# **REPORT**



과 목 : 데이터베이스이론및실습

제출일자: 2024.04.01

담당교수: 권기현

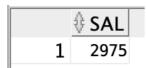
학 과: 정보통신공학과

학 번: 201920479

이 름: 김행복

#### -- 9-1) 사원 이름이 JONES인 사원의 급여 출력하기

SELECT SAL FROM EMP WHERE ENAME = 'JONES';



## -- 9-2) 급여가 2975보다 높은 사원 정보 출력하기

SELECT \* FROM EMP WHERE SAL > 2975;

# 실 № SQL □ 인출된 모든 행: 3(0.034초)											
	<b></b> € EMPNO	<b>♦ ENAME</b>	<b>∜ JOB</b>	<b>∯ MGR</b>	<b>♦ HIREDATE</b>	<b> ♦ SAL</b>	<b>⊕</b> СОММ	<b>♦ DEPTNO</b>			
1	7788	SC0TT	ANALYST	7566	1982/12/09	3000	(null)	20			
2	7839	KING	PRESIDENT	(null)	1981/11/17	5000	(null)	10			
3	7902	FORD	ANALYST	7566	1981/12/03	3000	(null)	20			

#### -- 9-3) 서브쿼리로 JONES의 급여보다 높은 급여를 받는 사원 정보 출력하기

SELECT \* FROM EMP WHERE SAL > (SELECT SAL FROM EMP WHERE ENAME = 'JONES');

	<b>⊕</b> EMPNO	<b>♦ ENAME</b>	<b>∜ JOB</b>	∯ MGR	<b>♦ HIREDATE</b>	<b>∜ SAL</b>	<b>⊕ СОММ</b>	<b>⊕</b> DEPTNO
1	7788	SC0TT	ANALYST	7566	1982/12/09	3000	(null)	20
2	7839	KING	PRESIDENT	(null)	1981/11/17	5000	(null)	10
3	7902	FORD	ANALYST	7566	1981/12/03	3000	(null)	20

## -- 9-4) 서브쿼리의 결과 값이 날짜형인 경우

SELECT \* FROM EMP WHERE HIREDATE < (SELECT HIREDATE FROM EMP WHERE ENAME = 'SCOTT');

<b>≠</b> 🖺	🔃 📚 SC	L │ 인출된	모든 행: 12	(0.027	초)			
	<b>⊕</b> EMPNO	<b>♦ ENAME</b>	<b>∜ JOB</b>	∯ MGR	<b>♦ HIREDATE</b>	<b></b> SAL	<b>⊕ СОММ</b>	DEPTNO
1	7369	SMITH	CLERK	7902	1980/12/17	800	(null)	20
2	7499	ALLEN	SALESMAN	7698	1981/02/20	1600	300	30
3	7521	WARD	SALESMAN	7698	1981/02/22	1250	500	30
4	7566	JONES	MANAGER	7839	1981/04/02	2975	(null)	20
5	7654	MARTIN	SALESMAN	7698	1981/09/28	1250	1400	30
6	7698	BLAKE	MANAGER	7839	1981/05/01	2850	(null)	30
7	7782	CLARK	MANAGER	7839	1981/06/09	2450	(null)	10
8	7839	KING	PRESIDENT	(null)	1981/11/17	5000	(null)	10
9	7844	TURNER	SALESMAN	7698	1981/09/08	1500	0	30
10	7900	JAMES	CLERK	7698	1981/12/03	950	(null)	30
11	7902	FORD	ANALYST	7566	1981/12/03	3000	(null)	20
12	7934	MILLER	CLERK	7782	1982/01/23	1300	(null)	10

#### -- 9-5) 서브쿼리 안에서 함수를 사용한 경우

SELECT E.EMPNO, E.ENAME, E.JOB, E.SAL, D.DEPTNO, D.DNAME, D.LOC FROM EMP E, DEPT D

WHERE E.DEPTNO = D.DEPTNO AND E.DEPTNO = 20 AND E.SAL > (SELECT AVG(SAL) FROM EMP);

	<b>⊕</b> EMPNO	<b>♦ ENAME</b>	<b>∜</b> JOB	<b> </b> \$ SAL	<b>♦ DEPTNO</b>	<b>♦ DNAME</b>	∯ LOC
1	7566	JONES .	MANAGER	2975	20	RESEARCH	DALLAS
2	7788	SC0TT	ANALYST	3000	20	RESEARCH	DALLAS
3	7902	F0RD	ANALYST	3000	20	RESEARCH	DALLAS

-- 9-6) IN 연산자 사용하기

SELECT \* FROM EMP WHERE DEPTNO IN (20, 30);

