

SELECT MAX (from row) FROM table;

SELECT MIN (from row) FROM table;

SELECT AVG (from row) FROM table;

SELECT SUM (from row) FROM table;

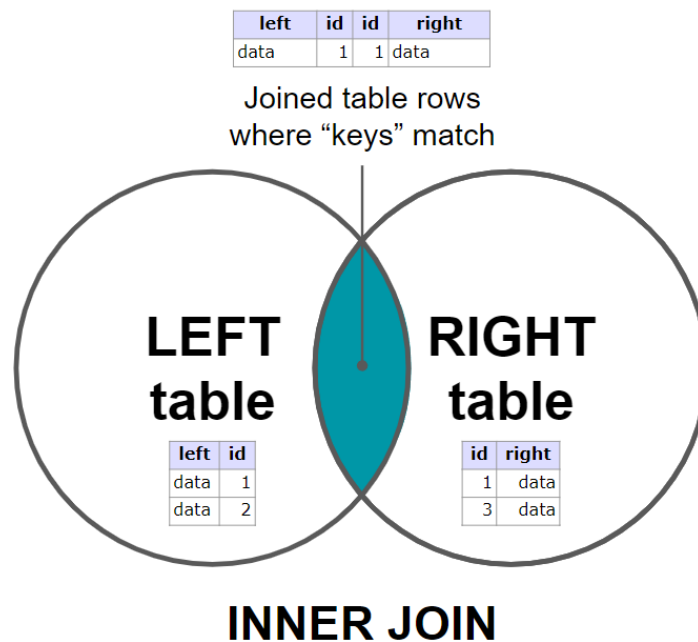
SELECT COUNT (from row) FROM table;

SELECT COUNT (movie_id), release_year FROM movie GROUP BY release_year;

SELECT COUNT (movie_id), release_year FROM movie GROUP BY release_year HAVING COUNT (movie_id)>5;

Also look for LIMIT and OFFSET

SELECT movie.title, movie.director_id, director.name FROM movie INNER JOIN director
ON movie.director_id = director.director_id;

