SQL

Introduction to MySQL

- **Introduction to MySQL.**
- **Installation of MySQL server**
- **Download sample database**
- **Load sample database to work**

Basic SQL

- **Basic SELECT Statement**
- **Selecting All Columns**
- **Selecting Specific Columns**
- **Writing SQL Statements**
- **Column Heading Defaults**
- **Using Arithmetic Operators**
- **Arithmetic Expressions**
- **Operator Precedence**
- **Using Parenthesis**
- **Defining a Null**
- **Defining a Column Alias**
- **Using Column Aliases**
- **Concatenation Operator**
- **Using the Concatenation Operator**

Restricting and Sorting Data

DDL Commands

- **Relational Database Management System (RDBMS)**
- **Normalization**
- **Create Database objects**
- **Data Types in SQL**
- **Alter Table Statements**
- **Drop Table Statements**
- **Various Constraints**
- **Creating Views**

DML statements

- **Data Manipulation Language**
- **Adding a New Row to a Table**
- **The INSERT Statement Syntax**
- **Inserting New Rows**
- **Inserting Rows with Null Values**
- **Inserting Special Values**
- **Inserting Specific Date Values**
- **Creating a Script**
- **Copying Rows from Another Table**
- **Changing Data in a Table**
- **The UPDATE Statement Syntax**

- Updating Rows in a Table
- Updating Two Columns with a Subquery
- Updating Rows Based on Another Table
- Updating Rows: Integrity Constraint Error
- Removing a Row from a Table
- The DELETE Statement
- Deleting Rows from a Table
- Deleting Rows Based on Another Table
- Deleting Rows: Integrity Constraint Error
- Using a Subquery in an INSERT Statement

DCL

DCL – Data Control Language Command in
- **Grant** – Give Permission
- **Revoke** – Remove Access

TCL

TCL - Transactional Control Language
- **Commit**- Commit a transaction, saving changes permanently
- **Rollback**- Undoes changes made during a transaction
- **Savepoint**- Sets a point within a transaction to which you can later roll back.

DQL

DQL (Data Query Language)

> Commands focus exclusively on retrieving the data from the database.

> Select DQL Command.

Retrieve records from multiple tables

Working and Retrieving records from multiple tables

> Self-Join

> Inner Join

> Left Join

> Right Join

> Cross Join

Subqueries Topic

- Using a Subquery to Solve a Problem
- Subquery Syntax
- Using a Subquery
- Guidelines for Using Subqueries
- Types of Subqueries
- Single- Row Subqueries
- Executing Single-Row Subqueries
- Using Group Functions in a Subquery
- HAVING Clause with Subqueries
- Multiple-Row Subqueries
- Using the ANY Operator in Multiple-Row Subqueries
- Using the ALL Operator in Multiple-Row Subqueries
- Null Values in a Subquery

Built-in Functions of SQL

- Conversion Function
- Logical Functions
- Math Function
- Aggregate Functions
- String Functions
- Date Functions

Advance functions in SQL

- ▶ **SQL Server Trigger**
- ▶ **SQL Server Procedure**
- ▶ **SQL Server Functions**
- ▶ **SQL Server Index**
- ▶ **SQL Server Views**
- ▶ **Manage and secure a database**
- ▶ **Monitor and optimize performance**

Windows Function/ Analytical Function

- ▶ **Row number**
- ▶ **Rank**
- ▶ **Dense rank**
- ▶ **Lead & Lag**

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