

Creating Web Services in Visual Studio 2010

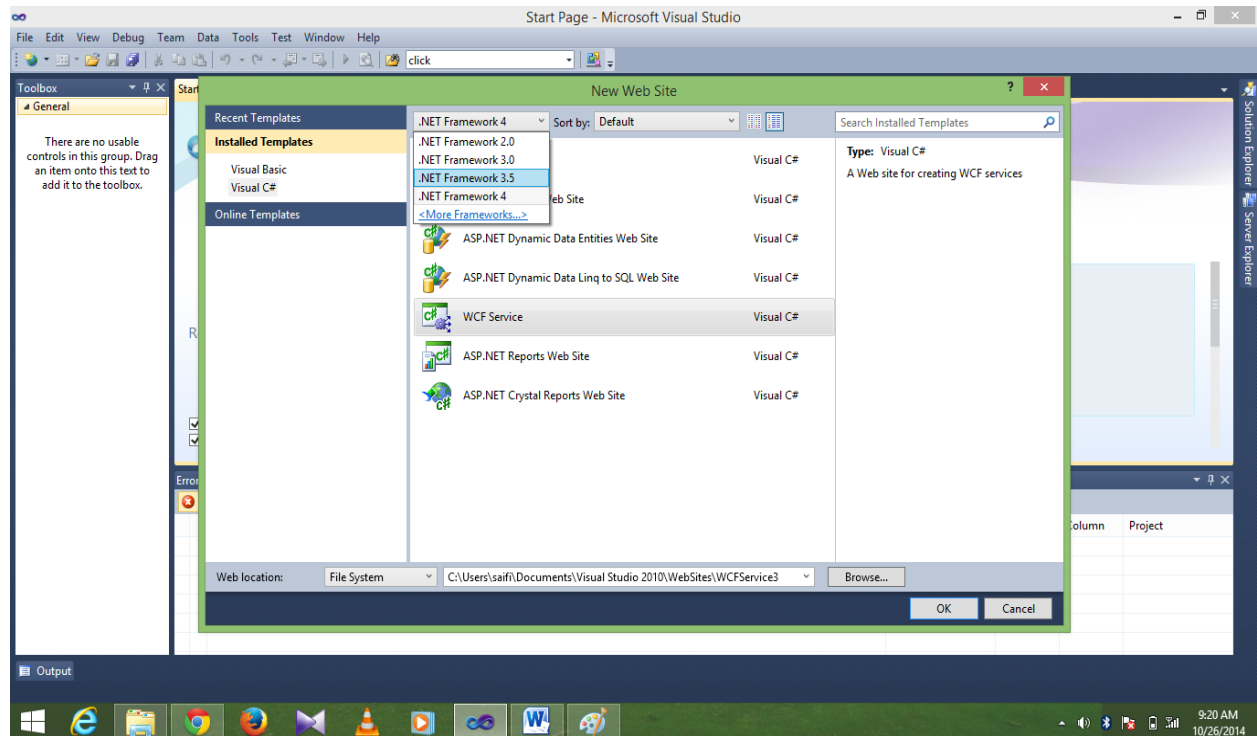
Q. What is Web Service?

Web services are client and server applications that communicate over the World Wide Web's (WWW) Hyper Text Transfer Protocol (HTTP). As described by the World Wide Web Consortium (W3C), web services provide a standard means of interoperating between software applications running on a variety of platforms and frameworks. Web services are characterized by their great interoperability and extensibility, as well as their machine-processable descriptions, thanks to the use of XML. Web services can be combined in a loosely coupled way to achieve complex operations. Programs providing simple services can interact with each other to deliver sophisticated added-value services. One big feature of Web Services is, Web Services are able to communicate with heterogeneous applications, because Web Services present the information in XML format.

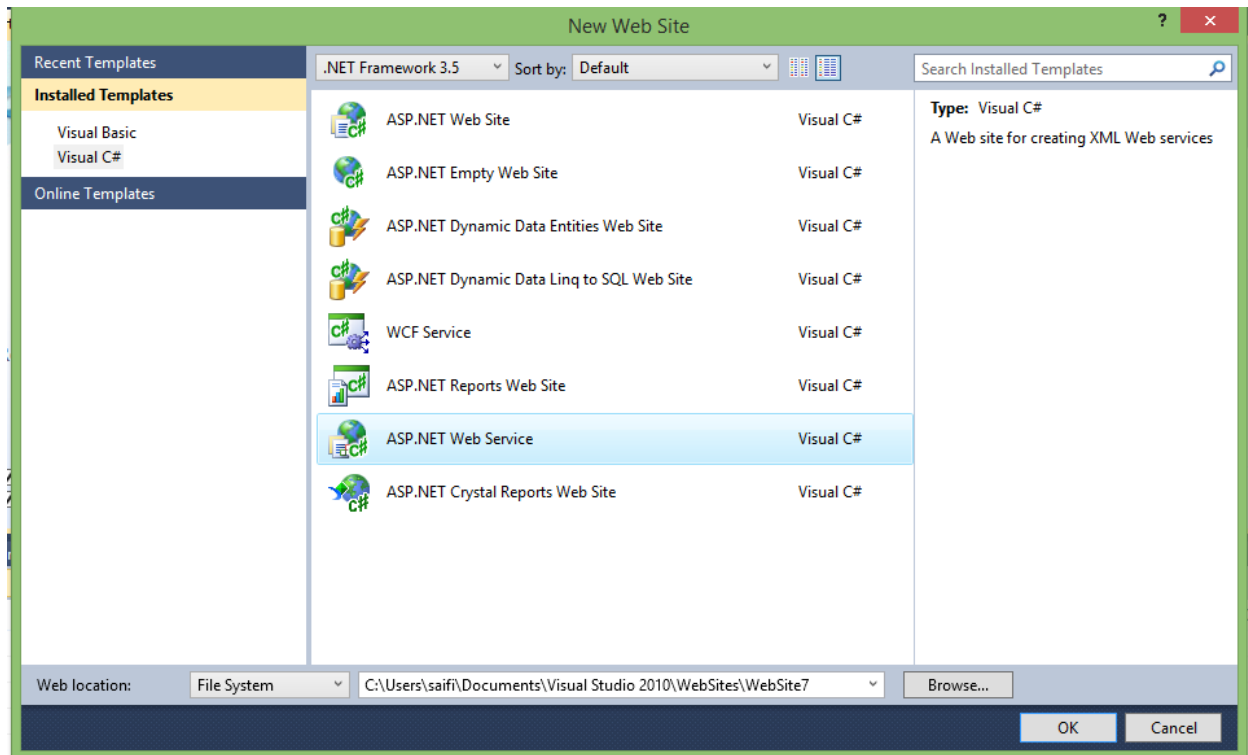
To create a Web Service in Visual Studio 2010, we have to follow these steps:

