
}
}
}

```



Output:

Employee Information

eid	ename	enumber	eaddress
1	Siddhi	123456789	Swantwadi
2	Rasik	987654321	Sawantwadi
3	Devyani	1298348756	Ratnagiri
4	Komal	192837465	Ratnagiri
5	Khushi	876543219	Ratnagiri
6	Tanuja	129837465	Ratnagiri
7	Raj	123897456	Sawarde
8	Suresh	123987455	Kalyan

Q3. Create an XML Web Service that insert employee details into emp_info Microsoft SQL Server Database table. Design a Web client that consumes this service.

EmployeeInfoServerSide.asmx.cs:

```
using System;
using System.Collections.Generic;
using System.Configuration;
using System.Data;
using System.Data.SqlClient;
using System.Linq;
using System.Web;
using System.Web.Services;

namespace Emp_Info_ServerSide
{
    /// <summary>
    /// Summary description for EmpInfoServerSide
    /// </summary>
    [WebService(Namespace = "http://tempuri.org/")]
    [WebServiceBinding(ConformsTo = WsiProfiles.BasicProfile1_1)]
    [System.ComponentModel.ToolboxItem(false)]

    // To allow this Web Service to be called from script, using ASP.NET AJAX, uncomment the
    following line.
    // [System.Web.Script.Services.ScriptService]

    public class EmpInfoServerSide : System.Web.Services.WebService
    {
        static string conStr = ConfigurationManager.ConnectionStrings["EmpConStr"].ToString();
        SqlConnection conn = new SqlConnection(conStr);
```

```
SqlCommand cmd = null;
```

```
SqlDataReader dr = null;
```

```
DataTable dt = null;
```

```
[WebMethod]
```

```
public DataTable DisplayAllRecord()
```

```
{  
    try  
    {  
        cmd = new SqlCommand("SELECT * FROM emp_info", conn);  
        if (conn.State == ConnectionState.Closed)  
        {  
            conn.Open();  
        }  
        dt = new DataTable("empTable");  
        dr = cmd.ExecuteReader();  
        dt.Load(dr);  
    }  
    catch (Exception ex)  
    {  
        // throw ex("Exception! " + ex.Message);  
    }  
    finally  
    {  
        conn.Close();  
    }  
    return dt;  
}
```

```

    }

    [WebMethod]
    public string InsertRecord(int eid, string ename, int enumber, string eaddress)
    {
        string msg;
        try
        {
            cmd = new SqlCommand("INSERT INTO emp_info VALUES
(@eid,@ename,@enumber,@eaddress)", conn);

            if (conn.State == ConnectionState.Closed)
            {
                conn.Open();
            }

            cmd.Parameters.AddWithValue("@eid", eid);
            cmd.Parameters.AddWithValue("@ename", ename);
            cmd.Parameters.AddWithValue("@enumber", enumber);
            cmd.Parameters.AddWithValue("@eaddress", eaddress);

            int r = cmd.ExecuteNonQuery();
            if (r != 0)
            {
                msg = "Record Inserted Sucessfully";
            }
            else
            {
                msg = "Record Not Inserted Sucessfully";
            }
        }
    }

```

```

        catch (Exception ex)
        {
            msg = "Exception " + ex.Message;
        }
        finally
        {
            conn.Close();

        }
        return msg;
    }
}

```

EmpInfoServerSide

The following operations are supported. For a formal definition, please review the [Service Description](#).

- [DisplayAllRecord](#)
- [InsertRecord](#)

EmployeeInfoClientSide.aspx:

Enter Employee ID:

Enter Employee Name:

Enter Employee Number:

Enter Employee Address:

[lblMessage]

Insert

EmployeeInfoClientSide.aspx.cs:

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

namespace Emp_Info_ClientSide
{
    public partial class EmpInfoClientSide : System.Web.UI.Page
    {
        localhost.EmpInfoServerSide proxy = new localhost.EmpInfoServerSide();
        DataTable dt = null;

        protected void Page_Load(object sender, EventArgs e)
        {

        }

        protected void btnInsert_Click(object sender, EventArgs e)
        {
            int Id = Convert.ToInt32(txtID.Text);
            string Name = txtName.Text;
            int Number = Convert.ToInt32(txtNumber.Text);
            string Address = txtAddress.Text;

            lblMessage.Text = proxy.InsertRecord(Id, Name, Number, Address);
        }
    }
}
```

