SQL School

Premium Quality Training

SQL Server TSQL Course

Thank you for contacting our **SQL School**. I am **Mr. Sai Phanindra**, trainer for this **MSSQL / SQL Server TSQL Training** Course. With 19+ Years of technical expertise exclusively on SQL & Database Technologies, I assure you 100% Practical, Step by Step Classes for this MSSQL course. My Profile @ https://www.linkedin.com/in/saiphanindra/

What is Database?

Database is a platform to store, extract and manage any type of data. Any amount of data.

What is SQL?

SQL (Structured Query Language) is a platform to connect, operate with database. We can store data, secure, report data and analyze data using SQL.

What is TSQL?

TSQL stands for Transact SQL. It is a Microsoft variant of SQL. TSQL is used to design, program and develop databases. It is very easier, faster and easier to work with.

Who can join this course?

Anyone. There are NO Pre-requisites for this course. We start the classes from scratch, right from Basics. Placement Assistance is part of the course, purely based on merit & opportunities.

What about the Lab? What are the System Requirements?

Window OS; 6 GB RAM; Any Processor. We shall guide you for Software Installation, Practice.

SQL Server TSQL Course Plans:

	Course	Chapters	Applicable for	Duration
Plan A	1. MSSQL, TSQL Queries 2. TSQL Programming	Ch 1 to Ch 24	Data Analysts, Data Engineers, Data Scientists	4 Weeks
Plan B	1. MSSQL, TSQL Queries 2. TSQL Programming 3. Query Tuning	Ch 1 to Ch 40	Database Developers SQL Programmers	5.5 Weeks
Plan C	1. MSSQL, TSQL Queries 2. TSQL Programming 3. Query Tuning 4. Azure SQL Development	Ch 1 to Ch 50	Database Developers, Azure SQL Developers	7 Weeks

Module 1: SQL Server TSQL (MS SQL) Queries

Helpful for Data Analysts, Data Engineers, Data Scientists, BI Developers

Ch 1: Introduction ✓ Database Introduction ✓ Types of Databases ✓ Need for & ETL, DWH ✓ BI Implementations ✓ SQL Server Advantages ✓ Version, Editions of MSSQL ✓ Realtime Database Job Roles	**Ch 2: Installations** ✓ SQL Server 2019, 2017 ✓ SSMS Tools Installation ✓ Database Engine (OLTP) ✓ SCM, Configuration Tools ✓ Instance Types, Uses ✓ Authentication Modes ✓ Collation, File Stream	**Ch 3: SQL Basics - 1** ✓ Need for Databases, Tables ✓ Need for SQL Commands ✓ DDL, DML & DQL Statements ✓ Database Creation @ GUI ✓ Data Operations @ GUI ✓ Session ID, SQL Context ✓ DB, Tables, Data @ SQL
Ch 4: SQL Basics - 2 ✓ DDL Variants in MSSQL ✓ DML Variants in MSSQL ✓ INSERT & INSERT INTO ✓ SELECT & SELECT INTO ✓ Basic Operators in SQL ✓ Special Operators in MSSQL ✓ ALTER, ADD, TRUNCATE, DROP	**Ch 5: Data Imports, Schemas** ✓ Data Imports with Excel ✓ ORDER BY & UNION ✓ UNION ALL For Sorting Data ✓ Creating, Using Schemas ✓ Real-world Banking Database ✓ Table Migrations @ Schemas ✓ 2 Part, 3 Part & 4 Part Naming	**Ch 6: Constraints, Index Basics** ✓ Need for Constraints, Keys ✓ NULL, NOT NULL, UNIQUE ✓ Primary Key & Foreign Key ✓ RDBMS and ER Models ✓ Identity Property, Default ✓ Clustered Index, Primary Key ✓ Non Clustered Index, Unique

