

KOENIG SOLUTIONS · COURSE OUTLINE

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

Learn to query, sort, join and modify data in SQL Server using Transact-SQL, from basic SELECT statements to built-in functions.

2 Days

16 HOURS

30

TOPICS

5

HANDS-ON LABS

COURSE OVERVIEW

The DP-080T00: Querying data with Microsoft Transact-SQL course is an essential training program for professionals who aim to master MS Transact-SQL for querying, modifying, and Managing data within Microsoft SQL Server databases. It covers foundational skills in using T-SQL, starting with basic SELECT statements and advancing through complex operations like Joins and subqueries. Module 1 introduces T-SQL and the tools for writing queries, while Module 2 delves into sorting and Filtering data. Module 3 teaches learners how to craft sophisticated queries using Joins and Subqueries. Module 4 focuses on leveraging Built-in functions to perform calculations and Data transformations. Finally, Module 5 covers Data modification techniques. By completing this course, participants will gain a solid understanding of Querying data with Microsoft Transact-SQL, which is pivotal for database management and analytics roles. The course equips learners with practical skills to efficiently query and manipulate data, thereby supporting business intelligence and data-driven decisions.

WHO THIS COURSE IS FOR

The DP-080T00 course equips professionals with essential skills for querying data using Microsoft Transact-SQL, a key tool for database management. Target audience for the course includes:

Database Administrators

Database Developers

Data Analysts

BI Professionals

SQL Server Power Users

IT Professionals who work with SQL databases

Data Scientists who need to manipulate SQL Server data

Report Writers

System Engineers who manage and maintain SQL Server databases

Aspiring individuals aiming for a career in data management or related fields

What You Will Learn

- Explain relational database concepts and the T-SQL language
- Write SELECT statements to retrieve data from tables
- Apply ORDER BY and OFFSET-FETCH to sort and page results
- Write WHERE clauses to filter rows and remove duplicates
- Combine data from multiple tables using JOIN operations
- Write scalar and correlated subqueries within a SELECT statement
- Apply scalar and aggregate functions to compute results
- Implement INSERT, UPDATE, DELETE and MERGE statements

COURSE SYLLABUS

30 Topics

01

Lab

Getting Started with Transact-SQL

In this module you will learn about the basics of the Transact-SQL (T-SQL) language, as well as general properties and terminology of relational databases. This module will also introduce the basic SELECT statement for retrieving data from a table.

LESSONS

Introduction to Transact-SQL · Using the SELECT statement

AFTER COMPLETING THIS MODULE, STUDENTS WILL BE ABLE TO

- Using a query tool to write and execute queries in Transact-SQL
- Understand the basic concepts of relational database and the T-SQL language
- Write SELECT statements to retrieve data from a relational database table
- Understand basic datatypes and how they are used
- Understand the basics of NULL values

Sorting and Filtering Query Results

In the module you will learn how to control what data is returned, the order in which it is returned. You will use the `ORDER BY` clause, with and without paging. You will learn about various kinds of filters that can be used in the `WHERE` clause to control which data rows are returned. You will also learn how to manage the results by removing duplicates with `DISTINCT`.

LESSONS

- Sorting query results
- Filtering the data

AFTER COMPLETING THIS MODULE, STUDENTS WILL BE ABLE TO

- Use `ORDER BY` to sort results from a T-SQL `SELECT` statement
- Add a `TOP` clause to limit the ordered rows returned
- Page the sorted data with `OFFSET-FET`
- Write `WHERE` clauses to filter the rows returned
- Use `DISTINCT` to eliminate duplicate rows in the results

Using Joins and Subqueries

In this module, you will explore T-SQL queries which access data from multiple tables with various kinds of `JOIN` operations and simple subqueries.

LESSONS

- Using `JOIN` operations
- Using subqueries

AFTER COMPLETING THIS MODULE, STUDENTS WILL BE ABLE TO

- Write queries accessing data from multiple tables using `JOIN` operations
- Understand the differences between type of `JOIN` operations: `INNER JOIN`, `OUTER JOIN`, `CROSS JOIN`
- Understand how to join a table to itself with a self-join
- Write subqueries within a `SELECT` statement
- Understand the difference between scalar and multi-valued subqueries
- Understand the difference between correlated and self-contained subqueries

Using Built-in Functions

In the module you will explore the use of built-in functions for returning computed or special values in the `SELECT` list or in the `WHERE` clause. Functions include math functions, string functions and system functions. There are other types of functions that will be mentioned, but not discussed in detail. You will also learn how to combine rows of data into a single group, providing summary information for the group such as `SUM`, `MIN` or `MAX`.

LESSONS

- Getting started with scalar functions
- Grouping aggregated results

AFTER COMPLETING THIS MODULE, STUDENTS WILL BE ABLE TO

- Write queries using scalar functions
- Write queries using aggregate functions
- Use `GROUP BY` to combine data into groups based on a common column value
- Understand how `HAVING` is used to filter groups of rows

Modifying Data

In this module, you will learn the T-SQL statements for modifying table data including `UPDATE`, `DELETE` and `MERGE` as well as various options for `INSERT` including creating a new table with data from an existing table. You will also look at how to have the system automatically supply values for columns as the data is inserted.

LESSONS

Inserting data into tables · Modifying and deleting data

HANDS-ON LABS

Practise What You Learn

#	MODULE	ACTIVITY
01	Getting Started with Transact-SQL	Get started with SQL Server query tools and writing queries in T-SQL
02	Sorting and Filtering Query Results	Sort and filter data returned by <code>SELECT</code> queries
03	Using Joins and Subqueries	■ Write queries with <code>JOIN</code> operations ■ Write <code>SELECT</code> statements using subqueries
04	Using Built-in Functions	Built-in functions

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training

Live Online Classes (ILO)

Fly-Me-A-Trainer (FMAT)

Flexi (Self-Paced)

1-on-1 Training

Ready to Get Started?

Talk to a learning advisor about schedules, group training and customised delivery.

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