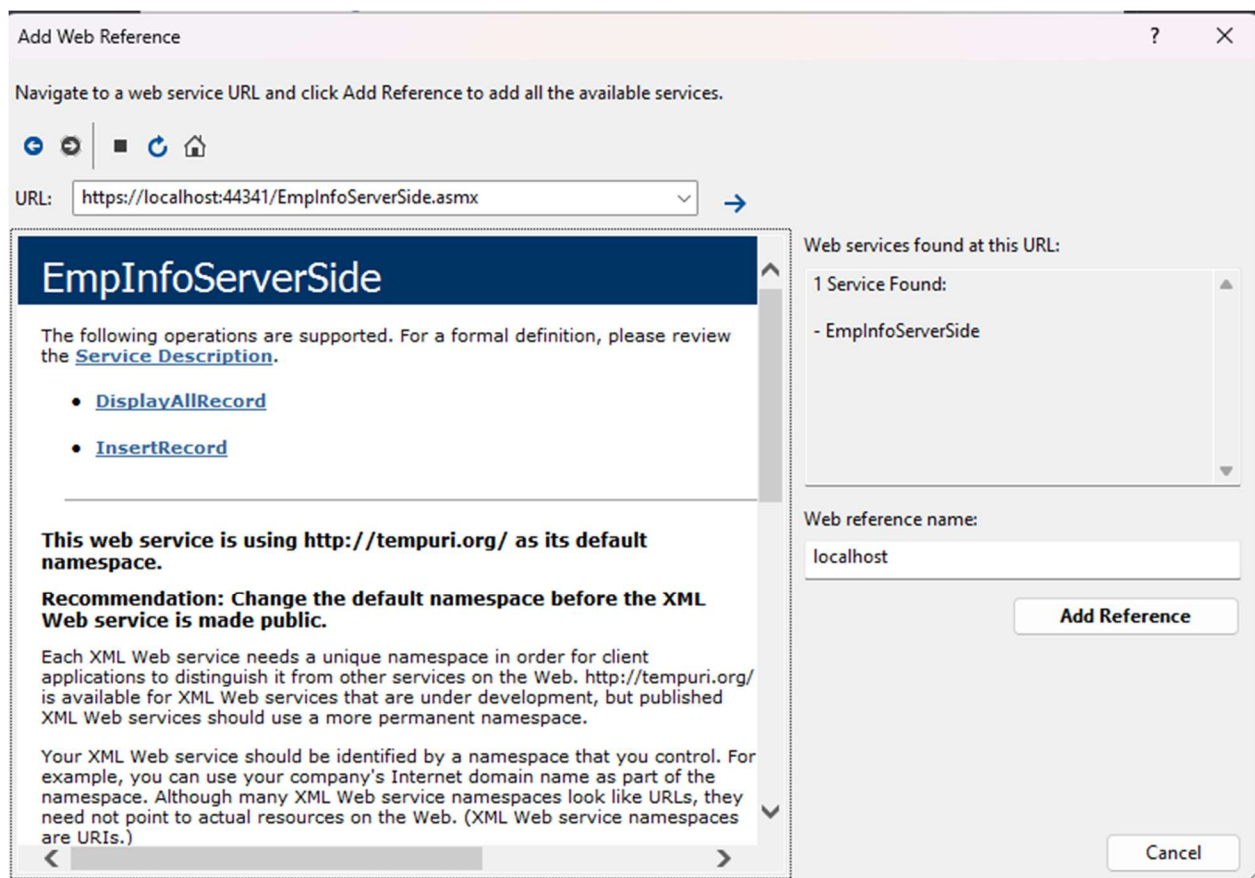


```

    }

    protected void btnShow_Click(object sender, EventArgs e)
    {
        dt = proxy.DisplayAllRecord();
        GVEmployeeInfo.DataSource = dt;
        GVEmployeeInfo.DataBind();
    }
}
}
}

