2015150220 이윤수

Chapter3 - Lab
SQL Practice 2

Exercise1

A. Execute 'select * from instructor;' and 'select * from course;'

```
practice2=# select *
practice2-# from instructor;
   id  |    name    | dept_name  |  salary
-------+------------+------------+----------
 10101 | Srinivasan | Comp. Sci. | 65000.00
 12121 | Wu         | Finance    | 90000.00
 15151 | Mozart     | Music      | 40000.00
 22222 | Einstein   | Physics    | 95000.00
 32343 | El Said    | History    | 60000.00
 33456 | Gold       | Physics    | 87000.00
 45565 | Katz       | Comp. Sci. | 75000.00
 58583 | Califieri  | History    | 62000.00
 76543 | Singh      | Finance    | 80000.00
 76766 | Crick      | Biology    | 72000.00
 83821 | Brandt     | Comp. Sci. | 92000.00
 98345 | Kim        | Elec. Eng. | 80000.00
(12 rows)
```

```
practice2=# select *
practice2-# from course
practice2-# ;
 course_id |          title           | dept_name  | credits
-----------+--------------------------+------------+---------
 BIO-101   | Intro. to Biology        | Biology    |       4
 BIO-301   | Genetics                 | Biology    |       4
 BIO-399   | Computational Biology    | Biology    |       3
 CS-101    | Intro. to Computer Science | Comp. Sci. |     4
 CS-190    | Game Design              | Comp. Sci. |       4
 CS-315    | Robotics                 | Comp. Sci. |       3
 CS-319    | Image Processing         | Comp. Sci. |       3
 CS-347    | Database System Concepts | Comp. Sci. |       3
 EE-181    | Intro. to Digital Systems | Elec. Eng. |      3
 FIN-201   | Investment Banking       | Finance    |       3
 HIS-351   | World History            | History    |       3
 MU-199    | Music Video Production   | Music      |       3
 PHY-101   | Physical Principles      | Physics    |       4
(13 rows)
```

B. Increase the salary of each instructor in the Comp. Sci. Department by 10%.

```
practice2=# update instructor
practice2-# set salary = salary * 1.1
practice2-# where dept_name = 'Comp. Sci.';
UPDATE 3
```

C.Delete all courses that have never been offered (i.e., do not occur in the section relation).

```
practice2=# delete from course
where course_id not in (
select course_id
from section
);
DELETE 1
```

D. Insert every student whose tot_cred attribute is greater than 100 as an instructor in the same department, with a salary of $10,000.

```
practice2=# insert into instructor
practice2-# select id, name, dept_name, 10000
practice2-# from student
practice2-# where tot_cred > 100;
INSERT 0 3
```

E. Execute 'select * from instructor;' and 'select * from course;'

```
practice2=# select *
from instructor;
   id  |    name    | dept_name  |  salary
-------+------------+------------+-----------
 12121 | Wu         | Finance    |  90000.00
 15151 | Mozart     | Music      |  40000.00
 22222 | Einstein   | Physics    |  95000.00
 32343 | El Said    | History    |  60000.00
 33456 | Gold       | Physics    |  87000.00
 58583 | Califieri  | History    |  62000.00
 76543 | Singh      | Finance    |  80000.00
 76766 | Crick      | Biology    |  72000.00
 98345 | Kim        | Elec. Eng. |  80000.00
 10101 | Srinivasan | Comp. Sci. |  71500.00
 45565 | Katz       | Comp. Sci. |  82500.00
 83821 | Brandt     | Comp. Sci. | 101200.00
 00128 | Zhang      | Comp. Sci. |  10000.00
 23121 | Chavez     | Finance    |  10000.00
 98988 | Tanaka     | Biology    |  10000.00
(15 rows)
```

```
practice2=# select * from course;
 course_id |          title           | dept_name  | credits
-----------+--------------------------+------------+---------
 BIO-101   | Intro. to Biology        | Biology    |       4
 BIO-301   | Genetics                 | Biology    |       4
 CS-101    | Intro. to Computer Science | Comp. Sci. |     4
 CS-190    | Game Design              | Comp. Sci. |       4
 CS-315    | Robotics                 | Comp. Sci. |       3
 CS-319    | Image Processing         | Comp. Sci. |       3
 CS-347    | Database System Concepts | Comp. Sci. |       3
 EE-181    | Intro. to Digital Systems | Elec. Eng. |      3
 FIN-201   | Investment Banking       | Finance    |       3
 HIS-351   | World History            | History    |       3
 MU-199    | Music Video Production   | Music      |       3
 PHY-101   | Physical Principles      | Physics    |       4
(12 rows)
```

Exercise2

A. Find the ID, name, city, and street of each employee who works for "First Bank Corporation".

```
practice2=# select *
from employee
where id in (
select id
from works
where company_name='First Bank Corporation'
);
  id   | person_name | street |    city
-------+-------------+--------+------------
 12345 | Adams       | Spring | Pittsfield
 22222 | Curry       | North  | Rye
 77777 | Jones       | Main   | Harrison
(3 rows)
```

B. Find the ID, name, city, and street of each employee who works for "First Bank Corporation" and earns more than $10000.

```
practice2=# select *
from employee
where id in (
select id
from works
where company_name='First Bank Corporation' and salary > 10000
);
  id   | person_name | street |    city
-------+-------------+--------+------------
 12345 | Adams       | Spring | Pittsfield
 22222 | Curry       | North  | Rye
(2 rows)
```

C. Find the ID of each employee who does not work for "First Bank Corporation".

```
practice2=# select id from employee where id not in (
practice2(# select id from works where company_name = 'First Bank Corporation'
practice2(# );
  id
-------
 11111
 33333
 44444
 55555
 66666
 88888
 99999
 00000
 54321
(9 rows)
```

D. Find the ID of each employee who earns more than every employee of "Small Bank Corporation".

```
practice2=# select id
from works
where salary > all (select salary from works where company_name = 'Small Bank Corporation');
  id
-------
 11111
 22222
 33333
 44444
 55555
 99999
 54321
(7 rows)
```

E. Find the name of each company that is in the city of "Small Bank Corporation" is located.

```
practice2=# select company_name
from company
where city = (select city from company where company_name = 'Small Bank Corporation');
      company_name
------------------------
 First Bank Corporation
 Small Bank Corporation
(2 rows)
```

F. Find the name of the company that has the most employees (or companies, in the case where there is a tie for the most).

```
practice2=# with num_employees(company_name, num) as (select company_name, count(id) from works
group by company_name),
num_employees_max(value) as (select max(num) from num_employees)
select company_name
from num_employees, num_employees_max
where num_employees.num = num_employees_max.value;
      company_name
---------------------
 Big Bank Corporation
(1 row)
```

G. Find the name of each company whose employees earn a higher salary, on average, than the average salary at "First Bank Corporation".

```
practice2=# with avg_salary(company_name, avg_salary) as
(select company_name, avg(salary)
from works
group by company_name),
avg_salary_FirstBank(value) as
(select avg_salary from avg_salary where company_name = 'First Bank Corporation')
select company_name
from avg_salary, avg_salary_FirstBank
where avg_salary.avg_salary > avg_salary_FirstBank.value;
      company_name
------------------------
 Second Bank Corporation
 Big Bank Corporation
(2 rows)
```