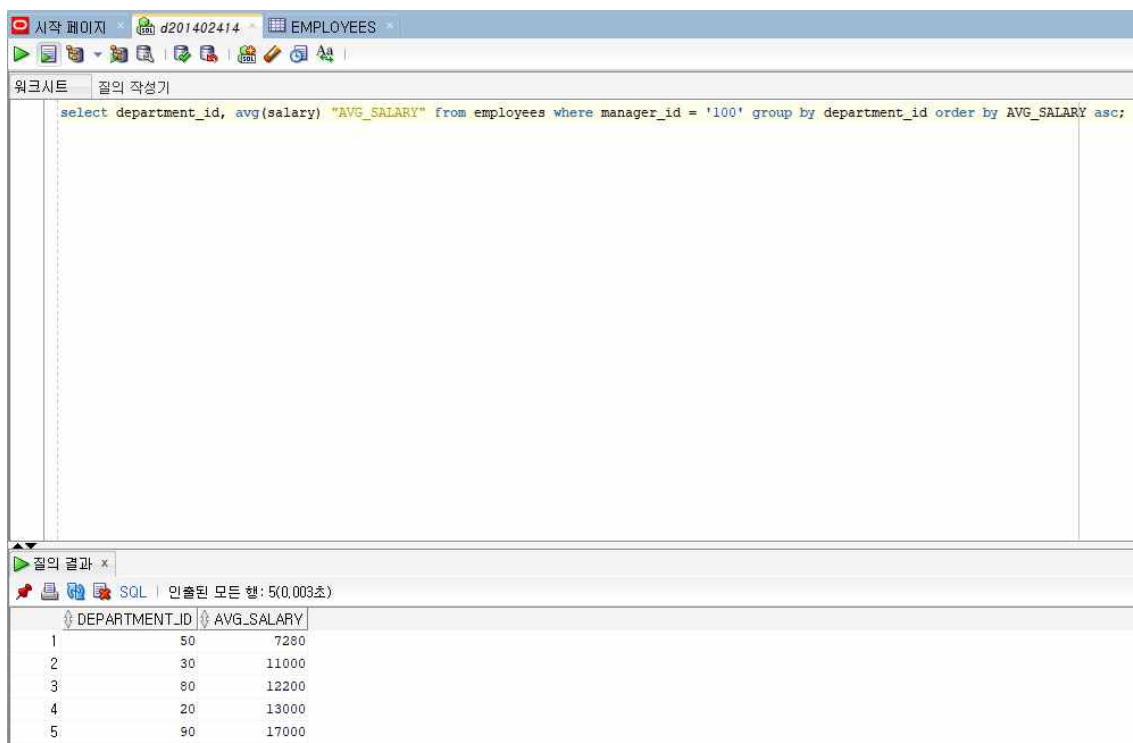


데이터베이스설계 Q4

문제 1) 사원 'Steven King' 이 관리하는 직원들에 대해 소속된 부서별로 평균 월급을 출력하시오. (단, 검색 결과는 평균 월급에 대한 오름차순으로 정렬하고, 평균 급여에 대한 항목 이름은 'AVG_SALARY'로 표시한다.)



The screenshot shows a SQL query execution window with the following query:

```
select department_id, avg(salary) "AVG_SALARY" from employees where manager_id = '100' group by department_id order by AVG_SALARY asc;
```

The results are displayed in a table with 5 rows and 3 columns: DEPARTMENT_ID, AVG_SALARY, and an unnamed column for the count of rows.

DEPARTMENT_ID	AVG_SALARY	인출된 모든 행: 5(0.003초)
50	7280	1
30	11000	2
80	12200	3
20	13000	4
90	17000	5

문제 2) 'United States of America'에 위치한 부서에서 근무하는 직원들의 first_name, last_name, department_name, city를 검색하시오.
(단, 검색 조건으로 'US'가 아닌 'United States of America'를 사용한다.)

