

Exam for lecture

“Methods and Tools for Management Information Systems”

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summer semester 2009

Surname:

Forename:

Student ID:

Course of studies:

The time allotted for the exam is 120 minutes. No ancillary materials are allowed. You can get a maximum of 60 points.

Task	Max. accessible points	Reached points
1	5	
2	2	
3	3	
4	5	
5	30	
6	5	
7	10	
Sum	60	

1. (5 points) The organisation W3C describes in its document “XML in 10 points”, that “XML leads HTML to XHTML”. What does the W3C mean. Are there any differences between XML, HTML, and XHTML. What are the advantages, where can you use XHTML.
2. (2 points) Are there any valid XML-documents who are not well-formed? Give an example.
3. (3 points) What are namespaces, for what are they useful? Can you leave out the usage of namespaces?
4. (5 points) Without any reason indicate with yes or no whether the following elements are well-formed: for every correct answer you get one point, for every wrong answer you get one point minus.

Syntax	Complete well-formed element (yes/no)
<Telefonnummer>+49-391-67-11368</Telefonnummer>	
<Name_Beginn>Henner Graubitz</Name_End</Name_End>	
<copyright jahr=2009>AG Managementinformationssysteme </copyright>	
<vorlesungsstil>Rock 'n" Roll</vorlesungsstil>	
<Breite-Größe>f(x) >= x^{1/2} -4,5</Breite-Größe>	

5. (30 points) A company gives you the following well-formed XML documents. You are going to create the corresponding XML-Schema with the following additional details:
 - you have to mention at least one “first” element, there are no limits “to the top”
 - the elements "latitude" and "longitude" are of type “float”
 - the attribute "person" is of type "ID"
 - the attribute "tags" is of type "String"
 - the attribute "kind" of elements "phone" can only take the values "Home" or "Work"
 - the attribute "title" of elements "name" can only take the values "Mr." or "Mrs."
 - the attribute "contacts" of element "knows" gives a unique enumeration of the attribute "person" (and so can show the who knows who relation).

```
<?xml version="1.0"?> <contacts xmlns="http://www.example.com/contacts"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.example.com/contacts contacts10.xsd" version="1.0">
```

```
<contact person="Jeff_Rafter" tags="author xml poetry">
  <name title="Mr.">
    <first>Jeff</first>
    <first>Craig</first>
    <last>Rafter</last>
  </name>
  <location>
    <address>Redlands, CA, USA</address>
    <latitude>34.031892</latitude>
    <longitude>-117.207642</longitude>
  </location>
  <phone kind="Home">001-909-555-1212</phone>
  <knows contacts="David_Hunter"/>
  <description>Jeff is a <em>developer</em> </description>
</contact>
```

```
<contact person="David_Hunter" tags="author consultant CGI">
```

```

<name>
  <first>David</first>
  <last>Hunter</last>
</name>
<location>
  <address>Address is not known</address>
</location>
<phone kind="Work">416 555 1212</phone>
<knows contacts="Jeff_Rafter"/>
<description>Senior Technical Consultant for CGI.</description>
</contact>
</contacts>

```

6. (5 points) You receive the following XML dokument:

```

<?xml version="1.0" encoding="UTF-8"?>
<A>
  <B>b</B>
  <C>
    <D myAttribute="1">d1</D>
    <D myAttribute="2">d2</D>
  </C>
  <E>
    <F>
      <g myAttribute="3">g1</g>
    </F>
  </E>
</A>

```

Write down the results of the following XPath expressions which will be given with the usage of an application (Tip: string() gives you the textual content of the specified element):

XPath	Result
string(/B)	
string(/B)	
string(/g[@myAttribute])	
sum(/@myAttribute)	
string(/A/C/D)	

7. RDF and RDF-Schema: Angela Merkel is married with Joachim Sauer.
- (5 points) Please write down the corresponding triple notations? (Tip: you can abbreviate URIs).
 - (5 points) How does the corresponding RDF code looks like?