

Exercise #1

Menus at the university restaurant need to be structured and stored into an XML document. Each day's menu is made of:

- a first course (salad...);
- a main course, itself composed of:
 - meat,
 - vegetables;
- a dessert.

1. With any text editor (e.g., Notepad++), create an XML document named `menus.xml`. Write the standard prologue, and then define a root element named `menus` and `menu` subelements with respect to the data table below. Embed in each `menu` element the necessary subelements. `day` should be an *attribute* of `menu`. Note that Wednesday's `couscous` is a unique main course that replaces both meat and vegetables (use a `unique_course` element instead).

@Day	1st course	Main course		Dessert
		Meat	Vegetables	
Monday	Green salad	Chicken	French fries	Lemon pie
Tuesday	Pâté	Rabbit	Pasta	Banana
Wednesday	Tabbouleh	Couscous		Turkish delights
Thursday	Pizza	Omelette	Green beans	Crème brûlée
Friday	Pirojki	Fish	Rice	Apple

2. Visualize `menus.xml` with any Web browser. Test the +/- "command buttons". Is your XML document well-formed?
3. Replace "Pasta" by "Farfalle ><" in Tuesday's menu. Test. What happens? Solve the problem!
4. Insert a comment of your choice anywhere in your XML document. Check out what appears on screen.

Exercise #2

Structure and store the list of scientific publications below into a well-formed XML document named `publications.xml`, such that:

- the type of publication (conference, book chapter...) wraps each publication's information;
- authors are listed separately;
- quoted text (e.g., "bla bla") is a publication's title;
- conference names and book titles are indicated in grey; they are considered the same information, denoted `booktitle`;
- locations include both a city and a country (they may be stored together);
- month and year of publication must be stored separately;
- information in *italics* are called series;
- underlined names are publishers;
- number ranges (e.g., 117-127) are page numbers;
- information between brackets are notes.

• Conferences

- H.H. Nguyen, N. Harbi, J. Darmont, "An Efficient Fuzzy Clustering-Based Approach for Intrusion Detection", 15th East-European Conference on Advances and Databases and Information Systems (ADBIS 11), Vienna, Austria, September 2011; *Research Communications, Austrian Computer Society*, 117-127.
- R. Salem, J. Darmont, O. Boussaid, "Efficient Incremental Breadth-Depth XML Event Mining", 15th International Database Engineering and Applications Symposium (IDEAS 11), Lisbon, Portugal, September 2011, 197-203.
- H.H. Nguyen, N. Harbi, J. Darmont, "An Efficient Local Region and Clustering-Based Ensemble System for Intrusion Detection", 15th International Database Engineering and Applications Symposium (IDEAS 11), Lisbon, Portugal, September 2011, 185-191.

• Book chapters

- F. Bentayeb, N. Maiz, H. Mahboubi, C. Favre, S. Loudcher, N. Harbi, O. Boussaid, J. Darmont, "Innovative Approaches for efficiently Warehousing Complex Data from the Web", *Business Intelligence Applications and the Web: Models, Systems and Technologies, Business Science Reference*, 2011, 26-52 (M.E. Zorrilla, J.N. Mazón, Ó. Ferrández, I. Garrigós, F. Daniel, J. Trujillo, Eds.).

• Other publications

- J. Darmont, "Privacy and performance of cloud data warehouses", *Data Warehousing: from Occasional OLAP to Real-time Business Intelligence (Dagstuhl Seminar 11361), Dagstuhl Reports, Volume 1, Issue 9*, 2011.

Exercise #3

Structure and store the part inventory below into a well-formed XML document named `inventory.xml`, such that all part information are stored as attributes. Zero quantities must not appear in the XML file.

PARTNO	DESCRIPTION	QONHAND	QONORDER
P207	Gear	75	20
P209	Cam	0	10
P221	Big Bolt	650	200
P222	Small Bolt	1250	0
P231	Big Nut	0	200
P232	Small Nut	1100	0
P250	Big Gear	5	3
P285	WheelBelt	350	0
P295	Belt	0	25

Exercise #4

Write a well-formed XML document named `products.xml` that includes all the particular cases represented in the data tree model below.

