

20464 Developing Microsoft® SQL Server® Databases

Course Overview

[View Course Dates & Register Today](#)

This is a 5-day class

This 5-day instructor-led course introduces SQL Server 2014 and describes logical table design, indexing and query plans. It also focusses on the creation of database objects including views, stored procedures, along with parameters, and functions. Other common aspects of procedure coding, such as indexes, concurrency, error handling, and triggers are also covered in this course. Also this course helps you prepare for the Exam 70-464.



Note: This course is designed for customers who are interested in learning SQL Server 2012 or SQL Server 2014. It covers the new features in SQL Server 2014, but also the important capabilities across the SQL Server data platform.

Who Should Attend

The primary audience for this course is IT Professionals who want to become skilled on SQL Server 2014 product features and technologies for implementing a database.

The secondary audiences for this course are individuals who are developers from other product platforms or previous versions of SQL Server looking to become skilled in the implementation of a SQL Server 2014 database.

Course Objectives

After completing this course, students will be able to:

- Introduce the entire SQL Server platform and its major tools. It will cover editions, versions, basics of network listeners, and concepts of services and service accounts.
- Determine appropriate data types to be used when designing tables, convert data between data types, and create alias data types.
- Be aware of good design practices regarding SQL Server tables and be able to create tables using T-SQL. (Note: partitioned tables are not covered).
- Implement PRIMARY KEY, FOREIGN KEY, DEFAULT, CHECK and UNIQUE constraints, and investigate cascading FOREIGN KEY constraints.
- Determine appropriate single column and composite indexes strategies.
- Create tables as heaps and tables with clustered indexes. Also consider the design of a table and suggest an appropriate structure.
- Read and interpret details of common elements from execution plans.
- Design effective non-clustered indexes.
- Design and implement views
- Design and implement stored procedures.
- Work with table types, table valued parameters and use the MERGE statement to create stored procedures that update data warehouses.
- Design and implement functions, both scalar and table-valued. (Also describe where they can lead to performance issues).
- Perform basic investigation of a deadlock situation and learn how transaction isolation levels affect application concurrency.
- Use both traditional T-SQL error handling code and structured exception handling.
- Design and implement DML triggers
- Learn appropriate uses for SQL CLR integration and implement an existing .NET assembly within SQL Server.
- Store XML data and schemas in SQL Server.
- Perform basic queries on XML data in SQL Server.

Course Outline



nhls.com



20464 Developing Microsoft® SQL Server® Databases

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
Partitioning Data
Compressing Data

3 Ensuring Data Integrity through Constraints

Enforcing Data Integrity
Implementing Domain Integrity
Implementing Entity and Referential Integrity

4 Introduction to Indexing

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

5 Designing Optimized Index Strategies

Covering Indexes
Managing Indexes
Working with Execution Plans
Using the DTE

6 Columnstore Indexes

Introduction to Columnstore indexes
Creating Columnstore Indexes
Working with Columnstore Indexes

7 Designing and Implementing Views

Introduction to Views
Creating and Managing Views
Performance Considerations for Views

8 Designing and Implementing Stored Procedures

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

9 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

20464 Developing Microsoft® SQL Server® Databases

10 Responding to Data Manipulation via Triggers

Designing DML Triggers
Implementing DML Triggers
Advanced Trigger Concepts

11 Using In-Memory Tables

In-Memory Tables
Native Stored Procedures

12 Implementing Managed Code in SQL Server 2014

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

13 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

14 Working with SQL Server 2014 Spatial Data

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