

SQL Server Administration Contents

Duration -5 Days

Day-1

- SQL Server Introduction
- SQL Server versions and Editions
- SQL Server Architecture
- Normalization
- Installation of SQL Server and explanation of components/features available
- SQL Server Management and Development Tools
 - Basic Understanding
- Types Of TSQL Commands
- Data Definition Language (DDL)
- Data Manipulation Language (DML)
- Data Query Language (DQL)
- Data Control Language (DCL)
- Transaction Control Language (TCL)
- Batch processing
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Day-2

Database operations

- Creating Database
- Altering Database
- Deleting Database
- Constrains
- Data Types In TSQL
- Working with table operations
- Data retrieval statements
- Joins
- Operations on database object
- Where clause

- Order By Clause
- Distinct Keyword
- Isnull() function
- Column aliases
- Predicates
- Between ... And
- In
- Like
- Is Null
- Built In Functions
- Scalar Functions
- Numeric Functions
- Character Functions
- Conversion Functions
- Date Functions
- Aggregate Functions
- Convenient Aggregate Functions
- Statistical Aggregate Functions
- Group By and Having Clauses
- Super Aggregates
- Over(partition by ...) Clause
- Ranking Functions
- Common Table Expressions (CTE)
- Top n Clause
- Sub Queries
- Single Row Sub Queries
- Multi Row Sub Queries
- Any or Some
- ALL
- Nested Sub Queries
- Co-Related Sub Queries
- Exists and Not Exists

Day-3

- Indexes

- Clustered Index
- Non-Clustered Index
- Create, Alter and Drop Indexes
- Using Indexes
- Views
- Purpose of Views
- Creating, Altering and Dropping Indexes
- Simple and Complex Views
- Encryption and Schema Binding Options in creating views
- Security
- Login Creation
- SQL Server Authenticated Login
- Windows Authenticated Login
- User Creation
- Granting Permissions
- Revoking Permissions
- Roles
- Transaction Management
- Introduction
- Begin Transaction
- Commit Transaction
- Rollback Transaction
- Save Transaction
- Role of Log File in Transaction Management
- Implicit Transactions
- Security options like data masking and always encrypted
- Partitioning, Intelligent Query Processing (IQ)
- SQL Trace
- Function , Stored Procedure in SQL Server
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Day-4:

- Trigger and Cursors
- CTE and UDF
- Full Text Searching

- Dynamic SQL
- Hierarchical Queries, Keys & Constraints (When to use What/Why?)
- Profiler

Day-5

- Performance tuning
- Query Optimization
- Advanced Filtering Using Sub-queries
- Assignment and review

Overview of Generative AI

- Introduction to AI Concepts
- What is AI
- AI solutions and types
- What is Generative AI
- Examples of Generative AI services
- Benefits of GenAI
- Use case of GenAI
 - Language Processing
 - Image generation
 - Audio/Video generation
- Concerns around Gen AI
 - Responsible AI principles
 - Risks and regulations