

SQL JOINs in MySQL

In SQL, **JOINS** are used to combine rows from **two or more tables** based on related columns — usually a **foreign key** in one table referencing a **primary key** in another.

We'll use the following two tables:

users table

id	name
1	Aarav
2	Sneha
3	Raj

addresses table

id	user_id	city
1	1	Mumbai
2	2	Kolkata
3	4	Delhi

Note: `user_id` is a **foreign key** that references `users.id`.

1. INNER JOIN

Returns **only the matching rows** from both tables.

```
SELECT users.name, addresses.city  
FROM users  
INNER JOIN addresses ON users.id = addresses.user_id;
```

Output:

name	city
Aarav	Mumbai
Sneha	Kolkata

Raj is excluded because there is no matching address. Delhi is excluded because its user_id (4) is not in users .

Visual Representation:

```
users           addresses  
-----          -----  
| 1 |           | 1 |  
| 2 |           | 2 |  
|   |           |   |  
=> only matching pairs
```

2. LEFT JOIN

Returns all rows from the left table (users), and matching rows from the right table (addresses). If no match is found, NULLs are returned.

```
SELECT users.name, addresses.city  
FROM users  
LEFT JOIN addresses ON users.id = addresses.user_id;
```

Output:

name	city
Aarav	Mumbai
Sneha	Kolkata
Raj	NULL

Raj is shown even though he doesn't have an address.

Visual Representation:



3. RIGHT JOIN

Returns all rows from the right table (addresses), and matching rows from the left table (users). If no match is found, NULLs are returned.

```
SELECT users.name, addresses.city
FROM users
RIGHT JOIN addresses ON users.id = addresses.user_id;
```

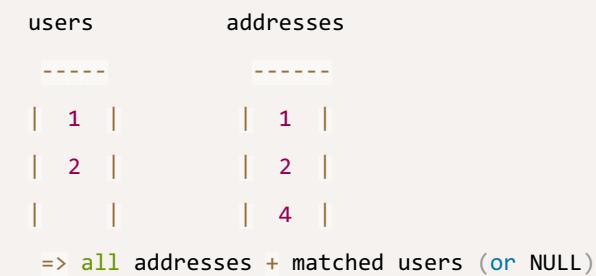
Output:

name	city
Aarav	Mumbai
Sneha	Kolkata

name	city
NULL	Delhi

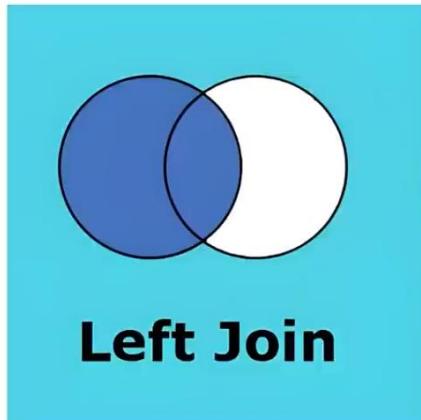
`Delhi` is shown even though it points to a `user_id` that doesn't exist.

Visual Representation:

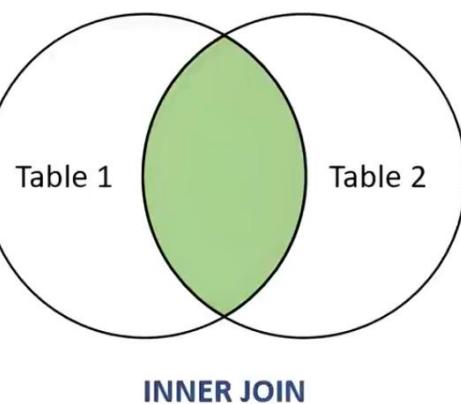
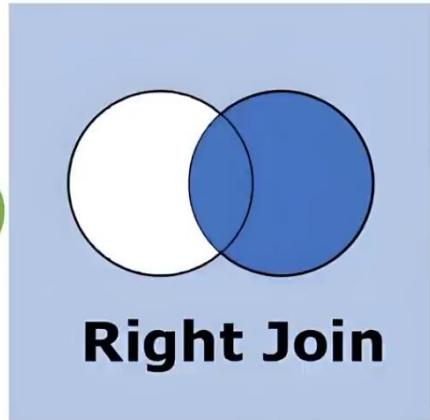


Summary Table

JOIN Type	Description
INNER JOIN	Only matching rows from both tables
LEFT JOIN	All rows from left table + matching from right
RIGHT JOIN	All rows from right table + matching from left



vs



INNER JOIN



Activate Windows
Go to Settings to activate Windows



Activate Windows
Go to Settings to activate Windows