

SQL Intermediate

Course Overview – 1-day course

A crucial skill for anyone working with data is the ability to access and analyse that data. Structured Query Language (SQL) enables users to access data from databases, combine data from multiple, related tables and to aggregate, sort, filter or limit the data retrieved as needed.

In this course, participants will move beyond using basic SELECT clauses for retrieving data. Students will learn to work with many different types of functions and expressions that modify the way data are returned in the result set. Students will learn how to calculate moving averages and percentages and reshape data by pivoting and unpivoting. They will learn techniques to simplify querying, including how to use variables, user-defined functions and stored procedures. Students will learn more advanced techniques to create more complex queries, including using control flow statements, temporary tables and common table expressions and cross joins.

In this course, students work with an Azure SQL database and write queries in Microsoft's Transact-SQL (T-SQL). Much of what is covered will be useful for users working with other database products.

Detailed Content

<p>Introduction SQL and T-SQL</p>	<p>Calculate date/time differences Calculate a new date Extracting date components Creating dates</p>	<p>Calculate percentages, moving averages and running totals LAG and LEAD FIRST_VALUE, LAST_VALUE</p>
<p>Data Types Conversion between data types CAST, CONVERT and PARSE</p>	<p>Logical Functions IIF CHOOSE GREATEST and LEAST</p>	<p>Ranking Functions ROW_NUMBER RANK and DENSE RANK NTILE</p>
<p>Functions in SQL Built-in Functions Aggregate Functions Scalar Functions Ranking Functions User-defined functions</p>	<p>Mathematical Functions ROUND, CEILING and FLOOR</p>	<p>User-Defined Functions Scalar user-defined functions Table-valued functions Schemas APPLY</p>
<p>Aggregate Functions and Group By Extensions GROUP BY CUBE, ROLLUP and GROUPING SETS CASE and CASE alternatives COALESCE NULLIF PIVOT and UNPIVOT</p>	<p>Writing More Complex Queries Temporary tables Common table expressions Recursive CTEs Cross joins and self joins</p>	<p>Control of Flow IF...ELSE BEGIN...END</p>
<p>String Functions Concatenate, replace and format</p>	<p>Variables Local variables Table variables</p>	<p>Simplifying Code Reuse Views Stored procedures</p>
<p>Date and Time Functions Get today's date</p>	<p>Window Functions OVER clause</p>	<p>Query Performance Improving query performance</p>