

A practical 2 day workshop on writing advanced SQL queries

Course Objectives

To develop your knowledge of writing SQL scripts to manage data stored in a relational database.

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, Google BigQuery 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.

Getting Started

- Relational database concepts
- The role of SQL and ANSI standards

Creating our training database

- Creating a database
- Creating tables
- SQL data types
- Altering tables (adding, dropping and renaming columns)
- Table and column constraints
- The role of indexes
- Inserting data
- Importing data

SQL Scripts

- Good practice when writing SQL queries
- Exploring the templates and stored procedures available in SSMS
- Saving script files v saving stored procedures
- Using Parameterised queries

Advanced SQL SELECT statements

- Recap on writing JOIN statements and column and table aliases
- ISNULL() function v IS NULL criterion
- Useful string, date and convert functions
- Aggregate functions
- Group by clause including rollup
- IF and CASE
- UNION queries

DML and Transaction Control

- Working with INSERT
- Working with UPDATE
- Working with DELETE
- Creating computed columns
- Using Begin transactions with Commit and Rollback
- Simple error trapping

Sub Queries and Window Functions

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

Managing Views

- Creating a view
- Selecting data using a view
- Altering and dropping views

Stored Procedures (USP)

- Introduction to Stored Procedures
- Advantages of Stored Procedures
- Creating and Using Stored Procedures
- Dealing with an INSERT

User Defined Functions (UDF) – if time permits

- Scalar
- Tabular