



SQL Server Course Contents

Synopsis

This SQL Server training course will introduce you to Relational Databases (RDBMS), Structured Query Language (SQL) and T-SQL Programming. You will also learn about the most common features of the proprietary extensions to the standard SQL language supported by the two most common databases – *Microsoft SQL Server* and Oracle. The course covers elements of ANSI SQL using SQL Server as an example database. This course is also suitable for anyone who wants to learn the basics of SQL whether using *Microsoft SQL Server*, Microsoft Access, Oracle, MySQL etc.

Prerequisites

There are no Prerequisites for this course.

Exercises

This course is instructor-led. Each section begins with an explanation and demonstration of a key concept. You then work through several practical exercises to apply your knowledge and test your understanding.

Approach

All contents in this course is aimed at making you faster and relaxed SQL user. Often numerous way are approached working in database, we will also be monitoring execution time to reduce query cost.

Day 1 / Day 2

- Data, Database, DBMS and Database Concepts
- Introduction of MS SQL Server
- Database and DBMS
- Database Types
 - Flat-type databases
 - Hierarchical databases
 - Network databases
 - Relational databases
- Rules of Cardinality
 - 1:1 Relation
 - 1:M or M:1 Relation
 - M:M Relation
- Data Models
 - Conceptual data model
 - Logical data model
 - Physical data model
 - Entity – Relationship Diagram

Day 3/ Day 4

- Editions of MS SQL Server
- Introduction to SQL Server Management Studio
- Planning and Creating Databases

www.optimizesql.com; Call at: 9177166122; optimizesql@gmail.com

- Creating database
 - Understanding SQL Architecture
 - Overview of SQL Language
- Introduction of SQL and Transact-SQL (T-SQL)
 - Types of Tables
- Data Definition Language (DDL)
 - USE Command, Create, Alter and Drop Tables using T-SQL
- Introduction of Data Manipulation Language (DML)
 - Insert, Delete, Update, Merge Statements
 - Difference between DELETE and TRUNCATE
- Commit, Rollback and Save (TCL)
 - With (NoLock) Commands
- Identity Specification , Computed columns

Day 5/ Day 6

- Data types in SQL Server
 - Exact, Approximate, Unicode, Non-Unicode, DateTime, Binary, Others
- SQL Operators
 - Arithmetic, List, Pattern, Set , Is Null, Range, and other Operators.
 - Set Clauses using Intersect, Union, Union All, Except Operators.

Day 7

- SQL Clauses used to Filter Data Using
 - Distinct, Top, Offset, Fetch , Where, Group By, Having, Rollup, Cube, Order by
 - Using Aggregate Function

Day 8

- Constraints and Data Integrity
- Introduction of Database Constraint
 - Creating default values
 - Creating Null values
 - Creating Check Constraint
 - Unique Key
 - Primary and Foreign Key
 - Composite Primary Key
 - Referential Integrity
 - Setting Cascade Update and Delete

Day 9

- System Functions
 - Scalar Function
 - Ranking Function
 - Aggregate Function

Day 10

- Joins using Multiple Tables
- Inner join
 - Equi Join
 - Non Equi Join
 - Self Join
- Outer Join

www.optimize-sql.com; Call at: 9177166122; optimize-sql@gmail.com

- Left, Right, Full Outer Join
- Cross Join,
- Cross Apply, Outer Apply

Day 11

- Using Sub-queries
- Simple Subqueries
- Correlated Sub queries
 - Using All, Any, Exists Predicates with Sub queries
- Limitations of Sub-queries
- CTE's

Day 12

- Creating a Schema
- Referencing Schema Object
- Creating Synonyms
- Creating and Implementing Sequences
- Audits
 - Creating Server Level Audits
 - Creating Database Level Audits

Day 13

- Views and Advantages of Views
- Create View
- Manipulating View
- SchemaBinding
- Indexing Views
- Views Restriction

Day 14/ Day 15

- Understanding Indexes
 - Table Scan, Index Scan ,Index Seek
 - Clustered Index, Non Clustered Index
 - Creating Indexes
 - Managing Indexes
- Migrating, Importing and Exporting
 - Generate SQL Scripts
 - Import and Export Wizard
 - Import Data into SQL Server
 - Bulk Insertions
- Database Security
 - Creating and Managing Logins
 - Creating and Managing Database Users
 - Using SQL Server Roles
- Other functions
 - PIVOT / UNPIVOT, Coalesce() functions
- **Quick Recap of SQL Summary and Query Solving**

Day 16

- T-SQL Programming
- Variables
- Control Flow - *IF...ELSE*
- CASE Statement/Expression
- The WHILE statement

Day17

www.optimizesql.com; Call at: 9177166122; optimizesql@gmail.com

Day 18

- Using Cursors / Life cycle of Cursor
- Types of Cursors
- WHERE CURRENT OF
- Restriction on Cursor Operation

- User Defined Functions (UDF's)
- Creating UDF's
- Returning Value from a function
- Calling Scalar Function
- Table Valued Function
 - Inline table valued function
 - Multilined table valued function
- Cross Apply and Outer Apply using Function

Day 19/ 20/ 21

- Stored Procedures
- Creating SP
- Parameters
 - Input , Optional , No Parameters
- Return Statements
- Output Parameters
- Handling Errors
 - Try...Catch Block
 - Raiserror, Throw
 - Working with Error Information
- Transaction Handling
- With Recompile
- Recursive SP
- Dynamic SQL
 - What is Dynamic SQL
 - Dynamic SQL Examples
 - Guard against SQL injection

Day 22

- Triggers
- Types of Triggers
- DML triggers
- Inserted and Deleted Tables
- DDL triggers
- Eventdata() Function
- Instead of Triggers
- Logon Triggers
- Enabling, Disabling and Dropping Triggers
- Examples

Day 23

- FAQ's in Interviews
- Recap on entire SQL course