

Azure SQL Developer 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 right from Basics

What about the Lab? What are the System Requirements?

Window OS; 6 GB RAM; Any Processor. We shall guide you for Software Installation, Step by Step Practice with our experienced, well versed Lab Faculty.

This Azure SQL Developer course includes:

- 7 Weeks Course
- 2 Realtime Projects

This course is very helpful for:

- 1. Database Developers
- 2. Data Engineers
- 3. Data Analysts
- 4. BI Developers
- 5. Cloud Architects



Detailed Course Content

Module 1: SQL Server TSQL (MS SQL) Queries

Ch 1: Database Intro & Job Roles

- ✓ Database Introduction
- Database Types: OLTP, DWH
- ✓ DBMS & Realtime Use
- ✓ DBMS Software & Purpose
- ✓ SQL: Purpose & Use
- **SQL Server Versions, Editions**
- ✓ Microsoft SQL Job Roles

Ch 4: SQL Basics V2 (Operators)

- ✓ DDL Variants in MSSQL
- ✓ DML Variants in MSSQL
- ✓ INSERT & INSERT INTO
- ✓ SELECT & SELECT INTO
- ✓ Basic Operators in SQL
- ✓ Special Operators in MSSQL
- ✓ ALTER, TRUNCATE, DROP

Ch 2: SQL Server Installations

- ✓ SQL Server 2022 Installations
- ✓ SOL Server 2019 Installations
- ✓ SSMS Tool Installation
- ✓ Server Connections, Properties
- ✓ Instance & Instance Types
- ✓ Authentication Types
- System Databases & Purpose

Ch 5: Excel Data Imports

- ✓ Data Imports with Excel
- ✓ SQL Native Client
- ✓ Order By: Asc, Desc
- ✓ Order By with WHERE
- ✓ TOP & OFFSET
- UNION ALL
- ✓ UNION, Data Appends

Ch 3: SQL Basics V1 (Commands)

- ✓ Database, Tables & Columns
- ✓ SQL Basics: Purpose
- ✓ DDL Statements
- ✓ DML Statements
- ✓ DQL Statements
- ✓ Verifications @ GUI
- ✓ Basic SELECT Queries

Ch 6: Schemas & Security

- ✓ Schemas: Creation, Usage
- ✓ Schemas & Table Grouping
- ✓ Using Default Schema
- ✓ Real-world Banking Database
- ✓ Table Migrations @ Schemas
- ✓ 2 Part, 3 Part & 4 Part Naming
- ✓ Verifying Schemas in UI