📌 🖺	🗗 🖺 🙀 📚 SQL 🗆 인출된 모든 행: 11(0.082초)										
	<b>⊕</b> EMPNO	<b>♦ ENAME</b>	<b> </b>	<b>⊕</b> MGR	<b>♦ HIREDATE</b>	<b> \$ SAL</b>	<b>⊕</b> СОММ	<b>♦ DEPTNO</b>			
1	7369	SMITH	CLERK	7902	1980/12/17	800	(null)	20			
2	7499	ALLEN	SALESMAN	7698	1981/02/20	1600	300	30			
3	7521	WARD	SALESMAN	7698	1981/02/22	1250	500	30			
4	7566	JONES .	MANAGER	7839	1981/04/02	2975	(null)	20			
5	7654	MARTIN	SALESMAN	7698	1981/09/28	1250	1400	30			
6	7698	BLAKE	MANAGER	7839	1981/05/01	2850	(null)	30			
7	7788	SC0TT	ANALYST	7566	1982/12/09	3000	(null)	20			
8	7844	TURNER	SALESMAN	7698	1981/09/08	1500	0	30			
9	7876	ADAMS	CLERK	7788	1983/01/12	1100	(null)	20			
10	7900	JAMES	CLERK	7698	1981/12/03	950	(null)	30			
11	7902	FORD	ANALYST	7566	1981/12/03	3000	(null)	20			

-- 9-7) 각 부서별 최고 급여와 동일한 급여를 받는 사원 정보 출력하기

SELECT \* FROM EMP WHERE SAL IN (SELECT MAX(SAL) FROM EMP GROUP BY DEPTNO);

<b>≠</b> 🖺	📌 🖺 🔞 📚 SQL 🗆 인출된 모든 행: 4(0.05초)											
	<b>⊕</b> EMPNO	<b>♦ ENAME</b>	<b>∜ JOB</b>	∯ MGR	<b>♦ HIREDATE</b>	<b></b> \$AL	<b>⊕</b> СОММ	<b>♦ DEPTNO</b>				
1	7698	BLAKE	MANAGER	7839	1981/05/01	2850	(null)	30				
2	7788	SC0TT	ANALYST	7566	1982/12/09	3000	(null)	20				
3	7839	KING	PRESIDENT	(null)	1981/11/17	5000	(null)	10				
4	7902	FORD	ANALYST	7566	1981/12/03	3000	(null)	20				

#### -- 9-8) 부서 번호 별로 최대 급여 출력하기

SELECT MAX(SAL) FROM EMP GROUP BY DEPTNO;

1	3000
2	2850
3	5000

-- 9-9) ANY 연산자 사용하기

SELECT \* FROM EMP WHERE SAL = ANY(SELECT MAX(SAL) FROM EMP GROUP BY DEPTNO);

📌 🚇	📌 🚇 🝓 🗽 SQL 🗆 인출된 모든 행: 4(0.032초)										
	<b>♦ EMPNO</b>	<b>♦ ENAME</b>	<b>\$ JOB</b>	∯ MGR	<b>♦ HIREDATE</b>	<b> \$ SAL</b>	<b>⊕ СОММ</b>	<b>♦ DEPTNO</b>			
1	7698	BLAKE	MANAGER	7839	1981/05/01	2850	(null)	30			
2	7788	SCOTT	ANALYST	7566	1982/12/09	3000	(null)	20			
3	7839	KING	PRESIDENT	(null)	1981/11/17	5000	(null)	10			
4	7902	FORD	ANALYST	7566	1981/12/03	3000	(null)	20			

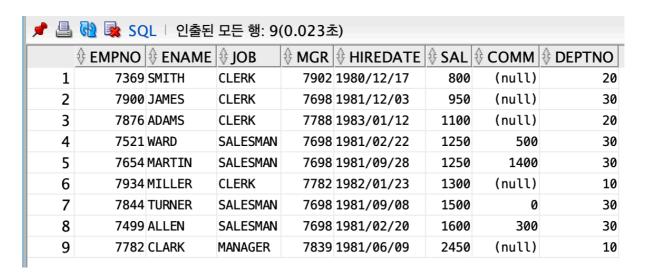
-- 9-10) SOME 연산자 사용하기

SELECT \* FROM EMP WHERE SAL = SOME(SELECT MAX(SAL) FROM EMP GROUP BY DEPTNO);

📌 🖺	🔃 📚 SC	L │ 인출된	모든 행: 4(0	0.106초)				
	<b>⊕</b> EMPNO	<b> ⊕</b> ENAME	<b>∜ JOB</b>	<b>∯ MGR</b>	<b>♦ HIREDATE</b>	<b></b> \$AL	<b>⊕ СОММ</b>	<b>♦ DEPTNO</b>
1	7698	BLAKE	MANAGER	7839	1981/05/01	2850	(null)	30
2	7788	SC0TT	ANALYST	7566	1982/12/09	3000	(null)	20
3	7839	KING	PRESIDENT	(null)	1981/11/17	5000	(null)	10
4	7902	FORD	ANALYST	7566	1981/12/03	3000	(null)	20

