# Less Common Joins: Takeaways ⤶

## Syntax

- Combining tables using left joins:

```
SELECT *
  FROM some_table
  LEFT JOIN another_table
    ON some_table.some_column = another_table.some_column;
```

- Combining tables using cross joins:

```
SELECT *
  FROM some_table
  CROSS JOIN another_table;
```

- Joing tables on complex conditions:

```
SELECT i1.invoice_id, i1.invoice_date, i1.total,
       i2.invoice_id AS previous_invoice_id,
       i2.invoice_date AS previous_invoice_id,
       i2.total AS previous_total
  FROM invoice i1
  JOIN invoice i2
    ON i1.invoice_id >= i2.invoice_id;
```

## Concepts

- A self-join occurrs when we join a table with itself.
- An **equi-join** is a join where the join condition is an equality.
- Join conditions don't need to be equalities; they can be anything.
- Cross joins give us all combinations between rows of the intervening tables.

## Resources

- [Joins in SQL](#)
- [Running total](#)