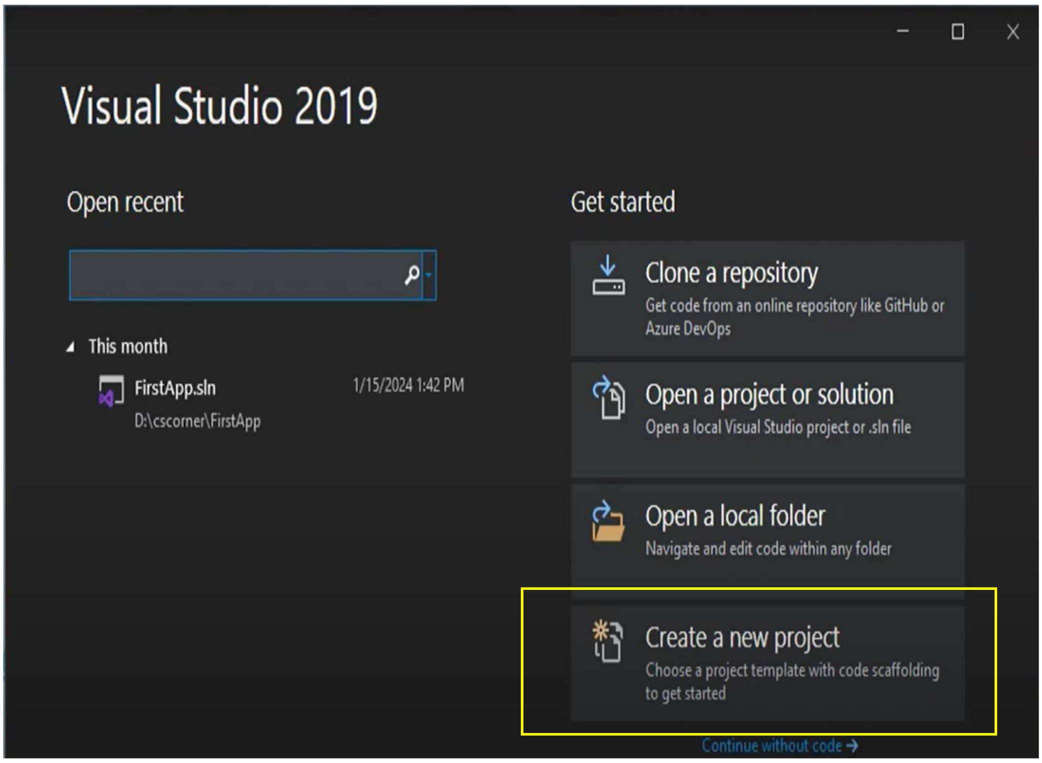
PRACTICAL NO: 04

AIM: To create a Simple Web Service EvenOdd in .Net. Also create a .Net client to consume it.

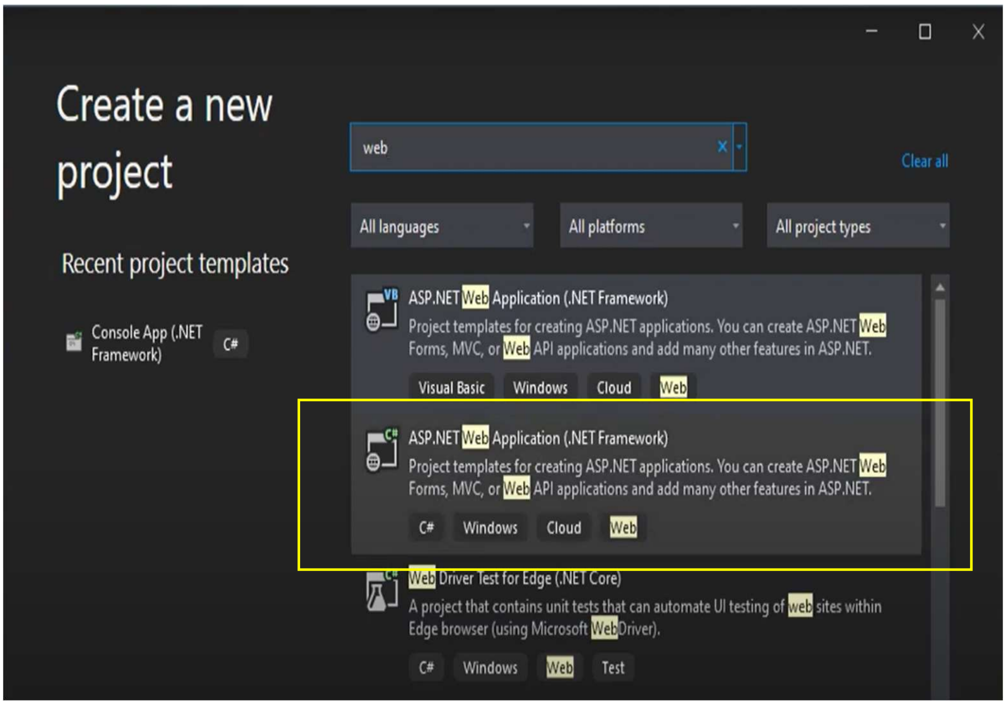
A] FOR SEVER

STEP 1: Open Visual Studio -> Select create on new project.



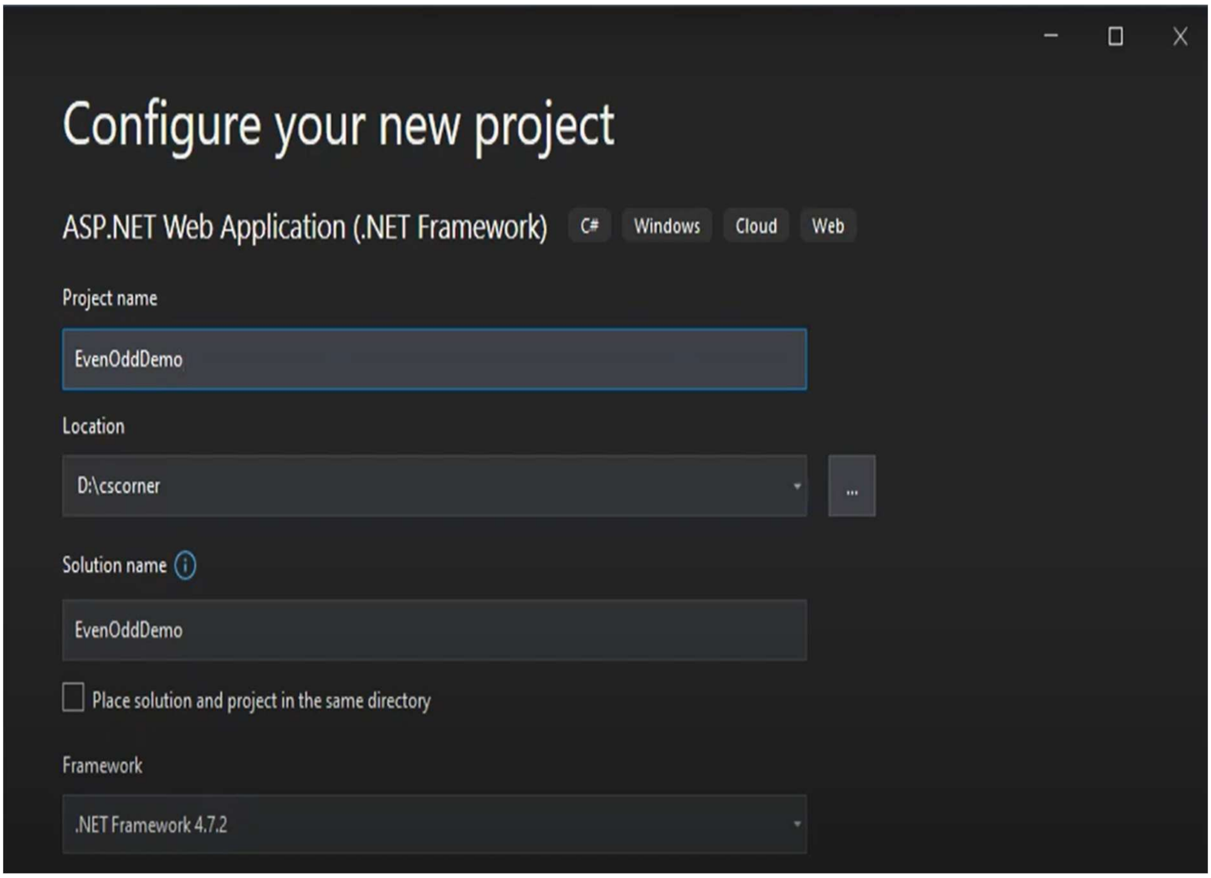
Visual Studio 2019
Open recent
This month
FirstApp.sln
D:\cscorner\FirstApp
1/15/2024 1:42 PM
Get started
Clone a repository
Get code from an online repository like GitHub or Azure DevOps
Open a project or solution
Open a local Visual Studio project or .sln file
Open a local folder
Navigate and edit code within any folder
Create a new project
Choose a project template with code scaffolding to get started
Continue without code →

