

Exercise – 8
XML and Semantic Web Technologies – SoSe 2012
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Q1. Consider the following document.

```
<?xml version="1.0" encoding="UTF-8"?>
<bib>
  <book year="2006">
    <title>Computer Networks</title>
    <author>Silber Schatz</author>
    <publisher>MIT</publisher>
    <price>50.50</price>
  </book>
  <book year="2009">
    <title>Data Mining: Next Generation</title>
    <author>Kargupta</author>
    <publisher>Springer</publisher>
    <price>31.20</price>
  </book>
  <book year="2010">
    <title>Head First Java</title>
    <author>xyz</author>
    <publisher>O'Reilly</publisher>
    <price>60.00</price>
  </book>
  <book year="2008">
    <title>XML In a Nutshell</title>
    <author>Harold</author>
    <author>Means</author>
    <publisher>O'Reilly</publisher>
    <price>40.50</price>
  </book>
  <book year="1992">
    <title>Machine Learning</title>
    <author>Kargupta</author>
    <editor>
      Gerbarg
      <affiliation>abc</affiliation>
    </editor>
    <publisher>MIT Press</publisher>
    <price>129.50</price>
  </book>
</bib>
```

Write the following queries and run them using oXygen:

- Give the titles of all books sorted by price.
- How many books have been written by Kargupta?

- Give for each author the number of books which he has written.

Q2. Consider the following document:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE eth SYSTEM "eth.dtd">
<eth xmlns="http://www.ethz.ch"
  xmlns:db="http://www.dbis.ethz.ch"
  date="11.11.2006"
  db:date="12.11.2006">
  <date>13.11.2006</date>
  <president number="1">Empty</president>
  <Rektor>Name 2</Rektor>
</eth>
```

Correct the following XQuery expressions so that they refer to the correct namespace, in order to determine the value of the *date* child and of the two *date* attributes.

- /eth/date
- /eth/@date

Hint: You can bind a prefix *pre* to a URI `http://www.example.com` with the following prolog declaration:

```
declare namespace pre = "http://www.example.com";
```

You can then use the prefix in path expressions.

Q3. Properties of XQuery Comparison Operators.

- Find a variable binding for $\$x$ so that $\$x=1$ and $\$x=2$. Can one infer that, in XQuery, $1=2$?
- Find variable bindings for $\$x$, $\$y$ and $\$z$ so that $\$x > \y and $\$y > \z , but $\$x > \z is not true.
- Find a variable binding for $\$x$ so that neither $\$x \text{ eq } \x nor $\$x = \x is true. Explain why.