

Assignment 10

Question 1: Calculator Web Service

Web Service Calculator

The following operations are supported. For a formal definition, please review the [Service Description](#).

- Add
- Divide
- Multiply
- Subtract

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 should use a more permanent 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 URIs.)

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 WebService {
    // operations
}
```

Visual Basic

```
WebService(Namespace="http://microsoft.com/webservices/") Public Class WebService
    ' operations
End Class
```

C++

```
WebService(Namespace="http://microsoft.com/webservices/")
public: ref class WebService {
    // operations
}
```

WSDL

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

```
<?xml definition="http://www.w3.org/2001/XMLSchema" xmlns="http://schemas.xmlsoap.org/wsdl" xmlns:soap="http://schemas.xmlsoap.org/soap/encoding/" xmlns:tns="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:tm="http://microsoft.com/wsdl/textmatching/" xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/" targetNamespace="http://tempuri.org/">
  <wsdl:types>
    <xs:schema elementFormDefault="qualified" targetNamespace="http://tempuri.org/">
      <xs:element name="Add">
        <xs:complexType>
          <xs:sequence>
            <xs:element minOccurs="1" maxOccurs="1" name="x" type="s:double"/>
            <xs:element minOccurs="1" maxOccurs="1" name="y" type="s:double"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="AddResponse">
        <xs:complexType>
          <xs:sequence>
            <xs:element minOccurs="1" maxOccurs="1" name="AddResult" type="s:double"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="Subtract">
        <xs:complexType>
          <xs:sequence>
            <xs:element minOccurs="1" maxOccurs="1" name="x" type="s:double"/>
            <xs:element minOccurs="1" maxOccurs="1" name="y" type="s:double"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="SubtractResponse">
        <xs:complexType>
          <xs:sequence>
            <xs:element minOccurs="1" maxOccurs="1" name="SubtractResult" type="s:double"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="Multiply">
        <xs:complexType>
          <xs:sequence>
            <xs:element minOccurs="1" maxOccurs="1" name="x" type="s:double"/>
            <xs:element minOccurs="1" maxOccurs="1" name="y" type="s:double"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:schema>
  </wsdl:types>
</?>
```

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:	<input type="text" value="5"/>
Y:	<input type="text" value="9"/>

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.aspx 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:soap="http://schemas.xmlsoap.org/soap/">
  <soap:Body>
    <Multiply xmlns="http://tempuri.org/">
      <x>double</x>
      <y>double</y>
    </Multiply>
  </soap:Body>
</soap:Envelope>
```

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 x +

← ↻ 🏠 🔒 https://localhost:44372/WebForm1.aspx

Calculator web Service Consumer Demo

Enter First number

Enter Second number

Select Operation

Result
25

Calculator web Service Consumer x +

← ↻ 🏠 🔒 https://localhost:44372/WebForm1.aspx

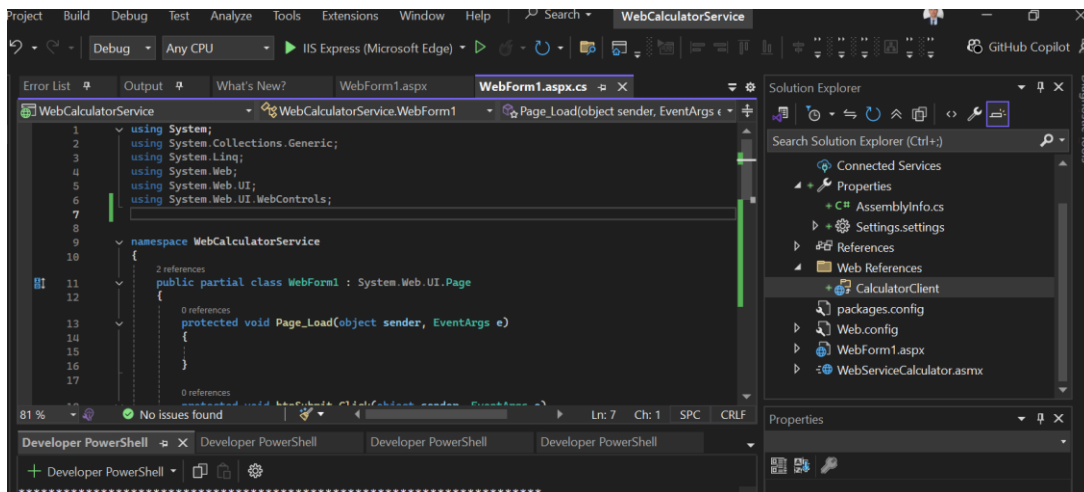
Calculator web Service Consumer Demo

Enter First number

Enter Second number

Select Operation

Result
-333



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.