STEP 2: search for web and select the ASP.NET Application of C#



Create a new project
web
Clear all
All languages
All platforms
All project types
Recent project templates
Console App (.NET Framework)
C#
ASP.NET Web Application (.NET Framework)
Project templates for creating ASP.NET applications. You can create ASP.NET Web Forms, MVC, or Web API applications and add many other features in ASP.NET.
Visual Basic
Windows
Cloud
Web
ASP.NET Web Application (.NET Framework)
Project templates for creating ASP.NET applications. You can create ASP.NET Web Forms, MVC, or Web API applications and add many other features in ASP.NET.
C#
Windows
Cloud
Web
Web Driver Test for Edge (.NET Core)
A project that contains unit tests that can automate UI testing of web sites within Edge browser (using Microsoft WebDriver).
C#
Windows
Web
Test

STEP 3: Give a name for the project -> Click on create project



Configure your new project

ASP.NET Web Application (.NET Framework)

Project name

EvenOddDemo

Location

D:\cscorner

Solution name

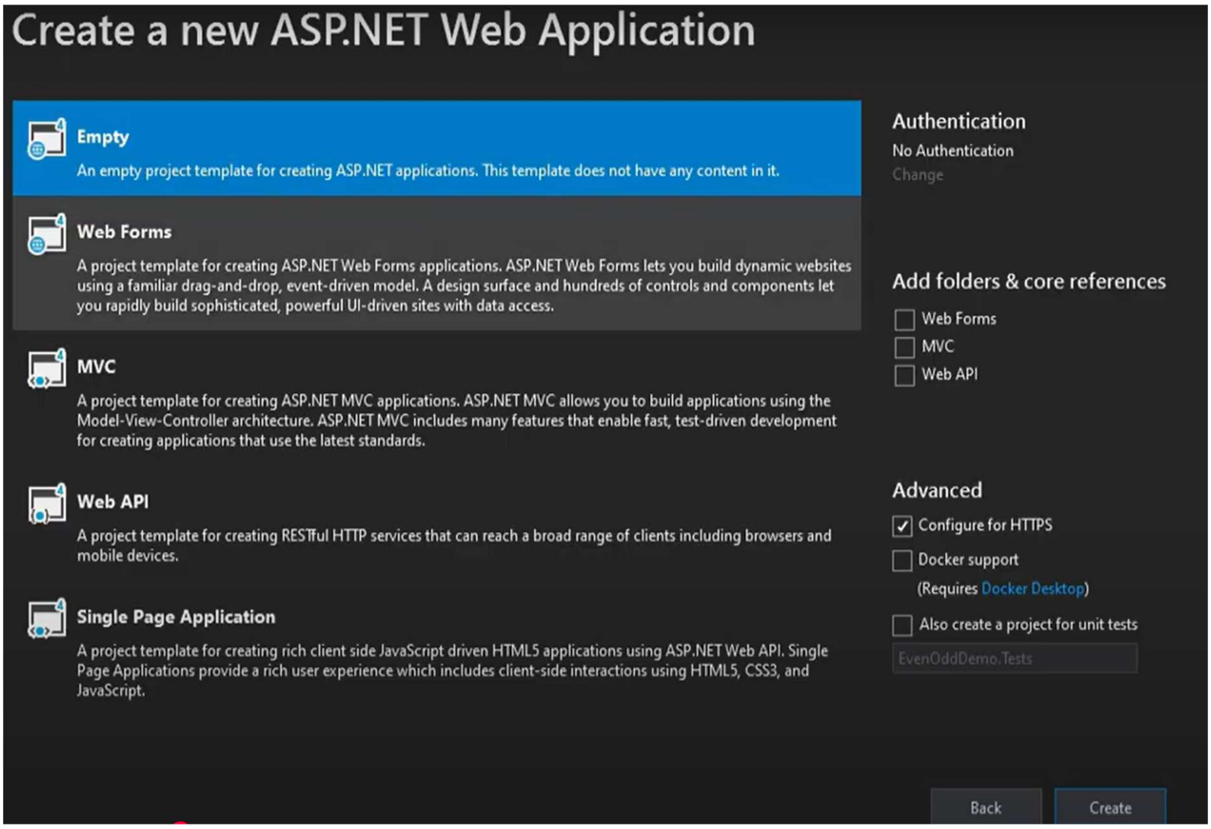
EvenOddDemo

□ Place solution and project in the same directory

Framework

.NET Framework 4.7.2

STEP 4: Select the Empty folder -> click on create



Create a new ASP.NET Web Application

Empty
An empty project template for creating ASP.NET applications. This template does not have any content in it.

Web Forms
A project template for creating ASP.NET Web Forms applications. ASP.NET Web Forms lets you build dynamic websites using a familiar drag-and-drop, event-driven model. A design surface and hundreds of controls and components let you rapidly build sophisticated, powerful UI-driven sites with data access.

MVC
A project template for creating ASP.NET MVC applications. ASP.NET MVC allows you to build applications using the Model-View-Controller architecture. ASP.NET MVC includes many features that enable fast, test-driven development for creating applications that use the latest standards.

Web API
A project template for creating RESTful HTTP services that can reach a broad range of clients including browsers and mobile devices.