Ch 7: Constraints & Keys Basics ✓ Need for Constraints, Keys ✓ Null, Not Null Constraints ✓ Unique Key Constraint ✓ Primary Key Constraint ✓ Foreign Key & References ✓ Default Constraint & Usage ✓ DB Diagrams & ER Models	Ch 8: Indexes Basics, Tuning ✓ Indexes & Tuning ✓ Clustered Index, Primary Key ✓ Non Clustered Index & Unique ✓ Creating Indexes Manually ✓ Verifying Indexes ✓ Composite Keys, Query Optimizer ✓ Composite Indexes & Usage	Ch 9: Joins & Audits ✓ Joins: Table Comaparisons ✓ Inner Joins & Matching Data ✓ Outer Joins: LEFT, RIGHT ✓ Full Outer Joins & Audits ✓ Cross Join & Table Combination ✓ Joining more than 2 tables ✓ Joining Tables with Aliases
Ch 10: Views & RLS ✓ Views: Realtime Usage ✓ Storing SELECT in Views ✓ DML, SELECT with Views ✓ RLS: Row Level Security ✓ WITH CHECK OPTION ✓ Database Audits & Metadata ✓ Important System Views	Ch 11: Stored Procedures ✓ Stored Procedures: Realtime Use ✓ Parameters Concept with SPs ✓ Procedures with SELECT ✓ System Stored Procedures ✓ Metadata Access with SPs ✓ SP Recompilations ✓ Stored Procedures, Tuning	Ch 12: User Defined Functions ✓ Using Functions in MSSQL ✓ Scalar Value Functions ✓ Inline & Multiline Functions ✓ Parameterized Queries ✓ Date & Time Functions ✓ String Functions & Queries ✓ Aggregated Functions & Usage
Ch 13: Triggers & Automations ✓ Need for Triggers ✓ DDL & DML Triggers ✓ For / After Triggers ✓ Instead Of Triggers ✓ Memory Tables with Triggers ✓ Data Replication, Automation ✓ Disabling DMLs & Triggers	Ch 14: Transactions & ACID ✓ Transaction Concepts in OLTP ✓ Transaction Types in Realtime ✓ Auto Commit, Explicit Transaction ✓ COMMIT, ROLLBACK ✓ Checkpoint & Logging ✓ Lock Hints & Query Blocking ✓ READPAST, LOCKHINT	Ch 15: Cursors & Fetch ✓ Cursors: Realtime Usage ✓ Cursor Declaration Types ✓ Open Cursor, Close Cursor ✓ Local & Global Cursors ✓ Scroll & Forward Only Cursors ✓ Static & Dynamic Cursors ✓ Fetch, Absolute Cursors
Ch 16: CTEs & Tuning ✓ Common Table Expression ✓ Creating and Using CTEs ✓ CTEs, In-Memory Processing ✓ Using CTEs for DML Operations ✓ Using CTEs for Data Retrieval ✓ Using CTEs for Tuning ✓ CTEs: Duplicate Row Deletion	Ch 17: Relations, Normal Forms ✓ Adding PK to Tables ✓ Adding FK to Tables ✓ Cascading Keys ✓ Self Referencing Keys ✓ Database Diagrams ✓ Normal Forms: 1 NF, 2 NF ✓ 3 NF, BCNF and 4 NF	Ch 18: Self Joins, EXISTS ✓ Joining same table ✓ Correlated Queries ✓ Joining Tables, Queries ✓ Self Joins with WHERE ✓ Self Joins with UNION ✓ Self Joins with Order By ✓ Self Joins with Views
Ch 19: Remote Joins ✓ Working with Multiple Servers ✓ Multi Server Access from SSMS ✓ Linked Servers Creation, Tests ✓ 4 Part Naming Convention ✓ Remote Data Access ✓ RPC & RPC OUT ✓ Remote Joins & Data Analysis	Ch 20: Sub Queries ✓ Sub Queries Concept ✓ Sub Queries & Aggregations ✓ Joins with Sub Queries ✓ Sub Queries with Aliases ✓ Sub Queries with OrderBy ✓ Sub Queries with WHERE ✓ Sub Queries, Joins, Where	Ch21: Group By Queries ✓ Group By, Distinct Keywords ✓ GROUP BY, HAVING ✓ Cube() and Rollup() ✓ Sub Totals & Grand Totals ✓ Grouping() & Usage ✓ Group By with UNION ✓ Group By with UNION ALL

Ch 22: Joins with Group By

- ✓ Joins with Group By
- √ 3 Table, 4 Table Joins
- ✓ Join Queries with Aliases
- ✓ Join Queries & WHERE
- ✓ Join Queries & Group By
- ✓ Joins with Sub Queries
- ✓ Query Execution Order

Ch 23: Data Types & Conversions

- ✓ Integer Data Types
- ✓ Character, MAX Data Types
- ✓ Decimal & Money Data Types
- ✓ Boolean & Binary Data Types
- ✓ Date and Time Data Types
- √ Table, SQL_Variant Types
- ✓ Cast() and Convert() Functions

Ch 24: Window Functions, CASE

- ✓ IIF Function and Usage
- ✓ IIF with Tables, Joins
- ✓ CASE Statement Usage
- ✓ Window Functions (Rank)
- ✓ Row_Number()
- ✓ Rank(), DenseRank()
- ✓ Partition By & Order By

Mini Project (Can be used in Resume)

Module 2: TSQL Programming

Ch 25: Variables & Try..Catch

- ✓ Variables: Declaration & Usage
- ✓ Assigning Values to Variables
- ✓ SELECT & SET Operations
- ✓ Using Variables in SPs
- ✓ Variables Versus Parameters
- ✓ Try.. Catch Block with Variables
- ✓ THROW Statement, Error Handling

Ch 26: Updatable Views

- ✓ 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

Ch 27: Stored Procedures & TVPs

- ✓ Using TVP with Procedures
- ✓ Creating User Defined Types
- ✓ Big Data Copy & Transactions
- ✓ Using SPs & Table Variables
- ✓ Transactional Integrity with SPs
- ✓ Conditional Commits, Rollbacks
- ✓ Procedure Recompilations

