



## **Exercise Sheet 8: SQL I (until Thursday 22.12.2011)**

Please note that you need **50%** of all exercise points to receive the “Studienleistung”. Exercises have to be turned in until **Thursday** of each respective week and must be completed in teams of two students each. You may hand in your solutions either on paper **before the lecture** or into the mailbox at the IFIS floor (Mühlenpfordtstraße 23, 2nd floor). Please do not forget your “Matrikelnummer” and your tutorial group number on your solutions. Your solutions may be in German or English. Please note: To pass the “RDB I Modul” you need the exercise points and the exam! Please always use your own words for all questions.

### **Database Schema**

The following database schema stores information about movies and all participating people. The *Movie* relation includes an id, the movie title, the year of publication, the country where the movie was produced, its box-office takings, and a type (e.g. cinema or TV). A person is identified by an id, has a name, a sex and a birthdate. The *Plays* relation contains all actors with their respective roles. The *Crew* relation contains people attending in the respective movie, e.g. as a director or producer (type='director' ...). Furthermore, each movie is associated with a number of genres in the *Has\_Genre* relation.

Movie (mid, title, year, country, box\_office\_takings, type)

Person (pid, name, sex, birthdate)

Crew(person → Person, movie → Movie, type)

Plays (person → Person, movie → Movie, role)

Has\_Genre(movie → Movie, genre → Genre)

Genre(name, description)

### **Exercise 8.1 (17 points)**

Translate the following expressions to SQL.

- Show a list including all cinema movies. (1 point)
- Show a list of all genres (name) in whose description the word 'hero' occurs. (1 point)
- Show the names of all actors playing in any 'Fantasy' movie in 1980. (2 points)
- Show a list including the number of movies for each genre. Please note, your list should also include genres having no movies. (2 points)
- How many female actors played a 'killer' (role) in a Steven Spielberg (director) movie? (2 points)
- Show the titles of all movies where 'Terence Hill' (actor) played without 'Bud Spencer' (actor). (3 points)

- g) Find the titles of all movies whose box-office takings are higher than the average box-office takings regarding all movies. (3 points)
- h) Which actor played in the most movies? (3 points)

### **Exercise 8.2 (5 points)**

- a) Explain how the GROUP BY clause works. What is the difference between the WHERE and the HAVING clause? (2 points)
- b) What restrictions apply to the use of the aggregate functions within the SELECT statement? How do NULL values affect the aggregate functions? (2 points)
- c) What is the difference between correlated and uncorrelated subqueries? (1 point)