

INFS3204/7204 Practical 2 – Multiple Web Services

Note that: for all practicals in this course, you need to submit your codes in a single zip file to the blackboard, before you demonstrate your codes to your tutor. Demonstration without submitting your codes will be 0 directly. The purpose of this is to detect any possible plagiarism.

The goal of this practical is to explore .NET web services. All practicals will have to be developed with Microsoft Visual Studio 2010 using C# as the programming language. No other languages will be accepted. This practical contributes to 5% of your overall grade. You must present this practical to your lab tutor during your scheduled lab session in week 6. You are not allowed to change your session.

This practical is divided into 2 tasks:

- Creating a simple Text Editor web application using multiple web services (2.5 Marks)
- Creating a single contact Phone Book web application using multiple web services (2.5 Marks)

Preparation

This practical is designed to make you more familiar with the functions of .NET and the usage of multiple Web Services in a single web application. Before attempting to do this practical, you should have a basic knowledge of C# as the programming language and use of Microsoft Visual Studio 2010 to create web services. Please note that you need to choose .NET Framework 4 for your practicals. You also need to have Windows 7 installed on your computer.

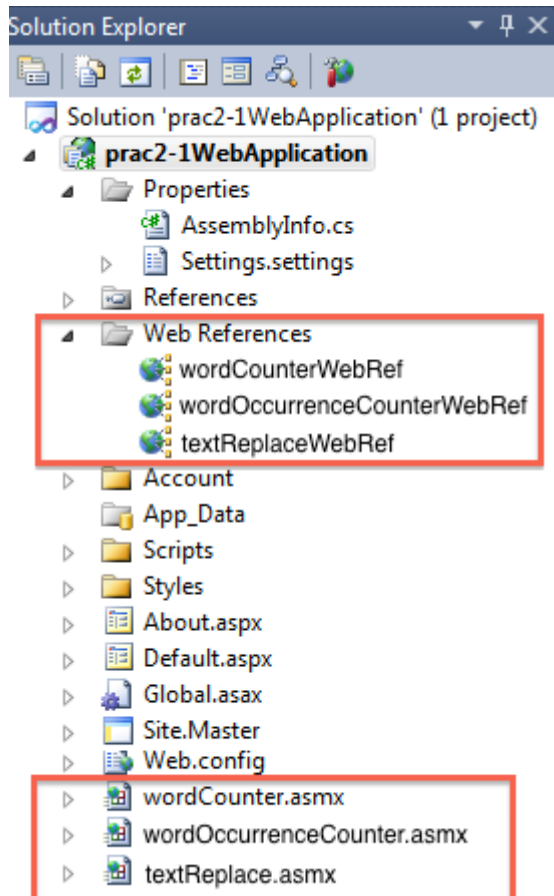
Task 1: A simple Text Editor Web application (2.5 Marks)

Create a simple Text Editor Web application using Web Form with the following functions (**Please note** that you have to create a web service for each of these functions):

- **Word Count (1 mark):** counts all the words in the main text.

- **Word Occurrence Count (1 mark):** counts the number of a specific word occurrence in the main text.
- **Replace Text (0.5 mark):** replaces the two specified words in the main text.

Your solution explorer should look like the example below:



You should have a drop down list containing the required operations that upon selection of each operation, the relevant text boxes should appear (**Please note** that you are required to display the identified messages in each case):

- For the **Word Count**, only the main text box should appear:

The screenshot shows a web browser window with the address bar displaying 'localhost:49321/Default.aspx'. The page has a blue header with the title 'My ASP.NET APPLICATION' and two navigation buttons: 'Home' and 'About'. Below the header is a large text area labeled 'Main text:' containing the text: 'Welcome to the second prac for INFS3204/7204. In this prac, you will learn how to use multiple web services in a single web application.' Below the text area is a dropdown menu labeled 'Word Count' and a 'Submit' button. At the bottom, a red-bordered box displays the text 'Total words in text: 24'.

- For the **Word Occurrence Count**, another text box in addition to the main text box should appear:

This screenshot shows the same web application with an additional search feature. A search bar labeled 'search word:' contains the text 'prac'. To the right of the search bar, a red-bordered box displays '2 matches found!'. Below the search bar is a dropdown menu labeled 'Word Occurrence Count' and a 'Submit' button. The 'Main text:' area remains the same. At the bottom, the text 'Total words in text: 24' is still visible.

