WEEK 15

Introduction to **Joins**

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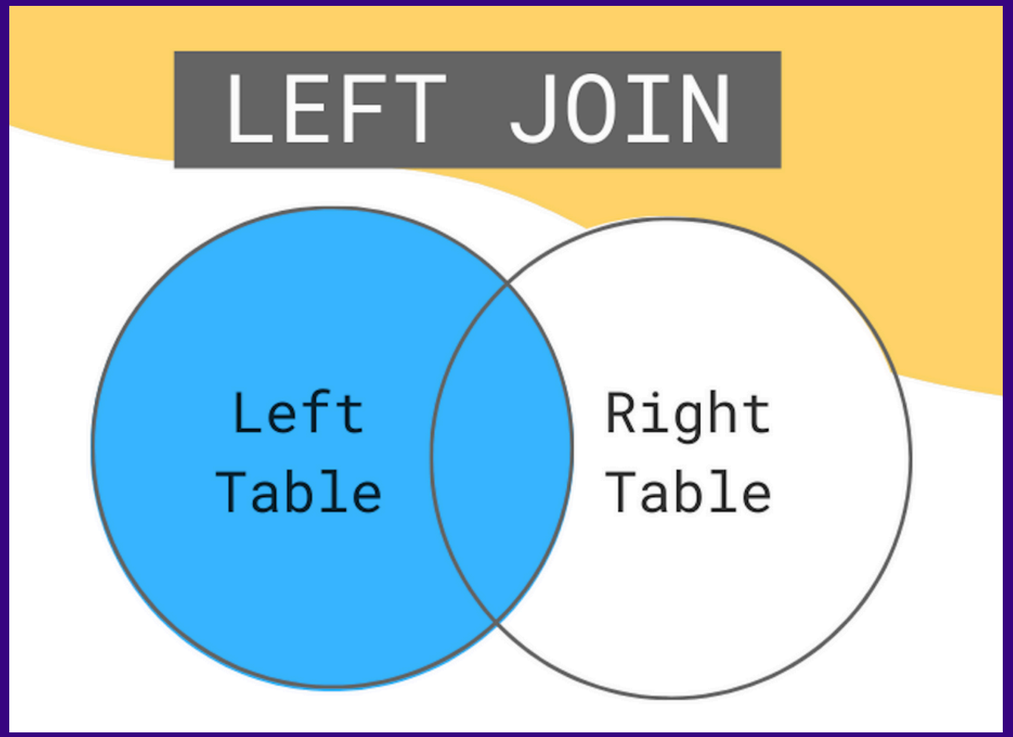
Left Join

