

MS SQL

Course Contents:

Module 1: Introduction to Microsoft SQL Server

- Introduction to RDBMS
 - Understanding problems of Flat File Systems
 - Converting Flat File System into RDBMS Model
 - Data Integrity Rules such as Primary Key, Unique Key, Foreign Key, Not Null and Check Constraint.
- The Basic Architecture of SQL Server
- SQL Server Editions and Versions
- Getting Started with SQL Server Management Studio

Module 2: Introduction to T-SQL

- Introducing T-SQL
- Understanding Sets
- Understanding Predicate Logic
- Understanding the Logical Order of Operations in SELECT statements

Module 3: Writing SELECT Queries

- Writing Simple SELECT Statements
- Eliminate Duplicates with DISTINCT
- Using Column and Table Aliases
- Write Simple CASE Expressions

Module 4: Querying Multiple Tables

- Understanding Joins
- Querying with Inner Joins
- Querying with Outer Joins
- Querying with Cross Joins and Self Joins

Module 5: Sorting and Filtering Data

- Sorting Data
- Filtering Data with Predicates
- Filtering with the TOP and OFFSET-FETCH
- Working with Unknown Values

Module 6: Working with SQL Server Data Types

- Introducing SQL Server 2014 Data Types
- Working with Character Data
- Working with Date and Time Data

Module 7: Using DML to Modify Data

- Inserting Data
- Modifying and Deleting Data

Module 8: Using Built-In Functions

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

Module 9: Grouping and Aggregating Data

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

Module 10: Using Subqueries

- Writing Self-Contained Subqueries
- Writing Correlated Subqueries
- Using the EXISTS Predicate with Subqueries

Module 11: Using Table Expressions

- Using Views
- Using Inline Table-Valued Functions
- Using Derived Tables
- Using Common Table Expressions

Module 12: Using Set Operators

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

Module 13: Using Window Ranking, Offset, and Aggregate Functions

- Creating Windows with OVER
- Exploring Window Functions

Module 14: Pivoting and Grouping Sets

This module discusses techniques for pivoting data in T-SQL as well to introduce the fundamentals of the GROUPINGSETS clause. It will also cover the use of GROUP BY ROLLUP and GROUP BYCUBE syntax in SQL Server.

Lessons

- Writing Queries with PIVOT and UNPIVOT
- Working with Grouping Sets

Module 15: Querying data with Stored Procedures & Functions

This module introduces the use of existing stored procedures in a T-SQL querying environment. It discusses the use of EXECUTE, how to pass input and output parameters to a procedure, and how to invoke system stored procedures.

Lessons

- Writing Queries with PIVOT and UNPIVOT
- Passing Parameters to Stored Procedures
- Creating Simple Stored Procedures
- Working with Dynamic SQL
- Pass parameters to procedures.

Module 16: Programming with T-SQL

- T-SQL Programming Elements
- Controlling Program Flow

Module 17: Implementing Error Handling

- Using TRY / CATCH Blocks
 - Working with Error Information
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