



SQL TRAINING And DBA Syllabus

SQL Server Training Course Content

Introduction to DBMS

- File Management System And Its Drawbacks
- Database Management System (DBMS) and Data Models
 - Physical Data Models
 - Logical Data Models
 - Hierarchical Data Model (HDBMS)
 - Network Data Model (NDBMS)
 - Relational Data Model (RDBMS)
 - Object Data Model (ODBMS)
 - Object Relational Data Model (ORDBMS)
- Conceptual Data Models
 - Entity – Relationship (E-R) Model

Introduction To SQL Server

- Advantages and Drawbacks Of SQL Server Compared To Oracle And DB2
 - Connecting To Server
 - Server Type
 - Server Name
 - Authentication Modes
 - Sql Server Authentication Mode
 - Windows Authentication Mode
 - Login and Password
 - Sql Server Management Studio and Tools In Management Studio
 - Object Explorer
 - Object Explorer Details
 - Query Editor

TSQL (Transact-Structured Query Language)

Introduction To TSQL

- History and Features of TSQL
- Types Of TSQL Commands
 - Data Definition Language (DDL)
 - Data Manipulation Language (DML)
 - Data Query Language (DQL)
 - Data Control Language (DCL)
 - Transaction Control Language (TCL)
 - Database
 - Creating Database
 - Altering Database
 - Deleting Database
 - Constrains



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- Procedural Integrity Constraints
- Declarative Integrity Constraints
 - Not Null, Unique, Default and Check constraints
 - Primary Key and Referential Integrity or foreign key constraints
 - Data Types In TSQL
 - Table
 - Creating Table
 - Altering Table
 - Deleting Table

Data Manipulation Language

- Insert
 - Identity
 - Creating A Table From Another Table
 - Inserting Rows From One Table To Another
- Update
 - Computed Columns
 - Delete
 - Truncate
 - Differences Between Delete and Truncate

Data Query Language (DQL)

- Select
- Where clause
- Order By Clause
- Distinct Keyword
- Isnull() function
- Column aliases
- Predicates
 - Between ... And
 - In
 - Like
 - Is Null

Built In Functions

- Scalar Functions
 - Numeric Functions
 - Character Functions
 - Conversion Functions
 - Date Functions
 - Aggregate Functions
 - Convenient Aggregate Functions
 - Statistical Aggregate Functions
 - Group By and Having Clauses
 - Super Aggregates
 - Over(partition by ...) Clause



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- Ranking Functions
 - Common Table Expressions (CTE)

Top n Clause

Set Operators

- Union
- Intersect
- Except

Joins

- Inner Join
 - Equi Join
 - Natural Join
 - Non-Equi Join
 - Self Join
- Outer Join
 - Left Outer Join
 - Right Outer Join
 - Full Outer Join
 - Cross Join

Sub Queries

- Single Row Sub Queries
- Multi Row Sub Queries
 - Any or Some
 - ALL
 - Nested Sub Queries
 - Co-Related Sub Queries
 - Exists and Not Exists

Indexes

- Clustered Index
- NonClustered Index
- Create, Alter and Drop Indexes
- Using Indexes

Security

- Login Creation
 - SQL Server Authenticated Login
 - Windows Authenticated Login



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- User Creation
- Granting Permissions
- Revoking Permissions
- Roles

Views

- Purpose Of Views
- Creating , Altering and Dropping Indexes
- Simple and Complex Views
- Encryption and Schema Binding Options in creating views

Transaction Management

- Introduction
- Begin Transaction
- Commit Transaction
- Rollback Transaction
- Save Transaction
- Role Of Log File In Transaction Management
- Implicit Transactions

TSQL Programming

- Drawbacks Of TSQL that leads to TSQL Programming
- Introduction To TSQL Programming
- Control statements In TSQL Programming
 - Conditional Control Statements
 - If
 - Case
- Looping Control Statements
 - While

Cursors

- Working With Cursors
- Types Of Cursors
 - Forward Only and Scroll Cursors
 - Static, Dynamic and Keyset Cursors
 - Local and Global Cursors

Stored Sub Programs

- Advantages Of Stored Sub Programs compared to Independent SQL Statements
- Stored Procedures
 - Creating , Altering and Dropping
 - Optional Parameters
 - Input and Output Parameters



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- Permissions on Stored Procedures
- User Defined Functions
 - Creating, Altering and Dropping
 - Types Of User Defined Functions
 - Scalar Functions
 - Table Valued Functions
 - Inline Table Valued Functions
 - Multi Statement Table Valued Functions
 - Permissions On User Defined Functions
- Triggers
 - Purpose of Triggers
 - Differences Between Stored Procedures and User Defined Functions and Triggers
 - Creating, Altering and Dropping Triggers
 - Magic Tables
 - Instead Of Triggers
- Exception Handling
 - Implementing Exception Handling
 - Adding and removing User Defined Error Messages To And From SQL Server Error Messages List
 - Raising Exceptions Manual

CLR Integration

- What is CLR Integration and The Steps For Implementing It
- A Simple Example With CLR Integration

Use of HTML in SQL server

Indexing

Working With XML Data Type

Working With JSON Data Type

Backup and Restore Of Database

Attach and Detach of Database

Recovery Model In SQL Server

Replication in SQL Server

Mirroring In the Database



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SQL Profiler

SQL Plan Execution

Performance Tunning

SQL Performance Monitor

Query Optimization

Dynamic SQL Query

SSIS Integration in SQL

Table Partitioning

RISING TECHNOLOGY