



Developing SQL Databases

Course duration

4 días (32 hrs)

Descripción del curso

Este curso de cuatro días dirigido por un instructor proporciona a los estudiantes el conocimiento y las habilidades para desarrollar una base de datos de Microsoft SQL Server 2016. El curso se centra en enseñar a las personas cómo usar las características y herramientas del producto SQL Server 2016 relacionadas con el desarrollo de una base de datos.

Objetivos

- Design and Implement Tables.
- Describe advanced table designs
- Ensure Data Integrity through Constraints.
- Describe indexes, including Optimized and Columnstore 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.

Perfil de la audiencia

El público principal de este curso son los profesionales de TI que desean adquirir conocimientos sobre las características y tecnologías del producto SQL Server 2016 para implementar una base de datos. Las audiencias secundarias de este curso son personas que son desarrolladores de otras plataformas de productos que buscan capacitarse en la implementación de una base de datos de SQL Server 2016.

Prerrequisitos

- Conocimientos básicos del sistema operativo Microsoft Windows y su funcionalidad principal.
 - Conocimiento práctico de Transact-SQL.
 - Conocimiento práctico de bases de datos relacionales.
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Esquema del curso

Module 1: Introduction to Database Development

- Introduction to the SQL Server Platform
- SQL Server Database Development Tasks

Module 2: Designing and Implementing Tables

- Designing Tables
- Data Types
- Working with Schemas
- Creating and Altering Tables

Module 3: Advanced Table Designs

- Partitioning Data
- Compressing Data
- Temporal Tables

Module 4: Ensuring Data Integrity through Constraints

- Enforcing Data Integrity
- Implementing Data Domain Integrity
- Implementing Entity and Referential Integrity

Module 5: Introduction to Indexes

- Core Indexing Concepts
- Data Types and Indexes
- Heaps, Clustered, and Nonclustered Indexes
- Single Column and Composite Indexes

Module 6: Designing Optimized Index Strategies

- Index Strategies
 - Managing Indexes
 - Execution Plans
 - The Database Engine Tuning Advisor
 - Query Store
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Module 7: Columnstore Indexes

- Introduction to Columnstore Indexes
- Creating Columnstore Indexes
- Working with Columnstore Indexes

Module 8: Designing and Implementing Views

- Introduction to Views
- Creating and Managing Views
- Performance Considerations for Views

Module 9: Designing and Implementing Stored Procedures

- Introduction to Stored Procedures
- Working with Stored Procedures
- Implementing Parameterized Stored Procedures
- Controlling Execution Context

Module 10: Designing and Implementing User-Defined Functions

- Overview of Functions
- Designing and Implementing Scalar Functions
- Designing and Implementing Table-Valued Functions
- Considerations for Implementing Functions
- Alternatives to Functions

Module 11: Responding to Data Manipulation via Triggers

- Designing DML Triggers
- Implementing DML Triggers
- Advanced Trigger Concepts

Module 12: Using In-Memory Tables

- Memory-Optimized Tables
- Natively Compiled Stored Procedures

Module 13: Implementing Managed Code in SQL Server

- Introduction to CLR Integration in SQL Server
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- Implementing and Publishing CLR Assemblies

Module 14: Storing and Querying XML Data in SQL Server

- Introduction to XML and XML Schemas
- Storing XML Data and Schemas in SQL Server
- Implementing the XML Data Type
- Using the Transact-SQL FOR XML Statement
- Getting Started with XQuery
- Shredding XML

Module 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

Module 16: Storing and Querying BLOBs and Text Documents in SQL Server

- Considerations for BLOB Data
- Working with FILESTREAM
- Using Full-Text Search

Module 17: SQL Server Concurrency

- Concurrency and Transactions
- Locking Internals

Module 18: Performance and Monitoring

- Extended Events
 - Working with extended Events
 - Live Query Statistics
 - Optimize Database File Configuration
 - Metrics
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