

Exercises for the book

Semantic Web Databases

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Chapter 12 – Comparison of the XML and Semantic Web Worlds

1. Translate the following SPARQL query into XQuery and into XSLT:

```
PREFIX dc:    <http://purl.org/dc/elements/1.1/>
PREFIX lupos: <http://www.luposdate.org/>
SELECT ?title ?price ?author
WHERE {
    ?x dc:title ?title .
    ?x dc:autor ?author .
    OPTIONAL {
        ?x lupos:price ?price .
        FILTER ( ?price < 30 ).
    }
}
```

2. Transform the following XML data into RDF using the proposed numbering scheme and translate the XPath query `/child::universities/descendant-or-self::professor/parent::node()/parent::node()/child::courses` into SPARQL:

```
<?xml version="1.0"?>
<universities>
  <university>
    <name>Uni 1</name>
    <professors>
      <professor>
        <name>Prof 1</name>
      </professor>
    </professors>
    <courses>
      <course>
        <name>Course 1</name>
        <lecturer>Prof 1</lecturer>
      </course>
      <course>
        <name>Course 2</name>
        <lecturer>Prof 1</lecturer>
      </course>
    </courses>
  </university>
</universities>
```