

Course Level

Professional

Who should attend?

Students looking to develop applications using SQL Server 2005, work towards the MCITP: Database Developer certification, or update their development skills from SQL Server 2000

ET : 513

Programming Microsoft SQL 2005

Microsoft SQL Server 2005 includes many new features for Database Developers to increase flexibility, productivity, scalability, and performance. These features include .NET integration, Native XML Data type, SQL Service Broker, Native Data Encryption, Notification Services, Web Services, SQL Server Management Studio, Business Intelligence Development Studio, and integration with Visual Studio 2005. This hands-on course will explore the new and existing features using the development of example applications as a solution-based training model.

Pre-requisites

Experience using SQL Server 2000 and an understanding of relational database and application development

Course Duration

5 days.

Course Objective.

- New features of SQL Server 2005 for the Database Developer
- Use SQL Server Management Studio
- Create Databases
- Create Database Objects - Stored Procedures, Triggers, Functions
- Create Indexes for Performance
- Explore Transact-SQL Enhancements
- Implement XML Technologies
- Utilize .NET Framework Hosting with Visual Studio 2005
- Compare Transact SQL and CLR-based Stored Procedures
- Using the SQL Service Broker for Asynchronous Messaging
- Develop an XML Web Service in the Database Tier
- Enable Native Data Encryption
- Implement Notification Services
- Use New Full Text Index Features

Descriptions.

Module 1: Overview SQL Server 2005 Programming
Module 2: Database Creation
Module 3: Implementing Database Objects
Module 4: Transact-SQL and Data Manipulation
Module 5: Performance Tuning a Database and a Database Application
Module 6: Stored Procedures
Module 7: Triggers and
Module 8: User-Defined Functions
Module 9: Implement Data Security
Module 10: Using Database Transaction
Module 11: Develop an XML Web Service in SQL 2005
Module 12: SQL Service Broker
Module 13: SQL Notification Services

Course Outline

1. New Features of SQL Server 2005 for the Developer

- New Features for the Developer
- Installation and Upgrade
- Post-installation Steps

2. SQL Server Management Studio and Database Creation

- Administrative Utilities
- SQL Server Management Studio
- Database Creation
- Files and Filegroups
- Template Explorer
- Sample Application Database

3. Designing and Implementing Database Objects

- Modeling
- Normalization
- Table Creation
- Datatypes
- New datatypes
- Temporary Tables
- Types of Data Integrity
- Control Data integrity through the use of Constraints
- Primary Keys
- Foreign Keys

4. Transact-SQL and Data Manipulation

- Basic Select Statement
- Use of Select Operators
- Table Joins
- Views
- Select and Sub Queries
- Insert, Update, and Delete
- Views and Data Manipulation
- Aggregate Functions
- Group BY
- Compute and Compute BY
- New Recursive Query Capabilities (CTEs)
- PIVOT Operations
- Error Handling

5. Performance Tuning a Database and a Database Application

- Types of Indexes
- Heaps
- Clustered Index
- Non-Clustered Index
- Index Creation Fill Factors
- Physical Storage
- Online Index Operations
- Database Engine Tuning Advisor
- SQL Profiler
- Full Text Index - New features
- Example Application using Full Text Index

6. Stored Procedures

- Overview of Stored Procedures
- Creating Stored Procedures
- Understanding the Procedure Cache
- Passing Parameters
- Returning Parameters
- Recompile Stored Procedures
- NET CLR for Stored Procedures
- Business Intelligence Development Studio
- CLR Examples
- CLR vs. T-SQL
- Code Access Security (CAS)

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7. Triggers and User-Defined Functions

- Create Triggers
- Disable Triggers for Bulk Insert
- After Trigger
- Instead of Trigger
- DDL Triggers
- CLR examples - Trigger
- Functions
- System vs. User-Defined
- Scalar-Valued
- Table-Valued
- CLR examples - UDF
- Development Environment
- Example Notification Services Application

8. Security - Native Data Encryption

- Object-Level Security
- New Schema Object
- Enable Native Data Encryption
- Example Application of Data Encryption

9. ADO.NET 2.0

- Multiple Active Result Sets (MARS)
- Transparent Client Redirection
- Asynchronous Processing

10. Designing a Transaction Strategy

- Transaction Statements
- Lock Implementation
- Isolation Levels
- Snapshot Isolation

11. Develop an XML Web Service in the Database Tier

- Overview of XML Technologies
- XML Web Services Overview
- Endpoints
- Example Web Service
- Visual Studio for Testing Application and Database Objects

12. SQL Server Service Broker

- Service-Oriented Architecture (SOA)
- Asynchronous Messaging
- Example Application

13. Set Up and Use Notification Services

- Notification Services Overview
- Development Environment
- Example Notification Services Application