Developing Microsoft SQL Server Databases (MS-20464)

Modality: Virtual Classroom

Duration: 5 Days

SATV Value: 5

If you are joining this preparation course with no Master Subscription plan, a Free Voucher for Official Exam you will receive (not includes purchases utilizing the SATV / Vouchers of Training) for the Exam of 70-464. No Exam Voucher includes in this course if your enrollment is within the Master Subscription plan, but you have the option to request the purchase of Voucher for Official Exam separately.

About this course:

This 5-day instructor-led course presents understudies to the SQL Server 2014 alongside the clarifications of logical table structure, indexing, and inquiry plans. The course will likewise examine the database development objects, for example, stored and views procedures, other than the functions and parameters.

Distinctive normal traits of procedure coding like concurrency, indexes, error handling, and triggers will likewise be included. Do see that the course is principally intended for students interested in SQL Server 2012 or SQL Server 2014. The course subject will examine the latest highlights of SQL Server 2014 alongside the important capacities over the SQL Server information platform.

Course Objectives:

- Examine the entire SQL Server stage alongside its significant devices. Also, the details will likewise cover variants, editions, essentials of network listeners, and understanding of service accounts and services.
- Inquire the significant types of information which are to be utilized when designing tables, perform information transformation between the types of data and develop alias information types.
- Execute significant things including FOREIGN KEY, PRIMARY KEY, CHECK, DEFAULT, and UNIQUE constraints, and examine the cascading the limitations of FOREIGN KEY.
- Think of a reasonable single column and composite indexes processes.
- Create tables in the type of heaps with bunched indexes. Moreover, do think about the plan of a table and suggest an important structure.
- Make effectual non-clustered indexes.
- Create and execute stored procedures.
- Make and implement views
- Analyze the details of basic elements taken from the plans of execution.
- Lead a basic inquiry of a deadlock circumstance and see how the transaction isolation levels influence the application simultaneousness.
- Comprehend and work with table-valued parameters, table types, and incorporate the statement of MERGE to develop stored methods for updating the warehouses of data.

- Use both conventional T-SQL structured exemption handling and error handling code.
- Create and apply DML triggers
- Comprehend the applicable uses for SQL CLR integration and apply an existing assembly of .NET within SQL Server.
- Store the mappings and XML information in SQL Server.
- Encourage basic questions on XML data in SQL Server.

Audience:

- The designed crowd of this course is the Professionals of IT, explicitly the individuals who want to procure aptitude on SQL Server 2014 product technologies and features for executing a database.
- The secondary audience is experts, mainly designers coming from other product platforms or past forms of SQL Server looking to become the expert in the usage of a SQL Server 2014 database.

Prerequisites:

This course mandates the students to meet the following essentials:

- Information on basic concepts of the relational database.
- Understanding about the writing of T-SQL questions.

Course Outline:

Module 1: Introduction to Database Development

This module introduces database development and the key tasks that a database developer would typically perform.

Lessons

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

Lab : Introduction to Database Development

After completing this module, you will be able to:

- Describe the architecture and editions of SQL Server 2012.
- Work with SQL Server tools.
- Configure SQL Server Services.

Module 2: Designing and Implementing Tables

This module explains how to design, create, and alter tables. Also it focusses on working with schemas.

Lessons

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

Lab : Designing and Implementing Tables

After completing this module, you will be able to:

- Design Tables.
- Work with Schemas.
- Create and Alter Tables.

Module 3: Ensuring Data Integrity through Constraints

This module explains how to enforce data integrity, and implement domain integrity to maintain high quality data. Also it focusses on implementing Entity and Referential Integrity.

Lessons

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

Lab : Ensuring Data Integrity through Constraints

After completing this module, you will be able to:

- Explain the available options for enforcing data integrity and the levels at which they should be applied.
- Implement domain integrity.
- Implement entity and referential integrity.

Module 4: Introduction to Indexing

This module describes the concept of an index and discusses selectivity, density and statistics. It covers appropriate data type choices and choices around composite index structures.

Lessons

- Core Indexing Concepts
- Data Types and Indexes
- Single Column and Composite Indexes

Lab : Implementing Indexes

After completing this module, you will be able to:

- Describe core indexing concepts.
- Choose appropriate data types for indexes.
- Design and implement clustered and nonclustered indexes.

Module 5: Designing Optimized Index Strategies

This module explains covering indexes and the INCLUDE clause as well as the use of padding, hints and statistics. The module also covers the use of the Database Engine Tuning Advisor and index-related dynamic management views to assess indexing strategies.

