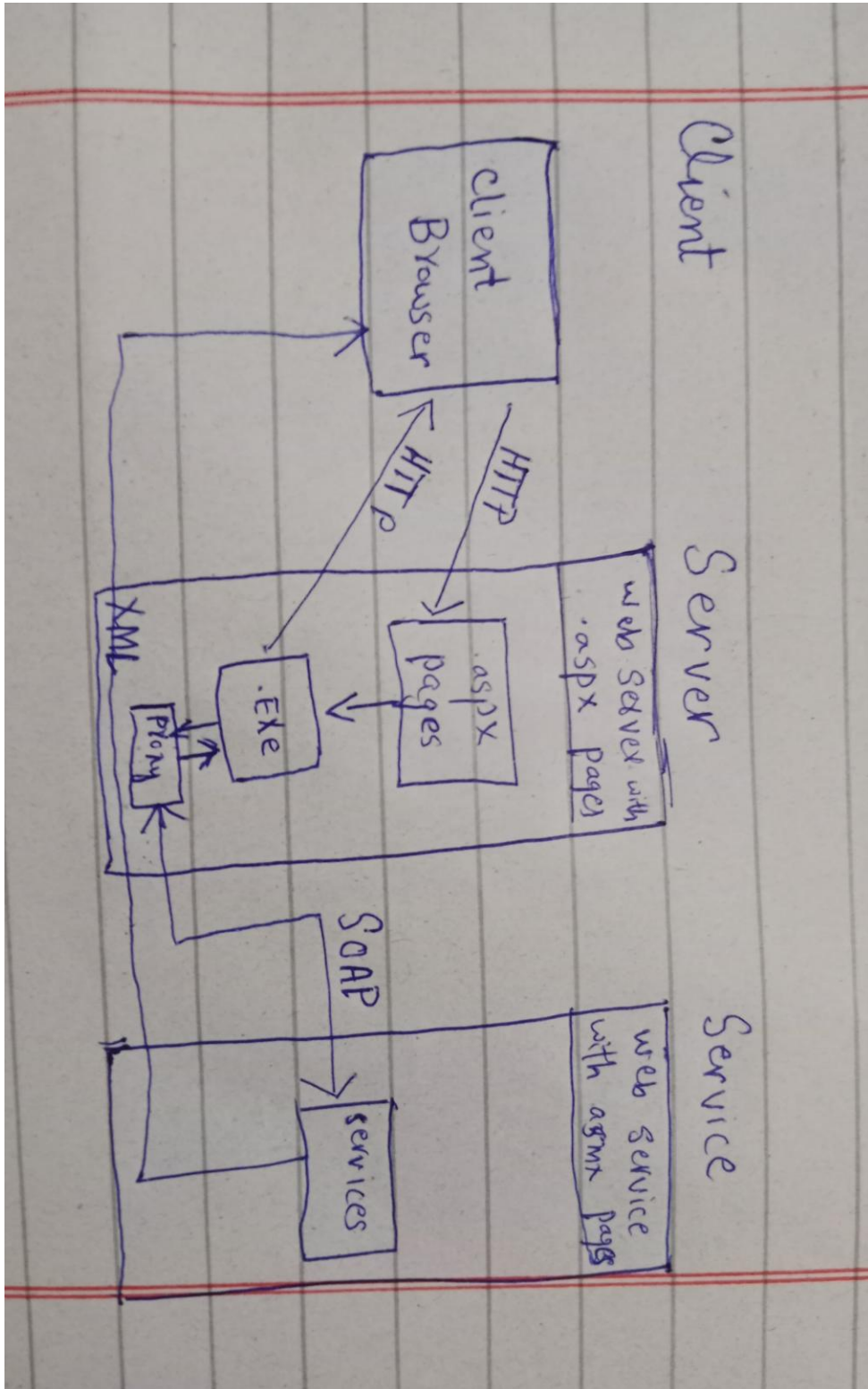


Q#1



## Q2)

Develop a web service with four web methods as follows: (a) Add (b) Subtract (c) Multiply (d) Divide Assume all above methods need two parameters and return a single value as stringvalue

### CalclatorService

Click [here](#) for a complete list of operations.

#### Add

##### Test

To test the operation using the HTTP POST protocol, click the 'Invoke' button.

| Parameter | Value                          |
|-----------|--------------------------------|
| num1:     | <input type="text" value="2"/> |
| num2:     | <input type="text" value="2"/> |

##### SOAP 1.1

The following is a sample SOAP 1.1 request and response. The placeholders shown need to be replaced with actual values.

```
POST /CalclatorService.asmx HTTP/1.1
Host: localhost
Content-Type: text/xml; charset=utf-8
Content-Length: length
SOAPAction: "http://tempuri.org/Add"

<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body>
    <Add xmlns="http://tempuri.org/">
      <num1>double</num1>
      <num2>double</num2>
    </Add>
  </soap:Body>
</soap:Envelope>

HTTP/1.1 200 OK
Content-Type: text/xml; charset=utf-8
Content-Length: length

<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body>
    <AddResponse xmlns="http://tempuri.org/">
      <AddResult>string</AddResult>
    </AddResponse>
  </soap:Body>
</soap:Envelope>
```

