

20761: Querying Data with Transact-SQL

Duration: 5 Days

Method: Instructor-Led

Certification: Microsoft® Certified Solutions Associate (MCSA): SQL 2016 Database Development — Exam 1 Of 2: 70-761 Querying Data with Transact-SQL

Course Description

This course is designed to introduce participants to Transact-SQL and give a good understanding of the language. This course also teaches the skills required to take the certification exam.

Target Audience

This course is intended for:

- Database Administrators, Database Developers and BI professionals.

Prerequisites

To attend this course, participants should have:

- Basic knowledge of the Microsoft® Windows operating system and its core functionality.
- Working knowledge of relational databases.

Course Objectives

Upon successful completion of this course, participants will be able to:

- Describe key capabilities and components of SQL Server® 2016.
- Describe T-SQL, sets, and predicate logic.
- Write a single table SELECT statement.
- Write a multi-table SELECT statement.
- Write SELECT statements with filtering and sorting.
- Describe how SQL Server® uses data types.
- Write DML statements.
- Write queries that use built-in functions.
- Write queries that aggregate data.
- Write subqueries.
- Create and implement views and table-valued functions.
- Use set operators to combine query results.
- Write queries that use window ranking, offset and aggregate 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.



Course Content

Module 1: Introduction to Microsoft® SQL Server® 2016

- The Basic Architecture of SQL Server®
- SQL Server® Editions and Versions
- Getting Started with SQL Server® Management Studio

Module 2: Introduction to T-SQL Querying

- Introducing T-SQL
- Understanding Sets
- Understanding Predicate Logic
- Understanding the Logical Order of Operations in SELECT statements

Module 3: Writing SELECT Queries

- Writing Simple SELECT Statements
- Eliminating Duplicates with DISTINCT
- Using Column and Table Aliases
- Writing Simple CASE Expressions

Module 4: Querying Multiple Tables

- Understanding Joins
- Querying with Inner Joins
- Querying with Outer Joins
- Querying with Cross Joins and Self Joins

Module 5: Sorting and Filtering Data

- Sorting Data
- Filtering Data with Predicates
- Filtering Data with TOP and OFFSET-FETCH
- Working with Unknown Values

Module 6: Working with SQL Server® 2016 Data Types

- Introducing SQL Server® 2016 Data Types
- Working with Character Data
- Working with Date and Time Data

Module 7: Using DML to Modify Data

- Inserting Data
- Modifying and Deleting Data

Module 8: Using Built-In Functions

- Writing Queries with Built-In Functions
- Using Conversion Functions
- Using Logical Functions
- Using Functions to Work with NULL



Course Content, *Continued*

Module 9: Grouping and Aggregating Data

- Using Aggregate Functions
- Using the GROUP BY Clause
- Filtering Groups with HAVING

Module 10: Using Subqueries

- Writing Self-Contained Subqueries
- Writing Correlated Subqueries
- Using the EXISTS Predicate with Subqueries

Module 11: Using Table Expressions

- Using Views
- Using Inline Table-Valued Functions
- Using Derived Tables
- Using Common Table Expressions

Module 12: Using Set Operators

- Writing Queries with the UNION operator
- Using EXCEPT and INTERSECT
- Using APPLY

Module 13: Using Windows Ranking, Offset, and Aggregate Functions

- Creating Windows with OVER
- Exploring Window Functions

Module 14: Pivoting and Grouping Sets

- Writing Queries with PIVOT and UNPIVOT
- Working with Grouping Sets

Module 15: Executing Stored Procedures

- Querying Data with Stored Procedures
- Passing Parameters to Stored procedures
- Creating Simple Stored Procedures
- Working with Dynamic SQL

Module 16: Programming with T-SQL

- T-SQL Programming Elements
- Controlling Program Flow

Module 17: Implementing Error Handling

- Implementing T-SQL error handling
- Implementing structured exception handling

Module 18: Implementing Transactions

- Transactions and the database engines
- Controlling transactions

LABS INCLUDED

