

A practical workshop on writing advanced SQL queries**Course Objectives**

To develop your knowledge of writing SQL scripts to manage data stored in a relational database using Microsoft SQL Server Management Studio SSMS

This course is suitable for anyone who wants to learn the advanced SQL querying whether they work with Microsoft SQL Server, Microsoft Access, Oracle, MySQL, or other database systems.

Prerequisites

Delegates for this course should have a basic understanding of SQL select statements. This course assumes a knowledge of SQL to the level of our Introduction course.

Exercises

This course is instructor-led. Each section begins with an explanation and demonstration of a key concept. You then work through several practical exercises to apply your knowledge and test your understanding.

TOPICS**Getting Started**

- Overview of the database used in the workshop

Creating our training database

- Flat File and Relational concepts
- Data Normalization
- Creating a database
- Creating tables
- SQL Relationship Types
- SQL Join Types
- Altering tables (adding, dropping and renaming columns)
- Table and column constraints
- The role of indexes
- Scripting Table creates and inserts
- Roles of Primary and Foreign Keys

Managing Views for Workflow

- OLTP vs OLAP
- Creating a views
- Altering and dropping views
- Selecting data using a view

SQL Scripts

- Good practice when writing SQL queries

Advanced SQL SELECT statements

- Writing JOIN statements and column and table aliases
- Useful math, string, and date functions
- Convert function
- Format function
- Casting data types

Sub Queries and Window Functions

- Writing sub queries
- Over() and Over(Partition by)
- Row() v Rank()

SQL Table Types

- Sub selects/CTE
- Tabular Functions
- Temporary Tables

Iterators and SET

- IIF and CASE
- SET Operator queries

SQL Variables

- @local
- @@global

User Defined Functions (UDF)

- Using Parameterised queries
- Scalar vs Tabular

DML and Transaction Control

- Using Begin transactions with Commit and Rollback
- Working with UPDATE
- Working with DELETE
- Simple Try and Catch error handling.

Stored Procedures (USP)

- Exploring the templates and stored procedures available in SSMS
- Saving script files v saving stored procedures
- Introduction to Stored Procedures
- Advantages of Stored Procedures
- Creating and Using Stored Procedures
- Dealing with an UPDATE