# DP-080T00: Querying Data with Microsoft® Transact-SQL

## Duration: 2 Days
## Method: Instructor-Led Training (ILT) | Live Online Training

## Course Description

This course will teach participants how to use Transact-SQL. They will learn to query and modify data in relational databases hosted in Microsoft SQL Server-based database systems, including Microsoft SQL Server®, Azure® SQL Database and Azure Synapse Analytics.

## Target Audience

This course is intended for:
- Data Analysts
- Data Scientists
- Data Engineers
- Database Developers
- Database Administrators.

## Prerequisites

To attend this course, candidates must have:
- Basic knowledge of the Microsoft Windows® operating system and its core functionality.
- Working knowledge of relational databases.

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## Course Objectives

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

- Describe key capabilities and components of SQL Server.
- 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 Topics

### Module 1: Introduction to Transact-SQL

- Work with Schemas
- Explore the Structure of SQL Statements
- Examine the SELECT Statement
- Work with Data Types
- Handle NULLs

### Module 2: Sort and Filter Results in T-SQL

- Sort Your Results
- Limit the Sorted Results
- Page Results
- Remove Duplicates
- Filter Data with Predicates

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## Course Topics *Continued*

### Module 3: Combine Multiple Tables with JOINs in T-SQL
- Understand Joins Concepts and Syntax
- Use Inner Joins
- Use Outer Joins
- Use Cross Joins
- Use Self Joins

### Module 4: Write Subqueries in T-SQL
- Understand Subqueries
- Use Scalar or Multi-Valued Subqueries
- Use Self-Contained or Correlated Subqueries

### Module 5: Use Built-In Functions and GROUP BY in Transact-SQL
- Categorize Built-In Functions
- Use Scalar Functions
- Use Ranking and Rowset Functions
- Use Aggregate Functions
- Summarize Data with GROUP BY
- Filter Groups with HAVING

### Module 6: Modify Data with T-SQL
- Insert Data
- Generate Automatic Values
- Update Data
- Delete Data
- Merge Data Based on Multiple Tables

## EXERCISES INCLUDED