

SQL Exercise

Data Intelligence and Learning ([DIAL](#)) Lab

Prof. Jongwuk Lee

1. Creating Tables

- Create the following tables: EMP, DEPT, BONUS, SALGRADE, DUMMY. (아래의 테이블을 생성하시오.)

EMP

Field	Type	Null	Key	Default	Extra
EMPNO	int(4)	NO		NULL	
ENAME	varchar(10)	YES		NULL	
JOB	varchar(9)	YES		NULL	
MGR	int(4)	YES		NULL	
HIREDATE	date	YES		NULL	
SAL	decimal(7,2)	YES		NULL	
COMM	decimal(7,2)	YES		NULL	
DEPTNO	int(2)	YES		NULL	

DEPT

Field	Type	Null	Key	Default	Extra
DEPTNO	int(2)	YES		NULL	
DNAME	varchar(14)	YES		NULL	
LOC	varchar(13)	YES		NULL	

BONUS

Field	Type	Null	Key	Default	Extra
ENAME	varchar(10)	YES		NULL	
JOB	varchar(9)	YES		NULL	
SAL	int(11)	YES		NULL	
COMM	int(11)	YES		NULL	

SALGRADE

Field	Type	Null	Key	Default	Extra
GRADE	int(11)	YES		NULL	
LOSAL	int(11)	YES		NULL	
HISAL	int(11)	YES		NULL	

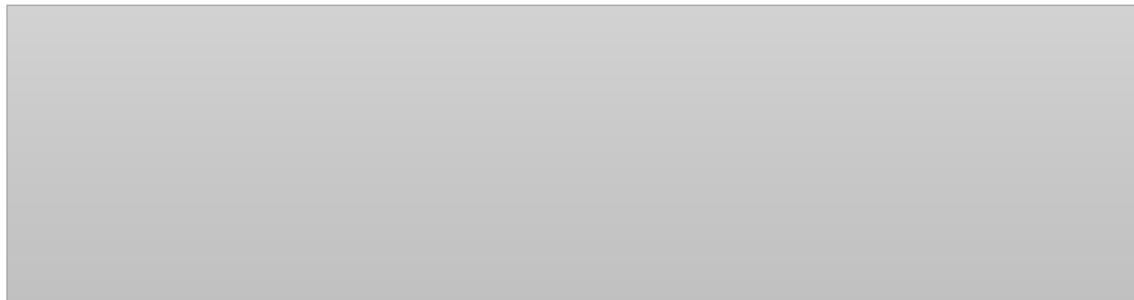
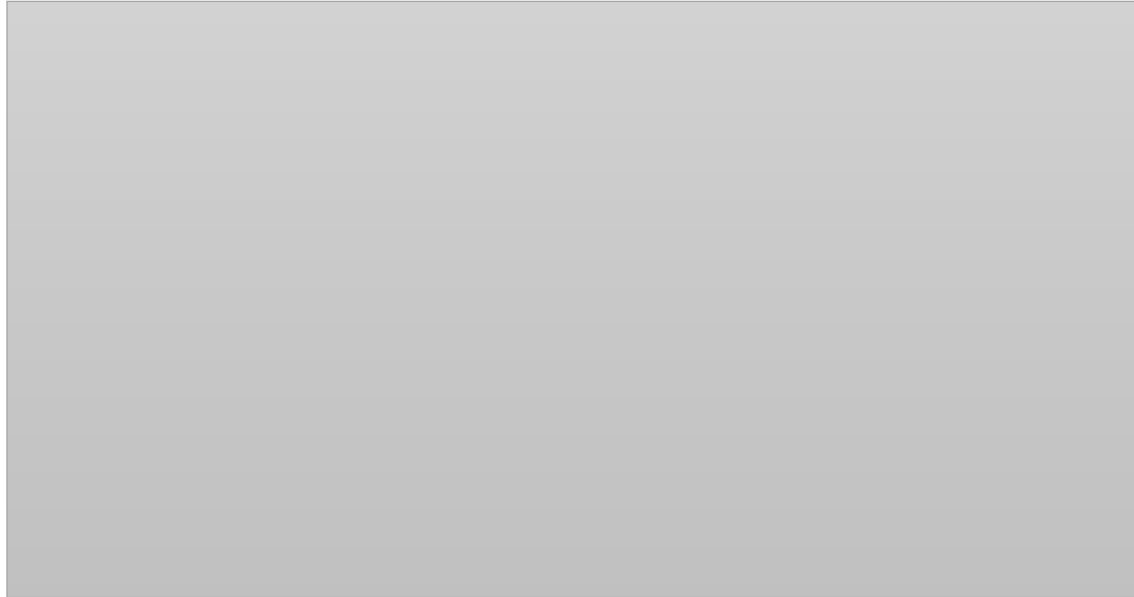
DUMMY

Field	Type	Null	Key	Default	Extra
DUMMY	int(11)	YES		NULL	

1. Creating Tables



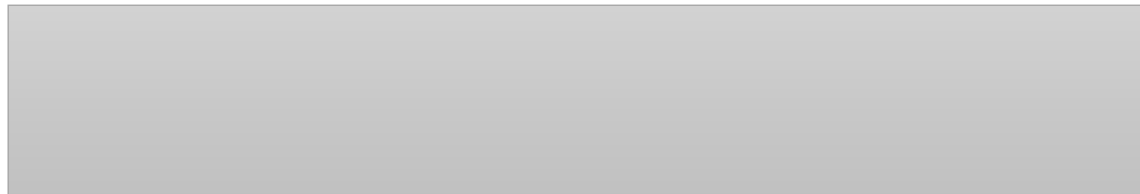
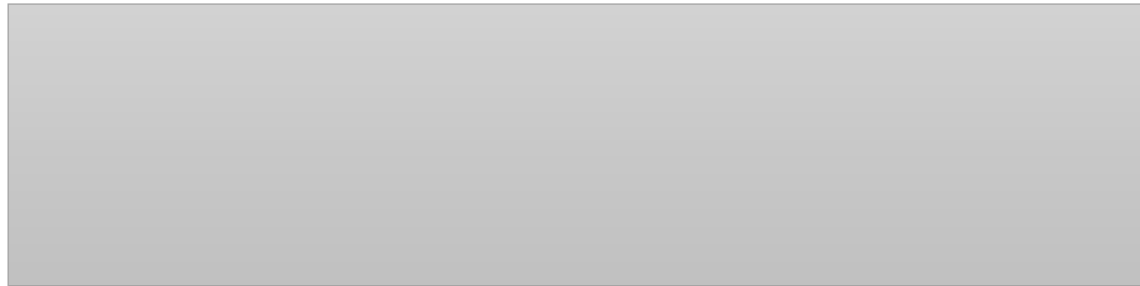
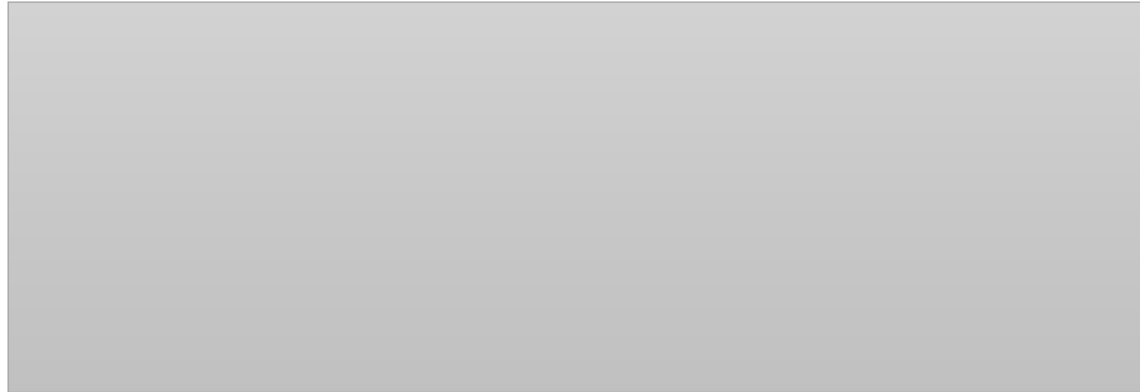
➤ SQL



