

3612ICT Database Systems and Administration /7204ICT Database administration

SQL on MySQL

Instructions:

You may install MySQL on your own computer. Download MySQL Community Server 5.7.17.0 from <https://dev.mysql.com/downloads/>

Alternatively, download and install XAMP (<https://www.apachefriends.org/download.html>)

You can bring your computer to the labs if you want to (recommended). A useful administration tool is MySQL Workbench, using which you can create users, set passwords, and grant/revoke privileges.

If you prefer, you can also use the computer in the ICT school labs where MySQL is already installed. However, you may lose your data when you log off the computer. So you will need to store a copy of the SQL script files on your USB so that you can recreate the database.

Schema

Student (sID, lastname, firstname, gender, phone)

Course (cID, title, description)

Faculty (fID, name, title, email)

CourseOffer (cID, year, semester, fID, venue) FK: cID references cID in course table fID references fID in faculty table

Enrolment(sID, cID, year, semester, grade) FKs: sID references sID in student table

(cID, year, semester) references corresponding attributes in CourseOffer table

Exercises

1. Create a database called Lab1, use the database, and create the above tables using the give script file lab1data.sql
2. Find all courses whose description contains the word 'database'.
3. Find all students (by student ID and name) who do not have a phone number recorded in the table, in ascending order of last name.
4. Find all courses that are offered in semester 1, 2016 but not in semester 2, 2016.
5. Find all students enrolled in 3512ICT in semester 1, 2016.
6. Find the number of female students enrolled in 2002ICT, in semester 2, 2016.
7. Find the number of students who received F, P, C, D, and HD respectively in 1420ICT in semester 2, 2016.
8. Find all students by (ID and name) who enrolled in less than 2 courses in semester 1, 2016.
9. Find the courses which have an enrolment of less than five students in semester 1, 2016.
10. List the names of those students who received HD in 1420ICT in semester 2, 2016.
11. List all faculties by name, and if the faculty teaches a course in semester 2, 2016, also list the course id.

12. Find all students who received D or HD in every course he/she enrolled in in semester 2, 2015.
13. Find all students who enrolled in some courses and received D or HD in every course he/she enrolled in in semester 2, 2016.
14. Modify the structure of the table student to add an attribute email.
15. Change the grade to HD for students enrolled in 2002ICT, semester 1, 2016 and whose grade is D

SUBMISSION

Complete all queries, some of the queries (or subqueries) may result in empty results; i.e no records; if that happens, change the semester (from 1 to 2) or year (from 2015 to 2016) to illustrate/demonstrate the query works. Make sure you submit scripts and screen shots to provide **EVIDENCE THE TASKS IN THE LAB WERE COMPLETED.**

Complement the submission with a

REFLECTIVE LABORATORY REPORT (in PDF format)

than **analyzes** the screen shots and illustrations from the evidence that you completed the lab and also **discusses** in your own words what was the lab about, what concepts you discovered, and what did you learn in this lab. The reflective report is an account of your learning experience. You should **evaluate** the usefulness of the lab.