University of Stirling, Computing Science and Mathematics

CSCU9T4/CSCU9TF - Managing Information. XML Practical 2: Valid XML   (DTD and XSD)

Lecturer: Dr. Gabriela Ochoa

The purpose of this practical is to create your first Document Type Definition (DTD), and your first XML Schema Definition (XSD). You will use an online XML validation tool to check the validity of XML documents against a DTD and XSD, respectively.

1. **Running the XML validation site**
    - Open the XML validation site at: `http://www.xmlvalidation.com/`
    - Click on the 'An example' tag and follow the instructions there to run the provided example. Look at the errors reported and correct them. The example considers a simple XML document that should be validated against a given XSD.

2. **Creating your first DTD**
    - Consider the file named `simple+dtd.xml`.
        - Download it to your directory
        - Open it in your editor and look at its structure. Then use the validation site to check the document. You should copy and paste the whole document including the DTD section. No errors should be reported.
        - Test how the validation site reports errors by modifying some aspect of the `simple+dtd.xml` file. For example, deleting the 'to' element, or swapping the 'to' and 'from' elements.
    - Consider the XML file provided, named `contacts.xml`. Open it in your browser and text editor and explore its structure.
    - Your task is to create a DTD that describes the structure of this document.
    - Create a new file named `contacts+dtd.xml` and copy the content of the `contacs.xml` file into it. Now, in the same file, start working on the DTD section of the document to describe its structure.
    - The DTD should comply with the following:
        - Allow a minimum of one contact and unbounded maximum.
        - All the elements are mandatory except 'middle' name and 'age', which are optional.
        - For the location, provider a choice between 'city' and 'postcode'.
    - Add two new different entries to the `contacts+dtd.xml`, which comply with your newly created DTD.
    - Once you finished, validate your whole document `contacts+dtd.xml` using the validation site. No errors should be reported.

Checkpoint	
`contacts+dtd.xml`	Without errors using the validation site with the internal DTD. That is the DTD should be inside the XML file.

3. **Creating your first XSD**
    - Consider the XML file provided, named `contacts.xml`. Open it in your browser and text editor and explore its structure.
    - Your task is now to create a XML Schema that describes the structure of this document.
    - Create a new file named `contacts.xsd`. It should be an external file containing the schema definition.
    - The XSD should comply with the following:
        - Allow a minimum of one contact and unbounded maximum.
        - All the elements are mandatory except 'middle' name and 'age', which are optional.
        - For the location, provider a choice between 'city' and 'postcode'.
    - You should create two complex types named 'NameType' and 'LocationType' to describe respectively the name and location elements.
    - Once you finish creating your schema, validate the given 'contacts.xml' document against your created 'contacts.xsd' using the validation site. No errors should be reported.

Checkpoint	
`contacts.xml` `contacts.xsd`	Without errors using the validation site. Check the given 'contacts.xml' against your created 'contacts.xsd' as an external file.