Corso Querying Data with Microsoft Transact-SQL

Durata: 2 giornate

Scopo del corso:

Questo corso presenterà i concetti di base del dialetto Microsoft per il linguaggio SQL standard: Transact-SQL. Gli argomenti includono sia l'esecuzione di query che la modifica dei dati nei database relazionali ospitati in sistemi di database basati su Microsoft SQL Server, tra cui: Microsoft SQL Server, database SQL di Azure e Azure Synapse Analytics.

A chi è rivolto:

Questo corso può essere utile per chiunque abbia bisogno di scrivere query SQL o Transact-SQL semplici. È incluso chiunque lavori con i dati come analista di dati, ingegnere dei dati, scienziato dei dati, amministratore di database o sviluppatore di database. Può anche essere utile per altri utenti che sono coinvolti marginalmente nell'elaborazione dei dati o che vogliono scoprire di più sull'uso di dati come progettisti di soluzioni, studenti e responsabili della tecnologia.

Prerequisiti:

Conoscenza operativa dei database relazionali e conoscenza di base del sistema operativo Microsoft Windows e le sue funzionalità basilari.

Contenuti:

Module 1: 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

Lab : Get started with SQL Server query tools and writing queries in T-SQL

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

Module 2: 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

Lab : Sort and filter data returned by SELECT queries

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

Module 3: 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

Lab : Write queries with JOIN operations

Lab : Write SELECT statements 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

Module 4: 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

Lab : Built-in functions

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

Module 5: 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

Lab : Modify data

After completing this module, students will be able to:

-Insert data into an existing table

-Specify that a column should be automatically populating with an IDENTITY or a SEQUENCE value

-Modify data using the UPDATE statement

-Delete data using the DELETE statement

-Modify data using MERGE to synchronize two tables