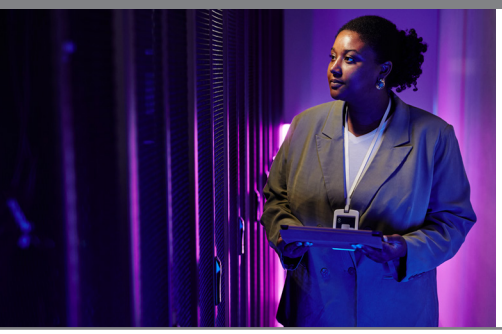

SQL Querying: Advanced

Course Overview

In today's competitive environment, information is one of the most important factors in determining the success of an organization. If you are able to manage and retrieve information efficiently, you can streamline the organization's processes and give it a competitive edge. Some data analysis tasks may require that you query multiple tables simultaneously or create complex views of data.

In the course SQL Querying: Fundamentals, you learned the basics of SQL querying. In this course, you will build on this foundation, learning advanced querying techniques, such as writing nested queries, using JOINs to combine data from multiple tables, summarizing query results, using advanced filtering, and using views to simplify repetitive querying tasks. You will also learn how to perform common database administration tasks such as duplicating tables, modifying table structures, inserting, updating, or deleting data, and indexing tables to optimize query performance. You will also learn how to work with multiple tasks as a transaction.

Prerequisites

To ensure your success, we recommend you first take the following Logical Operations courses, or have equivalent skills and knowledge:

- SQL Querying: Fundamentals

Target Audience

- Business Analysts
- Data Analysts
- Developers
- Software Engineer
- Server administrator

Course Objectives

In this course, you will work with advanced queries to manipulate and index tables. You will also create transactions so that you can choose to save or cancel the data entry process. You will:

- Use nested queries to generate query output.
- Manipulate table data by inserting and updating records in a table and deleting records from a table.
- Manipulate table structure.
- Create views, manipulate data through views, modify the view structure, and drop views.
- Create indexes on table columns and drop inefficient indexes.
- Mark the beginning of a transaction, roll back a transaction, and commit a transaction.

Duration

1 Day

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SQL Querying: Advanced

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Course Outline

Lesson 1: Using Nested Queries

- Topic A: Search Based on Values from a Subquery
- Topic B: Compare Values from a Subquery
- Topic C: Search Based on the Existence of Records
- Topic D: Generate Output Using Correlated Subqueries
- Topic E: Filter Grouped Data Within Subqueries
- Topic F: Perform Multiple-Level Subqueries

Lesson 2: Manipulating Table Data

- Topic A: Insert Rows
- Topic B: Modify and Delete Data

Lesson 3: Manipulating Table Structure

- Topic A: Create a Table
- Topic B: Create a Table with Constraints
- Topic C: Modify a Table's Structure
- Topic D: Delete Tables

Lesson 4: Working with Views

- Topic A: Create a View
- Topic B: Manipulate Data in Views
- Topic C: Modify and Delete Views

Lesson 5: Indexing Data

- Topic A: Create Indexes
- Topic B: Drop Indexes

Lesson 6: Managing Transactions

- Topic A: Define Transactions
- Topic B: Commit Transactions

Course-specific Technical Requirements

Hardware:

Each computer will need the following minimum hardware configurations:

- 2 GHz or faster 64-bit (x64) processor
- 4 gigabytes (GB) RAM
- 40 GB available hard disk space
- CD-ROM drive (if installing any software from a CD-ROM)
- Keyboard and mouse (or other pointing device)
- 1024 x 768 (or higher) resolution monitor recommended
- Network cards and cabling for local network access
- Internet access (contact your local network administrator)
- Printer (optional) or an installed printer driver
- Projection system to display the instructor's computer screen

Software:

To prepare a system for the class, install the following software according to the instructions provided. You will need the following software:

- Microsoft® Windows® 10 64-bit with sufficient licenses.

Windows 10 requires activation unless you have volume-licensing agreements. There is a grace period for activation. If the duration of your class will exceed the activation grace period (for example, if you are teaching the class over the course of an academic semester), you should activate the installations at some point before the grace period expires. Otherwise, the operating system may stop working before the class ends.

- Microsoft® SQL Server® 2017 Express. (When this course was written, the installation file for this free software was available for download from https://www.microsoft.com/en-us/sql-server/sql-server-downloads.)
- Microsoft® SQL Server® Management Studio (SSMS). (When this course was written, the installation file for this free software was available for download from https://docs.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms.)