Exercise 5

Date of issue: 28.03.2017          Deadline: 04.04.2017, 12:15

The exercise is based on the **Mondial** database. Its schema can be accessed at
[https://files.ifi.uzh.ch/dbtg/dbs/mondial/schema.pdf](https://files.ifi.uzh.ch/dbtg/dbs/mondial/schema.pdf)

**SQL Queries**

For the following queries: (a) formulate and write down the query in SQL, (b) execute them on your Mondial database, and (c) write down the number of rows returned. Make sure your queries are correct for all Mondial database instances. Result relations may not contain duplicates and the duplicates must be removed if necessary.

1. The codes of all countries in lexicographical order that are adjacent to the deepest sea(s).
   
   (a) State the query without using joins or Cartesian products in the FROM clauses.
   
   (b) State the query without using subqueries in WHERE clauses.

2. The name, province and country code of all cities that are located next to a lake and a sea, but not to a river.

3. For each country determine its name and count the number of provinces where the number of mountains and islands are equal.

4. The names of all countries in the continent ‘America’ for which the database records that at least one language is spoken and

   (a) at least one Australian/Oceanic language is spoken. No GROUP BY is allowed.
   
   (b) at least two Australian/Oceanic languages are spoken.
   
   (c) all Australian/Oceanic languages are spoken.

An Australian/Oceanic language is a language spoken in the continent ‘Australia/Oceania’. You may use the constants ‘America’ and ‘Australia/Oceania’.