



SQL Server TSQL Programming

Hi !

Thank you for contacting our **SQL School**. I am **Mr. Sai Phanindra**, trainer for this **SQL Server TSQL Programming** 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 basic 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 Programming Course Plans :

	Modules	Chapters	Duration
Plan A	1. SQL Server, TSQL Programming	Ch 1 to Ch 25	4 + 1 Weeks
Plan B	1. SQL Server, TSQL Programming 2. Query Tuning	Ch 1 to Ch 31	5 + 1 Weeks
Plan C	1. SQL Server, TSQL Programming 2. Query Tuning 3. Azure SQL Development	Ch 1 to Ch 42	7.5 to 8 Weeks

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Module 1: SQL Server TSQL (MSSQL)

<p>Ch 1: Introduction</p> <ul style="list-style-type: none"> ✓ Database Introduction ✓ Types of Databases ✓ Need for & ETL, DWH ✓ BI Implementations ✓ SQL Server Advantages ✓ Version, Editions of MSSQL ✓ Data Engineering Job Roles 	<p>Ch 2: Installations</p> <ul style="list-style-type: none"> ✓ SQL Server 2019, 2017 ✓ SSMS Tools Installation ✓ Database Engine (OLTP) ✓ SCM, Configuration Tools ✓ Instance Types, Uses ✓ Authentication Modes ✓ Collation, File Stream 	<p>Ch 3: SQL Basics - 1</p> <ul style="list-style-type: none"> ✓ 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
<p>Ch 4: SQL Basics - 2</p> <ul style="list-style-type: none"> ✓ 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 	<p>Ch 5: Data Imports, Schemas</p> <ul style="list-style-type: none"> ✓ 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 	<p>Ch 6: Constraints, Index Basics</p> <ul style="list-style-type: none"> ✓ 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
<p>Ch 7: Joins & Views Basics</p> <ul style="list-style-type: none"> ✓ 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 	<p>Ch 8: Functions(UDF), Data Types</p> <ul style="list-style-type: none"> ✓ 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 	<p>Ch 9: Stored Procedures, Models</p> <ul style="list-style-type: none"> ✓ Stored Procedures & Usage ✓ Creating, Testing Procedures ✓ Encryption, Deferred Names ✓ SPs for Validations, Analysis ✓ System SPs, Recompilation ✓ Normal Forms & Types ✓ Data Models, Self-References
<p>Ch 10: Triggers, Temp Tables</p> <ul style="list-style-type: none"> ✓ Need for Triggers ✓ DDL & DML Triggers ✓ Using Memory Tables ✓ Data Replication, Automation ✓ Local & Global Temp Tables ✓ Testing & Using Temp Tables ✓ SELECT .. INTO & Bulk Loads 	<p>Ch 11: DB Architecture, Locks</p> <ul style="list-style-type: none"> ✓ 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 	<p>Ch 12: Cursors & CTEs, Links</p> <ul style="list-style-type: none"> ✓ 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
<p>Ch 13: Merge, Upsert & Rank</p> <ul style="list-style-type: none"> ✓ Need for Merge in ETL ✓ Incremental Loads with SQL ✓ MERGE and RANK Functions ✓ Window Functions, Partition ✓ Identify, Remove Duplicates 	<p>Ch 14: Grouping & Cube</p> <ul style="list-style-type: none"> ✓ Group By & HAVING ✓ Cube, Rollup & Grouping ✓ Joins with Group By ✓ 3 Table, 4 Table Joins ✓ Query Execution Order 	<p>Ch 15: Self Joins, Excel Analysis</p> <ul style="list-style-type: none"> ✓ Self Joins & Self References ✓ UNION, UNION ALL ✓ Sub Queries with Joins ✓ IIF, CASE, EXISTS Statements ✓ Excel Analytics, Pivot Reports

Module 2: TSQL Programming

<p>Ch 16: Adv. Stored Procedures 1</p> <ul style="list-style-type: none"> ✓ 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 	<p>Ch 17: Adv. Stored Procedures 2</p> <ul style="list-style-type: none"> ✓ 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 	<p>Ch 18: Adv. Stored Procedures 3</p> <ul style="list-style-type: none"> ✓ 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
<p>Ch 19: Complex Functions (UDF)</p> <ul style="list-style-type: none"> ✓ 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 	<p>Ch 20: Complex Functions - 2</p> <ul style="list-style-type: none"> ✓ Reading JSON Data ✓ Using OPENROWSET() ✓ Using nvarchar(max) values ✓ Using PIVOT() Function ✓ Data De-duplication in SQL ✓ Recursive CTEs, Anchors ✓ Recursive CTEs, Anchors 	<p>Ch 21 – 25: Banking Project</p> <ul style="list-style-type: none"> ✓ Design & Planning Phase ✓ Querying Phase ✓ Programming Phase ✓ Debugging Phase ✓ Testing Phase ✓ Complete Project Solution ✓ Project FAQs, Resume Points

