📘 SQL Commands & Statements

# 📂 Database Commands

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| --- | --- |
| Operation | SQL Command |
| Create a database | CREATE DATABASE DB\_NAME; |
| List all databases | SHOW DATABASES; |
| Use a specific database | USE DB\_NAME; |
| Delete a database | DROP DATABASE DB\_NAME; |

# 📑 Table Commands

CREATE TABLE table\_name (  
 column\_name\_1 DATATYPE CONSTRAINT NULL/NOT NULL,  
 column\_name\_2 DATATYPE CONSTRAINT NULL/NOT NULL,  
 ...  
);

## Example:

CREATE TABLE habitat (  
 id INT PRIMARY KEY AUTO\_INCREMENT,  
 name VARCHAR(64)  
);

## Create a table with Foreign Key:

CREATE TABLE animal (  
 id INT PRIMARY KEY AUTO\_INCREMENT,  
 name VARCHAR(64),  
 species VARCHAR(64),  
 age INT,  
 habitat\_id INT,  
 FOREIGN KEY (habitat\_id) REFERENCES habitat(id)  
);

|  |  |
| --- | --- |
| Operation | SQL Command |
| List all tables | SHOW TABLES; |
| Show table structure | DESC table\_name; |

# ⚙️ SQL Language Classification

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| --- | --- |
| Type | Keywords |
| DDL | CREATE, ALTER, DROP, TRUNCATE |
| DML | INSERT, UPDATE, DELETE |
| TCL | COMMIT, ROLLBACK, SAVEPOINT |
| DCL | GRANT, REVOKE |

# 🗃️ DDL (Data Definition Language)

## 1. CREATE

CREATE TABLE table\_name (  
 column\_name\_1 DATATYPE CONSTRAINT NULL/NOT NULL,  
 column\_name\_2 DATATYPE CONSTRAINT NULL/NOT NULL,  
 ...  
);

## 2. ALTER

### a. Add Column

ALTER TABLE table\_name ADD column\_name DATATYPE CONSTRAINT NULL/NOT NULL [AFTER column\_x];

### b. Drop Column

ALTER TABLE table\_name DROP column\_name;

### c. Modify Data Type

ALTER TABLE table\_name MODIFY column\_name NEW\_DATATYPE CONSTRAINT NULL/NOT NULL;

### d. Modify NULL/NOT NULL

ALTER TABLE table\_name MODIFY column\_name EXISTING\_DATATYPE NULL/NOT NULL;

### e. Change Column Name

ALTER TABLE table\_name CHANGE old\_column\_name new\_column\_name EXISTING\_DATATYPE;

### f. Add Constraints

ALTER TABLE table\_name  
ADD CONSTRAINT PRIMARY KEY (column\_name);  
ALTER TABLE table\_name  
ADD CONSTRAINT UNIQUE (column\_name);  
ALTER TABLE table\_name  
ADD CONSTRAINT CHECK (column\_name);  
ALTER TABLE table\_name  
ADD CONSTRAINT FOREIGN KEY (column\_name) REFERENCES parent\_table(column\_name);

# 🧮 DML (Data Manipulation Language)

## 1. INSERT

INSERT INTO table\_name (column1, column2, ...)  
VALUES (value1, value2, ...);

INSERT INTO habitat (name)  
VALUES ('Rainforest');

## 2. UPDATE

UPDATE table\_name  
SET column1 = value1, column2 = value2, ...  
WHERE condition;

UPDATE habitat  
SET name = 'Desert'  
WHERE id = 1;

## 3. DELETE

DELETE FROM table\_name  
WHERE condition;

DELETE FROM habitat  
WHERE name = 'Desert';

# 🔁 TCL (Transaction Control Language)

## 1. COMMIT

COMMIT;

## 2. ROLLBACK

ROLLBACK;

## 3. SAVEPOINT

SAVEPOINT sp1;

ROLLBACK TO sp1;

# 🔐 DCL (Data Control Language)

## 1. GRANT

GRANT privilege\_type  
ON database\_name.table\_name  
TO 'username'@'host';

GRANT SELECT, INSERT  
ON mydb.\*  
TO 'user1'@'localhost';

## 2. REVOKE

REVOKE privilege\_type  
ON database\_name.table\_name  
FROM 'username'@'host';

REVOKE INSERT  
ON mydb.\*  
FROM 'user1'@'localhost';