**YTU-CE: Semantic Web Graduate Course   
Fall 2016   
Homework Assignment  
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This homework based on organization schema of the Central Bank of Republic of Turkey. There is one xsd file (cbrt.xsd) that includes the structure showed in <TCMB_orgChart.jpg>. Since there are too much elements and attributes in the xsd, therefore it would require too much manual effort to implement, to avoid this complexity, in the project Jaxb Api is used.

For validating xml files, Dom and Sax validations are implemented.

For parsing, developer can select which parser to be used by Jaxb Api.

For querying xml files, XPATH is used.

For styling xml files XSLT is used. Only elements with the same name of xml files are styled. Xslt files also uses a single css file.

For running time comparison of Dom and Sax parsers, 5 xml files created with different sizes. Dom and Sax parsers run for 5 times and the average of the running times are calculated. Time Differencemeans the difference running time t from running time t -1. Results of the tests are like follows:

|  |  |
| --- | --- |
| **DOM** | **SAX** |
| |  |  |  | | --- | --- | --- | | *File Size* | *Runnig Time* | *Time Difference* | | 1MB | 223.2 ms |  | | 2MB | 284.6 ms | 61.4 | | 3MB | 362.0 ms | 77.4 | | 4MB | 403.8 ms | 41.8 | | 5MB | 458.8 ms | 55 | | |  |  |  | | --- | --- | --- | | *File Size* | *Runnig Time* | *Time Difference* | | 1MB | 643.2 ms |  | | 2MB | 784.0 ms | 140.8 | | 3MB | 838.2 ms | 54.2 | | 4MB | 941.8 ms | 103.6 | | 5MB | 980.0 ms | 38.2 | |
|  | |

As shown above, for all cases, Sax parsing is slower than Dom. For further inferences, more tests with different sizes must be done.

**REFERENCES**

<https://www.javacodegeeks.com/2013/02/jaxb-tutorial-getting-started.html> <http://dublintech.blogspot.com.tr/2011/12/jaxb-sax-dom-performance.html>

<http://stackoverflow.com/questions/7709928/jaxb-vs-dom-and-sax>