Lessons

- Covering Indexes
- Managing Indexes
- Working with Execution Plans
- Using the DTE

Lab : Designing Optimized Index Strategies

After completing this module, you will be able to:

- Describe the elements of an execution plan.
- Design effective indexing strategies.
- Monitor your system to assess the performance of your indexing strategy.

Module 6: Columnstore Indexes

This module explains columnstore indexes and how to use them to maximize the performance and scalability of database applications.

Lessons

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

Lab : Using Columnstore Indexes

After completing this module, you will be able to:

- Create columnstore indexes.
- Describe the considerations for updating tables with non-clustered columnstore indexes.

Module 7: Designing and Implementing Views

This module introduces Views, and explains how to create and manage Views. Also it focuses on the performance consideration for Views.

Lessons

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

Lab : Designing and Implementing Views

After completing this module, you will be able to:

- Explain the role of views in database development.
- Implement views.
- Describe the performance related impacts of views.

Module 8: Designing and Implementing Stored Procedures

This module describes the potential advantages of the use of stored procedures along with guidelines on creating them.

Lessons

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

Lab : Designing and Implementing Stored Procedures

After completing this module, you will be able to:

- Describe the role of stored procedures and the potential benefits of using them.
- Work with stored procedures.
- Implement parameterized stored procedures.
- Control the execution context of a stored procedure.

Module 9: Designing and Implementing User-Defined Functions

This module explains how to design and implement user-defined functions that enforce business rules or data consistency, and modify and maintain existing functions written by other developers.

Lessons

- Overview of Functions
- Designing and Implementing Scalar Functions
- Designing and Implementing Table-Valued Functions

- Implementation Considerations for Functions
- Alternatives to Functions

Lab : Designing and Implementing User-Defined Functions

After completing this module, you will be able to:

- Design and implement scalar functions.
- Design and implement table-valued functions.
- Describe implementation considerations for functions.
- Describe alternatives to functions.

Module 10: Responding to Data Manipulation via Triggers

This module, explains what DML triggers are and how they enforce data integrity. Also it focusses on the different types of triggers available, and how to define triggers in a database.

Lessons

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

Lab : Responding to Data Manipulation via Triggers

After completing this module, you will be able to:

- Design DML triggers.
- Implement DML triggers.
- Explain advanced DML trigger concepts.

Module 11: Using In-Memory Tables

This module covers the creation of in-memory tables and native stored procedures and discusses the advantages and disadvantages of using in-memory tables.

Lessons

- In-Memory Tables
- Native Stored Procedures

Lab : In-Memory OLTP

After completing this module, you will be able to:

- Design and implement memory-optimized tables.
- Create native stored procedures.

Module 12: Implementing Managed Code in SQL Server 2014

This module explains how to use CLR integrated code to create user-defined database objects that are managed by the .NET Framework.

Lessons

- Introduction to SQL CLR Integration
- Importing and Configuring Assemblies
- Implementing SQL CLR Integration

Lab : Implementing Managed Code in SQL Server 2014

After completing this module, you will be able to:

- Explain the importance of SQL Server CLR Integration.
- Import and configure assemblies.
- Implement objects that have been created within .NET assemblies.

Module 13: Storing and Querying XML Data in SQL Server

This module introduces XML and shows how XML data can be stored within SQL Server and then queried, including queries written in a language called XQuery.

Lessons

- 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

Lab : Storing and Querying XML Data in SQL Server 2014

After completing this module, you will be able to:

- Describe XML and XML schemas.
- Store XML data and associated XML schemas in SQL Server.
- Implement the XML data type within SQL Server.
- Use the T-SQL FOR XML Statement.
- Work with basic XQuery queries.
- Shred XML to a relational form.

Module 14: Working with SQL Server 2014 Spatial Data

This module introduces Spatial Data, and explains how to work with SQL Server Spatial Data Types.

Lessons

- Introduction to Spatial Data
- Working with SQL Server Spatial Data Types
- Using Spatial Data in Applications

Lab : Working with SQL Server Spatial Data

After completing this module, you will be able to:

- Describe the importance of spatial data and the industry standards related to it.
- Explain how to store spatial data in SQL Server.
- Perform calculations on and query SQL Server spatial data.

Module 15: Incorporating Data Files into DatabasesLessons

- Querying Data with Stored Procedures
- Implementing FILESTREAM and File Tables
- Searching Data Files

Lab : Implementing a Solution for Storing Data Files

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