€TRAINING

Querying Data With Microsoft Transact SQL

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Introduction:

In today's data-driven world, the ability to effectively retrieve, manipulate, and analyze data is essential for success in various industries. Microsoft Transact-SQL T-SQL serves as a powerful tool for interacting with data stored in Microsoft SQL Server databases, offering a comprehensive suite of querying and manipulation capabilities. This training program is designed to equip participants with the knowledge and skills needed to harness the full potential of T-SQL for querying data with precision and efficiency.

Program Objectives:

By the end of this program, participants will be able to:

- Master Microsoft Transact-SQL fundamentals.

- Execute T-SQL queries for data retrieval.

- Manipulate data efficiently using T-SQL.

- Explore advanced T-SQL concepts for complex analysis.

- Optimize T-SQL queries for enhanced performance.

- Apply T-SQL skills to real-world scenarios for data-driven decision-making.

Targeted Audience:

- Data Analysts.

- Data Engineers.

- Data Scientists.

- Database Administrators.

- Database Developers.

Program Outlines:

Unit 1.

Querying basics:

- Understand the fundamentals of T-SQL querying.

- Learn to write and execute basic SELECT statements.

- Explore filtering and sorting data using WHERE and ORDER BY clauses.

- Practice retrieving data from single and multiple tables using JOINs.

- Master the use of aliases and expressions in SELECT queries.

Unit 2.

Data manipulation:

- Explore INSERT, UPDATE, and DELETE statements for data manipulation.

- Learn to modify data in tables based on specified conditions.

- Understand the use of transactions to ensure data integrity.

- Master the concept of transaction isolation levels.

- Practice using common table expressions CTEs for complex data manipulation tasks.

Unit 3.

Advanced querying techniques:

- Dive into subqueries and their applications in T-SQL queries.

- Learn to use window functions for analytical queries.

- Explore the use of GROUP BY and HAVING clauses for aggregate queries.

- Practice writing recursive queries for hierarchical data structures.

- Understand query optimization and performance tuning principles.

Unit 4.

Stored procedures and functions:

- Understand the purpose and benefits of stored procedures and user-defined functions UDFs.

- Learn to create, modify, and execute stored procedures.

- Explore different types of UDFs and their usage in T-SQL queries.

- Practice passing parameters to stored procedures and functions.

- Master error handling techniques in stored procedures and functions.

Unit 5.

Practical applications:

- Apply T-SQL querying skills to real-world scenarios and business use cases.

- Practice querying and analyzing data from diverse datasets.

- Work on case studies and projects to reinforce learning.

- Collaborate with peers to solve complex querying challenges.

- Explore practical applications of T-SQL in various industries and domains.