```



Output:

Enter Employee ID:
Enter Employee Name:
Enter Employee Number:
Enter Employee Address:

Enter Employee ID:
Enter Employee Name:
Enter Employee Number:
Enter Employee Address:

Record Inserted Sucessfully

Q4. Design a Web Service using WCF for simple Calculator and consume it with client application.

WCF_ArithmeticCalculator:

IService1.cs:

```
using System;
```

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

```
using System.Linq;
```

```
using System.Runtime.Serialization;
```

```
using System.ServiceModel;
```

```
using System.ServiceModel.Web;
```

```
using System.Text;
```

```
namespace WCF_ArithmeticCalculator
```

```
{
```

```
    // NOTE: You can use the "Rename" command on the "Refactor" menu to change the interface  
    name "IService1" in both code and config file together.
```

```
    [ServiceContract]
```

```
    public interface IService1
```

```
    {
```

```
        [OperationContract]
```

```
        string Addition(Calculator a);
```

```
        [OperationContract]
```

```
        string Subtraction(Calculator b);
```

```
        [OperationContract]
```

```
        string Multiplication(Calculator c);
```

```

        [OperationContract]
        string Division(Calculator d);

    }
    public class Calculator
    {
        int num1;
        [DataMember]
        public int Num1
        {
            get { return num1; }
            set { num1 = value; }
        }
        int num2;
        [DataMember]
        public int Num2
        {
            get { return num2; }
            set { num2 = value; }
        }
    }
}

```

Service1.svc:

```

using System;
using System.Collections.Generic;
using System.Linq;
using System.Runtime.Serialization;

```

```
using System.ServiceModel;
```

```
using System.ServiceModel.Web;
```

```
using System.Text;
```

```
namespace WCF_ArithmeticCalculator
```

```
{
```

```
    // NOTE: You can use the "Rename" command on the "Refactor" menu to change the class  
    name "Service1" in code, svc and config file together.
```

```
    // NOTE: In order to launch WCF Test Client for testing this service, please select  
    Service1.svc or Service1.svc.cs at the Solution Explorer and start debugging.
```

```
    public class Service1 : IService1
```

```
    {
```

```
        public string Addition(Calulator e)
```

```
        {
```

```
            return "Addition is: " + (e.Num1 + e.Num2);
```

```
        }
```

```
        public string Subtraction(Calulator e1)
```

```
        {
```

```
            return "Subtraction is: " + (e1.Num1 - e1.Num2);
```

```
        }
```

```
        public string Multiplication(Calulator e2)
```

```
        {
```

```
            return "Multiplication is: " + (e2.Num1 * e2.Num2);
```

```
        }
```

```
        public string Division(Calulator e3)
```

```
        {
```

```
            return "Division is: " + (e3.Num1 / e3.Num2);
```

```
        }
```

```
}  
}
```

WCF_ForCalculator: WebForm1.aspx:

WCF for simple Calculator	
Enter Number 1:	<input type="text"/>
Enter Number 2:	<input type="text"/>
<input type="button" value="Addition"/>	<input type="button" value="Subtraction"/>
<input type="button" value="Multiplication"/>	<input type="button" value="Division"/>

