

Transact-SQL Server 2008

Course Summary

Description

In this course, you will learn about the features that are available in SQL Server like how to design and create a database, and how to build basic queries using Transact-SQL, the language of SQL Server. Then you will learn how to build effective views, stored procedures, triggers, and user-defined functions using Transact-SQL. You will learn how to use the Transact-SQL programming language for error handling and hierarchical queries, dealing with complex data structures and processes, and how to make your databases more scalable through partitioning. SQL Server 2008 includes a rich set of tools that go beyond the basics of querying and manipulating data. You will learn how to take advantage of the user-friendly management console that integrates both authoring and administrative tasks. You will learn how to take advantage of SQL Server's tools for analyzing and tuning your databases.

Objectives

At the end of this course, students will be able to:

- Understand the differences between the available editions of SQL Server 2008.
- Create a SQL Server database based on sound design principles.
- Create constraints, triggers, and indexes.
- Use Transact-SQL INSERT, UPDATE and DELETE statements.
- Configure and use SQL Server Management Studio (SSMS).
- Use Transact-SQL with data types, delimiters and variables.
- Understand the differences between views, stored procedures, triggers, and user-defined functions.
- How to write and use stored procedures to provide a safe, controlled, efficient way to execute Transact-SQL code to access and update data and database objects.
- Discover how transactions can protect the integrity of your data and ways to handle errors that occur when code executes.
- Understand the complex data types in SQL Server, such as for spatial and hierarchical data, and how they support complex data operations.
- How to partition data to store data in ways that improves the efficiency of queries.
- Investigate the XML data type and its properties and methods, and how it supports both free form and relational data.

Topics

- A Tour of SQL Server 2008
- Designing and Creating a Database
- Working with SQL Server Management Studio
- Transact-SQL Programming
- Transactions and Error Handling
- Data Selection Queries
- Advanced Data Types
- Complex Querying
- Modifying Data
- Working with XML
- Creating Views
- Implementing SQL Server Partitions
- Creating User-Defined Functions
- Creating Stored Procedures and Triggers
- Advanced Query Techniques
- Advanced Techniques

Prerequisites

To get the most out of the Microsoft T-SQL Server 2008 course, you should have a solid understanding of relational databases. No particular programming experience is required, but the course is taught from a developer's perspective.

Duration

Four days

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Course Outline

- I. A Tour of SQL Server 2008**
 - A. SQL Server 2008 Editions, Components, and Tools
 - B. Using SQL Server Management Studio (SSMS)
 - C. Working with Tables, Queries, and Views
 - D. Business Intelligence Services
- II. Designing and Creating a Database**
 - A. Relational Database Design Principles
 - B. Implementing the Design
- III. Working with SQL Server Management Studio**
 - A. Getting Started with Management Studio
 - B. Exploring the Object Explorer
 - C. Working with the Query Editor
 - D. Using SQL Server Books Online
- IV. Transact-SQL Programming**
 - A. Overview of Transact-SQL
 - B. Using Built-In Functions
 - C. Controlling Flow
 - D. Ranking Results
- V. Transactions and Error Handling**
 - A. Transaction Concepts
 - B. Applications and Transactions
 - C. Creating Explicit Transactions
 - D. Using TRY/CATCH Error Handling
- VI. Data Selection Queries**
 - A. Understanding Transact-SQL
 - B. The SELECT Statement
 - C. The WHERE Clause
 - D. Using ORDER BY to Sort Data
 - E. The GROUP BY Clause
 - F. Joining Tables
- VII. Advanced Data Types**
 - A. Introduction
 - B. The HierarchyID Data Type
 - C. Sparse Columns and Column Sets
 - D. FILESTREAM Storage
 - E. Spatial Data
- VIII. Complex Querying**
 - A. Working with NULL Values
 - B. Ranking Grouped Data
 - C. Writing Correlated Subqueries
 - D. Using Common Table Expressions
- IX. Modifying Data**
 - A. Modifying Data with Transact-SQL
 - B. Inserting Data
 - C. Updating Data
 - D. Deleting Data
 - E. Understanding Transaction Isolation
- X. Working with XML**
 - A. The XML Data Type
 - B. XML Schema Collections
 - C. Querying XML
 - D. Best Practices
- XI. Creating Views**
 - A. What Is a View?
 - B. Creating Views
 - C. Updating Data Using a View
 - D. Using Computed Columns
 - E. Indexed Views
 - F. Partitioned Views
- XII. Implementing SQL Server Partitions**
 - A. Overview of Table-Based Partitions
 - B. Creating Partitioned Tables
 - C. Querying Partitions
 - D. Managing Partitions
- XIII. Creating User-Defined Functions**
 - A. User-Defined Function Overview
 - B. Scalar Functions
 - C. Inline Table-Valued Functions
 - D. Multi-Statement Table-Valued Functions
 - E. Using Functions, Views, and Stored Procedures
- XIV. Creating Stored Procedures and Triggers**
 - A. Creating Stored Procedures
 - B. Creating Triggers

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Course Outline (cont'd)

XV. Advanced Query Techniques

- A. Full-Text Search
- B. Advanced T-SQL Techniques
- C. Executing Dynamic SQL

XVI. Advanced Techniques

- A. Complex Data and Structures
- B. Writing More Efficient Queries
- C. Working with Complex Queries
- D. Maintaining Query Files