

# **YTÜ-CE: Semantic Web Graduate Course**

## **Homework Assignment**

**Fall 2016**

This homework assignment asks you to write in XML Schema language, the schema document that best specify the structure in your work and do some XML processing on XML instances of your Schema.

### **1. Details & Requirements**

- The document root element must be your company name.
- In total, your schema should at least 10 element types and 5 attribute types in the document. These may use user defined data types (simple and complex data types)
- One of the elements has to be employee and its type should be employeeType.
- The employee element has two elements as children: a title element followed by a name element. The title element has an empty content, and must have an attribute prefix whose values can only be one of Mr, Mrs, or Miss. The name element always has text as its content.
- You must use minOccurs and maxOccurs constraints to identify the quantity of elements.
- At least one high level element should have a sequence of min. of two elements.
- At least one high level element should have collection of elements where the order is not important (hint: all).
- At least one high level element should have a collection of elements of which one will be chosen (hint: choice)
- At least one of your data types should use enumeration.
- Your schema must have data type extension for one of the complex data types.
- Your schema must have data type restriction for one of the complex data types.
- You may use Web Tools Platform plugin for Eclipse ([www.eclipse.org/webtools](http://www.eclipse.org/webtools))  
OR You may directly download Eclipse Luna where the XML Editor is included (<https://projects.eclipse.org/releases/luna>).
- You will create 5 different XML files each corresponding to a different employee and covering different parts of your XML Schema.
- You will use both SAX XML Parser and DOM XML Parser to read the data from all XML instances and write the data into one .txt file.
- You will use both SAX XML Parser and DOM XML Parser to validate your XML

instances against your XML Schema.

- You will implement at least two different types of XPATH queries to query data on your XML instances.
- Only Java language is allowed.

## **2. Implement your application and write a 1 page report**

- Your report should include
  - Brief explanation of your implementation and information on how to compile and run.
  - Experiences and discussion.
- How to submit
  - A. Please submit the files in .zip format with the filename corresponding to your student id.(e.g TP\_StudentID.zip) via email to the assistant instructor ([ytublm5151@gmail.com](mailto:ytublm5151@gmail.com)) Email Title : [XMLSchemaAssignment] Your Student ID, Your Name
  - Zip file should include your all source codes as an eclipse project where all the libraries are included and path to libraries are set properly.
  - **Due Date: Sunday, 16/10, 11:59PM**

## **3. Bonus Points**

- You may do one or both of the following to get bonus points
- 1) Comparison of DOM and SAX Parsers in XML processing. Details of this was explained in the class.
- 2) XSLT program that converts your XML instances into a single HTML format.

## **4. Late Assignment Policy**

- A grading penalty will be applied to late assignments. (10% penalty up to the first 24 hours, 20% for 24 to 48 hours, with no credit received after that)