

SQL SERVER and T-SQL DEVELOPMENT

❖ **SQL INTRODUCTION & INSTALLATION:**

- Why to use SQL Server?
- How to Install SQL Server?
- SQL Server Service Accounts
- Authentication Modes, Usage
- SQL Server Installation Features
- Management Studio (SSMS)
- Configuration Tools & SMO

❖ **SQL SERVER DATABASE DESIGN:**

- Need for SQL Database
- Database Creation
- Using Files and File Groups
- Locations and Size Options
- Log Files and Locations

❖ **SQL SERVER TABLES & DATA:**

- Need for SQL Tables
- Tables using T-SQL Scripts
- Naming Conventions
- Multi-Row Inserts & SELECT
- Table and Column Aliases
- Table creation using Schemas
- Basic INSERT, UPDATE, DELETE

❖ **DATA VALIDATIONS AND CONSTRAINTS:**

- Need for Constraints
- NULL and IDENTITY Properties
- UNIQUE KEY and NOT NULL
- PRIMARY KEYS & Usage
- CHECK and DEFAULT
- Composite Primary Keys

❖ **BASIC QUERIES AND JOIN QUERIES:**

- Variants of SELECT statement
- WHERE, IN and BETWEEN
- ORDER BY, GROUPING, HAVING
- Use of Predicates and TOP
- Sub Queries & Usage
- Nested Queries & Usage
- INSERT INTO... SELECT

❖ **VIEWS AND ROW DATA SECURITY:**

- Views in SQL Database
- Views with Single Table
- SCHEMABINDING, ENCRYPTION
- Issues with ALTER TABLE
- Dynamic Management Views
- JOINS inside Views

❖ **INDEXES AND QUERY TUNING:**

- Architecture of Table Indexes
- Clustered & NonClustered

❖ **STORED PROCEDURES & BENIFITS:**

- Need for Stored Procedures?
- Types of Stored Procedures
- Variables and Prameters
- SCHEMABINDING, ENCRYPTION
- INPUT & OUTPUT Parameters
- System Stored Procedures
- Dynamic SQL Queries

❖ **FUNCTIONS(UDF) AND USAGE:**

- Where to use Functions?
- Scalar Valued Funtions
- Table Valued Functions
- SCHEMABINDING, ENCRYPTION
- System Functions and Usage
- Date and Time Functions

❖ **TRIGGERS AND CURSORS:**

- Why to use Triggers?
- DML Triggers & Performance
- INSERTED and DELETED tables
- Database and Server Triggers
- Cursor declaration Options
- STATIC and DYNAMIC cursors
- SCROLL & FORWARD_ONLY
- LOCAL and GLOBAL cursors

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