

Assignment

* Aim:-

↳ To understand the use of joins in SQL
↳ To learn how to combine rows from two or more tables by
using common column(s).

* Here

- (i) Explain the need of joins.
- (ii) Explain the types of joins.

* Theory:-

↳ What is Cartesian product?

↳ Explain its needs.

→ Product there is a join for each row of one table to every row of another table. This usually happens when the matching column or WHERE condition is not specified.

Q) In the presence of WHERE condition this join will function like a INNER JOIN.

Q) Generally, cross join is similar to an inner join where join condition is always evaluate to true. output

Syntax:- SELECT table1.column1, table2.column2 from table1

CROSS JOIN table2;

e.g:- SELECT student.NAME , stud.course , courseID from student

CROSS JOIN studentcourse;

Q) What is join? Explain need of joins.

→ JOIN:- A JOIN means combining columns from one or more tables by

using values common to each.

↳ Need:-
It creates a set that can be saved as a table or used as it is.

①	In SQL a join is needed to get details about the relation between two tables.
②	To avoid repetition of data in the table and to avoid extra space needed for storing of data JOIN is used.
③	Explain all types of join with syntax and example.

→ There are five types of join:-

- ① Inner join
- ② Outer join

- a) left outer join
- b) Right outer join

- c) full outer join
- d) cross join
- e) Natural join or join of two or more tables
- f) self join

④ Inner join:-

Do consider two tables:

⑤ Outer join:-

Do consider two tables:

⑥ Cross join:-

Do consider two tables:

⑦ Natural join:-

Do consider two tables:

⑧ Self join:-

Do consider two tables:

⑨ Join with condition:-

Do consider two tables:

⑩ Left outer join:-

Do consider two tables:

⑪ Right outer join:-

Do consider two tables:

⑫ Full outer join:-

Do consider two tables:

⑬ Department:-

Do consider two tables:

⑭ Employee:-

Do consider two tables:

⑮ Job:-

Do consider two tables:

⑯ Salary:-

Do consider two tables:

Deptno	Deptno	Dname	Loc
10	10	Accounting	New York
20	20	Sales	Paris
30	30	Research	London
40	40	Marketing	Barcelona

Empno	Ename	Job	Sal	Deptno
7839	King	President	5000	10
7369	Clark	Manager	2400	10
7432	Tenns	Analyst	3000	30
7566	Ford	Clerk	900	20
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① Inner join:-

The INNER JOIN is used to display records that have matching values in both tables.

Syntax:- SELECT column.names from table1

INNER JOIN table2 ON

table1 . column_name = table2 . column_name

e.g:- In above tables,

```
select ename, job, sal from emp INNER JOIN dept  
on emp.deptno = dept.deptno;
```

② Outer join:-

Outer join is based on both matched & unmatched data.

Outer join is divided into :-

① Left outer join:-

It returns all the rows from the left table even if there are no matches in right table.

Syntax:- SELECT column.names from table1

LEFT OUTER JOIN table2

```
on table1 . column = table2 . column ;
```

e.g:-
SELECT * FROM emp LEFT OUTER JOIN dept ON emp.deptno =
dept.deptno;

(ii) Right outer join:-

Retains all rows from right table even if there are no matches in left table.

Syntax:- SELECT column.names from table1

RIGHT OUTER JOIN table2

```
on emp . column . name = dept . column . name ;
```

e.g:-
SELECT * FROM emp RIGHT OUTER JOIN dept ON

```
emp.deptno = dept.deptno ;
```

(iii) full outer join: it retains matching data of both the tables and remaining rows of left & right table.

eg:- `SELECT * FROM emp FULL OUTER JOIN dept ON emp.deptno = dept.deptno;`

③ natural Join:

natural join is a type of INNER JOIN & is structured in such a way that, columns with same name of associated tables will appear only once.

syntax: `SELECT * FROM table1 NATURAL JOIN table2;`

④ self join:- self join is a regular join , but the table is joined with itself.

syntax: `SELECT column.names FROM table1,table1 WHERE table1.empA,empB WHERE A.empId = B.empno;`

⑤ cross join:- It is a join for each row of one table to every row of another table.

syntax: `SELECT table1.column , table2.column FROM table1 CROSS JOIN table2;`

eg:-

`SELECT emp.ename, dept.dname FROM emp CROSS JOIN dept;`

diff b/w self join & cross join

Self join :-
1. It is a join of same table.
2. It is a join of same table with itself.

Cross join :-
1. It is a join of different tables.
2. It is a join of different tables with itself.