CSCI 585 - Database Systems (Spring 2014)
Homework Assignment 3
Prof. Shawn Shamsian
Due: 04/25/2014, 11:59PM

The main goal of this assignment is to design an XML Schema, XML Stylesheet and use Xquery to query on XML data.

Part 1: Design an XML Schema that incorporates the following specifications (20 points).

For each Book:
ID (1 occurrence, required)
Title (1 occurrence, required)
Author (1 or more occurrences, required)
Price (1 occurrence, required)
ISBN (1 occurrence, required)
[Three types for ISBN taught in class]
Publish_Date (YYYY/MM/DD) (1 occurrence, required)

For each review:
Review_ID(1 occurrence, required)
Book_Title (1 occurrence, required)
Rating (values from 1 to 5, 1 occurrence, required)
Reviewer (1 occurrence, required)
Review Description (0 or 1 occurrence, optional)
Review_Date (YYYY/MM/DD) (1 occurrence, required)

Part 2: Take the data (book.xsl, review.xsl) and the XML Schema you designed in Part 1 to create a valid XML data file (15 points)

Note: Make sure that the XML files are validated against the XML Schema you designed. You can use the online validator:
http://www.corefiling.com/opensource/schemaValidate.html
You may also use other tools of your choice that perform the same functions as the ones we have indicated above.

Part 3. Insert the XML data into Oracle DB using JAVA, use XQuery to answer 6 queries (60 points, 10 points to each question).

1. Display reviewer names who reviewed a book whose price is 25$ or above, and which is published after Aug (not limited to the specific year)

2. Display the book ID of the books, which are reviewed in 2014.

3. Display reviewer names and all reviewed books for each reviewer, with both reviewer names and book names in an ascending order.

4. Display the average review rating for each book, with the average value in a descending order.

5. Display the average review rating, review number (count) and name for each reviewer.

6. Find the review rating higher than 3, print its reviewer name, rating value and all dates, with the publish date in an ascending order, and the review date in a descending order.

Submission Instructions

You need to submit the following files (the filenames should be EXACTLY the same as mentioned below):

1. The Readme.txt file that contains your full name, USC ID and the list of the submitted files. There is a 10 points penalty if this file or some of the required information is missing from your submission.
2. The XML Schema files book.xsd, review.xsd. (20 points)
3. The XML data files book.xml, review.xml. (15 points)
4. Your JAVA source code for inserting the XML data. (5 points)
5. Six XQuery files: q1.xquery, q2.xquery, q3.xquery, q4.xquery, q5.xquery, q6.xquery. (60 points)
6. Make HW3_your_usc_id.zip file that includes all these files.
7. You need to submit your assignment to https://www.uscden.net
8. No late or makeup submissions will be accepted.

Reference

1. http://www.w3schools.com/ (Learn XML, XSL etc.)
2. http://www.xml.com (Info about XML etc.)