



SQL SERVER PROGRAMMING – STORED PROCEDURE

Course ID : SQL-PG-SP



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Duration: 2 Days

(12 Hours) 09:00 AM – 04:00 PM



Price: 9,900 THB

* (excluding VAT 7%)

* Eligible for 200% tax deduction



Training Schedule

www.9experttraining.com

Category: Data

Stored procedures and functions are subprograms within a database that are created using scripting skills. This course covers the design and scripting of Stored Procedures, Functions, and Triggers for developing data source systems with transaction control. The focus is on practical implementation, understanding the limitations of each object, and applying concepts for optimal performance and security. The course includes case studies and intensive workshops.

Objectives

1. Participants will understand the components involved in creating database scripts.
2. Participants will be able to create scripts and use them to build various types of objects appropriately.
3. Participants will be able to declare transactions and choose appropriate isolation levels.

Target Audience

1. Individuals who query with T-SQL and wish to work with transactions.
2. Developers seeking to improve code quality, management, and development practices.
3. Developers interested in scripting for enhanced database performance.

Prerequisites

1. Understanding of relational databases and some experience in database design.
2. Proficiency in querying data.
3. Experience with at least one programming language.

System Requirements

1. Operating System : Windows 11 or Windows 10
2. CPU : 1.6 GHz or faster
3. RAM : 8 GB or higher
4. Remote Desktop Connection
5. Stable Internet access

TOPICS TRAINING

 **DAY 1 - Morning Session** 9:00 AM – 12:00 PM

1. Essentials Before Using Microsoft SQL Server

- Basic architecture of Microsoft SQL Server
- Introduction to SQL Server Management Studio
- Introduction to Visual Studio

2. Components of T-SQL

- Types of operators in T-SQL
- Types of system functions
- Variables
- Expressions
- Batch execution control
- Flow control
- Comments



DAY 1 - Afternoon Session

1:00 PM – 4:00 PM

3. Script Creation

- Understanding batch and scope
 - Creating and using variables within the appropriate scope
- Flow control
 - Using IF...ELSE
 - Using WHILE
- Error notification
 - Using RAISERROR
 - Using THROW
- Using relevant system functions to generate custom error messages
- Error handling with TRY/CATCH
 - Programming with TRY/CATCH blocks
 - Error handling functions
 - Catchable and non-catchable errors
 - Managed code errors

4. Declaring Transactions

- Understanding transactions
- Types of transactions
 - Implicit transactions
 - Explicit transactions
 - Automatic transactions
- Handling errors within transactions
- Transactions and errors in nested structures
- Declaring and managing transactions within TRY/CATCH blocks
- Using XACT_ABORT
- BEGIN / COMMIT / ROLLBACK TRANSACTION statements



DAY 2 - Morning Session

9:00 AM – 12:00 PM

5. Concurrency in SQL Server

- Understanding concurrency models
- Concurrency problems
- Understanding transaction isolation levels
 - Pessimistic isolation levels
 - Optimistic isolation levels (row versioning)
- Using row-versioned isolation levels effectively

6. Designing and Creating Stored Procedures

- Designing stored procedures
 - Benefits of stored procedures
 - Using system stored procedures
 - Statements that are not allowed in stored procedures

- Creating stored procedures
 - Defining parameters
 - Error handling
 - Other considerations
- Best practices for creating stored procedures
- Encrypting stored procedures
- Executing stored procedures
- Addressing parameter sniffing and related performance issues
- Controlling the execution security context



DAY 2 - Afternoon Session

1:00 PM – 4:00 PM

7. Designing and Creating Functions

- Overview of functions
 - Types of functions
 - System-defined functions
- Designing and creating scalar functions
- Designing and creating table-valued functions
 - Inline table-valued functions
 - Multi-statement table-valued functions
- Considerations for function creation
 - Performance implications of scalar functions
 - Performance implications of multi-statement table-valued functions
- Alternatives to functions
- Controlling the execution security context

8. Responding to Data Modifications with Triggers

- Understanding DML triggers
- Considerations for using triggers and evaluating alternatives
- Creating DML triggers
 - Inserted and Deleted virtual tables
 - Using SET NOCOUNT ON
 - Creating AFTER INSERT triggers
 - Creating AFTER DELETE triggers
 - Creating AFTER UPDATE triggers
 - Using the UPDATE function
- Understanding INSTEAD OF triggers
 - Comparing AFTER triggers and INSTEAD OF triggers
 - Creating INSTEAD OF triggers
- Performance considerations
 - Nested triggers
 - Recursive triggers
 - Controlling the order of trigger execution



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