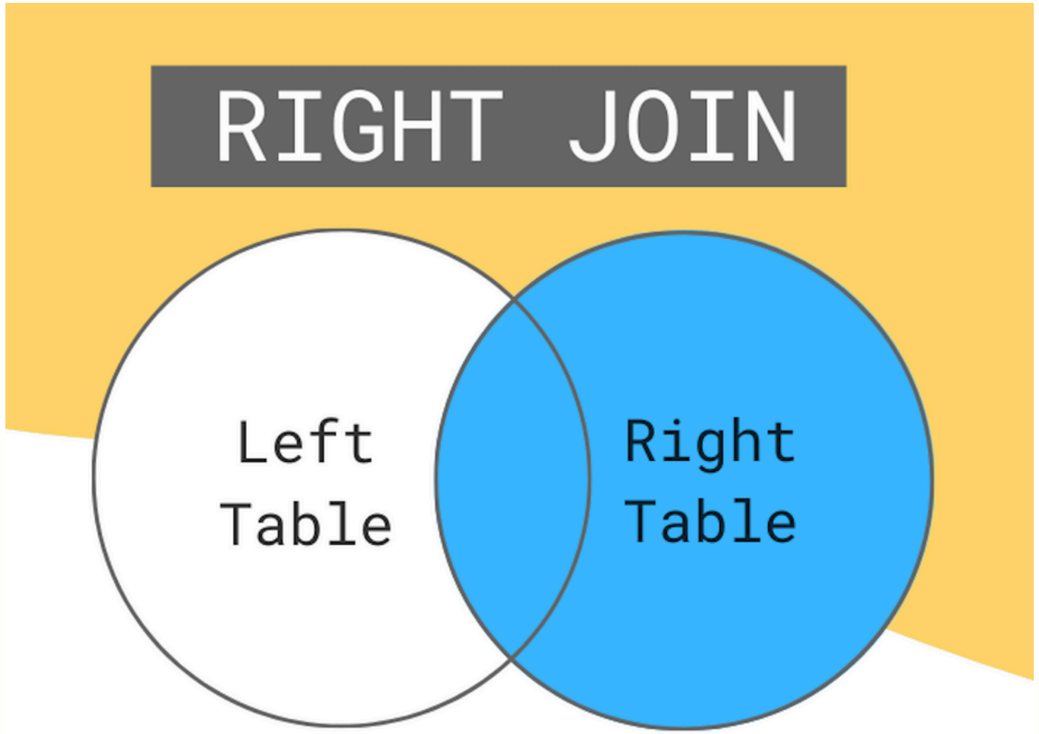
A left join, alternatively knows as a left outer join, returns all rows from the left table (the table mentioned first in the query) and corresponding rows from the right table (the table mentioned second) that meet a specific criteria or set of criteria. For the rows in the left table that do not meet the join criteria the entries will show NULL values.




```sql
-- SQL Syntax Example:
SELECT a.column_1, b.column_2
FROM table_a AS a
LEFT JOIN table_b AS b ON a.column_1 = b.column_1
```

Right Join

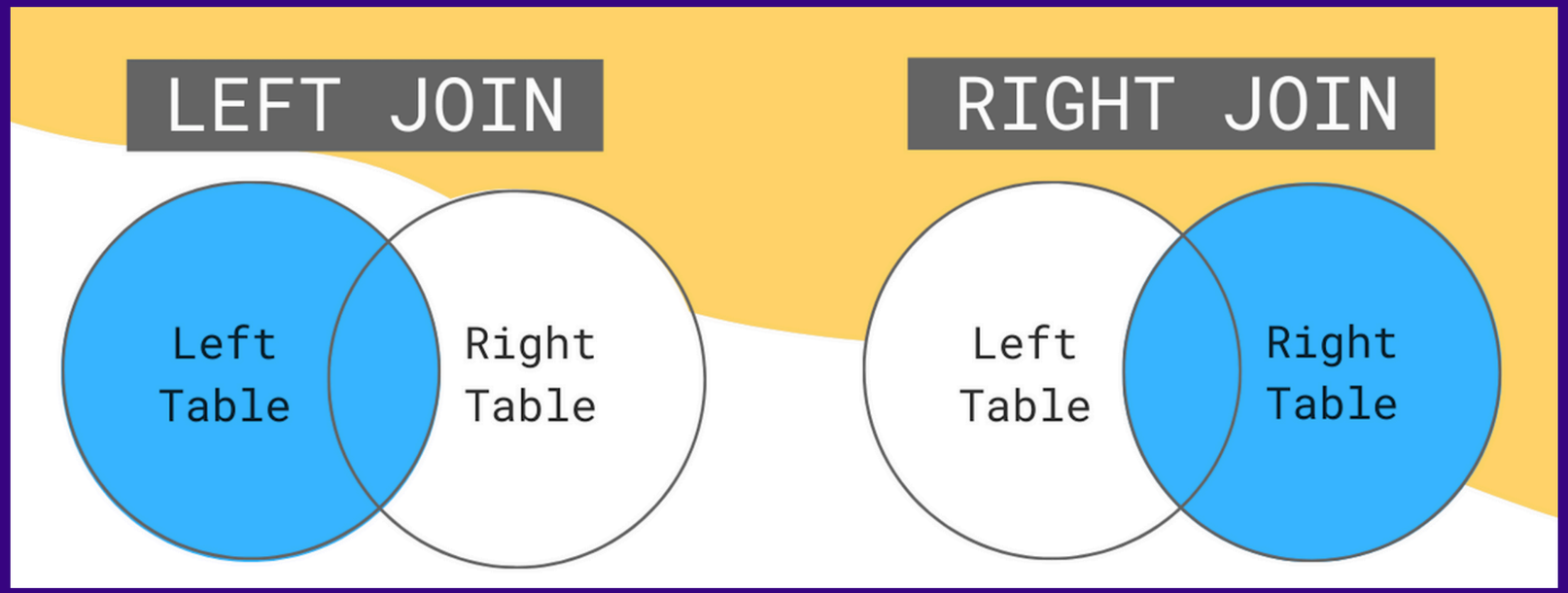
A left join, alternatively knows as a left outer join, returns all rows from the left table (the table mentioned first in the query) and corresponding rows from the right table (the table mentioned second) that meet a specific criteria or set of criteria. For the rows in the left table that do not meet the join criteria the entries will show NULL values.




```sql
-- SQL Syntax Example:
SELECT a.column_1, b.column_2
FROM table_a AS a
RIGHT JOIN table_b AS b ON a.column_1 = b.column_1
```