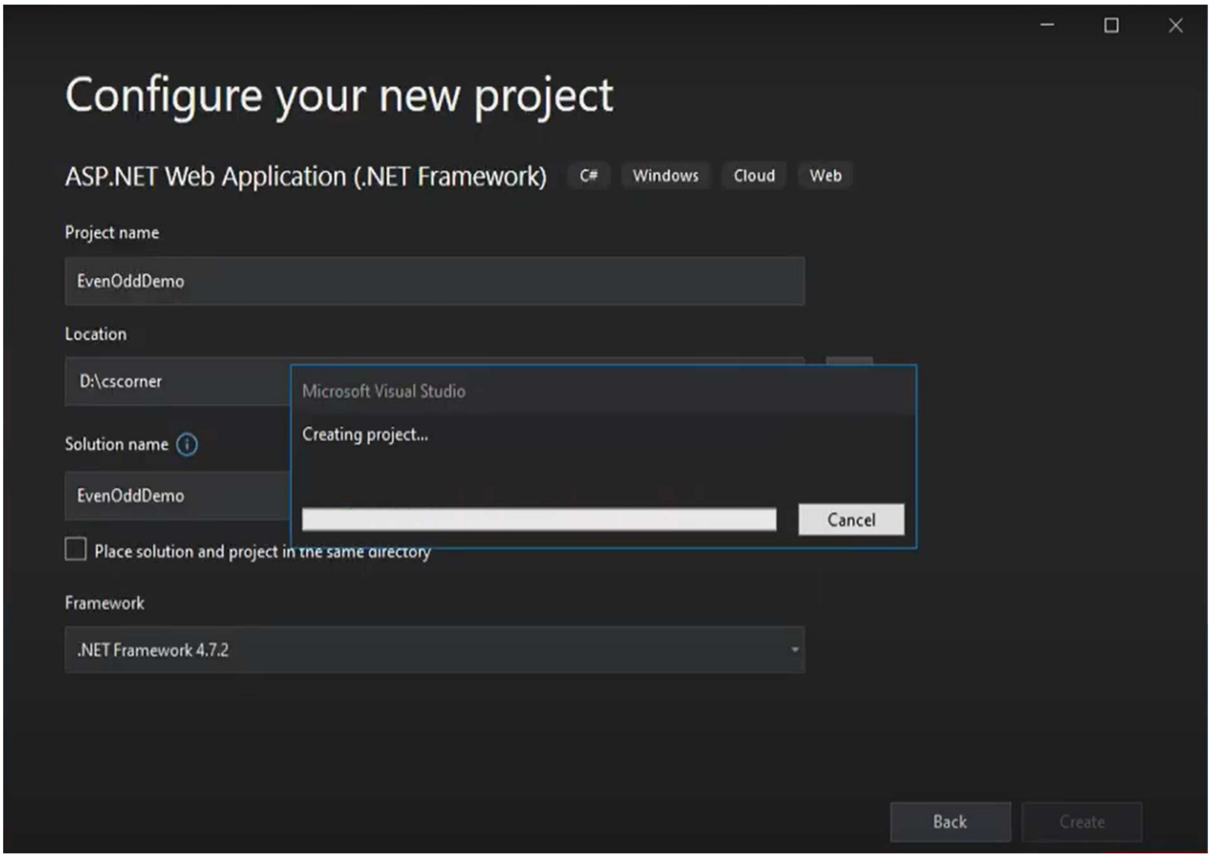
Single Page Application
A project template for creating rich client side JavaScript driven HTML5 applications using ASP.NET Web API. Single Page Applications provide a rich user experience which includes client-side interactions using HTML5, CSS3, and JavaScript.

Authentication
No Authentication
Change

Add folders & core references
□ Web Forms
□ MVC
□ Web API

Advanced
☑ Configure for HTTPS
□ Docker support
(Requires Docker Desktop)
□ Also create a project for unit tests
EvenOddDemo.Tests

STEP 5: Once create is clicked loading page starts



Configure your new project

ASP.NET Web Application (.NET Framework)

Project name: EvenOddDemo

Location: D:\cscorner

Solution name: EvenOddDemo

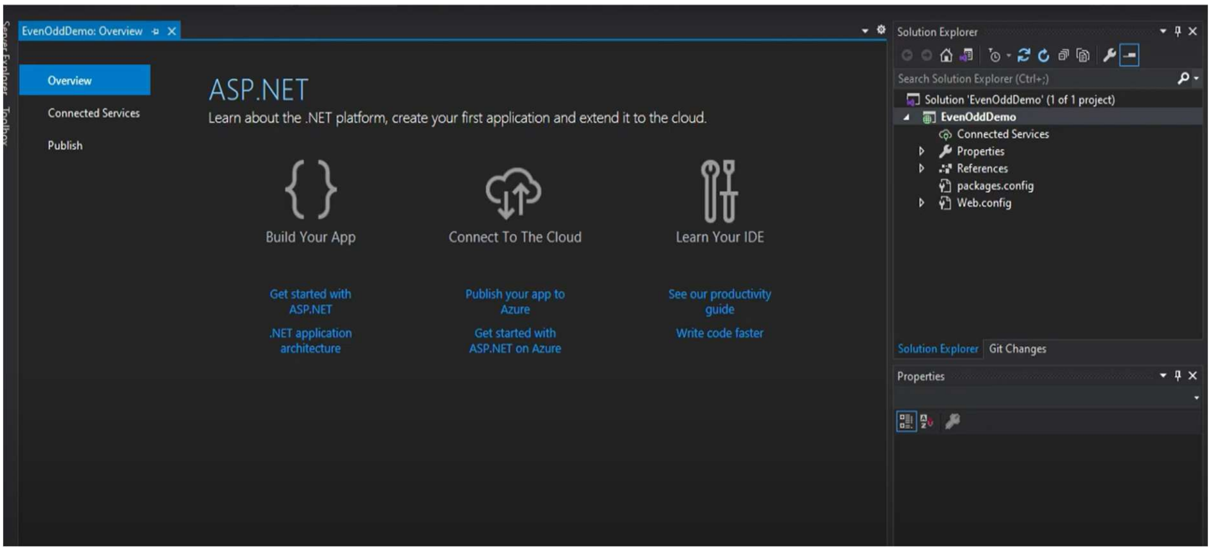
□ Place solution and project in the same directory

Framework: .NET Framework 4.7.2

Microsoft Visual Studio

Creating project...

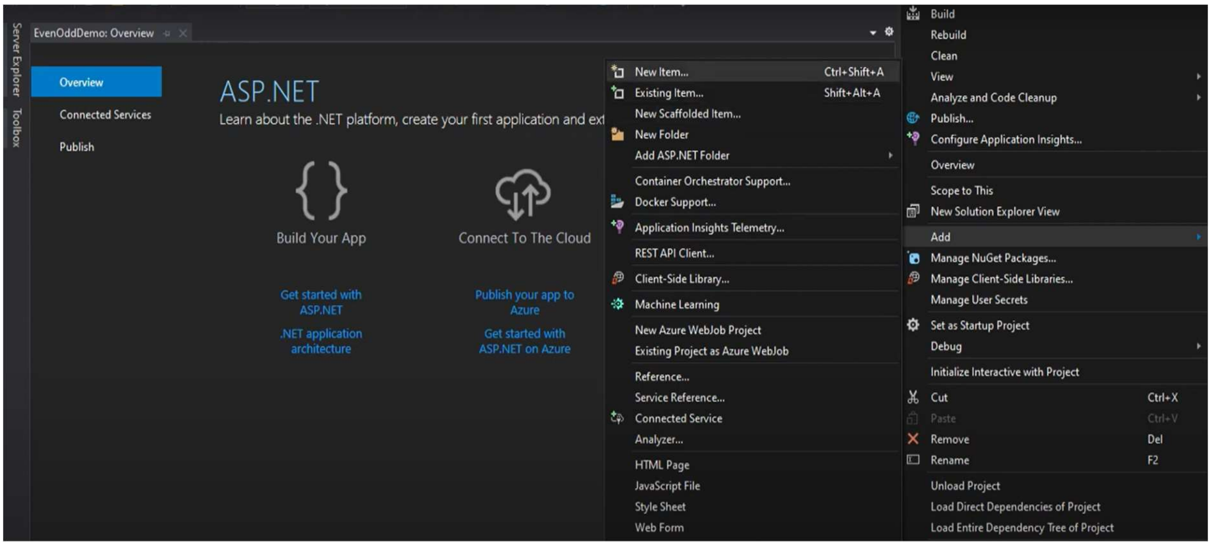
STEP 6: Once project is created this page will be dispalyed



