

Foundation

WEEKLY DIGEST / E101

7-13 September 2026



This week

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TUESDAY / 8 September 2026

Elly Explains: What Are SQL Joins?

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ELLY EXPLAINS: WHAT ARE SQL JOINS?



A JOIN combines related rows from two tables into one query result, using a matching rule.

Customers stores names.

CustomerID	Name
1	Alice
2	Bob
3	Carol
4	David

Orders stores purchases.

OrderID	CustomerID	Item
101	1	Laptop
102	2	Mouse
103	1	Keyboard
104	3	Monitor
105	2	Headphones



A join answers **‘Who ordered what?’** without copying each name into every order.

== TWO TABLES. ONE USEFUL ANSWER. ==

THE FOUR MOVING PARTS

1

LEFT TABLE

customers **AS** c

2

RIGHT TABLE

orders **AS** o

3

MATCH RULE



ON c.customer_id = o.customer_id

4

JOIN TYPE



decides what happens to unmatched rows

JOIN TYPE — WHAT EACH ONE RETURNS



INNER JOIN

— matched pairs only



LEFT JOIN

— every left row; right-side NULL when no match



RIGHT JOIN

— every right row



FULL JOIN

— every row from both sides



IMPORTANT

A row can match many rows.
Joins do not remove duplicates.

TINY TABLES, REAL RESULTS

CUSTOMERS	
customer_id	name
1	Ana
2	Bo
3	Cy

ORDERS		
order_id	customer_id	item
10	1	Tea
11	1	Cake
12	2	Soup
13	4	Pie



```
SELECT c.name, o.item
FROM customers AS c
INNER JOIN orders AS o
ON c.customer_id = o.customer_id
ORDER BY o.order_id;
```

INNER RESULT	
name	item
Ana	Tea
Ana	Cake
Bo	Soup



CHANGE INNER TO LEFT	
same three rows + Cy NULL	
name	item
Ana	Tea
Ana	Cake
Bo	Soup
Cy	NULL



Ana appears twice: two orders match. Pie has no customer, so this left join does not include it.

USES AND MISCONCEPTIONS

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ORDERS + CUSTOMERS

Who bought what?



SALES + PRODUCTS

Which items sold?



TICKETS + AGENTS

Who owns each ticket?



MISCONCEPTION

~~“A join permanently merges the tables.”~~

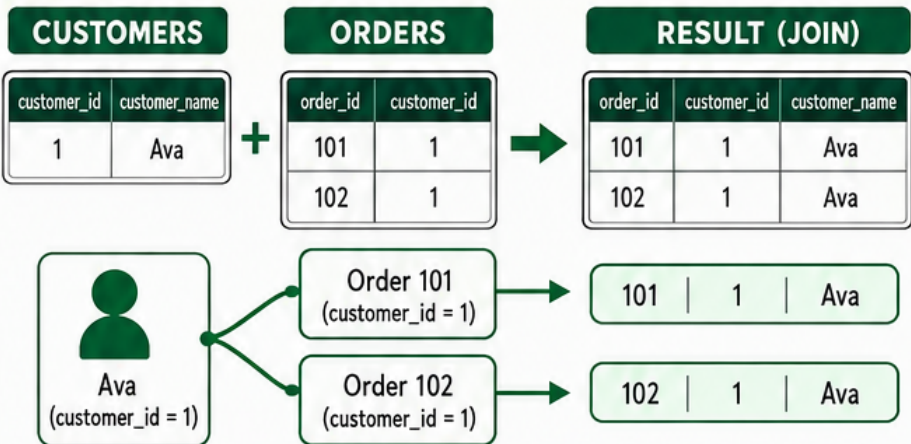


NO. A join produces a query result.
The source tables stay separate.

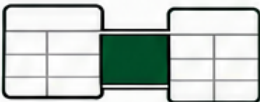
WATCH THE ROW COUNT

One customer with two orders makes two result rows.

A join follows every match; it does not promise one row per customer.



CHOOSE DELIBERATELY



INNER

hides unmatched rows.



LEFT

keeps every row from the left table.

THE 30-SECOND RECAP

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1

Choose the tables.

2

Write the match rule.

3

Choose the join type based on which unmatched rows you need.



TINY GLOSSARY



KEY —
a column used
to identify or
link rows



ON —
the rule that
decides which
row pairs match



NULL —
a missing result
value on the
unmatched side

CHECK YOUR UNDERSTANDING

Q:

You need every customer, including customers with no orders. Which join?

A:

Start with customers **LEFT JOIN** orders and match their **customer_id** columns.

NEXT:**WHAT IS KIMBALL DATA WAREHOUSING?**