



REAL WORLD
TECHNOLOGY TRAINING & SOLUTIONS
"Training You Can Really Use"

SQL for Data Analytics

Duration: 3 Days

Method: Instructor-Led Training (ILT) | Live Online Training

Course Description

This course covers everything participants need to progress from simply knowing basic SQL to telling stories and identifying trends in data. Participants will be able to start exploring their data by identifying patterns and unlocking deeper insights. They will also gain experience working with different types of data in SQL, including time-series, geospatial, and text data. Finally, they will understand how to become productive with SQL with the help of profiling and automation to gain insights faster. By the end of the course, participants will be able to use SQL in everyday business scenarios efficiently and look at data with the critical eye of analytics professional.

Target Audience

This course is intended for:

- Database engineers who are looking to transition into analytics,
- Backend engineers who want to develop a deeper understanding of production data,
- Data scientists or business analysts who want to improve their data analytics skills using SQL.

Prerequisites

To attend this course, candidates must have:

- Knowledge of basic SQL and database concepts.

Course Objectives

Upon successful completion of this course, attendees will be able to:

- Use SQL to summarize and identify patterns in data.
- Apply special SQL clauses and functions to generate descriptive statistics.
- Use SQL queries and subqueries to prepare data for analysis.
- Perform advanced statistical calculations using the window function.
- Analyse special data types in SQL, including geospatial data and time data.
- Import and export data using a text file and PostgreSQL.
- Debug queries that will not run.
- Optimize queries to improve their performance for faster results.



Course Topics

Module 1: Understanding and Describing Data

- The World of Data
- Methods of Descriptive Statistics
- Statistical Significance Testing

Module 2: The Basics of SQL for Analytics

- Relational Databases and SQL
- Basic Data Types of SQL
- Reading Tables: The SELECT Query
- Creating Tables
- Updating Tables
- Deleting Data and Tables
- SQL and Analytics

Module 3: SQL for Data Preparation

- Assembling Data
- Transforming Data

Module 4: Aggregate Functions for Data Analysis

- Aggregate Functions
- Aggregate Functions with GROUP BY
- The HAVING Clause
- Using Aggregates to Clean Data and Examine Data Quality

Module 5: Window Functions for Data Analysis

- Window Functions
- Statistics with Window Functions

Module 6: Importing and Exporting Data

- The COPY Command
- Using R with Our Database
- Using Python with Our Database
- Best Practices for Importing and Exporting Data

Module 7: Analytics Using Complex Data Types

- Date and Time Data Types for Analysis
- Performing Geospatial Analysis in Postgres
- Using Array Data Types in Postgres
- Using JSON Data Types in Postgres
- Text Analytics Using Postgres

Module 8: Performant SQL

- Database Scanning Methods
- Performant Joins
- Functions and Triggers

Module 9: Using SQL to Uncover the Truth - A Case Study

- Case Study

ACTIVITIES INCLUDED