

Due on: Thursday 30.06.2005 by 14:00 (in class)

Exercise 1

A travel agency offers the following flights:

```
<?xml version="1.1"?>
<flights>
  <flight from="Frankfurt" to="Rom" start="2004-09-07 09:30"
arrival="2004-09-07 10:30" price="70"/>
  <flight from="Frankfurt" to="Rom" start="2004-09-07 09:00"
arrival="2004-09-07 10:05" price="70"/>
  <flight from="Frankfurt" to="Helsinki" start="2004-09-07 09:50"
arrival="2004-09-07 11:45" price="90"/>
  <flight from="Basel" to="Prag" start="2004-09-07 10:15"
arrival="2004-09-07 11:30" price="60"/>
  <flight from="Baden-Baden" to="Frankfurt" start="2004-09-07 08:30"
arrival="2004-09-07 09:05" price="55"/>
</flights>
```

- a) You want to go to Rom. Write an XQuery that lists all flights to Rom. Write a second XQuery that lists all flights to Rom in order of departure. Can you express these XQueries as XPath queries?
- b) You would like to start in Baden-Baden. As there unfortunately is no direct flight from Baden-Baden to Rom, maybe you could go there by changing somewhere else? Write an XQuery that lists all possibilities to go from Baden-Baden to Rom with one transit stop in-between.
- c) Write an XQuery that lists all possibilities to go from Baden-Baden to Rom by changing as often as necessary (i.e., without a fixed upper bound for the number of transit stops for a more general case).

Exercise 2

Classifieds for used cars are stored in the XML document *classifieds.xml* (available online)

- a) Write an XQuery that returns a list of all offered Audis with 150000 miles or less sorted by price.
- b) Write an XQuery that lists all persons mentioned in the classifieds.
- c) Extend your XQuery from b) to list with any person any cars he/she is offering in the following format:

```
<?xml version="1.0"?>
<persons>
  <person name="Anne">
    <car manufacturer="Audi" model="A4" year="2000"
miles="60000" price="6999"/>
    <car manufacturer="VW" model="Sharan" year="2002"
miles="20000" price="11900"/>
  </person>
  ...
</persons>
```

Do not forget to include the prices!

- d) Write an XQuery that matches offers and requests. The query should output a series of `match`-elements that contain exactly one `request`-element and arbitrarily many matching `offer`-elements, i.e., having the requested manufacturer and model (if any), at least the requested year and at most the requested miles and price.