

KOENIG SOLUTIONS • COURSE OUTLINE

Mastering Stored Procedures in Microsoft SQL Server

Learn to design, secure and optimise stored procedures in Microsoft SQL Server, from basic syntax to real-world integration.

3 Days

DURATION

7

MODULES

26

TOPICS

2

HANDS-ON ACTIVITIES

COURSE OVERVIEW

This course provides a thorough exploration of stored procedures in MS SQL Server, guiding learners from the basics to advanced integrations. Through hands-on labs and real-world scenarios, attendees will gain the skills necessary to design efficient, secure, and robust stored procedures suitable for professional SQL Server environments.

WHO THIS COURSE IS FOR

SQL Developers

Database Administrators

Database Developers

Backend Developers

Data Engineers

PREREQUISITES

- Basic knowledge of relational databases
- Familiarity with SQL syntax and commands
- Experience using Microsoft SQL Server (recommended)

LEARNING OBJECTIVES

- Understand the different types and benefits of stored procedures
- Design, create, and execute stored procedures in MS SQL Server
- Work with parameters, handle errors, and incorporate best practices
- Optimize, secure, and maintain stored procedures for performance and reliability
- Integrate stored procedures into real-world applications and workflows

7 Modules, 26 Topics

01

Introduction to Stored Procedures in SQL Server

TOPICS

- Definition and purpose of stored procedures
- Key advantages and business cases
- **Types of stored procedures:** system, user-defined, extended, CLR
- How stored procedures fit into SQL Server architecture

02

Fundamentals of Creating and Executing Stored Procedures

TOPICS

- **Syntax and structure:** CREATE PROCEDURE
- Naming conventions and parameter declaration
- Executing stored procedures with EXEC and sp_executesql
- Working with simple input and output parameters

HANDS-ON

- Hands-on examples and practice exercises

03

Parameter Handling and Data Management

TOPICS

- Differences between input and output parameters
- Optional and default parameter values
- Using table-valued parameters
- Returning single vs. multiple result sets

04

Advanced Stored Procedure Features

TOPICS

- Error handling with TRY...CATCH and @@ERROR
- Managing transactions within stored procedures
- Using local variables and control flow (IF, WHILE, CASE)
- Incorporating dynamic SQL within procedures

05

Best Practices and Security

TOPICS

- Modularity and documentation standards
- Permission management and security considerations
- Techniques for avoiding SQL injection
- Strategies for debugging and testing stored procedures

06

Performance Tuning and Optimization

TOPICS

- Understanding execution plans and reusability
- Writing efficient procedural code and using indexes
- Monitoring, measuring, and improving performance
- Optimizing resource cost and minimizing network traffic

07

Maintenance and Real-World Scenarios

TOPICS

Versioning and updating stored procedures · Auditing, logging, and document control

CAPSTONE

- Capstone projects and hands-on case studies

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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