

Intermediate SQL – Lesson 1: Understanding Joins

What You'll Learn

In this lesson, you'll learn how to:

- Combine multiple tables using different types of SQL joins
 - Understand the difference between inner, outer, left, and right joins
 - Select specific fields from joined tables
 - Apply joins to solve real-world data problems
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What is a JOIN?

A **JOIN** is a method of combining rows from two or more tables based on a related column, typically one that uniquely identifies a record — like `employee_id`. This allows you to bring different pieces of information together into one cohesive result.

Types of Joins Covered

1. Inner Join

- Returns only the rows where a match exists in **both** tables.
- Useful when you want to work only with complete data records.

2. Full Outer Join

- Returns **all** rows from both tables, filling in `NULL` where there's no match.

- Ensures you don't miss any data, even if records don't match perfectly.

3. Left Outer Join

- Returns all records from the **left table** and the matched ones from the right.
- Missing matches from the right will be filled with **NULL**.

4. Right Outer Join

- Opposite of left join: includes all records from the **right table**.
- Data missing in the left table will show as **NULL**.



Selecting Specific Columns

Instead of pulling all columns from joined tables, it's more efficient to **select only the fields you need**.

You'll often want to include fields like employee name, job title, or salary — and avoid duplicates or irrelevant fields.

Tip: When two tables have a column with the same name (like `employee_id`), you must specify which table you're referencing.



Real-World Use Cases

✓ Use Case 1: Michael Scott's Budget Fix

Michael needs to cut the highest-paid employee's salary (other than his own) to hit his quota.

Using a join and filtering out "Michael", we can sort by salary and find the top earner — which unfortunately, is Dwight Schrute.

✓ Use Case 2: Angela Verifies Kevin's Work

Kevin miscalculates the average salary for salesmen.

Angela uses SQL to group salespeople and find the accurate average salary, ensuring their department reporting is correct.

Recap

- ✓ Joins help you combine tables and gain a full picture of your data
 - ✓ Each join type (inner, full outer, left, right) behaves differently — choose based on your need
 - ✓ Selecting specific columns keeps your queries efficient and readable
 - ✓ Real-world business cases are solved with strategic joins and filtering
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Next Up: UNION

In the next video, you'll learn about the **UNION** operator — how to stack result sets, manage duplicates, and when to use **UNION ALL** instead.