Web Data with XML, JSON and AJAX

Tutor Marked Assignment (TMA)

Introduction

The Web Data with XML, JSON and Ajax TMA accounts for 25% of the module marks. It covers the bulk of the materials covered in sessions 1 – 4, i.e. XML, XSD and XSL.

TMA Specifications

The BBC Good Food site uses the same format for all of its recipes. Analyse one or two of the recipes (e.g. Gooseberry Tart, Jerk Chicken, etc.). Make a note of what data is included in a recipe and the way recipe data is structured. It may help to represent the data as a tree diagram.

Task 1

Create an XML document with a structure capable of holding the data for BBC recipes. This should include the different ingredients, the preparation and cooking time, as well as all other *relevant* data.

Note that the preparation time and cooking time should be in minutes. Use the upper estimates as the actual cooking time and prep time if the recipe states both an upper and a lower estimate (e.g. 1-2 hours would be 120 minutes).

When you have completed your XML structure, add at least ten pieces of test data (e.g. recipes from the BBC site). This should include some recipes that take more than an hour to cook (e.g. Roast Beef), and some recipes that take thirty minutes to one hour to cook (Haddock & leek au gratin), and some recipes that take less than thirty minutes to cook (e.g. Cheese Omelette).

Check your XML syntax for well-formedness.

Save your completed file as *recipes.xml*.

Task 2

Create an XML schema against which the recipe data in your XML file can be validated. The schema should do the following:

- Show which elements and attributes are required
- Include examples of simple and complex element types
- Show the sequence in which recipe data should be entered
- Define appropriate data types
- Impose appropriate restrictions on the allowable number occurrences of elements where appropriate
- Allow only the following values to be entered for the recipe difficulty level: *Easy, Moderate, Difficult*).

Check your XML schema syntax for well-formedness.

Save your schema file as *recipes.xsd*.

Link *recipes.xml* and *recipes.xsd*. Use an XML tool to validate *recipes.xml against recipes.xsd.* Remove any errors in *recipes.xml* and/or *recipes.xsd*.

Publish your XML and XSD files on the DCSIS server at:

http://titan.dcs.bbk.ac.uk/~username/wd/wdtma/recipes.xml
http://titan.dcs.bbk.ac.uk/~username/wd/wdtma/recipes.xsd

Task 3

Create an XSL stylesheet that transforms recipe data in *recipes.xml* for display in a web browser. The XSL stylesheet should do the following:

- Display all the data in the XML file holding recipe data in HTML table format.
- Produce valid HTML 5 output.
- Sort recipe data by cooking time and recipe name.
- Dynamically create an additional element based on the content of the cooking time element. If the cooking time is greater than sixty minutes, the new element should display the words *Slow Burner*. If the cooking time is less than or equal to sixty minutes, and greater than or equal to thirty minutes, this new element should display the words *Medium Burner*. Otherwise, the new element should display the words *Quick and Easy*.

- Include a link to a CSS style sheet (e.g. *recipes.css).*

Save your XSL stylesheet as *recipes.xsl*. Link your XSL file to your XML file. Upload your file to the DCSIS server at:

http://titan.dcs.bbk.ac.uk/~username/wd/wdtma/recipes.xsl

Task 4

Create a CSS stylesheet. Save it as *recipes.css.* Use it to style the markup outputted from *recipes.xsl* Styling should be to professional standard.

Upload your CSS file to the DCSIS server at:

http://titan.dc.bbk.ac.uk/~username/wd/wdtma/recipes.css

Submission Procedure

All files must be published on the URLs stated above.

Also, please submit a copy of all your files (*recipes.xml*, *recipes.xsd*, *recipes.xsl* and *recipes.css*) in a zip folder (*username_wd_tma.zip*) via the TMA dropbox in Moodle. Failure to submit your files in Moodle may mean that your TMA is awarded 0%.

Completing the TMA

The TMA must be completed and submitted electronically in the assignment dropbox in Moodle (normally before the start of session 5).

You should work on your TMA after class and during the self-study session scheduled after Session 4. Begin your work early, as the TMA is a substantial task that requires planning and effort to complete satisfactorily. The TMA prepares you for the FMA, so you greatly reduce your risk of a poor overall mark by completing and submitting a TMA.

Getting feedback

Feedback on the marked TMA can be downloaded from Moodle and will normally be returned to you within 2 weeks of submission. The feedback on your TMA and any issues that arise can be discussed with your tutor in Session 5, or optionally you can make a tutorial appointment for individual support within 2 weeks of the return of your marked TMA.

Backing up files

Always keep a back-up copy of all work submitted for assessment in case of unforeseen submission problems.

Plagiarism

Plagiarism, which is claiming the work of others as your own, is a serious offence and can result in your exclusion from all colleges of the University of London. You should be aware that we use a range of automated tools to spot potential plagiarism in spreadsheets, databases, programme code and text documents. Providing you clearly reference work done by others that you have included in your TMA you will not be penalised.

In the course of completing the assignment, we acknowledge that you will research code from books and from online sources. *Ideas* and *techniques* from these sources may be used in the completion of your own work. HOWEVER, your own work MUST differ significantly from any third-party sources. If it does not, this will constitute plagiarism. You must also clearly reference any third-party sources you have used.

Likewise, we acknowledge that some students will work together collaboratively to solve problems. Again, if you do this, each student's final submission must be markedly different. If your work is not markedly different from another student's work, again, this will consitute plagiarism.