

Name: Chapla Krishna Arpit

ID: 21CEUOD006

Roll No: 024

Subject: WSD

Lab: 5

# DataContract

## Lab5

### IServiceClass.cs

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.ServiceModel;
using System.Text;
using System.Threading.Tasks;
using System.Runtime.Serialization;
namespace Lab5
{
    [ServiceContract]
    public interface IServiceClass
    {
        [OperationContract]
        ExplicitNumbers Add(ExplicitNumbers en1, ExplicitNumbers en2);

        [OperationContract]
        ExplicitNumbers Subtract(ExplicitNumbers en1, ExplicitNumbers en2);
    }

    [DataContract]
    public class ExplicitNumbers
    {
        [DataMember]
        public double Explicit1;
        [DataMember]
        public double Explicit2;

        public ExplicitNumbers(double explicit1, double explicit2)
        {
            this.Explicit1 = explicit1;
            this.Explicit2 = explicit2;
        }
    }
}
```

```
}
```

## ServiceClass.cs

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

namespace Lab5
{
    public class ServiceClass : IServiceClass
    {
        public ExplicitNumbers Add(ExplicitNumbers en1, ExplicitNumbers en2)
        {
            return new ExplicitNumbers(en1.Explicit1 + en2.Explicit1, en1.Explicit2 +
en2.Explicit2);
        }

        public ExplicitNumbers Subtract(ExplicitNumbers en1, ExplicitNumbers en2)
        {
            return new ExplicitNumbers(en1.Explicit1 - en2.Explicit1, en1.Explicit2 -
en2.Explicit2);
        }
    }
}
```

## WCFServiceHostWinForm

### App.config

```
<?xml version="1.0" encoding="utf-8" ?>
<configuration>
    <startup>
        <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.7.2" />
    </startup>
    <system.serviceModel>
        <services>
            <service name="Lab5.ServiceClass" behaviorConfiguration
="metadataSupport">
                <host>
                    <baseAddresses>
                        <add
baseAddress="net.tcp://localhost:8000/Lab5"/>
                    </baseAddresses>
                </host>
                <endpoint address="tcp" binding="netTcpBinding"
contract="Lab5.IServiceClass"/>
                <endpoint address="tcpmex" binding="mexTcpBinding"
contract="IMetadataExchange"/>
            </service>
        </services>
        <behaviors>
            <serviceBehaviors>
                <behavior name="metadataSupport">
```

```

                                <serviceMetadata httpsGetEnabled="false"
httpGetUrl=""/>
                                </behavior>
                            </serviceBehaviors>
                        </behaviors>
                    </system.serviceModel>
</configuration>

