

Assignment 10

Question 1: Calculator Web Service

Web Service Calculator

This web service is using <http://tempuri.org/> as its default namespace.
Recommendation: Change the default namespace before the XML Web service is made public.

Each XML Web service needs a unique namespace in order for client applications to distinguish it from other services on the Web. <http://tempuri.org/> is available for XML Web services that are under development, but published XML Web services need their own unique namespace.

Your XML Web service should be identified by a namespace that you control. For example, you can use your company's Internet domain name as part of the namespace. Although many XML Web service namespaces look like URLs, they need not point to actual resources on the Web. (XML Web service namespaces are URLs.)

For XML Web services created using ASP.NET, the default namespace can be changed using the WebService attribute's Namespace property. The WebService attribute is an attribute applied to the class that contains the XML Web service methods. Below is a code example that sets the namespace to <http://microsoft.com/webservices/>.

C#

```
[WebService(Namespace="http://microsoft.com/webservices/")]
public class WebServiceCalculator : System.Web.Services.WebService
{
    // implementation
}
```

Visual Basic

```
<WebService(Namespace="http://microsoft.com/webservices/")> Public Class WebServiceCalculator
    ' implementation
End Class
```

C++

```
[WebService(Namespace="http://microsoft.com/webservices/")]
public ref class WebServiceCalculator : System::Web::Services::WebService
{
    // implementation
}
```

WSDL

```
<wsdl:definitions xmlns:i="http://www.w3.org/2001/XMLSchema" xmlns:soap="http://schemas.xmlsoap.org/soap/http" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/" xmlns:mswsdl="http://schemas.xmlsoap.org/wsdl/mswsdl/" xmlns:tempuri="http://tempuri.org/" xmlns:ns0="http://schemas.xmlsoap.org/soap/" xmlns:ns1="http://schemas.xmlsoap.org/soap/encoding/" xmlns:ns2="http://schemas.xmlsoap.org/wsdl/" targetNamespace="http://tempuri.org/">
  <wsdl:types>
    <xs:schema elementFormDefault="qualified" targetNamespace="http://tempuri.org/">
      <xs:element name="Add" type="xsd:double">
        <xs:complexType>
          <xs:sequence>
            <xs:element minOccurs="1" maxOccurs="1" name="x" type="xsd:double"/>
            <xs:element minOccurs="1" maxOccurs="1" name="y" type="xsd:double"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="AddResponse">
        <xs:complexType>
          <xs:sequence>
            <xs:element minOccurs="1" maxOccurs="1" name="AddResult" type="xsd:double"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="Subtract">
        <xs:complexType>
          <xs:sequence>
            <xs:element minOccurs="1" maxOccurs="1" name="x" type="xsd:double"/>
            <xs:element minOccurs="1" maxOccurs="1" name="y" type="xsd:double"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="SubtractResponse">
        <xs:complexType>
          <xs:sequence>
            <xs:element minOccurs="1" maxOccurs="1" name="SubtractResult" type="xsd:double"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="Multiply">
        <xs:complexType>
          <xs:sequence>
            <xs:element minOccurs="1" maxOccurs="1" name="x" type="xsd:double"/>
            <xs:element minOccurs="1" maxOccurs="1" name="y" type="xsd:double"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:schema>
  </wsdl:types>
  <wsdl:port name="WebMethodPort" binding="mswsdl:WebMethodBinding">
    <mswsdl:binding name="WebMethodBinding">
      <mswsdl:operation name="Add" message="tempuri:WebMethodAddRequest" />
      <mswsdl:operation name="AddResponse" message="tempuri:WebMethodAddResponse" />
      <mswsdl:operation name="Subtract" message="tempuri:WebMethodSubtractRequest" />
      <mswsdl:operation name="SubtractResponse" message="tempuri:WebMethodSubtractResponse" />
      <mswsdl:operation name="Multiply" message="tempuri:WebMethodMultiplyRequest" />
      <mswsdl:operation name="MultiplyResponse" message="tempuri:WebMethodMultiplyResponse" />
    </mswsdl:binding>
    <wsdl:address location="http://tempuri.org/"/>
  </wsdl:port>

```

← ⌂ ⌂ https://localhost:44372/WebServiceCalculator.asmx?op=Multiply

WebServiceCalculator

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

Multiply

Test

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

Parameter Value

x:

y:

