



SQL Querying 1

Course Description

This course is intended for individuals with basic computer skills, familiar with concepts related to database structure and terminology, and who want to use SQL to query databases.

Learning Objectives

- Connect to the SQL Server database and execute a simple query.
- Include a search condition in a simple query.
- Use various functions to perform calculations on data.
- Organize data obtained from a query before it is displayed.
- Retrieve data from multiple tables.
- Export the results of a query.

Executing a Simple Query

- Connect to the SQL Database
 - Databases
 - Tables
 - Client/Server Architecture for SQL Databases
 - Other Architectures for SQL Databases
 - SQL
 - SQL Command Groups
 - Ways SQL is Used
 - The Query Editor Window
- Query a Database
 - Queries
 - The SELECT Command
 - Query Processing
 - Syntax
 - Guidelines for Constructing SQL Statements
 - Select All Columns
 - Optional Clauses of the SELECT Statement
 - Syntax Notation for the SQL SELECT Command
- Save a Query
 - SQL Script Files
- Modify and Execute a Saved Query
 - Data Types Available in SQL Server
 - Stored Procedures
 - Comments

Working with Views

- Generate a Text File
 - Text Data Formats
- Generate an XML File
 - XML
 - The FOR XML Clause
 - Syntax of the FOR XML Clause

Performing a Conditional Search

- Search Using One or More Conditions
 - Conditions
 - The Conditional Search Process
 - The WHERE Clause
 - Operators
 - Comparison Operators
 - Arithmetic Operators
 - Column Aliasing
 - Alternative Ways to Define an Alias
 - Logical Operators
 - The AND, OR, and NOT Operators
 - Operator Precedence
 - Parentheses
 - Comparison Involving NULL
- Search for a Range of Values and NULL Values
 - The BETWEEN...AND Operator
 - The IN Operator
 - The NULL Value
 - The IS NULL Clause
- Search Data Based on String Patterns
 - Wildcard Characters
 - Pattern Matching

Retrieving Data from Multiple Tables

- Combine the Results of Two Queries
 - The UNION Operator
 - Syntax of the UNION Operator
- Compare the Results of Two Queries
 - The EXCEPT and INTERSECT Operators
- Retrieve Data by Joining Tables
 - Joins
 - Cross Joins
 - Syntax of a Cross Join
 - Inner Joins
 - Syntax of an Inner Join
 - Outer Join
 - Syntax of an Outer Join
 - The Table Alias Name
 - Self Joins
 - Multiple Table Joins

Working with Functions

- Perform Date Calculations
 - Date Storage
 - Functions
 - Types of Functions
 - Date Functions
 - Date and Time Data Types
 - Conversion Between Date Types
 - The DATEPART() Function
 - Nested Functions
- Calculate Data Using Aggregate Functions
 - Keywords
- Manipulate String Values
 - String Functions
 - Case Conversion Functions
 - Column Leading and Trailing Spaces
 - The Trim Functions
 - Character Extraction
 - The Substring Function
 - Concatenation

Organizing Data

- Sort Data
 - The ORDER BY Clause
 - Rank Data
- The Ranking Functions
 - Syntax of a Ranking Function
 - The RANK Function
 - The DENSE_RANK Function
 - The ROW_NUMBER Function
 - The NTILE Function
 - The TOP n Keyword
- Group Data
 - The GROUP BY Clause
 - Specifications for Using the GROUP BY Clause
 - Querying Grouping Sets
 - CUBE and ROLLUP Subclauses
- Filter Grouped Data
 - The HAVING Clause
- Summarize Grouped Data
 - The CUBE and ROLLUP Operators
- Use PIVOT and UNPIVOT Operators
 - Syntax of the PIVOT Operator