Programming Assignment 7

Due Dec 1, 2020 by 11:59pm **Points** 100 **Submitting** a file upload **Available** until Dec 4, 2020 at 11:59pm

This assignment was locked Dec 4, 2020 at 11:59pm.

Using DOM, XPath, and XSLT

Description

The goal of this project is to learn DOM, XPath, and XSLT to query XML data.

This project must be done individually. No copying is permitted. **Note: We will use a system for detecting software plagiarism, called Moss (http://theory.stanford.edu/~aiken/moss/) , which is an automatic system for determining the similarity of programs.** That is, your program will be compared with the programs of the other students in class as well as with the programs submitted in previous years. This program will find similarities even if you rename variables, move code, change code structure, etc.

Note that, if you use a Search Engine to find similar programs on the web, we will find these programs too. So don't do it because you will get caught and you will get an F in the course (this is cheating). Don't look for code to use for your project on the web or from other students (current or past). Just do your project alone using the help given in this project description and from your instructor and GTA only.

Platform

You will do this project on your own PC/laptop. You may use a text editor to develop your Java programs but you may use an IDE, such as IntelliJ Idea or Eclipse, if you want.

Here are some examples:

- **Using XPath in Java** ⬇ **(https://uta.instructure.com/files/10649019/download?download_frd=1)**
- **Using XPath in Java** ⬇ **(https://uta.instructure.com/files/10649023/download?download_frd=1)**
- **An XSLT transformation** ⬇ **(https://uta.instructure.com/files/10649036/download?download_frd=1)**

- Using XSLT in Java (https://uta.instructure.com/files/10649017/download?download_frd=1)
- The cs.xml XML document used in Java (https://uta.instructure.com/files/10649035/download?download_frd=1)

Documentation

The following web pages provide some tutorials. Use them as a reference only.

- DOM Java API (https://www.w3.org/TR/2000/REC-DOM-Level-2-Core-20001113/java-binding.html)
- XPath Tutorial (http://www.zvon.org/xxl/XPathTutorial/General/examples.html)
- Java API for javax.xml.xpath (http://java.sun.com/javase/6/docs/api/javax/xml/xpath/package-summary.html)
- XSLT Tutorial (http://www.w3schools.com/xsl/)
- Another XSLT tutorial (http://www.zvon.org/xxl/XSLTutorial/Output/contents.html)
- XSL Transformations (by XML Bible) (http://www.ibiblio.org/xml/books/bible2/chapters/ch17.html)

Project Requirements

You will evaluate DOM, XPath, and XSLT over XML data that represents courses from Reed College, available at reed.xml (http://aiweb.cs.washington.edu/research/projects/xmltk/xmldata/data/courses/reed.xml) with DTD reed.dtd (http://aiweb.cs.washington.edu/research/projects/xmltk/xmldata/data/courses/reed.dtd). More specifically:

1. Write a plain Java program `dom.java` that uses the Java DOM API over the XML data in reed.xml to print the titles of all MATH courses that are taught in room LIB 204
2. Write a plain Java program `xpath.java` that evaluates the following XPath queries over the XML data in reed.xml:
    1. Print the titles of all MATH courses that are taught in room LIB 204
    2. Print the instructor name who teaches MATH 412
    3. Print the titles of all courses taught by Wieting
3. Write an XSLT program `math.xsl` to display all MATH courses in Reed College by transforming the XML file reed.xml to XHTML using XSLT. Your XHTML must contain a table, where each table row is a Math course. Modify the Java program xslt.java (https://uta.instructure.com/files/10649017/download?download_frd=1) to test your XSLT and then load the resulting html output file on your web browser.

What to Submit

Submit your zipped directory project7 with your files `dom.java`, `xpath.java`, `math.xsl`, `xslt.java`, and the output from your DOM, XPath, and XSLT programs.