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.

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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	Ch 1 to Ch 15	Data Analysts, Data Engineers, Data Scientists	3 Weeks
Plan B	1. MSSQL, TSQL Queries 2. TSQL Programming 3. Query Tuning	Ch 1 to Ch 30	Database Developers SQL Programmers	5 Weeks
Plan C	1. MSSQL, TSQL Queries 2. TSQL Programming 3. Query Tuning 4. Azure SQL Development	Ch 1 to Ch 40	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	Ch 2: Installations	Ch 3: SQL Basics - 1
✓ Database Introduction	✓ SQL Server 2019, 2017	✓ Need for Databases, Tables
✓ Types of Databases	✓ SSMS Tools Installation	✓ Need for SQL Commands
✓ Need for & ETL, DWH	✓ Database Engine (OLTP)	✓ DDL, DML & DQL Statements
✓ BI Implementations	✓ SCM, Configuration Tools	✓ Database Creation @ GUI
✓ SQL Server Advantages	✓ Instance Types, Uses	✓ Data Operations @ GUI
✓ Version, Editions of MSSQL	✓ Authentication Modes	✓ Session ID, SQL Context
✓ Realtime Database Job Roles	✓ Collation, File Stream	✓ DB, Tables, Data @ SQL
Ch 4: SQL Basics - 2	**Ch 5: Data Imports, Schemas**	**Ch 6: Constraints, Index Basics**
✓ DDL Variants in MSSQL	✓ Data Imports with Excel	✓ Need for Constraints, Keys
✓ DML Variants in MSSQL	✓ ORDER BY & UNION	✓ NULL, NOT NULL, UNIQUE
✓ INSERT & INSERT INTO	✓ UNION ALL For Sorting Data	✓ Primary Key & Foreign Key
✓ SELECT & SELECT INTO	✓ Creating, Using Schemas	✓ RDBMS and ER Models
✓ Basic Operators in SQL	✓ Real-world Banking Database	✓ Identity Property, Default
✓ Special Operators in MSSQL	✓ Table Migrations @ Schemas	✓ Clustered Index, Primary Key
✓ ALTER, ADD, TRUNCATE, DROP	✓ 2 Part, 3 Part & 4 Part Naming	✓ Non Clustered Index, Unique

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

Module 2: TSQL Programming & Tuning

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

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

Module 3: Query Tuning

Ch 25: Query Audits, Perfmon	Ch 26: Indexes & Tuning	Ch 27: Partitions, Statistics
✓ Query Performance Issues	✓ Indexes: Sort Locations	✓ Partition Implementations
✓ Reasons for Slow Queries	✓ Clustered & Online Indexes	✓ Partition Functions & Schemes
✓ Performance Tuning Options	✓ Non-Clustered, Column store	✓ Primary & Secondary Types
✓ Performance Tuning Tools	✓ Included Indexes in Realtime	✓ Data Archival with Partitions
✓ Query Store & History	✓ Filtered Indexes & Usage	✓ Compression with Partitions
✓ Activity Monitor, Perfmon	✓ Covering Index & Selectivity	✓ Statistics: Realtime Use
✓ DMVs & DMFs for Audits	✓ Indexed Views (Materialized)	✓ Index, Column Stats, Updates
Ch 28: Tuning Tools, Exec Plans	**Ch 29: MOT & Temporal Tables**	**Ch 30: Locks & Isolation Levels**
✓ Tuning Tools and Workloads	✓ Memory Optimized Tables	✓ Transactions & Locks
✓ Profiler Tool: Trace Files	✓ Non-Clustered Primary Keys	✓ Lock Types & Performance
✓ Trace Filters and Rollover	✓ Stats Updates, Performance	✓ Lock Management Options
✓ DTA Tool Recommendations	✓ Temporal Tables in Realtime	✓ Isolation Levels & TempDB
✓ PDS, & Index Size, Index Scan	✓ History Tracking & Testing	✓ Snapshots and Performance
✓ Execution Plans, Index Seeks	✓ Timestamp Columns Usage	✓ Deadlocks Simulations, Graphs
✓ Query Cost Issues, Solutions	✓ Tuning Stored Procedures	✓ Profiler Tool & LIVE Locks

Module 4: Azure SQL Dev

Ch 31: Cloud Basics, Azure Funda	Ch 32: Azure SQL Database	Ch 33: 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

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Ch 34: Azure SQL DB Licensing	Ch 35: Azure SQL DB Metrics	Ch 36: Azure SQL DB Tuning, AI
✓ Azure SQL DB Licensing ✓ Per Database Licensing ✓ DTUs: Basic, Standard Types ✓ VPU and Plan Types ✓ DTU Versus VPU Licensing ✓ Elastic DTUs (eDTU) Usage ✓ Elastic Query Processing	✓ Azure SQL DB Metrics ✓ CPU, Memory, Log Metrics ✓ Data File Metrics, Alerts ✓ Action Groups & Emails ✓ Query Performance Insight ✓ Automated Tuning Options ✓ Query Recommendations	✓ Automated Tuning Options ✓ Manual Tuning Options ✓ Server Level Tuning ✓ Database Level Tuning ✓ AI Search Service, Tuning ✓ AI Indexes and Practical Use ✓ Watermark Columns, Updates
Ch 37: Azure PaaS & Azure IaaS	**Ch 38: Azure IaaS Concepts**	**Ch 39 – 40: 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.

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---------- **Thank you, All the best!** ----------

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