School of Information Technology and Electrical Engineering
INFS3204/7204 – Service Oriented Architecture

Assignment Two (10 Marks)

Due at 23:59 Sunday 17/09/2017

The goal of this assignment is to explore the ASP.NET Web MVC Applications and ASP.NET Web Services. All assignments will have to be developed with **Microsoft Visual Studio** using **C#** as the programming language. No other languages will be accepted. This assignment contributes to 10% of your overall grade. You must demonstrate this assignment to your lab tutors during your enrolled lab session in week 8. It is your own interest to ensure that your codes have been submitted to the BlackBoard before 23:59 Sunday 17/09/2017. You have only three attempts to submit your codes. Penalty will be applied for late submission. All submissions need to be in the form of zip/rar file format.

You are required to develop a Book Store Management System using ASP.NET MVC and ASP.NET Web Services in this assignment and the assignment is divided into 2 tasks:

- **Building A Data Storage Web Service Using ASP.NET Web Service** (4 Marks)
- **Building A Book Store Application Using ASP.NET MVC and Invoking the Data Storage Web Service** (6 Marks)

Please Note: The GUI of Prac Two is objective and no marks will be allocated to the layout design of this assignment.

Preparation

- Before attempting to do this assignment, you should have the basic knowledge of how to use Microsoft Visual Studio 2015 or 2017 to create ASP.NET MVC Application and ASP.NET Web Services, as well as the basic knowledge of programming with C#. Please note that you need to choose .NET Framework 4.6 for your assignments.
- Hints: Please be advised that the design and implementation of this assignment is totally up to you. However, you may need to ensure that you are familiar with the concept of MVC.
- Microsoft Visual Studio 2015 Free Download: You may install the Microsoft Visual Studio 2015 on your own computer for free from the following links:

  https://www.dreamspark.com/Student/Default.aspx
  https://beta.visualstudio.com/download-visual-studio-vs/

Part I - Data Storage Web Service (4 Marks)

Data Storage Web Service consists of the following elements:

1. Data Structure (1 Mark):

Data will be stored in a text file. The content of the text file is similar to the image below and the sample file is available in the Blackboard.

```
0470376848,Service Oriented Architecture (SOA) For Dummies,Judith Hurwitz,2009,$25.27,3
0470476248,Service-Oriented Architecture: Concepts Technology and Design,Thomas Erl,2005,$46.36,2
0485965215,Service-Oriented Architecture: A Field Guide to Integrating XML and Web Services,Thomas Erl,2007,$43.16,1
0456235975,SOA in Practice: The Art of Distributed System Design,Nicolai M. Josuttis,2007,$24.59,1
0487965321,SOA Made Simple,Lonneke Dikmans,2012,$13.72,2
0412359687,SOA with REST: Principles Patterns & Constraints for Building Enterprise Solutions with REST,Thomas Erl,2012,$48.25,3
```

The individual book record must contain the following elements.

- A Book (1 Mark)
    - ID
    - Name
    - Author
    - Year
    - Price
    - Stock

2. Data Storage Web Service (3 Mark):

You are required to create a web service for the data storage management (the text file). The web service is only responsible for reading data from the text file (1.5 mark) and saving/updating data to the text file (1.5 marks). The web service will be consumed by the Book Store Application in Part II.

Part II - Book Store Application (6 Marks)

Book Store Application consists of the following elements:

1. GetAllBooks() (1.5 Marks):

A page that lists all book records from Data Storage Web Service. (Note that Num is the index of a book in this book list and is not recorded in book.txt)

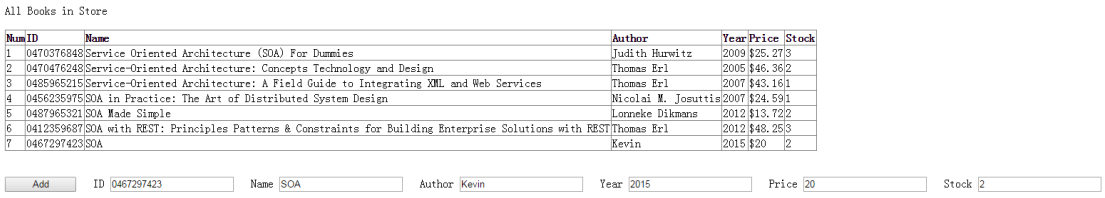
All Books in Store

Num	ID	Name	Author	Year	Price	Stock
1	0470376848	Service Oriented Architecture (SOA) For Dummies	Judith Hurwitz	2009	$25.27	3
2	0470476248	Service-Oriented Architecture: Concepts Technology and Design	Thomas Erl	2005	$46.36	2
3	0485965215	Service-Oriented Architecture: A Field Guide to Integrating XML and Web Services	Thomas Erl	2007	$43.16	1
4	0456235975	SOA in Practice: The Art of Distributed System Design	Nicolai M. Josuttis	2007	$24.59	1
5	0487965321	SOA Made Simple	Lonneke Dikmans	2012	$13.72	2
6	0412359687	SOA with REST: Principles Patterns & Constraints for Building Enterprise Solutions with REST	Thomas Erl	2012	$48.25	3

2. AddBook() (1.5 Marks):

A page (similar to the image below) that allows users to add more book records to the Book Store Application. An AddBook() controller is needed for receiving the information of a book from the view and creating an instance of class Book, then it will add this book into existing book list and save the information to the text file via Data Storage Web Service.

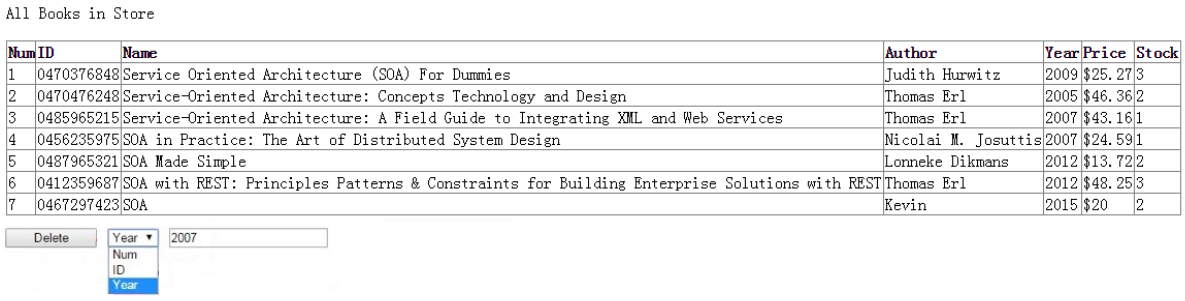
Note that: The new book list after this operation needs to be displayed on the top of the page. Input validation is needed, and the input cannot be null. All the input values are subject to proper validation.



3. DeleteBook() (1.5 Marks):

A page (similar to the image below) that allows users to remove book records from the system. An DeleteBook() controller will need to be created for the request from the corresponding view. For example, the field is year, and the value is 2007. Then, it deletes all the books that match the condition, and save the rest of the books back to the file via Data Storage Web Service. If the operation is successful, it returns true. Otherwise it returns false.

Note that: Input validation is needed, and the input cannot be null. All the input values are subject to proper validation.



4. SearchBook() (1.5 Marks):

A search page (similar to the image below) that allows users to search book records in the system. For example, one user is using year as the search condition. Then, the page displays all the books that match the condition.

Note that: The supported fields should include Name, ID, Author and Year (Using Dropdownlist). Input validation is needed, and the input cannot be null. All the input values are subject to proper validation.

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