Label

WebForm1.aspx.cs:

```
using System;  
using System.Collections.Generic;  
using System.Linq;  
using System.Web;  
using System.Web.UI;  
using System.Web.UI.WebControls;  
  
namespace WCFForCalculator  
{  
    public partial class WebForm1 : System.Web.UI.Page  
    {  
        ServiceReference2.Service1Client proxy = new ServiceReference2.Service1Client();  
        protected void Page_Load(object sender, EventArgs e)  
        {  
  
        }  
    }  
}
```

```
protected void btnAddition_Click(object sender, EventArgs e)
{
    ServiceReference2.Calculator c1 = new ServiceReference2.Calculator();
    c1.Num1 = Convert.ToInt32(txtNum1.Text);
    c1.Num2 = Convert.ToInt32(txtNum2.Text);
    lblMessage.Text = proxy.Addition(c1);

}
```

```
protected void btnSub_Click(object sender, EventArgs e)
{
    ServiceReference2.Calculator c1 = new ServiceReference2.Calculator();
    c1.Num1 = Convert.ToInt32(txtNum1.Text);
    c1.Num2 = Convert.ToInt32(txtNum2.Text);
    lblMessage.Text = proxy.Subtraction(c1);

}
```

```
protected void btnMultiplication_Click(object sender, EventArgs e)
{
    ServiceReference2.Calculator c1 = new ServiceReference2.Calculator();
    c1.Num1 = Convert.ToInt32(txtNum1.Text);
    c1.Num2 = Convert.ToInt32(txtNum2.Text);
    lblMessage.Text = proxy.Multiplication(c1);
}
```

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

```
{  
    ServiceReference2.Calulator c1 = new ServiceReference2.Calulator();  
    c1.Num1 = Convert.ToInt32(txtNum1.Text);  
    c1.Num2 = Convert.ToInt32(txtNum2.Text);  
    lblMessage.Text = proxy.Division(c1);  
}  
}  
}
```

Output

Addition:

WCF for simple Calculator

Enter Number 1:	<input type="text" value="12"/>
Enter Number 2:	<input type="text" value="2"/>
<input type="button" value="Addition"/> <input type="button" value="Subtraction"/> <input type="button" value="Multiplication"/> <input type="button" value="Division"/>	
Addition is: 14	

Subtraction:

WCF for simple Calculator

Enter Number 1:	<input type="text" value="12"/>
Enter Number 2:	<input type="text" value="2"/>
<input type="button" value="Addition"/> <input type="button" value="Subtraction"/> <input type="button" value="Multiplication"/> <input type="button" value="Division"/>	
Subtraction is: 10	

Multiplication:

Enter Number 1:
Enter Number 2:

Multiplication is: 24

WCF for simple Calculator

Division:

Enter Number 1:
Enter Number 2:

Division is: 6

WCF for simple Calculator

5. Create an WCF Web Service that update product details into product_info Microsoft SQL Server Database table. Design a Web client that consumes this service.

6. Create an WCF Web Service that delete product details from product_info Microsoft SQL Server Database table based on productID. Design a Web client that consumes this service.

WCF_ProductQueServer.sln

IService.cs

```
using System;
using System.Collections.Generic;
using System.Data;
using System.Linq;
using System.Runtime.Serialization;
using System.ServiceModel;
using System.ServiceModel.Web;
using System.Text;

namespace WCF_ProductQueServer
{
    [ServiceContract]
    public interface IService1
    {

        [OperationContract]
        DataTable showRecord(Product prod1);

        [OperationContract]
        string updateRecord(Product prod1);

    }

    [DataContract]
    public class Product
    {
        int prodID;
        string prodNm;
        int quantity;
        int price;
    }
}
```

```

    [DataMember]
    public int ProdID
    {
        get { return prodID; }
        set { prodID = value; }
    }

    [DataMember]
    public string ProdNm
    {
        get { return prodNm; }
        set { prodNm = value; }
    }

    [DataMember]
    public int Quantity
    {
        get { return quantity; }
        set { quantity = value; }
    }

    [DataMember]
    public int Price
    {
        get { return price; }
        set { price = value; }
    }
}

```

Service.svc.cs:

```

using System;
using System.Collections.Generic;
using System.Configuration;
using System.Data;
using System.Data.SqlClient;
using System.Linq;
using System.Runtime.Serialization;
using System.ServiceModel;
using System.ServiceModel.Web;
using System.Text;

namespace WCF_ProductQueueServer
{
    public class Service1 : IService1
    {
        static string conStr =
        ConfigurationManager.ConnectionStrings["ConProdString"].ToString();

