



Contact: info@ellarr.com

SQL Server Querying and Development

Introduction to Microsoft SQL Server

- SQL Server Service
- SQL Server Instances
- SSMS

SELECT Queries

- Logical Order in SELECT Statements
- Writing Simple SELECT Statements
- Select with DISTINCT
- Column and Table Aliases
- CASE Expressions

Order By and Where Conditions

- Sorting Data
- Filtering Data
- Filtering Data with TOP and OFFSETFETCH
- Working with NULL Values

Retrieving Data from Two or More Tables

- Inner Joins
- Left Outer Joins
- Right Outer Joins
- Self Join
- Cross Joins

All the training sessions will be conducted with Practical Examples.
Students' practice labs will be provided separately for hands on.



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Group By Clause

- Using Aggregate Functions
- Using the GROUP BY Clause
- Filtering Groups with HAVING

Creating and maintaining databases, tables, and sequences with SQL statements

- Creating Databases, Tables
- Using Constraints
- Working with Schema
- Creating and Altering Tables
- Working with Sequences

DML to Modify Data

- Adding Data to Tables
- Modifying and Removing Data
- Sequences VS Identity

Built-in Functions

- Writing Queries with Built-in Functions
- Using Conversion Functions
- Using Logical Functions
- Using Functions to Work with NULL

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Subqueries

- Subqueries in Search Conditions
- Other Ways to Use Subqueries
- Correlated Subqueries
- Using the EXISTS Predicate with Subqueries
- Guidelines for Working with Complex Queries
- Common Table Expressions
- Using Derived Tables

Set Operators

- Writing Queries with the UNION Operator
- Using EXCEPT and INTERSECT

Window Functions

- Creating Windows with OVER
- Exploring Window Functions

Pivoting and Grouping Sets

- Writing Queries with PIVOT
- Writing Queries with UNPIVOT
- Writing Queries with GROUPING SETS

Metadata

- Catalog Views and Functions
- System Stored Procedures
- Information Schema Views
- Dynamic Management Objects

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Views

- Creating and Managing Views
- Using Views
- Performance Considerations for Views

Indexing Concepts

- SQL Server Table Structures
- Clustered Indexes
- Designing Effective Clustered Indexes
- Comparing the Performance of Clustered Indexes vs. Heaps
- Nonclustered Indexes
- Implementing Nonclustered Indexes
- Data Types and Indexes
- Single Column and Composite Indexes
- Covering Indexes
- Fragmentation and Defragmentation

Stored Procedures

- Working with Stored Procedures
- Implementing Parameterized Stored Procedure
- Parameter Sniffing

Merging Data and Passing Tables

- Using the MERGE Statement
- Implementing Table Types
- Using TABLE Types As Parameters

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User Defined Functions

- Overview of Function
- Scalar Functions
- Table-Valued Functions
- Deterministic and Non Deterministic Functions
- Implementation Considerations for Functions
- Using APPLY

Triggers

- Designing DML Triggers
- Implementing DML Triggers
- Advanced Trigger Concepts

Execution Plans

- Execution Plan Core Concepts
- Common Execution Plan Elements
- Working with Execution Plans

Cursors

- Cursors in SQL Server
- Using Cursors to Retrieve Data
- Modifying Data through a Cursor

Error Handling

- TRY / CATCH Blocks
- Working with Error Information
- Debugging Techniques (Triggers and Stored procedure, etc.)
- Throw, Raiserror
- Adding Customized Error Messages into SQL Server

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Managing Transactions and Locking

Introduction to Transactions

Introduction to Locks

Management of Locking

Transaction Isolation Levels

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