

Writing Queries With Microsoft SQL Server 2012– 4 Days



Overview

This course provides students with the technical skills required to write basic Transact-SQL queries for Microsoft® SQL Server® 2012. This course is the foundation for all SQL Server related disciplines; namely, Database Administration, Database Development and Business Intelligence.

Target Audience

This course is intended for those who are developing systems using SQL Server databases, or who are using SQL to extract and analyse data from SQL Server databases. The course is also aimed for SQL power users who aren't necessarily database-focused; namely, report writers, business analysts or client application developers.

Prerequisites

Before attending this course, students must have:

- Working knowledge of relational databases.
- Basic knowledge of the Microsoft Windows® operating system and its core functionality

Course Summary

In this course students will learn how to:

- Write SELECT Queries
- Query Multiple Tables
- Use Built-In Functions
- Use Subqueries
- Execute Stored Procedures
- Use Set Operators
- Implement Error Handling
- Implementing Transactions
- Use Table Expressions
- Sort and Filter Data
- Use Window Ranking, Offset and Aggregate Functions
- Query SQL Server Metadata
- Program with T-SQL
- Improve Query Performance

Course Content**Module 1: Introduction to Microsoft SQL Server 2012**

- Lesson 1: Introducing Microsoft SQL Server 2012
- Lesson 2: Getting Started with SQL Server Management Studio
- Lab: Working with SQL Server 2012 Tools

Module 2: Getting Started with SQL Azure

- Lesson 1: Overview of SQL Azure

Module 3: Introduction to T-SQL Querying

- Lesson 1: Introducing T-SQL
- Lesson 2: Understanding Sets
- Lesson 3: Understanding Predicate Logic
- Lesson 4: Understanding the Logical Order of Operations in SELECT statements
- Lab: Introduction to T-SQL Querying

Module 4: Writing SELECT Queries

- Lesson 1: Writing Simple SELECT Statements
- Lesson 2: Eliminating Duplicates with DISTINCT
- Lesson 3: Using Column and Table Aliases
- Lesson 4: Writing Simple CASE Expressions
- Lab: Writing Basic SELECT Statements

Module 5: Querying Multiple Tables

- Lesson 1: Understanding Joins
- Lesson 2: Querying with Inner Joins
- Lesson 3: Querying with Outer Joins
- Lesson 4: Querying with Cross Joins and Self-Joins
- Lab: Querying Multiple Tables

Module 6: Sorting and Filtering Data

- Lesson 1: Sorting Data
- Lesson 2: Filtering Data with Predicates
- Lesson 3: Filtering with TOP and OFFSET-FETCH
- Lesson 4: Working with Unknown Values
- Lab: Sorting and Filtering Data

Module 7: Working with SQL Server 2012 Data Types

- Lesson 1: Introducing SQL Server 2012 Data Types
- Lesson 2: Working with Character Data
- Lesson 3: Working with Date and Time Data
- Lab: Working with SQL Server 2012 Data Types

Module 8: Using Built-In Functions

- Lesson 1: Writing Queries with Built-In Functions
- Lesson 2: Using Conversion Functions
- Lesson 3: Using Logical Functions
- Lesson 4: Using Functions to Work with NULL
- Lab: Using Built-In Functions

Module 9: Grouping and Aggregating Data

- Lesson 1: Using Aggregate Functions
- Lesson 2: Using the GROUP BY Clause
- Lesson 3: Filtering Groups with HAVING
- Lab: Grouping and Aggregating Data

Module 10: Using Subqueries

- Lesson 1: Writing Self-Contained Subqueries
- Lesson 2: Writing Correlated Subqueries
- Lesson 3: Using the EXISTS Predicate with Subqueries
- Lab: Using Subqueries

Module 11: Using Table Expressions

- Lesson 1: Using Views
- Lesson 2: Using Inline Table-Valued Functions
- Lesson 3: Using Derived Tables
- Lesson 4: Using Common Table Expressions
- Lab: Using Table Expressions

Module 12: Using Set Operators

- Lesson 1: Writing Queries with the UNION Operator
- Lesson 2: Using EXCEPT and INTERSECT
- Lesson 3: Using APPLY
- Lab: Using Set Operators

Module 13: Using Window Ranking, Offset, and Aggregate Functions

- Lesson 1: Creating Windows with OVER
- Lesson 2: Exploring Window Functions
- Lab: Using Window Ranking, Offset, and Aggregate Functions

Module 14: Pivoting and Grouping Sets

- Lesson 1: Writing Queries with PIVOT and UNPIVOT
- Lesson 2: Working with Grouping Sets
- Lab: Pivoting and Grouping Sets

Module 15: Querying SQL Server Metadata

- Lesson 1: Querying System Catalog Views and Functions
- Lesson 2: Executing System Stored Procedures
- Lesson 3: Querying Dynamic Management Objects
- Lab: Querying SQL Server Metadata

Module 16: Executing Stored Procedures

- Lesson 1: Querying Data with Stored Procedures
- Lesson 2: Passing Parameters to Stored Procedures
- Lesson 3: Creating Simple Stored Procedures
- Lesson 4: Working with Dynamic SQL
- Lab: Executing Stored Procedures

Module 17: Programming with T-SQL

- Lesson 1: T-SQL Programming Elements
- Lesson 2: Controlling Program Flow
- Lab: Programming with T-SQL

Module 18: Implementing Error Handling

- Lesson 1: Using TRY / CATCH Blocks
- Lesson 2: Working with Error Information
- Lab: Implementing Error Handling

Module 19: Implementing Transactions

- Lesson 1: Transactions and the Database Engine
- Lesson 2: Controlling Transactions
- Lab: Implementing Transactions

Module 20: Improving Query Performance

- Lesson 1: Factors in Query Performance
- Lesson 2: Displaying Query Performance Data
- Lab: Improving Query Performance

Course Materials: presentation slides/hands-on exercises with CD