CS/SE 157B
Section 3
Database Management Systems II
Spring 2018
Instructor: Ron Mak

Assignment #5

Assigned:	Thursday, March 22
Due:	Monday, April 9 at 11:59 pm
	Team assignment, 100 points max

XML and XQuery

The purpose of this assignment is to give your team experience working with XML semi-structured data. You can download, install, and obtain a 30-day trial license key for the Oxygen XML editor: http://www.oxygenxml.com . Make screen shots of the editor to show the results of the following exercises.

XML data

Create an XML data file with a structural complexity that's similar to the `catalog.xml` example, which has elements at three levels of nesting beneath the root `catalog` element. Your data should have at least three top-level elements (`catalog.xml` has two top-level `journal` elements). You can convert some of your project's database data into XML for this exercise, or you can create new XML data that ideally can become part of your project.

Your file must include all the simple and complex types:

- Four different simple types. Some or all of them can be attributes.
- One each of the four complex types.

XML schema

Create an XML schema for your data file and make sure that you can validate your data file against your schema. Make an Oxygen editor screen shot that indicates your file was validated.

XQuery and FLWOR expressions

Write and execute <u>five XQuery FLWOR expressions</u> on your data file. For each expression, briefly describe what it is supposed to return, and include a text file of the output and an Oxygen editor screen shot of the expression and results. At least one of your FLWOR expressions must convert your XML data file to HTML code that would enable a browser to display your results.

Now create another XML data file. (There are no type requirements on this second XML file.) Write and execute <u>two XQuery FLWOR expressions</u> that joins the two data files. Again, for each expression, briefly describe what it is supposed to return, and include a text file of the output and a screen shot of the expression and the results.

What to turn in

Create a zip file named after your team (e.g., `Supercoders.zip`) containing:

- Text files of your XML, XML Schema, and XQuery FLWOR expressions.
- Text files of the output of your FLWOR expressions.
- Oxygen editor screen shots of the FLWOR expressions and results.

Submit into Canvas: **Assignment #5. XML**

Rubrics

Criteria	Max points	
XML	**30**	
• XML data file		• 10
• XML schema		• 20
XQuery FLWOR expressions	**70**	
• 5 expressions with output (at least one that generates HTML)		• 50
• 2 expressions with output where each joins two XML data files		• 20

Artificial data generators

If you cannot obtain actual datasets, Google "test data generation tools" for tools you can use to generate artificial data for your tables.

Rubrics

Criteria	Max points
OLAP operations (SQL queries and text files or screen shots of results)	**90**
• Drill up and drill down (show three levels of aggregation)	• 60
• Slice	• 15
• Dice	• 15
Dimensional model	**10**
• Star schema and database dump	• 10