# Query and modify data with Transact-SQL (DP-080) Training

Duration: **2 Day**

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**Query and Modify Data with Transact-SQL (DP-080)** is a foundational training course designed to teach learners the fundamentals of **Transact-SQL (T-SQL)**, Microsoft's implementation of the SQL language. The course focuses on querying, filtering, combining, and modifying data stored in relational database systems.

Participants will gain practical experience working with **Microsoft SQL Server**, **Azure SQL Database**, and **Azure Synapse Analytics**, learning how to write efficient SQL queries and manage data within modern database environments.

This course provides a strong foundation in **SQL Querying**, **Database Management**, **Data Analysis**, and **T-SQL Programming**, making it ideal for professionals who work with data and relational databases.

## Prerequisites

There are no formal prerequisites for this course.

However, familiarity with the following concepts is beneficial:

- Basic computer literacy
- General understanding of data concepts
- Familiarity with database terminology

## Who Should Attend

This course is ideal for:

- **Data Analysts**
- **Data Engineers**
- **Data Scientists**
- **Database Administrators (DBA)**
- **Database Developers**
- **Solution Architects**
- IT professionals working with data
- Students entering data-related careers
- Technology managers

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## What You Will Learn

By the end of this course, learners will be able to:

- Understand the fundamentals of **Transact-SQL (T-SQL)**.
- Write and execute SQL queries.
- Sort and filter datasets efficiently.
- Combine multiple tables using **JOIN** operations.
- Create and use **Subqueries**.
- Utilize built-in SQL functions.
- Group and aggregate data using **GROUP BY**.
- Insert, update, and delete records within relational databases.
- Work effectively with Microsoft database platforms.

## Training Outline

### Module 1: Query and Modify Data with Transact-SQL

#### Introduction to Transact-SQL

- Fundamentals of **Transact-SQL (T-SQL)**
- SQL syntax and query structure
- Database objects and concepts
- Data retrieval fundamentals

#### Sorting and Filtering Results

- **SELECT** statements
- Data filtering techniques
- **WHERE** clauses
- Sorting result sets
- Search operations

#### Combining Tables with JOINs

- Relational database concepts
- **INNER JOIN**
- **LEFT JOIN**
- **RIGHT JOIN**
- **FULL JOIN**
- Multi-table query techniques

#### Writing Subqueries

- Nested queries
- Correlated subqueries
- Advanced subquery usage
- Data analysis techniques

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**Built-In Functions and Data Grouping**

- SQL functions
- String functions
- Date and time functions
- Mathematical functions
- **GROUP BY**
- **HAVING**
- Aggregation and summarization techniques

**Modifying Data with T-SQL**

- **INSERT** statements
- **UPDATE** operations
- **DELETE** commands
- Data integrity concepts
- Database modification techniques

## Working with Microsoft Data Platforms

- **Microsoft SQL Server**
- **Azure SQL Database**
- **Azure Synapse Analytics**
- Cloud-based database solutions
- Enterprise data management practices