```

## Form1.cs

```

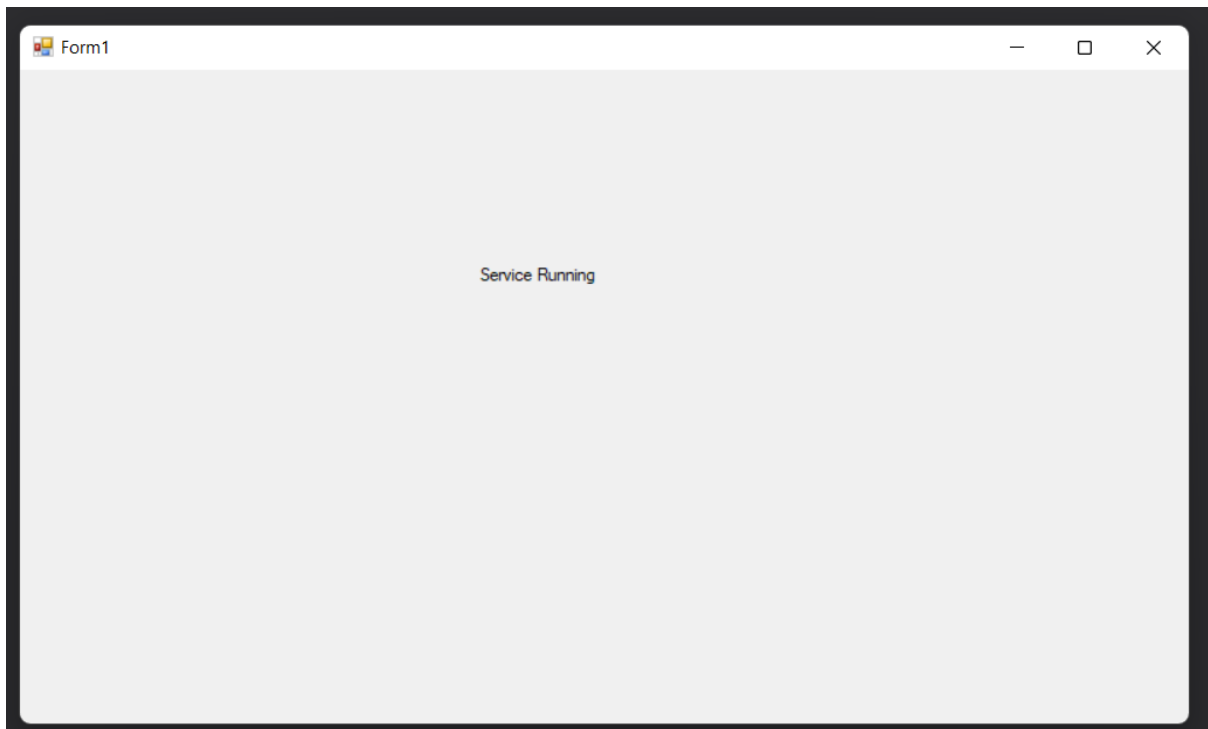
using System;
using System.ServiceModel;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace WCFServiceHostWinForm
{
    public partial class Form1 : Form
    {
        ServiceHost sh = null;
        public Form1()
        {
            InitializeComponent();
        }

        private void Form1_FormClosing(object sender, FormClosingEventArgs e)
        {
            sh.Close();
        }

        private void Form1_Load(object sender, EventArgs e)
        {
            sh = new ServiceHost(typeof(Lab5.ServiceClass));
            sh.Open();
            label1.Text = "Service Running";
        }
    }
}

```



## WCFCClient

### Form1.cs

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

        private void button1_Click(object sender, EventArgs e)
        {
            TCP.ServiceClassClient client = new
WCFCClient.TCP.ServiceClassClient("NetTcpBinding_IServiceClass");

            WCFCClient.TCP.ExplicitNumbers val1 = new WCFCClient.TCP.ExplicitNumbers();
            val1.Explicit1 = int.Parse(textBox1.Text);
            val1.Explicit2 = int.Parse(textBox2.Text);
        }
    }
}
```

```

        WCFClient.TCP.ExplicitNumbers val2 = new WCFClient.TCP.ExplicitNumbers();
        val2.Explicit1 = int.Parse(textBox3.Text);
        val2.Explicit2 = int.Parse(textBox4.Text);

        WCFClient.TCP.ExplicitNumbers result = client.Add(val1, val2);
        label3.Text = result.Explicit1.ToString();
        label4.Text = result.Explicit2.ToString();
        client.Close();
    }

    private void button2_Click(object sender, EventArgs e)
    {
        TCP.ServiceClassClient client = new
WCFClient.TCP.ServiceClassClient("NetTcpBinding_IServiceClass");

        WCFClient.TCP.ExplicitNumbers val1 = new WCFClient.TCP.ExplicitNumbers();
        val1.Explicit1 = int.Parse(textBox1.Text);
        val1.Explicit2 = int.Parse(textBox2.Text);

        WCFClient.TCP.ExplicitNumbers val2 = new WCFClient.TCP.ExplicitNumbers();
        val2.Explicit1 = int.Parse(textBox3.Text);
        val2.Explicit2 = int.Parse(textBox4.Text);

