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:

```xml
<countries>
    <country>Albania</country>
    <country>Greece</country>
    <country>Macedonia</country>
    ...
</countries>
```
- Return all name pairs of neighboring countries (self-join)!