1. Open Visual Studio 2010
2. Click on New project Link on start page, New Project Window Will Open
3. Select Asp.net Web Application in the template window as shown below

Choose Framework 3.5

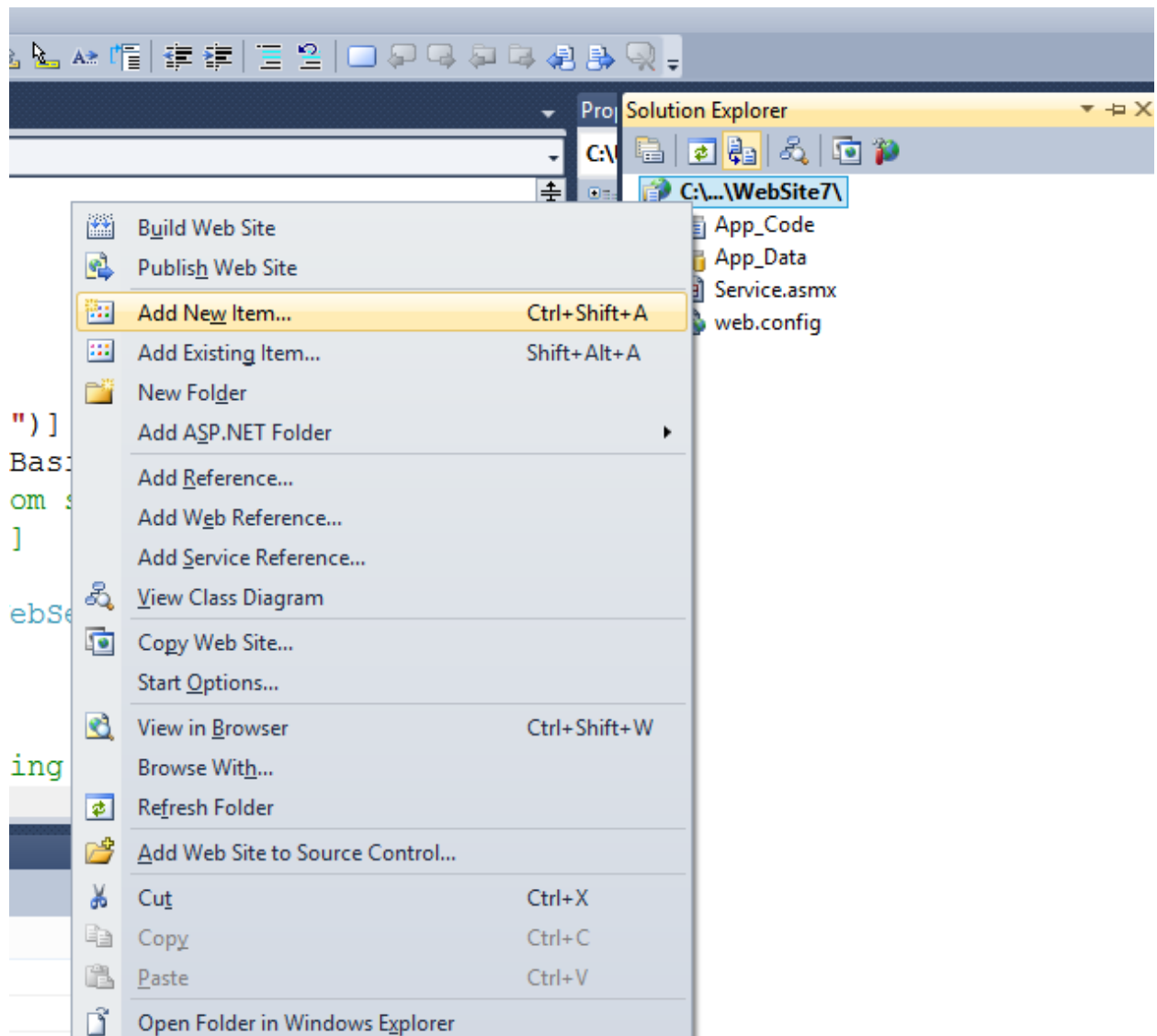


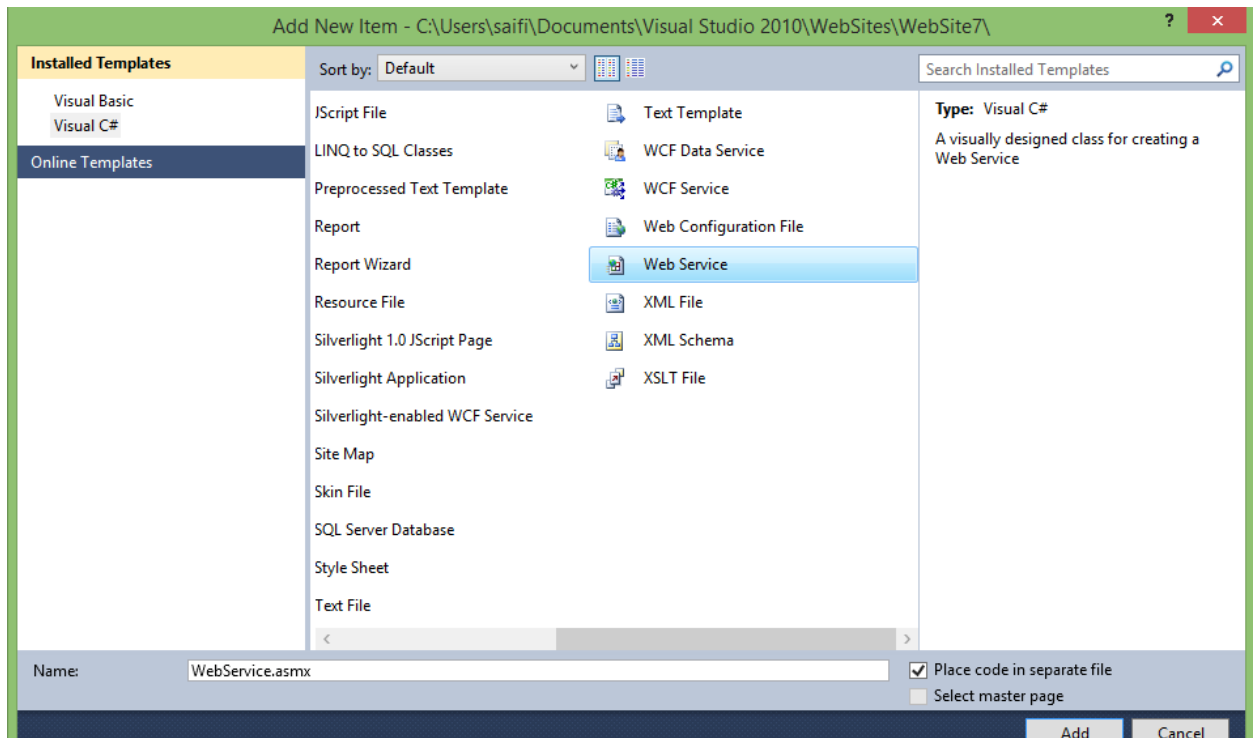
Choose ASP.Net Web Service



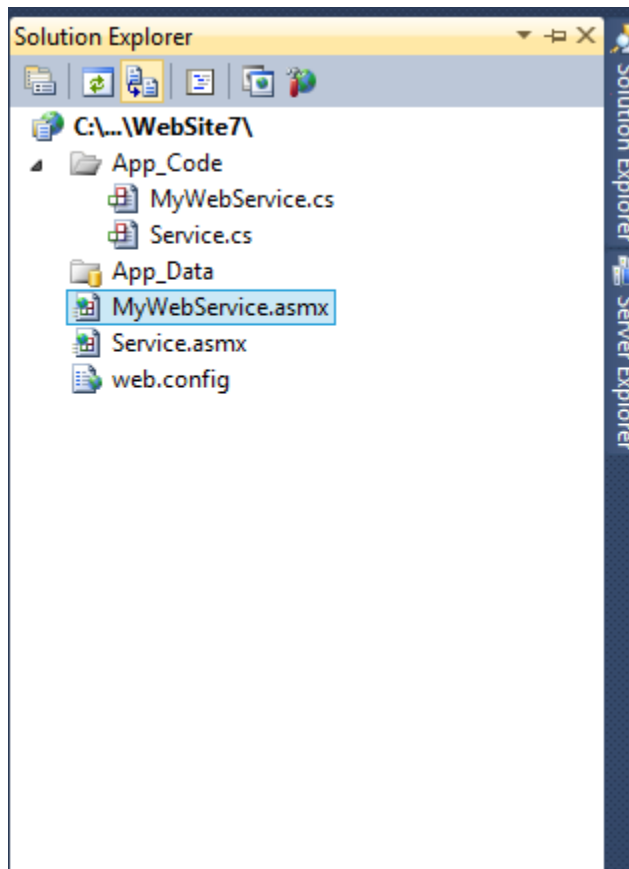
4. Enter the name of project or leave as it is and Press OK

5. Open Solution Explorer of your project and Right click on project, the pop window will open, Drag cursor on to add menu, the submenu of add menu will open, click on NewItem or Go to Add->NewItem.The AddNew Item Window will open, Select **WebService and Rename WebService1.asmx to MyWebService.asmx**, then click on ok button. These steps are shown in the figure below





6. The MyWebService.asmx file will appear in the solution explorer, open MyWebService.asmx file



7. Declare your own method in this file bellow the HellowWorld function. You can remove the HellowWorld function from the WebService.

For Example : the bellow function generate a random number and returns to it.

```
[WebMethod(Description = "Get Random Number")]//Description about web method
```

```
public string GetNumber() // Declaration of Method
```

```
{  
    Random RM=new Random();  
    return RM.Next(1,100).ToString();  
}
```

```
[WebMethod(Description = "Adds Two Number And return result")]
```

```
public string Add(int firstno, int secondno)
```

```
{  
    double result = firstno + secondno;  
    return result.ToString();  
}
```

```
1 using System;  
2 using System.Collections.Generic;  
3 using System.Linq;  
4 using System.Web;  
5 using System.Web.Services;  
6  
7 /// <summary>  
8 /// Summary description for MyWebService  
9 /// </summary>  
10 [WebService(Namespace = "http://tempuri.org/")]  
11 [WebServiceBinding(ConformsTo = WsiProfiles.BasicProfile1_1)]  
12 // To allow this Web Service to be called from script, using ASP.NET AJAX, uncomment the following line.  
13 // [System.Web.Script.Services.ScriptService]  
14 public class MyWebService : System.Web.Services.WebService {  
15  
16     public MyWebService () {  
17  
18         //Uncomment the following line if using designed components  
19         //InitializeComponent();  
20     }  
21  
22     [WebMethod]  
23     public string HelloWorld() {  
24         return "Hello World";  
25     }  
}
```



```
26 [WebMethod(Description = "Get Random Number")]//Description about web method
27 public string GetNumber() // Declaration of Method
28 {
29     Random RM = new Random();
30     return RM.Next(1, 100).ToString();
31 }
32 [WebMethod(Description = "Adds Two Number And return result")]
33 public string Add(int firstno, int secondno)
34 {
35     double result = firstno + secondno;
36     return result.ToString();
37 }
38
39
40 }
41
```

Code in text format is shown here

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Web.Services;

///<summary>
/// Summary description for MyWebService
///</summary>
[WebService(Namespace = "http://tempuri.org/")]
[WebServiceBinding(ConformsTo = WsiProfiles.BasicProfile1_1)]
// To allow this Web Service to be called from script, using ASP.NET AJAX,
// uncomment the following line.
// [System.Web.Script.Services.ScriptService]
public class MyWebService : System.Web.Services.WebService {

    public MyWebService () {

        //Uncomment the following line if using designed components
        //InitializeComponent();
    }

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

    [WebMethod(Description = "Get Random Number")] //Description about web
    method
    public string GetNumber() // Declaration of Method
    {
        Random RM = new Random();
        return RM.Next(1, 100).ToString();
    }

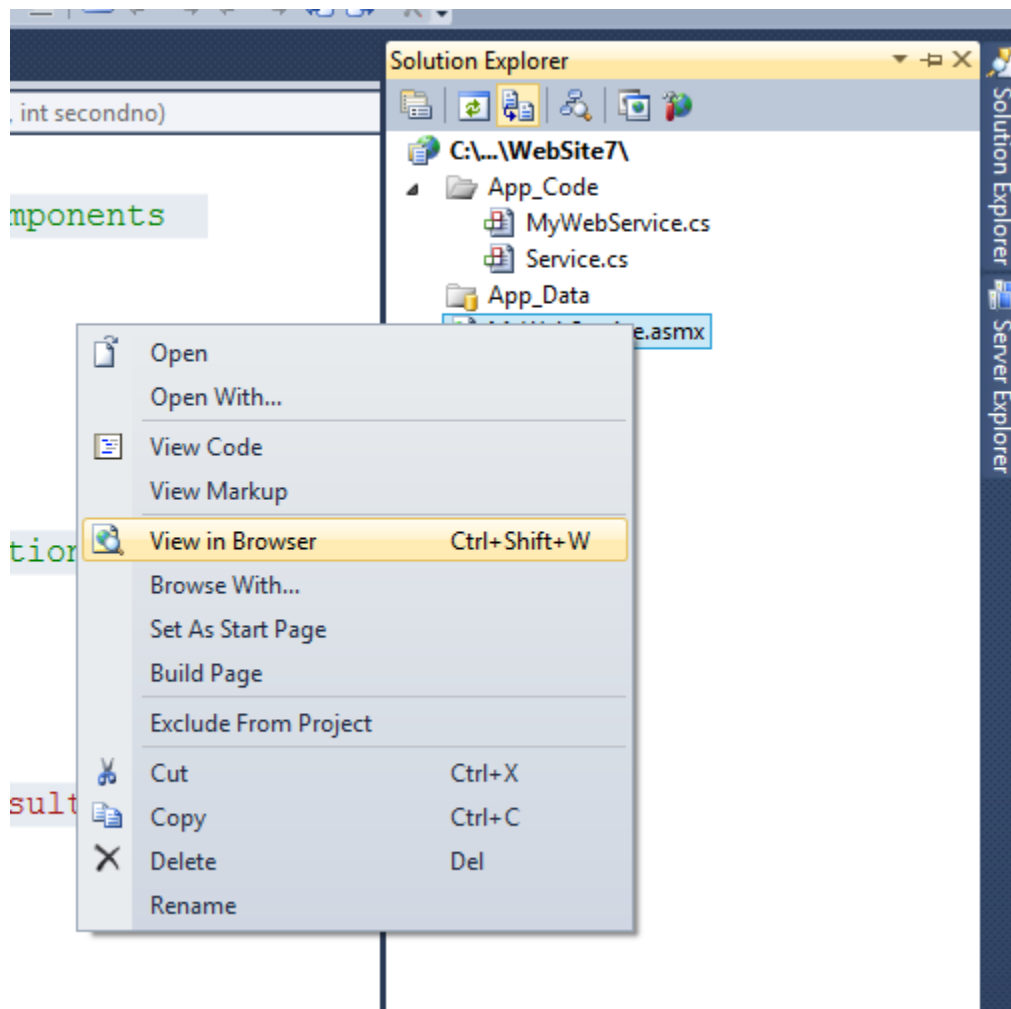
    [WebMethod(Description = "Adds Two Number And return result")]
    public string Add(int firstno, int secondno)
    {
        double result = firstno + secondno;
        return result.ToString();
    }

