



## MS SQL Server

### Description

This SQL Server training teaches developers all the Transact-SQL skills they need to create database objects like Tables, Views, Stored procedures & Functions and triggers in SQL Server. Gives idea about writing Queries & Sub-queries, working with Joins, etc. As well as database management skills like backup, restore, etc.

### Expectations and Goals

- Learn Database models, Overview of SQL Server Management Studio and Transact-SQL language
- Master writing simple and complex queries that retrieve data from the database
- Calculate information across result sets using aggregate queries (sum, min, max, avg, etc.)
- Insert, update, and delete data, Retrieve data from tables
- Joins, Sub-queries, Working with Data Types, Procedure and Functions
- Understand the different Views, Working with Triggers
- Design a database, Maintain databases, tables, and sequences with SQL statements
- Create and manage views, Ensure the integrity of multiple, related database updates by using transactions
- Retrieve data using cursors, Manage binary data using BLOBs

### Prerequisites

No prior experience is presumed.

Module	Topic
Module 1	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	

<p><b>Module 2</b></p>	<p>Introduction to SQL Server                  Advantages and Drawbacks Of SQL Server                  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</p>
<p><b>Module 3</b></p>	<p>TSQL (Trans act-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                  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</p>

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<p><b>Module 4</b></p>	<p>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</p>
<p><b>Module 5</b></p>	<p>Data Query Language (DQL)                  Select                  Where clause                  Order By Clause                  Distinct Keyword                  Isnull() function                  Column aliases                  Predicates                  Between ... And                  In                  Like                  Is Null</p>
<p><b>Module 6</b></p>	<p>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                  Ranking Functions                  Common Table Expressions (CTE)</p>

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<p><b>Module 7</b></p>	<p>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</p>
<p><b>Module 8</b></p>	<p>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</p>
<p><b>Module 9</b></p>	<p>Security                  Login Creation                  SQL Server Authenticated Login                  Windows Authenticated Login                  User Creation                  Granting Permissions                  Revoking Permissions                  Roles</p>

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## Module 10

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

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<p><b>Module 11</b></p>	<p>Stored Sub Programs                      Advantages Of Stored Sub Programs compared to Independent SQL S tatements                      Stored Procedures                      Creating , Altering and Dropping                      Optional Parameters                      Input and Output Parameters                      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 Mess ages To And From SQL Server Error Mess ages List                      Raising Exceptions Manual</p>
<p><b>Module 12</b></p>	<p>Project work and documentation</p>

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