1. Creating Tables



➤ SQL



2. Adding Tuples for Each Table

- Inserting the following tuples for each table
(각 테이블에 아래의 튜플을 추가하시오.)

EMP

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	1980-12-17	800.00	NULL	20
7499	ALLEN	SALESMAN	7698	1981-02-20	1600.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-22	1250.00	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	1250.00	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	MANAGER	7839	1981-06-09	2450.00	NULL	10
7788	SCOTT	ANALYST	7566	1987-04-19	3000.00	NULL	20
7839	KING	PRESIDENT	NULL	1981-11-17	5000.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1500.00	0.00	30
7876	ADAMS	CLERK	7788	1987-05-23	1100.00	NULL	20
7900	JAMES	CLERK	7698	1981-12-03	950.00	NULL	30
7902	FORD	ANALYST	7566	1981-12-03	3000.00	NULL	20
7934	MILLER	CLERK	7782	1982-01-23	1300.00	NULL	10

DEPT

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON

2. Adding Tuples for Each Table

- Inserting the following tuples for each table
(각 테이블에 아래의 튜플을 추가하시오.)

SALGRADE

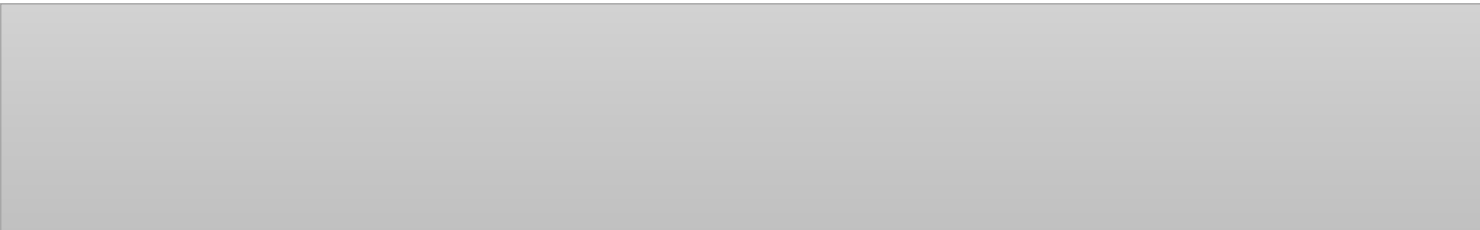
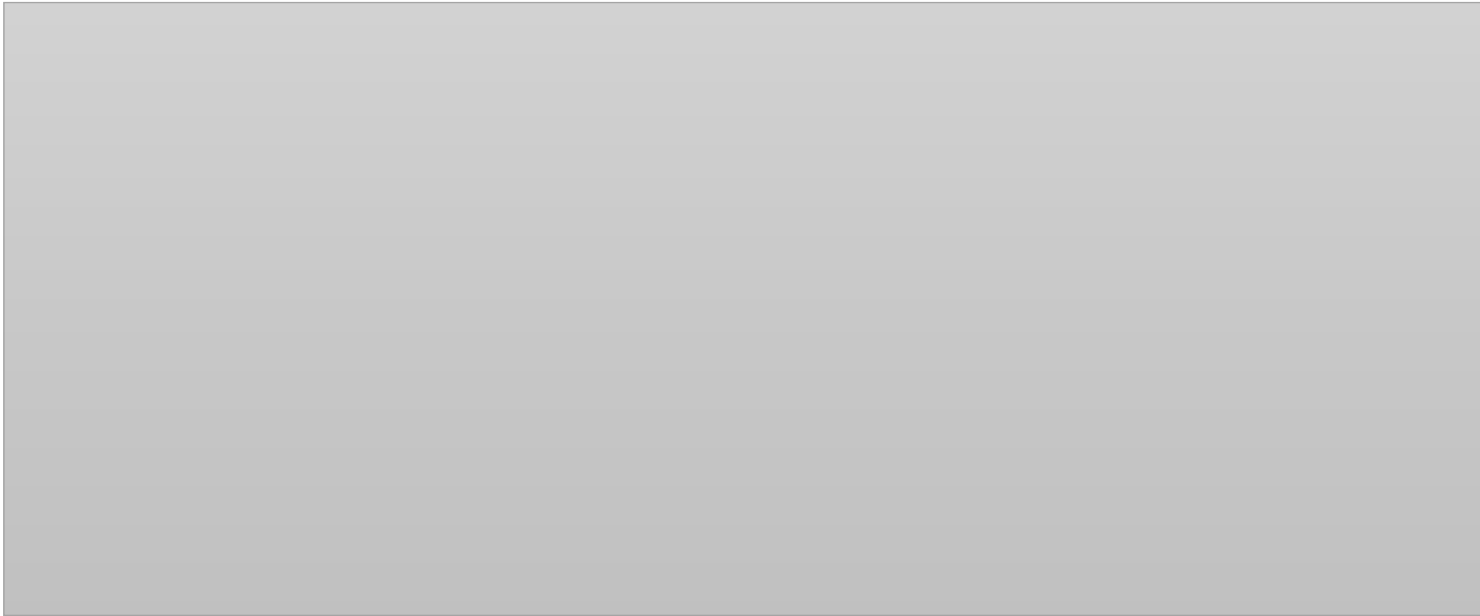
GRADE	LOSAL	HISAL
1	700	1200
2	1201	1400
3	1401	2000
4	2001	3000
5	3001	9999

