

MySQL practicals

N.B.: before you leave the practical sessions please show the demonstrators that you have completed the proposed exercise

Exercise FOUR

OBJECTIVES: practice writing SQL queries, reaction policies.

Task 1 - Using the tables *students*, *courses* and *student_taking_course* you created in previous weeks, write (each in a different query tab) and execute the SQL queries that retrieve the following information (verify that the correct results are returned based on the data contained in your database):

- 1) *studentid* of students that take the course with code WEB20;
- 2) First name and last name of all students;
- 3) The student with *studentid* 11111;
- 4) First name of students with last name Murphy;
- 5) Code of courses with name 'Relational databases'. Could there be more than one course with such a name?
- 6) Code and name of courses which cost less than 250€;
- 7) Students with no email address (use: email is NULL as predicate);
- 8) Last name of students that take the course with code REL20;
- 9) Code of courses taken by the student with *studentid* 11111;
- 10) *studentid* of students that are taking a course that costs less than €250;
- 11) Last name and *studentid* of students that are taking a course that costs less than €250;
- 12) Name and code of courses taken by students with last name Murphy;

Task 2 – Consider table *student_taking_course*. This table has two foreign keys. By default MySQL sets reaction policies for foreign keys to NO ACTION (ie., changes to referenced tables are not allowed if the values being updated/deleted are referenced by other tables). Set reaction policies for these foreign keys as follows: *on delete cascade*; *on update cascade* (in the MySQL Workbench interface you can locate this functionality, called Foreign Keys Options, by clicking on the Foreign Keys tab when you are editing the table).

NOTE: if there are other tables/columns – eg. *tutor teaching courses* - that reference *coursecode* with policy NO ACTION then also those foreign keys have to be updated to CASCADE in order for everything to work.

- a) What happens if you modify the course code REL20 to REL21 in the *courses* table? Remember to click APPLY.
- b) What happens if you delete course WEB20 from the *courses* table?
- c) Change the reaction policies of the foreign keys to *on delete NO ACTION*. What happens now if you try to delete course EXL20 from the *courses* table?

Task 3 – Practice writing in Relational algebra the queries you wrote for Task 1 (solutions will be posted later).