

MOC COURSE: 20762 Developing SQL Databases

Summary

<i>Duration:</i>	<i>5 days/ 40 hours</i>
<i>Level:</i>	<i>300*</i>
<i>Delivery method:</i>	<i>In class</i>
<i>Language:</i>	<i>Bulgarian</i>
<i>Price:</i>	<i>950 Euro excl VAT</i>

** The difficulty level is consistent with the widely accepted scale of technical difficulty of training on Microsoft Corp*

AUDIENCE:

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.

AFTER THE TRAINING ATTENDEES WILL BE ABLE TO:

- 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.

TOPICS:

Module 1. INTRODUCTION TO DATABASE DEVELOPMENT

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

Module 2. DESIGNING & IMPLEMENTING TABLES

Designing Tables; Data Types; Working with Schemas; Creating and Altering Tables | Lab: Designing and Implementing Tables

Module 3. ADVANCED TABLE DESIGNS

Partitioning data; Compressing Data; Temporal Tables | Lab: Using Advanced Table Designs

Module 4. ENSURING DATA INTEGRITY THROUGH CONSTRAINTS

Enforcing data Integrity; Implementing Domain Integrity; Implementing Entity and Referential Integrity
Lab: Using Data Integrity Through Constraints

Module 5. INTRODUCTION TO INDEXES

Core Indexing Concepts; Data Types and Indexes; Heaps, Clustered, and Nonclustered Indexes; Single Column and Composite Indexes | Lab: Implementing Indexes

Module 6. DESIGNING OPTIMIZED INDEX STRATEGIES

Index Strategies; Managing Indexes; Execution Plans; The Database Engine Tuning Advisor; Query Store
Lab: Optimizing Indexes

Module 7. COLUMNSTORE INDEXES

Introduction to Columnstore Indexes; Creating Columnstore Indexes; Working with Columnstore Indexes
Lab: Using Columnstore Indexes

Module 8. DESIGNING AND IMPLEMENTING VIEWS

Introduction to Views; Creating and Managing Views; Performance Considerations for Views
Lab: Designing and Implementing Views

Module 9. DESIGNING AND IMPLEMENTING STORED PROCEDURES

Introduction to Stored Procedures; Working with Stored Procedures; Implementing Parameterized Stored Procedures; Controlling Execution Context | Lab: Designing and Implementing Stored Procedures

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
Lab : Designing and Implementing User-Defined Functions

Module 11. RESPONDING TO DATA MANIPULATION VIA TRIGGERS

Designing DML Triggers; Implementing DML Triggers; Advanced Trigger Concepts
Lab: Responding to Data Manipulation by Using Triggers

Module 12. USING IN-MEMORY TABLES

Memory-Optimized Tables; Natively Compiled Stored Procedures | Lab : Using In-Memory Database Capabilities

Module 13. IMPLEMENTING MANAGED CODE IN SQL SERVER

Introduction to CLR Integration in SQL Server; Implementing and Publishing CLR Assemblies | Lab: Implementing Managed Code in SQL Server

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
Lab: Storing and Querying XML Data in SQL Server

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
Lab: Working with SQL Server Spatial Data

Module 16. STORING AND QUERYING BLOBS AND TEXT DOCUMENTS IN SQL SERVER

Considerations for BLOB Data; Working with FILESTREAM; Using Full-Text Search | Lab: Storing and Querying BLOBs and Text Documents in SQL Server

Module 17. SQL SERVER CONCURRENCY

Concurrency and Transactions; Locking Internals | Lab: SQL Server Concurrency

Module 18. PERFORMANCE AND MONITORING

Extended Events; Working with extended Events; Live Query Statistics; Optimize Database File Configuration Metrics | Lab: Monitoring, Tracing, and Baselining