OD20762C: Developing SQL Databases SQL Server 2016 MOD

Course Details

Course Outline

1. **Introduction to Database Development**
   - Introduction to the SQL Server Platform
   - SQL Server Database Development Tasks
   - o **Lab : SQL Server Database Development Tasks**

2. **Designing and Implementing Tables**
   - Designing Tables
   - Data Types
   - Working with Schemas
   - Creating and Altering Tables
   - o **Lab : Designing and Implementing Tables**

3. **Advanced Table Designs**
   - Partitioning data
   - Compressing Data
   - Temporal Tables
   - o **Lab : Using Advanced Table Designs**

4. **Ensuring Data Integrity through Constraints**
   - Enforcing data Integrity
   - Implementing Domain Integrity
   - Implementing Entity and Referential Integrity
   - o **Lab : Ensuring Data Integrity through Constraints**

5. **Introduction to Indexes**
   - Core Indexing Concepts
   - Data Types and Indexes
   - Single Column and Composite Indexes
   - o **Lab : Implementing Indexes**

6. **Designing Optimized Index Strategies**

- Covering Indexes
- Managing Indexes
- Execution Plans
- Using the DTE
  - o **Lab : Designing Optimized Index Strategies**

7. **Columnstore Indexes**
   - Introduction to Columnstore indexes
   - Creating Columnstore indexes
   - Working Columnstore indexes
     - o **Lab : Using Columnstore indexesDescribe suitable scenarios for Columnstore indexes**

8. **Designing and Implementing Views**
   - Introduction to views
   - Creating and managing views
   - Performance considerations for views
     - o **Lab : Designing and Implementing Views**

9. **Designing and Implementing Stored Procedures**
   - Introduction to Stored Procedures
   - Working with Stored Procedures
   - Implementing Parameterized Stored Procedures
   - Controlling Execution Context
     - o **Lab : Designing and Implementing Stored Procedures**

10. **Designing and Implementing User-Defined Functions**
    - Overview of Functions
    - Designing and Implementing Scalar Functions
    - Designing and Implementing Table-Valued Functions
    - Implementation Considerations for Functions
    - Alternatives to Functions
      - o **Lab : Designing and Implementing User-defined FunctionsDesign, create and alter scalar functions**

11. **Responding to Data Manipulation via Triggers**
    - Designing DML Triggers
    - Implementing DML Triggers

- Advanced Trigger Concepts
- o **Lab : Responding to Data Manipulation via Triggers**

12. Using In-Memory Tables

- In-Memory tables
- Native Stored Procedures
- o **Lab : In Memory OLTP**

13. Implementing Managed Code in SQL Server

- Introduction to SQL CLR Integration
- Importing and Configuring Assemblies
- Implementing SQL CLR Integration
- o **Lab : Implementing Managed Code in SQL Server**

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 T-SQL FOR XML Statement
- Getting Started with xQuery
- o **Lab : Storing and Querying XML Data in SQL Server**

15. Working with SQL Server Spatial Data

- Introduction to Spatial Data
- Working with SQL Server Spatial Data Types
- Using Spatial Data in Applications
- o **Lab : Working with SQL Server Spatial Data**

16. Storing and Querying Blobs and Text Documents in SQL Server

- Considerations for BLOB Data
- Working with FileStream
- Using Full-Text Search
- o **Lab : Storing and Querying Blobs and Text Documents in SQL Server**