DUMMY

DUMMY
0

2. Adding Tuples for Each Table

➤ SQL



2. Adding Tuples for Each Table

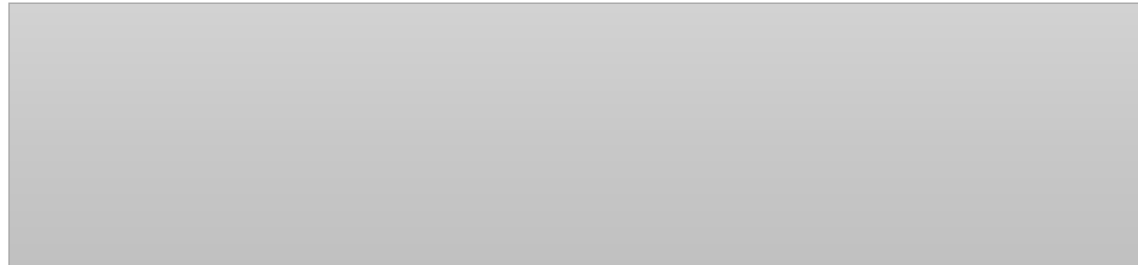


➤ SQL

3. Finding Locations of Emps

- Finding empno, name, and location for each employee.
(모든 사원의 사번, 사원명, 근무지를 찾으시오.)

- SQL



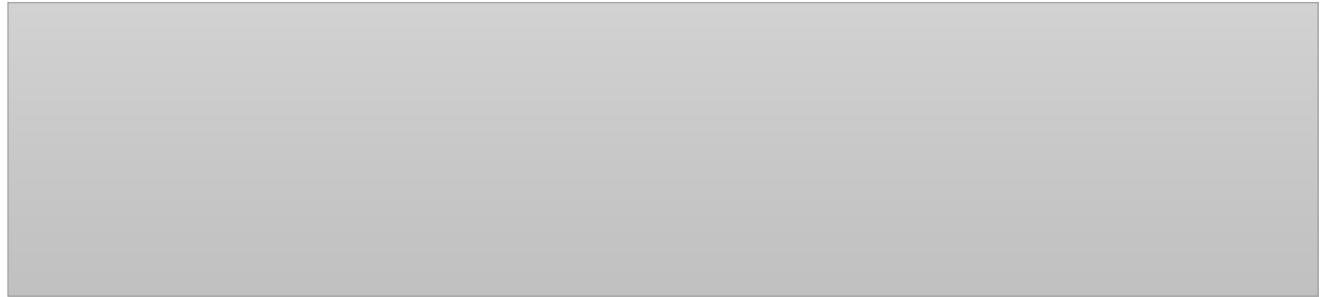
- Results

empno	ename	loc
7369	SMITH	DALLAS
7499	ALLEN	CHICAGO
7521	WARD	CHICAGO
7566	JONES	DALLAS
7654	MARTIN	CHICAGO
7698	BLAKE	CHICAGO
7782	CLARK	NEW YORK
7788	SCOTT	DALLAS
7839	KING	NEW YORK
7844	TURNER	CHICAGO
7876	ADAMS	DALLAS
7900	JAMES	CHICAGO
7902	FORD	DALLAS
7934	MILLER	NEW YORK

4. Finding Salary Grades of Emps

- Finding empno, name, and salary grade for each employee.
(모든 사원의 사번, 사원명, 봉급 등급을 찾으시오.)

- SQL



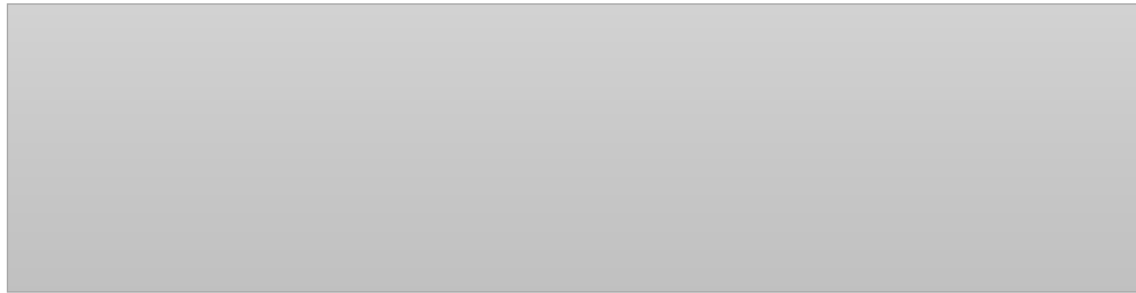
- Results

empno	ename	grade
7369	SMITH	1
7499	ALLEN	3
7521	WARD	2
7566	JONES	4
7654	MARTIN	2
7698	BLAKE	4
7782	CLARK	4
7788	SCOTT	4
7839	KING	5
7844	TURNER	3
7876	ADAMS	1
7900	JAMES	1
7902	FORD	4
7934	MILLER	2

5. Finding Emps with a Salary

- Finding employees whose salaries are not in 800 and 1500.
(급여가 800 ~ 1500 이외의 직원들의 이름과 급여를 찾으시오.)

- SQL



- Results

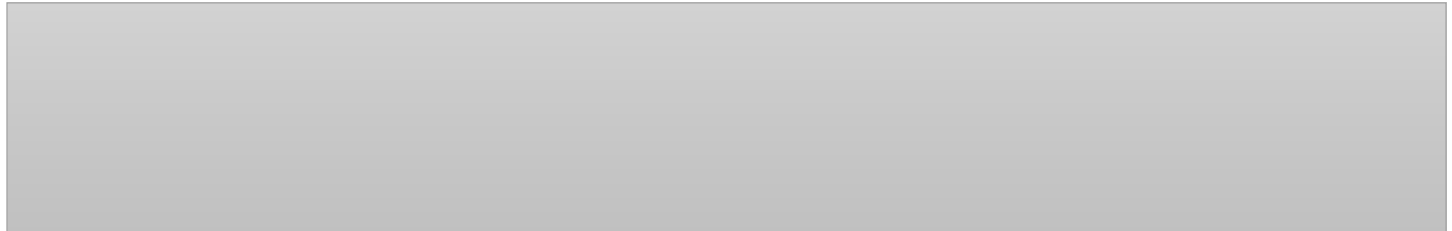
ename	sal
ALLEN	1600.00
JONES	2975.00
BLAKE	2850.00
CLARK	2450.00
SCOTT	3000.00
KING	5000.00
FORD	3000.00

6. Finding Emps with a Salary

- Finding employees whose job is same as 7844 and the salary is more than 1400.

(사번이 7844인 사원과 같은 직업을 갖고 급여가 1400 이상인 사원의 이름을 찾으시오.)

- SQL



- Results

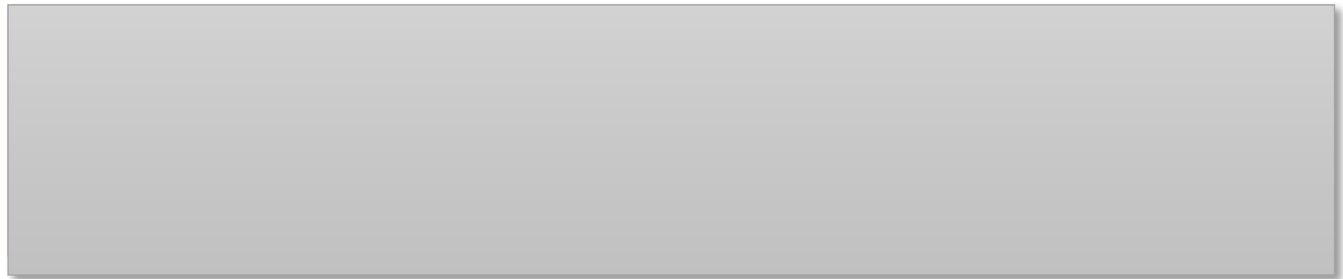
ename
ALLEN
TURNER

7. Finding Emps with a Salary Grade



- Finding employees whose salary grades are not in 4 and 5.
(급여 등급이 4 ~ 5등급 이외의 직원들을 찾으시오.)

- SQL



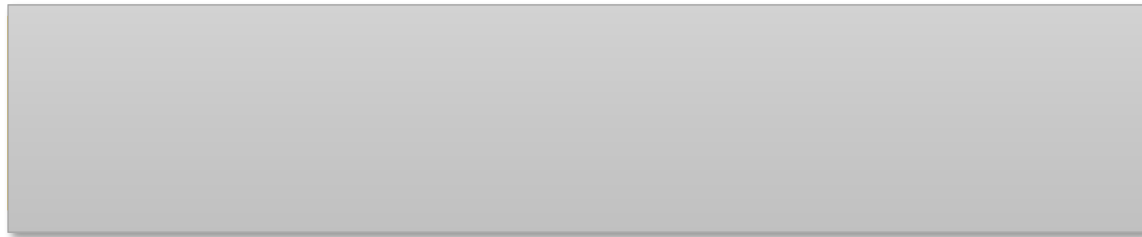
- Results

empno	ename	grade
7369	SMITH	1
7499	ALLEN	3
7521	WARD	2
7654	MARTIN	2
7844	TURNER	3
7876	ADAMS	1
7900	JAMES	1
7934	MILLER	2

8. Finding Emps with Commissions

- Finding employees who has commissions.
(커미션을 가진 직원들을 찾으시오.)

- SQL



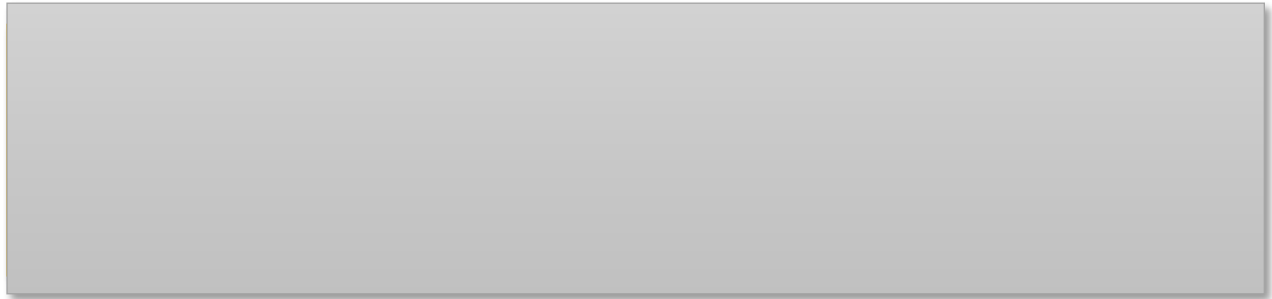
- Results

empno	ename	comm
7499	ALLEN	300.00
7521	WARD	500.00
7654	MARTIN	1400.00
7844	TURNER	0.00

9. Finding Emps before King

- Finding employees who work before King.
(사원 '킹' 전에 입사한 사원들을 찾으시오.)

- SQL



- Results

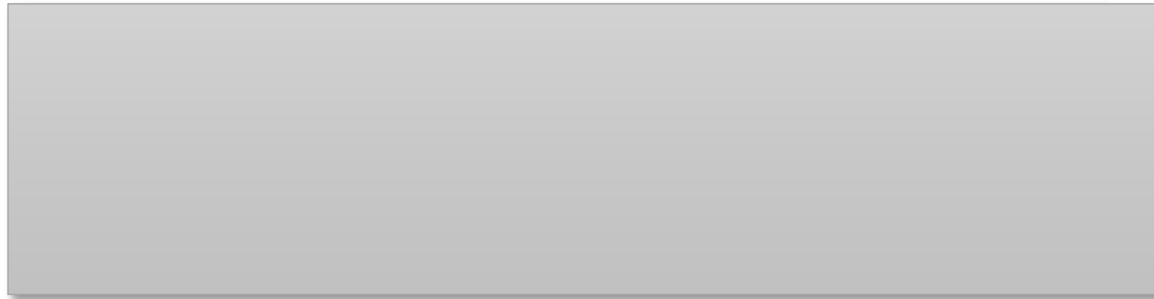
ename
JONES
BLAKE
CLARK

10. Finding the Mangers of Emps

➤ Finding the manager of employee 7788.

(사번 7788을 가진 사원의 직속 사원을 찾으시오.)

