이럴때는

nested loop join 으로 유도하라! 두번째

■ 학습 내용

- 1. 3개 이상의 테이블 조인시 조인 순서 정하기
- 2. 3개 이상의 테이블 조인시 검색 조건이 있을때 조인 순서 정하기
- 3. 3개 이상의 테이블 조인시 검색 조건이 여러개 있을때 조인 순서 정하기

■ 학습 목표

여러개의 테이블을 조인할 때 nested loop 조인으로 유도할 수 있고 조인 순서를 조정할 수 있습니다.

1.3개 이상의 테이블 조인시 조인순서는?

select /*+ leading(s e d) use_nl(e) use_nl(d) */ e.ename, d.loc, s.grade from emp e, dept d, salgrade s where e.deptno = d.deptno and e.sal between s.losal and s.hisal;

salgrade 테이블

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

emp 테이블

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	СОММ	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

dept 테이블

DEPTNO		DNAME	LOC		
10		ACCOUNTING	NEW YORK		
	20	RESEARCH	DALLAS		
	30	SALES	CHICAGO		
7	40	OPERATIONS	BOSTON		

buffer 139개

2. 반대로 조인하면 성능이 좋아질까?

select /*+ leading(d e s) use_nl(e) use_nl(s) */ e.ename, d.loc, s.grade from emp e, dept d, salgrade s where e.deptno = d.deptno and e.sal between s.losal and s.hisal;

salgrade 테이블

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

emp 테이블

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	СОММ	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	I
	7566	JONES	MANAGER	7839	1981-04-01	2975		20	l
	7654	MARTIN	SALESMAN	7698	1981-09-10	1250	1400	30	
1	7499	ALLEN	SALESMAN	7698	1981-02-11	1600	300	30	l
N	7844	TURNER	SALESMAN	7698	1981-08-21	1500	0	30	
\	7900	JAMES	CLERK	7698	1981-12-11	950		30	l
N	7521	WARD	SALESMAN	7698	1981-02-23	1250	500	30	l
V	7902	FORD	ANALYST	7566	1981-12-11	3000		20	
V	7369	SMITH	CLERK	7902	1980-12-09	800		20	l
	7788	SCOTT	ANALYST	7566	1982-12-22	3000		20	l
H	7876	ADAMS	CLERK	7788	1983-01-15	1100		20	
	7934	MILLER	CLERK	7782	1982-01-11	1300		10	

dept 테이블

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

buffer 119개

3. 검색 조건이 있었을때의 조인순서는?

select /*+ leading(e d s) use_nl(d) use_nl(s) */ e.ename, d.loc, s.grade from emp e, dept d, salgrade s where e.deptno = d.deptno and e.sal between s.losal and s.hisal and e.ename='SCOTT';

emp 테이블

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	СОММ	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

dept 테이블

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

salgrade 테이블

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

buffer 21개

4.반대로 조인하면 성능이 좋아질까?

select /*+ leading(s d e) use_nl(d) use_nl(e) */ e.ename, d.loc, s.grade from emp e, dept d, salgrade s where e.deptno = d.deptno and e.sal between s.losal and s.hisal and e.ename='SCOTT';

emp 테이블

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	СОММ	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

dept 테이블

salgrade 테이블

PTNO	DNAME	LOC		GRADE	LOSAL	HIS
10	ACCOUNTING	NEW YORK		1	700	12
20	RESEARCH	DALLAS		2	1201	14
30	SALES	CHICAGO		3	1401	20
				4	2001	300
40	OPERATIONS	BOSTON	1	5	3001	99

buffer 182개

5.검색 조건이 여러개 있었을때의 조인순서는?

select /*+ leading(s e d) use_nl(e) use_nl(d) */ e.ename, d.loc, s.grade from emp e, dept d, salgrade s where e.deptno = d.deptno and e.sal between s.losal and s.hisal and s.grade in (3,4) and d.loc='DALLAS';

salgrade 테이블

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

emp 테이블

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	сомм	DEPTNO
	7839	KING	PRESIDENT		1981-11-17	5000		10
1	7698	BLAKE	MANAGER	7839	1981-05-01	2850		30
ı	7782	CLARK	MANAGER	7839	1981-05-09	2450		10
ı	7566	JONES	MANAGER	7839	1981-04-01	2975		20
Ī	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
ľ	7369	SMITH	CLERK	7902	1980-12-09	800		20
ı	7788	SCOTT	ANALYST	7566	1982-12-22	3000		20
Ī	7876	ADAMS	CLERK	7788	1983-01-15	1100		20
ł	7934	MILLER	CLERK	7782	1982-01-11	1300		10

dept 테이블

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

buffer 70개

6. 반대로 조인하면 성능이 좋아질까?

select /*+ leading(d e s) use_nl(e) use_nl(s) */ e.ename, d.loc, s.grade from emp e, dept d, salgrade s where e.deptno = d.deptno and e.sal between s.losal and s.hisal and s.grade in (3,4) and d.loc='DALLAS';

salgrade 테이블

GRADE	LOSAL	HISAL	
1	700	1200	7
2	1201	1400	L
3	1401	2000]\
4	2001	3000	
5	3001	9999	Ĩ

emp 테이블

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	СОММ	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

dept 테이블

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

buffer 49개