COP 4814 Lab: BookFinder Web Service

In this activity, you will create a web service that returns a list of books and lets a client program search for a book by its title or author, using a partial string match. (The string can be found anywhere within the book's title.)

Part 1: Build the Web Service

1. Start by creating an empty Visual Studio Solution. I will show how to do that in class. Then right-click on the solution name in the Solution Explorer window, select *New Web site* from the popup menu. Select the C# language, select *WCF Service,* and take note of the service's location next to the Browse button. You can change the location. At the end of the path, add a folder named *\bookfinderservice*. Click the OK button.

> If the word "Solution" does not appear in the first line of the Solution Explorer window, do the following: Select *Options* from the Tools menu, select *Projects and Solutions* (on the left side), and select *Always show solution*. Then click OK.

2. Edit the *IService.cs* file in the App_Code folder (Solution Explorer), and change it to the version below. Be sure to right click on the service name in the editor and select *Refactor | Rename* from the popup menu.

```
public interface IBookFinderService
{
   [OperationContract]
   string[] GetBookList();

   [OperationContract]
   String FindBook(String partialName);
}
```

2. Edit the Service.cs file and change it to this:

```
public class BookFinderService : IBookFinderService
{
    List<string> bookList = new List<string>();

   public string[] GetBookList()
   {
        return bookList.ToArray();
   }

   public String FindBook(String partialName)
   {
        return null;
   }
}
```

3. Add a constructor to this class and use it to add 10 book titles to the list.

4. Code a *foreach* loop in the FindBook method to search through bookList.

5. Edit the Service.svc file so it looks like this:

```
<%@ ServiceHost Language="C#" Debug="true" Service="BookFinderService"
CodeBehind="~/App_Code/Service.cs" %>
```

6. Right click the website name in the Solution Explorer window and select *Build Web Site*. Look at the status bar on the bottom of the window for "Build Succeeded". If it's not there, try to fix your errors and try again.

Part 2: Build a Simple Client Program

1. Right-click the Solution name and select *Add*, then select *New Project*. In the dialog window, select Visual C#, then select *Windows Forms Application*. In the Location box at the bottom of the window, browse to the same folder where you created the BookFinder Service. Set the project name to *BookFinder Consumer*.

2. Right-click your new application in Solution Explorer and select *Set as Startup Project*.

3. Right-click the References item in Solution Explorer, select *Add Service Reference*, click the *Discover* button, expand the *Service.svc* entry and select *BookFinderService*. Change the Namespace entry to *localhost*. Click OK to save your changes.

4. In the Form1 design window, add a textbox, label, and button to the form's design window. Name them txtTitle, lblBookInfo, and btnCallService.

5. For lblBookInfo, set AutoSize to False, and expand its area so it holds several lines and is about 80% of the width of the form.

6. Double-click the btnCallService button to create a Click handler. Insert the following code into the handler:

```
private void btnCallService_Click(object sender, EventArgs e)
{
   localhost.BookFinderServiceClient client =
      new localhost.BookFinderServiceClient();
   lblBookInfo.Text = string.Empty;

   foreach (string title in client.GetBookList())
      lblBookInfo.Text += title + ", ";
}
```

7. Save the program. Run it by selecting "Debug" from the Debug menu (if a dialog window pops up, just click the OK button). Click the *Call Service* button. You should see something like this:
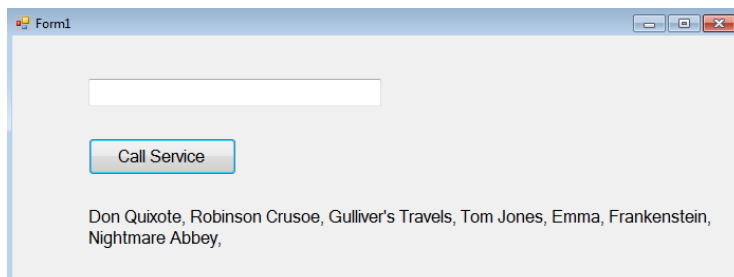
8. Next, test the FindBook method. The user should be able to input part of a book title, and when they click the *Call Service* button, a list of matching books should appear in the Label control.