

Querying Microsoft SQL Server

A 5 day **Hands on** training course



Description

This course covers the technical skills required to write basic Transact-SQL queries for Microsoft SQL Server and provides the foundation for all SQL Server-related disciplines; namely, database administration, database development and business intelligence. This course helps prepare for exam 70-761. Note: This course is designed for SQL Server 2014 or SQL Server 2016.



Key outcomes

By the end of the course delegates will be able to:

- ✓ Write SELECT statements.
- ✓ Create and implement views and table-valued functions.
- ✓ Transform data by implementing pivot, unpivot, rollup and cube.
- ✓ Create and implement stored procedures.
- ✓ Add programming constructs such as variables, conditions, and loops to T-SQL code.



Training approach

This structured course uses Instructor Led Training to provide the best possible learning experience. Small class sizes ensure students benefit from our engaging and interactive style of teaching with delegates encouraged to ask questions throughout the course. Quizzes follow each major section allowing checking of learning. Hands on sessions are used throughout to allow delegates to consolidate their new skills.



Details

Who will benefit?

Database administrators, database developers, and business intelligence professionals. SQL power users, namely, report writers, business analysts and client application developers.






Prerequisites

Database fundamentals

Duration: 5 days

Overall rating:



Generic training 	Small class sizes 	Hands On training 	Our courseware 	Customise your course 
<p>Generic training compliments product specific courses covering the complete picture of all relevant devices including the protocols "on the wire".</p> <p><i>"Friendly environment with expert teaching that teaches the why before the how."</i> G.C. Fasthosts</p>	<p>We limit our maximum class size to 8 delegates; often we have less than this. This ensures optimal interactivity between delegates and instructor.</p> <p><i>"Excellent course. The small class size was a great benefit..."</i> M.B. IBM</p>	<p>The majority of our courses use hands on sessions to reinforce the theory.</p> <p><i>"Not many courses have practice added to it. Normally just the theoretical stuff is covered."</i> J.W. Vodafone</p>	<p>We write our own courses; courseware does not just consist of slides and our slides are diagrams not bullet point text.</p> <p><i>"Comprehensive materials that made the course easy to follow and will be used as a reference point."</i> V.B. Rockwell Collins</p>	<p>Please contact us if you would like a course to be customised to meet your specific requirements. Have the course your way.</p> <p><i>"I was very impressed by the combination of practical and theory. Very informative. Friendly approachable environment, lots of hands on."</i> S.R. Qinetiq</p>

Querying Microsoft SQL Server

Course content

Introduction to Microsoft SQL Server: Management studio, creating and organizing T-SQL scripts, using books online. Hands on: working with SQL Server tools.

T-SQL querying: Introducing T-SQL, sets, predicate logic, logical order of operations in SELECT statements, basic SELECT statements, queries that filter data using predicates, queries that sort data using ORDER BY. Hands on: introduction to T-SQL querying.

Writing SELECT queries: Writing simple SELECT statements, eliminating duplicates with DISTINCT, column and table aliases, simple CASE expressions. Hands on: writing basic SELECT statements.

Querying multiple tables: cross joins and self joins, write queries that use Inner joins, write queries that use multiple-table inner joins, write queries that use self-joins, write queries that use outer joins, write queries that use cross joins. Hands on: querying multiple tables.

Sorting and filtering data: Sorting data, filtering data with predicates, filtering data with TOP and OFFSET-FETCH, working with unknown values, WHERE clause, ORDER BY clause, TOP option, OFFSET-FETCH clause. Hands on: sorting and filtering data.

SQL Server data types: Introducing SQL Server data types, Character data, date and time data, queries that return date and time data, write queries that use date and time functions, write queries that return character data, write queries that return character functions. Hands on: working with SQL Server data types.

DML: Adding data to tables, modifying and removing data, generating automatic column values, Inserting records with DML, updating and deleting records using DML. Hands on: using DML to modify data.

Built-in functions: Queries with built-in functions, conversion functions, logical functions, functions with NULL, queries that use conversion functions, queries that use logical functions, queries that test for nullability. Hands on: built-in functions.

Grouping and aggregating data: Aggregate functions, the GROUP BY clause, filtering groups with HAVING, queries that use the GROUP BY clause, queries that use aggregate functions, queries that use distinct aggregate

functions, queries that filter groups with the HAVING clause. Hands on: grouping and aggregating data.

Subqueries: Self-contained subqueries, correlated subqueries, EXISTS predicate with subqueries, scalar and multi-result subqueries. Hands on: subqueries.

Table expressions: Views, inline table-valued functions, derived tables, common table expressions. queries that use views, write queries that use derived tables, Common Table Expressions (CTEs), write queries that use inline Table valued expressions (TVFs). Hands on: table expressions.

Set operators: The UNION operator, EXCEPT and INTERSECT, APPLY, queries that use UNION set operators and UNION ALL, CROSS APPLY and OUTER APPLY operators. Hands on: set operators.

Windows ranking, offset, and aggregate functions: OVER, window functions, ranking functions, offset functions, window aggregate functions. Hands on; windows ranking, offset, and aggregate functions.

Pivoting and grouping sets: PIVOT and UNPIVOT, grouping sets, queries that use the PIVOT operator, queries that use the UNPIVOT operator, queries that use the GROUPING SETS CUBE and ROLLUP subclauses. Hands on: pivoting and grouping sets.

Executing stored procedures: Querying data with stored procedures, passing parameters to stored procedures, simple stored procedures, dynamic SQL, the EXECUTE statement to invoke stored procedures. Hands on: executing stored procedures.

Programming with T-SQL: T-SQL programming elements, controlling program flow, declaring variables and delimiting batches, control-of-flow elements, variables in a dynamic SQL statement, synonyms. Hands on: programming with T-SQL.

Error handling: T-SQL error handling, structured exception handling, redirect errors with TRY/CATCH, THROW to pass an error message back to a client. Hands on: implementing error handling.

Implementing transactions: Transactions and the database engines, controlling transactions, BEGIN, COMMIT, and ROLLBACK, adding error handling to a CATCH block. Hands on: implementing transactions.

