

# **TSQL With Database Administration**

## **Module 1: Getting Started with Transact-SQL**

- Introduction to Transact-SQL
- Using the SELECT statement
- Lab: Get started with SQL Server query tools and writing queries in T-SQL

## **Module 2: Sorting and Filtering Query Results**

- Sorting query results
- Filtering the data
- Lab: Sort and filter data returned by SELECT queries

## **Module 3: Using Joins and Subqueries**

- Using JOIN operations
- Using subqueries
- Lab: Write queries with JOIN operations

## **Module 4: Stored Procedure and View**

- Creating Simple and Parameterized Stored Procedure
- Create Simple and Complex View
- Lab: Writing Stored procedure and Views

## **Module 5: SQL Server Components and Architecture**

- Overview of SQL Server Architecture
- Introduction to the SQL Server Platform
- Installing and Configuring SQL Server 2019
- Installation changes/ Feature Selection /New Tab
- Lab: Identify the Edition and Version of a Running SQL Server Instance, Installing SQL Server 2019

## **Module 6: Working with Databases**

- Introduction to Data Storage with SQL Server
- Managing Storage for System and user Databases
- Configuring the Buffer Pool Extension and Hybrid buffer pool
- Lab: Managing Database Storage

## **Module 7: Performing Database Maintenance**

- Ensuring Database Integrity
- Tempdb Configuration and Memory-optimized TempDB Metadata
- Maintaining Indexes
- Lab: Performing Ongoing Database Maintenance

## **Module 8: SQL Server Authentication and Authorization**

- Connections to SQL Server
- Privileges and permissions to Logins with Database
- Authorization Across Servers
- Lab: Authenticating Users

## **Module 9: Working with Server and Database Roles**

- Working with Server Roles
- Working with Fixed Database Roles
- User-Defined Database and Server Roles
- Lab: Assigning Server and Database Roles

## **Module 10: Controlling User Access**

- Creating and Granting User Access to Objects
- Authorizing Users to Execute Code
- Configuring Permissions at the Schema and Database level
- Lab: Authorizing Users to Access Resources

## **Module 11: Database Encryption and Auditing**

- Auditing Data Access in SQL Server
- Implementing SQL Server Audit
- Managing SQL Server Audit
- Always Encrypted with Secure Enclaves, Database classification function on 2019
- Lab: Using Auditing and Encryption

## **Module 12: Planning and Implementing a Backup Strategy**

- Understanding Backup Strategies
- SQL Server Transaction Logs
- Planning Backup Strategies
- Lab: Understanding SQL Server Recovery Models

## **Module 13: Backing Up SQL Server Databases**

- Backing Up Databases and Transaction Logs
- Managing Database Backups
- Advanced Database Options
- Lab: Backing Up Databases

## **Module 14: Restoring SQL Server 2019 Databases**

- Understanding the Restore Process
- Restoring SQL Databases
- Point-in-time Recovery with Advance Restore Scenario
- Accelerated Database Recovery
- Lab: Restoring SQL Server Databases

### **Module 15: Automating SQL Server Management**

- Automating SQL Server Management
- Working with SQL Server Agent
- Managing SQL Server Agent Jobs with Security Contexts
- Lab: Automating SQL Server Management

### **Module 16: SQL Server with Extended Events**

- Extended Events Core Concepts
- Working with Extended Events
- Lab: Extended Events

### **Module 17: Performance Improvement and Monitoring SQL Server 2019**

- Monitoring Activity
- Capturing and Managing Performance Data
- Query Execution and Query Plan Analysis
- Statistics Internal
- Query Store
- Lab: Monitoring SQL Server

### **Module 18: Troubleshooting SQL Server**

- Monitoring SQL Server Errors
- A Troubleshooting Methodology for SQL Server
- Resolving Blocking and Locking in SQL Server
- Resolving Connectivity and Login Issues
- Lab: Troubleshooting Common Issues

### **Module 19: Different Method of Transferring Data**

- Transferring Data to and from SQL Server
- Importing and Exporting Table Data
- bulk copy program and BULK INSERT to Import Data
- Lab: Importing and Exporting Data