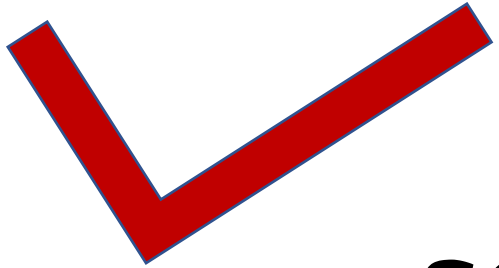


이럴때는



sort merge 조인으로 유도하자 !

■ 학습 내용

1. sort merge join 으로 유도해야하는 조인문이 어떤 문장인지 이해합니다.
2. sort merge join 문의 원리를 이해합니다.
3. sort merge join 문의 조인 순서를 이해합니다.

■ 학습 목표

sort merge join 문으로 SQL 조인문장을 튜닝할 수 있습니다.

1.non equi join 을 해쉬조인으로 수행할 수 있을까?

```
select /*+ leading(s e) use_merge(e) */ e.ename, e.sal, s.grade
from emp e, salgrade s
where e.sal between s.losal and s.hisal;
```

emp 테이블

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT		1981-11-17	5000		10
7698	BLAKE	MANAGER	7839	1981-05-01	2850		30
7782	CLARK	MANAGER	7839	1981-05-09	2450		10
7566	JONES	MANAGER	7839	1981-04-01	2975		20
7654	MARTIN	SALESMAN	7698	1981-09-10	1250	1400	30
7499	ALLEN	SALESMAN	7698	1981-02-11	1600	300	30
7844	TURNER	SALESMAN	7698	1981-08-21	1500	0	30
7900	JAMES	CLERK	7698	1981-12-11	950		30
7521	WARD	SALESMAN	7698	1981-02-23	1250	500	30
7902	FORD	ANALYST	7566	1981-12-11	3000		20
7369	SMITH	CLERK	7902	1980-12-09	800		20
7788	SCOTT	ANALYST	7566	1982-12-22	3000		20
7876	ADAMS	CLERK	7788	1983-01-15	1100		20
7934	MILLER	CLERK	7782	1982-01-11	1300		10

salgrade 테이블

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

2. sort merge 조인의 원리

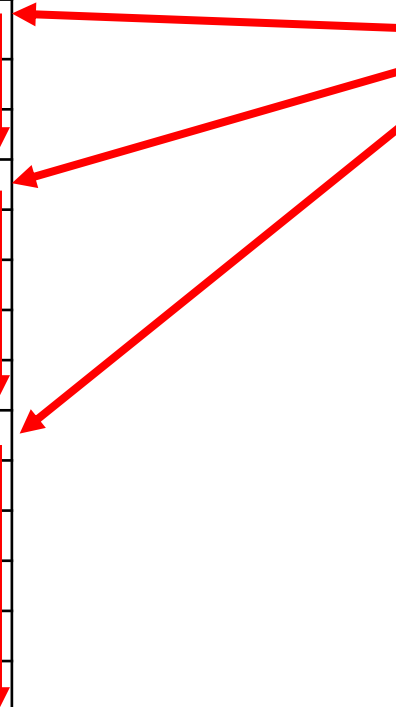
```
select /*+ leading(d e) use_merge(e) */ e.ename, d.loc  
from emp e, dept d  
where e.deptno = d.deptno;
```

emp 테이블

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT		1981-11-17	5000		10
7782	CLARK	MANAGER	7839	1981-05-09	2450		10
7934	MILLER	CLERK	7782	1982-01-11	1300		10
7876	ADAMS	CLERK	7788	1983-01-15	1100		20
7788	SCOTT	ANALYST	7566	1982-12-22	3000		20
7369	SMITH	CLERK	7902	1980-12-09	800		20
7902	FORD	ANALYST	7566	1981-12-11	3000		20
7566	JONES	MANAGER	7839	1981-04-01	2975		20
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7499	ALLEN	SALESMAN	7698	1981-02-11	1600	300	30
7654	MARTIN	SALESMAN	7698	1981-09-10	1250	1400	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850		30
7844	TURNER	SALESMAN	7698	1981-08-21	1500	0	30

dept 테이블

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



3.sort merge 조인도 조인 순서가 중요할까?

```
select /*+ leading(e d) use_merge(d) */ e.ename, d.loc
from emp e, dept d
where e.deptno = d.deptno;
```

emp 테이블

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT		1981-11-17	5000		10
7782	CLARK	MANAGER	7839	1981-05-09	2450		10
7934	MILLER	CLERK	7782	1982-01-11	1300		10
7876	ADAMS	CLERK	7788	1983-01-15	1100		20
7788	SCOTT	ANALYST	7566	1982-12-22	3000		20
7369	SMITH	CLERK	7902	1980-12-09	800		20
7902	FORD	ANALYST	7566	1981-12-11	3000		20
7566	JONES	MANAGER	7839	1981-04-01	2975		20
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7499	ALLEN	SALESMAN	7698	1981-02-11	1600	300	30
7654	MARTIN	SALESMAN	7698	1981-09-10	1250	1400	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850		30
7844	TURNER	SALESMAN	7698	1981-08-21	1500	0	30

dept 테이블

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