## Code

### .asmx

```
<%@ WebService Language="VB" CodeBehind="~/App_Code/CalclatorService.vb"
Class="CalclatorService" %>
```

### .vb

```
Imports System.Web.Services
```

```
Imports System.Web.Services.Protocols
```

```
Imports System.ComponentModel
```

```
<WebService(Namespace:="http://tempuri.org/")>
```

```
<WebServiceBinding(ConformsTo:=WsiProfiles.BasicProfile1_1)>  
<Global.Microsoft.VisualBasic.CompilerServices.DesignerGenerated(>
```

```
Public Class CalculatorService
```

```
    Inherits System.Web.Services.WebService
```

```
<WebMethod(>
```

```
Public Function Add(ByVal num1 As Double, ByVal num2 As Double) As String
```

```
    Return (num1 + num2).ToString()
```

```
End Function
```

```
<WebMethod(>
```

```
Public Function Subtract(ByVal num1 As Double, ByVal num2 As Double) As String
```

```
    Return (num1 - num2).ToString()
```

```
End Function
```

```
<WebMethod(>
```

```
Public Function Multiply(ByVal num1 As Double, ByVal num2 As Double) As String
```

```
    Return (num1 * num2).ToString()
```

```
End Function
```

```
<WebMethod(>
```

```
Public Function Divide(ByVal num1 As Double, ByVal num2 As Double) As String
```

```
    If num2 = 0 Then
```

```
        Return "Error: Division by zero"
```

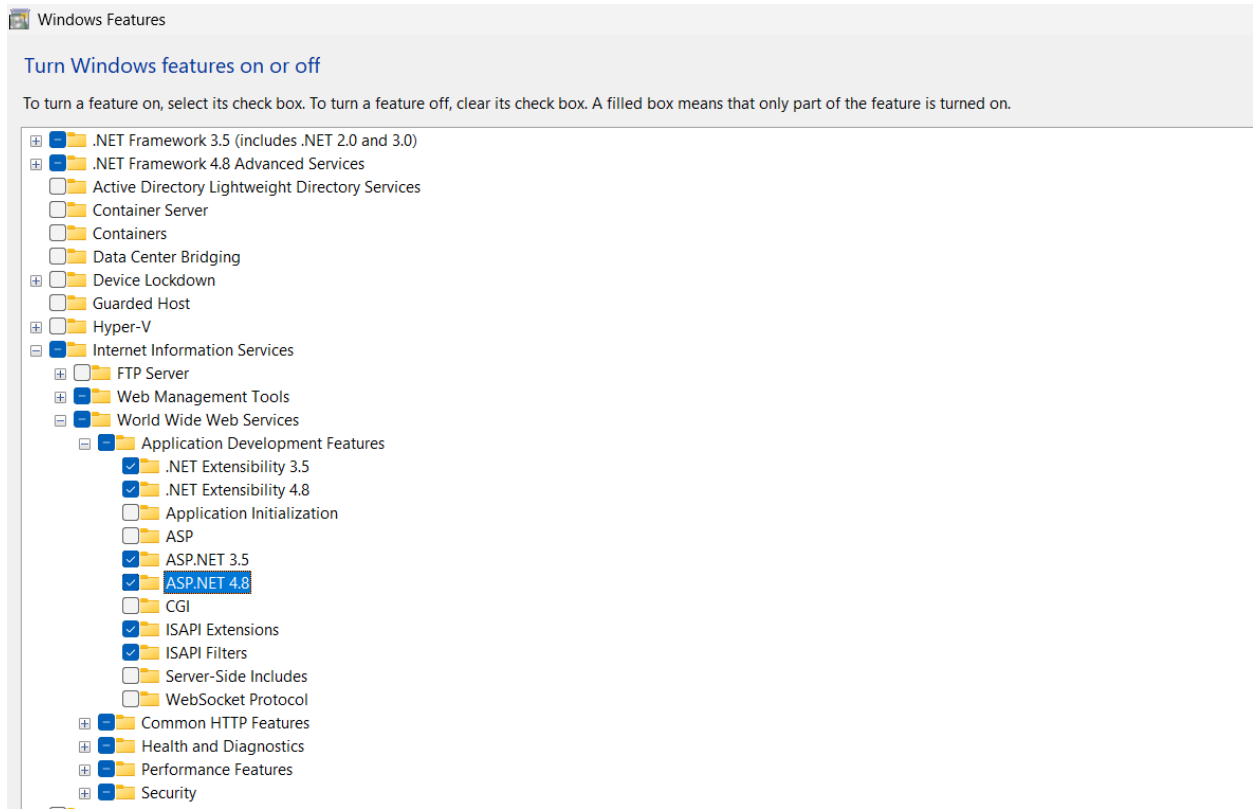
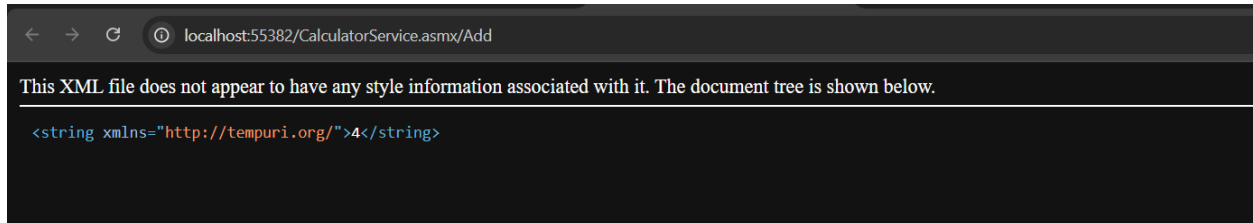
```
    End If
```

```
    Return (num1 / num2).ToString()
```