The screenshot shows a SQL query in a database client window. The query is as follows:

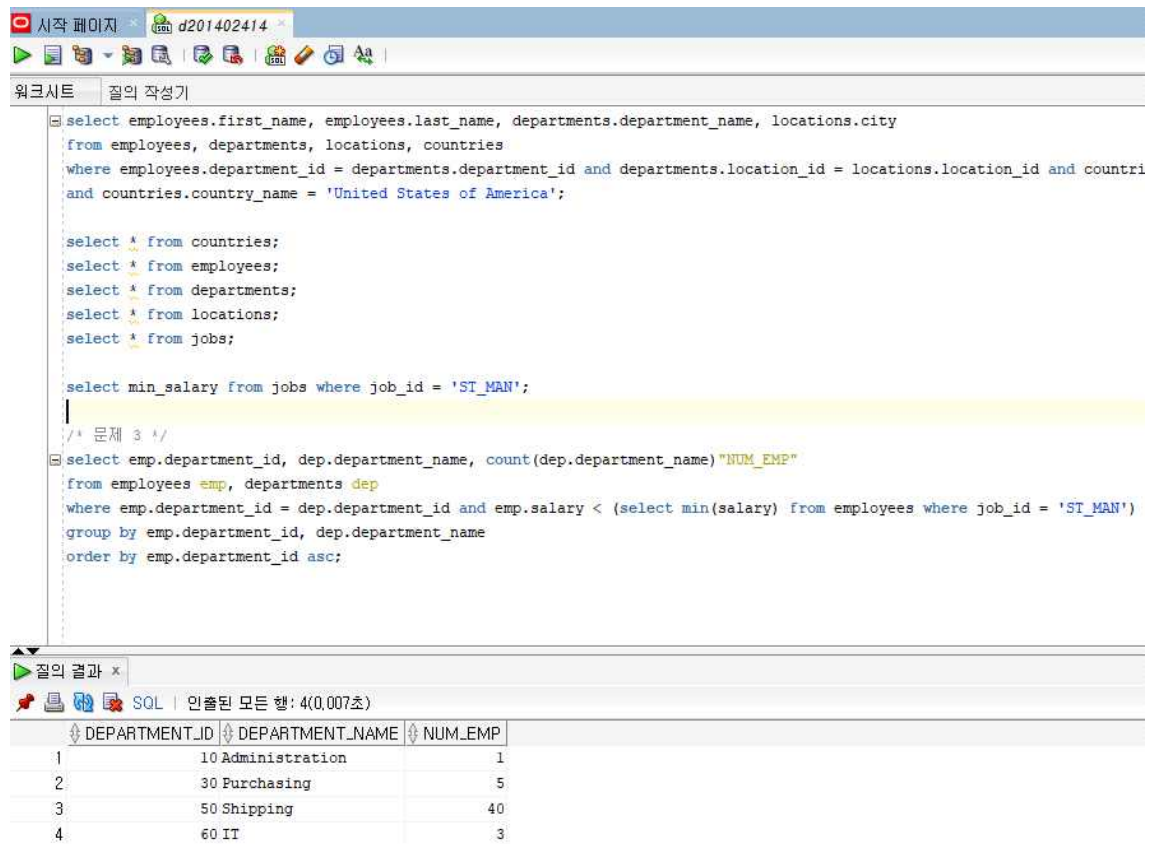
```
select employees.first_name, employees.last_name, departments.department_name, locations.city
from employees, departments, locations, countries
where employees.department_id = departments.department_id and departments.location_id = locations.location_id and countries.country_id = locations.country_id
and countries.country_name = 'United States of America';

select * from countries;
select * from employees;
select * from departments;
select * from locations;
```

Below the query, the results of the first query are displayed in a table. The table has four columns: FIRST_NAME, LAST_NAME, DEPARTMENT_NAME, and CITY. There are 25 rows of data.

FIRST_NAME	LAST_NAME	DEPARTMENT_NAME	CITY
1 Alexander	Hunold	IT	Southlake
2 Bruce	Ernst	IT	Southlake
3 David	Austin	IT	Southlake
4 Valli	Pataballa	IT	Southlake
5 Diana	Lorentz	IT	Southlake
6 Matthew	Weiss	Shipping	South San Francisco
7 Adam	Fripp	Shipping	South San Francisco
8 Payam	Kaufling	Shipping	South San Francisco
9 Shanta	Vollman	Shipping	South San Francisco
10 Kevin	Mourgos	Shipping	South San Francisco
11 Julia	Nayer	Shipping	South San Francisco
12 Irene	Mikkilineni	Shipping	South San Francisco
13 James	Landry	Shipping	South San Francisco
14 Steven	Markle	Shipping	South San Francisco
15 Laura	Bissot	Shipping	South San Francisco
16 Mozhe	Atkinson	Shipping	South San Francisco
17 James	Marlow	Shipping	South San Francisco
18 TJ	Olson	Shipping	South San Francisco
19 Jason	Mallin	Shipping	South San Francisco
20 Michael	Rogers	Shipping	South San Francisco
21 Ki	Gee	Shipping	South San Francisco
22 Hazel	Philtanker	Shipping	South San Francisco
23 Renske	Ladwig	Shipping	South San Francisco
24 Stephen	Stiles	Shipping	South San Francisco
25 John	Seo	Shipping	South San Francisco

문제 3) 직업 id가 'ST_MAN'인 사원들의 최저 월급보다 적게 받는 사원들이 몇 명이 되는지를 부서 id와 부서 이름별로 구분하여 출력하시오.
(단, 검색 결과는 부서 ID에 대한 오름차순으로 정렬하고, 사원의 수는 'NUM_EMP'로 표시한다.)