Ch 28: Stored Procedures, Cursors

- ✓ Cursors Types: Local, Global
- ✓ Using Procedues with Cursors
- ✓ Formatting Queries, Nvarchar
- ✓ WHILE Loop: @Fetch Status
- √ Variables with Dynamic SQL
- √ sp_executesql Extended SP
- ✓ Dynamic SQL Programming

CTEst Common Table Evers

- ✓ CTEs: Common Table Expression
- ✓ CTEs For DML Operations
- ✓ Defining Recursive CTEs
- ✓ Anchor Element: Realtime Use
- √ Termination Checks and Loops
- ✓ Defining SPs with CTEs
- √ Cautions with Recursive CTEs

Ch 30: Functions & Loops

- ✓ 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

Ch 31: OpenRowSet, Debugging

- ✓ Reading JSON Data
- √ Using OPENROWSET()
- ✓ OpenRowSet with Variables
- ✓ Debugging Stored Procedures
- ✓ Debugging Types in TSQL
- ✓ Debugging Techniques with SSMS
- ✓ Debug Options with Variables

Ch 32: PIVOT, UNPIVOT

- ✓ Reading Denormalized Data
- ✓ Normalizing Table Data
- ✓ PIVOT Operation with TSQL
- ✓ PIVOT with Aggregates
- ✓ FOR and IN Operators
- ✓ UNPIVOT with TSQL
- ✓ PIVOT with Functions, SPs

Ch 33: Temporary Tables

- ✓ TempDB: Realtime Use
- ✓ Local Temporary Tables
- ✓ Global Temporary Tables
- ✓ Testing & Using Temp Tables
- ✓ Temp Tables across Sessions
- ✓ Auto CreateTables using Select
- ✓ SELECT .. INTO & Bulk Loads

Ch 34: Synonyms & Realtime Use

- ✓ Synonyms: Creation, Use
- ✓ Creating Synonyms For Tables
- ✓ Synonyms for Schemas, Tables
- ✓ Synonyms: DB, Schemas, Tables
- ✓ Remote DB Access with Synonyms
- ✓ Listing & Varying Synonyms
- ✓ Synonyms Versus Aliases

Ch 35: Server Architecture

- ✓ Database Engine Components
- Parser, Compiler & Optimizer
- ✓ Protocols and Query Processing
- ✓ MDAC and CLR Components
- ✓ Parsing and Compilation
- √ Memory Manager & IO Managers
- ✓ SQL OS Components, MDAC

Ch 36: DB Architecture (VLDB)

- **Planning Large Databases**
- **Primary, Secondary Data Files**
- Filegroups, Spacing and Sizing
- ✓ Log File: Usage and Precautions
- ✓ Creating Tables with Filegroups
- **Pages and Extents for Storage**
- VLF, MiniLSN & Checkpoint

Realtime Project 2 (For Resume)

Module 3: Query Tuning

Ch 37: Tuning: Audits, AM Tool ✓ Activity Monitor Tool ✓ Perfmon Tool & Counters ✓ Query Audits: DMVs, DMFs

- ✓ Plan Handle, Execution Time
- ✓ Long Running Queries
- ✓ Query Store & Buffer Cache
- ✓ Data Flush, Stats Collection

Ch 38: Tuning: Indexes

- ✓ Indexes : Sort Locations
- **Clustered & Online Indexes**
- ✓ Non Clustered, Column Store
- ✓ Included Indexes in Realtime
- √ Filtered Indexes & Usage
- ✓ Covering Index & Selectivity
- √ Indexed Views (Materialized)

Ch 39: Tuning: Partitions

- ✓ Partitions: Performance Tuning
- ✓ Partition Functions & Schemes
- ✓ Partition Un-partitioned Tables
- √ Compressions: ROW, PAGE
- ✓ Auditing Partitions
- ✓ Partitions Limitations in OLTP
- ✓ Partitions with DWH

Ch 40: Statistics & Tuning

- ✓ Statistics: Realtime Usage
- ✓ Index & Column Statistics
- ✓ Statistics & Key Purpose
- ✓ Verifying, Using Stats
- ✓ Statistics Versus Indexes
- ✓ Stats Updates on Tables
- ✓ Stats Updates on Views

