**Connection**

-- Connect to MySQL

mysql -u username -p

**Database Operations**

-- Create a new database

CREATE DATABASE dbname;

-- Use a database

USE dbname;

-- Show all databases

SHOW DATABASES;

-- Drop a database

DROP DATABASE dbname;

**Table Operations**

-- Create a new table

CREATE TABLE tablename (

id INT AUTO\_INCREMENT PRIMARY KEY,

column1 VARCHAR(255) NOT NULL,

column2 INT,

column3 DATE

);

-- Show all tables in the current database

SHOW TABLES;

-- Describe the structure of a table

DESCRIBE tablename;

-- Drop a table

DROP TABLE tablename;

**Insert Data**

-- Insert data into a table

INSERT INTO tablename (column1, column2, column3)

VALUES ('value1', 123, '2024-07-15');

**Query Data**

-- Select all columns and rows

SELECT \* FROM tablename;

-- Select specific columns

SELECT column1, column2 FROM tablename;

-- Select with a WHERE clause

SELECT \* FROM tablename WHERE column2 = 123;

-- Select with ORDER BY

SELECT \* FROM tablename ORDER BY column1 DESC;

-- Select with LIMIT

SELECT \* FROM tablename LIMIT 10;

**Update Data**

-- Update data in a table

UPDATE tablename

SET column1 = 'new\_value'

WHERE column2 = 123;

**Delete Data**

-- Delete data from a table

DELETE FROM tablename

WHERE column2 = 123;

**Indexes**

-- Create an index on a table

CREATE INDEX indexname

ON tablename (column1);

-- Drop an index

DROP INDEX indexname ON tablename;

**Joins**

-- Inner join

SELECT a.column1, b.column2

FROM table1 a

INNER JOIN table2 b ON a.common\_column = b.common\_column;

-- Left join

SELECT a.column1, b.column2

FROM table1 a

LEFT JOIN table2 b ON a.common\_column = b.common\_column;

-- Right join

SELECT a.column1, b.column2

FROM table1 a

RIGHT JOIN table2 b ON a.common\_column = b.common\_column;

**Aggregation**

-- Count

SELECT COUNT(\*) FROM tablename;

-- Sum

SELECT SUM(column2) FROM tablename;

-- Average

SELECT AVG(column2) FROM tablename;

-- Min

SELECT MIN(column2) FROM tablename;

-- Max

SELECT MAX(column2) FROM tablename;

-- Group By

SELECT column1, COUNT(\*)

FROM tablename

GROUP BY column1;

**Transactions**

-- Start a transaction

START TRANSACTION;

-- Commit a transaction

COMMIT;

-- Rollback a transaction

ROLLBACK;

**User Management**

-- Create a new user

CREATE USER 'username'@'host' IDENTIFIED BY 'password';

-- Grant privileges to a user

GRANT ALL PRIVILEGES ON dbname.\* TO 'username'@'host';

-- Revoke privileges from a user

REVOKE ALL PRIVILEGES ON dbname.\* FROM 'username'@'host';

-- Show grants for a user

SHOW GRANTS FOR 'username'@'host';

-- Delete a user

DROP USER 'username'@'host';

**Backup and Restore**

-- Backup a database

mysqldump -u username -p dbname > backupfile.sql

-- Restore a database

mysql -u username -p dbname < backupfile.sql

**Show MySQL Version**

-- Show MySQL version

SELECT VERSION();

**Exit MySQL**

-- Exit MySQL

EXIT;