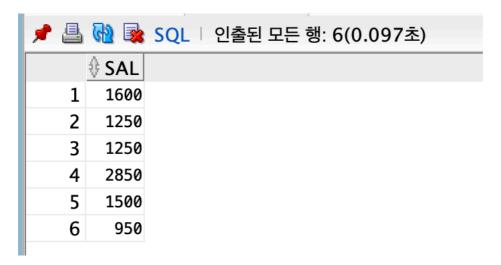
-- 9-11) 30번 부서 사원들의 최대 급여보다 적은 급여를 받는 사원 정보 출력하기

SELECT \* FROM EMP WHERE SAL < ANY(SELECT SAL FROM EMP WHERE DEPTNO = 30) ORDER BY SAL,EMPNO;



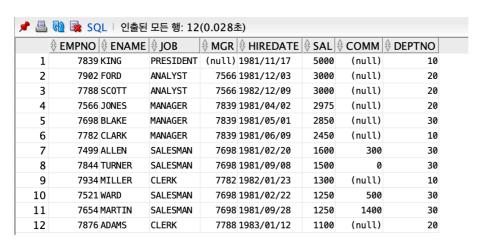
-- 9-12) 부서 번호가 30인 사원들의 급여 출력하기

SELECT SAL FROM EMP WHERE DEPTNO = 30;



-- 9-13) 30번 부서 사원들의 최소 급여보다 많은 급여를 받는 사원 정보 출력하기

SELECT \* FROM EMP WHERE SAL > ANY(SELECT SAL FROM EMP WHERE DEPTNO = 30);



-- 9-14) 부서 번호가 30번인 사원들의 최소 급여보다 더 적은 급여를 받는 사원 출력하기 SELECT \* FROM EMP WHERE SAL < ALL(SELECT SAL FROM EMP WHERE DEPTNO = 30);

	SC SC							
	<b>⊕</b> EMPNC	QL <sub>NAME</sub>	<b>₿ЈОВ</b>	<b>♦ MGR</b>	<b>♦ HIREDATE</b>	<b> </b> \$ SAL	<b>⊕</b> СОММ	<b>♦ DEPTNO</b>
1	7369	SMITH	CLERK	7902	1980/12/17	800	(null)	20

-- 9-15) 부서 번호가 30번인 사원들의 최대 급여보다 더 많은 급여를 받는 사원 출력하기 SELECT \* FROM EMP WHERE SAL > ALL(SELECT SAL FROM EMP WHERE DEPTNO = 30);

<b>→</b> 🖺	# 🚇 🚵 SQL │ 인출된 모든 행: 4(0.023초)											
	<b>⊕</b> EMPNO	<b>♦ ENAME</b>	<b>∯ JOB</b>	<b>∯ MGR</b>	<b>♦ HIREDATE</b>	<b></b> \$AL	<b>⊕ СОММ</b>					
1	7566	JONES	MANAGER	7839	1981/04/02	2975	(null)	20				
2	7788	SC0TT	ANALYST	7566	1982/12/09	3000	(null)	20				
3	7902	FORD	ANALYST	7566	1981/12/03	3000	(null)	20				
4	7839	KING	PRESIDENT	(null)	1981/11/17	5000	(null)	10				

-- 9-16) 서브쿼리 결과 값이 존재하는 경우

SELECT \* FROM EMP WHERE EXISTS (SELECT DNAME FROM DEPT WHERE DEPTNO = 10);

<b>≠</b> 🖺	🔞 📚 SC	L │ 인출된	모든 행: 14	(0.107	호)			
	<b>♦ EMPNO</b>	<b> ⊕</b> ENAME	<b>∯ JOB</b>	∯ MGR	<b>♦ HIREDATE</b>	<b> </b>	<b>⊕</b> СОММ	DEPTNO
1	7369	SMITH	CLERK	7902	1980/12/17	800	(null)	20
2	7499	ALLEN	SALESMAN	7698	1981/02/20	1600	300	30
3	7521	WARD	SALESMAN	7698	1981/02/22	1250	500	30
4	7566	<b>JONES</b>	MANAGER	7839	1981/04/02	2975	(null)	20
5	7654	MARTIN	SALESMAN	7698	1981/09/28	1250	1400	30
6	7698	BLAKE	MANAGER	7839	1981/05/01	2850	(null)	30
7	7782	CLARK	MANAGER	7839	1981/06/09	2450	(null)	10
8	7788	SC0TT	ANALYST	7566	1982/12/09	3000	(null)	20
9	7839	KING	PRESIDENT	(null)	1981/11/17	5000	(null)	10
10	7844	TURNER	SALESMAN	7698	1981/09/08	1500	0	30
11	7876	ADAMS	CLERK	7788	1983/01/12	1100	(null)	20
12	7900	JAMES	CLERK	7698	1981/12/03	950	(null)	30
							/	

