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Computer and Information Sciences

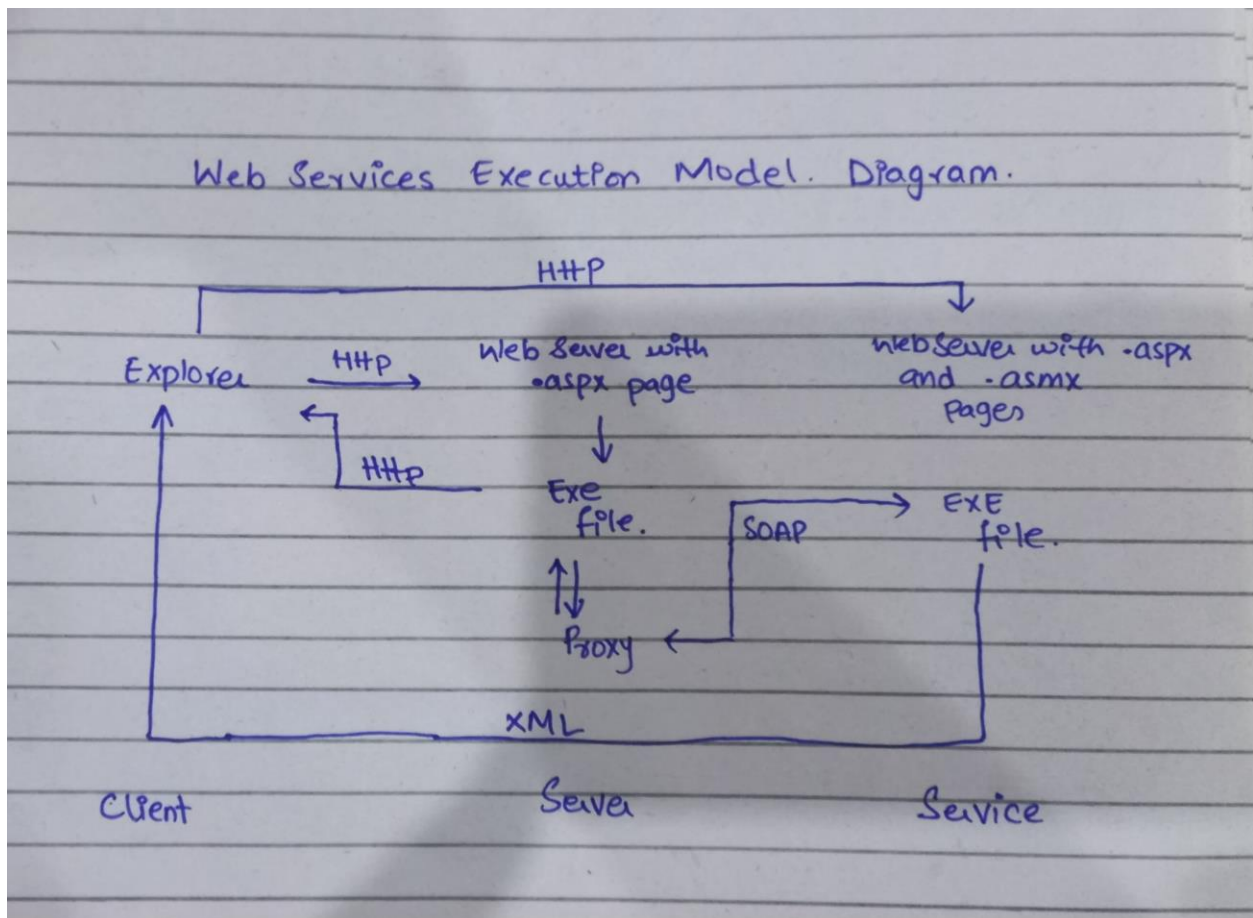
Internet Application Development

Assignment: Web Services

Date May 18th, 2025

Question Number:01

Web Services Execution Model



Question Number:02

.asmx File

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

.vb File

```
Imports System.Web
```

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

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

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

```
<WebServiceBinding(ConformsTo:=WsiProfiles.BasicProfile1_1)>
```

```
Public Class WebService
```

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

```
<WebMethod(Description:="This method adds two numbers")>
```

```
Public Function Add(x As Integer, y As Integer) As String
```

```
    Return (x + y).ToString()
```

```
End Function
```

```
<WebMethod(Description:="This method subtract two numbers")>
```

```
Public Function Subtract(x As Integer, y As Integer) As String
```

```
    Return (x - y).ToString()
```

```
End Function
```

```
<WebMethod(Description:="This method multiply two numbers")>
```

```
Public Function Multiply(x As Integer, y As Integer) As String
```

```
    Return (x * y).ToString()
```

```
End Function
```

```
<WebMethod(Description:="This method divide two numbers")>
```

```
Public Function Divide(x As Integer, y As Integer) As String
```

```
    If y = 0 Then
```

