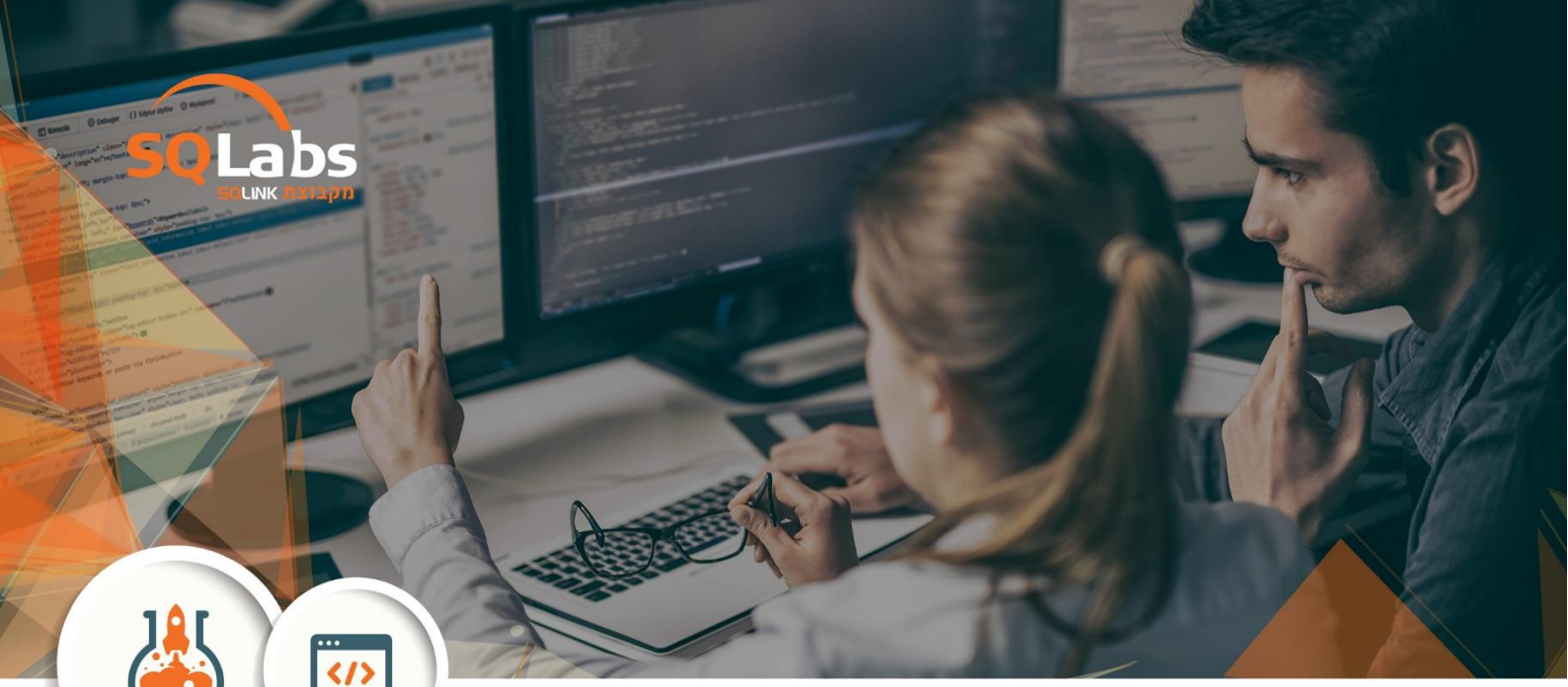

Querying and developing Microsoft SQL Server 2016 -40 שעות

Prerequisites

Good English languge level – Must

Outline

Module 1: Introduction to Microsoft SQL Server 2016

This module introduces the SQL Server platform and major tools. It discusses editions, versions, tools used to query, documentation sources, and the logical structure of databases.

- 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

This module introduces Transact SQL as the primary querying language of SQL Server. discusses the basic structure of T-SQL queries, the logical flow of a SELECT statement, and introduces concepts such as predicates and set-based operations.

- Introducing T-SQL
- Understanding Sets

- Understanding Predicate Logic
- Understanding the Logical Order of Operations in SELECT statements

Module 3: Writing SELECT Queries

This module introduces the fundamentals of the SELECT statement, focusing on queries against a single table.

- Writing Simple SELECT Statements
- Eliminating Duplicates with DISTINCT
- Using Column and Table Aliases
- Writing Simple CASE Expressions

Module 4: Querying Multiple Tables

This module explains how to write queries which combine data from multiple sources in SQL Server. The module introduces the use of JOINs in T-SQL queries as a mechanism for retrieving data from 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

This module explains how to enhance queries to limit the rows they return, and to control the order in which the rows are displayed. The module also discusses how to resolve missing and unknown results.

- Sorting Data
- Filtering Data with a WHERE Clause
- Filtering with the TOP and OFFSET-FETCH Options
- Working with Unknown and Missing Values

Module 6: Working with SQL Server 2014 Data Types

This module explains the data types SQL Server uses to store data. It introduces the manytypes of numeric and special-use data types.
It also explains conversions between data types, and the importance of type precedence.

- Introducing SQL Server 2014 Data Types
- Working with Character Data
- Working with Date and Time Data

Module 7: Using DML to Modify Data

This module describes the use of Transact-SQL Data Manipulation Language to perform inserts, updates, and deletes to your data.

- Inserting Data
- Modifying and Deleting Data

Module 8: Using Built-In Functions

This module introduces the use of functions that are built in to SQL Server Denali, and will discuss some common usages including data type conversion, testing for logical results and nullability.

- Writing Queries with Built-In Functions
- Using Conversion Functions
- Using Logical Functions
- Using Functions to Work with NULL

Module 9: Grouping and Aggregating Data

This module introduces methods for grouping data within a query, aggregating the grouped data and filtering groups with HAVING. The module is designed to help the student grasp why a SELECT clause has restrictions placed upon column naming in the GROUP BY clause as well as which columns may be listed in the SELECT clause.

- Using Aggregate Functions
- Using the GROUP BY Clause
- Filtering Groups with HAVING

Module 10: Using Subqueries

This module will introduce the use of subqueries in various parts of a SELECT statement. It will include the use of scalar and multi-result subqueries, and the use of the IN and EXISTS operators.

- Writing Self-Contained Subqueries
- Writing Correlated Subqueries
- Using the EXISTS Predicate with Subqueries

Module 11: Using Table Expressions

This module introduces T-SQL expressions which return a valid relational table, typically for further use in the query. The module discusses views, derived tables, common table expressions and inline table-valued functions.

- Using Derived Tables
- Using Common Table Expressions
- Using Views
- Using Inline Table-Valued Functions