        WCFClient.TCP.ExplicitNumbers result = client.Subtract(val1, val2);
        label3.Text = result.Explicit1.ToString();
        label4.Text = result.Explicit2.ToString();
        client.Close();
    }
}

```

The screenshot shows a Windows Form titled "Form1" with a light gray background. It contains two rows of controls. The first row is for addition, with a label "Explicit 1" followed by a text box containing "5", a label "Explicit 2" followed by a text box containing "2", and a blue "Add" button. The second row is for subtraction, with a label "Explicit 2" followed by a text box containing "2", a label "Explicit 1" followed by a text box containing "5", and a gray "Subtract" button. Below the first row, the result "7" is displayed. Below the second row, the result "7" is displayed.



# MessageContract

## WCFServiceMsg

### IServiceClass.cs

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

namespace WCFServiceMsg
{
    [ServiceContract]
    public interface IServiceClass
    {
        [OperationContract]
        string InitiateOrder();

        [OperationContract]
        BookOrder PlaceOrder(BookOrder request);

        [OperationContract]
        string FinalizeOrder();
    }

    [MessageContract]
    public class BookOrder
    {
    }
```

```

private string isbn;
private int quantity;
private string firstname;
private string lastname;
private string address;
private string ordernumber;
public BookOrder() { }

public BookOrder(BookOrder message)
{
    this.isbn = message.isbn;
    this.quantity = message.quantity;
    this.firstname = message.firstname;
    this.lastname = message.lastname;
    this.address = message.address;
}

[MessageHeader]
public string ISBN
{
    get { return isbn; }
    set { isbn = value; }
}

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

[MessageBodyMember]
public string Firstname
{
    get { return firstname; }
    set { firstname = value; }
}

[MessageBodyMember]
public string Lastname
{
    get { return lastname; }
    set { lastname = value; }
}

[MessageBodyMember]
public string Address
{
    get { return address; }
    set { address = value; }
}

[MessageBodyMember]
public string OrderNumber
{
    get { return ordernumber; }
    set { ordernumber = value; }
}
}
}

```

ServiceClass.cs

```

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

namespace WCFServiceMsg
{
    public class ServiceClass : IServiceClass
    {
        string IServiceClass.InitiateOrder()
        {
            return "Initiating Order....";
        }
        public BookOrder PlaceOrder(BookOrder request)
        {
            BookOrder response = new BookOrder(request);
            response.OrderNumber = "12345678";
            return response;
        }
        string IServiceClass.FinalizeOrder()
        {
            return "Order Placed Successfully";
        }
    }
}

```

## WCFServiceMsgHostWinForm

### Form1.cs

```

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

namespace WCFServiceMsgHostWinForm
{
    public partial class Form1 : Form
    {
        ServiceHost sh = null;
        private void Form1_Load(object sender, EventArgs e)
        {
            sh = new ServiceHost(typeof(WCFServiceMsg.ServiceClass));
            sh.Open();
            label1.Text = "Service Running";
        }
        private void Form1_FormClosing(object sender, FormClosingEventArgs e)
        {
            sh.Close();
        }
        public Form1()
    }
}

```



```

    {
        InitializeComponent();
    }
}

```

## App.config

```

<?xml version="1.0" encoding="utf-8" ?>
<configuration>
  <startup>
    <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.7.2" />
  </startup>
  <system.serviceModel>
    <services>
      <service name="WebServiceMsg.ServiceClass" behaviorConfiguration
="metadataSupport">
        <host>
          <baseAddresses>
            <add
baseAddress="net.tcp://localhost:8000/WebServiceMsg"/>
          </baseAddresses>
        </host>
        <endpoint address="tcp" binding="netTcpBinding"
contract="WebServiceMsg.IServiceClass"/>
        <endpoint address="tcpmex" binding="mexTcpBinding"
contract="IMetadataExchange"/>
      </service>
    </services>
    <behaviors>
      <serviceBehaviors>
        <behavior name="metadataSupport">
          <serviceMetadata httpsGetEnabled="false"
httpGetUrl="" />
        </behavior>
      </serviceBehaviors>
    </behaviors>
  </system.serviceModel>
</configuration>

```

