

Querying Data with Transact-SQL (20761) H1SQ4S

The main purpose of this 3-day instructor-led course is to give you a good understanding of the Transact-SQL language which is used by all SQL Server-related disciplines; namely, Database Administration, Database Development and Business Intelligence. As such, the primary target audience for this course is: Database Administrators, Database Developers and Business Intelligence professionals.

HPE course number	H1SQ4S
Course length	3 days
Delivery mode	ILT, VILT
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Audience:

This course is intended for Database Administrators, Database Developers, and Business Intelligence professionals. The course will usually be well attended by SQL power users who are not necessarily database-focused; namely, report writers, business analysts and client application developers.

- Write SELECT queries
- Query multiple tables
- Sort and filter data
- Describe the use of data types in SQL Server
- Modify data using Transact-SQL
- Use built-in functions
- Group and aggregate data
- Use subqueries
- Use table expressions
- Use set operators
- Use window ranking, offset and aggregate functions
- Implement pivoting and grouping sets
- Execute stored procedures
- Program with T-SQL
- Implement error handling
- Implement transactions

Prerequisites:

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

Course objectives:

After completing this course, students will be able to:

- Describe the basic architecture and concepts of Microsoft SQL Server 2016.
- Understand the similarities and differences between Transact-SQL and other computer languages.

Detailed Course Outline

Module 1: Introduction to Microsoft SQL Server 2016	This module introduces SQL Server, the versions of SQL Server, including cloud versions, and how to connect to SQL Server using SQL Server Management Studio.
Module 2: Introduction to T-SQL Querying	This module introduces the elements of T-SQL and their role in writing queries, describes the use of sets in SQL Server, describes the use of predicate logic in SQL Server, and describes the logical order of operations in SELECT statements.
Module 3: Writing SELECT Queries	This module introduces the fundamentals of the SELECT statement, focusing on queries against a single table.
Module 4: Querying Multiple Tables	This module explains how to write queries which combine data from multiple sources in SQL Server. The module introduces the use of JOINS in T-SQL queries as a mechanism for retrieving data from multiple tables.
Module 5: Sorting and Filtering Data	This module explains how to enhance queries to limit the rows they return, and to control the order in which the rows are displayed. The module also discusses how to resolve missing and unknown results.
Module 6: Working with SQL Server 2016 Data Types	This module explains the data types SQL Server uses to store data. It introduces the many types of numeric and special-use data types. It also explains conversions between data types, and the importance of type precedence.
Module 7: Using DML to Modify Data	This module describes the use of Transact-SQL Data Manipulation Language to perform inserts, updates, and deletes to your data.
Module 8: Using Built-In Functions	This module introduces the use of functions that are built in to SQL Server Denali, and will discuss some common usages including data type conversion, testing for logical results and nullability.
Module 9: Grouping and Aggregating Data	This module introduces methods for grouping data within a query, aggregating the grouped data and filtering groups with HAVING. The module is designed to help the student grasp why a SELECT clause has restrictions placed upon column naming in the GROUP BY clause as well as which columns may be listed in the SELECT clause.
Module 10: Using Subqueries	This module will introduce the use of subqueries in various parts of a SELECT statement. It will include the use of scalar and multi-result subqueries, and the use of the IN and EXISTS operators.
Module 11: Using Set Operators	This module introduces the set operators UNION, INTERSECT, and EXCEPT to compare rows between two input sets.

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