



Microsoft SQL Training

Advanced SQL Queries

About The Course

During this 2-day Advanced SQL course, you will learn more advanced aspects of the SQL language, and a better understanding of how SQL databases work. You will learn about good database design, improve your ability to retrieve, manipulate and analyse data using SQL, learn about more creating more efficient queries, and how to combine multiple queries.

The course will focus on Microsoft SQL Server. However, the skills you learn in this Advanced SQL Queries course is not limited to just Microsoft SQL; it is also suitable for learning more about PostgreSQL, MySQL & MariaDB and Oracle, among others.

Duration: 2 days

Class size: 10 students max

Times: 9:00am - 5:00pm

Price: Refer to our website for current course and package pricing

After the course?

Each student will receive:

- Certificate of completion
- Training manual
- 12 months FREE email support
- FREE class re-sit (if necessary)

Who Should Do This Course?

This course is suitable for anyone seeking to extend their knowledge of the SQL Language, as well as a better understanding of how SQL databases work.

Prerequisites

This course assumes a basic understanding of SQL prior to attending. Participants should have completed our SQL Essentials course or equivalent skills.

Content

Unit 1: Setting up SQL

- Setting up the Editor
- Setting up Databases
- Testing, Type Qualifications & Arguments
- IF an object EXISTS
- 'type' qualifications
- 'type' arguments of the functions
- Building the SQL Database
- Creating the Database
- Creating the Tables
- Inserting the Data

- SQL Schema
- The Database Schema
- Import Table Wizard
- RESTORE the Databases

Unit 2: Data Definition Language (DDL)

- Commonly used DDL statements
- Using CREATE TABLE
- Understanding Temporary Tables
- CREATE Local Temporary Tables
- CREATE Global Temporary Tables

- Differences Between DELETE & TRUNCATE TABLE
- Using DELETE
- Using TRUNCATE TABLE
- Creating a VIEW

Unit 3: Stored Procedures & Functions

- Understanding Functions and Stored Procedures
- Understanding a User Defined Function (udf)
- Creating a Scalar-Valued Function
- The Random Number Generator
- Using the Random Number Generator
- Using INSERT INTO
- Using UPDATE
- Creating a VIEW
- What is a User Stored Procedure (usp)
- Procedures to Invoke CALL Functions
- Creating a User Stored Procedure (usp)
- Stored Procedure with Default Parameters
- Generating Stored Procedures to Rebuild the Orders Table
- Wrapping Stored Procedures
- Manipulating Strings With Scalar Functions
- Creating an Inline 'Table-Valued' Function
- Using a Multi-Statement Table-Valued Function

Unit 4: Local & Global Variables

- What are variables?
- Understanding Data Variables
- Understanding @variable datatypes
- Strings
- Numeric
- Date/Time
- Understanding Global variables
- Examples of SQL Global Variables
- Using the TRANCOUNT global variable
- Using the ROWCOUNT global variable
- Using the VERSION global variable
- Understanding the ERROR global variable

Unit 5: Debugging SQL Code

- Useful debugging keyboard shortcuts
- How to Debug a Procedure (usp)
- How to Debug a Function (udf)
- Commencing the debugging process
- Viewing the Locals window
- Inserting a Breakpoint

Unit 6: Common Conversion Functions

- Defined datatypes ranked in order of precedence
- Working with CAST() with Dates
- Working with CAST() to Concatenate

- Working with CONVERT()
- Working with TRY_CAST and TRY_CATCH
- Working with COALESCE
- Working with DATENAME()

Unit 7: Logic Functions

- Analysing IIF versus CASE statements
- Working with an IIF Function
- Working with CASE

Unit 8: Row Functions & Operators

- Using OVER
- Using OVER PARTITION BY
- Using multiple columns in the PARTITION BY
- Using ROLLUP
- Using ORDER BY ROW
- Using ORDER BY RANGE

Unit 9: Ranking Functions

- Defining Common Ranking Functions
- Understanding ROW_NUMBER
- Understanding RANK
- Understanding DENSE_RANK
- Understanding NTILE
- Using ROW_NUMBER
- Using RANK
- Using DENSE_RANK
- Using NTILE

Unit 10: Using Subqueries

- Overview of Subqueries
- Using a Subquery in WHERE
- Using Subqueries in SELECT
- Using CAST() in a Subquery
- Building a Function with Subquery
- Understanding Correlated Subqueries

Unit 11: Common Table Expressions (CTE)

- Overview of Common Table Expressions (CTE)
- Understanding Non-Recursive CTE's
- Using a Non-Recursive CTE
- Using the CTE - ORDER BY
- Declaring variables for the CTE definition
- Using a CTE Without Parameters
- Using a CTE With a Calculated Definition
- Using a CTE with Multiple Query Expressions
- Using a Recursive Common Table Expression (CTE)
- Demonstrating a Simple Recursive CTE
- Using a CTE for a Hierarchy

Unit 12: Triggers

- Understanding Triggers
- Creating Trigger Tables
- Creating Table Triggers INSERT, UPDATE & DELETE
- Maintaining the Employee and Audit Tables
- Using Action Triggers
- Rebuilding The Employees & Audit Tables

Unit 13: Transaction Processing

- Understanding Transaction Processing
- Integrating Transaction Statements
- Working with BEGIN TRANSACTION
- Working with COMMIT & ROLLBACK
- Using the ERROR Global Variable
- Creating the Table & User Stored Procedure for Transaction
- Using the TRANCOUNT Global Variable

Unit 14: Cursors

- Methods of Iteration
- Using WHILE loops
- What is a CURSOR
- Using a CURSOR with FETCH
- Using a Cursor to iterate over a table
- Using a Cursor to iterate over all databases

Unit 15: Workshop Exercises

- Creating a Workplace Table
- Creating Stored Procedures
- Creating an Inventory Orders Table
- Creating a Failed Order Log Table
- Creating a Stored Procedure to Log a Failed Order
- Creating a Stored Procedure for a New Order
- Creating Stored Procedures to Test New Orders
- Building a udf_Spend_Boundary
- Working with CAST() to convert Numeric
- Working with CAST() to ROUND Numeric
- COALESCE_NULL_Names
- Using SCROLL with a CURSOR
- Using PIVOT Tables
- Referring to Other Databases

Looking for course dates?

To view a full list of course dates, please visit our website at www.dynamicwebtraining.com.au

Alternatively please contact our office on **1300 888 724**