

CSC 3002F 2007 XML Assignment

XML for Web 2.0

Summary:

The aim of this assignment is to store and process data in an XML format rather than a flat text file or a database. Three aspects will be considered in the context of a fictitious electronic commerce system: storing data; verifying the quality of data; and rendering of the data using Web 2.0 techniques.

Recommended Tools:

Xerces for XML DOM parsing and validation, Xalan for XSL Transformation. Contained in jars.zip.

Sample files:

TEST.XML/XSD/XSL/JAVA/CLASS to demonstrate how to bootstrap the DOM parser and provide a fully working, validifiable and transformable dataset. “validate”, “transform” and “domtest” shell scripts. Contained in script_tools.zip.

Submit:

A single tar.gz archive file containing all required files as indicated below.

Question 1

Create XML documents to store the following structured information. Each list of orders must be stored in a separate XML document, with the indicated name. Use an appropriate structure that is consistent for all documents, with subfields for each part of the names and items.

ORDER1.XML

Name: Sithole, Bruce

Item: id:1, description:duck, quantity:1, unit price:15.25

Item: id:2, description:canned tomato, quantity:1, unit price:5.00

Item: id:3, description:canned peas, quantity:2, unit price:4.20

Name: Bliss, Philip

Item: id:4, description:canned beans, quantity:2, unit price:3.46

Item: id:2, description:canned tomato, quantity:1, unit price:5.00

Item: id:5, description:onions, quantity:1, unit price:6.70

ORDER2.XML

Name: Mpako, Lindiswa

Item: id:4, description:canned beans, quantity:1, unit price:3.56

Name: Rae, Steven

Item: id:6, description:bread, quantity:3, unit price:6.00

Item: id:7, description:butter, quantity:1, unit price:7.95

Name: Konda, Abdul

Item: id:4, description:canned beans, quantity:1, unit price:3.56

Item: id:8, description:rolls, quantity:12, unit price:0.50

ORDER3.XML

Name: Zaal, Lorin

Item: id:10, description:gouda cheese, quantity:1, unit price:14.73

Item: id:11, description:wholewheat rolls, quantity:6, unit price:0.65

Item: id:12, description:2 litre orange juice, quantity:1, unit price:11.80

Question 2

Write an XML Schema description for your XML data. Edit the XML documents to include a link to the Schema. Validate each file against the schema and copy-and-paste the output into a file called "validation.out".

Question 3

Write an XSLT stylesheet to transform the XML into XHTML. Name this XSLT document ORDER.XSL. Use the HTML output method by including the following line as the first within the stylesheet element:

```
<xsl:output method="html"/>
```

Use the attached file (webxml.htm) to load the XML and transform it dynamically within a Web page. The following image shows a simple display of the data using this file and appropriate XML and XSL files.

Web XML Data Display

Click to load data:

List of orders

Order to: Bruce Sithole				
Qty	Id	Description	Unit Price	Total Price
1	1	duck	15.25	15.25
1	2	canned tomato	5.00	5.00
2	3	canned peas	4.20	8.40

Order to: Philip Bliss				
Qty	Id	Description	Unit Price	Total Price
2	4	canned beans	3.46	6.92
1	2	canned tomato	5.00	5.00
1	5	onions	6.70	6.70

Submission

Submit a gzipped/tarred file containing at least the following structure:

- ORDER1.XML
- ORDER2.XML
- ORDER3.XML
- ORDER.XSD

- Validation.out
 - Output from running the validation program on all XML order files
- ORDER.XSL
- WEBXML.HTM

General Notes

Your assignment must work with the provided tools, and the Web page must load and operate correctly in Firefox v1.5.

Your assignment will be marked according to the following criteria:

- Correctness – XML is complete and well-formed, 10; XML validates against schema, 20; WebXML can transform and display data, 20 (50%)
- Output – for validation (10%)
- Documentation – comments within XSD, 10; comments within XSL, 10 (20%)
- Efficiency of XSL (10%)
- Creativity – extra effort (10%)