

Due on: (postponed to) Thursday 19.05.2005 via email tso@informatik.uni-freiburg.de

Exercise 7

a) Download the *products.xsd* (you can get the file from our department webpage, in *Exercises* section).

1. Complete the XML schema so that it fulfils the following restriction:

The productCode of a company has the following form:

E.g. hP SC 12345

- The first component (e.g. hP) consists of 2 letters. With LOWERCASE OR UPPERCASE letters from a to z.
- The second component (e.g. SC) consists of 1 OR 2 letter.
- The last component (e.g. 12345) is a number with up to 4 digits.

b) Given a fragment of an XML schema.

1. Does the following XML schema violate the Unique Particle Attribution?

```
<xs:element name="names">
  <xs:choice maxOccurs="unbounded">
    <xs:element ref="first-name"/>
    <xs:sequence>
      <xs:element ref="first-name" minOccurs="0"/>
      <xs:element ref="middle-name" minOccurs="0"/>
      <xs:element ref="last-name"/>
    </xs:sequence>
  </xs:choice>
</xs:element>
```

2. If yes, explain why and model it correctly such that it allows the following names combination.

<first-name> Michael </first-name>	<first-name> Michael </first-name>	<first-name> Michael </first-name>	<middle-name> Joseph </middle-name>
<middle-name> Joseph </middle-name>	<last-name> Jackson </last-name>		<last-name> Jackson </last-name>
<last-name> Jackson </last-name>			

Exercise 8

- a) Given the following example xml document, design a suitable schema such that the document is valid w.r.t. the schema.

```
<bank xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:noNamespaceSchemaLocation="bank.xsd">
  <account account_num="_1"
          sin="123456789"
          name="Ben"
          city="Crazy Town">
    <accountType
      account_type="Checking"
      balance="100">
      <account_activity
        operation_type="W"
        operation_date="2005-05-04T09:13:12"
        amount="99" />
    </accountType>
    <accountType
      account_type="Saving"
      balance="100" />
  </account>
  <account
    account_num="_2"
    sin="234567801"
    name="Tony"
    city="City of Angel">
    <accountType
      account_type="Checking"
      balance="890">
      <account_activity
        operation_type="D"
        operation_date="2005-04-23T10:12:04"
        amount="800" />
    </accountType>
  </account>
</bank>
```