

## Querying Microsoft SQL Server 2000 with Transact-SQL

### Course GWE20710—Two days—Instructor-led



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### Introduction

The goal of this course is to provide students with the technical skills required to write basic Transact-SQL queries for Microsoft SQL Server 2000.

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### Audience

This course is intended for SQL Server database administrators, implementers, system engineers, and developers who are responsible for writing queries.

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### At Course Completion

After completing the course, students will be able to:

- Describe the uses of and ways to execute the Transact-SQL language.
- Use querying tools.
- Write SELECT queries to retrieve data.
- Group and summarize data by using Transact-SQL.
- Join data from multiple tables.
- Write queries that retrieve and modify data by using subqueries.
- Modify data in tables.
- Query text fields with full-text search.
- Describe how to create programming objects.

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### Microsoft Certification exams

This course will help the student prepare for the following Microsoft Certified Professional exam:

- [Designing and Implementing Databases with Microsoft SQL Server 2000 Enterprise Edition](#)

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## Prerequisites

Before attending this course, students must have:

- Experience using a Microsoft Windows operating system.
- An understanding of basic relational database concepts, including:
  - Logical and physical database design.
  - Data integrity concepts.
  - Relationships between tables and columns (primary key and foreign key, one-to-one, one-to-many, and many-to-many).
  - How data is stored in tables (rows and columns).
- Familiarity with the role of the database administrator
- The course materials, lectures, and lab exercises are in English. To benefit fully from our instruction, students need an understanding of the English language and completion of the prerequisites.

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## Student Materials

The student kit includes a comprehensive workbook and other necessary materials for this class. The following software is provided in the student kit:

- Microsoft SQL Server 2000, Enterprise Edition Evaluation Copy

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## Course Outline

### Module 1: Introduction to Transact-SQL

The following topics are covered in this module:

- The Transact-SQL Programming Language
- Types of Transact-SQL Statements
- Transact-SQL Syntax Elements
- Using SQL Server Books Online

After completing this module, you will be able to:

- Differentiate between Transact-SQL and ANSI-SQL.
- Describe the basic types of Transact-SQL.
- Describe the syntax elements of Transact-SQL.

### Module 2: Using Transact-SQL Querying Tools

The following topics are covered in this module:

- SQL Query Analyzer
- Using the Object Browser Tool in SQL Query Analyzer
- Using the **osql** Utility
- Executing Transact-SQL Statements
- Creating and Executing Transact-SQL Scripts

After completing this module, you will be able to:

- Describe the basic functions of SQL Query Analyzer.
- Describe how to use the Object Browser tool in SQL Query Analyzer.
- Describe how to use the templates in SQL Query Analyzer.
- Describe how to use the **osql** command-line utility.
- Execute Transact-SQL statements in various ways.

### **Module 3: Retrieving Data**

The following topics are covered in this module:

- Retrieving Data by Using the SELECT Statement
- Filtering Data
- Formatting Result Sets
- How Queries Are Processed
- Performance Considerations
- Retrieving Data and Manipulating Result Sets

After completing this module, you will be able to:

- Retrieve data from tables by using the SELECT statement.
- Filter data by using different search conditions to use with the WHERE clause.
- Format result sets.
- Describe how queries are processed.
- Describe performance considerations that affect retrieving data.

### **Module 4: Grouping and Summarizing Data**

The following topics are covered in this module:

- Listing the TOP n Values
- Using Aggregate Functions
- GROUP BY Fundamentals
- Generating Aggregate Values Within Result Sets
- Using the COMPUTE and COMPUTE BY Clauses
- Grouping and Summarizing Data

After completing this module, you will be able to:

- Use the TOP n keyword to retrieve a list of the specified top values in a table.
- Generate a single summary value by using aggregate functions.
- Organize summary data for a column by using aggregate functions with the GROUP BY and HAVING clauses.
- Generate summary data for a table by using aggregate functions with the GROUP BY clause and the ROLLUP or CUBE operator.
- Generate control-break reports by using the COMPUTE and COMPUTE BY clauses.

### **Module 5: Joining Multiple Tables**

The following topics are covered in this module:

- Using Aliases for Table Names
- Combining Data from Multiple Tables

- Combining Multiple Result Sets
- Querying Multiple Tables

After completing this module, you will be able to:

- Use aliases for table names.
- Combine data from two or more tables by using joins.
- Combine multiple result sets into one result set by using the UNION operator.

### **Module 6: Working with Subqueries**

The following topics are covered in this module:

- Introduction to Subqueries
- Using a Subquery as a Derived Table
- Using a Subquery as an Expression
- Using a Subquery to Correlate Data
- Using the EXISTS and NOT EXISTS Clauses
- Working with Subqueries

After completing this module, you will be able to:

- Describe when and how to use a subquery.
- Use subqueries to break down and perform complex queries.

### **Module 7: Modifying Data**

The following topics are covered in this module:

- Using Transactions
- Inserting Data
- Deleting Data
- Updating Data
- Performance Considerations
- Modifying Data

After completing this module, you will be able to:

- Describe how transactions work.
- Write INSERT, DELETE, and UPDATE statements to modify data in tables.
- Describe performance considerations related to modifying data.

### **Module 8: Querying Full-Text Indexes**

The following topics are covered in this module:

- Introduction to Microsoft Search Service
- Microsoft Search Service Components
- Getting Information About Full-Text Indexes
- Writing Full-Text Queries
- Querying Full-Text Indexes

After completing this module, you will be able to:

- Describe Microsoft Search service function and components.
- Write full-text queries.
- Get information about full-text indexes.

## **Module 9: Introduction to Programming Objects**

The following topics are covered in this module:

- Displaying the Text of a Programming Object
- Introduction to Views
- Advantages of Views
- Creating Views
- Introduction to Stored Procedures
- Introduction to Triggers
- Introduction to User-defined Functions
- Working with Views

After completing this module, you will be able to:

- Display the text of a programming object.
- Describe the concepts of views.
- List the advantages of views.
- Describe stored procedures.
- Describe triggers.
- Describe user defined functions.

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