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# SQL School <sup>TM</sup>

## Quality Training Assured

For Free Demo, Call Us on [+91 9666 44 0801](tel:+919666440801) or [+1 510. 400. 4845](tel:+15104004845) (24 X 7)

## Performance Tuning ( with SQL Server )

[Complete Practical & Real-time Training](#)

### Performance Training Highlights:

✓ Memory Optimizations	✓ In-depth Performance Tuning
✓ Fragmentation Issues	✓ LIVE Execution Plans
✓ Database Query Store	✓ Performance Baselines
✓ Tuning Tools, Counters	✓ LIVE Query Statistics
✓ Study Material & Practice Labs	✓ Spooling, Performance Insights

**Trainer 1:** Mr. Sai Phanindra Tholeti is a Database Consultant; Microsoft Certified Trainer with more than 13 years expertise. He is rendering impeccable; highly interactive; friendly and highly technical Trainings on **Microsoft SQL Server, SQL DBA, MSBI & Power BI** to our Corporate Clients: **Infosys, MindTree, ADP, Infotech, PrimeHealth** and more. Profile @ <http://www.linkedin.com/in/saiphanindra>

**ALL OUR TRAINING SESSIONS ARE COMPLETELY REAL-TIME and PRACTICAL.**

**Pre-requisites: Participant should have knowledge on SQL Server T-SQL Queries**

**This course is applicable for:**

- 1. SQL Server Developers**
- 2. SQL Database Administrators [SQL DBA]**
- 3. MSBI Developers**
- 4. Database Consultants**
- 5. Database Architects**

## **Performance Tuning [Query Tuning] : Complete Course Plan**

### **DAY 1: PERFORMANCE TUNING Demo, Indexes**

Need for Performance Tuning (Query Tuning); SQL Server Query Tuning Operations – Plan; SQL Server Versions and Editions - Course Plan; Query Parse, Compilation and Query Executions; Query Optimizer [QO] Component Overview; TDS Packets - Verification and SSMS Options; Query Performance Tuning Factors in SQL Server; Query Memory Settings and Server Properties; Day Wise Course Plan - Performance Tuning Course;

Indexes: Architecture and Types Of Indexes; Clustered Indexes and Non Clustered Indexes; Included Index, ColumnStore Index, Filtered Indexes; COVERING Indexes and UNIQUE Column Indexes; LIVE Online Indexes in Real-time - Practical Use; B Tree Structures and Index Access Management (IAM); Branch Level Pages and Leaf Level Pages in Indexes; Tuning Join Queries and Query Level Conditions;

### **DAY 2: QUERY TUNING - QUERY AUDITS, PARTITIONS**

Audit Long Running Queries using DMVs and DMFs; Activity Monitor Tool and Query Statistics Reports; Logical I/O, Physical I/O and Database I/O, Wait Time; Recent Expensive Queries & Active Expensive Queries; Plan Handle and Execution Time - Query Usage Audits; Factors Impacting the Query Executions, Performance; Resumable Indexes, Usage in SQL Server 2017 & 2019; ONLINE, RESUME, PAUSE, MAX\_DURATION Options; Query Store - Settings and Advantages. Options;

PARTITIONS Mechanism : Advantages, Performance; Database Filegroups Usage with Partition Ranges; Partition Functions and Partition Schemes – Usage; Partitioning Un-partitioned Tables using Indexes; Aligned / Indexed Partitions - Query Importance; Partition SPLIT and Partition MERGE, NextUsed; Partition Compression Techniques : ROW, PAGE; Data Archival & SWITCH Partitions. Partitioned Views;

### **DAY 3: QUERY TUNING 3 - FULL TEXT SEARCH, TABLE TYPES**

Full Text Search (FTS) Mechanism - Architecture, Tuning; Stop Words, Stemmer and Thesaurus For FullText Queries; Indexer Program, Query Processor & FT Query Compilation; Database Catalogs (FTC) and FDHost.exe. Daemon Threads; Full Text (FT) Indexes for Query Tuning with Tokenization; Crawler Threads and User Tables. Filter Daemon Host Exe; CONTAINS() Queries and FREETEXT() Queries with SELECT;