Ch 7: Joins & Views Basics	Ch 8: Functions (UDF), Data Types	Ch 9: Stored Procedures, Models
✓ JOINS: Purpose. Inner Joins ✓ Left / Right / Full Outer Joins ✓ Cross Joins, Query Tuning ✓ Creating & Using Views ✓ DML, SELECT with Views ✓ RLS: WITH CHECK OPTION ✓ System Views & Metadata	✓ Using Functions in MSSQL ✓ Scalar Value Functions ✓ Inline & Multiline Functions ✓ Date & Time Functions ✓ String, Aggregate Functions ✓ Data Types: Integer, Char, Bit ✓ SQL Variant, Timestamp, Date	✓ Stored Procedures & Usage ✓ Creating, Testing Procedures ✓ Encryption, Deferred Names ✓ SPs for Validations, Analysis ✓ System SPs, Recompilation ✓ Normal Forms & Types ✓ Data Models, Self-References
Ch 10: Triggers, Temp Tables	**Ch 11: DB Architecture, Locks**	**Ch 12: Cursors & CTEs, Links**
✓ Need for Triggers ✓ DDL & DML Triggers ✓ Using Memory Tables ✓ Data Replication, Automation ✓ Local & Global Temp Tables ✓ Testing & Using Temp Tables ✓ SELECT ... INTO & Bulk Loads	✓ Planning VLDBs: Files, Sizing ✓ Filegroups, Extents & Types ✓ Log Files: VLF, Mini LSN ✓ Table Location, Performance ✓ Schemas, Transfer, Synonyms ✓ Transactions Types, Lock Hint ✓ Query Blocking Scenarios	✓ Cursors: Realtime Use ✓ Fetch & Access Cursor Rows ✓ CTEs for SELECT, DML ✓ CTEs: Scenarios & Tuning ✓ Linked Servers, Remote Joins ✓ Linked Servers: MSDTC, RPC ✓ Tuning Remote Queries
Ch 13: Merge, Upsert & Rank	**Ch 14: Grouping & Cube**	**Ch 15: Self Joins, Excel Analysis**
✓ Need for Merge in ETL ✓ Incremental Loads with SQL ✓ MERGE and RANK Functions ✓ Window Functions, Partition ✓ Identify, Remove Duplicates	✓ Group By & HAVING ✓ Cube, Rollup & Grouping ✓ Joins with Group By ✓ 3 Table, 4 Table Joins ✓ Query Execution Order	✓ Self Joins & Self References ✓ UNION, UNION ALL ✓ Sub Queries with Joins ✓ IIF, CASE, EXISTS Statements ✓ Excel Analytics, Pivot Reports
Real-time Case Study		
Mini Project [Design, Queries, Stored Procedures, Functions, Joins, more.]		

Module 2: TSQL Programming

Ch 16: Adv. Stored Procedures 1	Ch 17: Adv. Stored Procedures 2	Ch 18: Adv. Stored Procedures 3
✓ Declaring, Using Variables ✓ Using Triggers with Views ✓ Updatable Views, DML ✓ Views & Stored Procedures ✓ Data Distributions in Tables ✓ Transactions with Procedures ✓ Conditional Commits in SPs ✓ Rollback Options in Realtime	✓ Table Valued Parameters ✓ Using TVP with Procedures ✓ Creating User Defined Types ✓ Big Data Copy & Transactions ✓ Using SPs & Table Variables ✓ Transactional Integrity ✓ Output Parameters in SP ✓ IN and OUT Options Usage	✓ Dynamic SQL Programs ✓ sp_executesql Extended SP ✓ Formatting Queries, Nvarchar ✓ Cursors Types: Local, Global ✓ Cursor Types: Static, Dynamic ✓ Forward Only, Scroll Types ✓ WHILE Loop: @@Fetch Status ✓ Variables with Dynamic SQL

Ch 19: Complex Functions (UDF)	Ch 20: Complex Functions - 2	Ch 21 – 24: Banking Project
✓ Inline, Table Line Functions ✓ Multi Line Table Functions ✓ Using LOOPs in Functions ✓ Variables & Return Values ✓ Table Generation Logic ✓ Date & Time Data Types ✓ Calendar Data Generations	✓ Reading JSON Data ✓ Using OPENROWSET () ✓ Using nvarchar(max) values ✓ Using PIVOT () Function ✓ Data De-duplication in SQL ✓ Recursive CTEs, Anchors ✓ Recursive CTEs, Anchors	✓ Design & Planning Phase ✓ Querying Phase ✓ Programming Phase ✓ Debugging Phase ✓ Testing Phase ✓ Complete Project Solution ✓ Project FAQs, Resume Points

Module 3: Query Tuning

Ch 25: Performance Tuning Intro	Ch 26: Server Architecture	Ch 27: Database Architecture
✓ Performance Tuning: Reasons ✓ Factors Affecting Performance ✓ Processor Affinity and Memory ✓ Disk Configurations and Memory ✓ Server Dashboards & Monitoring ✓ Performance Tuning Techniques	✓ Database Engine Components ✓ SQL OS Components ✓ Protocols and Query Processing ✓ MDAC and CLR Components ✓ Parsing and Compilation ✓ Memory Manager & IO Managers	✓ Planning for Large Databases ✓ Primary & Secondary Data Files ✓ Filegroups, Spacing and Sizing ✓ Log File: Usage and Precautions ✓ Creating Tables with Filegroups ✓ Pages, Extents and VLF, MiniLSN
Ch 28: Query Audits	**Ch 29: Query Store**	**Ch 30: Indexes**
✓ Activity Monitor Tool ✓ Perfmon tool & counters ✓ Query Audits: DMVs, DMFs ✓ Plan Handle, Execution Time ✓ Auditing Long Running Queries ✓ Audit Frequent Running Queries	✓ Buffer Cache: Limitations ✓ Query Store: Advantages ✓ Query Store: Configurations ✓ Operation Mode, Data Flush ✓ Query Mode, Capture Mode ✓ Stats Collection, Stale Queries	✓ Indexes: Realtime Use ✓ Clustered Index: Sort, PadIndex ✓ Non-Clustered Index: Regular ✓ Included, Column Store Indexes ✓ Filtered, Online Indexes ✓ Covering Index, Selectivity
Ch 31: Indexed Views	**Ch 32: Statistics**	**Ch 33: Partitions**
✓ Views with Schemabinding ✓ Creating Views for Indexes ✓ Creating Indexes on Views ✓ Recursive Queries, Index Views ✓ Composite Indexes ✓ Indexes on Text Columns	✓ Statistics: Realtime Use ✓ Automated Statistics ✓ Index Statistics ✓ Column Statistics ✓ Conditional Statistics ✓ Manual Update of Statistics	✓ Partitions: Performance Tuning ✓ Partition Functions & Schemes ✓ Partition Un-partitioned Tables ✓ Compressions: ROW, PAGE ✓ Auditing Partitioned Structures ✓ Partitions Limitations with OLTP

