

# 1. Experiment: Database design and SQL queries

## Notes

You have to install the Mondial-database to solve the exercises. Installing instructions can be found on the course homepage (<http://dbis.informatik.uni-freiburg.de/index.php?course=SS10/Praktikum/Programmierung+in+SQL/index.html>) under *Software/sonstiges*. You have to setup the script path so that the scripts referenced in `create.sql` can be found and executed. You'll get an e-mail as soon as the database and your repository are available.

Information about the Mondial database is given under *Dokumente* (ER-diagram, foreign key dependencies, attribute descriptions).

### Exercise 1.1 (50 P.)

Create an ER-diagram for a mini world about football games. Consider games from the German 1. and 2. Bundesliga and from the DFB Cup. Assume that it is interesting to know

- which teams exist
- who plays in which team
- the events of a game
- the coach of a team
- the line-up for a game
- ...

This list is not complete but should give some ideas. Avoid redundancy. Of course, it should be possible to retrieve a state of the table or to find out the cup winners (it must be possible to express this information in the model).

### Exercise 1.2 (20 P.)

Transform your diagram into relational schemata. Combine the schemata if possible. Show the foreign key relations with arrows. (You have not to create tables or fill in data).

### Exercise 1.3 (5 P.)

For all countries, give the sum of the population of all its neighbors (take *all* countries into account).

### Exercise 1.4 (5 P.)

List all organizations with the sum of the population of their members (in descending order, ignore different member types).

### Exercise 1.5 (5 P.)

For each country in America, give the highest mountain and its height; ordered by height.

### Exercise 1.6 (5 P.)

Compute the percentage of believers of every religion from the world's population.

Deadline: 5.5.2010, 11h