IIT Guwahati

Advanced Certification Programme in Data Science Business Analytics

Week 4

Types of Commands in MySQL and Their Syntax

Topics Covered

- Types of Commands in MySQL
- Q & A

Types of Commands in MySQL

Types of Commands in MySQL

An In-Depth Classification

- **DDL** – Data Definition Language
- **DML** – Data Manipulation Language
- **DQL** – Data Query Language
- **TCL** – Transaction Control Language
- **DCL** – Data Control Language

SQL Command Types and Their Functions

SQL Commands with Their Purposes and Examples

Command category	Description	Common commands
DDL Data Definition Language	Defines and manages database structures	CREATE, ALTER, DROP, TRUNCATE, RENAME
DML Data Manipulation Language	Alters and manipulates database records	INSERT, UPDATE, DELETE
DCL Data Control Language	Controls access and permissions on data	GRANT, REVOKE
TCL Transaction Control Language	Manage transaction management	COMMIT, ROLLBACK, SAVEPOINT
DQL Data Query Language	Fetches and queries data	SELECT

DDL Commands in MySQL

Defining and Managing Database Structures

Command category	Purpose
CREATE	Create a database, table or view
ALTER	Modify the table structure
DROP	Delete a database or table permanently
TRUNCATE	Delete all records but keep the structure
RENAME	Change the table name

DDL Commands and Their Syntax

Create, Modify and Manage Databases

Command	Usage	Syntax
Create	To create a database	Create Database Database_name;
	To create a table	Create Table Table_name (Column1 Datatype, Column2 Datatype, ...);
Alter	To add a new column in table	Alter table table_name add column column_name datatype;
	To delete a column in table	Alter table table_name drop column column_name;
	To change data type of a column in table	Alter table table_name modify column column_name new_datatype;
	To change the name of a column in table	Alter table table_name rename column old_column_name to new_column_name;

DDL Commands and Their Syntax

Create, Modify and Manage Databases

Command	Purpose	Syntax
Drop	To drop a database	Drop Database Database_name;
	To drop a table	Drop Table Table_name;
Truncate	To delete all the records for a table	Truncate Table Table_name;
Rename	To change the name of a table	Rename Table old_Table_name to new_Table_name;

Understanding DDL Commands

Defining, Structuring and Managing Databases Efficiently

- Define and describe the structure of a database
- Help create, modify and manage table structures within the database

DML Commands in MySQL

Managing and Manipulating Data in Tables

Command	Purpose
INSERT	Adds a new row to the table
UPDATE	Modifies an existing record in the table
DELETE	Removes a specific record from the table

DML Commands and Their Syntax

Essential SQL Commands for Managing Your Data

Command	Purpose	Syntax
Insert (single record)	Insert a record in a table	INSERT INTO table_name VALUES (col1value, col2value, col3value);
Insert (multiple records)	Insert multiple records into a table	INSERT INTO table_name VALUES (col1value, col2value, col3value), (col1value, col2value, col3value), ...;
Insert (specific columns)	Insert values into specific columns only	INSERT INTO table_name (col1, col2, col3) VALUES (col1value, col2value, col3value);
Update	Change a particular value in an existing record of a table	UPDATE table_name SET column_name = new_value WHERE condition;
Delete	Delete a specific record from a table	DELETE FROM table_name WHERE condition;

Understanding Data Manipulation Language

Managing and Modifying Database Records

- Manage records within a table
- Allow users to insert, delete and update data as needed
- Play a crucial role in modifying and maintaining database content

DQL Commands and Their Syntax

Understanding the SELECT Command in SQL

Purpose/Usage	Syntax example
Select all columns	SELECT * FROM table_name;
Select specific columns	SELECT Column1, Column2 FROM table_name;

Understanding DQL in Databases

Retrieving Data Efficiently

- Used to query or retrieve data efficiently from a database
- Fetch all records or specific details as needed
- Ensure quick and accurate access to required information

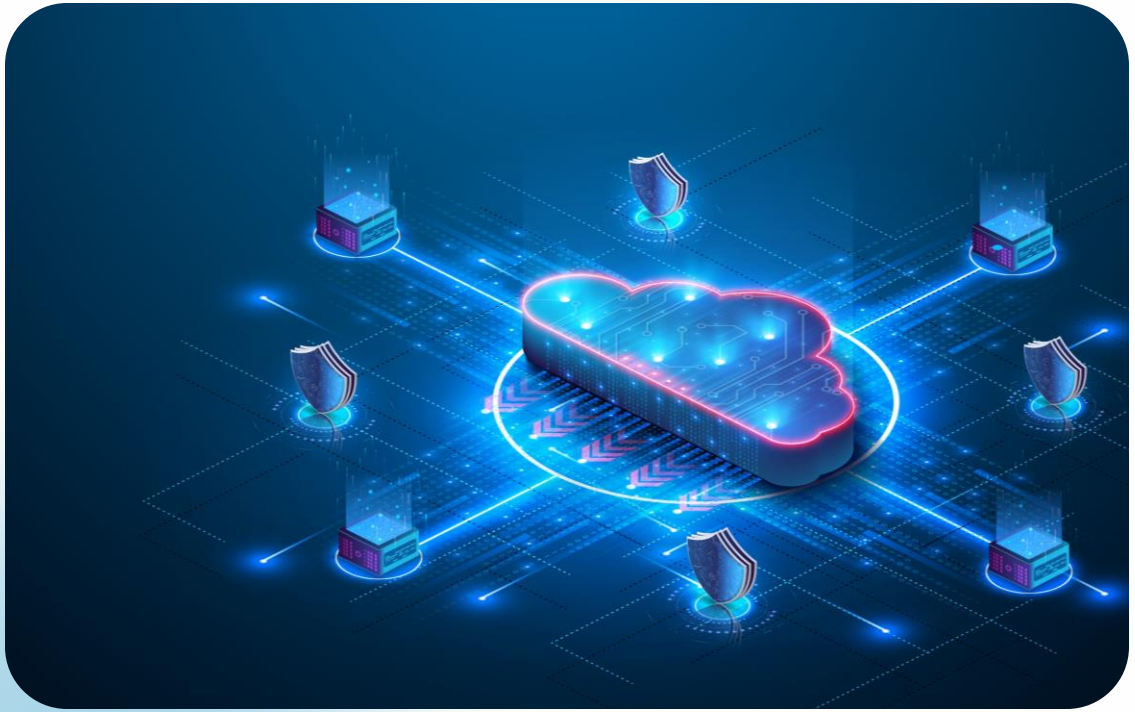
TCL Commands and Their Syntax

Commit and Rollback Commands

Command	Syntax	Description
Commit	COMMIT;	Saves the transaction permanently in the database
Rollback	ROLLBACK;	Reverts the changes made by the DML transaction

Transaction Control in Databases

Ensuring Data Consistency, Integrity and Reliability



- Control transactions, ensuring changes are saved or undone as needed
- COMMIT permanently saves changes to the database
- ROLLBACK undoes changes, restoring the previous state
- Help maintain data consistency and integrity in databases

Q & A

Thank you