```

```

SqlConnection conn = new SqlConnection(conStr);
SqlCommand cmd = null;

SqlDataReader dr = null;
DataTable dt = null;
public string insertRecord(Product prod)
{
    string msg;
    try
    {
        cmd = new SqlCommand("INSERT INTO
product_info(prodID,prodNm,quantity,price) VALUES(@id,@nm,@qty,@price)", conn);
        if (conn.State == ConnectionState.Closed)
        {
            conn.Open();
        }
        cmd.Parameters.AddWithValue("@id", prod.ProdID);
        cmd.Parameters.AddWithValue("@nm", prod.ProdNm);
        cmd.Parameters.AddWithValue("@qty", prod.Quantity);
        cmd.Parameters.AddWithValue("@price", prod.Price);

        int r = cmd.ExecuteNonQuery();
        if (r != 0)
        {
            msg = "Record inserted successfully!";
        }
        else
        {
            msg = "Record not inserted!";
        }
    }
    catch (Exception ex)
    { msg = "Exception! " + ex.Message; }
    finally
    {
        conn.Close();
    }
    return msg;
}
public DataTable showRecord(Product prod)
{
    try
    {
        cmd = new SqlCommand("SELECT * FROM product_info", conn);
        if (conn.State == ConnectionState.Closed)

```

```

        {
            conn.Open();
        }
        dt = new DataTable("prodTable");
        dr = cmd.ExecuteReader();
        dt.Load(dr);
    }
    catch (Exception e)
    {
    }
    finally
    {
        conn.Close();
    }
    return dt;
}
public string updateRecord(Product prod)
{
    string msg;
    try
    {
        cmd = new SqlCommand("UPDATE product_info SET
prodNm=@nm,quantity=@qty,price=@price WHERE prodID=@id", conn);
        if (conn.State == ConnectionState.Closed)
        {
            conn.Open();
        }
        cmd.Parameters.AddWithValue("@id", prod.ProdID);
        cmd.Parameters.AddWithValue("@nm", prod.ProdNm);
        cmd.Parameters.AddWithValue("@qty", prod.Quantity);
        cmd.Parameters.AddWithValue("@price", prod.Price);

        int r = cmd.ExecuteNonQuery();
        if (r != 0)
        {
            msg = "Record updated successfully!";
        }
        else
        {
            msg = "Record not update!";
        }
    }
    catch (Exception ex)
    { msg = "Exception! " + ex.Message; }
    finally

```

```

        {
            conn.Close();
        }
        return msg;
    }
    public string deleteRecord(Product prod)
    {
        string msg;
        try
        {
            cmd = new SqlCommand("DELETE FROM product_info WHERE prodID=@id",
conn);
            if (conn.State == ConnectionState.Closed)
            {
                conn.Open();
            }
            cmd.Parameters.AddWithValue("@id", prod.ProdID);

            int r = cmd.ExecuteNonQuery();
            if (r != 0)
            {
                msg = "Record Deleted successfully!";
            }
            else
            {
                msg = "Record not delete!";
            }
        }
        catch (Exception ex)
        { msg = "Exception! " + ex.Message; }
        finally
        {
            conn.Close();
        }
        return msg;
    }
}

```

Update operation at Web Service Side:-

The screenshot displays the WCF Test Client interface. On the left, the 'My Service Projects' tree shows a service at 'http://localhost:61716/Service1.svc' with a contract 'IService1 (BasicHttpBinding IService1)'. The 'updateRecord()' method is selected. The main pane shows the 'updateRecord' operation details. The 'Request' section contains a table with the following data:

