Advanced Database Models
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Practical exercise 4 - XML, DTDs, XPath, XQuery

The following tasks use the XPath and XQuery playground available at:
`http://www.semwebtech.org/xquery-demo/`

1. DTDs

Using the simple XPath query „/" the full `mondial.xml` document can be shown. Analyze the returned document and derive a possible DTD for this document!

2. XPath

Using the mondial database, answer the following queries:

- Find all continents!

- Return all names of countries sharing a border (tag) with Germany (attribute `country` with value 'D')!

- Return the names of all countries with more than 10 (`count()` function) ethnic groups (`ethnicgroups` tag)

- Find all islands belonging (`located` tag) to the country (attribute) Great Britain (value `'GB'`)!

3. XQuery

Using the mondial database, answer the following queries:

- Return all names of countries ordered by the area in descending order!

- Return all country names according to the following structure:

```
<countries>
   <country>Albania</country>
   <country>Greece</country>
   <country>Macedonia</country>
   ...
</countries>
```

- Return all name pairs of neighboring countries (self-join)!