Practical No 5

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1. INNER JOIN: The inner join keyword selects all rows from both the tables as long as the satisfies

```
select emp_dharmit1.deptno,ename,sal,job,dname,loc
from emp_dharmit1 inner join dept_dharmit
on emp_dharmit1.deptno=dept_dharmit.deptno;
```

Results Explain Describe Saved SQL History

DEPTNO	ENAME	SAL	JOB	DNAME	LOC
10	king	5000	president	Accounting	new york
30	blake	2850	manager	sales	chicago
10	clark	2450	manager	Accounting	new york
20	jones	2975	manager	research	dallas
20	scott	3000	analyst	research	dallas
20	ford	3000	analyst	research	dallas
20	smith	800	clerk	research	dallas
30	allen	1600	salesman	sales	chicago
30	ward	1250	salesman	sales	chicago
30	martin	1250	salesman	sales	chicago
30	turner	1500	salesman	sales	chicago
20	adams	1100	clerk	research	dallas
30	james	950	clerk	sales	chicago
10	miller	1300	clerk	Accounting	new york

14 rows returned in 0.01 seconds CSV Export

2. NATURAL JOIN: A natural join is a type equi join which occurs implicitly by comparing all the same names column in both tables. The join result has only one column for each pair of equally named column

```
select * from emp_dharmit1 natural join dept_dharmit;
```

Results Explain Describe Saved SQL History

DEPTNO	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DNAME	LOC
10	7839	king	president	-	17-NOV-81	5000	-	Accounting	new york
30	7698	blake	manager	7839	01-MAY-81	2850	-	sales	chicago
10	7782	clark	manager	7839	09-JUN-81	2450	-	Accounting	new york
20	7566	jones	manager	7839	02-APR-81	2975	-	research	dallas
20	7788	scott	analyst	7566	03-DEC-81	3000	-	research	dallas
20	7902	ford	analyst	7566	03-DEC-81	3000	-	research	dallas
20	7369	smith	clerk	7902	17-DEC-81	800	-	research	dallas
30	7499	allen	salesman	7698	20-FEB-81	1600	300	sales	chicago
30	7521	ward	salesman	7698	22-FEB-81	1250	500	sales	chicago
30	7654	martin	salesman	7698	28-SEP-81	1250	1400	sales	chicago
30	7844	turner	salesman	7698	08-SEP-81	1500	0	sales	chicago
20	7876	adams	clerk	7788	23-MAY-87	1100	-	research	dallas
30	7900	james	clerk	7698	03-DEC-81	950	-	sales	chicago
10	7934	miller	clerk	7782	23-JAN-82	1300	-	Accounting	new york

14 rows returned in 0.01 seconds CSV Export

```
select * from emp_dharmit1 natural join dept_dharmit order by dname;
```

Results Explain Describe Saved SQL History

DEPTNO	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DNAME	LOC
10	7782	clark	manager	7839	09-JUN-81	2450	-	Accounting	new york
10	7934	miller	clerk	7782	23-JAN-82	1300	-	Accounting	new york
10	7839	king	president	-	17-NOV-81	5000	-	Accounting	new york
20	7902	ford	analyst	7566	03-DEC-81	3000	-	research	dallas
20	7788	scott	analyst	7566	03-DEC-81	3000	-	research	dallas
20	7566	jones	manager	7839	02-APR-81	2975	-	research	dallas
20	7369	smith	clerk	7902	17-DEC-81	800	-	research	dallas
20	7876	adams	clerk	7788	23-MAY-87	1100	-	research	dallas
30	7521	ward	salesman	7698	22-FEB-81	1250	500	sales	chicago
30	7654	martin	salesman	7698	28-SEP-81	1250	1400	sales	chicago
30	7844	turner	salesman	7698	08-SEP-81	1500	0	sales	chicago
30	7900	james	clerk	7698	03-DEC-81	950	-	sales	chicago
30	7499	allen	salesman	7698	20-FEB-81	1600	300	sales	chicago
30	7698	blake	manager	7839	01-MAY-81	2850	-	sales	chicago

14 rows returned in 0.00 seconds CSV Export

3. OUTER JOIN: Theta Join, Equijoin, and Natural Join are called inner joins. An inner join includes only those tuples with matching attributes and the rest are discarded in the resulting relation. Therefore, we need to use outer joins to include all the tuples from the participating relations in the resulting relation. There are three kinds of outer joins - left outer join, right outer join, and full outer join.

A) RIGHT OUTER JOIN:

```
select empno,ename,sal,emp_dharmit1.deptno,dept_dharmit.deptno,dname
from dept_dharmit right outer join emp_dharmit1
on emp_dharmit1.deptno=dept_dharmit.deptno;
```

Results Explain Describe Saved SQL History

EMPNO	ENAME	SAL	DEPTNO	DEPTNO	DNAME
7839	king	5000	10	10	Accounting
7698	blake	2850	30	30	sales
7782	clark	2450	10	10	Accounting
7566	jones	2975	20	20	research
7788	scott	3000	20	20	research
7902	ford	3000	20	20	research
7369	smith	800	20	20	research
7499	allen	1600	30	30	sales
7521	ward	1250	30	30	sales
7654	martin	1250	30	30	sales
7844	turner	1500	30	30	sales
7876	adams	1100	20	20	research
7900	james	950	30	30	sales
7934	miller	1300	10	10	Accounting

14 rows returned in 0.00 seconds CSV Export

B) LEFT OUTER JOIN:

```
select empno,ename,sal,emp_dharmit1.deptno,dept_dharmit.deptno,dname
from dept_dharmit left outer join emp_dharmit1
on emp_dharmit1.deptno=dept_dharmit.deptno;
```