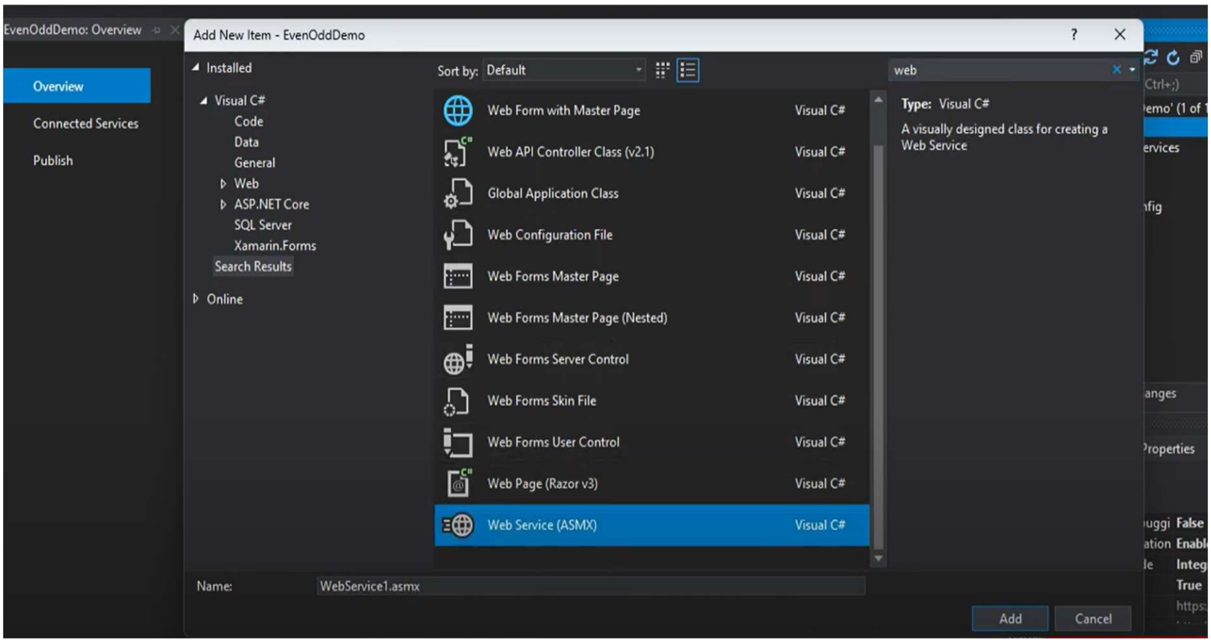
ASP.NET

Learn about the .NET platform, create your first application and extend it to the cloud.

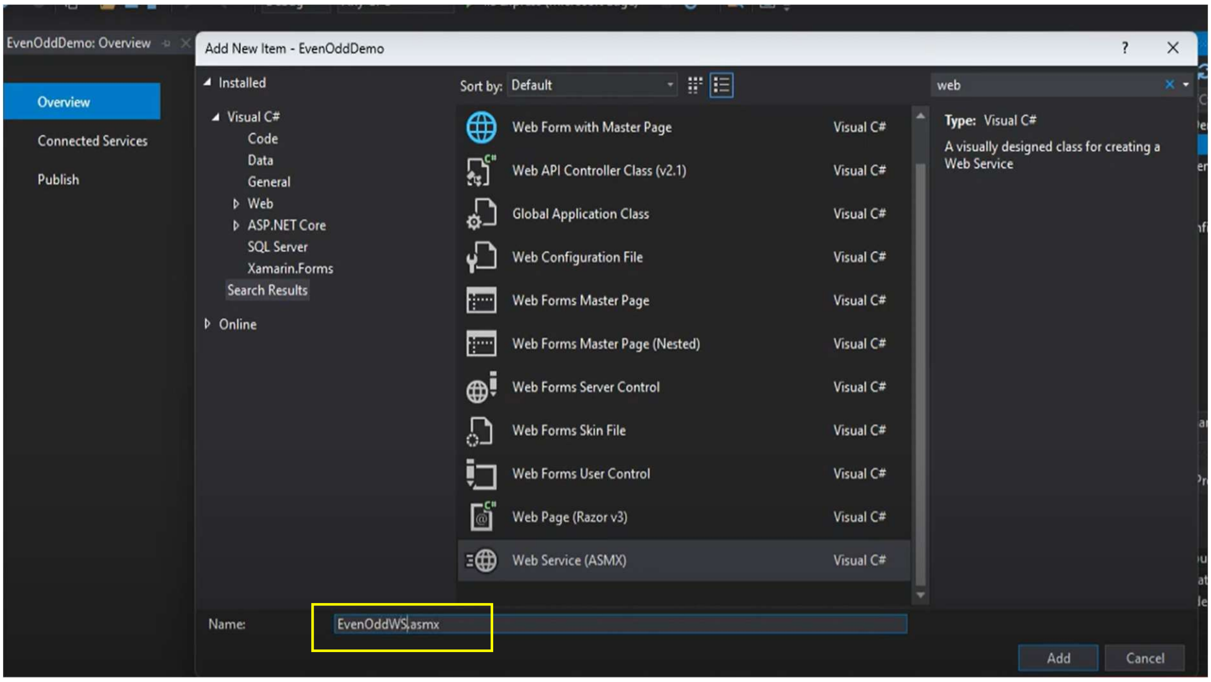
STEP 7: Right click on the project name showing on the right side -> click on Add -> Select New Item.



STEP 8: Once new item folder opens -> select web service (ASMX)


EvenOddDemo: Overview
Add New Item - EvenOddDemo
Installed
Visual C#
Code
Data
General
Web
ASP.NET Core
SQL Server
Xamarin.Forms
Search Results
Online
Sort by: Default
web
Web Form with Master Page Visual C#
Web API Controller Class (v2.1) Visual C#
Global Application Class Visual C#
Web Configuration File Visual C#
Web Forms Master Page Visual C#
Web Forms Master Page (Nested) Visual C#
Web Forms Server Control Visual C#
Web Forms Skin File Visual C#
Web Forms User Control Visual C#
Web Page (Razor v3) Visual C#
Web Service (ASMX) Visual C#
Type: Visual C#
A visually designed class for creating a Web Service
Name: WebService1.asmx
Add
Cancel

