

## CS241 - Questions for Lab Assignment 3

### 1 INSTRUCTIONS

- (1) This lab is **graded**.
- (2) Use the student database that was created in Lab1.
- (3) Each question carries 4 marks.

### 2 QUESTION 1

Consider the following relations:

Student(snum: integer, sname: string, major: string, level: string, age: integer)

Class(name: string, meets\_at: time, room: string, fid: integer)

Enrolled(snum: integer, cname: string)

Faculty (fid: integer, fname: string, deptid: integer)

The meaning of these relations is straightforward; for example, Enrolled has one record per student-class pair such that the student is enrolled in the class.

Write the following queries in SQL. No duplicates should be printed in any of the answers.

- (1) For each level, print the level and the average age of students for that level.
- (2) For all levels except SR, print the level and the average age of students for that level.
- (3) For each faculty member that has taught classes, print the faculty member's name and the total number of classes she or he has taught.
- (4) Find the name and number of students who have enrolled in Database Systems but not in Operating System Design.
- (5) Find the average age of all students taking a course, if that course has at least 2 students.
- (6) Find the ids of faculty members who are teaching more than one course.
- (7) Find the ids of all students who have enrolled for more than one course.
- (8) List students (their ids, names, majors, level and age) in descending order of age.
- (9) Find the names and ids of all students whose major is some branch of Engineering (Electrical Engineering, Mechanical Engineering, Computer Engineering, Civil Engineering).
- (10) Count the number of students in each branch of Engineering.
- (11) Find the names and ids of faculty members who either teach Communication Networks or Introduction to Math.
- (12) Find the names and ids of instructors who are teaching a course and belonging to department id 68.
- (13) Find the names and ids of students who have not enrolled for any course.
- (14) Find the ages of all students whose last name begins with W and has at least 3 characters.
- (15) Find the age of the youngest student who is eligible to vote (that is, at least 18 years old) for each level (standing) with at least two such students.