➤ SQL



➤ Results

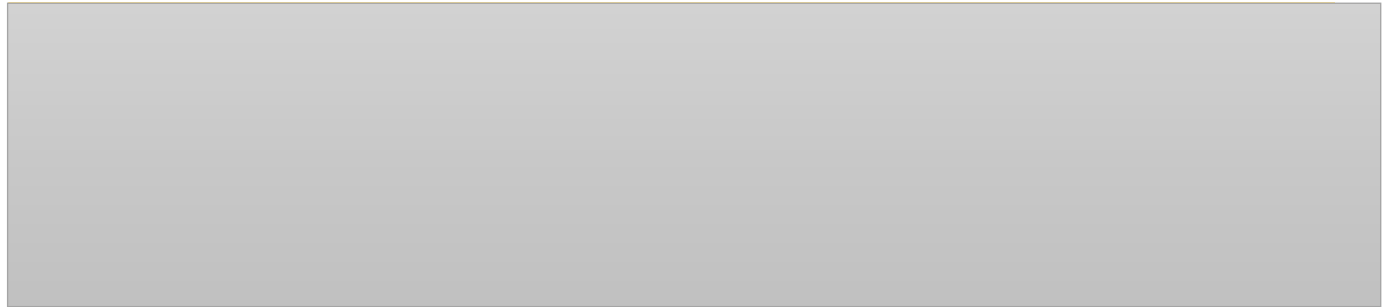
ename	ename
SCOTT	JONES

11. Finding the Mangers of Emps

➤ Finding the manager X of employee 7788 and X's manager.

(사번 7788의 직속상사의 이름과 직속상사의 직속상사의 이름을 찾으시오.)

➤ SQL



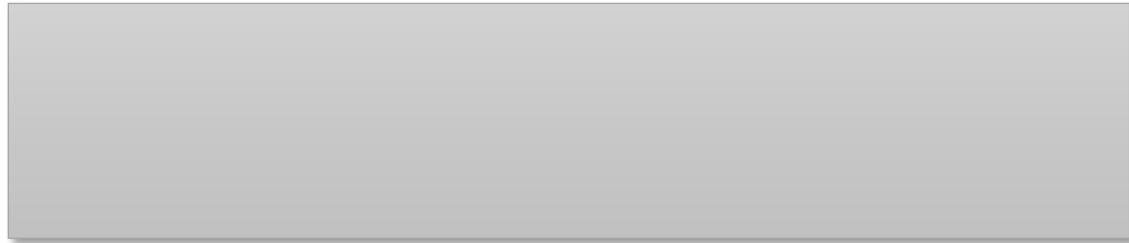
➤ Results

ename	ename	ename
SCOTT	JONES	KING

12. Finding Emps Managed

- Finding employees who are managed by 7839.
(사번 7839의 직속 부하 직원을 찾으시오.)

- SQL



- Results

ename
JONES
BLAKE
CLARK

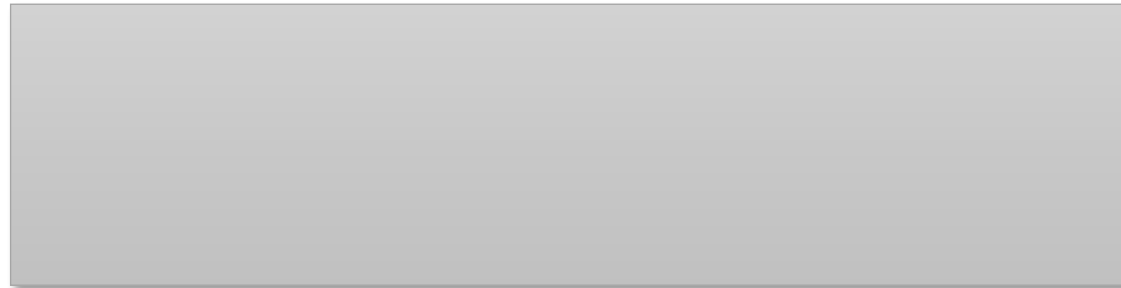
13. Name of Managers for Each Dept



- Finding the name of managers for each department. Print all departments although the manager does not exist.

(부서별 매니저 직종을 가진 사원명을 찾으시오. 매니저 직종이 존재하지 않은 부서의 경우, 빈 값을 출력하시오.)

- SQL



- Results

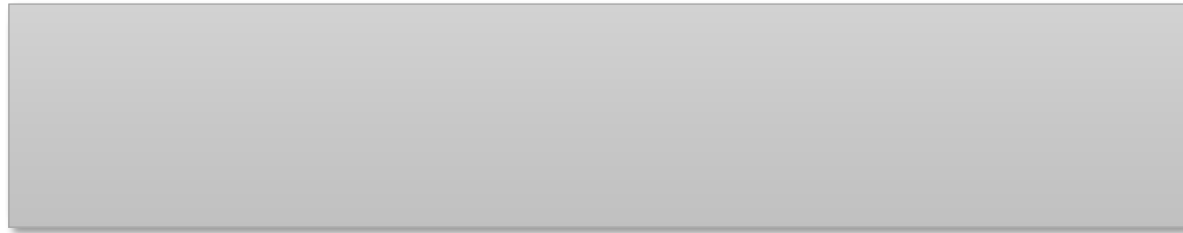
dname	ename
RESEARCH	JONES
SALES	BLAKE
ACCOUNTING	CLARK
OPERATIONS	NULL

14. Employees and Their Managers

- Finding the name of employees and their managed employees in sequence.

(사원들의 이름과 사원들의 직속 부하 직원의 이름을 쌍으로 출력하시오.)

- SQL



- Results

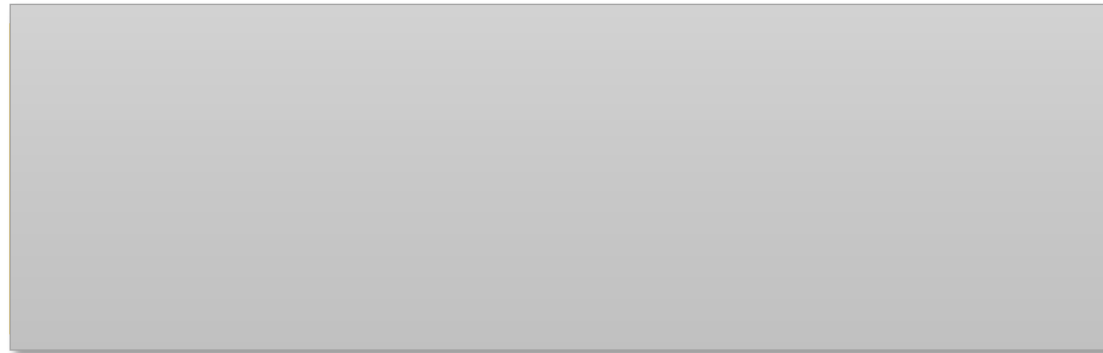
senior	junior
FORD	SMITH
BLAKE	ALLEN
BLAKE	WARD
KING	JONES
BLAKE	MARTIN
KING	BLAKE
KING	CLARK
JONES	SCOTT
BLAKE	TURNER
SCOTT	ADAMS
BLAKE	JAMES
JONES	FORD
CLARK	MILLER
SMITH	NULL
ALLEN	NULL
WARD	NULL
MARTIN	NULL
TURNER	NULL
ADAMS	NULL
JAMES	NULL
MILLER	NULL

15. Emps with No Managed Emps

- Finding the employees that does not have employees to be managed.