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

<?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="http://tempuri.org/">
  <soap:Body>
    <Multiply xmlns="http://tempuri.org/">
      <x>5</x>
      <y>9</y>
    </Multiply>
  </soap:Body>
</soap:Envelope>
```

← ⌂ ⌂ https://localhost:44372/WebServiceCalculator.asmx/Multiply

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
<double xmlns="http://tempuri.org/">45</double>
```

Calculator web Service Consumer

https://localhost:44372/WebForm1.aspx

Calculator web Service Consumer Demo

Enter First number

Enter Second number

Select Operation

Result
25

Calculator web Service Consumer

https://localhost:44372/WebForm1.aspx

Calculator web Service Consumer Demo

Enter First number

Enter Second number

Select Operation

Result
-333

Project Build Debug Test Analyze Tools Extensions Window Help | Search | WebCalculatorService

Error List Output What's New? WebForm1.aspx WebForm1.aspx.cs

```
1  using System;
2  using System.Collections.Generic;
3  using System.Linq;
4  using System.Web;
5  using System.Web.UI;
6  using System.Web.UI.WebControls;
7
8
9  namespace WebCalculatorService
10 {
11     public partial class WebForm1 : System.Web.UI.Page
12     {
13         protected void Page_Load(object sender, EventArgs e)
14         {
15         }
16     }
17 }
```

81 % No issues found

Developer PowerShell Developer PowerShell Developer PowerShell Developer PowerShell

Properties

Solution Explorer

- Connected Services
- Properties
- C# AssemblyInfo.cs
- Settings.settings
- References
- Web References
 - CalculatorClient
 - packages.config
 - Web.config
 - WebForm1.aspx
 - WebServiceCalculator.asmx

Diagnostic Tools

Question 2: OTP Verification

Create a Web application that uses API for sending OTP One Time Password through text message on phone number and ask user to verify in the web form.

s\Install the NuGet package

In Visual Studio's Package Manager Console, run:

Install-Package Vonage

```
PM> Install-Package Vonage

Attempting to gather dependency information for package 'Vonage.8.15.0' with respect to project 'WebAppOTP', targeting '.NETFramework,Version=v4.8'
Gathering dependency information took 4.74 sec
Attempting to resolve dependencies for package 'Vonage.8.15.0' with DependencyBehavior 'Lowest'
Resolving dependency information took 0 ms
Resolving actions to install package 'Vonage.8.15.0'
Resolved actions to install package 'Vonage.8.15.0'
GET https://api.nuget.org/v3-flatcontainer/system.io/4.3.0/system.io.4.3.0.nupkg
GET https://api.nuget.org/v3-flatcontainer/microsoft.extensions.primitives/8.0.0/microsoft.extensions.primitives.8.0.0.nupkg
GET https://api.nuget.org/v3-flatcontainer/stdsocketshttpandler/2.2.0.8/stdsocketshttpandler.2.2.0.8.nupkg
GET https://api.nuget.org/v3-flatcontainer/jose-jwt/5.2.0/jose-jwt.5.2.0.nupkg
GET https://api.nuget.org/v3-flatcontainer/microsoft.extensions.fileproviders.physical/8.0.0/microsoft.extensions.fileproviders.physical.8.0.0.nupkg
GET https://api.nuget.org/v3-flatcontainer/enums.net/5.0.0/enums.net.5.0.0.nupkg
GET https://api.nuget.org/v3-flatcontainer/microsoft.extensions.fileproviders.abstractions/8.0.0/
GET https://api.nuget.org/v3-flatcontainer/microsoft.extensions.filesystemblobbing/8.0.0/microsoft.extensions.filesystemblobbing.8.0.0.nupkg
GET https://api.nuget.org/v3-flatcontainer/system.security.cryptography.encoding/4.1.0/system.security.cryptography.encoding.4.1.0.nupkg
GET https://api.nuget.org/v3-flatcontainer/system.runtime/4.3.0/system.runtime.4.3.0.nupkg
GET https://api.nuget.org/v3-flatcontainer/system.security.cryptography.primitives/4.3.1/system.security.cryptography.primitives.4.3.1.nupkg
GET https://api.nuget.org/v3-flatcontainer/system.security.cryptography.algorithms/4.3.1/system.security.cryptography.algorithms.4.3.1.nupkg
OK https://api.nuget.org/v3-flatcontainer/system.security.cryptography.encoding/4.3.0/system.security.cryptography.encoding.4.3.0.nupkg 7ms
OK https://api.nuget.org/v3-flatcontainer/system.runtime/4.3.0/system.runtime.4.3.0.nupkg 9ms
OK https://api.nuget.org/v3-flatcontainer/stdsocketshttpandler/2.2.0.8/stdsocketshttpandler.2.2.0.8.nupkg 9ms
OK https://api.nuget.org/v3-flatcontainer/stdsocketshttpandler/2.2.0.8/stdsocketshttpandler.2.2.0.8.nupkg 9ms
OK https://api.nuget.org/v3-flatcontainer/microsoft.extensions.fileproviders.physical/8.0.0/microsoft.extensions.fileproviders.physical.8.0.0.nupkg 5ms
Sms
OK https://api.nuget.org/v3-flatcontainer/system.security.cryptography.primitives/4.3.0/system.security.cryptography.primitives.4.3.0.nupkg 64ms
```