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

```
    End If
```

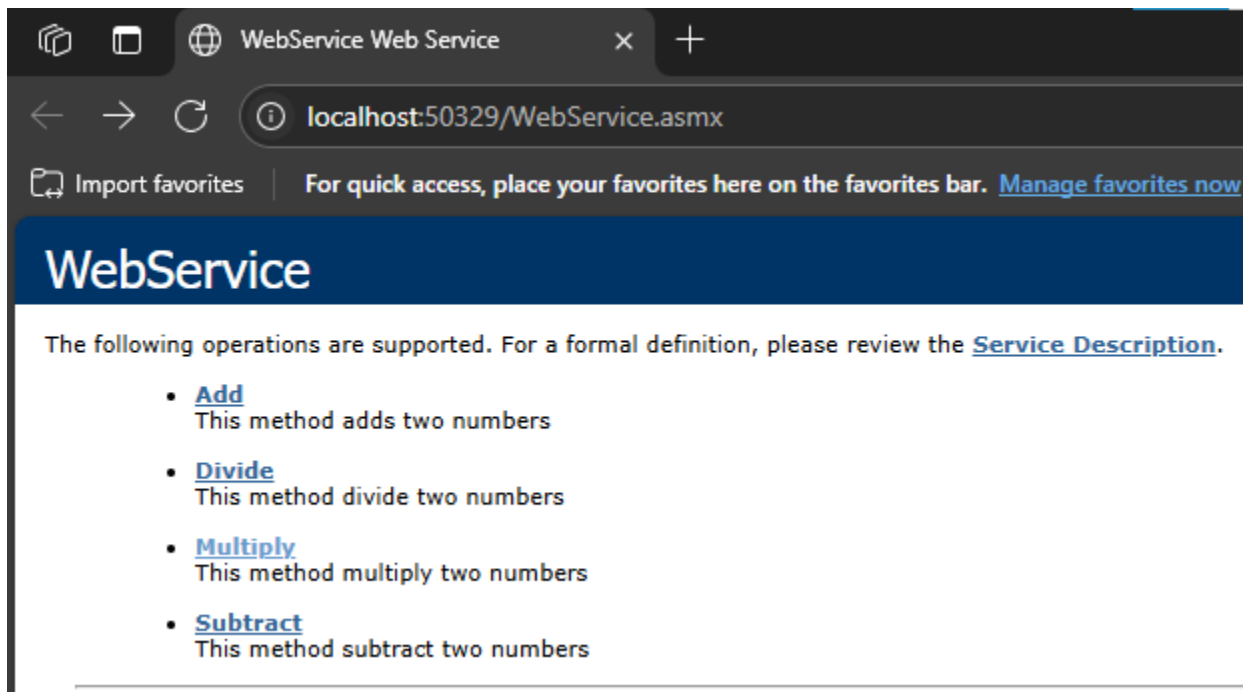
```
    Return (x / y).ToString()
```

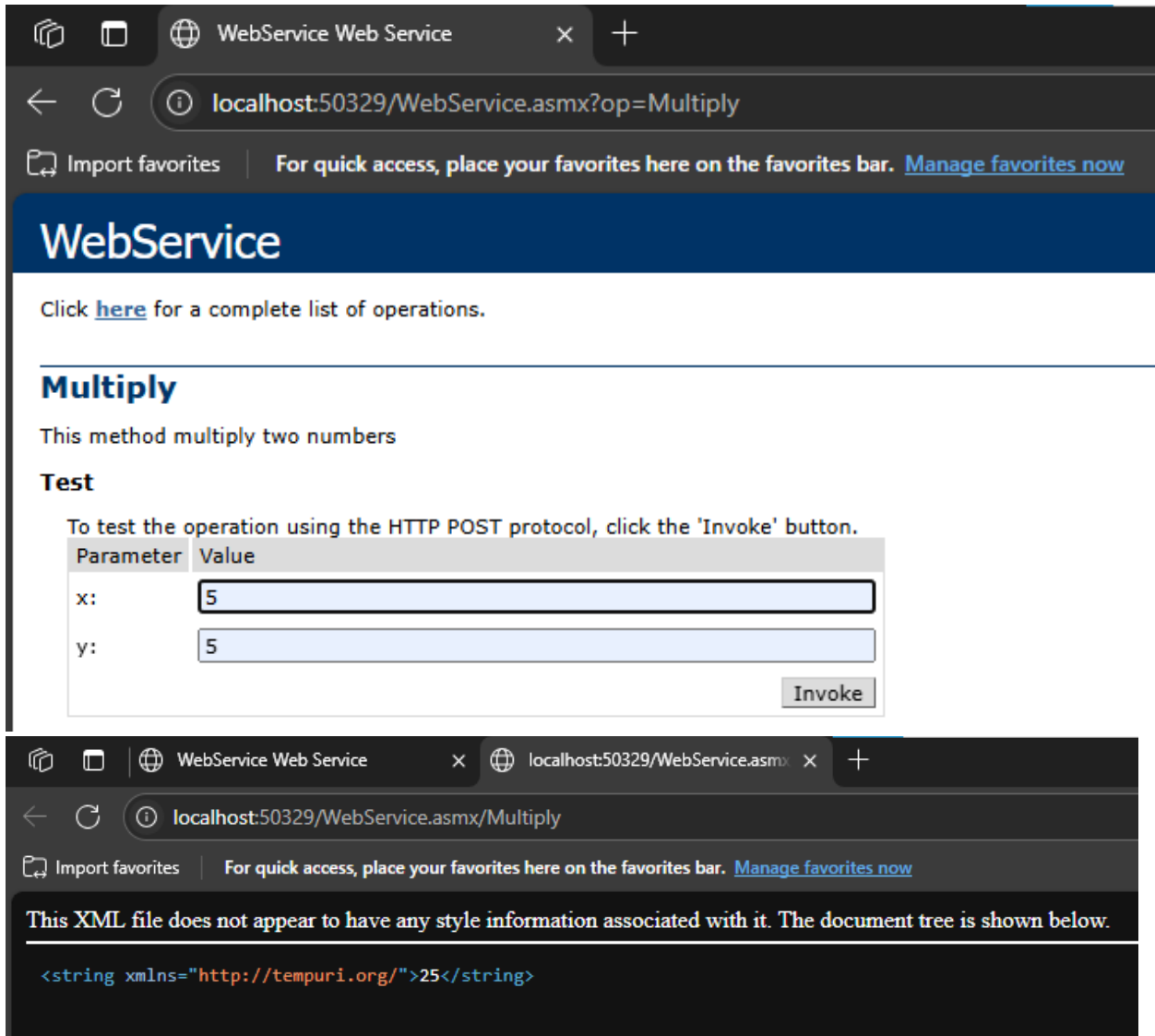
```
End Function
```

```
End Class
```

Question Number:03

Testing:





Question Number:04

.aspx File

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

```
<!DOCTYPE html>
```

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

```
<head>
  <title>Service Client</title>
</head>
<body>
  <form id="form1" runat="server">
    <h2>Math Operations --- Web Service Client</h2>

    <asp:Label ID="lblNum1" runat="server" Text="Number 1: "></asp:Label>
    <asp:TextBox ID="txtNum1" runat="server"></asp:TextBox>
    <br /><br />

    <asp:Label ID="lblNum2" runat="server" Text="Number 2: "></asp:Label>
    <asp:TextBox ID="txtNum2" runat="server"></asp:TextBox>
    <br /><br />

    <asp:DropDownList ID="ddlOperation" runat="server">
      <asp:ListItem Text="Add" Value="Add"></asp:ListItem>
      <asp:ListItem Text="Subtract" Value="Subtract"></asp:ListItem>
      <asp:ListItem Text="Multiply" Value="Multiply"></asp:ListItem>
      <asp:ListItem Text="Divide" Value="Divide"></asp:ListItem>
    </asp:DropDownList>
    <br /><br />

    <asp:Button ID="btnCalculate" runat="server" Text="Calculate" OnClick="btnCalculate_Click" />
    <br /><br />
```

```
<asp:Label ID="lblResult" runat="server" Text="Result will be shown here"></asp:Label>
</form>
</body>
</html>
```

.vb File

```
