



IT EDUCATION
CENTRE

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

- ▶ **Literal Character Strings**
- ▶ **Using Literal Character Strings**
- ▶ **Duplicate Rows**
- ▶ **Eliminating Duplicate Rows**

Restricting and Sorting Data

- ▶ **Limiting Rows Using a Selection**
- ▶ **Limiting the Rows Selected**
- ▶ **Using the WHERE Clause**
- ▶ **Character Strings and Dates**
- ▶ **Comparison Conditions**
- ▶ **Using Comparison Conditions**
- ▶ **Other Comparison Conditions**
- ▶ **Using the BETWEEN Condition**
- ▶ **Using the IN Condition**
- ▶ **Using the LIKE Condition**
- ▶ **Using the NULL Conditions**
- ▶ **Logical Conditions**
- ▶ **Using the AND Operator**
- ▶ **Using the OR Operator**
- ▶ **Using the NOT Operator**
- ▶ **Rules of Precedence**
- ▶ **ORDER BY Clause**
- ▶ **Sorting in Descending Order**
- ▶ **Sorting by Column Alias**
- ▶ **Sorting by Multiple Columns**

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

GitHub

- ▶ **Creating a Git Account**
- ▶ **Cloning the repository**
- ▶ **Adding the file**
- ▶ **Committing the file**
- ▶ **Git push**
- ▶ **Removing the file**

