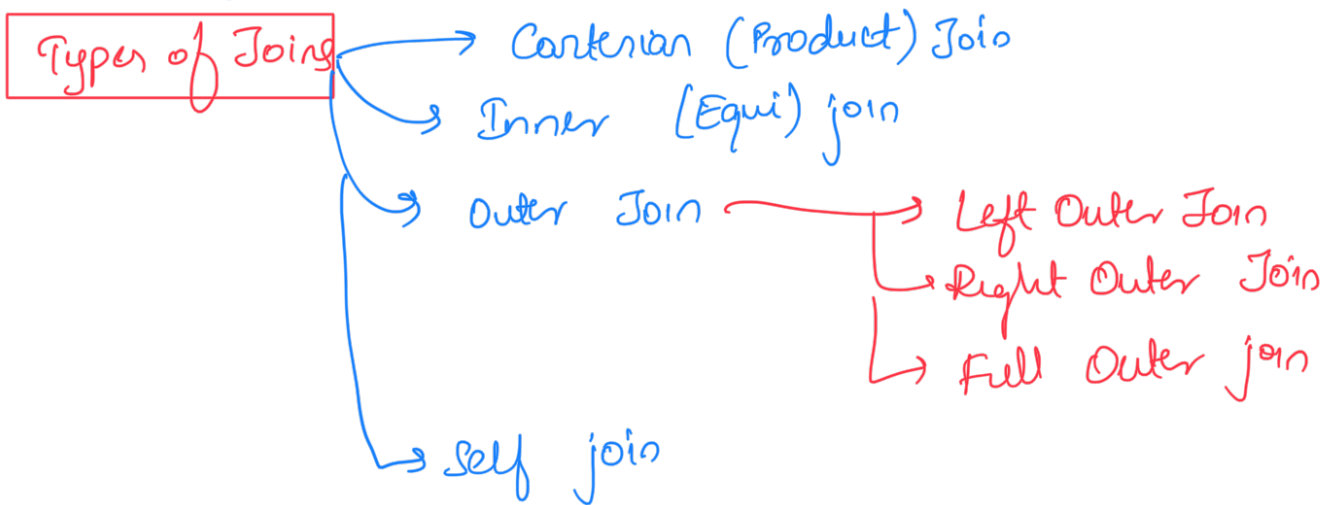


## SQL Chapter 7 Join FSN

**Joins** are used when we need to fetch the data from multiple tables



### Cartesian Join

- based on cartesian product theory

-  $T_A$  -  $m$  rows

$T_B$  -  $n$  rows

- not preferred for realtime scenarios

$T_A \overset{\text{cartesian}}{\text{join}} T_B = m \times n$  rows

ideally expected

$\max(m, n)$  rows

`select * from emp, dept;`

### Inner Join Equi joins

- they return the matching records b/w tables

- In real time scenarios, this is most frequently used join

Conventional Style

`select A.ename, B.dept_name`

`from empA, empB`

`where A.dept_id = B.dept_id`

`and A.sal > 2000;`

Join Condition

(Filter condition)

optional

This join condition is mandatory for removing Cartesian o/p.

if join 3 table A B & C.

select \* from A, B, C

where  $A.x = B.x$

and  $A.x = C.x$

No. of Tables = No. of joins + 1

No. of Joins = No. of tables - 1

Note: If there are no common columns, then 2 tables can't be joined

Note: common columns can be in different name  
cust-id & customer-id

ANSI style join

select \* from  
emp A join dept B

on A.dept\_id = B.dept\_id,

where'

(Outer Join)

↳ It returns both matching & non matching records

Outer join = Inner Join + Non matching records

7 ~~≠~~ 3  
3 ~~≠~~ 3  
3 match 3

It means data present in one table, but absent in another table w.r.t. common columns

	A 10 rows	B 6 rows
Cartesian-	10X6	60 rows
Left join	All match 3 + 7 non match from A left	10
Right join	All match 3 + 3 non match right B	6
Full join	3 matching + 7 non match A 3 non match B	13

## SELF JOIN

- Joining a table to itself is called Self join

## Correlated SubQueries

- Special type of sub queries
- both outer & inner queries are interdependent
- for each & every record of outer query, entire inner query will be executed

- they work on both principles of sub-queries & joins

Display employee who earning the highest salary

select \* from emp A

where 1 = (select count(distinct (B.sal)) from emp B

where A.sal < B.sal);



← for min salary