COMP3421 Lab01 XML Schema Tutorial and Exercise

There are three important websites for you to test your Xml Schema and XML
1: http://xsd2xml.com/
After you type the correct XSD file, you can obtain one example of the XML file.

2: http://www.freeformatter.com/xsd-generator.html
After you type the correct XML file, it can generate the corresponding XSD file.

3: http://www.utilities-online.info/xsdvalidation/#.V904oph96Uk
This is the validation of both XML and XSD file. It checks whether the XML and XSD file are valid to each other.

You can use the above three websites to check all answers in this exercise.

Editor:
You can choose to use the XML-editor in https://www.oxygenxml.com/xml_editor/register.html (30 days trial version) or you can simply use Notepad or Nodepad++ to create your XML Schema/ XML file.

Exercise:
Step 1

- Create an XSD for a real estate XML document
- Its root element real-estate contains a sequence of sub-elements agencies, owners, properties and flats, all with an empty content
- Do not define any global complex type

- Modify the XML document such that its validity can be checked with respect to this XSD

Step 2

- Extend the previous XSD schema for 02.xml
- Elements agencies, owners, properties and flats can now contain particular agency, owner, property and flat elements respectively
- Agency = name, e-mail, phone
- Owner = name
- Property = name, number of flats
- Flat = name, description, rate
- Define global complex types for all the 4 main entities
- Use ordinary xs:string simple type for all text values

Step 3

- Extend the previous XSD schema for 03.xml
- Add the following compulsory attributes
- Identifiers of owners, properties and flats
- References from flats to properties they belong to
- Comfort levels of flats
- Add the following optional attributes
- References from properties to owners they belong to
- Dates when flats were posted
- Use xs:string simple type once again for all values

Step 4

- Extend the previous XSD schema for 04.xml
- Choose appropriate predefined simple types for all text and attribute values and/or introduce your own derived global/anonymous simple types

- Allow only A, B, C, D, E, F values for comfort levels of flats
- Rates of flats are positive integers or 0
- Flat identifiers must match regular expression [fF][0-9]{1,5}
- Numbers of property flats should be equal to at most 1500
- Flat names must have at least 5 and at most 100 characters

Step 5

- Extend the previous XSD schema for 05.xml
- Add features to properties and flats
- Add an optional attribute to each feature describing a list of categories to which it is associated
- Only a fixed list of predefined categories is permitted (location, equipment, security, comfort)

Step 6

- Extend the previous XSD schema for 06.xml
- Add the following keys
- Identify properties using their idProperty attributes
- Identify flats using their idFlat attributes
- Identify flats also using pairs of their names and properties they belong to, i.e. using name and propertyRef
- Add the following foreign key
- References from flats to properties they belong to