Imports ServiceClient.MathLibService
```

```
Partial Class _Default
```

```
    Inherits System.Web.UI.Page
```

```
    Protected Sub btnCalculate_Click(sender As Object, e As EventArgs) Handles btnCalculate.Click
```

```
        Try
```

```
            Dim Num1 As Integer = Convert.ToInt32(txtNum1.Text)
```

```
            Dim Num2 As Integer = Convert.ToInt32(txtNum2.Text)
```

```
            Dim service As New MathLibService.WebServiceSoapClient()
```

```
            Dim operation As String = ddlOperation.SelectedValue
```

```
            Dim result As String = ""
```

```
            Select Case operation
```

```
                Case "Add"
```

```
        result = service.Add(Num1, Num2)

    Case "Subtract"

        result = service.Subtract(Num1, Num2)

    Case "Multiply"

        result = service.Multiply(Num1, Num2)

    Case "Divide"

        result = service.Divide(Num1, Num2)

End Select

lblResult.Text = "Result: " & result

Catch ex As Exception

    lblResult.Text = "Error: " & ex.Message

End Try

End Sub

End Class
```

Output:

Service Client

localhost:50862/serviceClient.aspx

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Math Operations --- Web Application ServiceClient

Number 1:

Number 2:

Add ▾

Calculate

Result will be shown here

Service Client

localhost:50862/serviceClient.aspx

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Math Operations --- Web Application ServiceClient

Number 1:

Number 2:

Multiply ▾

Calculate

Result: 25