

Exercise
Business Informatics 2 (PWIN)
Winter Term 2011/2012

Exercise V:
Markup Languages, Databases &
Data-oriented Modelling

Fachbereich
Wirtschaftswissenschaften

Institut für Wirtschaftsinformatik
Professur für Mobile Business & Multilateral Security
www.m-chair.net

Prof. Dr. Kai Rannenberg

Telefon +49 (0)69-798 34701
Telefax +49 (0)69-798 35004
E-Mail kai.rannenberg@m-chair.net

Shuzhe Yang, M.Sc.

E-Mail shuzhe.yang@m-chair.net

Dipl.-Wirt.-Inf. Stephan Heim

E-Mail stephan.heim@m-chair.net

Exercise 1: Repetition XML (Mentorium)

Write a DTD for the storage of a dynamic customer profile based on the Myplace example. Furthermore write an example XML document which is based on this DTD.

- The customer profile shall include a user's pseudonym, login time, current location, personal data (age, gender, interests). Possible interests are cinema, restaurant, tennis, soccer, sports bar... .
- **Example for XML Document:**
 - Pseudonym: mobileFritz1380, Age: 25, gender: male
 - Interests: Cinema, Restaurants

Exercise 2: Well-formed XML Documents

Which of the following XML documents are well-formed?

<pre> <?xml version="1.0"?> <User> <Pseudonym> Jenny23 </Pseudonym> <Mobile_Operator> t-mobile </ Mobile_Operator > <Registration> 03.02.2007 </Registration> <Lastlogin> 29.04.2007 </Lastlogin> </User> </pre>	<pre> <?xml version="1.0"?> <User> <Pseudonym> Joe1976 </Pseudonym> < Mobile_Operator > vodafone </ Mobile_Operator > < Registration > 03.02.2007 < Lastlogin > 29.04.2007 </User> </pre>
--	---

<pre> <?xml version="1.0"?> <Date> <Place> Fressgass 17, Frankfurt </ Place > <Time> 25.03.2007, 21:15-0:15 </Time> <Meeting_Point> Starbucks <People> Gina </Meeting_Point> </People> <People> Jimmy </People> <Activitiy> Cocktails </Activitiy> <Comment> Gina 2 Caipis ausgegeben </Comment> </Date> </pre>	<pre> <?xml version="1.0"?> <Date> <Place> Schweizer Strasse, Frankfurt </Place> <Time> 25.03.2007, 21:15-0:15 </Time> <Meeting_Point> Apfelwein-Wagner </Meeting_Point> <People> Pit </People> <People> Jenny23 </People> <Activitiy> Äppler trinken </Activitiy> <Comment> Pit hatte coole Sonnenbrille an! </Comment> </Date> </pre>
---	---

Exercise 3: Validated XML documents

InstantONS[®] has bought a competitor and wants to integrate his data into its own database. Unfortunately the data is structured differently.

Validate the following XML document extracted from the competitors database against the DTD of InstantONS[®]. If there are mismatches, adapt the DTD so the new data can be integrated without losses.

<pre><Date> ... (gekürzt) <People> Jenny23 </People> <Activity> Äppler trinken </Activity> <Success> <Compliment>ja</Compliment> <Invitation>nein</Invitation> <Newdate>nein</Newdate> </Success> <Comment> Pit hatte coole Sonnenbrille an! </Comment></pre>	<pre><?xml version="1.0"?> <!DOCTYPE Date [<!ELEMENT Date (Place,Time,Meeting_Point,People+, Activity,Comment)> <!ELEMENT Place (#PCDATA)> <!ELEMENT Time (#PCDATA)> <!ELEMENT Meeting_Point (#PCDATA)> <!ELEMENT People (#PCDATA)> <!ELEMENT Activity (#PCDATA)> <!ELEMENT Comment (#PCDATA)>]></pre>
---	---

Exercise 4: ER-Model

Create an ER-Model of the InstantONS[®] system with the help of the following information:

- Use the following entities for your model:
 - User
 - InstantONS
 - Date (when, where, who, how often ...),
 - Event (cinema, restaurant, ...)
 - Eigenschaft (User profile, e.g. age)
 - Meeting Point(Location for the date)
- Identify and mark the primary key for each entity and avoid as far as possible artificial keys (e.g. ID).
- Define the Cardinalities, using the 1:n notation.
- Make explicitly use of weak entities