B4M36DS2, BE4M36DS2: **Database Systems 2**

http://www.ksi.mff.cuni.cz/~svoboda/courses/191-B4M36DS2/

Practical Class 3
XQuery

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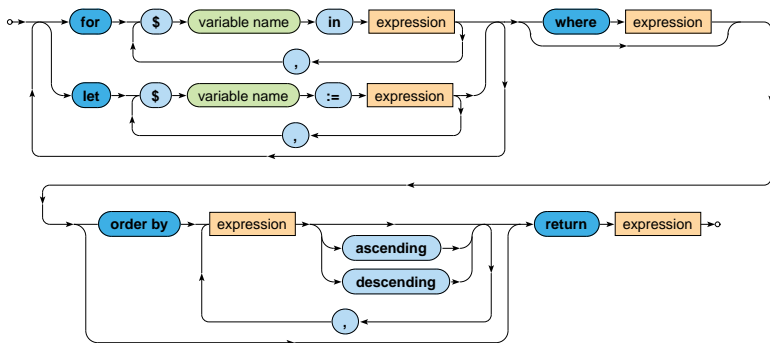martin.svoboda@fel.cvut.cz

14. 10. 2019

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FLWOR Expressions

FLWOR

- Versatile construct allowing for **iterations over sequences**

Conditional Expressions
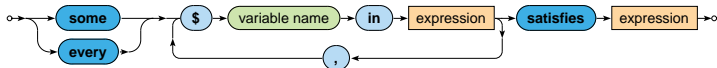
Condition

- Note that the <u>else</u> branch is compulsory
    - Empty sequence () can be returned if needed

Quantified Expressions

Quantifier

- Returns `true` if and only if…
    - in case of `some` **at least one item**
    - in case of `every` **all the items**
- … of a given sequence/s **satisfy the provided condition**

Exercise 1

Express the following XQuery query

- **Flights heading to any airport in Germany (*DEU*) on *2019-10-18***

Exercise 2

Express the following XQuery query

- **Sequence of lines longer than _60_ minutes**
- Respect the following output structure

```
<line origin="airport-code" destination="airport-code">
  <code>line-number</code>
  <departure>departure-time</departure>
  <arrival>arrival-time</arrival>
</line>
...
```

- Propose two solutions using **direct / computed constructors** respectively

Exercise 3

Express the following XQuery query

- **Names of airline companies such that all their flights are associated with aircrafts**

Exercise 4

Express the following XQuery query

- **Generate an XHTML table with data about flights from *PRG***
  - Use <i>Unknown</i> when an aircraft is not assigned
  - Sort the flights using dates (descending order) and times of departure (ascending)

```
<table>
  <tr>
    <th>Date</th><th>Time</th><th>Number</th><th>Aircraft</th>
  </tr>
  <tr>
    <td>flight-date</td>
    <td>time-of-departure</td>
    <td>line-number</td>
    <td>aircraft-registration-or-unknown</td>
  </tr>
  ...
</table>
```

Exercise 5

Express the following XQuery query

- **Names of passengers of *EK140* flights with at least average number of sold tickets over all *EK140* flights**
- Respect the following output structure

```
<passengers date="flight-date" tickets="number-of-tickets">
  comma-separated-list-of-passenger-names
</passengers>
...
```