Ch 41: Index Management

- ✓ Index Management Options
- ✓ Index Rebuilds, Re-Organize
- ✓ Database Maintenance Plans
- Page Count and Index Conditions
- ✓ Degree Of Parallelism Settings
- ✓ Resumable & Online Indexes
- ✓ PAUSE, RESUME in Rebuilds

Ch 42: Tuning Tools

- ✓ Tuning Tools: Workload Files
- ✓ Profiler Tuning, Events
- ✓ DTA, Profiler Options
- ✓ Physical Design Structures
- ✓ PDS Recommendations
- **Query Execution Cache**
- **Tuning Tools: Precautions**

Ch 43: Execution Plans

- ✓ Execution Plan Analysis
- ✓ IO Cost and CPU Cost
- ✓ SubTree & Operator Cost
- √ NUMA Nodes, Processor Affinity
- ✓ Thread Count, DOP
- ✓ Table & Index Scan. Index Seek
- ✓ Index Selectivity & Tuning

Ch 44: Lock Management 1

- ✓ Open Transactions in Realtime
- ✓ Open Transaction, Blocking
- ✓ LOCKS: Types & Audits
- ✓ S, X, IX, U and MD Locks
- ✓ Sch-M and Sch-S Locks
- ✓ SP_WHO2, SP_LOCK
- ✓ sysprocesses & Lock Waits

Ch 45: Lock Management 2

- ✓ Deadlocks in Real-world
- ✓ Profiler Tool & Deadlocks
- ✓ Lock Management: Deadlocks
- ✓ Deadlock Graphs & Events
- ✓ Avoidance, Prevention
- ✓ Deadlock Prevention
- √ sysprocesses & sp_who2

Ch 46: Isolation Levels

- ✓ Lock Hints and Isolation Levels
- ✓ Read Committed, Uncommitted
- ✓ Serializable, Repeatable Read
- ✓ Snapshot Isolation, Versioning
- ✓ Read Committed Snapshot
- √ sysprocesses & sp_who2
- √ Choosing Correct Isolation Level

Realtime Case Study

Module 4: Azure SQL Dev

Ch 47: Cloud Fundamentals ✓ Cloud Fundamentals ✓ Public Cloud & Private Cloud ✓ Cloud Implementations: SaaS ✓ Paas & IaaS Implementations ✓ Cloud Storage: Practical Benefits ✓ Database Hosting in Cloud ✓ Azure Cloud: Advantages	Ch 48: Azure SQL Deployments ✓ Azure SQL Server Creation ✓ Azure Server (Logical Server) ✓ Networking Settings ✓ Azure Firewall Creations ✓ Azure Services: Enabling ✓ Testing SSMS Connections ✓ Password Resets in Azure	Ch 49: Azure SQL DB Migrations ✓ 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
Ch 50: Azure SQL DB Licensing ✓ 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	Ch 51: Azure SQL DB Metrics ✓ Azure SQL DB Metrics ✓ CPU, Memory, Log Metrics ✓ Data File Metrics, Alerts ✓ Action Groups & Emails ✓ Query Performance Insight ✓ Automated Tuning Options ✓ Query Recommendations	Ch 52: Azure SQL DB Tuning, Al ✓ Automated Tuning Options ✓ Manual Tuning Options ✓ Server Level Tuning ✓ Database Level Tuning ✓ Create Index Option ✓ Drop Index, Seek Options ✓ Built-In Intelligence
Ch 53: Azure Al Search ✓ Al Search Service, Tuning ✓ Al Indexes, Practical Use ✓ Watermark Columns ✓ Triggers & Timestamp ✓ Filterable, Searchable ✓ Sortable, Facetable ✓ Indexer & Data Refresh	Ch 54: Azure Backups, Restores ✓ Azure Backups & Restores ✓ Automated Backups ✓ Backup Retention Options ✓ LTR, PITR & Differential ✓ Backup Audits from Portal ✓ Restores from SQL Server ✓ Restores from Azure Portal	Realtime Project 3

All sessions are practical, step by step.



Trending Job Roles

- Data Analyst
- Data Engineer
- Data Architect
- Data Scientist
- Developer, more .. !

Training Highlights

- **≪** LIVE Project(s)
- **Job Assistance**
- **Resume Guidance**
- **Concept wise FAQs**

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	Thank you. All the best!