

CMPE 226 Database Systems

Spring 2017
Instructor: Ron Mak

Assignment #8

Assigned: Tuesday, April 18
Due: Tuesday, April 25 at 11:59 pm
Team assignment, 100 points max

XML

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> You can 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). Your file should have a mixture of simple and complex types.

You can convert some of your project's database data into XML for this exercise, or you can create new XML that can become part of your project.

XML schema

Create an XML schema for your data file and make sure that you can validate your data file against your schema.

XPath expressions

Write and execute ten XPath expressions on your data file. For each expression, briefly describe what it is supposed to return, and show its results.

XQuery and FLWOR expressions

Write and execute five XQuery FLWOR expressions on your data file. For each expression, briefly describe what it is supposed to return, and show its results. At least one of your FLWOR expressions should convert your XML data file to HTML code that enables a browser to display your data.

Now create another XML data file. Write and execute two XQuery FLWOR expressions where each which joins the two data files. Again, for each expression, briefly describe what it is supposed to return, and show its 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, XPath expressions, and XQuery FLWOR expressions.
- Text files of the output of your XPath and FLWOR expressions. You can instead create XML editor screen shots of the expressions and results.

Submit into Canvas: **Assignment #8. XML**

Rubrics

Criteria	Max points
XML <ul style="list-style-type: none">• XML data file• XML schema	45 <ul style="list-style-type: none">• 20• 25
XPath expressions <ul style="list-style-type: none">• 10 expressions with output	20 <ul style="list-style-type: none">• 20
XQuery FLWOR expressions <ul style="list-style-type: none">• 5 expressions with output (at least one that generates HTML)• 2 expressions with output where each joins two XML data files	35 <ul style="list-style-type: none">• 25• 10

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) <ul style="list-style-type: none">• Drill up and drill down (show three levels of aggregation)• Slice• Dice	90 <ul style="list-style-type: none">• 60• 15• 15
Dimensional model <ul style="list-style-type: none">• Star schema and database dump	10 <ul style="list-style-type: none">• 10