

SQL Query Assignment

Due: Wednesday Nov. 22, 2000.

1.0 The Database

This assignment will use a database containing university-type data. The relations are contained in a database called db564. The schema of the database is provided below (keys are in bold).

student (**sid**, sname, sex, age, year, gpa)
dept(**dname**, numphds)
prof(**pname**, dname)
course(**cno**, cname, **dname**)
major(**dname**, **sid**)
section(**dname**, **cno**, **sectno**, pname)
enroll(**sid**, grade, **dname**, **cno**, **sectno**)

2.0 Queries

Write SQL queries that answer the questions below (one query per question) and run them on the Sybase system using its SQL interpreter (isql). The query answers should be duplicate free, but you should use **distinct** only when necessary. Directions for using Sybase are provided in the other handout.

1. Print the names of professors who work in departments that have fewer than 50 PhD students.
2. Print the name(s) of student(s) with the lowest gpa.
3. For each Computer Sciences class, print the cno, sectno, and the average gpa of the students enrolled in the class.
4. Print the names and section numbers of all classes with more than six students enrolled in them.
5. Print the name(s) and sid(s) of the student(s) enrolled in the most classes.
6. Print the names of departments that have one or more majors who are under 18 years old.
7. Print the names and majors of students who are taking one of the College Geometry courses. (Hint: You'll need to use the "like" predicate and the string matching character in your query.)
8. For those departments that have no majors taking a College Geometry course, print the department name and the number of PhD students in the department.
9. Print the names of students who are taking both a Computer Sciences course and a Mathematics course.
10. Print the age difference between the oldest and youngest Computer Sciences major(s).
11. For each department that has one or more majors with a GPA under 1.0, print the name of the department and the average GPA of its majors.
12. Print the ids, names, and GPAs of the students who are currently taking all of the Civil Engineering courses.

3.0 What To Turn In

You are to hand in a script of a session on Sybase with your queries and the answers. As mentioned earlier, you can place all of your correct SQL queries together in one file. You can develop your query file with an editor in one window and pipe the file to the SQL interpreter after each change to see if the queries are correct or not. Or, you can develop the queries interactively within the SQL interpreter and access vi (by just typing vi) to correct errors in a query. However you do it, you should have the final queries in one query file. In the final run, you will start script to generate a script file and pipe the query file to the SQL interpreter. The queries and the results will be recorded in the script file which you will then hand in.