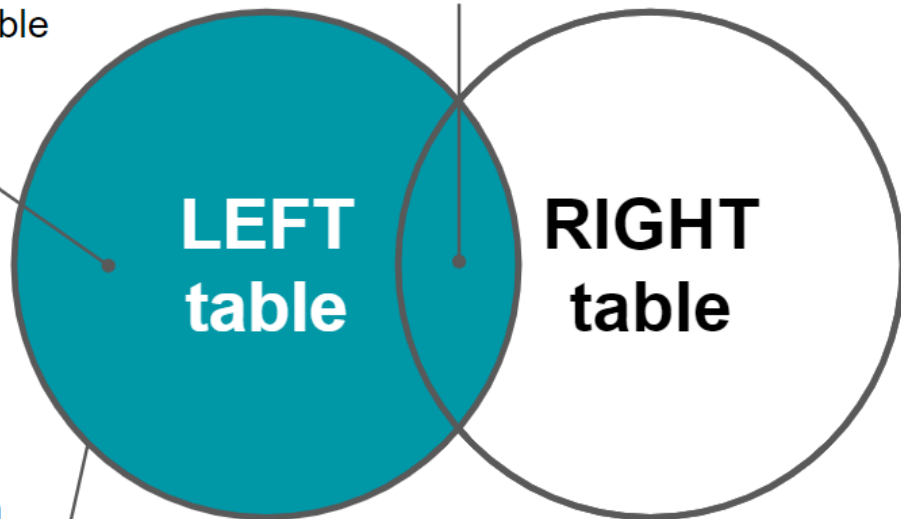


left	id	id	right
data	2	NULL	NULL

Joined table rows
without right table
"keys" match

left	id	id	right
data	1	1	data

Joined table rows
where "keys" match



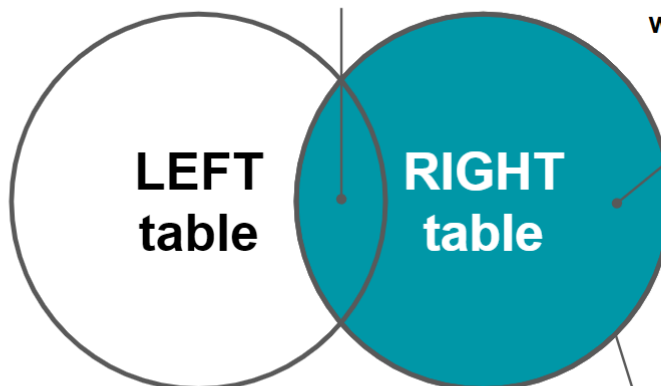
left	id	id	right
data	1	1	data
data	2	NULL	NULL

All rows of data
from left table +
right data if it exists

LEFT JOIN

left	id	id	right
data	1	1	data

Joined table rows
where "keys" match



left	id	id	right
NULL	NULL	3	data

Joined table rows
without left table
"keys" match

left	id	id	right
data	1	1	data
NULL	NULL	3	data

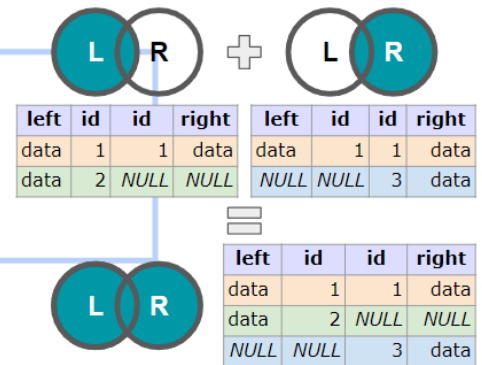
All rows of data
from right table +
left data if it exists

RIGHT JOIN

FULL JOIN¹

- **FULL JOIN** is both a **LEFT JOIN** and **RIGHT JOIN** in 1 query
 - returns all matching records from both tables whether the other table “key” matches or not
- **FULL JOIN** does not exist in MySQL but does in other DBMSs
 - In MySQL we can use **LEFT/RIGHT JOIN** to create a **FULL JOIN**
- **LEFT JOIN + RIGHT JOIN:**

```
SELECT * FROM movie LEFT JOIN director
ON movie.director_id=director.director_id
UNION
SELECT * FROM movie RIGHT JOIN director
ON movie.director_id=director.director_id;
```



- ***UNION** removes the duplicate rows from the intersection

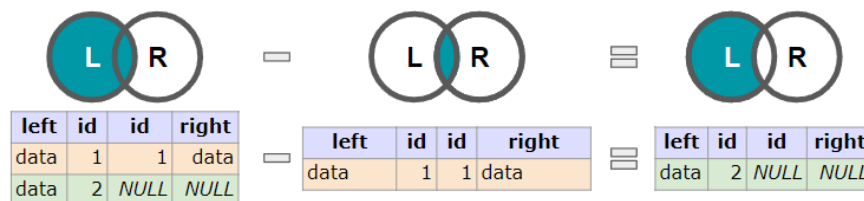
¹https://www.w3schools.com/sql/sql_join_fu

```
SELECT m.title, d.name FROM movie m INNER JOIN director d
ON m.director_id=d.director_id;
```

Exclusive LEFT JOIN

- Exclusive **LEFT JOIN** returns all records from the left table, but **NOT** the records that fulfill the **ON** condition from the right table
 - Example: “Show me all the movies, *without* directors assigned to them”

```
SELECT movie.title, director.name FROM movie
LEFT JOIN director ON movie.director_id=director.director_id
WHERE director.director_id IS NULL;
```



(left join) - (inner join) = left joined table where “keys” do **NOT** match

JOIN - 2+ Tables

- We can also join more than 2 tables in a single query

```
SELECT t1.column, t2.column, t3.column FROM table_1 t1
      INNER JOIN table_2 t2
      ON t1.id = t2.id
      INNER JOIN table_3 t3
      ON t1.id = t3.id;
```