

What are SQL JOINS ?

In SQL, a join is a way to combine two or more database table based on related column betⁿ them.

But why have Data in Multiple Tables

userid	name
1.	Nabin
2.	Vishesh
3.	Shishir

→ T₁

order id	userid	name
ABC 2	1	Nabin
ABC 2	1	Nabin

T₂

If we make in single table without making any other table 2 or more

- repeated (memory wasted)
- update anomaly (In case customer changed his location, we have 'large data' to edit which is hectic work)
- not well organized

Divided table called 'normalization'.

It helps to reduce data redundancy

Types of Join

Left JOIN



Right JOIN



INNER JOIN



Full JOIN



{ CROSS JOIN }
{ SELF JOIN }

CROSS JOIN → Cartesian Products → it return Cartesian product of the 2 tables being joined (return all the combination of rows from the 2 tables)

C ₁	C ₂	C ₃	C ₄
A	B	E	f
C	D	G	H

C ₁	C ₂	C ₃	C ₄
A	B	E	f
A	B	G	H
C	D	E	f
C	D	G	H

$A = \{1, 2\}$

$B = \{3, 4\}$

$A \times B = \{(1, 3), (1, 4), (2, 3), (2, 4)\}$

In MySQL, full outer join can't perform. To perform it, there will be queries called SET operator.

SET OPERATOR

- I) union - It removes duplicate rows
- II) union all - It doesn't remove dup rows
- III) Intersect - Common
- IV) Except - difference

SELF JOIN

It is a join in which the table is joined with itself.

Self Join is a type of inner join, which is performed in cases where the comparison between two columns of a same table is required; probably to establish a relationship between them. In other words, a table is joined with itself when it contains both Foreign Key and Primary Key in it.

Joining on more than 1 column

Select * from db.table t₁ JOIN db.table t₂ ON t₁.__ = t₂.__
AND t₁.__ = t₂.__

Joining more than 2 Tables

```
SELECT * FROM udus.order_details t1
JOIN udus.orders t2
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SELECT * FROM udus.order_details t1
JOIN udus.orders t2
ON t1.order_id = t2.order_id
JOIN udus.users t3
ON t2.user_id = t3.user_id

filter columns from Join Tables

SELECT t1.order_id, t2.order, t3.name FROM udus.order_details t1
JOIN udus.orders t2
ON t1.order_id = t2.order_id
JOIN udus.users t3
ON t2.user_id = t3.user_id

filter rows from Join Tables

SELECT * FROM udus.order_details t1
JOIN udus.orders t2
ON t1.order_id = t2.order_id
JOIN udus.users t3
ON t2.user_id = t3.user_id
WHERE t3.address = 'Kathmandu'

→ if address is found in table 3.

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