- For the **Replace Text**, two other text boxes in addition to the main text box should appear:

localhost:49321/Default.aspx

My ASP.NET APPLICATION

Home About

search word: 2 matches replaced!

replace word:

Main text:

```
Welcome to the second practical for
INFS3204/7204. In this practical, you
will learn how to use multiple web
services in a single web application.
```

Replace

Total words in text: 24

You are also required to check all the validations:

- None of the text boxes should be empty when the relevant operation happens:

localhost:49321/Default.aspx

My ASP.NET APPLICATION

Home About

search word: *Please enter a word!

replace word: *Please enter a word!

Main text:

*Please enter the text!

Replace

localhost:49321/Default.aspx

My ASP.NET APPLICATION

Home About

Main text:

*Please enter the text!

Word Count

- When the Replace Text happens, if the word that has to be replaced didn't exist, an error message should be displayed (you can use the Word Count web service for this purpose):

localhost:49321/Default.aspx

My ASP.NET APPLICATION

Home About

search word: first not found in the text!

Main text:

```
Welcome to the second prac for
INFS3204/7204. In this prac, you will
learn how to use multiple web services in
a single web application.
```

Word Occurrence Count

Total words in text: 24

localhost:49321/Default.aspx

My ASP.NET APPLICATION

Home About

search word: first not found in the text!

replace word:

Main text:

```
Welcome to the second prac for
INFS3204/7204. In this prac, you will
learn how to use multiple web services in
a single web application.
```

Replace

Total words in text: 24

Task 2: A single contact PhoneBook web application (2.5 Marks)

For this task, you are required to create a single contact PhoneBook web application using Web Forms.

Your application must have the following pages:

1. Add Contact page:

- First name (Text box – required filed)
- Last name (Text box – required filed)
- Area Code (Drop down list – required filed)
- Phone Number (Text box – required filed, user should not be able to enter an invalid phone number and more than 8 digits)
- Address (Text box – required filed)
- State (Drop down list – required filed)
- Email (Text box – required filed, should have a valid format)

- Date of Birth (desired control – required)
- Save button

Please not:

- Once a contact is saved, the user will be redirected to the ‘Search Contact’ page.

2. Search Contact page:

- Search by (Drop down list, containing ‘Last name’ and ‘Phone number’ options - upon selection of each option, the relevant search fields should appear)
- Search phrase (Text box – required)
- ‘Not Found’ error message (Label)
- Search button
- Result section containing:
 - Full name (Label)
 - Phone number (Label)

For the Task 2, you need to create 2 web services:

- **A web service to check the area code (0.5 mark):**

This web service must contain one web method called ‘IsValid’. The Australian states with their corresponding area codes are as follows:

States	Area Code
NSW, ACT	02
VIC, TAS	03
QLD	07
WA, SA, NT	08

- **A web service for Add and Search Contact:**

This web service must contain three web methods:

1. **AddContact (1 mark):** This web method stores the contact information in a text file. You should make use of FileStream, StreamWriter and StreamReader objects, or others from System.IO namespace.
2. **SearchByLastname (0.5 mark):** This web method receives a last name and if it has been stored before, returns the full phone number (area code+phone number) of the user.
3. **SearchByPhone (0.5 mark):** This web method receives a phone number and if it has been stored before, returns the full name (first name+last name) of the user.

Please note:

- You are **not** required to create multiple users for this task.
- You are required to check all the validations for this task.
- Your web application is required to consume both web services.
- Your final application should look like the following example (feel free to design the interface):

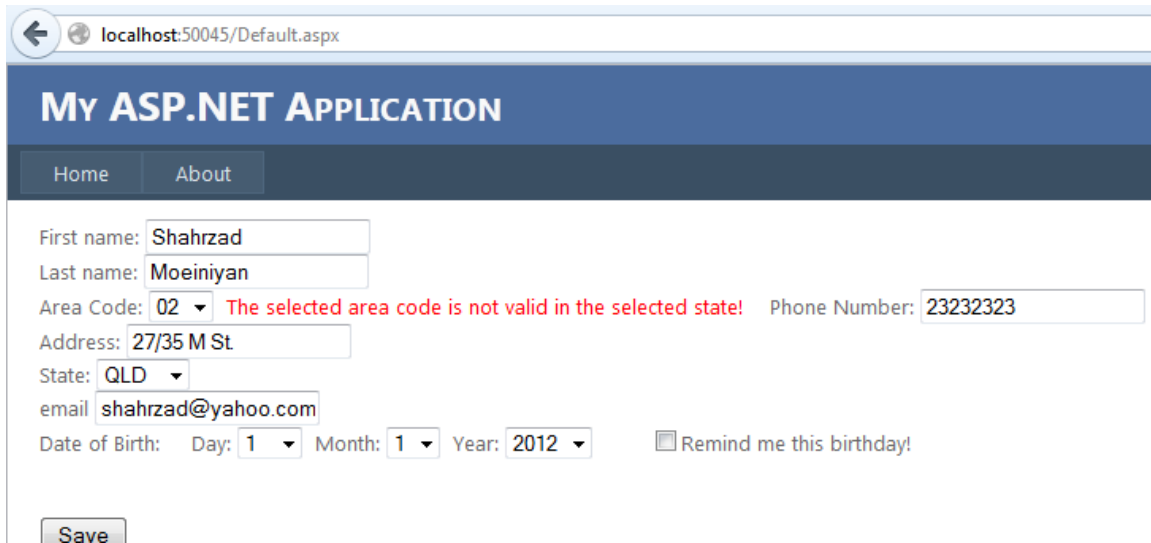
Error messages for required fields and invalid fields:

The screenshot shows a web browser window with the address bar displaying 'localhost:50045/Default.aspx'. The page title is 'My ASP.NET APPLICATION'. Below the title is a navigation bar with 'Home' and 'About' links. The main content area contains a contact form with the following fields and validation messages:

- First name: *required field
- Last name: *required field
- Area Code: Phone Number: Not valid!
- Address: *required field
- State:
- email: Not valid!
- Date of Birth: Day: Month: Year:
- ☐ Remind me this birthday!

At the bottom of the form is a 'Save' button.

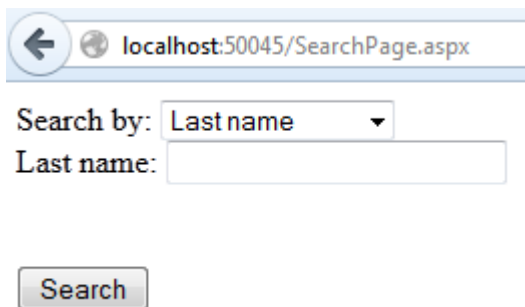
If the area code is not valid for the selected state, an error message will be displayed:



The screenshot shows a web browser window with the address bar displaying 'localhost:50045/Default.aspx'. The page title is 'My ASP.NET APPLICATION'. Below the title is a navigation bar with 'Home' and 'About' links. The main content area contains a form with the following fields: 'First name' (Shahrzad), 'Last name' (Moeiniyan), 'Area Code' (02), 'Phone Number' (23232323), 'Address' (27/35 M St), 'State' (QLD), 'email' (shahrzad@yahoo.com), and 'Date of Birth' (Day: 1, Month: 1, Year: 2012). A red error message is displayed next to the 'Area Code' field: 'The selected area code is not valid in the selected state!'. There is a 'Save' button at the bottom of the form.

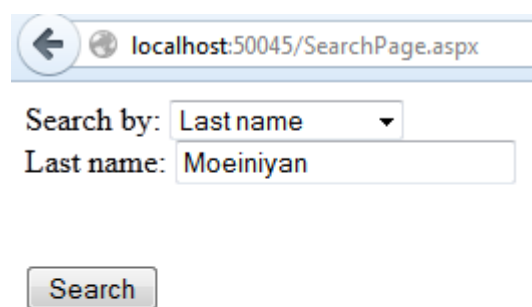
The Search Contact page (Search by “Last name”):

Before:



The screenshot shows the 'Search by:' dropdown set to 'Last name'. The 'Last name' input field is empty. There is a 'Search' button at the bottom.

After:

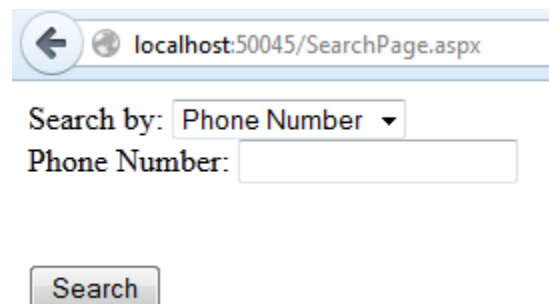


The screenshot shows the 'Search by:' dropdown set to 'Last name'. The 'Last name' input field contains 'Moeiniyan'. There is a 'Search' button at the bottom.

Contact Info:

Full name: Shahrzad Moeiniyan
Full Phone Number: 07 23232323

The Search Contact page (Search by “Phone Number”):



The screenshot shows the 'Search by:' dropdown set to 'Phone Number'. The 'Phone Number' input field is empty. There is a 'Search' button at the bottom.