STEP 9: Change the name -> Click on Add

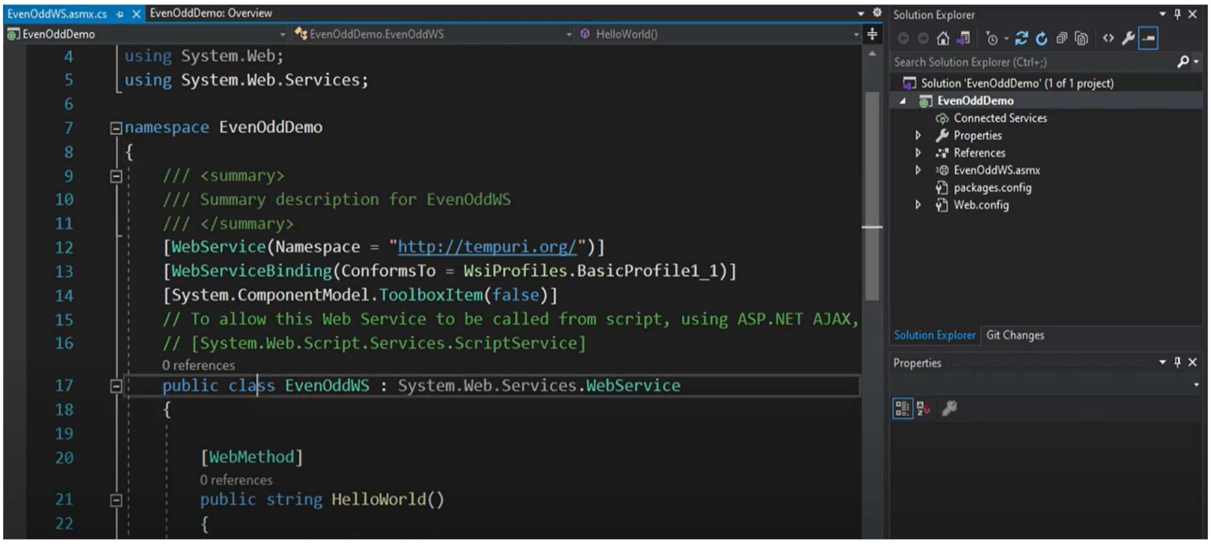

EvenOddDemo: Overview
Overview
Connected Services
Publish
Add New Item - EvenOddDemo
Installed
Visual C#
Code
Data
General
Web
ASP.NET Core
SQL Server
Xamarin.Forms
Search Results
Online
Sort by: Default
web
Web Form with Master Page Visual C#
Web API Controller Class (v2.1) Visual C#
Global Application Class Visual C#
Web Configuration File Visual C#
Web Forms Master Page Visual C#
Web Forms Master Page (Nested) Visual C#
Web Forms Server Control Visual C#
Web Forms Skin File Visual C#
Web Forms User Control Visual C#
Web Page (Razor v3) Visual C#
Web Service (ASMX) Visual C#
Add
Cancel

Type: Visual C#

A visually designed class for creating a Web Service

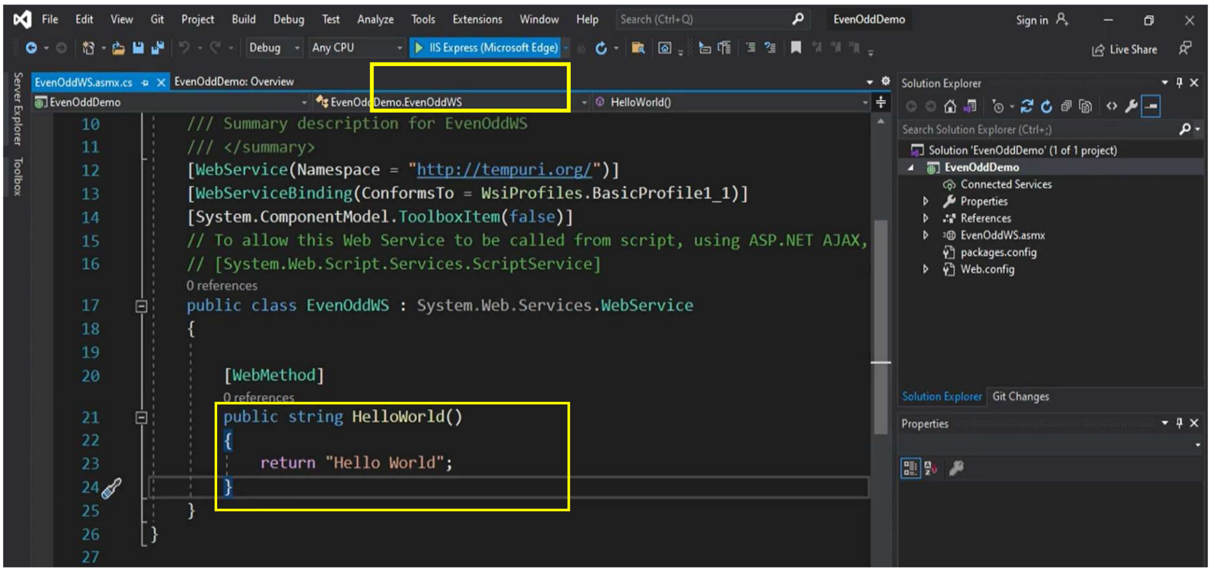
Name: EvenOddWS.asmx

STEP 10: Once add is clicked this page will be displayed

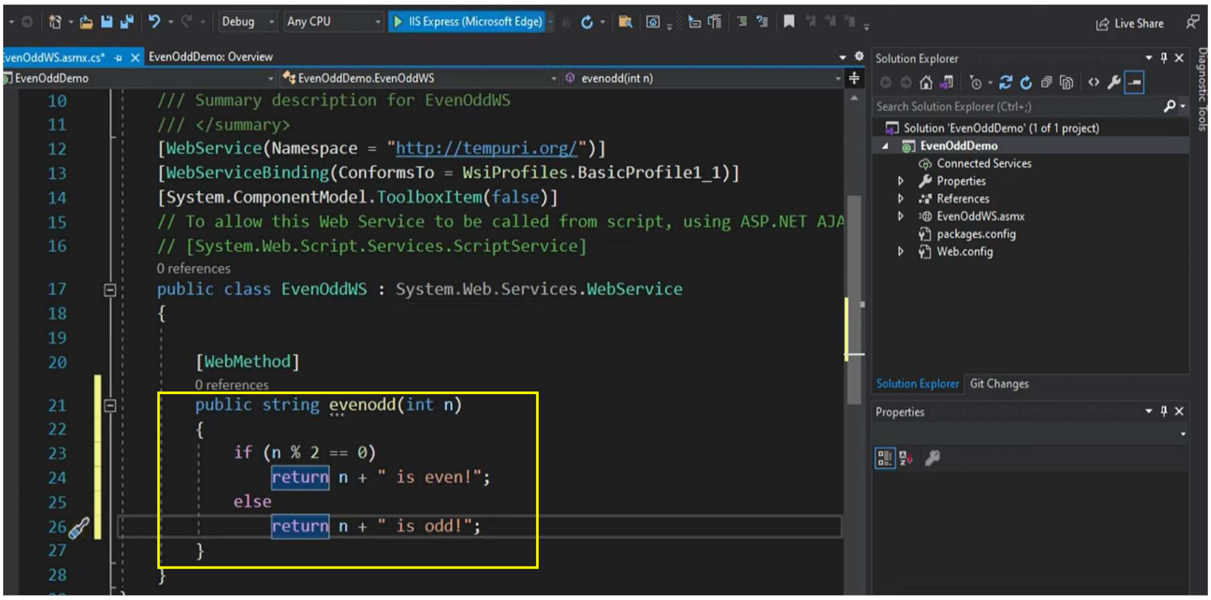


```
using System.Web;
using System.Web.Services;

namespace EvenOddDemo
{
    /// <summary>
    /// Summary description for EvenOddWS
    /// </summary>
    [WebService(Namespace = "http://tempuri.org/")]
    [WebServiceBinding(ConformsTo = WsiProfiles.BasicProfile1_1)]
    [System.ComponentModel.ToolboxItem(false)]
    // To allow this Web Service to be called from script, using ASP.NET AJAX,
    // [System.Web.Script.Services.ScriptService]
    0 references
    public class EvenOddWS : System.Web.Services.WebService
    {

        [WebMethod]
        0 references
        public string HelloWorld()
        {
```

STEP 11: Change this Hello World code with the main code -> then select the play button above.

