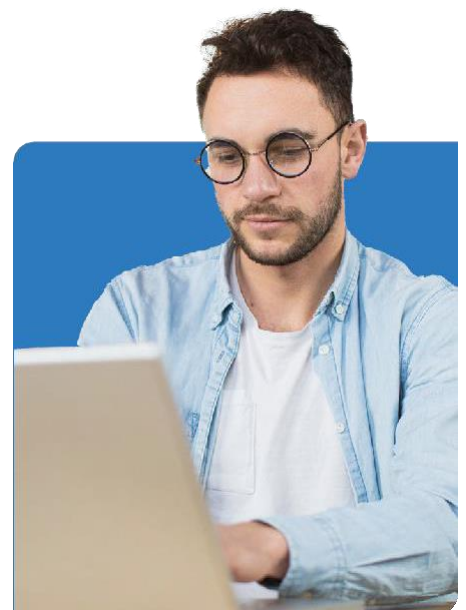




# Querying Data with Transact-SQL

---

# TDXBI-109



# ThriveDX Querying Data with Transact-SQL

## Time Commitment

5 days (total of 40 hours / 8 hours per day)

## Skill Level

Advanced Level

## Course Category

BI & Big Data

This course is designed to introduce students to Transact-SQL. It is designed in such a way that the first three days can be taught as a course to students requiring the knowledge for other courses in the SQL Server curriculum. Days 4 & 5 teach the remaining skills required to take exam 70-761. In order to expose the participants to the new revolutions in the field, the course will include a module on 'generic artificial intelligence in database management'. This module will demonstrate how AI is changing SQL databases, from creating synthetic datasets to optimizing queries.

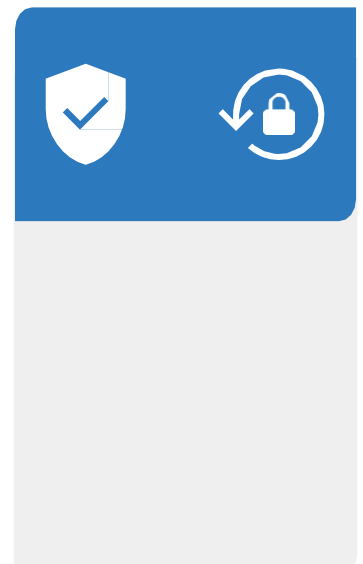
## Objectives

On completing this course, delegates will be able to:

- Understanding the SQL fundamentals
- Understanding of queries and stored procedures
- Better understanding SQL as a language

## Prerequisites

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



---

# Program Structure

## **Module 1: Introduction to Microsoft SQL Server**

- 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 Data Types**

- Introducing SQL Server 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

## **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: Implementing Transactions**

- Transactions and the database engines
- Controlling transactions

## **Module 16: Integrating Generative AI with MS SQL**

- Introduction to Generative AI
- Importance of AI in the SQL Domain
- Enhance and simplify SQL query
- Integrating Generative AI with MS SQL for Data Analytics

