Advanced Certification Programme in Data Science and Business Analytics with Generative AI

Student Guide for Sync Session

Week 4: Types of Commands in MySQL and Their Syntax

This guide is your roadmap to making the most of our online session. Packed with essential tips and strategies, it's designed to keep you engaged, prepared, and ready to dive into a smooth and productive learning journey. Get ready to participate, learn, and thrive!

Session Overview

Session title	Types of Commands in MySQL and Their Syntax
Session duration	3 hours
Session type	• **Lectures**: Understanding different types of MySQL commands and their syntax. • **Case Studies**: Practical demonstrations of SQL commands.
Scope	This session introduces fundamental MySQL command types. It covers: • Data Definition Language (DDL) commands. • Data Manipulation Language (DML) commands. • Data Query Language (DQL) commands. • Transaction Control Language (TCL) commands. • Data Control Language (DCL) commands.
Software/tools	• MySQL Database • SQL Workbench / MySQL CLI • Dataset: Sample database with tables for queries and transactions
Learning objectives	

Objective	Core Capability
Understand different SQL command types	Ability to use DDL, DML, DQL, TCL, and DCL
Apply MySQL syntax to manage databases	Practical skills in writing and executing SQL commands
Manipulate and retrieve data efficiently	Understanding of SELECT, INSERT, UPDATE, and DELETE
Ensure data integrity using transaction control	Proficiency in COMMIT and ROLLBACK operations
Implement security through DCL	Knowledge of GRANT and REVOKE for user permissions

Pro Tips for Success

- **Ask Bold Questions**: No question is too small—curiosity is the key to learning!
- **Be Hands-On**: Practice writing SQL commands to improve retention.

- **Collaborate:** DisScuss different MySQL command applications with peers.

Session Details

Topic	A glimpse	Insight / Actionable
Introduction	Overview of SQL and command types.	Reflect on how SQL commands help manage databases efficiently.
DDL Commands (CREATE, ALTER, DROP)	Learn how to define and manage database structures.	Practice creating and modifying tables using MySQL.
DML Commands (INSERT, UPDATE, DELETE)	Understand how to manage and manipulate table data.	Insert, modify, and delete records in sample tables.
DQL Commands (SELECT)	Learn the importance of data retrieval in SQL.	Use SELECT queries to fetch and filter data effectively.
TCL Commands (COMMIT, ROLLBACK)	Understand transaction control for data consistency.	Implement COMMIT and ROLLBACK commands to manage changes.
DCL Commands (GRANT, REVOKE)	Learn how to control database security and access.	Assign and revoke user permissions using MySQL commands.
Hands-on Practice	Apply learned concepts through SQL exercises.	Write queries to manipulate and retrieve data in a sample database.
Best Practices for Writing SQL Queries	Discover techniques for efficiency, readability, and security.	Optimise queries using indexing and structured formatting.

Post-Session Activities

Reflection challenge	Which SQL commands do you think are most essential for database management?
Explore more	**Read**: MySQL documentation on SQL commands. **Watch**: Tutorials on database management using MySQL. **Practice**: Write SQL queries to modify and retrieve data.
Get inspired	Did you know that mastering SQL is a fundamental skill for data analysts and engineers? Learning it opens doors to various career opportunities!
The journey ahead	Explore advanced SQL concepts like joins, subqueries, and stored procedures!