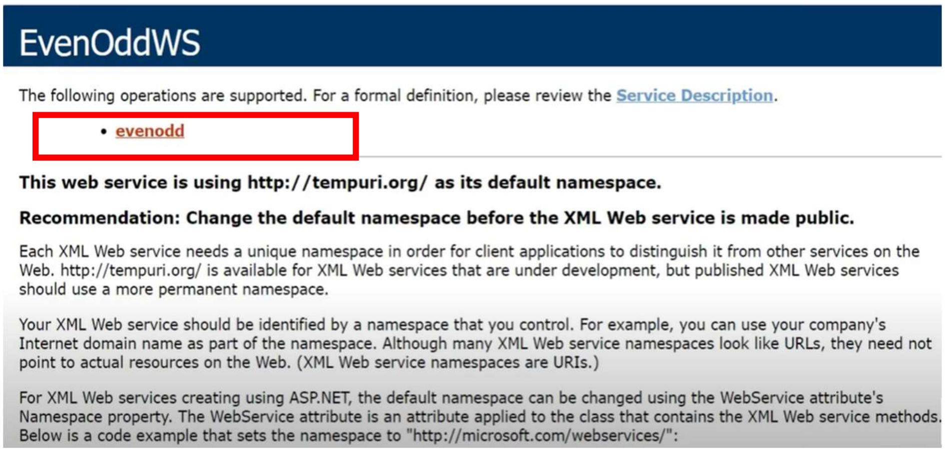


```
    /// Summary description for EvenOddWS
    /// </summary>
    [WebService(Namespace = "http://tempuri.org/")]
    [WebServiceBinding(ConformsTo = WsiProfiles.BasicProfile1_1)]
    [System.ComponentModel.ToolboxItem(false)]
    // To allow this Web Service to be called from script, using ASP.NET AJAX,
    // [System.Web.Script.Services.ScriptService]
    0 references
    public class EvenOddWS : System.Web.Services.WebService
    {

        [WebMethod]
        0 references
        public string HelloWorld()
        {
            return "Hello World";
        }
    }
}
```



```
    /// Summary description for EvenOddWS
    /// </summary>
    [WebService(Namespace = "http://tempuri.org/")]
    [WebServiceBinding(ConformsTo = WsiProfiles.BasicProfile1_1)]
    [System.ComponentModel.ToolboxItem(false)]
    // To allow this Web Service to be called from script, using ASP.NET AJA
    // [System.Web.Script.Services.ScriptService]
    0 references
    public class EvenOddWS : System.Web.Services.WebService
    {

        [WebMethod]
        0 references
        public string evenodd(int n)
        {
            if (n % 2 == 0)
                return n + " is even!";
            else
                return n + " is odd!";
        }
    }
```

STEP 12: This page is displayed once the play button is clicked -> open the evenodd link



EvenOddWS

The following operations are supported. For a formal definition, please review the Service Description.

- evenodd

This web service is using http://tempuri.org/ as its default namespace.

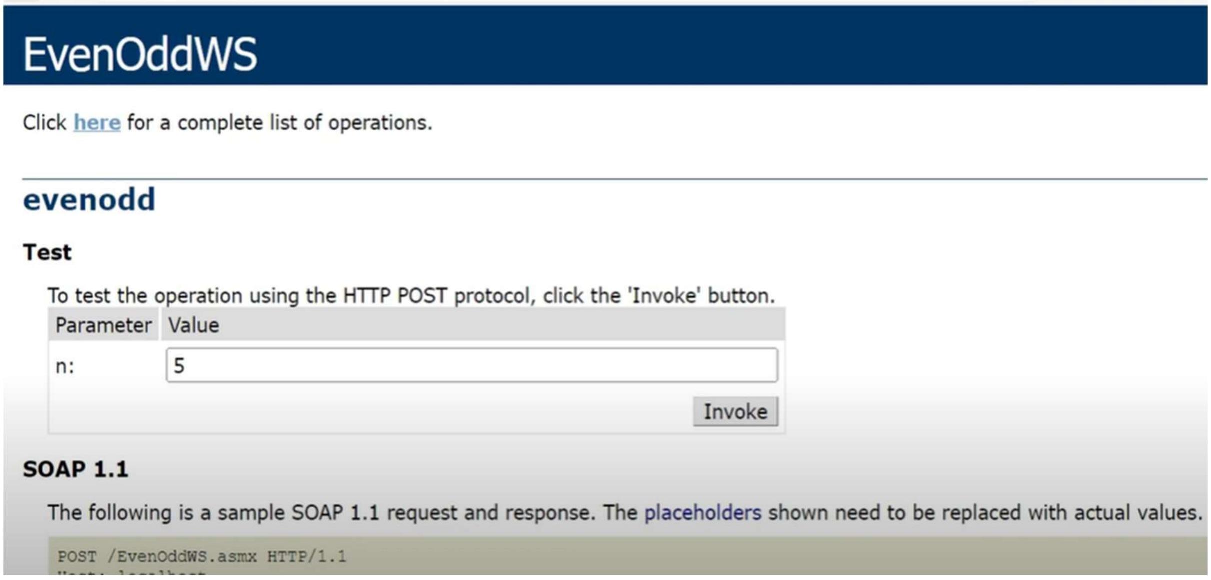
Recommendation: Change the default namespace before the XML Web service is made public.

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 creating 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/":

STEP 13: Enter any number -> select invoke button



EvenOddWS

Click here for a complete list of operations.

