Polytechnic Institute of NYU
Computer Science and Engineering
CS 6083, Spring 2012

Some Schemas and Queries just for Practice

Schema 1: Consider a simple relational database schema for Career Services at a university, defined by the following five relations where the primary key in each relation is underlined:

student (sID, sName, major, gpa)
employer (eID, eName, location)
position (eID, pName, salary)
interview (eID, sID, pName, date, outcome)
courses (sID, course, grade)

Thus we have students with a unique student ID, a name, and their major and GPA. Employers have a unique employer ID, a name, and a location. A position offered by a company has a name (e.g., "Programmer #3") that is unique within this employer, and a salary. A student interviews with a company for a particular position on a particular date. The outcome of the interview can be that the company does not make an offer to the student (NOOFFER), or makes an offer that is not accepted (OFFER), or makes an offer that is accepted (HIRED). The database also keeps information about courses taken by each student, so that a company can, e.g., look for students that have taken databases. Write SQL commands for the queries below.

(1) List the student IDs off all students majoring in Computer Science.

(2) List the company name, position name, and salary of all positions offered by companies located in Chicago.

(2) List the names of all students who have taken the course "Database Systems".

(4) List all companies that have interviewed students majoring in Computer Science during 2011.

(5) For each major, output the employment rate, defined as # students hired / total # of students.

(6) List the name of the company that offers the highest salary for any position.

(7) List the company that offers the highest average salary for its positions.

(8) List the sID of any student who has never received an offer but has had at least 6 interviews.

(9) List any students who were interviewed by every single company.

(10) List students who were interviewed by "IBM" but never be interviewed by "Micro Software".

(11) List the student with the highest GPA that was hired by "Google".

(12) List the city (company location) with the most positions.

(13) Output the student who has the highest rate of job offers. (# of offer / # of interviews).

(14) List the company that students most often preferred over IBM. (We say that a student prefers company A over B if the student has offers from both companies and goes to company A.)

(15) For each major, output the average salary of the students.