Module 3: Query Tuning

<p>Ch 26: Query Audits, Perfmon</p> <ul style="list-style-type: none"> ✓ Query Performance Issues ✓ Reasons for Slow Queries ✓ Performance Tuning Options ✓ Performance Tuning Tools ✓ Query Store & History ✓ Activity Monitor, Perfmon ✓ DMVs & DMFs for Audits 	<p>Ch 27: Indexes & Tuning</p> <ul style="list-style-type: none"> ✓ Indexes : Sort Locations ✓ Clustered & Online Indexes ✓ Non Clustered, Columnstore ✓ Included Indexes in Realtime ✓ Filtered Indexes & Usage ✓ Covering Index & Selectivity ✓ Indexed Views (Materialized) 	<p>Ch 28: Partitions, Statistics</p> <ul style="list-style-type: none"> ✓ Partition Implementations ✓ Partition Functions & Schemes ✓ Primary & Secondary Types ✓ Data Archival with Partitions ✓ Compression with Partitions ✓ Statistics : Realtime Use ✓ Index, Column Stats, Updates
<p>Ch 29: Tuning Tools, Exec Plans</p> <ul style="list-style-type: none"> ✓ Tuning Tools and Workloads ✓ Profiler Tool : Trace Files ✓ Trace Filters and Rollover ✓ DTA Tool Recommendations ✓ PDS, & Index Size, Index Scan ✓ Execution Plans, Index Seeks ✓ Query Cost Issues, Solutions 	<p>Ch 30: MOT & Temporal Tables</p> <ul style="list-style-type: none"> ✓ Memory Optimized Tables ✓ Non Clustered Primary Keys ✓ Stats Updates, Performance ✓ Temporal Tables in Realtime ✓ History Tracking & Testing ✓ Timestamp Columns Usage ✓ Tuning Stored Procedures 	<p>Ch 31: Locks & Isolation Levels</p> <ul style="list-style-type: none"> ✓ Transactions & Locks ✓ Lock Types & Performance ✓ Lock Management Options ✓ Isolation Levels & TempDB ✓ Snapshots and Performance ✓ Deadlocks Simulations, Graphs ✓ Profiler Tool & LIVE Locks

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Module 4: Azure SQL Dev

<p>Ch 32: Cloud Basics, Azure Funda</p> <ul style="list-style-type: none"> ✓ Cloud Fundamentals ✓ Cloud Concepts, Benefits ✓ IaaS, PaaS, SaaS Cloud Types ✓ Azure Cloud Concepts ✓ Azure Resources & Usage ✓ Azure Services & Purpose ✓ Azure Account & Subscription 	<p>Ch 33: Azure SQL Database</p> <ul style="list-style-type: none"> ✓ Azure SQL Services ✓ Azure SQL Server Creation ✓ Azure SQL Databases ✓ Azure Firewall : Rules ✓ Test Connections from SSMS ✓ SSMS Tool : Test Connections ✓ ADS Tool : Installation, use 	<p>Ch 34: Azure SQL DB Migrations</p> <ul style="list-style-type: none"> ✓ SQL DB Migration Options ✓ Data Migration Assistant: DMA ✓ DMA Tool, Migration Options ✓ On-Premises DB Export ✓ Azure SQL Database Import ✓ Azure Storage Account ✓ Linking SSMS with Azure
<p>Ch 35: Azure SQL DB Licensing</p> <ul style="list-style-type: none"> ✓ 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 	<p>Ch 36: Azure SQL DB Metrics</p> <ul style="list-style-type: none"> ✓ Azure SQL DB Metrics ✓ CPU, Memory, Log Metrics ✓ Data File Metrics, Alerts ✓ Action Groups & Emails ✓ Query Performance Insight ✓ Automated Tuning Options ✓ Query Recommendations 	<p>Ch 37: Azure SQL DB Tuning, AI</p> <ul style="list-style-type: none"> ✓ Automated Tuning Options ✓ Manual Tuning Options ✓ Server Level Tuning ✓ Database Level Tuning ✓ AI Search Service, Tuning ✓ AI Indexes and Practical Use ✓ Watermark Columns, Updates
<p>Ch 39: Azure PaaS & Azure IaaS</p> <ul style="list-style-type: none"> ✓ Azure PaaS : Operations ✓ Azure Paas : Limitations ✓ Azure IaaS : Advantages ✓ Azure IaaS Components ✓ Azure Virtual Machines ✓ Capacity & Networking ✓ Disk & Memory Config. 	<p>Ch 40: Azure IaaS Concepts</p> <ul style="list-style-type: none"> ✓ 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 	<p>Ch 41 – 42: Banking Project</p> <ul style="list-style-type: none"> ✓ 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. Kindly ensure on-time practice for best results.

Realtime Case Study : Health Care Domain

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