evenodd

Test

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

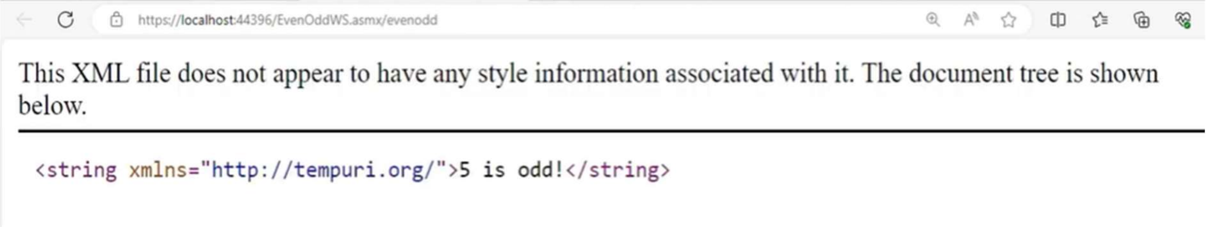
Parameter	Value
n:	5

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 /EvenOddWS.asmx HTTP/1.1
Host: localhost
```

STEP 15: The output will be displayed

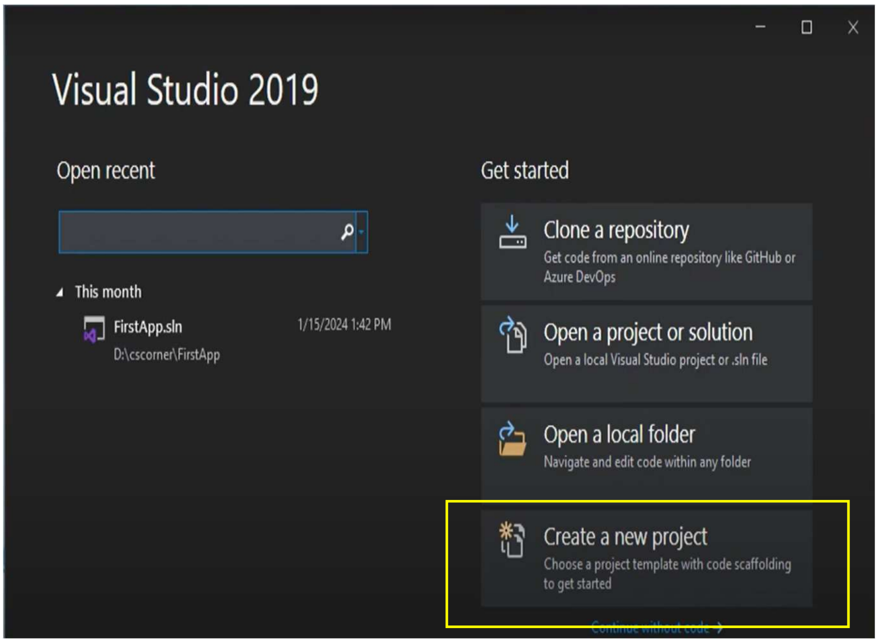


This XML file does not appear to have any style information associated with it. The document tree is shown below.

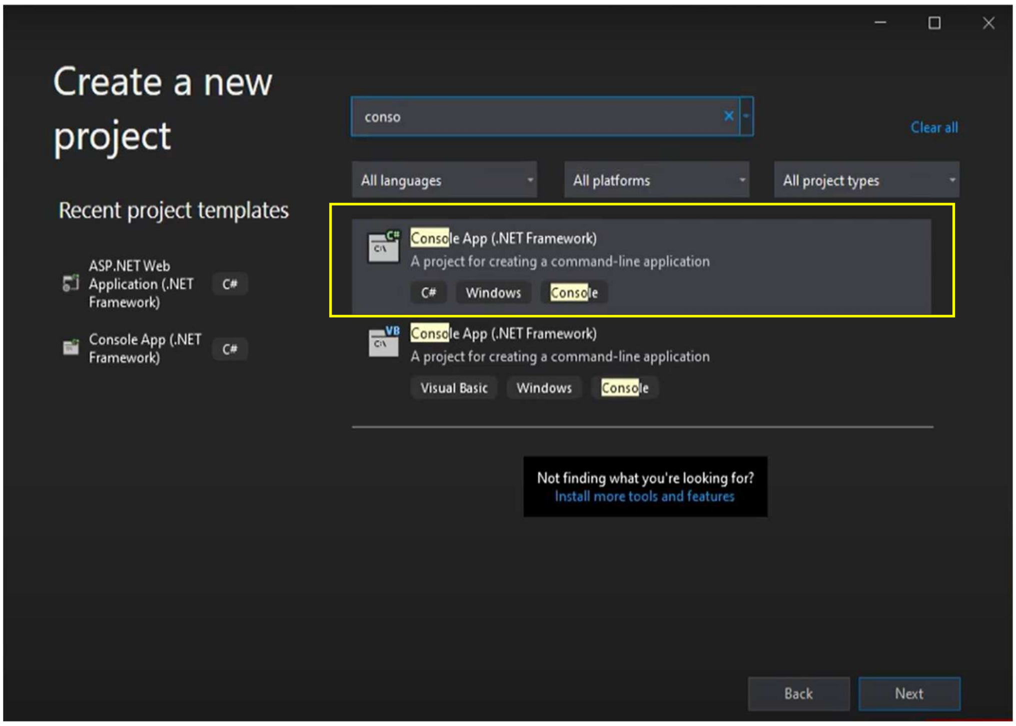
```
<string xmlns="http://tempuri.org/">5 is odd!</string>
```

B] FOR CLIENT

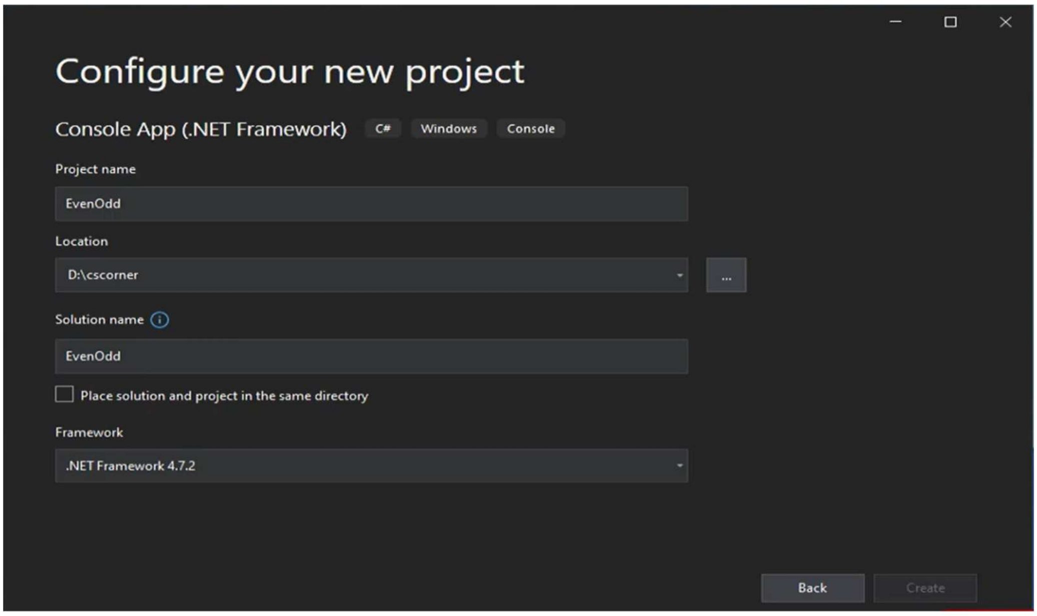
STEP 1: Open Visual Studio -> Select create on new project.


Visual Studio 2019
Open recent
This month
FirstApp.sln
D:\cscorner\FirstApp
1/15/2024 1:42 PM
Get started
Clone a repository
Get code from an online repository like GitHub or Azure DevOps
Open a project or solution
Open a local Visual Studio project or .sln file
Open a local folder
Navigate and edit code within any folder
Create a new project
Choose a project template with code scaffolding to get started
Continue without code →

STEP 2: search for console and select the Console App(.Framework) of C#


Create a new project
Recent project templates
ASP.NET Web Application (.NET Framework)
C#
Console App (.NET Framework)
C#
conso
Clear all
All languages
All platforms
All project types
Console App (.NET Framework)
A project for creating a command-line application
C#
Windows
Console
Console App (.NET Framework)
A project for creating a command-line application
Visual Basic
Windows
Console
Not finding what you're looking for?
Install more tools and features
Back
Next

STEP 3: Give a name for the project -> Click on create project



Configure your new project

Console App (.NET Framework) C# Windows Console

Project name

EvenOdd

Location

D:\cscorner

Solution name

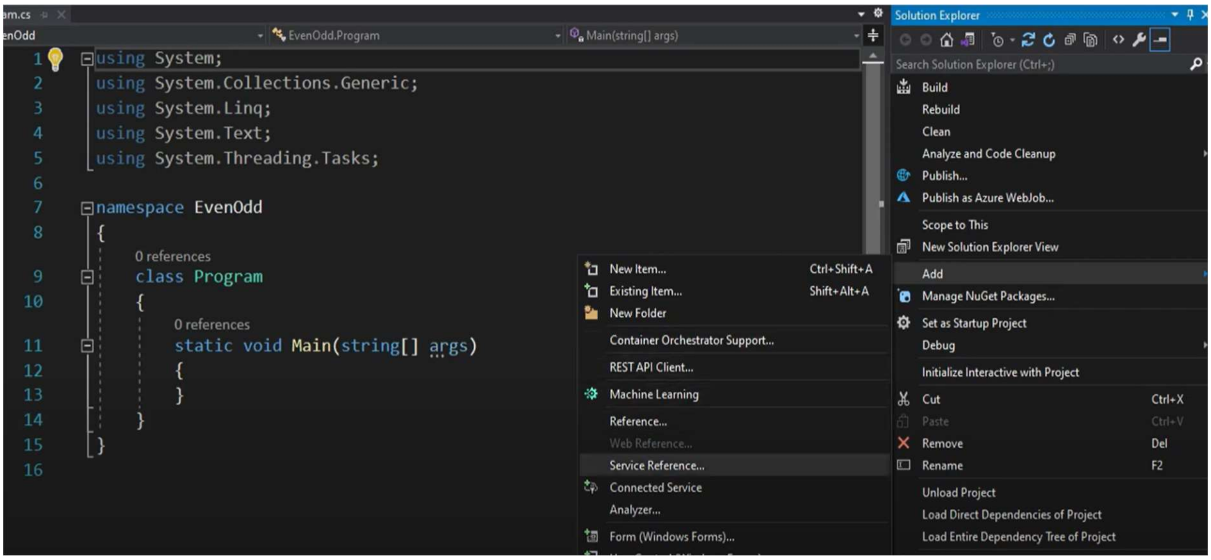
EvenOdd

□ Place solution and project in the same directory

Framework

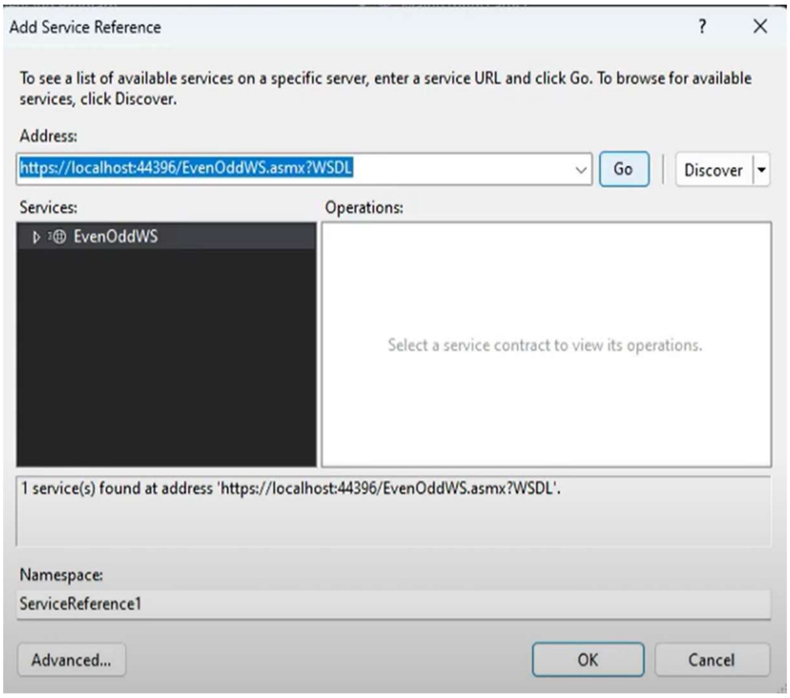
.NET Framework 4.7.2

STEP 4: Right click on the project name showing on the right side -> click on Add -> Select Service Reference.



