


# € TRAINING

Advanced Microsoft SQL

A group of four smiling business professionals (three men and one woman) in a meeting room. They are wearing white shirts. The woman in the foreground is wearing a black top and a necklace. The background is blurred, showing a modern office environment.

25 November -  
6 December 2024  
Kuala Lumpur (Malaysia)



# Advanced Microsoft SQL

REF: B1769 DATE: 25 November - 6 December 2024 Venue: Kuala Lumpur (Malaysia) - Fee: 8775 Euro

## Introduction:

This training program covers SQL and database management comprehensively, from fundamental concepts to advanced techniques in SQL Server environments. It prepares participants for effective database management across different organizational contexts.

## Program Objectives:

At the end of this program, participants will be able to:

- Explain MS SQL storage engines and their characteristics, including transactional and analytical options.
- Describe database transactions and demonstrate effective management techniques for ensuring data integrity.
- Obtain database metadata to understand structure, schema, and relationships within the database.
- Utilize MS SQL GUI tools for efficient database administration, including query optimization and performance tuning.
- Perform database backup, recovery, and data import/export operations using MS SQL Server tools and utilities.
- Discuss the features and benefits of MS SQL, highlighting its scalability, security features, and support for high availability.
- Use built-in MS SQL functions for data manipulation, aggregation, and analysis, and demonstrate proficiency in joining data from multiple tables.

## Targeted Audience

- Team leaders seeking professional development in MS SQL.
- IT Team Leader.
- MS SQL developer
- IT manager
- IT department managers.
- Project managers.
- Systems designers.

## Program Outline:

### Unit 1:

#### Basic SQL Concepts:

- Basic SELECT Statement Practice Problems.
- Microsoft SQL Server and T-SQL Microsoft SQL variant language.
- Differences between MS SQL and Python.
- Understanding data types and their importance in database management systems.
- Exploring the principles of database management.

### Unit 2:

#### Structured Query Language SQL:

- Nested Queries in MS SQL.
- Operation Vs Nested query in DBMS.
- Practical applications of SQL in real-world scenarios.
- Utilizing SQL to manipulate data efficiently.

### Unit 3:

#### Database Objects and Optimization:

- Database Objects in DBMS.
- Nested Queries in MS SQL.
- Indexing in Databases.
- Best practices for database design and normalization.
- Implementing advanced database queries.

### Unit 4:

#### MS SQL Server Administration:

- MS SQL Server Keys, Constraints, and Indexes.

- MS SQL Server Database Administration.
- SQL Server Programming.
- Advanced techniques in database administration and optimization.
- Managing data integrity through constraints and indexes.

## Unit 5:

### Advanced SQL Techniques:

- Auditing the execution of Code Template Mappings.
- SQL Server Comparison Operators.
- SQL Server Joins.
- Implementing data integration strategies using SQL.
- Enhancing performance with efficient SQL queries.

## Unit 6:

### Database Integration and Tools:

- SSMS and MySQL Workbench.
- Creating SQL loader mappings to Extract Data from Flat Files.
- Creating SAP extraction mappings.
- Understanding data integration between different database systems.
- Implementing data extraction techniques using SQL.

## Unit 7:

### SQL Integration with ERP Systems:

- Retrieving data from the SAP System.
- Creating Code Template CT mappings.
- Setting options for Code Templates in Code Template Mappings.
- Integrating SQL with enterprise resource planning ERP systems.
- Managing data transformations and mappings effectively.

## Unit 8:

### Advanced SQL Functions and Procedures:

- Implementing transactions and error handling in SQL Server.
- Utilizing Common Table Expressions CTEs in MS SQL.
- Optimizing query performance using SQL Server Execution Plans.
- Integration of SQL with other programming languages and environments.

## Unit 9:

### SQL Server Security:

- SQL Server Security and Permissions.
- Implementing row-level security in SQL Server.
- Auditing and monitoring SQL Server activities.
- Using encryption to protect sensitive data in SQL Server.
- Best practices for securing SQL Server environments.

## Unit 10:

### SQL in Big Data and NoSQL Environments:

- Big Data and SQL.
- Introduction to NoSQL databases and their advantages.
- Using SQL with distributed data processing frameworks Apache Hadoop, Spark.
- Managing large-scale data with SQL in cloud environments.
- Implementing data warehousing and analytics using SQL.