}
```

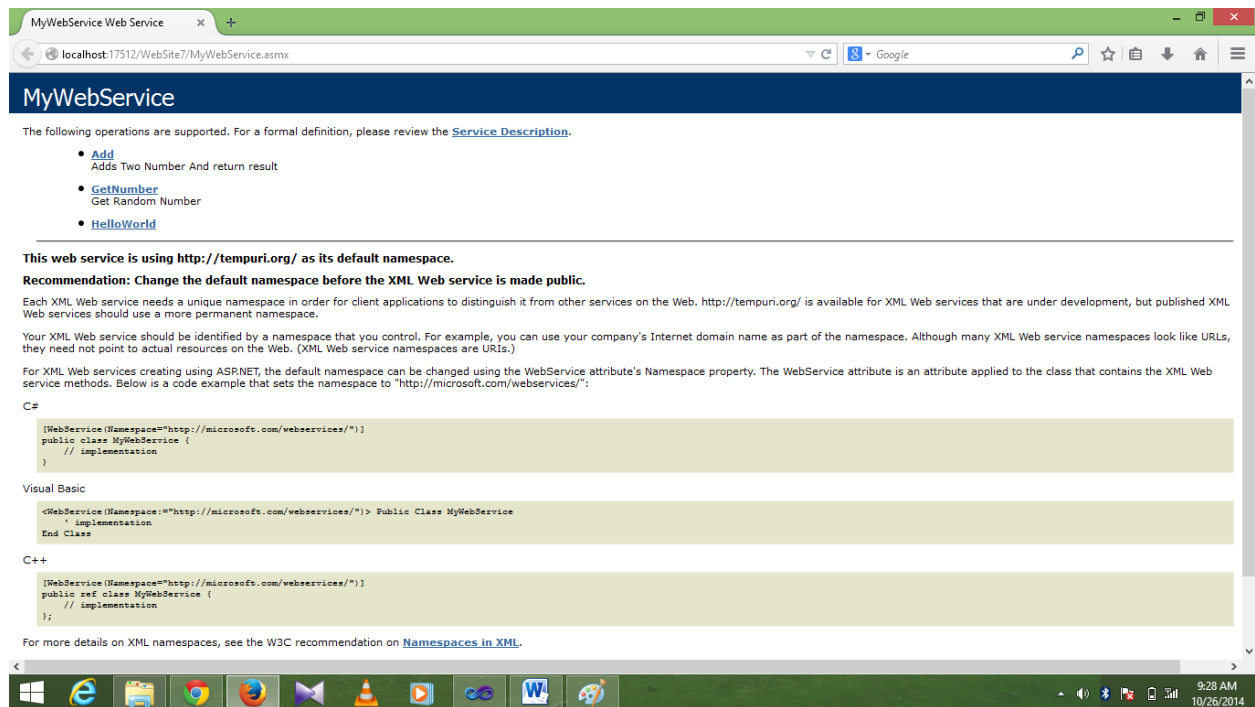
This is the all about create web service in your project, and then we will discuss about how to use or consume web service in your application.

Consume Web Service

1. Save all and then Right click on your WebService i.e MyService.asmx and click on Browse With. The Browser with window will open, select your installed explorer, for example select Internet Explorer.



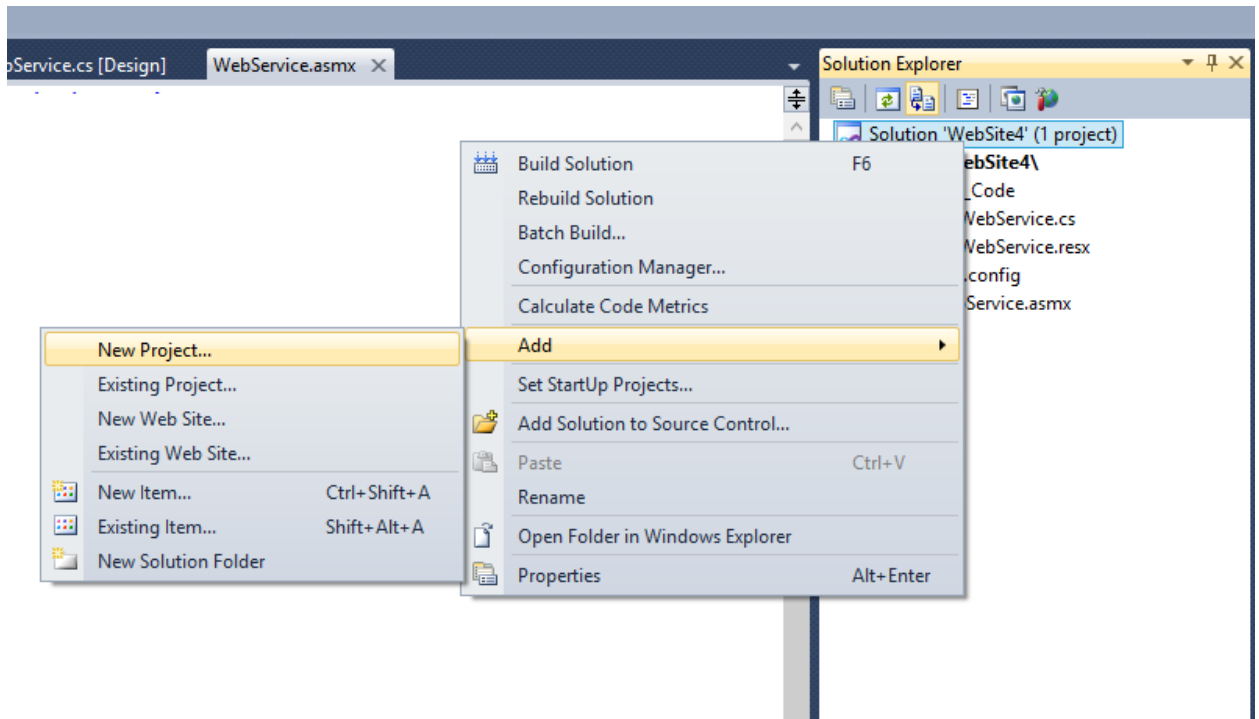
