



# TENABAL

## SQL for Data Analysis

Technical Manual — English Edition  
*SQLite as the reference engine*

Version 1.0 • 2026  
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Introduction

# The Universal Language of Data

*Why SQL remains the most in-demand data skill*

# What Is SQL and Why Learn It?

SQL (Structured Query Language) is the standard language for communicating with relational databases. Created in the 1970s by IBM and standardised in 1987, SQL remains the most sought-after analytical skill in the data job market — five decades later.

Unlike Python or R, SQL is not a general-purpose programming language. It is a declarative language designed exclusively to query, transform, and manipulate data. You tell it what you want, not how to get it. That conceptual simplicity is its greatest strength.

## Note

SQL is the language that bridges business analysts, data engineers, data scientists, and backend developers. Regardless of your role, SQL lets you access data directly without depending on anyone else.

## SQL in the Modern Data Ecosystem

SQL does not live in isolation — it underpins almost every piece of modern data infrastructure:

- Relational databases: PostgreSQL, MySQL, SQLite, SQL Server, Oracle
- Cloud data warehouses: BigQuery, Redshift, Snowflake, Databricks SQL
- BI tools: Power BI, Tableau, Looker (all generate SQL under the hood)
- Data orchestration: dbt (data build tool) uses SQL as its primary language
- Python: pandas can execute SQL directly via `pd.read_sql()`

## Why SQLite for This Manual?

SQLite is a full relational database that lives as a single file. It requires no server installation, no configuration, and runs on any operating system — perfect for learning SQL without infrastructure distractions.

Feature	SQLite	PostgreSQL	MySQL
Installation	None required	Server needed	Server needed
Data file	Single .db file	Data directory	Data directory
Concurrency	Limited	High	High
Advanced features	Core set	Very complete	Complete
Best for	Learning / mobile	Production / analytics	Web / production

## Note

All standard SQL you learn here works in PostgreSQL, MySQL, BigQuery, and Snowflake with minimal differences. The Appendix includes a cross-engine equivalence table.