Results Explain Describe Saved SQL History

EMPNO	ENAME	SAL	DEPTNO	DEPTNO	DNAME
7839	king	5000	10	10	Accounting
7698	blake	2850	30	30	sales
7782	clark	2450	10	10	Accounting
7566	jones	2975	20	20	research
7788	scott	3000	20	20	research
7902	ford	3000	20	20	research
7369	smith	800	20	20	research
7499	allen	1600	30	30	sales
7521	ward	1250	30	30	sales
7654	martin	1250	30	30	sales
7844	turner	1500	30	30	sales
7876	adams	1100	20	20	research
7900	james	950	30	30	sales
7934	miller	1300	10	10	Accounting
-	-	-	-	40	operations

15 rows returned in 0.00 seconds CSV Export

C) FULL OUTER JOIN:

```
select ename,job,sal,dname,loc
from emp_dharmit1 full outer join dept_dharmit
on emp_dharmit1.deptno=dept_dharmit.deptno;
```

Results Explain Describe Saved SQL History

ENAME	JOB	SAL	DNAME	LOC
king	president	5000	Accounting	new york
blake	manager	2850	sales	chicago
clark	manager	2450	Accounting	new york
jones	manager	2975	research	dallas
scott	analyst	3000	research	dallas
ford	analyst	3000	research	dallas
smith	clerk	800	research	dallas
allen	salesman	1600	sales	chicago
ward	salesman	1250	sales	chicago
martin	salesman	1250	sales	chicago
turner	salesman	1500	sales	chicago
adams	clerk	1100	research	dallas
james	clerk	950	sales	chicago
miller	clerk	1300	Accounting	new york
-	-	-	operations	boston

15 rows returned in 0.00 seconds CSV Export

4. CROSS JOIN: When each row of first table is combined with each row from the second table, known as Cartesian join or cross join.

```
select * from emp_dharmit1,dept_dharmit;
```

Results Explain Describe Saved SQL History

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO	DEPTNO	DNAME	LOC
7839	king	president	-	17-NOV-81	5000	-	10	10	Accounting	new york
7698	blake	manager	7839	01-MAY-81	2850	-	30	10	Accounting	new york
7782	clark	manager	7839	09-JUN-81	2450	-	10	10	Accounting	new york
7566	jones	manager	7839	02-APR-81	2975	-	20	10	Accounting	new york
7788	scott	analyst	7566	03-DEC-81	3000	-	20	10	Accounting	new york
7902	ford	analyst	7566	03-DEC-81	3000	-	20	10	Accounting	new york
7369	smith	clerk	7902	17-DEC-81	800	-	20	10	Accounting	new york
7499	allen	salesman	7698	20-FEB-81	1600	300	30	10	Accounting	new york
7521	ward	salesman	7698	22-FEB-81	1250	500	30	10	Accounting	new york
7654	martin	salesman	7698	28-SEP-81	1250	1400	30	10	Accounting	new york
7844	turner	salesman	7698	08-SEP-81	1500	0	30	10	Accounting	new york
7876	adams	clerk	7788	23-MAY-87	1100	-	20	10	Accounting	new york
7900	james	clerk	7698	03-DEC-81	950	-	30	10	Accounting	new york
7934	miller	clerk	7782	23-JAN-82	1300	-	10	10	Accounting	new york
7839	king	president	-	17-NOV-81	5000	-	10	20	research	dallas
7698	blake	manager	7839	01-MAY-81	2850	-	30	20	research	dallas
7782	clark	manager	7839	09-JUN-81	2450	-	10	20	research	dallas
7566	jones	manager	7839	02-APR-81	2975	-	20	20	research	dallas
7788	scott	analyst	7566	03-DEC-81	3000	-	20	20	research	dallas
7902	ford	analyst	7566	03-DEC-81	3000	-	20	20	research	dallas
7369	smith	clerk	7902	17-DEC-81	800	-	20	20	research	dallas
7499	allen	salesman	7698	20-FEB-81	1600	300	30	20	research	dallas
7521	ward	salesman	7698	22-FEB-81	1250	500	30	20	research	dallas
7654	martin	salesman	7698	28-SEP-81	1250	1400	30	20	research	dallas
7844	turner	salesman	7698	08-SEP-81	1500	0	30	20	research	dallas
7876	adams	clerk	7788	23-MAY-87	1100	-	20	20	research	dallas
7900	james	clerk	7698	03-DEC-81	950	-	30	20	research	dallas
7934	miller	clerk	7782	23-JAN-82	1300	-	10	20	research	dallas
7839	king	president	-	17-NOV-81	5000	-	10	30	sales	chicago
7698	blake	manager	7839	01-MAY-81	2850	-	30	30	sales	chicago

5. SELF JOIN: A self join is a join that can be used to join a table with itself. Hence, it is a unary relation. In a self join, each row of the table is joined with itself and all the other rows of the same table

```
select b.ename employee,a.ename manager
from emp_dharmit1 a, emp_dharmit1 b
where a.empno=b.mgr;
```

Results Explain Describe Saved SQL History

EMPLOYEE	MANAGER
blake	king
clark	king
jones	king
scott	jones
ford	jones
smith	ford
allen	blake
ward	blake
martin	blake
turner	blake
adams	scott
james	blake
miller	clark

13 rows returned in 0.00 seconds CSV Export

```
select b.ename,a.ename
from emp_dharmit1 a,emp_dharmit1 b
where a.empno=b.mgr;
```

Results Explain Describe Saved SQL Hi

ENAME	ENAME
blake	king
clark	king
jones	king
scott	jones
ford	jones
smith	ford
allen	blake
ward	blake
martin	blake
turner	blake
adams	scott
james	blake
miller	clark

13 rows returned in 0.00 seconds CSV E: