Database System
Homework
(relational algebra)

1. Write the following queries in relational algebra, using the university schema.
1) Find the names of all students who have taken at least one Comp. Sci. course.
2) Find the IDs and names of all students who have not taken any course offering by department EE.
3) Find the ids of all instructors earning the highest salary.

2. Consider the relational database of the following schema:
   employee(**person_name**, street, city)
   works(**person_name, company_name**, salary)
   company(**company_name**, city)
   manages(**person_name**, manager_name)
   where the manager of an employee is also an employee.

   底線表示 primary key, 請注意 primary key 隱藏的資訊是屬性間組合的限制, 例如 manages(person_name, manager_name) 表示一個 person name 最多只有一個 manager，works(person_name, company_name, salary) 則隱含一個 worker 可能在多個公司有工作
   要弄清楚此關係, 所下的查詢才能確保找出正確的答案

1) Find the names of all employees who work for "First Bank Corporation".
2) Find the names and cities of residence of all employees who work for "First Bank Corporation".
3) Find the names, street addresses, and cities of residence of all employees who work for "First Bank Corporation" and earn more than $10000.
4) Find the names of all employees who live in the same city as that in which the company for which they work is located.
5) Find the names of all employees who live in the same city and on the same street as do their managers.
6) Find the names of all employees in the databases who do not work for "First Bank Corporation".
7) Find the names of all employees who earn more than every employee of "Small Bank Corporation".