

GWENDAL LE COGUIC

COURSES

Each training session focuses on practical demonstrations, interactive exercises, and discussions based on real-life situations to ensure the acquisition of key skills.

Each session can be taken:

- on-site or remotely
- in French or English
- individually or in groups

Quotes available upon request

Tel: +33 7 69 02 25 10

Email: contact@glc.st

THE BASICS OF SQL



a. Description

*This hands-on training is designed to give developers, analysts, and IT professionals a solid foundation in SQL. You'll learn how to **design databases**, **write efficient queries**, and **analyze data** using real-world exercises and best practices. Whether you're just getting started or looking to deepen your skills, this course will make you fluent in relational database querying.*

b. Educational goals

- Understand the structure and logic of relational databases
- Design and create normalized database schemas
- Write basic and advanced SQL queries to retrieve and manipulate data
- Perform data aggregation and analysis using SQL functions
- Optimize queries and apply best practices for performance

c. Prerequisites

- Basic understanding of data and its organization (spreadsheets, tables)
- Familiarity with fundamental programming or logic concepts (variables, conditions)

d. Targeted audience

- Developers
- Data analysts
- System administrators

e. Program

Day 1 - SQL fundamentals

Introduction to SQL and relational databases

- Theoretical explanation of the relational model
- Database architecture and components
- Basics of SQL: syntax, structure, and execution

Database design and schema creation

- Understanding ER diagrams and normalization
- Creating tables: *CREATE TABLE*, constraints (*PRIMARY KEY*, *FOREIGN KEY*, etc.)
- Data types and indexing

Basic SQL queries

- Retrieving data with *SELECT*, filtering with *WHERE*
- Using operators (*AND*, *OR*, *LIKE*, *IN*)
- Sorting results with *ORDER BY*

Day 2 - Advanced SQL concepts

Advanced queries and joins

- Understanding *INNER JOIN*, *LEFT JOIN*, *RIGHT JOIN*, *FULL JOIN*
- Combining results with *UNION* and *INTERSECT*

Aggregations and subqueries

- Grouping data with *GROUP BY*, filtering with *HAVING*
- Using aggregate functions (*COUNT*, *SUM*, *AVG*, etc.)
- Writing subqueries with *EXISTS*, *NOT EXISTS*

Window functions

- Introduction to window functions (*OVER*, *PARTITION BY*)

Performance optimization

- Optimizing queries with indexing
- Common pitfalls and best practices