

Due on: Wednesday 02.05.2007 by 1 PM (via email: tso@ismll.uni-hildesheim.de)

Exercise 3.1

- a) [2 points] Explain the concept of XML Namespaces. How are namespaces declared and used in XML?
- b) Model a complex data with XML schema for:
1. [3 points] a *binary tree* which is either empty or consists of a root element and a left and a right binary sub-tree.
 2. [3 points] Emails from Ex. 2.2a with mark-up. (Use DTD provided on department website)
- c) [3 points] Give example documents for Ex 3.1 b).
- d) [2 points] Is it possible to add a constraint to restrict the node values of the binary to be between 0-50? How about restricting the parent's nodes of the binary tree to have a greater value than its children's nodes?

Exercise 3.2

- a) [2 points] Is the following section of a schema legal? Why and why not?

```
<xsd:complexType name="book">
  <xsd:sequence>
    <xsd:all>
      <xsd:element name="title" type="Titles"/>
      <xsd:element name="author" type="Names"/>
      <xsd:element name="isbn" type="isbns"/>
    </xsd:all>
    <xsd:sequence>
      <xsd:element ref="comment" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:sequence>
  <xsd:attribute name="publishDate" type="xsd:date"/>
</xsd:complexType>
```

- b) [1 point] Replace the following choice group to a legal sequence group.

```
<xsd:choice maxOccurs="2">
  <xsd:element name="a"/>
  <xsd:element name="b"/>
  <xsd:element name="c"/>
</xsd:choice>
```

- c) Given the following Type:
- ```
<xsd:complexType name="FashionType">
```

```
<xsd:sequence>
 <xsd:element name="id" type="FashionIDType"/>
 <xsd:element name="name" type="xsd:string"/>
</xsd:sequence>
</xsd:complexType>
```

Derive another *FashionType*, say *ShoeType*, which extends the *FashionType* and contains a *choice* group of (eg. size, color...etc).

- 1) [2 points] Extend this XML schema without complex content/extension
- 2) [2 points] Extend this XML schema with complex content/extension