DEVELOPING SQL DATABASES (M20762)
Course Code: 4400

Learn to design and develop a Microsoft SQL Server 2016 database.

This course provides students with the knowledge and skills to develop a Microsoft SQL Server database. The course focuses on teaching individuals how to use SQL Server product features and tools related to developing a database.

This course is also available in the On-Demand delivery format with digital Microsoft Official Courseware (dMOC). Click here to purchase.

What You’ll Learn

• Design and implement tables.
• Advanced table designs.
• Ensure data integrity through constraints.
• Indexes, including optimized and column store indexes.
• Design and implement views.
• Design and implement stored procedures.
• Design and implement user-defined functions.
• Respond to data manipulation using triggers.
• Design and implement in-memory tables.
• Implement managed code in SQL Server.
• Store and query XML data.
• Work with spatial data.
• Store and query BLOBs and text documents.

Who Needs to Attend

The primary audience for this course is IT Professionals who want to become skilled on SQL Server product features and technologies for implementing a database.

The secondary audiences for this course are individuals who are developers from other product platforms looking to become skilled in the implementation of a SQL Server database.

Prerequisites

• Basic knowledge of the Microsoft Windows operating system and its core functionality.
• Working knowledge of Transact-SQL.
• Working knowledge of relational databases.
Classroom Live Outline

1. Introduction to Database Development
   • Introduction to the SQL Server Platform
   • SQL Server Database Development Tasks

2. Designing and Implementing Tables
   • Designing Tables
   • Data Types
   • Working with Schemas
   • Creating and Altering Tables

3. Advanced Table Designs
   • Partitioning Data
   • Compressing Data
   • Temporal Tables

4. Ensuring Data Integrity through Constraints
   • Enforcing Data Integrity
   • Implementing Domain Integrity
   • Implementing Entity and Referential Integrity

5. Introduction to Indexes
   • Core Indexing Concepts
   • Data Types and Indexes
   • Heaps, Clustered, and Nonclustered Indexes
   • Single Column and Composite Indexes

6. Designing Optimized Index Strategies
   • Index Strategies
   • Managing Indexes
   • Execution Plans
• The Database Engine Tuning Advisor
• Query Store

7. Columnstore Indexes
• Introduction to Columnstore Indexes
• Creating Columnstore Indexes
• Working Columnstore Indexes

8. Designing and Implementing Views
• Introduction to Views
• Creating and Managing Views
• Performance Considerations for Views

9. Designing and Implementing Stored Procedures
• Introduction to Stored Procedures
• Working with Stored Procedures
• Implementing Parameterized Stored Procedures
• Controlling Execution Context

10. Designing and Implementing User-Defined Functions
• Overview of Functions
  Designing and Implementing Scalar Functions
• Designing and Implementing Table-Valued Functions
• Alternatives to Functions

11. Responding to Data Manipulation via Triggers
• Designing DML Triggers
• Implementing DML Triggers
• Advanced Trigger Concepts

12. Using In-Memory Tables
• In-Memory Tables
• Native Stored Procedures

13. Implementing Managed Code in SQL Server
• Introduction to CLR Integration in SQL Server
• Implementing and Publishing CLR Assemblies

14. Storing and Querying XML Data in SQL Server
• XML and XML Schemas
• Storing XML Data and Schemas in SQL Server
• Implementing the XML Data Type
• Using the T-SQL FOR XML Statement
• Getting Started with xQuery
• Shredding XML

15. Storing and Querying Spatial Data in SQL Server
• Introduction to Spatial Data
• Working with SQL Server Spatial Data Types
• Using Spatial Data in Applications
16. Storing and Querying BLOBs and Text Documents in SQL Server
   • Considerations for BLOB Data
   • Working with FileStream
   • Using Full-Text Search

17. Performance and Monitoring
   • Concurrency and Transactions
   • Locking Internals

18. Performance and Monitoring
   • Extended Events
   • Working with extended Events
   • Live Query Statistics
   • Optimize Database File Configuration
   • Metrics

Classroom Live Labs
Lab 1: Designing and Implementing Tables
Lab 2: Using Advanced Table Designs
Lab 3: Using Data Integrity Through Constraints
Lab 4: Implementing Indexes
Lab 5: Optimizing Indexes
Lab 6: Using Columnstore Indexes
Lab 7: Designing and Implementing Views
Lab 8: Designing and Implementing Stored Procedures
Lab 9: Designing and Implementing User-Defined Functions
Lab 10: Responding to Data Manipulation by Using Triggers
Lab 11: Using In-Memory Database Capabilities
Lab 12: Implementing Managed Code in SQL Server
Lab 13: Storing and Querying XML Data in SQL Server
Lab 14: Working with SQL Server Spatial Data
Lab 15: Storing and Querying BLOBs and Text Documents in SQL Server
Lab 16: SQL Server Concurrency
Lab 17: Monitoring, Tracing, and Baselining
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VIRTUAL CLASSROOM LIVE $2,995 USD 5 days

Virtual Classroom Live Outline

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Dec 2 - 6, 2019 | 8:30 AM - 4:30 PM EST
Jan 27 - 31, 2020 | 11:30 AM - 7:30 PM EST
Mar 9 - 13, 2020 | 8:30 AM - 4:30 PM EST
DEVELOPING SQL DATABASES (M20762)

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ON-DEMAND $895 USD  90 days

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PRIVATE GROUP TRAINING 5 days

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