03-3-1-051-2022

SUBHAN AMJAD

Web Services - Assignment

Internet Application Development

Q1) Draw web services execution model?

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Q2) Develop a web service with four web methods as follows:

WebService.asmx:

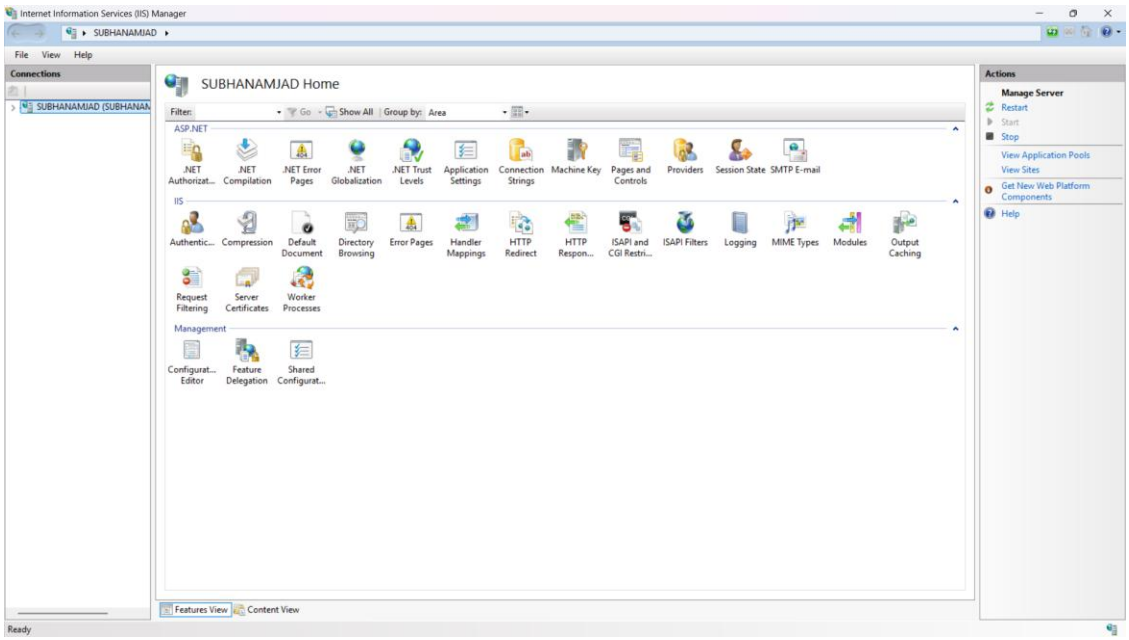
```
<%@ WebService Language="VB" Class="WebService" %>
```

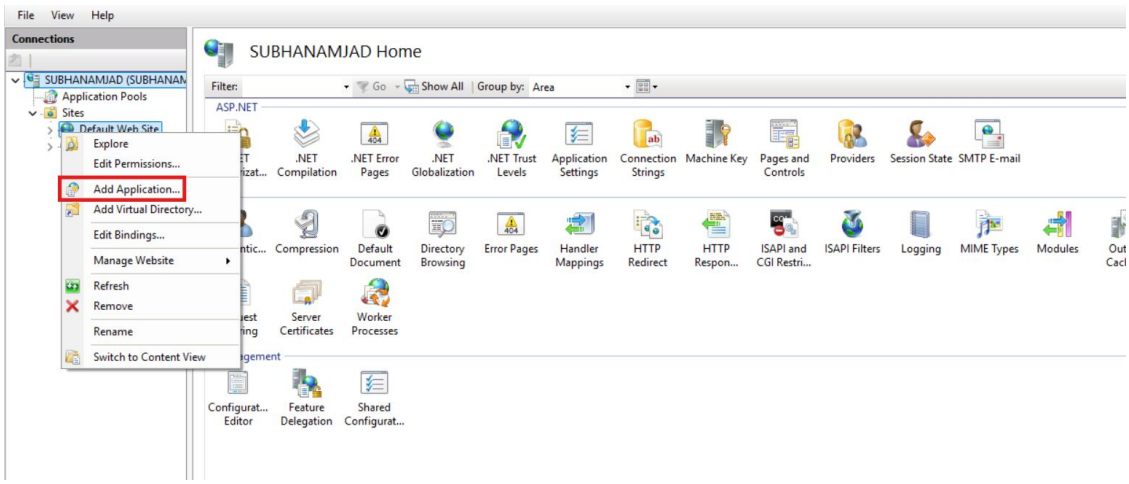
WebService.vb:

