

## 20761 Querying Data with Transact SQL

### Overview

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Are you ready to learn how to navigate relational databases like a pro? Transact SQL training from New Horizons will prepare you to take the next step in your data career.

In this course, you will gain a comprehensive understanding of the Transact SQL language, which is used by all SQL Server-related disciplines including database administration, database development and business intelligence.

### Prerequisite Comments

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We want you to get the most value possible out of your SQL Server training. To maximize your time taking this course, you should have working knowledge of relational databases and 1-2 years of experience using SQL Server. Basic understanding of the Windows operating system and its core functionalities will also set you up for success.

### Target Audience

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If you're a database administrator, developer or BI professional responsible for processing data, this course was made for you. However, if you're simply interested in learning Transact-SQL to become more efficient at your job, you can also benefit from taking this course.

### Course Objectives

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After finishing this course, you'll have the confidence to use Transact-SQL commands to interact with relational databases. You will be able to:

- Describe the key capabilities and components of SQL Server
- Confidently speak about T-SQL, sets and predicate logic
- Write single- and multi-table SELECT statements
- Explain how SQL Server uses data types
- Manipulate set operators to combine query results
- Work with and implement views and table-valued functions
- Write DML statements and queries
- 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 Outline

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## 1 - Introduction to Microsoft SQL Server 2016

Learn the Basics of SQL Server Architecture  
Get Exposed to the Different SQL Server Editions and Versions  
Become Familiar With SQL Server Management Studio  
Lab: Working with SQL Server 2016 Tools

## 2 - Introduction to T-SQL Querying

Learn the Components of T-SQL  
Understand Sets and Predicate Logic  
Master the Logical Order of Operations in SELECT statements  
Lab: Introduction to Transact-SQL Querying

## 3 - Writing SELECT Queries

Write Simple SELECT Statements and CASE Expressions  
Eliminate Duplicates With DISTINCT  
Practice Using Column and Table Aliases  
Lab: Writing Basic SELECT Statements

## 4 - Querying Multiple Tables

Understand Joins  
Query with Inner Joins, Outer Joins, Cross Joins and Self Joins  
Lab: Querying Multiple Tables

## 5 - Sorting and Filtering Data

Learn How to Sort Data  
Filter Data with Predicates  
Work With Unknown Values  
Lab: Sorting and Filtering Data

## 6 - Working with SQL Server 2016 Data Types

Learn About SQL Server 2016 Data Types  
Work With Character Data and Date and Time Data  
Lab: Working with SQL Server 2016 Data Types

## 7 - Using DML to Modify Data

Insert Data  
Modify and Delete Data  
Lab: Using DML to Modify Data

## 8 - Using Built-In Functions

Write Queries with Built-In Functions  
Practice Conversion Functions and Logical Functions  
Practice Using Functions to Work With NULL  
Lab: Using Built-In Functions

## 9 - Grouping and Aggregating Data

Use Aggregate Functions and the GROUP BY Clause  
Filter Groups With HAVING  
Lab: Grouping and Aggregating Data

## 10 - Using Subqueries

Write Self-Contained and Correlated Subqueries  
Execute the EXISTS Predicate with Subqueries  
Lab: Using Subqueries

## 11 - Using Table Expressions

Navigate Views and Inline Table-Valued Functions  
Manipulate Derived Tables and Common Table Expressions  
Lab: Using Table Expressions

## 12 - Using Set Operators

Complete Queries with the UNION Operator  
Use EXCEPT, INTERSECT and APPLY  
Lab: Using Set Operators

## 13 - Using Windows Ranking, Offset, and Aggregate Functions

Create Windows with OVER  
Explore Window Functions  
Lab: Using Windows Ranking, Offset, and Aggregate Functions

## 14 - Pivoting and Grouping Sets

Write Queries with PIVOT and UNPIVOT  
Work with Grouping Sets  
Lab: Pivoting and Grouping Sets

## 15 - Executing Stored Procedures

Query Data with Stored Procedures  
Pass Parameters to Stored procedures  
Create Simple Stored Procedures  
Navigate Dynamic SQL  
Lab: Executing Stored Procedures

## 16 - Programming with T-SQL

Master T-SQL Programming Elements  
Control Program Flow  
Lab: Programming with T-SQL

## 17 - Implementing Error Handling

Execute T-SQL Error Handling  
Implement Structured Exception Handling  
Lab: Implementing Error Handling

## 18 - Implementing Transactions

Learn About Transactions and Database Engines  
Control Transactions  
Lab: Implementing Transactions

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