#### -- 9-17) 서브쿼리 결과 값이 존재하지 않는 경우

SELECT \* FROM EMP WHERE EXISTS (SELECT DNAME FROM DEPT WHERE DEPTNO = 50);

	∯ MGR ∜	∯ HIRED ∯ SAL	
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#### -- 9-18) 다중열 서브쿼리 사용하기

SELECT \* FROM EMP WHERE (DEPTNO, SAL) IN (SELECT DEPTNO, MAX(SAL) FROM EMP GROUP BY DEPTNO);

<b>≠</b> 🖺	R SC	L □ 인출된	모든 행: 4(0	0.064초)	)			
	<b>\$ EM</b>	<b>♦ ENAME</b>	<b></b> JOB	∯ MGR	<b>♦ HIREDATE</b>	∯ SAL	<b>⊕</b> СОММ	<b>♦ DEPTNO</b>
1	7788	SC0TT	ANALYST	7566	1982/12/09	3000	(null)	20
2	7902	FORD	ANALYST	7566	1981/12/03	3000	(null)	20
3	7698	BLAKE	MANAGER	7839	1981/05/01	2850	(null)	30
4	7839	KING	PRESIDENT	(null)	1981/11/17	5000	(null)	10

#### -- 9-19) 인라인 뷰 사용하기

SELECT E10.EMPNO, E10.ENAME, E10.DEPTNO, D.DNAME, D.LOC FROM (SELECT \* FROM EMP WHERE DEPTNO = 10) E10, (SELECT \* FROM DEPT) D

WHERE E10.DEPTNO = D.DEPTNO;

<b>≠</b> 🖺	🔞 🕦 SC	L │ 인출된	모든 행: 3(0	.025초)	
	<b>⊕</b> EMPNO	<b>♦ ENAME</b>	<b>♦ DEPTNO</b>	<b>♦ DNAME</b>	∯ LOC
1	7782	CLARK	10	ACCOUNTING	NEW YORK
2	7839	KING	10	ACCOUNTING	NEW YORK
3	7934	MILLER	10	ACCOUNTING	NEW YORK

#### -- 9-20) WITH절 사용하기

WITH

E10 AS (SELECT \* FROM EMP WHERE DEPTNO = 10),

D AS (SELECT \* FROM DEPT)

SELECT E10.EMPNO, E10.ENAME, E10.DEPTNO, D.DNAME, D.LOC FROM E10, D

WHERE E10.DEPTNO = D.DEPTNO;

<b>≠</b> 🖺	Regional Science Control	L │ 인출된	모든 행: 3(0.	.029초)	
	<b>₿ EMPNO</b>	<b>♦ ENAME</b>	<b>♦ DEPTNO</b>	<b>♦ DNAME</b>	∯ LOC
1	7782	CLARK	10	ACCOUNTING	NEW YORK
2	7839	KING	10	ACCOUNTING	NEW YORK
3	7934	MILLER	10	ACCOUNTING	NEW YORK

-- 9-21) SELECT 절에 서브쿼리 사용하기

SELECT EMPNO, ENAME, JOB, SAL,

(SELECT GRADE FROM SALGRADE

WHERE E.SAL BETWEEN LOSAL AND HISAL) AS SALGRADE,

DEPTNO,

(SELECT DNAME FROM DEPT WHERE E.DEPTNO = DEPT.DEPTNO) AS DNAME

FROM EMP E;

	🔞 🙀 SC	L│ 인출된	모든 행: 14	(0.094	초)		
	<b>\$ EM ∀</b>	<b> ⊕</b> ENAME	<b> </b>	<b> \$ SAL</b>	<b>♦ SALGRADE</b>	<b>♦ DEPTNO</b>	<b>♦ DNAME</b>
1	7369	SMITH	CLERK	800	1	20	RESEARCH
2	7499	ALLEN	SALESMAN	1600	3	30	SALES
3	7521	WARD	SALESMAN	1250	2	30	SALES
4	7566	JONES	MANAGER	2975	4	20	RESEARCH
5	7654	MARTIN	SALESMAN	1250	2	30	SALES
6	7698	BLAKE	MANAGER	2850	4	30	SALES
7	7782	CLARK	MANAGER	2450	4	10	ACCOUNTING
8	7788	SC0TT	ANALYST	3000	4	20	RESEARCH
9	7839	KING	PRESIDENT	5000	5	10	<b>ACCOUNTING</b>
10	7844	TURNER	SALESMAN	1500	3	30	SALES
11	7876	ADAMS	CLERK	1100	1	20	RESEARCH
12	7900	JAMES	CLERK	950	1	30	SALES