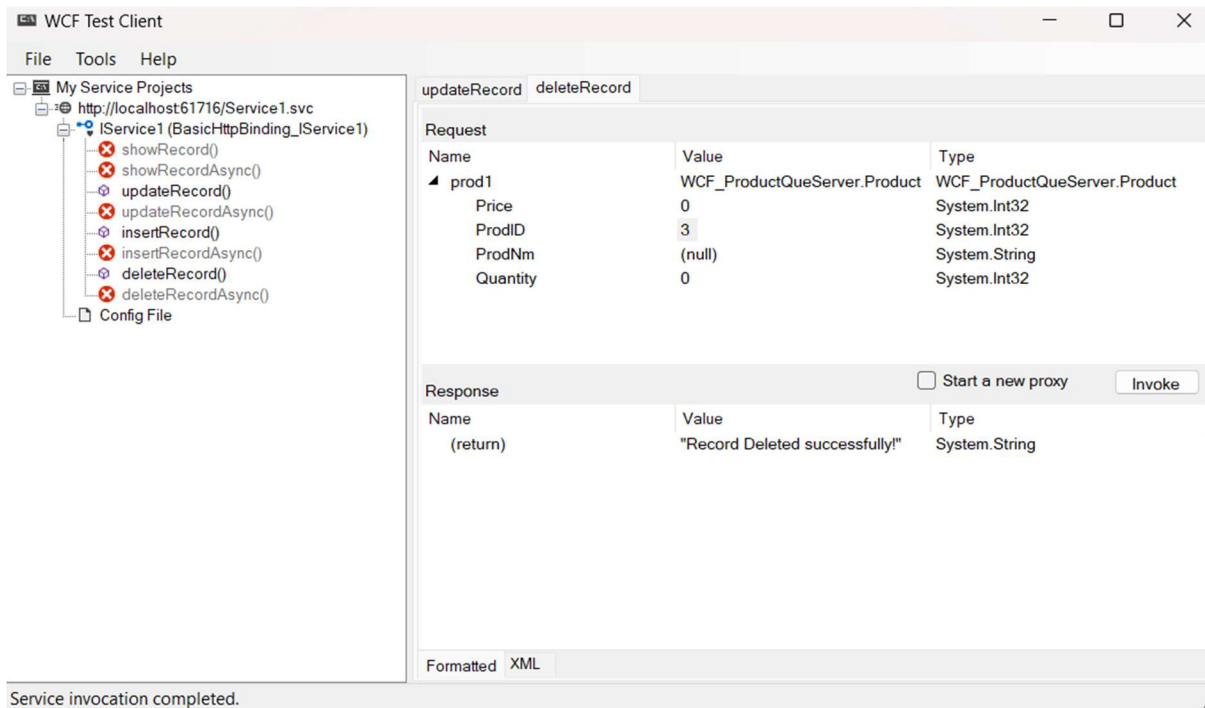
Name	Value	Type
prod1	WCF_ProductQueServer.Product	WCF_ProductQueServer.Product
Price	10	System.Int32
ProdID	1	System.Int32
ProdNm	Marie	System.String
Quantity	1	System.Int32

The 'Response' section shows a single entry:

Name	Value	Type
(return)	"Record updated successfully!"	System.String

At the bottom, the status bar indicates 'Service invocation completed.'

Delete operation at Web Service Side:-



WCF_ProductQueClient.sln

WebForm.aspx:

```
<%@ Page Language="C#" AutoEventWireup="true" CodeBehind="WebForm1.aspx.cs"
Inherits="WCF_ProductQueClient.WebForm1" %>
```

```
<!DOCTYPE html>
```

```
<html xmlns="http://www.w3.org/1999/xhtml">
```

```
<head runat="server">
```

```
<title></title>
```

```
</head>
```

```
<body>
```