```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace EvenOdd
{
    0 references
    class Program
    {
        0 references
        static void Main(string[] args)
        {
        }
    }
}
```

STEP 5: Copy the WSDL path from the server’s Service Description and paste it here -> click on Go -> click on Ok



To see a list of available services on a specific server, enter a service URL and click Go. To browse for available services, click Discover.

Address: https://localhost:44396/EvenOddWS.asmx?WSDL

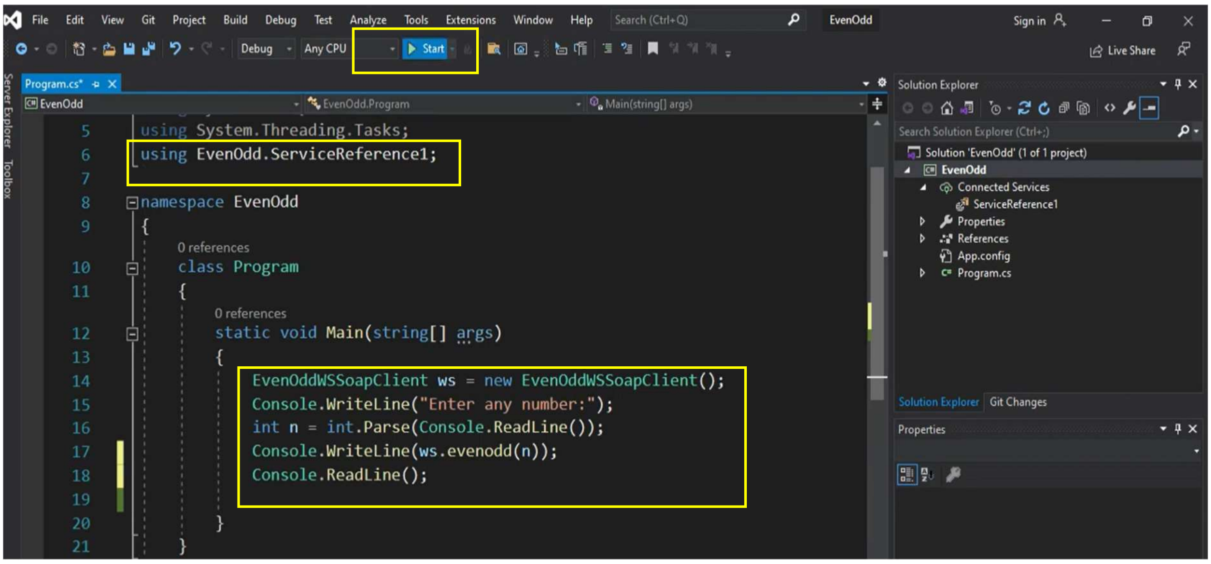
Services: EvenOddWS

Operations: Select a service contract to view its operations.

1 service(s) found at address 'https://localhost:44396/EvenOddWS.asmx?WSDL'.

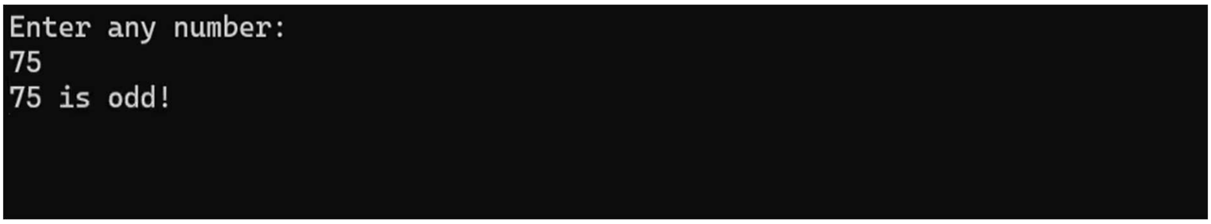
Namespace: ServiceReference1

STEP 6: Add the below shown commands in the code -> click on start



```
using System.Threading.Tasks;
using EvenOdd.ServiceReference1;

namespace EvenOdd
{
    0 references
    class Program
    {
        0 references
        static void Main(string[] args)
        {
            EvenOddWSSoapClient ws = new EvenOddWSSoapClient();
            Console.WriteLine("Enter any number:");
            int n = int.Parse(Console.ReadLine());
            Console.WriteLine(ws.evenodd(n));
            Console.ReadLine();

        }
    }
```

STEP 7: Here is the output displayed in client server.



```
Enter any number:
75
75 is odd!
```