Right Join vs. Left Join

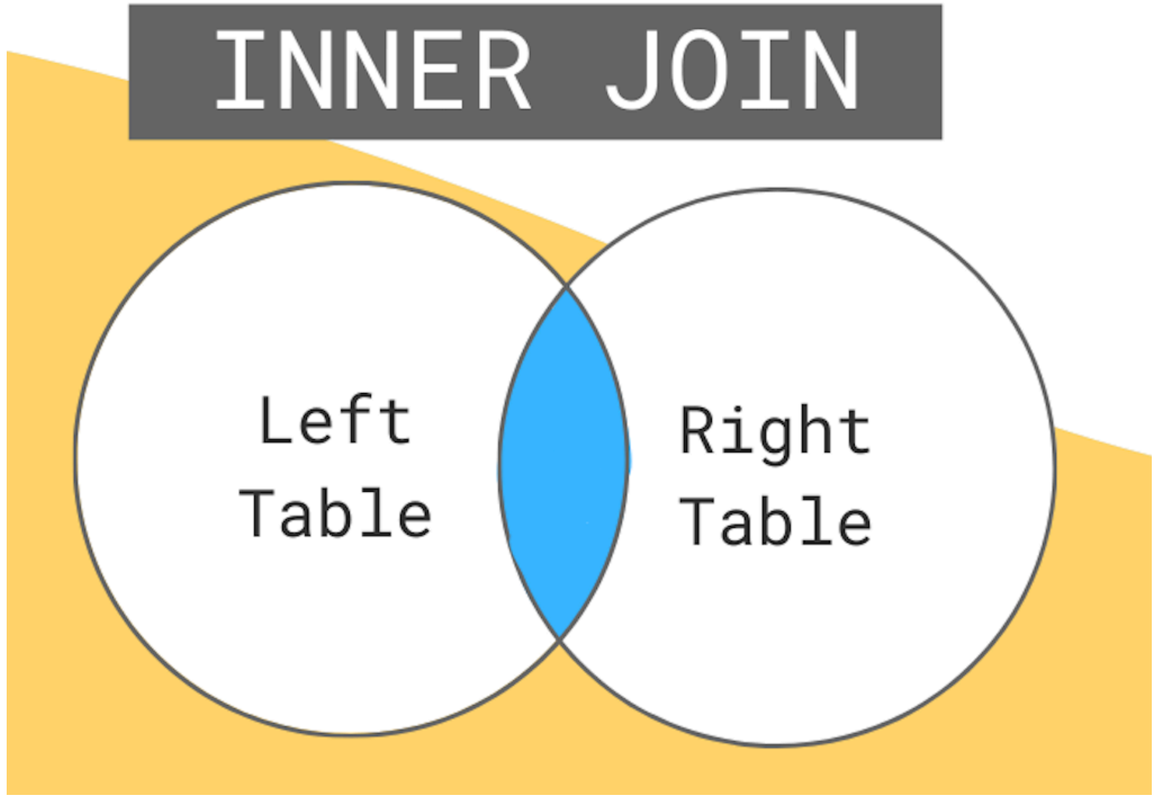
Essentially, since left joins and right joins are interchangeable so long as you reverse the order of the referenced tables, it is often simpler and a best practice to stick to using one of these join types. This will generally make your code logic easier to comprehend, and can simplify the process of debugging. In terms of conventions, left joins are more commonly used, this is partly because it is more intuitive, however whichever you choose stick to it.



