Optimising queries - Lesson overview

Learning objectives:

- Understand how efficiency, readability, and maintainability affect the long-term usefulness of SQL code.

- Know how to use subqueries.

- Know how to use Common Table Expressions and the benefits they provide.

- Know how to use AI to our benefit when querying data with SQL.

Legend

- Slide deck
- Knowledge questions
- Notebook
- Walk-through
- Reference card
- Exercise
- Reading

Lesson path

- **Subqueries** — 25 min
- **Subqueries in SELECT** — 20 min, 5 min
- **Subqueries in JOIN** — 20 min, 2 min
- **Subqueries in FROM** — 20 min, 2 min
- **Subqueries in WHERE** — 20 min, 3 min
- **Optimising queries** — 25 min, 10 min, 20 min
- **Common Table Expressions (CTEs)** — 25 min, 5 min
- **CTEs vs subqueries** — 20 min, 5 min, 20 min
- **Using AI with SQL** — 10 min

Description

SQL in production operates on datasets that can contain hundreds of millions of rows of data. **Poorly optimised SQL queries** can consume an **enormous amount of resources** if they are **applied incorrectly**, and be difficult to read and modify.

In this lesson, we look at **advanced topics in SQL**. We discuss how **subqueries** and **Common Table Expressions** enable more advanced analysis and how to optimise queries so that they execute quickly, are easy to read and understand, and simple to modify as the needs arise.