End Function

End Class

## TESTING



Q3)

**Test the web service using browser on local pc. Install Internet Information Services on your laptop/pc (if not installed) Using IIS manager create two separate applications as follows: (a) MathLibService (b) ServiceClient**

## MathLibraryService on IIS:

Add Application

Site name: Default Web Site  
Path: /

Alias: webservice  
Application pool: DefaultAppPool  
Select...

Example: sales

Physical path: C:\Users\b c m\OneDrive - Higher Education Commissic ...

Pass-through authentication  
Connect as... Test Settings...

☐ Enable Preload

OK Cancel

## ServiceClient on IIS:

Add Application

Site name: Default Web Site  
Path: /

Alias: ServiceClient  
Application pool: DefaultAppPool  
Select...

Example: sales

Physical path: C:\ASP.NET\ServiceClient ...

Pass-through authentication  
Connect as... Test Settings...

☐ Enable Preload

OK Cancel

## **.aspx**

```
<%@ Page Language="VB" AutoEventWireup="false" CodeFile="Default.aspx.vb"
Inherits="_Default" %>
```

```
<!DOCTYPE html>
```

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

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

```
    <title>Math Service Client</title>
```

```
</head>
```

```
<body>
```

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

```
        <div>
```

```
            <h2>Math Operations</h2>
```

```
            <asp:Label ID="Label1" runat="server" Text="Enter Number 1: " />
```

```
            <asp:TextBox ID="txtNum1" runat="server" /><br /><br />
```

```
            <asp:Label ID="Label2" runat="server" Text="Enter Number 2: " />
```

```
            <asp:TextBox ID="txtNum2" runat="server" /><br /><br />
```

```
            <asp:Button ID="btnAdd" runat="server" Text="Add" OnClick="btnAdd_Click" />
```

```
            <asp:Button ID="btnSubtract" runat="server" Text="Subtract"
OnClick="btnSubtract_Click" />
```

```
            <asp:Button ID="btnMultiply" runat="server" Text="Multiply"
OnClick="btnMultiply_Click" />
```

```
            <asp:Button ID="btnDivide" runat="server" Text="Divide" OnClick="btnDivide_Click"
/><br /><br />
```

```
<asp:Label ID="lblResult" runat="server" Font-Bold="true" Font-Size="Large"
ForeColor="Blue" />

</div>

</form>

</body>

</html>
```

### **.vb**

Partial Class \_Default

Inherits System.Web.UI.Page

' Create an instance of the web service client

Dim service As New MathRef.WebService()

Protected Sub btnAdd\_Click(sender As Object, e As EventArgs)

Dim num1 As Double = Double.Parse(txtNum1.Text)

Dim num2 As Double = Double.Parse(txtNum2.Text)

lblResult.Text = service.Add(num1, num2)

End Sub

Protected Sub btnSubtract\_Click(sender As Object, e As EventArgs)

Dim num1 As Double = Double.Parse(txtNum1.Text)

Dim num2 As Double = Double.Parse(txtNum2.Text)

lblResult.Text = service.Subtract(num1, num2)

End Sub

Protected Sub btnMultiply\_Click(sender As Object, e As EventArgs)

```
Dim num1 As Double = Double.Parse(txtNum1.Text)
Dim num2 As Double = Double.Parse(txtNum2.Text)
lblResult.Text = service.Multiply(num1, num2)
End Sub

Protected Sub btnDivide_Click(sender As Object, e As EventArgs)
    Dim num1 As Double = Double.Parse(txtNum1.Text)
    Dim num2 As Double = Double.Parse(txtNum2.Text)
    lblResult.Text = service.Divide(num1, num2)
End Sub

End Class
```

# Math Operations

Enter Number 1:

Enter Number 2:

**0.908163265306122**

