

KOENIG SOLUTIONS • COURSE OUTLINE

SQL Server and Data Management with Analytics

Learn to manage, secure and optimise SQL Server databases and build analytics reports and dashboards with Power BI, Tableau and Excel.

5 Days

40 HOURS

15

MODULES

62

TOPICS

COURSE OVERVIEW

This course covers SQL Server fundamentals, including SQL commands, data types and advanced queries, followed by database security, encryption and auditing. It then addresses database development, performance tuning, scalability, high availability and disaster recovery planning. The later modules introduce business analytics concepts, data visualization and dashboard creation using tools such as Power BI, Tableau, Excel and Crystal Reports, along with data preparation, report formulas and interactive reporting techniques.

WHO THIS COURSE IS FOR

Database Administrators

Database Developers

Data Analysts

Business Analysts

Report Developers

LEARNING OBJECTIVES

- Explain SQL Server editions, features and management tools
- Apply SQL commands and advanced queries including joins and subqueries
- Describe SQL Server security architecture and encryption techniques
- Plan database schema design using normalisation techniques
- Apply performance tuning and maintenance strategies for SQL Server
- Assess scalability options and query optimisation strategies
- Plan high availability and disaster recovery solutions
- Build dashboards and interactive reports with Power BI and Tableau

15 Modules, 62 Topics

01

Introduction to SQL Server

TOPICS

Overview of SQL Server · SQL Server Editions and Features · SQL Server Management Tools

02

SQL Fundamentals

TOPICS

- Understanding Databases and Tables
- **Basic SQL Commands:** SELECT, INSERT, UPDATE, DELETE
- Data Types in SQL Server
- SQL Functions and Operators
- **Advanced SQL Queries:** Joins, Subqueries, and Indexes

03

Data and Database Security

TOPICS

SQL Server Security Architecture · Authentication and Authorization · Encryption Techniques in SQL Server · Data Masking and Row-Level Security · Auditing and Compliance

04

Database Development

TOPICS

Database Design Principles · Planning and Requirements Analysis · Implementation of Database Schema · Normalization and Denormalization Techniques · Testing and Quality Assurance

05

Database Management

TOPICS

Monitoring SQL Server Performance · Performance Tuning and Optimization · Maintenance Plans and Automation · Backup and Recovery Strategies · Index Maintenance and Optimization

06

Database Scalability and Resource Optimization

TOPICS

Scaling Up vs. Scaling Out · Partitioning and Sharding Techniques · Query Optimization Strategies · Performance Monitoring and Capacity Planning

07

Business Continuity

HIGH AVAILABILITY SOLUTIONS

- Always On Availability Groups
- Failover Clustering
- Log Shipping
- Database Mirroring
- Backup and Restore Procedures
- Disaster Recovery Planning
- Incident Response and Recovery
- Best Practices for Ensuring Business Continuity

08

Introduction to Data and Business Analytics

TOPICS

- Overview of Business Analytics
- Importance of Data Visualization and Reporting Tools

09

Exploring Design Tools: An Overview

TOPICS

Introduction to Crystal Reports · Introduction to Tableau · Introduction to Excel · Introduction to Power BI

10

Data Visualization Techniques

TOPICS

- Understanding Different Types of Charts (Bar, Line, Pie, etc.)
- Using Graphs for Data Representation
- Other Visualization Techniques (Heatmaps, Scatter Plots, etc.)

11

Data Preparation and Cleaning

TOPICS

Importance of Data Preparation · Techniques for Data Cleaning · Tools for Data Preparation

12

Creating Dashboards

TOPICS

Best Practices for Dashboard Design · Dashboard Elements and Layout · Creating Dashboards in Tableau · Creating Dashboards in Power BI · Creating Dashboards in Excel

13

Report Data Sorting, Grouping, and Summarizing

TOPICS

Sorting Data in Reports · Grouping Data for Better Insights · Summarizing Data with Key Metrics

14

Working with Formulas and Functions in Reports

TOPICS

- Using Formulas in Excel and Power BI
- Leveraging Functions in Tableau and Crystal Reports
- Combining Multiple Functions for Complex Calculations

15

Interactive Reports

TOPICS

- What are Interactive Reports?
- Creating Interactive Reports in Tableau
- Interactive Features in Power BI
- Enhancing Reports with Interactivity in Excel and Crystal Reports

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.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training

Live Online Classes (ILO)

Fly-Me-A-Trainer (FMAT)

Flexi (Self-Paced)

1-on-1 Training

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