Install the NuGet package

In Visual Studio's Package Manager Console, run:

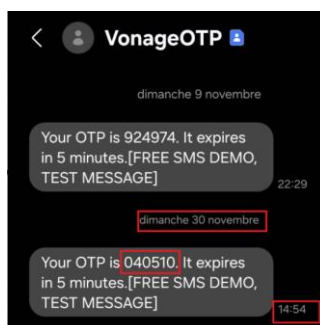
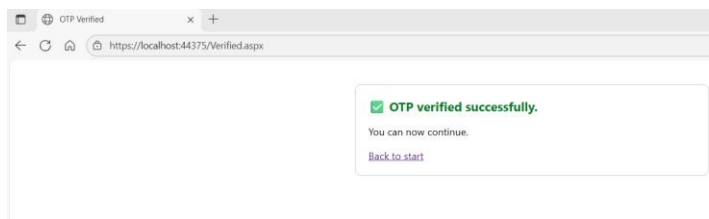
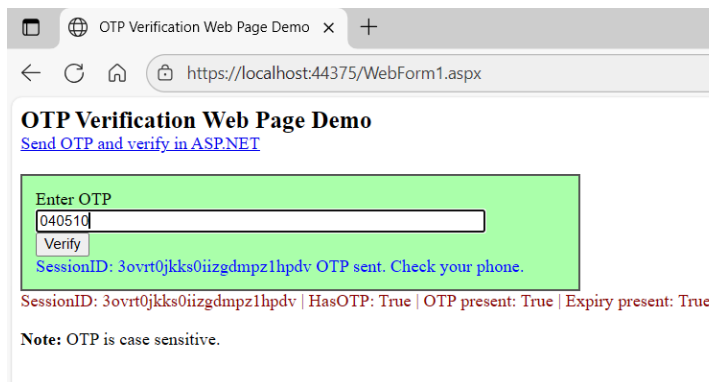
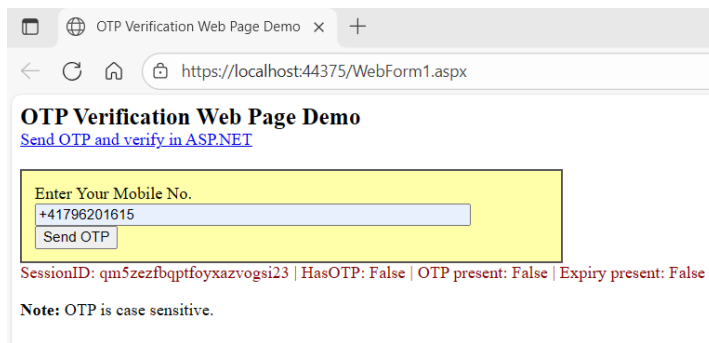
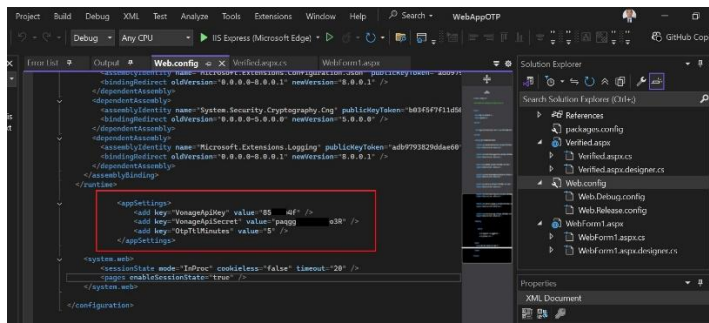
Install-Package Vonage

```
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/standardsocketshttphandler/2.2.0.8/standardsocketshttphandler.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/microsoft.extensions.fileproviders.abstractions.8.0.0.nupkg
GET https://api.nuget.org/v3-flatcontainer/microsoft.extensions.filesystemglobbing/8.0.0/microsoft.extensions.filesystemglobbing.8.0.0.nupkg
GET https://api.nuget.org/v3-flatcontainer/system.security.cryptography.encoding/4.3.0/system.security.cryptography.encoding.4.3.0.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/4.3.0/system.security.cryptography.primitives.4.3.0.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/standardsocketshttphandler/2.2.0.8/standardsocketshttphandler.2.2.0.8.nupkg 61ms
OK https://api.nuget.org/v3-flatcontainer/microsoft.extensions.fileproviders.physical/8.0.0/microsoft.extensions.fileproviders.physical.8.0.0.nupkg 58ms
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 API dashboard. On the left, there's a sidebar with navigation links: Balance (€1.60), Account (Master (85f74b4f)), CONTROL (Billing, API Settings), MONITOR (Fraud Defender, Logs, Analytics, Delivery and Quality), and BUILD (Akram, Account holder). The main area is titled 'Try the SMS API' and includes a 'Send message' button. It also shows a 'Try it out' section with a 'Send message' button and a 'Try it out with code' section with a 'Send message' button.

The screenshot shows a web application running in Visual Studio. The application is titled 'OTP Verification Web Page Demo' and has a 'Send OTP and verify in ASP.NET' button. The form has two sections: 'Enter Your Mobile No.' with a 'Send OTP' button and 'Enter OTP' with a 'Verify' button. The 'Verify' button is disabled. The 'Send OTP' button is highlighted in red. The 'Verify' button is highlighted in green. The 'Send OTP' button is labeled '[btnSendStatus]' and the 'Verify' button is labeled '[btnVerifyStatus]'. The 'Send OTP' button is labeled '[btnGlobal]'.



Question 3: Forms Authentication and Authorization

localhost:44305/Login.aspx

https://localhost:44305/Login.aspx

Login Form

User Name

Password

☐ Remember Me

Login

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

Login

Wrong Credentials

localhost:44305/Login.aspx

https://localhost:44305/Login.aspx

Login Form

User Name

Password

☐ Remember Me

Login Invalid Credentials

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

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

Login Form

User Name

Password

☐ Remember Me

Login