The screenshot shows a SQL IDE window with a query editor and a results pane. The query editor contains the following SQL code:

```
select employees.first_name, employees.last_name, departments.department_name, locations.city
from employees, departments, locations, countries
where employees.department_id = departments.department_id and departments.location_id = locations.location_id and countries.country_name = 'United States of America';

select * from countries;
select * from employees;
select * from departments;
select * from locations;
select * from jobs;

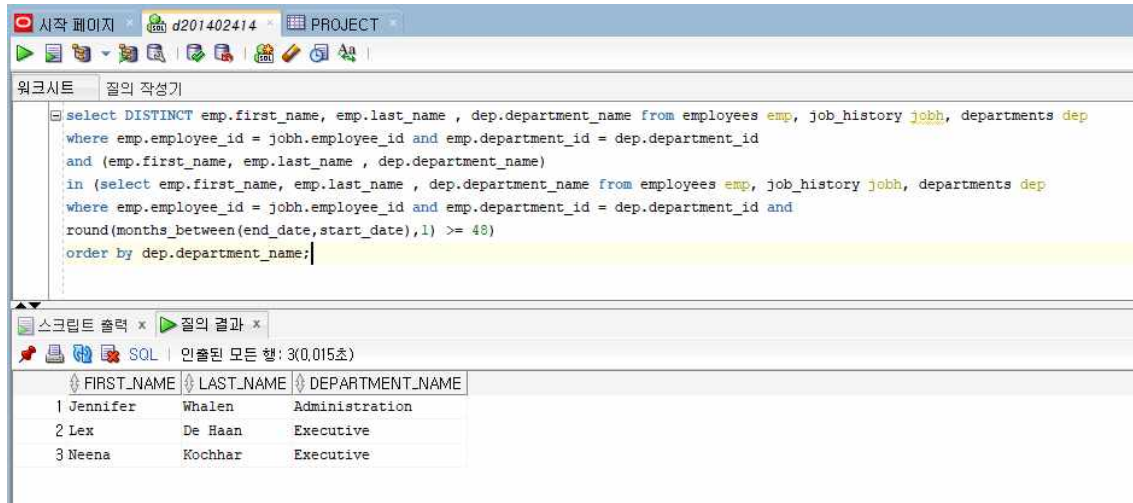
select min_salary from jobs where job_id = 'ST_MAN';

/* 문제 3 */
select emp.department_id, dep.department_name, count(dep.department_name) "NUM_EMP"
from employees emp, departments dep
where emp.department_id = dep.department_id and emp.salary < (select min(salary) from employees where job_id = 'ST_MAN')
group by emp.department_id, dep.department_name
order by emp.department_id asc;
```

The results pane shows the output of the query, displaying a table with 4 rows and 3 columns: DEPARTMENT_ID, DEPARTMENT_NAME, and NUM_EMP.

DEPARTMENT_ID	DEPARTMENT_NAME	NUM_EMP
1	10 Administration	1
2	30 Purchasing	5
3	50 Shipping	40
4	60 IT	3

문제 4) 부서를 변경하거나 부서 내에서 직무를 변경하여 근무한 기간이 48개월 이상인 근무 이력을 가지는 사원들의 first_name, last_name과 소속 부서를 출력하시오.
(단, 부속 질의어인 'In'을 사용하여 작성한다.)



The screenshot shows a SQL IDE window with a query editor and a results pane. The query is as follows:

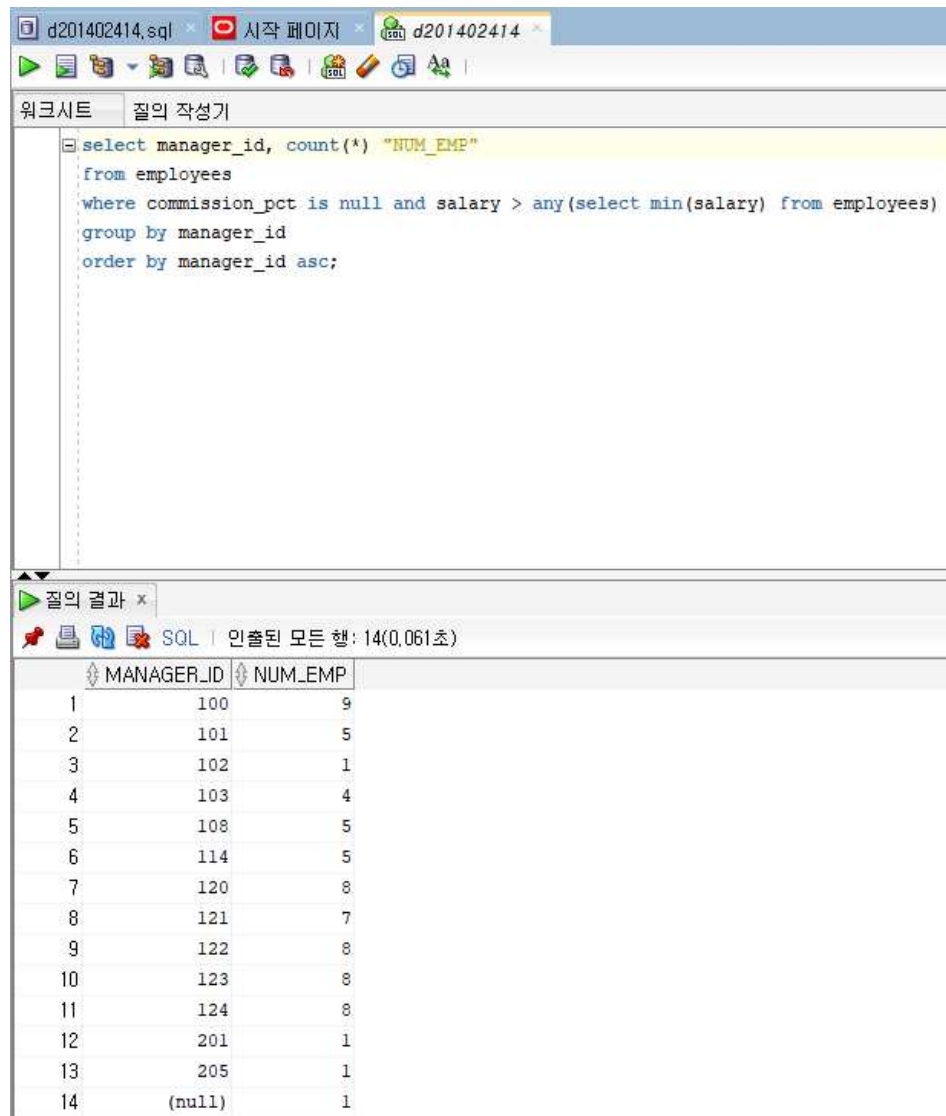
```
select DISTINCT emp.first_name, emp.last_name , dep.department_name from employees emp, job_history jobh, departments dep
where emp.employee_id = jobh.employee_id and emp.department_id = dep.department_id
and (emp.first_name, emp.last_name , dep.department_name)
in (select emp.first_name, emp.last_name , dep.department_name from employees emp, job_history jobh, departments dep
where emp.employee_id = jobh.employee_id and emp.department_id = dep.department_id and
round(months_between(end_date,start_date),1) >= 48)
order by dep.department_name;
```

The results pane shows the following data:

	FIRST_NAME	LAST_NAME	DEPARTMENT_NAME
1	Jennifer	Whalen	Administration
2	Lex	De Haan	Executive
3	Neena	Kochhar	Executive

문제 5) 'commission_pct' 값이 없는 직원을 한 명이라도 가지고 있는 관리자 ID와 'commission_pct' 값이 없는 사원의 수를 출력하시오.

(단, 검색 결과는 관리자 ID별로 구분하고 관리자 ID에 대한 오름차순으로 정렬한다. 사원의 수는 'NUM_EMP'로 표시한다. 부속질의어인 'ALL'이나 'ANY'를 사용하여 작성한다.)



The screenshot shows a SQL IDE window with a query editor and a results pane. The query editor contains the following SQL code:

```
select manager_id, count(*) "NUM_EMP"
from employees
where commission_pct is null and salary > any(select min(salary) from employees)
group by manager_id
order by manager_id asc;
```

The results pane shows the output of the query, which is a table with two columns: MANAGER_ID and NUM_EMP. The table contains 14 rows of data, sorted by MANAGER_ID in ascending order.

MANAGER_ID	NUM_EMP
1	100
2	101
3	102
4	103
5	108
6	114
7	120
8	121
9	122
10	123
11	124
12	201
13	205
14	(null)