In-Memory Tables : Creation and Practical Usage for Tuning; Memory Snapshots and Database Level and Table Level; FileStream Files and Memory Snapshot Filegroups for MOT; MEMORY\_OPTIMIZED\_ELEVATE\_TO\_SNAPSHOT Settings; Manual Table Stats Updates with FullScan, NoRecompute; Temporal Tables : Real-time Usage and History Tracking; Statistics : Creation Scenarios and Usage; Index Statistics and Column Statistics for Tables, ReUse;

## **DAY 4: QUERY TUNING - INDEX MANAGEMENT, LOCKS**

Index Management Concepts for Performance Tuning; Internal Fragmentation and External Fragmentation; Fragmentation Audits : DMFs and Threshold Values; Index Reorganization and Index Rebuild Options; Database Maintenance Plans (DMP) For Index Reorg; Compress Large Objects, Fragmentation Condition; Index Page Count Condition, Index Usage Condition; Fast, Sampled and Detailed Scan Types for Indexes; Statistics Updates : Full Scan Options, DMP Jobs;

LOCKS : Mechanism, Types, Concurrency Control; Lock Types: X, S, IS, IX, U, MD, Sch-M and Sch-S; Lock Audits : SP\_WHO2, SP\_LOCK, sysprocesses; Deadlock Simulation, Deadlock Prevention Scenarios; Deadlock Audits and Lock Events in Profiler Tool; Isolation Levels - ReadCommitted, Read Uncommitted; Serializable, Snapshot, Repeatable Read Isolations; Read Committed Snapshot Isolation Level in Real-time;

## **DAY 5: QUERY TUNING 4 - TUNING TOOLS, PERFMON**

Tuning Tools : Creating Workload Files and Trace Files; SQL Profiler Tool - Tuning Template and TSQL / SP Events; DTA Tool with Profiler Trace Files: Tuning Recommendations; DTA with Query Cache (Procedure Cache) & .SQL File Inputs; Execution Plans - Internals. Actual, LIVE Execution Plans; Understanding the Query Execution Plans, Cost Analysis; Plan Types : Index Scan, Index Seek, Tables Scan, Spooling; Query Costs : IO, CPU Cost, SubTree Cost, Operator Cost; NUMA Nodes, Boost SQL Priority, Thread Count, IO Affinity;

Perfmon Counters and Real-time Tracking Of Resources; Processor, Disk, Memory, Transactions, Database Counters; Using Perfmon for Big Query Audits. Free & Total Memory; Longest Running Transactions & Transactions Per Second; Database Log Space - Issues, Solutions. Log Rebuilds; TempDB Space Issues - Reasons, Cautions and Solutions; Memory Issues - Reasons, Buffer Cache and Solutions; Performance Tuning - Final Checklist;

## **Real-time Case Study on Performance Tuning**

This Case Study includes 24x7 LIVE Access to our remote SQL Server Instance hosting Big Data Sources in a Virtual Machine hosted in Azure Cloud.

The participant would be provided with specific tables and data access. Need to implement SQL Server Query Tuning [Performance Tuning] on the below concepts:

- 1. Query Audits
- 2. Table Partitions
- 3. Index Partitions
- 4. Index Management
- 5. Partitions Management
- 6. Statistics Management
- 7. Execution Plan Internals
- 8. Perfmon Tools & Query Resources
- 9. Spooling, Threads and Node Priority

### Reach Us:

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**For Technical Clarifications & Career Guidance, Contact us or reach your Trainer directly**

You can also reach your trainer **Mr. Sai Phanindra T** on [saiphanindrait@gmail.com](mailto:saiphanindrait@gmail.com)  
Or Call your trainer on +91 9030040801 between 1 PM to 3 PM IST or 9 PM to 11 PM IST

WE ASSURE YOU COMPLETE PRACTICAL & REAL-TIME TRAINING WITH RESUME GUIDANCE, REAL-TIME PROJECTS

## Courses from SQL School

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4. Power BI Training (Dev, Cloud, Admin)
5. Azure SQL Developer Training
6. Azure SQL DBA Training
7. MCSA Training [70-761, 70-762, 70-764, 70-765, 70-767, 70-768, 70-778, 70-466, 70-448]
8. Advanced MDX Training
9. Performance Tuning Training
10. Oracle PL SQL Training

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