The screenshot shows the Vonage APIs dashboard. On the left, there's a sidebar with sections like Control (Billing, API Settings), Monitor (Fraud Defender, Logs, Analytics, Delivery and Quality), and Build (Akram). The main area is titled "Try the SMS API" and contains a sub-section "Try it out". It has fields for "From" (set to "Vonage APIs"), "Registered phone number" (set to "41796201615"), and a "Message" box containing "Hello from Vonage SMS API". Below these is a "Send message" button. To the right, there's a "Try it out with code" section with tabs for cURL, Node, .Net, Java, PHP, Python, and Ruby. Under ".Net", there's a code snippet:

```
dotnet add package Vonage
```

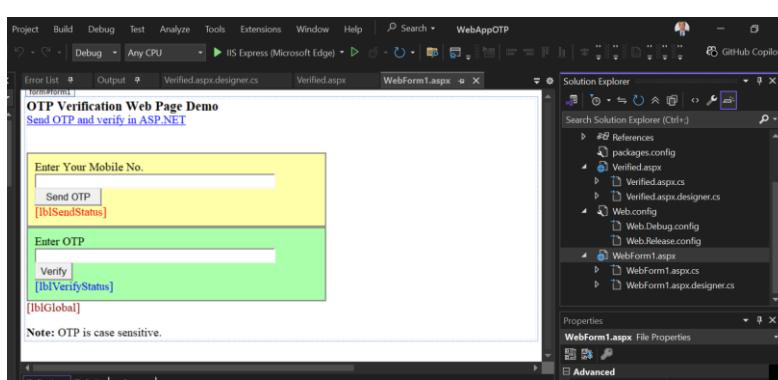
. Further down are sections for "Import Dependencies" (with code:

```
using Vonage;
```

) and "Initialize the library" (with code:

```
// if you want to manage your secret, please do so by visiting
```

).



```

<configuration>
  <appSettings>
    <add key="otp" value="98 - aRf" />
    <add key="otpSecret" value="pa9gg e3R" />
    <add key="OTPTimeOut" value="5" />
  </appSettings>
</configuration>

```

OTP Verification Web Page Demo

[Send OTP and verify in ASP.NET](#)

Enter Your Mobile No.

+41796201615

Send OTP

SessionID: qm5zezfbqptfoyxazvogi23 | HasOTP: False | OTP present: False | Expiry present: False

Note: OTP is case sensitive.

OTP Verification Web Page Demo

[Send OTP and verify in ASP.NET](#)

Enter OTP

040510

Verify

SessionID: 3ovrt0jkks0iizgdmpz1hpdv OTP sent. Check your phone.

SessionID: 3ovrt0jkks0iizgdmpz1hpdv | HasOTP: True | OTP present: True | Expiry present: True

Note: OTP is case sensitive.

OTP Verified

https://localhost:44375/Verified.aspx

OTP verified successfully.

You can now continue.

[Back to start](#)



Question 3: Forms Authentication and Authorization

localhost:44305/Login.aspx

https://localhost:44305/Login.aspx

Login Form

User Name

Password

Remember Me

Check Authorization: Trying to access Welcome.aspx

localhost:44305/Login.aspx?ReturnUrl=%2fWelcome.aspx

https://localhost:44305/Login.aspx?ReturnUrl=%2fWelcome.aspx

Login Form

User Name

Password

Remember Me

Wrong Credentials

localhost:44305/Login.aspx

https://localhost:44305/Login.aspx

Login Form

User Name

Password

Remember Me

Invalid Credentials

localhost:44305/Login.aspx?ReturnUrl=%2fWelcome.aspx

https://localhost:44305/Login.aspx?ReturnUrl=%2fWelcome.aspx

Login Form

User Name

Password

Remember Me

