

Due on: **Wednesday 16.05.2007 by 13:00** (via email: [tso@ismll.uni-hildesheim.de](mailto:tso@ismll.uni-hildesheim.de))

### Exercise 5.1

- a) [2 points] Which namespace does each "title" and "year" elements associated with in the following xml document. Does it violate namespace constraints? Explain.

```
<?xml version="1.0"?>
<movies xmlns:xmllib="http://www.xmlmovielibrary.com">
  <xmllib:title>Star Wars:Episode I-The Phantom
Menace</xmllib:title>
  <xmllib:year>1999</xmllib:year>
  <purchase xmlns:xmllib="http://www.othermovielibrary.com">
    <xmllib:title>Star Wars:Episode II-Attack of the Clones
</xmllib:title>
    <xmllib:year>2002</xmllib:year>
  </purchase>
  <xmllib:title>Star Wars:Episode III-Revenge of the Sith
</xmllib:title>
  <xmllib:year>2005</xmllib:year>
</movies>
```

- b) [3 points] Does the following xml document generate errors with the given schema file? If yes, explain and correct the xml document.

**XML document:**

```
<?xml version="1.0"?>
<book>
  <title/>
</book>
```

**XML Schema file:**

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="tar">
  <xs:element name="book">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="title" type="xs:string"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

c)

- 1) [8 points] Design a validate xml schema document for the given xml documents, such that it satisfies the following constraints:
- Set default namespace to <http://www.w3.org/2001/XMLSchema>
  - Set elementFormDefault and attributeFormDefault to unqualified.
  - Element books has the type t1
  - Element comments has the type string

- Type t1 consists of an element book of type t2
- Type t1 also has the elements comments.
- Type t2 consists of an element title of type string

**XML document:**

```
<?xml version="1.0"?>
<bk:books xmlns:bk="http://abc.com/">
  <book>
    <title>Mukhi</title>
  </book>
  <bk:comments> Ha ha </bk:comments>
</bk:books>
```

- 2) [2 points] What would be the changes to the xml document if the elementFormDefault is set to "qualified"?

Exercise 5.2

[5 points] Given the following xml document, **stock.xml** (can download from department web), design a suitable and valid schema such that the document is valid w.r.t the schema and use integrity constraints such that

- Each child of products must have a number attribute whose value references the item number
- All items descendants of stock must have a number element -- a unique item number.

```
<stock xmlns:xsi=http://www.w3.org/2001/XMLSchema-instance
xsi:noNamespaceSchemaLocation="stock.xsd">
  <products>
    <book number="12">
      <quantity>90</quantity>
      <language value="en"/>
    </book>
    <book number="12">
      <quantity>23</quantity>
      <language value="de"/>
    </book>
    <cd number="89">
      <quantity>50</quantity>
      <category>pop</category>
    </cd>
  </products>
  <items>
    <item>
      <number>12</number>
      <name>XML Bible (2nd Edition)</name>
      <price currency="USD">34,99</price>
    </item>
    <item>
      <number>89</number>
      <name>Shania Twain - Greatest Hits</name>
      <price currency="USD">20,99</price>
    </item>
  </items>
</stock>
```