

# SQL Server Training



MS SQL Server is a relational database management system. As a database server, SQL Server is used for storing and retrieving data as required by other applications. SQL Server supports ANSI SQL, which is the standard SQL (Structured Query Language) language. However, SQL Server comes with its own implementation of the SQL language, T-SQL (Transact-SQL).

## Course Objective:

- Understand the concepts of SQL Server Management Studio and Transact-SQL language
- Views, Stored Procedures and Modifying data using T-SQL
- Learn how to write simple and complex queries to retrieve data from the database
- Understand how to retrieve files and working with Triggers

## Course Audience:

- Those who want to learn SQL Server Database.
- SQL and Database Administrators
- Software Developers

## Course Prerequisites:

The participant should be aware of what is Database, Database concepts, SQL and RDBMS.

## **SQL Server Introduction & Installation:**

- SQL Server Installation
- Service Accounts & Use, Authentication Modes & Usage, Instance Configurations
- SQL Server Features & Purpose
- Using Management Studio (SSMS)
- Configuration Tools & SQLCMD
- Conventions & Collation

## **Introduction to SQL :**

- Basics of SQL Types of SQL Statements
- DDL, DML, DQL, DCL and TCL
- Create Database using Management Studio
- Datatypes in SQL Server
- Exploring DDL Statements on Table using Management Studio

## **DDL and DML Statements:**

- Create, Alter and Drop Table Insert,
- Update and Delete Statement Truncate Statement

## **Working with Queries:**

- Understanding Select Statement
- Usage of Top, Distinct, Null etc...keywords
- Exploring Where Clause with Operators
- Using Advanced Operators
- Sorting data using Order By clause
- Working with basic of Sub Queries

## **Aggregate Functions:**

- Using functions in Queries
- Using Predefined functions
- Count, Sum, Min, Max, Avg Group By and Having Clause
- Using Group By with Rollup and Cube

## **Joins and Set Operations :**

- Introduction to Joins
- Cross Join, Inner Join, Outer Join, and Self Join
- Set Operations using Unions, Intersect and Except

## **Data integrity and Constraints :**

- Entity integrity
- Domain integrity
- Referential integrity
- Types of constraints
- Unique, Not NULL, Primary Key and Default Check Foreign Key

## **Views :**

- Introduction & Advantages of Views
- Creating, Altering, Dropping Views
- Advance Options while Creating a View
- SQL Server Catalogue Views

## **Data Control language (DCL) and Indexes:**

- Creating Users & Roles
- Granting & Revoking of Roles & privileges
- Managing using Management Studio
- Introduction Clustered and Non-Clustered Index
- Creating and Dropping Indexes

## **Transact-SQL (T-SQL):**

- What is T-SQL?
- Scripts and Batches Declaring Variables
- Using Statements

- Working with Temp tables
- Error Handling
- Using System Functions / Global Variables Using Dynamic SQL

### **Stored Procedures and Functions :**

- Introduction to stored procedures
- Benefits of Stored Procedures
- Creating, Executing Modifying, Dropping
- Input-Output and Optional Parameters
- System defined SP's and Functions.
- User-defined Functions

### **Triggers and Cursors:**

- Introduction to triggers
- Constraints vs Triggers
- Creating, Altering, Dropping triggers
- for/after/instead of triggers
- Using Rollback Tran
- Creating Cursors
- Cursors vs. Select
- Types of cursors
- Locks on cursors
- Advantages of cursors

### **Transaction Control Language (TCL) :**

- Introduction Transactions process
- Types of transactions (Implicit, explicit)
- Working with Locks, Types of locks

### **Backup and Restore :**

- Generating SQL Script
- Executing SQL Script
- Generating Change Script

- Taking database Backup
- Restoring database using backup
- Attaching and Detaching of database

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