

Assignment 1

Exercises to hand-in:

You must hand in Exercise 1 and (either 2 or 3).

1. Explain (in more detail than is given in the paper) the point of the second paragraph of Section 6, page 10, of Wadler's paper A Formal Semantics for Patterns in XSLT. Why would the alternative definition not work ?
2. For Linux and Emacs users: BBDB is a database program for the GNU Emacs editor. See <http://bbdb.sourceforge.net> and the manual at <http://bbdb.sourceforge.net/bbdb.html> for a description of BBDB. Here is an example .bbdb file (the \ means that the text continues without a newline).

```
;;; file-version: 6
;;; user-fields: (www)
["Anders Petersen" "(Tandlaege)" nil nil (["Work" "1234 5678"]) \
 nil nil ((creation-date . "2002-07-07") (timestamp . "2002-07-08")) nil]
["Annette og Anders" "Pedersen" nil nil (["Home" "9876 5432"]) (["Home" \
("Glentevej 67") "Koebenhavn" "" "2400" "Denmark"]) nil \
((creation-date . "2002-07-07") (timestamp . "2002-07-07")) nil]
["Henrik" "Jensen" nil nil (["Work" "0987 8888"] ["Mobile" "0987 7777"]) \
 nil ("hj@abc.com") ((creation-date . "2002-08-30") \
(timestamp . "2002-08-30")) nil]
["Martin" "Andersen" nil nil (["Home" "0987 5555"]) \
(["Home" ("Ndr. Fasanvej 541, 3 TH") "Frederiksberg" "" \
"DK-2000" "Denmark"]) nil ((creation-date . "2002-07-07") \
(timestamp . "2002-07-07")) nil]
```

Design a DTD such that valid XML documents represent BBDB-data. (For this you should look at Section 1.9.1 in the BBDB manual.) Explain in words (5-10 lines) why you have designed the DTD as you have. Make a program which can transform XML documents into BBDB files (optionally, if you are very ambitious, also the other way). You should hand in the program text, with a few explanatory comments and some example input / output. It does not matter which programming language and/or tools you use.

3. Design one or more DTDs for representing the data for the course home page (for this course) in XML. Include a few comments about why you have designed the DTD(s) as you have. Write small example XML documents with sample data for the course. Write a program which can transform the xml documents into xhtml. You should hand in the program text and the input and output produced by it. It does not matter which programming language and/or tools you use.
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