Course : SQL for users, advanced level

Write complex SQL queries for high-performance analysis

Practical course - 3d - 21h00 - Ref. SAU

Price : 2040 CHF E.T.

NEW

As SQL is a data language, the queries to be implemented can be complex if you want to become an experienced data analyst. Preparing data from relational databases is essential for analyzing and/or designing a data warehouse that is easy to manipulate. This training course will introduce you to the advanced concepts of the different functions possible in the SELECT command, how to perform combined queries and how to understand update commands.

Teaching objectives

At the end of the training, the participant will be able to:

- Correctly combine queries using subqueries, joins and relational operators
- Master scalar functions and their use (indexing, conditional expressions, regular expressions, etc.).
- Differentiate and use analytical functions, aggregate functions and windowing functions according to analysis needs
- Exploit subgroup mechanisms (ROLLUP, CUBE)
- Understand the differences between views and CTE (WITH) to simplify complex queries
- Use update commands (INSERT, UPDATE, DELETE)

Intended audience

Anyone wishing to improve their SQL skills by executing complex queries.

Prerequisites

Basic knowledge of SQL language.

PARTICIPANTS

Anyone wishing to improve their SQL skills by executing complex queries.

PREREQUISITES

Basic knowledge of SQL language.

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

Practical details

Hands-on work

Discussions, experience sharing, demonstrations, tutorials and case studies.

Teaching methods

Active pedagogy based on examples, demonstrations, experience sharing, case studies and assessment of learning throughout the course.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

Course schedule

1 Reminders of how to build a relational database and SQL

- Tables, primary and foreign keys.
- Good use of different types of data.
- Creating tables and setting constraints.
- Joins (INNER, LEFT, RIGHT, FULL).
- Set operators (UNION, INTERSECT, EXCEPT).
- Views and indexes.
- SELECT command syntax.

Hands-on work

Get to grips with a database and handle simple queries.

2 Advanced data manipulation and analysis techniques in SQL

- Functions and indexing.
- Conditional processing with CASE.
- Regular expressions vs. the LIKE operator.
- Analytical functions vs. aggregate functions.
- Window functions.
- Subgroup functions with ROLLUP and CUBE.

Hands-on work

Handle extraction queries using the various functions covered in the chapter. Analyze the results obtained to determine the most relevant functions.

3 Methods for assembling and organizing SQL queries

- Subqueries versus joins.
- Division with operators.
- Subqueries in conditions.
- Correlated sub-surveys.
- Subqueries as data sources.
- Views versus CTE with WITH.

Hands-on work

Combine queries, check whether a join can replace a subquery. Manipulate ETCs.

4 Update orders

- User rights management for updates.
- Transactions.
- INSERT, UPDATE, DELETE update commands.
- The impact of constraints when executing an update.
- Mass updates.

Hands-on work

Perform database updating operations. Import and export data.

Dates and locations

REMOTE CLASS
2026 : 30 Mar., 3 June, 7 Sep., 7 Dec.