You will see the browser



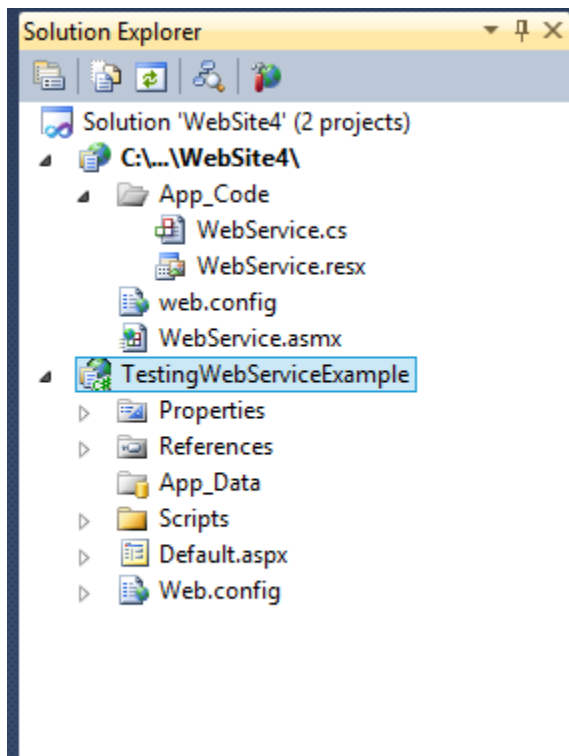
2. Copy the URL adder from the URL of browser, i.e.

http://localhost:17512/WebSite7/MyWebService.asmx

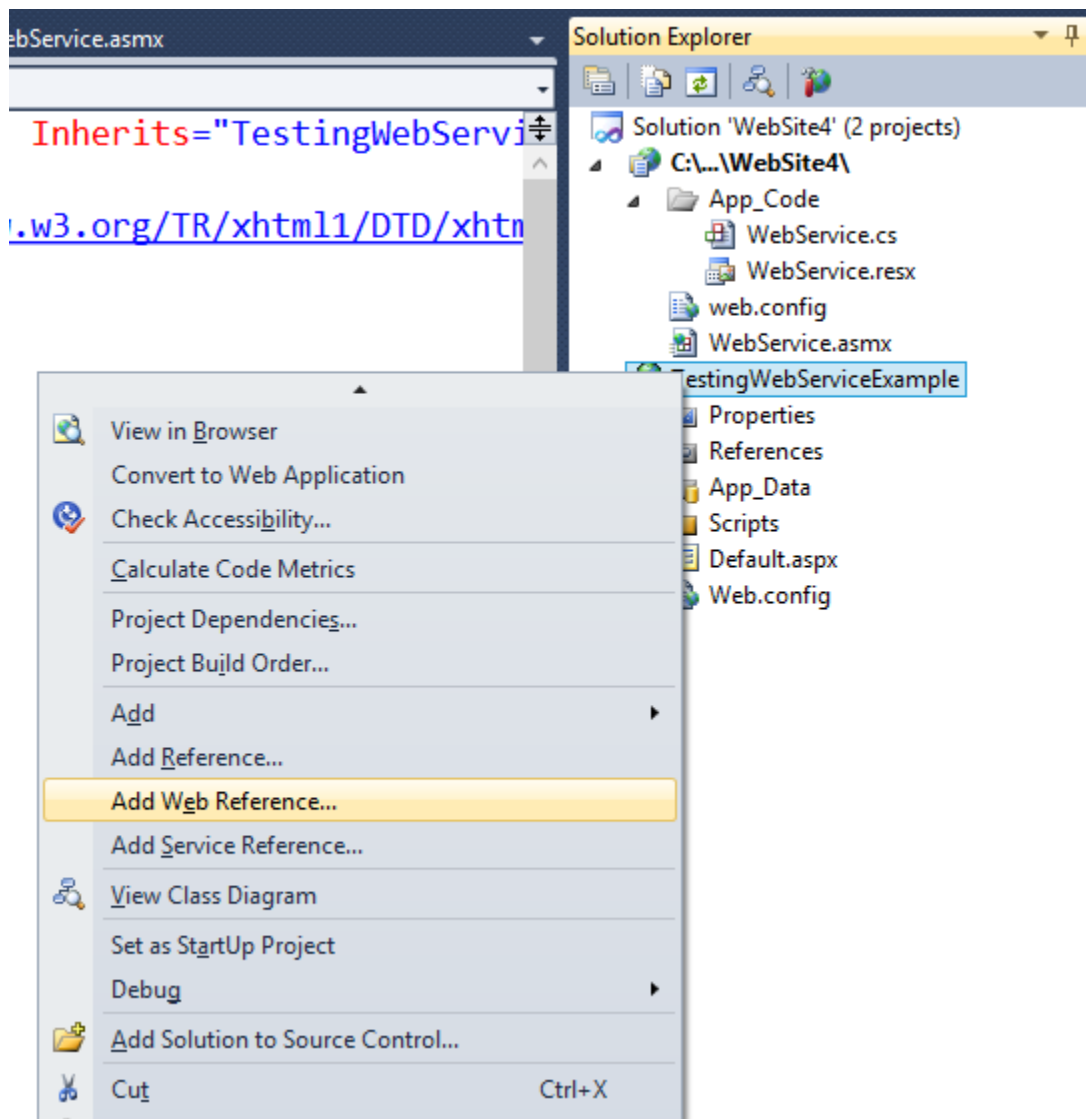
3. Add new project in the existing solution as shown



4. You will see the newly added project as shown



5. Right click on your newly added project, click Add Service Reference , the Service Reference Window will open.



Add Service Reference ? x

