SQL Training: Mastering SQL Queries

Introduction to the SQL Training

SQL (Structured Query Language) is the universal language for interacting with relational databases. In this comprehensive training, you will discover the fundamental principles of databases and learn how to manipulate and query data efficiently. Whether you are a beginner or looking to deepen your skills, this course provides a step-by-step approach to mastering SQL.

- Definition of a database and how it stores structured information
- Definition of a Database Management System (DBMS) and its role in handling data operations
- Defining a relational model and understanding the relationships between tables
- Overview of SQL languages: DQL (Data Query Language), DML (Data Manipulation Language), DDL (Data Definition Language)

Module 1: Course on DQL (Data Query Language)

Learn to extract data from your databases with precision and flexibility. This module covers all the essential SELECT statements used in real-world applications.

- Writing a SELECT FROM query to retrieve data
- Filtering results with a SELECT WHERE query
- Sorting data using SELECT ORDER query
- Limiting the number of returned rows with SELECT LIMIT
- Using expressions and functions with SELECT EXPR
- Joining tables using SELECT FROM JOIN
- Grouping data and applying aggregate functions with SELECT AGGR GROUP
- Filtering grouped results using SELECT AGGR GROUP HAVING

Module 2: Course on DML (Data Manipulation Language)

Master inserting, updating, and deleting records to maintain accurate and up-to-date data in your database.

- Introduction to DML concepts and their importance
- Adding new records with the INSERT query
- Creating records based on existing data using INSERT SELECT
- Inserting into multiple tables simultaneously
- Modifying existing records with UPDATE query
- Updating data across multiple tables in a single operation
- Removing records with DELETE query
- Deleting data from multiple tables in one command

Module 3: Course on DDL (Data Definition Language)

Understand how to create and maintain the structure of your databases through DDL commands.

- Creating new tables with the CREATE TABLE query
- Deleting tables and their data using DROP TABLE
- Changing table structures dynamically with ALTER TABLE

Module 4: Theory on Advanced SQL Concepts

Deepen your understanding of complex SQL topics that improve database performance and integrity.

- Using indexes and learning about different index types for faster queries
- Enforcing data consistency with foreign key constraints
- Principles of database normalization: 1NF, 2NF, and 3NF
- Differences between natural keys and complex (composite) keys

Additional Resources and Related Trainings

To expand your knowledge and explore other essential database topics, check out our specialized courses:

- SQL Triggers and Stored Procedures

- Excel Advanced Course for Data Analysis

- Discover All Our IT and Database Trainings

To learn more about SQL concepts, standards, and best practices, visit:

SQL – Wikipedia