(직속 부하직원이 없는 사람을 찾으시오.)

- SQL



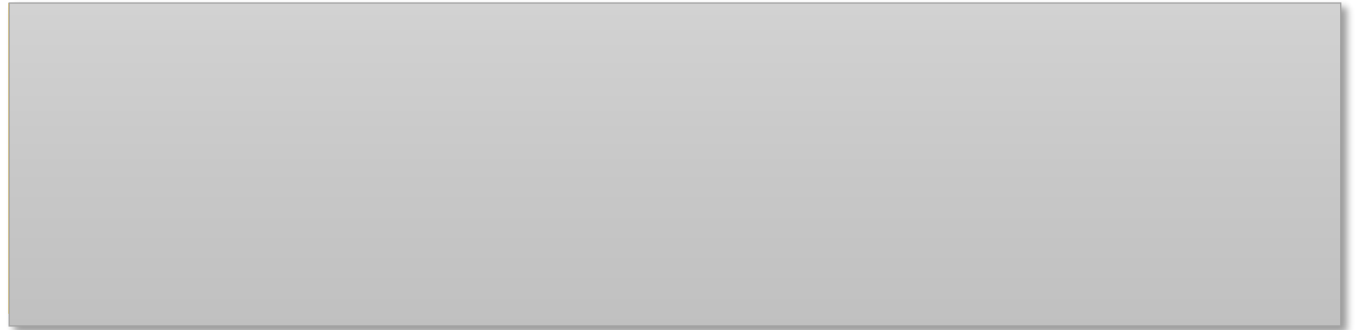
- Results

ename
SMITH
ALLEN
WARD
MARTIN
TURNER
ADAMS
JAMES
MILLER

16. Department for President

- Finding the department that have the president.
(President가 존재하는 부서를 찾으시오.)

- SQL



- Results

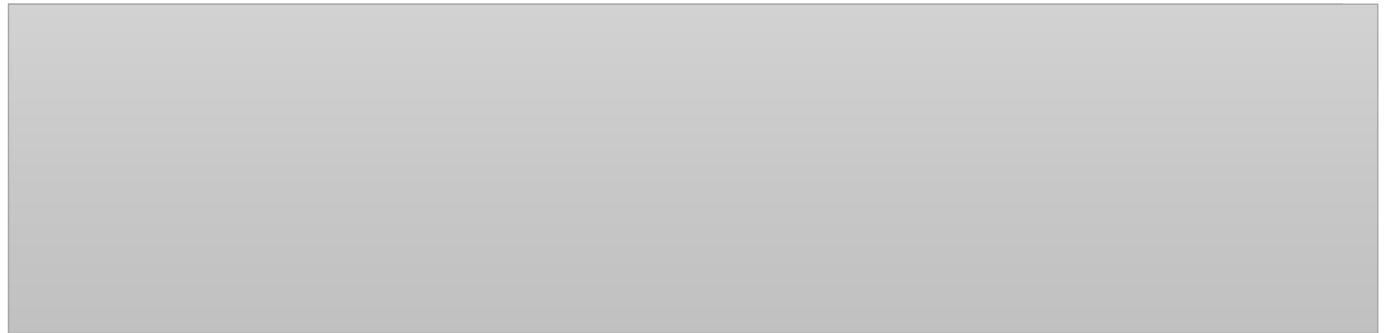
dname
ACCOUNTING

17. Department with Mangers

- Finding the departments that have employees but do not have the president.

(번역: 사원이 존재하는 부서 중에서 PRESIDENT가 존재하지 않는 부서들의 이름을 찾으시오.)

- SQL



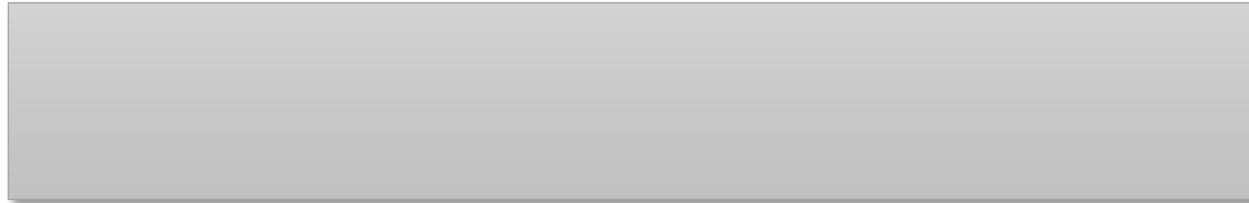
- Results

dname
RESEARCH
SALES

18. Finding Min/Max Hire Dates

- Finding the minimum and maximum hire dates for employees.
(전체 직원들의 가장 빠른 고용일과 가장 느린 고용일을 찾으시오.)

- SQL



- Results

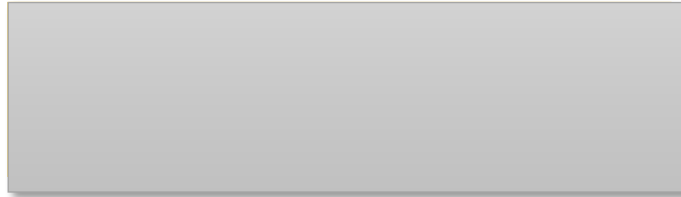
MAX(HIREDATE)	MIN(HIREDATE)
1987-05-23	1980-12-17

19. Finding Sum of Salaries Per Dept



- Finding the sum of salaries per department.
(부서별 급여의 총액을 찾으시오.)

- SQL



- Results

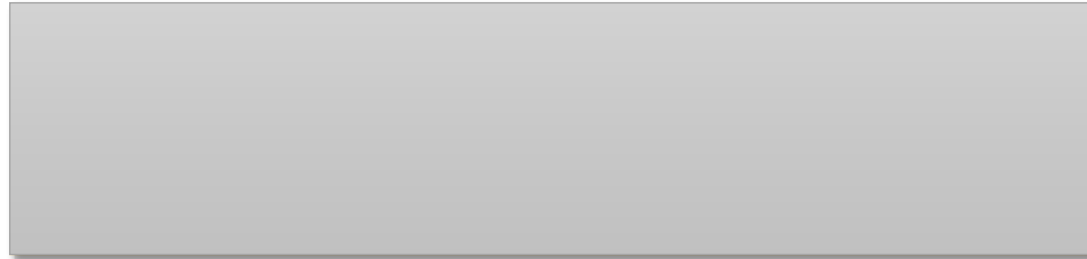
deptno	sum(sal)
20	10875.00
30	9400.00
10	8750.00

20. Average Salary Per Location

➤ Finding an average salary per location.

