MOD+DMOC: QUERYING MICROSOFT SQL SERVER 2014 (20461D)

Course Code: 4646

Learn basic Transact-SQL queries for SQL Server 2012 and 2014.

In this course, you will learn the technical skills required to write basic Transact-SQL (T-SQL) queries for Microsoft SQL Server 2014. This is the foundational course for all SQL server related disciplines: database administration, database development and business intelligence. Tools and skills you will learn include: SQL Server Management Studio, T-SQL, SELECT statements in querying multiple tables, data types, data sorting and filtering, data manipulation language (DML), grouping and aggregating data, table expressions, set operators, window functions, T-SQL programming, error handlers, and transaction management in SQL Server.

This course is designed for customers interested in learning SQL Server 2012 or SQL Server 2014. It covers the new features of SQL Server 2014 as well as the important capabilities across the SQL Server data platform.

This course incorporates material from the Official Microsoft Learning Product 20461: Querying Microsoft SQL Server 2014. It covers the skills and knowledge measured by Exam 70-461 and along with on-the-job experience, helps you prepare for the exam.

Redeem five SATVs for an individual On-Demand course plus digital Microsoft Official Courseware (dMOC). For more information on Microsoft SATVs click here.

What You’ll Learn

- SELECT query writing
- Query multiple tables
- Sort and filter data
- Data types in SQL Server
- Data modification using T-SQL
- Built-in functions
- Group and aggregate data
- Subqueries and table expressions
- Set operators
- Window functions: ranking, offset, and aggregate
- Pivot and group sets
- EXECUTE stored procedures
• T-SQL programming
• Error handling and transaction implementation

Who Needs to Attend
• Database administrators
• Database developers
• Business intelligence professionals
• SQL power-users such as:
  ◦ Report writers
  ◦ Business analysts
  ◦ Client application developers

Prerequisites
• Working knowledge of relational databases
• Basic knowledge of Microsoft Windows operation system and its core functionality
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| ON-DEMAND | $1,095 USD | 90 days |

On-Demand Outline

1. Microsoft SQL Server 2014
   - SQL Server Architecture
   - SQL Server Editions and Versions
   - SQL Server Management Studio

2. Transact-SQL Querying
   - Transact-SQL
   - Sets
   - Predicate Logic
   - Logical Order of Operations in SELECT Statements

3. Write SELECT Queries
   - Write Simple SELECT Statements
   - Eliminate Duplicates with DISTINCT
   - Column and Table Aliases
   - Write Simple CASE Expressions

4. Querying Multiple Tables
   - Joins
   - Query with Inner Joins and Outer Joins
   - Query with Cross Joins and Self Joins

5. Sorting and Filtering Data
   - Sort Data
   - Filter Data with a WHERE Clause
   - Filter with the TOP and OFFSET-FETCH Options
   - Work with Unknown and Missing Values

6. SQL Server 2014 Data Types
   - SQL Server 2014 Data Types
• Work with Character Data
  • Work with Date and Time Data

7. DML to Modify Data
  • Insert Data
  • Modify and Delete Data

8. Built-In Functions
  • Write Queries with Built-In Functions
  • Conversion Functions
  • Logical Functions
  • Use Functions to Work with NULL

9. Grouping and Aggregating Data
  • Use Aggregate Functions
  • Use the GROUP BY Clause
  • Filter Groups with HAVING

10. Sub-queries
    • Write Self-Contained Sub-queries
    • Write Correlated Sub-queries
    • Use the EXISTS Predicate with Sub-queries

11. Table Expressions
    • Use Derived Tables
    • Use Common Table Expressions
    • Use Views
    • Use Inline Table-Valued Functions

12. Set Operators
    • Write Queries with the UNION Operator
    • Use EXCEPT and INTERSECT
    • Use APPLY

13. Window Ranking, Offset, and Aggregate Functions
    • Create Windows with OVER
    • Explore Window Functions including Ranking, Aggregate and Offset Functions

14. Pivoting and Grouping Sets
    • Write Queries with PIVOT and UNPIVOT
    • Work with Grouping Sets

15. Query Data with Stored Procedures
    • Query Data with Stored Procedures
    • Pass Parameters to Store Procedures
    • Create Simple Stored Procedures
    • Work with Dynamic SQL

16. Programming with T-SQL

17. Implement Error Handling
• Use TRY/CATCH Blocks
• Work with Error Information

18. Implement Transactions
• Transactions and the Database Engine
• Control Transactions
• Isolation Levels

19. Appendix 1: Improve Query Performance
• Factors in Query Performance
• Display Query Performance Data

20. Appendix 2: Query SQL Server Metadata
• Query System Catalog Views and Functions
• Execute System Stored Procedures
• Query Dynamic Management Objects

On-Demand Labs

Lab 1: Work with SQL Server 2014 Tools
• SQL Server Management Studio

Lab 2: Transact-SQL Querying
• T-SQL elements and their role in writing queries
• Use of sets ad predicate login in SQL Server
• Logical order of operations in SELECT statements

Lab 3: Write Basic SELECT Statements
• Write Simple SELECT Statements
• Eliminate Duplicates using Distinct
• Table and Column Aliases
• Simple CASE Expression

Lab 4: Query Multiple Tables
• Write Queries that use Inner Joins, Multiple-Table Inner Join, Self Joins, Outer Joins, and Cross Joins

Lab 5: Sort and Filter Data
• Write Queries that filter data using a WHERE Clause, ORDER BY Clause, TOP Option and OFFSET-FETCH Clause

Lab 6: SQL Server 2014 Data Types
• Write Queries that return date and time data and character data
• Write Queries that use date, time, and character functions

Lab 7: Modify Data using DML
• Insert, Modify, and Delete Data

Lab 8: Built-In Functions
• Write Queries which use conversion and logical functions
• Write Queries which test for nullability

Lab 9: Group and Aggregate Data
• Write Queries which use the GROUP BY Clause
• Write Queries which use aggregate and distinct aggregate functions
• Write Queries which filter group with the HAVING Clause

Lab 10: Sub-Queries
• Write Queries which use self-contained, scalar and multi-result sub-queries
• Write Queries which use correlated sub-queries and EXISTS predicate

Lab 11: Table Expressions
• Write Queries which use Views, Derived Tables and Common Table Expressions
• Write Queries which use Inline Table-Valued Functions

Lab 12: Set Operators
• Write Queries which use UNION set operators and UNION ALL multi-set operators
• Write Queries which use CROSS APPLY and OUTER APPLY operators
• Write Queries which use EXCEPT and INTERSECT operators

Lab 13: Windows Ranking, Offset and Aggregate Functions

Lab 14: Pivoting and Grouping Sets

Lab 15: Execute Stored Procedures
• Invoke stored procedures using the EXECUTE statement
• Pass parameters to stored procedures
• Execute system stored procedures

Lab 16: Programming with T-SQL
• Declare Variables and Delimiting Batches
• Control-of-Flow Elements
• Generate Dynamic SQL
• Synonyms

Lab 17: Implement Error Handling
• Redirect Errors with TRY/CATCH
• Pass an Error Message Back to a Client using THROW

Lab 18: Implement Transactions
• Control transactions with BEGIN, COMMIT and ROLLBACK
• Add error handling to a CATCH block

Lab 19: Improve Query Performance
• View Query Execution Plans
• View Index Usage and Using SET STASTICS Statements

Lab 20: Query SQL Server Metadata
• Query System Catalog Views
• Query System Functions
• Query System Dynamic Management Views

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