

SQL JOIN

Joins in DBMS

Joins are used to retrieve data from multiple tables i.e it is used for data merging

There are multiple types of joins in DBMS :

1. Inner Join
2. Right Join
3. Left Join
4. Full Join
5. Cross Join
6. Natural Join

Inner Join in DBMS

Join is a query that combines rows from two or more tables, views, materialized views i.e When data from more than one table in the database is required a join condition is used

The most common type of join is `inner join` mechanism also called as `equal join` or `simple join`.

Inner join Definition

- Tables are joined based on equality condition
- Only matching records are displayed
- Joining tables must have at least one common same data type and the same values.

Emp table

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT	—	17-NOV-81	5000	—	10
7698	BLAKE	MANAGER	7839	01-MAY-81	2850	—	30
7782	CLARK	MANAGER	7839	09-JUN-81	2450	—	10
7566	JONES	MANAGER	7839	02-APR-81	2975	—	20
7788	SCOTT	ANALYST	7566	19-APR-87	3000	—	20
7902	FORD	ANALYST	7566	03-DEC-81	3000	—	20
7369	SMITH	CLERK	7902	17-DEC-80	800	—	20
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7876	ADAMS	CLERK	7788	23-MAY-87	1100	—	20
7900	JAMES	CLERK	7698	03-DEC-81	950	—	30
7934	MILLER	CLERK	7782	23-JAN-82	1300	—	10

Dept table

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

```
select
rownum,Empno,ENAME,Emp.Deptno,DNAME, sal*12 annsal,loc
from Emp,Dept
where Emp.Deptno=Dept.deptno and dname='SALES';
```

ROWNUM	EMPNO	ENAME	DEPTNO	DNAME	ANNSAL	LOC
1	7698	BLAKE	30	SALES	34200	CHICAGO
2	7499	ALLEN	30	SALES	19200	CHICAGO
3	7521	WARD	30	SALES	15000	CHICAGO
4	7654	MARTIN	30	SALES	15000	CHICAGO
5	7844	TURNER	30	SALES	18000	CHICAGO
6	7900	JAMES	30	SALES	11400	CHICAGO

Full Outer Join in DBMS

A join is a query that combines rows from two or more tables, views or materialized views

Definition: Full join returns all the matched records and unmatched records from both left side table and right side table.

A Full join is viewed as a ***union of an inner join, left outer join and right outer join.***

How full join works

- It Returns all the records that are matched based upon the condition (inner join)
- It Returns all the unmatched records from the right table (right outer)
- It Returns all the unmatched record from the left table (left outer)
- It places normal values on unmatched records when there is no data to be appended for some tuples.

```
select rownum,Empno,ENAME,Emp.Deptno,DNAME, sal*12 annsal,loc,jobfromEmpFULL JOINDepton Emp.Deptno=Dept.deptno and dname='SALES';
```

ROWNUM	EMPNO	ENAME	DEPTNO	DNAME	ANNUAL	LOC	JOB
1	7839	KING	10	–	60000	–	PRESID
2	7698	BLAKE	30	SALES	34200	CHICAGO	MANAGI
3	7782	CLARK	10	–	29400	–	MANAGI
4	7566	JONES	20	–	35700	–	MANAGI
5	7788	SCOTT	20	–	36000	–	ANALYS
6	7902	FORD	20	–	36000	–	ANALYS
7	7369	SMITH	20	–	9600	–	CLERK
8	7499	ALLEN	30	SALES	19200	CHICAGO	SALESM
9	7521	WARD	30	SALES	15000	CHICAGO	SALESM
10	7654	MARTIN	30	SALES	15000	CHICAGO	SALESM
11	7844	TURNER	30	SALES	18000	CHICAGO	SALESM
12	7876	ADAMS	20	–	13200	–	CLERK
13	7900	JAMES	30	SALES	11400	CHICAGO	CLERK
14	7934	MILLER	10	–	15600	–	CLERK
15	–	–	–	OPERATIONS	–	BOSTON	–
16	–	–	–	ACCOUNTING	–	NEW YORK	–
17	–	–	–	RESEARCH	–	DALLAS	–

Left Join in DBMS

A join is a query that combines rows from two or more tables, views or materialized views.

Definition: A left join is an outer join where it returns all the records from the left table and matching records from the right table.

Three points about left outer join

1. Tables are join based on some condition.
2. Only **matched records from right side table** and **all records from the left side table** are displayed.
3. The result is Null if there is no match from the right side table.

```
select rownum,Empno,ENAME,Emp.Deptno,DNAME, sal*12 annsal,loc,job
from
Emp
LEFT JOIN
Dept
on Emp.Deptno=Dept.deptno and dname='SALES';
```

ROWNUM	EMPNO	ENAME	DEPTNO	DNAME	ANNSAL	LOC	JOB
1	7698	BLAKE	30	SALES	34200	CHICAGO	MANAGI
2	7499	ALLEN	30	SALES	19200	CHICAGO	SALESM
3	7521	WARD	30	SALES	15000	CHICAGO	SALESM
4	7654	MARTIN	30	SALES	15000	CHICAGO	SALESM
5	7844	TURNER	30	SALES	18000	CHICAGO	SALESM
6	7900	JAMES	30	SALES	11400	CHICAGO	CLERK
7	7839	KING	10	–	60000	–	PRESID
8	7782	CLARK	10	–	29400	–	MANAGI
9	7934	MILLER	10	–	15600	–	CLERK
10	7566	JONES	20	–	35700	–	MANAGI
11	7788	SCOTT	20	–	36000	–	ANALYS
12	7902	FORD	20	–	36000	–	ANALYS
13	7369	SMITH	20	–	9600	–	CLERK
14	7876	ADAMS	20	–	13200	–	CLERK

Right Join in DBMS

In this article, we will learn about Right Join in DBMS.

A join is a query that combines rows from two or more tables, views or materialized views.

Definition: A right join is an outer join where it returns all the records from the right table and matching records from the left table.

Three points about right outer join

- Tables are join based on some condition
- Only **matched records from left side table** and **all records from right side table** are displayed
- The result is Null if there is no match from left side table.

```
select rownum,Empno,ENAME,Emp.Deptno,DNAME, sal*12 annsal,loc,job
from
Emp
RIGHT JOIN
Dept
on Emp.Deptno=Dept.deptno and dname='SALES';
```

ROWNUM	EMPNO	ENAME	DEPTNO	DNAME	ANNUAL	LOC	JOB
1	7698	BLAKE	30	SALES	34200	CHICAGO	MANAGI
2	7499	ALLEN	30	SALES	19200	CHICAGO	SALESM
3	7521	WARD	30	SALES	15000	CHICAGO	SALESM

4	7654	MARTIN	30	SALES	15000	CHICAGO	SALESM
5	7844	TURNER	30	SALES	18000	CHICAGO	SALESM
6	7900	JAMES	30	SALES	11400	CHICAGO	CLERK
7	–	–	–	OPERATIONS	–	BOSTON	–
8	–	–	–	ACCOUNTING	–	NEW YORK	–
9	–	–	–	RESEARCH	–	DALLAS	–