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:

<u>S</u> ervices:	<u>O</u> perations:

Namespace:

6. Past the copied URL address in the address textbox of service reference window. click to 'Go' button

Add Service Reference

?

×

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:

http://localhost:17512/WebSite7/MyWebService.asmx

Go

Discover

Services:

Operations:

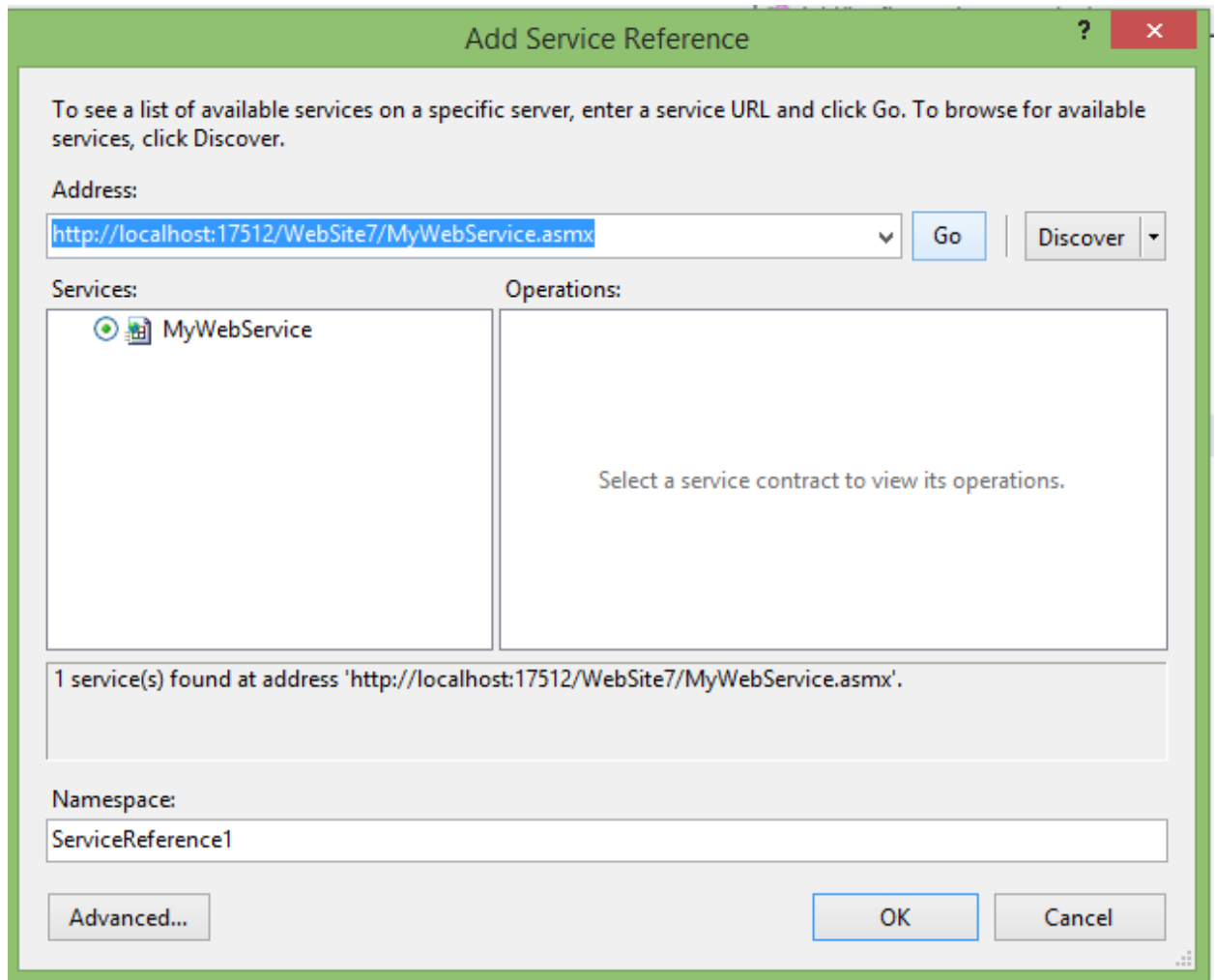
Namespace:

ServiceReference1

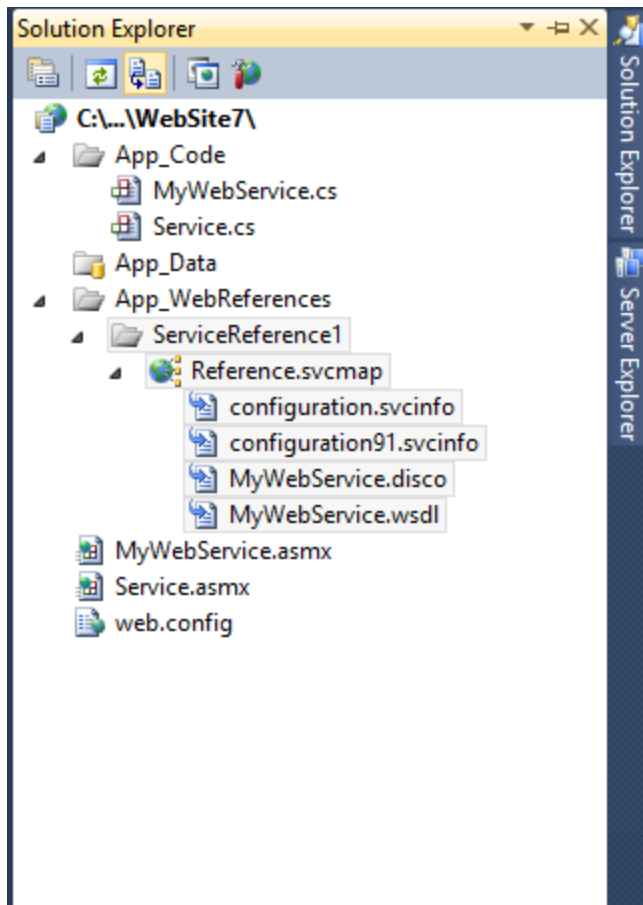
Advanced...

OK

Cancel



7. Rename the Namespace as required and then Press ok.
8. The reference of the Webservice will be appear in the Service Reference folder in solution explorer.



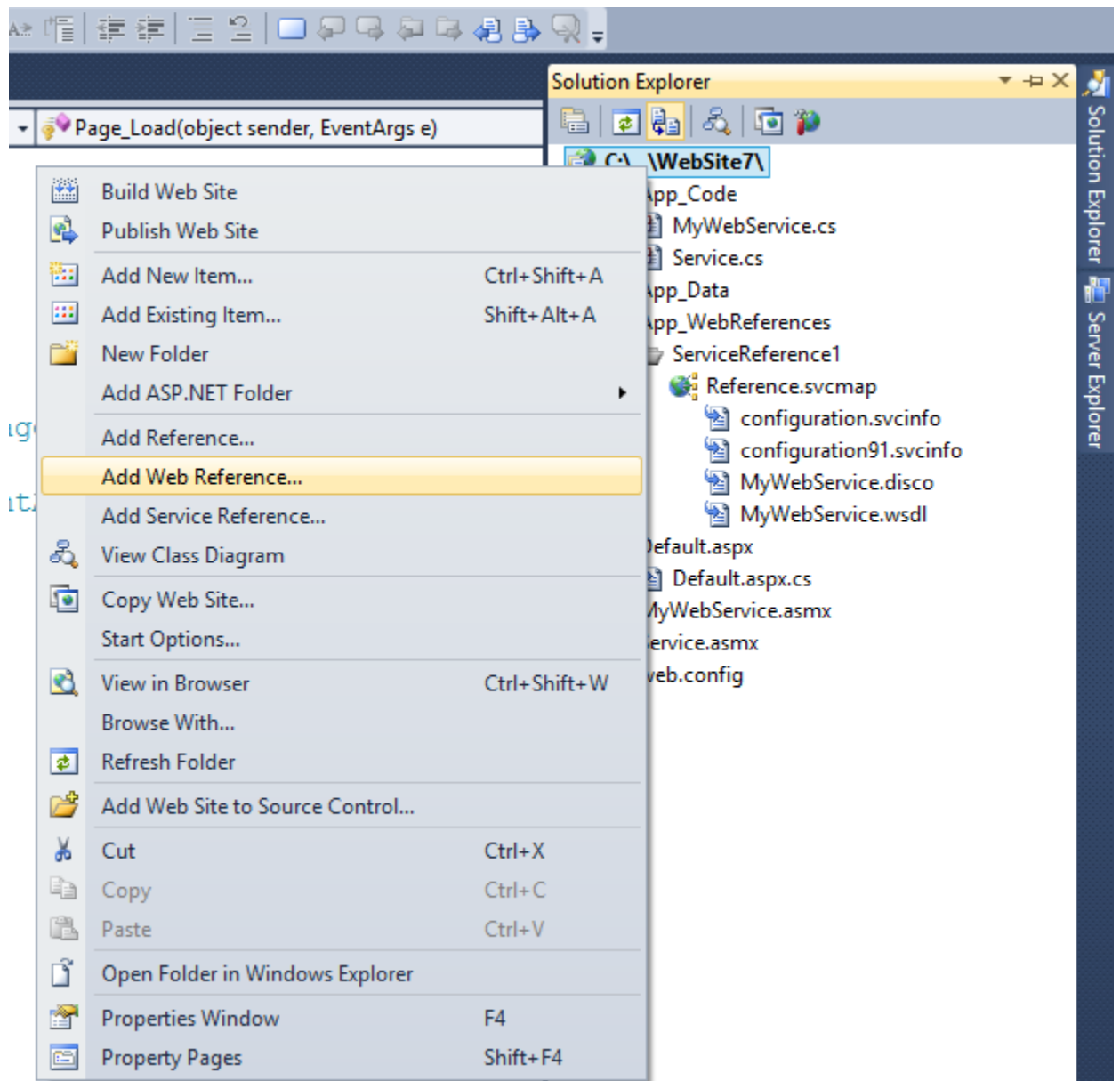
9. Go to the default page of your project, take one label, set the text to 'Random Number'.
10. Take another label control set this text as '0' and id as 'lblRandom'.

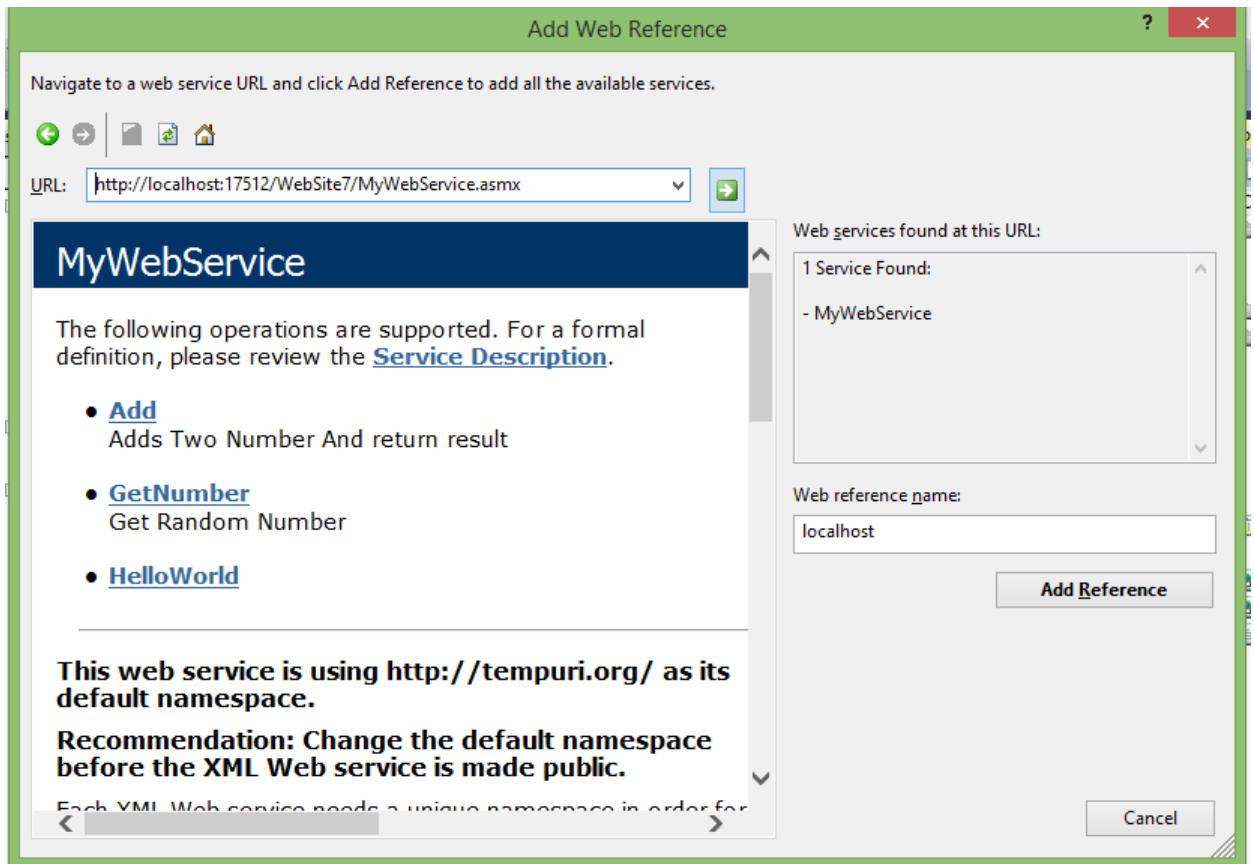
```

1  <%@ Page Language="C#" AutoEventWireup="true" CodeFile="Default.aspx.cs" Inherits="_Default" %>
2
3  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5  <html xmlns="http://www.w3.org/1999/xhtml">
6  <head runat="server">
7      <title></title>
8  </head>
9  <body>
10     <form id="form1" runat="server">
11     <div>
12         <asp:Label ID="lblRandom" runat="server" Text="Label"></asp:Label>
13     </div>
14     </form>
15 </body>
16 </html>
17

```

11. Now, again





Click the Add Reference Button

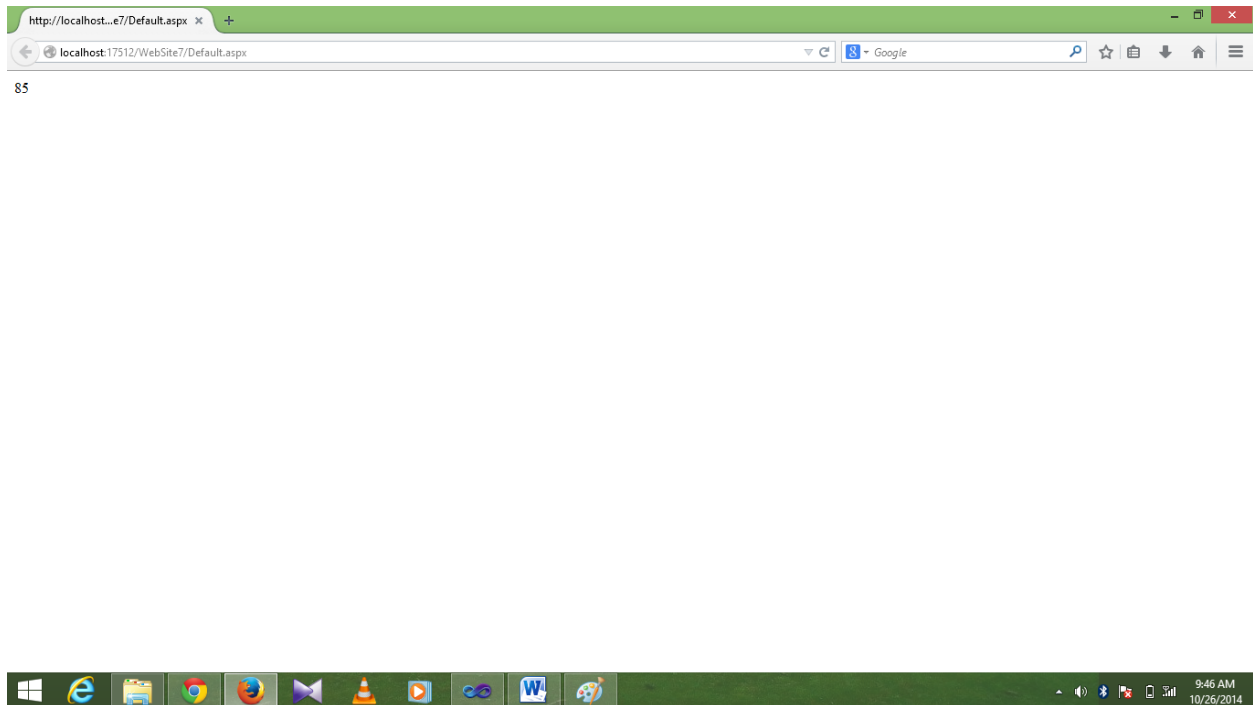
12. Now, put the following code in the page load event

```

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 public partial class _Default : System.Web.UI.Page
9 {
10     protected void Page_Load(object sender, EventArgs e)
11     {
12         localhost.MyWebService mws = new localhost.MyWebService();
13         lblRandom.Text = mws.GetNumber();
14     }
15 }
16

```

Finally, Run the default.aspx. you will see the output



Congratulations! You have successfully implemented the Web Services in ASP.Net

Further Readings

<http://www.c-sharpcorner.com/UploadFile/e95fe7/using-web-services-in-Asp-Net/>

<http://www.codeproject.com/Articles/337535/Understanding-the-Basics-of-Web-Service-in-ASP-NET>