(근무지별 평균 급여를 찾으시오.)

➤ SQL



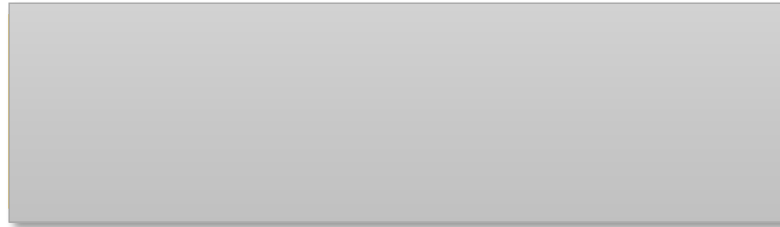
➤ Results

loc	avg(emp.sal)
DALLAS	2175.000000
CHICAGO	1566.666667
NEW YORK	2916.666667

21. Average Salary Per Job

- Finding an average salary per job.
(직종별 평균 급여를 찾으시오.)

- SQL



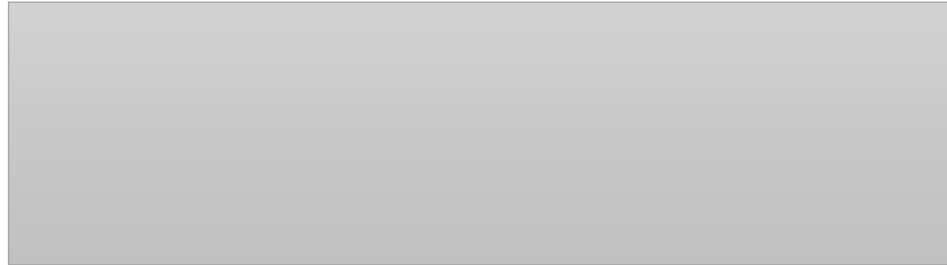
- Results

job	avg(emp.sal)
CLERK	1037.500000
SALESMAN	1400.000000
MANAGER	2758.333333
ANALYST	3000.000000
PRESIDENT	5000.000000

22. Number of Emps Managed

- Finding the number of employees managed per employee.
(사원 별 직속 부하 직원의 수를 찾으시오.)

- SQL



- Results

count(e.empno)	empno	ename
2	7566	JONES
5	7698	BLAKE
1	7782	CLARK
1	7788	SCOTT
3	7839	KING
1	7902	FORD

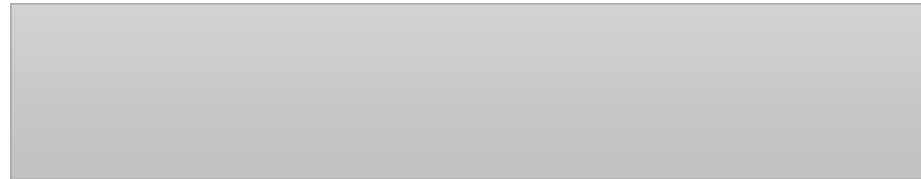
23. Finding Emps with High Salaries



- Finding the employees whose salaries are higher than an average salary.

(평균 급여보다 더 많은 급여를 받는 직원들을 찾으시오.)

- SQL



- Results

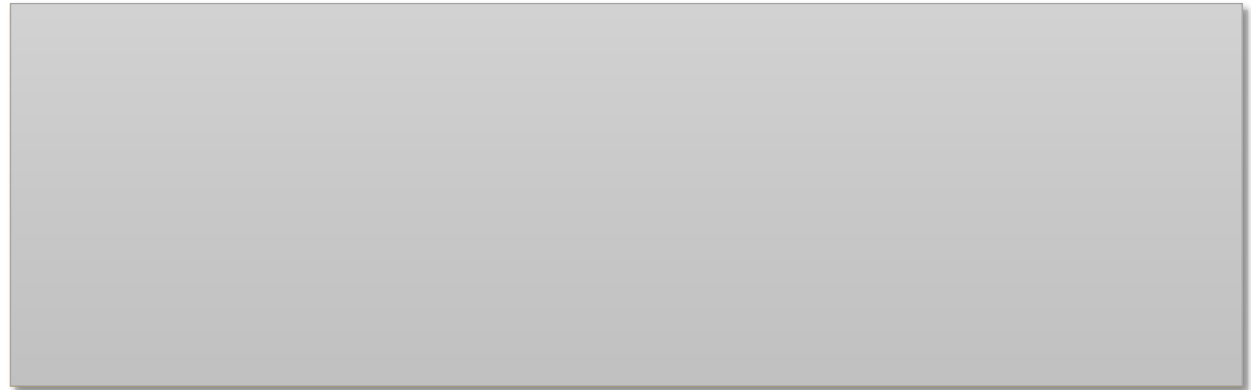
ENAME	SAL
JONES	2975.00
BLAKE	2850.00
CLARK	2450.00
SCOTT	3000.00
KING	5000.00
FORD	3000.00

24. Finding the Minimum Salary

- Finding the names of employees who have the minimum salary per department.

(부서별 최소 급여를 받는 사원의 이름을 찾으시오.)

- SQL



- Results

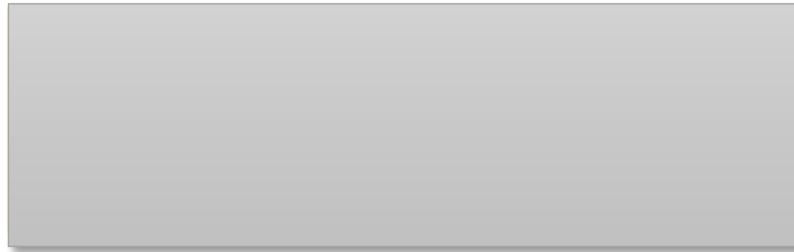
ename	sal	deptno
SMITH	800.00	20
JAMES	950.00	30
MILLER	1300.00	10

25. Finding the Sum of Salary > 10K



- Finding the department whose salaries is more than 10,000.
(부서별 급여 총액이 10000을 넘는 부서를 찾으시오.)

