



*Training Course:
Advanced SQL Bootcamp*

*21 - 25 February 2027
Cairo (Egypt)*

Training Course: Advanced SQL Bootcamp

Training Course code: IT1960 From: 21 - 25 February 2027 Venue: Cairo (Egypt) - Training Course Fees: 4100 € Euro

Introduction

Welcome to the Advanced SQL Bootcamp! Building on the foundational knowledge of SQL, this training program takes your skills to the next level, delving into advanced concepts and techniques that will empower you to tackle complex database challenges. Whether you're a business analyst, data scientist, or professional working with data, this program will equip you with the expertise to master advanced SQL operations and optimize database performance.

Objectives

By the end of this training program, participants will:

- Examine the characteristics of data, and the necessity to process data to produce and value information as the basis of decision-making.
- Analyze and design a database from a logical and physical perspective.
- Draw ERDs Entity Relationship Diagrams to depict the transformation of the business problem into a documented solution.
- Create and select advanced SQL statements to manage a database using MySQL or Workbench.

Target Audience

The Advanced SQL Bootcamp is designed for individuals who already possess a strong foundation in SQL and are eager to expand their skills and knowledge. The program is suitable for:

- Business analysts seek to enhance their ability to analyze complex data sets and extract valuable insights.
- Data scientists who want to refine their SQL skills to manipulate and analyze large datasets efficiently.
- Database administrators and developers looking to deepen their understanding of advanced SQL techniques and optimize database performance.
- Software engineers and programmers who want to improve their ability to work with SQL databases and design efficient database operations.
- IT professionals responsible for database management, performance tuning, and security implementation.
- Anyone with a solid understanding of SQL who wants to gain mastery over advanced SQL concepts and techniques.

Course Outline

Day 1: Data Modeling and Database Design

- Recap of basic SQL queries.
- Performing simple calculations and using built-in functions.
- Understanding data modeling concepts
- Designing a database schema
- Creating tables and defining relationships between them
- Setting primary and foreign keys

Day 2: Advanced Queries and Joins

- Reviewing basic queries and expanding on complex queries
- Using aliases to simplify queries and improve readability.
- Working with multiple tables and understanding the concept of relationships.
- Using JOIN statements INNER JOIN, LEFT JOIN, RIGHT JOIN
- Using subqueries and nested queries

Day 3: Data Manipulation and Transaction Management

- Understanding the importance of data integrity and constraints.
- Working with primary keys, foreign keys
- Modifying table structure using ALTER TABLE statements.
- Grouping and sorting query results.
- Filtering data using the HAVING clause.

Day 4: Advanced Queries with many to many relationships

- Querying an m:m relationship - EXISTS
- Querying an m:m relationship - EXISTS, NOT EXISTS
- Set Operations - UNION - INTERSECTS
- Normalization concepts and techniques

Day 5: Optimization and Performance Tuning

- Analyzing query performance and identifying bottlenecks
- Index optimization: creating, modifying, and removing indexes.
- Query optimization techniques: EXPLAIN statement, query hints.
- Profiling and monitoring database performance
- Optimizing database configuration parameters
- Troubleshooting common performance issues

Registration form on the Training Course: Advanced SQL Bootcamp

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