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

```
<div>
```

```
<h3>WCF for Product Information using Product_Info Table</h3>
```

```
<asp:Label ID="Label1" runat="server" Text="Enter Product ID:"></asp:Label>
```

```
&nbsp;<asp:TextBox ID="txtID" runat="server"></asp:TextBox>
```

```
<br />
```



```
<asp:Label ID="Label2" runat="server" Text="Enter Product Name:"></asp:Label>
&nbsp;<asp:TextBox ID="txtNm" runat="server"></asp:TextBox>
<br />
<asp:Label ID="Label3" runat="server" Text="Enter Product Quantity:"></asp:Label>
&nbsp;<asp:TextBox ID="txtQty" runat="server"></asp:TextBox>
<br />
<asp:Label ID="Label4" runat="server" Text="Enter Product Price:"></asp:Label>
&nbsp;<asp:TextBox ID="txtPrice" runat="server"></asp:TextBox>
<br />
<br />
<asp:Button ID="btnInsert" runat="server" OnClick="btnInsert_Click" Text="Insert" />
&nbsp;<asp:Button ID="btnUpdate" runat="server" OnClick="btnUpdate_Click"
Text="Update" />
&nbsp;<asp:Button ID="btnDelete" runat="server" OnClick="btnDelete_Click" Text="Delete"
/>
&nbsp;<asp:Button ID="btnDisplay" runat="server" OnClick="btnDisplay_Click"
Text="Display" />
<br />
<asp:GridView ID="GridView1" runat="server">
</asp:GridView>
<br />
<asp:Label ID="lblMessage" runat="server" Text="Label"></asp:Label>
</div>
</form>
</body>
</html>
```

WebForm.aspx:

WebForm1.aspx.cs WebForm1.aspx

body

WCF for Product Information using Product_Info Table

Enter Product ID:

Enter Product Name:

Enter Product Quantity:

Enter Product Price:

Column0	Column1	Column2
abc	abc	abc
abc	abc	abc
abc	abc	abc
abc	abc	abc
abc	abc	abc

Label

WebForm.aspx.cs

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

namespace WCF_ProductQueClient
{
    public partial class WebForm1 : System.Web.UI.Page
    {
        ServiceReference1.Service1Client proxy = new ServiceReference1.Service1Client();
        ServiceReference1.Product p1 = new ServiceReference1.Product();
        DataTable dt = null;
        protected void Page_Load(object sender, EventArgs e)
        {

        }
    }
}
```

```
protected void btnInsert_Click(object sender, EventArgs e)
{
    p1.ProdID = Convert.ToInt32(txtID.Text);
    p1.ProdNm = txtNm.Text;
    p1.Quantity = Convert.ToInt32(txtQty.Text);
    p1.Price = Convert.ToInt32(txtPrice.Text);
    lblMessage.Text = proxy.insertRecord(p1);

}

protected void btnUpdate_Click(object sender, EventArgs e)
{
    p1.ProdID = Convert.ToInt32(txtID.Text);
    p1.ProdNm = txtNm.Text;
    p1.Quantity = Convert.ToInt32(txtQty.Text);
    p1.Price = Convert.ToInt32(txtPrice.Text);
    lblMessage.Text = proxy.updateRecord(p1);
}

protected void btnDelete_Click(object sender, EventArgs e)
{
    p1.ProdID = Convert.ToInt32(txtID.Text);
    lblMessage.Text = proxy.deleteRecord(p1);

}

protected void btnDisplay_Click(object sender, EventArgs e)
{
    dt = proxy.showRecord(p1);
    GridView1.DataSource = dt;
    GridView1.DataBind();
}
}
```

Display Previous Records:-

WCF for Product Information using Product_Info Table

Enter Product ID:
Enter Product Name:
Enter Product Quantity:
Enter Product Price:

Insert	Update	Delete	Display
prodID	prodNm	quantity	price
1	Marie	1	10
2	Toast	2	40

Label

Display updated Records:-

WCF for Product Information using Product_Info Table

Enter Product ID:
Enter Product Name:
Enter Product Quantity:
Enter Product Price:

Insert	Update	Delete	Display
prodID	prodNm	quantity	price
1	Milk Bikies	1	25
2	Toast	2	40

Record updated successfully!

Display updated Records:-

WCF for Product Information using Product_Info Table

Enter Product ID:

Enter Product Name:

Enter Product Quantity:

Enter Product Price:

prodID	prodNm	quantity	price
1	Milk Bikies	1	25

Record Deleted successfully!