COIN-078B : Internet Programming with XML

Assignment 2

Objectives:

- Learn how to produce a paginated presentation of our XML information with XSLT and XSLFO.
- Use the open-source FOP (Formatting Objects Processor) from Apache.org.

Note: Please follow the specifications below. Points will be knocked off if not followed.

Read Assignment Guidelines & Requirements

The Extensible Stylesheet Language Formatting Objects (XSLFO), combines the heritage of Cascading Stylesheets (CSS) and Document Style Semantics and Specification Language (DSSSL) in a well-thought-out and robust specification of formatting semantics for paginating information. Layout and typesetting controls give us the power to express our information on pages in a visually pleasing and perhaps meaningful set of conventions conveying information in the presentation itself. In this assignment you are going to write an XSLT program that will transform an XML document elements.xml (same one you used in Assignment 1) to an XSLFO document. By using the open-source FOP (Formatting Objects Processor) from Apache.org, you can run the XSLT and the XSLFO processors on your xml and xslt files in a single command. The output formats it currently supported include PDF, PCL, PS, SVG, XML (area tree representation), Print, AWT, MIF and TXT. The output target for this assignment is PDF. The PDF output should contain a title called "Periodic Table of Elements" on the first page and a table containing rows of elements. The table columns are **Name, Symbol, Atomic Number, Atomic Weight, Oxidation States, Density, Electron Configuration, Electro negativity, Atomic Radius, Atomic Volume, Ionization Potential, Specific Heat Capacity, Thermal Conductivity** respectively. If available the units should be extracted from the appropriate attribute and placed in parenthesis under each label. Give the table rows any alternating color you like. Use the XSLT `choose` command, `position()` function & `mod` operator to check odd/even row and add the appropriate `background-color` attribute value. The elements are sorted by name. The bottom-right of each page dispays the page number. See the screenshot.

You'll need to read Chapters 13 & 14 of your textbook to be able to do this assignment. Skip Java code for the meantime.

Look at the textbook examples *ch14_01.xml* on page 689, *ch14_02.xsl* on page 690 and *ch14_08.fo* on page 725. Start with creating an XSLFO template with headings and table containing the specified columns and labels, a data row filled with temporary "data" text and page number at the bottom-right corner of the page. Save this file as **temp.fo**. Run FOP (FOP temp.fo temp.pdf) and check to see if the PDF output is displayed correctly in the Acrobat Reader. Using this file as template, turn to page 635, follow the steps on creating XSLT stylesheets with the appropriate template rules and applying them to the nodes of your XML document... continue up to page 686. Look at pages 654 to 667 and course-site links to help you write XPath patterns, expressions and functions. Be sure to declare the proper namespaces. Save your XSLT file as **assign2.xsl** in the **styles** folder.