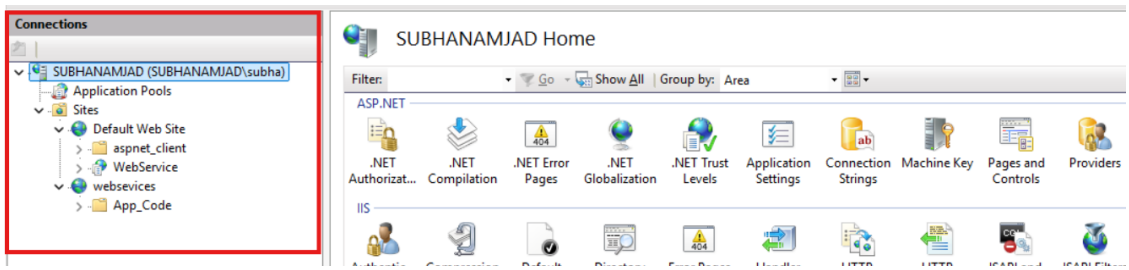
```
Imports System.Web.Services

<WebService(Namespace:="http://tempuri.org/")>
<WebServiceBinding(ConformsTo:=WsiProfiles.BasicProfile1_1)>
Public Class WebService
    Inherits System.Web.Services.WebService

    <WebMethod()>
    Public Function Add(a As Double, b As Double) As String
        Return (a + b).ToString()
    End Function

    <WebMethod()>
    Public Function Subtract(a As Double, b As Double) As String
        Return (a - b).ToString()
    End Function

    <WebMethod()>
    Public Function Multiply(a As Double, b As Double) As String
        Return (a * b).ToString()
    End Function

    <WebMethod()>
    Public Function Divide(a As Double, b As Double) As String
```

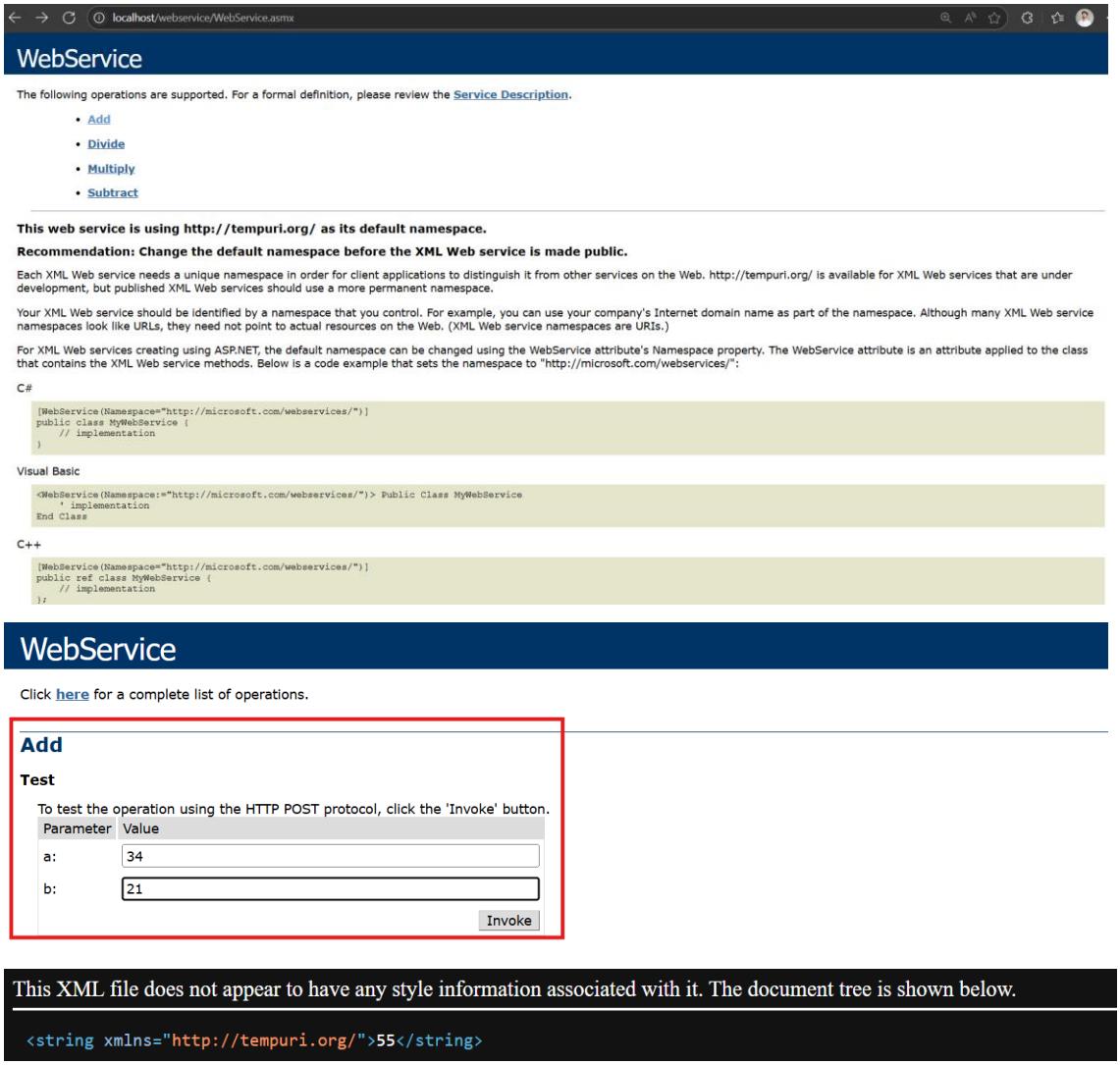
```
        If b = 0 Then
            Return "Cannot divide by zero"
        End If
        Return (a / b).ToString()
    End Function

End Class
```

