

SQL for tax data extraction and reporting

Course outline · issued 14 September 2026

Technology areas	SQL and Database Management
Level	Foundation
Short course	4 days
One-month track	4 weeks · 16 training days · 96 contact hours
Two-month track	8 weeks · 32 training days · 192 contact hours
Delivery	In person, Virtual, Hybrid
Class size	10 to 20 participants
Certification	Certificate of completion
Entry requirements	Comfortable with spreadsheets. No programming experience assumed.

Who it is for

Analysts and officers who need data from tax administration systems without waiting on IT.

REVENUE USE CASE

Queries run against a sample taxpayer-assessment-payment schema.

By the end, participants can

- Write SELECT queries with joins, filters and aggregates
- Reconcile data across taxpayer, assessment and payment tables
- Produce repeatable extracts for reporting

Short course modules (4 days)

1. Relational concepts and schemas
2. Filtering, joining and aggregating
3. Sub-queries and window functions
4. Data quality checks
5. Reporting extract project

One-month track — weeks 1 to 4

4 weeks · 16 training days · 96 contact hours

Week 1 — Relational foundations

- How a tax administration database is organised
- Tables, keys, and reading a schema diagram
- SELECT, WHERE and ORDER BY
- Data types, NULLs and the traps they set

Practical: Answer ten questions about a sample schema using single-table queries.

Week 2 — Joining and aggregating

- INNER, LEFT and the join you actually meant
- GROUP BY, HAVING and aggregate functions
- Joining taxpayer, assessment and payment tables
- Counting things correctly when rows duplicate

Practical: Produce collection totals by tax type and office.

Week 3 — Sub-queries and window functions

- Sub-queries, CTEs and readable query structure
- ROW_NUMBER, RANK and deduplication
- Running totals and period-on-period comparison
- Finding the latest record per taxpayer

Practical: Build an arrears ageing query using window functions.

Week 4 — Data quality and repeatable extracts

- Profiling a table before you trust it
- Referential and completeness checks
- Parameterising and saving an extract
- Documenting a query for handover

Practical: Deliver a documented, parameterised reporting extract.

Checkpoint: the one-month track is assessed [here](#).

Two-month track — continues through weeks 5 to 8

8 weeks · 32 training days · 192 contact hours

Week 5 — Views, procedures and scheduling

- Views and when they help or hide problems
- Stored procedures and parameters
- Scheduling an extract safely
- Version-controlling SQL

Practical: Wrap the week 4 extract in a scheduled, versioned procedure.

Week 6 — Performance and large tables

- Reading an execution plan at a basic level
- Indexes: what they fix and what they cost
- Writing queries that scale to millions of rows
- Query etiquette on a production system

Practical: Tune a slow query against a large sample table.

Week 7 — Analytical SQL for compliance

- Cohort and retention style analysis for filers
- Data matching across third-party sources
- Building a compliance risk indicator in SQL
- Explaining a query's logic to a non-technical reader

Practical: Build a risk indicator that flags likely under-declaration.

Week 8 — Capstone extract and review

- Assembling the reporting pack
- Peer review of another participant's SQL
- Documentation and handover
- Presenting results and caveats

Practical: Deliver, defend and hand over a complete reporting extract.

Capstone assessment and post-course evaluation.

Capstone

A documented, repeatable reporting extract built from a sample taxpayer-assessment-payment schema, with data quality checks built in.

About this outline

Indicative extended tracks. The one-month track runs weeks 1 to 4; the two-month track continues through week 8 with deeper labs, certification preparation and a capstone. Weeks, contact hours and cohort sizes are finalised with each client.

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