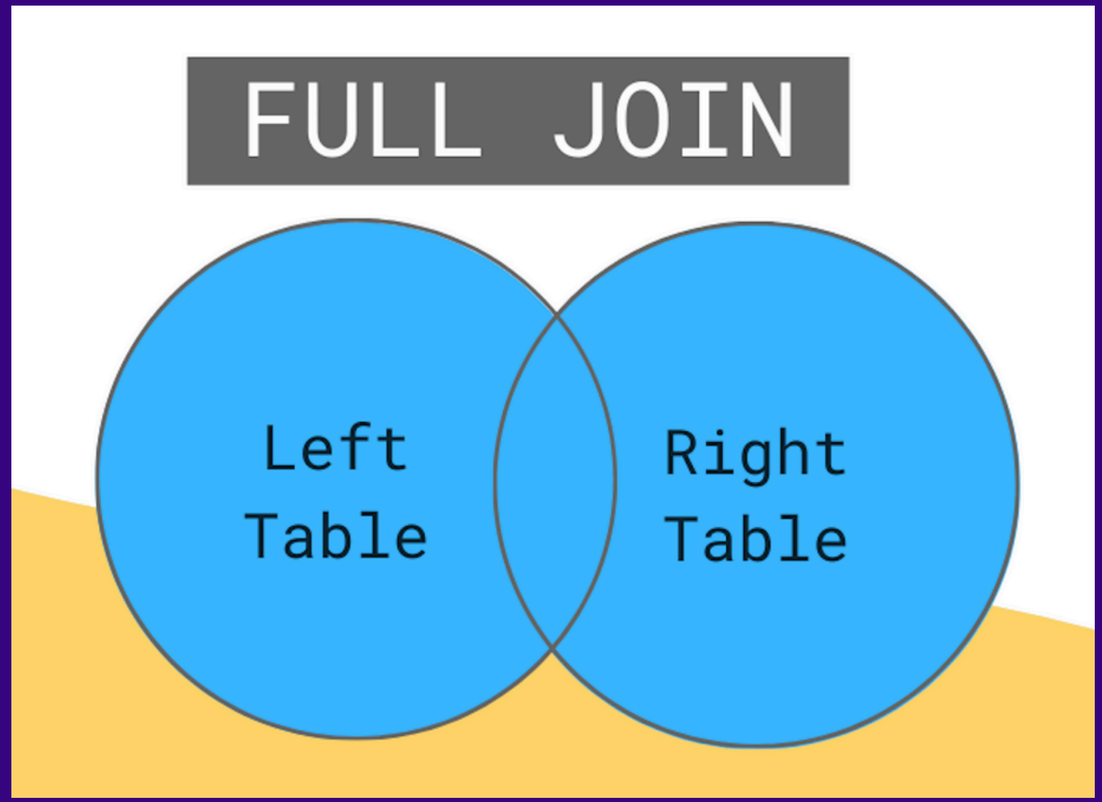
Inner Join

An inner join (aka join) only returns rows where there's a match in both tables based on the join condition.

```sql
-- SQL Syntax Example:
SELECT a.column_1, b.column_2
FROM table_a AS a
INNER JOIN table_b AS b ON a.column_1 = b.column_1
```



Outer Join

An outer join, otherwise known as a full join or full outer join returns all the rows from both tables. Rows that do not meet the join criteria in either of the tables will return NULL values. In simple terms, an outer join combines the results of a left join and a right join.

```sql
--SQL Syntax Example:
SELECT a.column_1, b.column_2, c.column_3
FROM table_a AS a
FULL JOIN table_b AS b ON a.column_1 = b.column_2
FULL JOIN table_c AS c ON a.column_1 = c.column_3
```