Ch 34: Index Management	Ch 35: Tuning Tools	Ch 36: Execution Plans
✓ Index Rebuilds, ReOrganize	✓ Tuning Tools: Workload Files, .trc	✓ Execution Plan Analysis
✓ Database Maintenance Plans	✓ Profiler Tuning Template, Events	✓ IO Cost and CPU Cost
✓ Page Count and Index Conditions	✓ DTA, Profiler: Recommendations	✓ SubTree & Operator Cost
✓ Degree Of Parallelism Settings	✓ PDS: Physical Design Structures	✓ NUMA Nodes, Processor Affinity
✓ Resumable & Online Indexes	✓ PDS Recommendations	✓ Thread Count, DOP
✓ PAUSE, RESUME in Rebuilds	✓ DTA with Query Execution Cache	✓ Table & Index Scan, Index Seek
Ch 38: Temporal & MOT Tables	**Ch 39: Lock Management**	**Ch 40: Isolation Levels**
✓ In-Memory Tables: Usage	✓ LOCKS : Types & Isolation Levels	✓ Lock Hints and Isolation Levels
✓ MOT Tables and Performance	✓ S, X, IX,U, MD, Sch-M, Sch-S	✓ Read Committed, Uncommitted
✓ Memory Snapshots at Database	✓ Lock Audits: SP_WHO2, SP_LOCK	✓ Serializable, Repeatable Read
✓ File Stream Files in SQL Server	✓ sysprocesses and Lock Waits	✓ Snapshot Isolation, Versioning
✓ Temporal Tables for DML Audits	✓ Open Transaction, Blocking	✓ Read Committed Snapshot
✓ Temporal Tables for Data Audits	✓ Deadlocks in Real-world	✓ Choosing Correct Isolation Level

Module 4: Azure SQL Dev

Ch 41: Cloud Basics, Azure Funda	Ch 42: Azure SQL Database	Ch 43: Azure SQL DB Migrations
✓ Cloud Fundamentals	✓ Azure SQL Services	✓ SQL DB Migration Options
✓ Cloud Concepts, Benefits	✓ Azure SQL Server Creation	✓ Data Migration Assistant: DMA
✓ IaaS, PaaS, SaaS Cloud Types	✓ Azure SQL Databases	✓ DMA Tool, Migration Options
✓ Azure Cloud Concepts	✓ Azure Firewall: Rules	✓ On-Premises DB Export
✓ Azure Resources & Usage	✓ Test Connections from SSMS	✓ Azure SQL Database Import
✓ Azure Services & Purpose	✓ SSMS Tool: Test Connections	✓ Azure Storage Account
✓ Azure Account & Subscription	✓ ADS Tool: Installation, use	✓ Linking SSMS with Azure
Ch 44: Azure SQL DB Licensing	**Ch 45: Azure SQL DB Metrics**	**Ch 46: Azure SQL DB Tuning, AI**
✓ Azure SQL DB Licensing	✓ Azure SQL DB Metrics	✓ Automated Tuning Options
✓ Per Database Licensing	✓ CPU, Memory, Log Metrics	✓ Manual Tuning Options
✓ DTUs: Basic, Standard Types	✓ Data File Metrics, Alerts	✓ Server Level Tuning
✓ VPU and Plan Types	✓ Action Groups & Emails	✓ Database Level Tuning
✓ DTU Versus VPU Licensing	✓ Query Performance Insight	✓ AI Search Service, Tuning
✓ Elastic DTUs (eDTU) Usage	✓ Automated Tuning Options	✓ AI Indexes and Practical Use
✓ Elastic Query Processing	✓ Query Recommendations	✓ Watermark Columns, Updates

Ch 47: Azure PaaS & Azure IaaS	Ch 48: Azure IaaS Concepts	Ch 49 – 50: Banking Project
✓ Azure PaaS: Operations ✓ Azure Paas: Limitations ✓ Azure IaaS: Advantages ✓ Azure IaaS Components ✓ Azure Virtual Machines ✓ Capacity & Networking ✓ Disk & Memory Config.	✓ Azure Virtual Machines ✓ SQL Server with Azure VM ✓ Access Azure VM from SSMS ✓ Migrations from PaaS ✓ Migrations from On-Premise ✓ Azure Data Studio, VMs ✓ Comparing SSMS & ADS Tool	✓ OLTP Databases in Azure ✓ Code Based Deployments ✓ Code Less Deployments ✓ Debugging Phases in Azure ✓ Testing Phases in Azure ✓ Complete Project Solution ✓ Project FAQs, Resume Points

All sessions are practical, step by step.

👉 **Please visit us on www.sqlschool.com**

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