- SQL



- Results

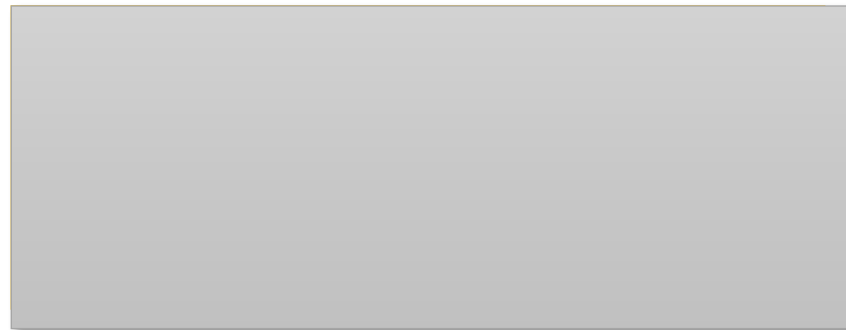
DEPTNO	SUM(SAL)
20	10875.00

26. Average Salary of Dept < 2000

- Finding the average salaries per department such that the salary is less than 2000.

(부서별 급여 평균이 2000이 넘지 않는 부서의 이름과 평균 급여를 찾으시오.)

- SQL



- Results

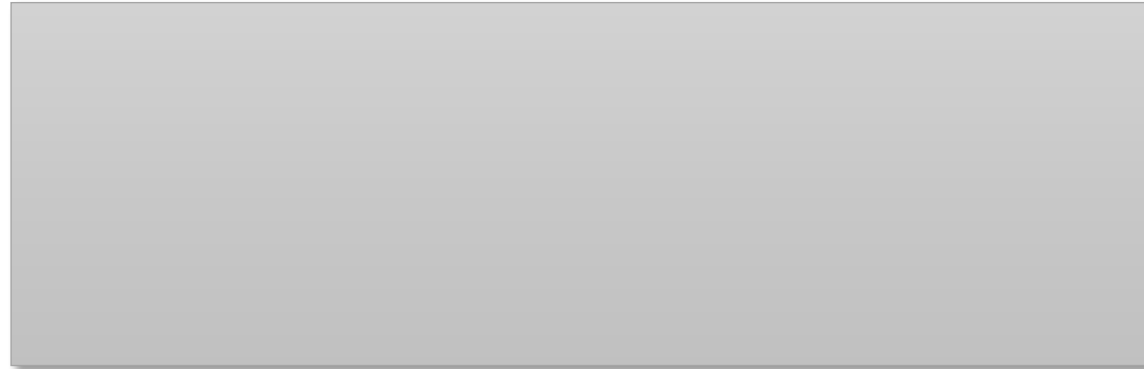
deptno	ROUND(AVG(sal))
30	1567

27. Number of Emps Per Dept

- Finding the number of employees per department except for 'President'.

(‘President’ 직종을 제외하고 부서별 사원의 수를 찾으시오.)

- SQL



- Results

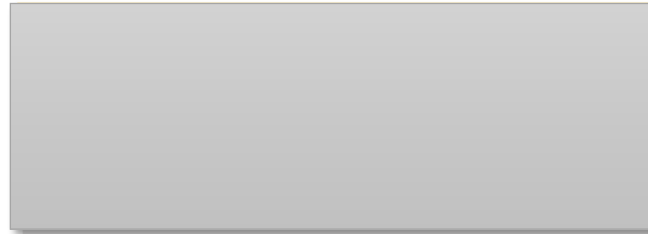
deptno	COUNT(*)
20	5
30	6
10	2

28. Sorting Salaries

- Finding employees that are sorted by salaries in descending order.

(급여의 내림 차순으로 사번과 사원명을 정렬하여 출력하시오.)

- SQL



- Results

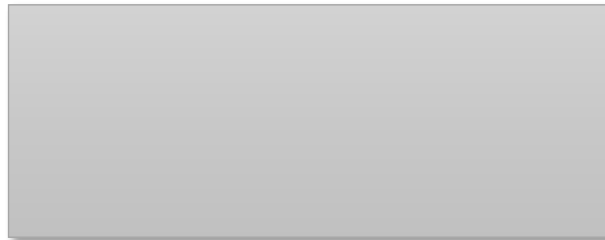
empno	ename	sal
7839	KING	5000.00
7788	SCOTT	3000.00
7902	FORD	3000.00
7566	JONES	2975.00
7698	BLAKE	2850.00
7782	CLARK	2450.00
7499	ALLEN	1600.00
7844	TURNER	1500.00
7934	MILLER	1300.00
7521	WARD	1250.00
7654	MARTIN	1250.00
7876	ADAMS	1100.00
7900	JAMES	950.00
7369	SMITH	800.00

29. Sorting Jobs

- Finding employees that are sorted by jobs in descending order.

(직종별 오른차순으로 사번과 사원명을 출력하시오.)

- SQL



- Results

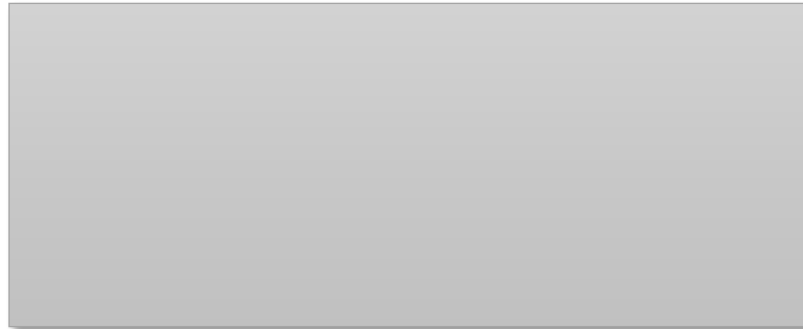
job	empno	ename
ANALYST	7788	SCOTT
ANALYST	7902	FORD
CLERK	7369	SMITH
CLERK	7876	ADAMS
CLERK	7900	JAMES
CLERK	7934	MILLER
MANAGER	7566	JONES
MANAGER	7698	BLAKE
MANAGER	7782	CLARK
PRESIDENT	7839	KING
SALESMAN	7499	ALLEN
SALESMAN	7521	WARD
SALESMAN	7654	MARTIN
SALESMAN	7844	TURNER

30. Sorting No of Emps

- Finding employees whose emp no is 75XX.

(사번이 75XX인 직원들을 직원명의 오름 차순으로 정렬하여 출력하시오.)

- SQL



- Results

empno	ename	deptno
7521	WARD	30
7566	JONES	20

- Chapter 6. *Basic SQL, Fundamentals of Database systems*
- Chapter 7. *More SQL: Complex Queries, Triggers, Views, and Schema Modification, Fundamentals of Database systems*

