

Assignment 2 – Database Queries

B561 - Fall 2011

Due: 10pm Oct. 18

Total score: 40 points + 5 bonus points

Consider the following RDB schema

Students (sid, name, age, dept, GPA)

Courses (cid, name, credit)

Take (sid, cid, term, year, grade)

The grade is a letter grade, e.g. A+, A, ...

Gradepoints (grade, points)

This table translates a letter grade to a grade in the scale of 0-4. For example, (A-, 3.7) is a tuple in it.

RequiredCourse (dept, cid)

This table records the required courses a student must take before receiving BA degree from a dept.

Please note that there may be other tables in the DB schema that are not involved in the queries of this assignment.

For example, there should be a Department (dept,) table, which supplies the reference for the foreign key

Student(dept and RequiredCourse(dept).

Please write queries as required. Please note that you will be graded based on whether your query is correct and simple, which means you should (1) you should write one single query using the required language for each query request; (2) avoid involving a relation unless you have to; (3) avoid writing nested query whenever possible. (5 points per query)

Q1. Find the sids and names of all students who never got a grade lower than A- (A- is OK). (RA, RC, SQL)

Q2. Find the students who have never taken any course that's not required by his/her department. (RA, RC, SQL)

Q3. For each department, find the name of the students with the highest GPA (if more than one student has the same GPA, return them all). (SQL)

Q4. A student can get the degree from his/her department if he/she has taken a total of 90 credit hours' courses, has a overall GPA over 2.0, and has taken all required courses. Please find the sids and names of the students who can get the degree from their department. (SQL)

Q5. (bonus) Find the courses (cid and name) that are required by more than 10 departments for its degree program. (SQL)