Q3) Test the web service using browser on local pc.









Q4) Implement a web application “ServiceClient” which will use the MathLibService as a web service. Develop a suitable web page for its demonstration. Use some text boxes to take input from user. Use proxy class to get answer (response from web service) and display it on page to user.

Default.aspx:

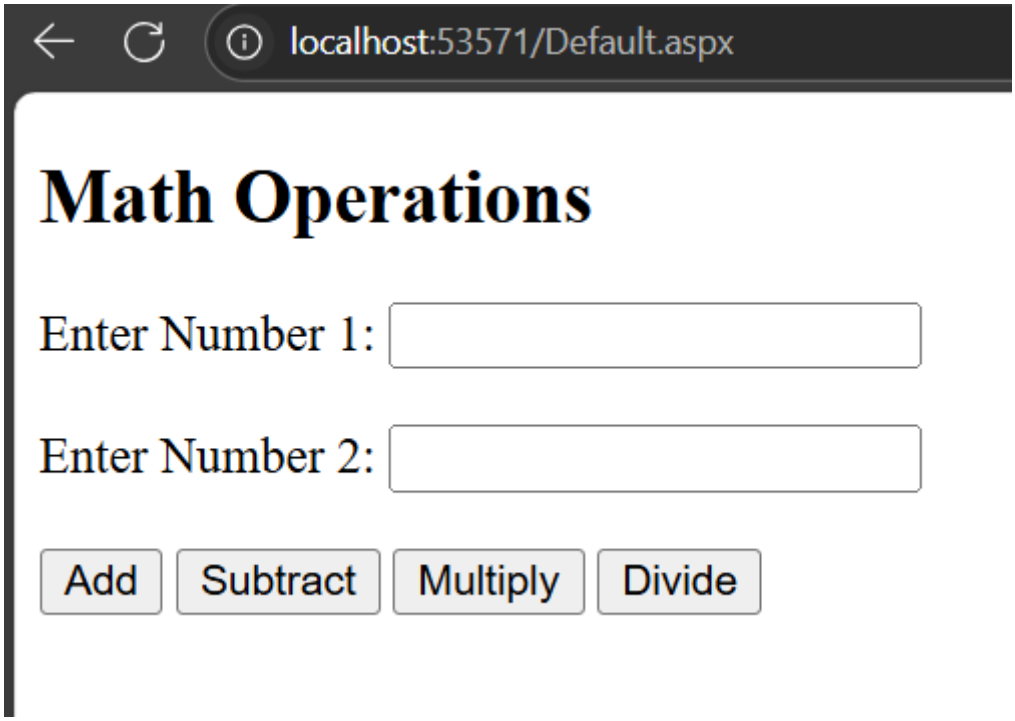
```
<%@ Page Language="VB" AutoEventWireup="false" CodeFile="Default.aspx.vb" Inherits="_Default" %>

<!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">
```

