Universität Freiburg
Institut für Informatik
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Lecture XML and Databases
Winter Semester 2011/12

Due date/discussion:3.2.2012

Exercise Sheet 11

Query Rewrites, Node IDs

Exercise 1:

1.1. Is this a legal rewrite?

```
let $x := <a/> return ($x, $x ) → (<a/>,<a/>)
```

1.2. Give a document fragment where `//a/b` could return items which are not in document order if document ordering were deactivated for path expressions.

1.3. In which of the following cases can "=" be rewritten to "eq"? Which additional information might be needed?

```
substring("Hello World", 7) = "World"
```

```
doc('books.xml')/bib/book[author = "Kossmann"]
```

Exercise 2: Node IDs

2.1. Add node IDs to the following document, using one of the following types of IDs. You should assign IDs which maintain document order.

a. integer IDs b. double IDs
c. Dewey (original) d. ORDPATH

```
<?xml version="1.0" encoding="UTF-8"?>
<doc>
    <Passenger>
        <name>Santa Claus</name>
        <passnumber>000111</passnumber>
        <address>Somewhere</address>
    </Passenger>
    <Reservation>
        <date>2009-12-24</date>
        <flightRef>LX124</flightRef>
        <passRef>000111</passRef>
    </Reservation>
</doc>
```

2.2. For double IDs and ORDPATH, write the new node IDs for the document resulting from the execution of the following updating query. Note that only new nodes get new IDs: the other IDs remain unchanged. After the update, IDs should still maintain document order. What about integer IDs and Dewey?

```
let $doc := doc("flights.xml")
return
insert node <Reservation>
              <date>2009-12-24</date>
              <flightRef>LX183</flightRef>
              <passRef>000111</passRef>
            </Reservation>
before $doc/Reservation[1]
```

2.3. Fill in the following table and estimate the properties of the different ID types:

	Size	Maintains document order	Ancestor/Descendant navigation	Sibling/Before/After navigation	Efficient insertion	Computation intensity
Integer IDs						
double IDs						
Dewey						
ORDPATH						