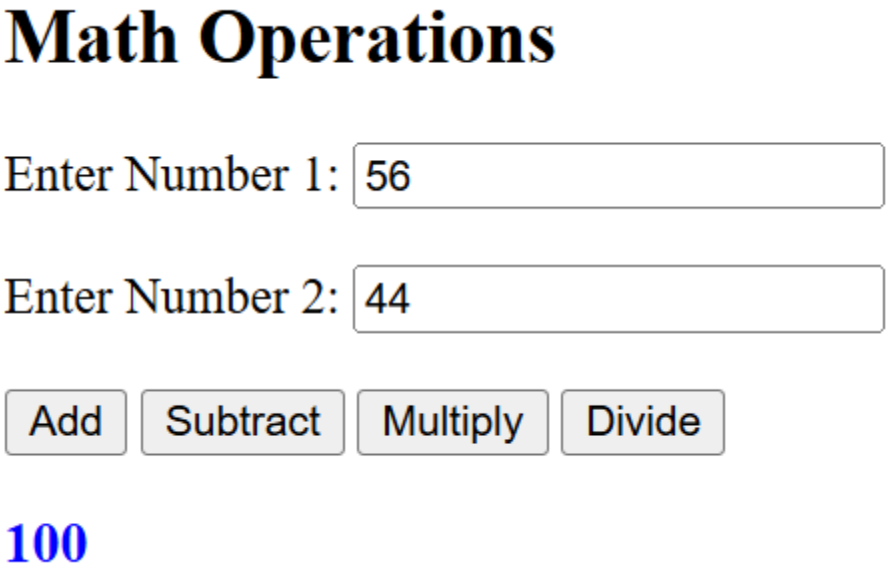
```
        <div>
            <h2>Math Operations</h2>
            <asp:Label ID="Label1" runat="server" Text="Enter Number 1: " />
            <asp:TextBox ID="txtNum1" runat="server" /><br /><br />

            <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>
```

Default.aspx.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: 56

Enter Number 2: 44

Add Subtract Multiply Divide

12

Math Operations

Enter Number 1: 56

Enter Number 2: 44

Add Subtract Multiply Divide

2464

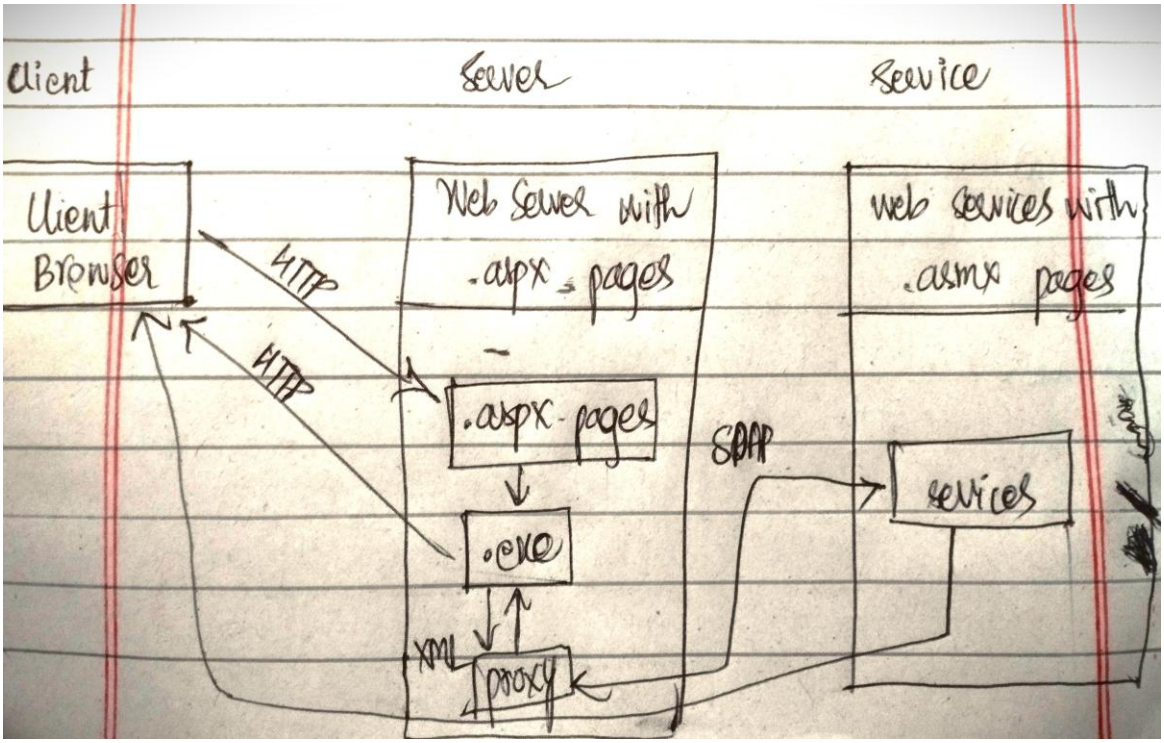
Math Operations

Enter Number 1: 56

Enter Number 2: 44

Add Subtract Multiply Divide

1.27272727272727


Client
Server
Service
Client Browser
HTTP
HTTP
Web Server with .aspx pages
web services with .asmx pages
.aspx pages
.exe
XML
proxy
SOAP
services