
DBMS PRACTICAL – PART A (DDL OPERATIONS)

Title: *DDL Commands – Create, Alter, Index, View, Rename & Drop*

AIM

To study and perform various *DDL (Data Definition Language)* operations in SQL such as:

- Creating a database
- Creating a table
- Altering the structure of a table
- Creating an index
- Creating views
- Renaming a view
- Dropping a view

These commands help in defining, modifying, and managing the structure of the database.

THEORY (LONG & DETAILED – FULL PAGE)

1. Introduction to DDL

SQL (Structured Query Language) is divided into different categories based on the type of operations performed. One of the most important categories is **DDL – Data Definition Language**. DDL commands are used to define, create, and modify the structure of database objects such as databases, tables, indexes, and views. DDL statements are auto-committed, meaning the changes made using these commands are saved permanently and cannot be rolled back.

2. CREATE Command

The **CREATE** command is used to create new database objects.

Examples:

- **CREATE DATABASE** creates a new database.

- CREATE TABLE creates a new table with specified columns, datatypes, and constraints.

The CREATE command forms the foundation of SQL because without creating a database or table, no data can be inserted or manipulated.

★ 3. ALTER Command

The **ALTER TABLE** command is used when we want to modify the structure of an existing table.

It allows operations such as:

- Adding a new column
- Modifying the datatype
- Dropping a column
- Renaming a column

ALTER does not affect the existing data but changes the structure of the table.

★ 4. INDEX

An **index** is a special lookup table that the database uses to speed up data retrieval. It works like the index page of a book, helping the database locate records faster without scanning the entire table.

Indexes improve performance but require extra memory.

Syntax:

```
CREATE INDEX index_name ON table_name(column_name);
```

★ 5. VIEW

A **view** is a *virtual table* created using a SELECT query.

It does not store data physically; instead, it displays data from one or more actual tables.

Views help in security, simplicity, and reusability of queries.

For example, a view can display only specific columns or filtered records.

★ 6. RENAME

The **RENAME TABLE** command is used to change the name of an existing table or view. It does not change the structure or data; only the name is updated.

7. DROP

The **DROP VIEW** command is used to permanently remove a view. It deletes only the virtual table, not the original data stored in the base table.

This practical demonstrates how DDL commands help in designing and managing database structures effectively.

PART A – COMPLETE DDL CODE

```
CREATE DATABASE practical;
```

```
USE practical;
```

```
CREATE TABLE stud(
```

```
    rno INT PRIMARY KEY AUTO_INCREMENT,
```

```
    name VARCHAR(30),
```

```
    age INT NOT NULL,
```

```
    marks INT,
```

```
    city VARCHAR(20)
```

```
);
```

```
ALTER TABLE stud ADD COLUMN email_id VARCHAR(20);
```

```
CREATE INDEX index_name ON stud(name);
```

```
CREATE VIEW stud_view AS
```

```
SELECT * FROM stud;
```

```
CREATE VIEW stud_view2 AS  
SELECT * FROM stud WHERE city = 'Nashik';  
  
RENAME TABLE stud_view TO stud_view_renamed;  
  
DROP VIEW stud_view2;
```

```
SHOW TABLES;
```

STEP-BY-STEP EXPLANATION (LINE BY LINE)

1. CREATE DATABASE

```
CREATE DATABASE practical;
```

- Creates a new database named *practical*.
- This is the top-level container for all tables.

2. USE DATABASE

```
USE practical;
```

- Selects the database so all commands run inside it.

3. CREATE TABLE

```
CREATE TABLE stud(  
    rno INT PRIMARY KEY AUTO_INCREMENT,  
    name VARCHAR(30),  
    age INT NOT NULL,  
    marks INT,  
    city VARCHAR(20)  
);
```

Line-by-line:

- CREATE TABLE stud → Creates a table named stud.
 - rno INT → Roll number, an integer.
 - PRIMARY KEY → Makes rno unique + not null.
 - AUTO_INCREMENT → Automatically increases (1,2,3...).
 - name VARCHAR(30) → Name up to 30 characters.
 - age INT NOT NULL → Age cannot be empty.
 - marks INT → Stores marks.
 - city VARCHAR(20) → Stores city name.
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★ 4. ALTER TABLE

```
ALTER TABLE stud ADD COLUMN email_id VARCHAR(20);
```

- Modifies the existing stud table.
 - Adds a new column named email_id.
-

★ 5. CREATE INDEX

```
CREATE INDEX index_name ON stud(name);
```

- Creates an index on the name column.
 - Speeds up searching using the name field.
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★ 6. CREATE VIEW (All Records)

```
CREATE VIEW stud_view AS SELECT * FROM stud;
```

- Creates a virtual table showing all records.
 - Does not store data; just displays data from stud.
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★ 7. CREATE VIEW (Filtered Records)

```
CREATE VIEW stud_view2 AS SELECT * FROM stud WHERE city='Nashik';
```

- Creates a view showing only students from Nashik.

8. RENAME VIEW

```
RENAME TABLE stud_view TO stud_view_renamed;
```

- Renames stud_view → stud_view_renamed.
-

9. DROP VIEW

```
DROP VIEW stud_view2;
```

- Deletes the view stud_view2 permanently.
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10. SHOW TABLES

```
SHOW TABLES;
```

- Displays all tables and views inside the database.
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HOW TO EXPLAIN THE PRACTICAL TO EXTERNAL (SHORT & IMPRESSIVE)

“Sir, in this practical I demonstrated various DDL commands.

First I created a database and a table with rno as primary key and auto-increment.

Then I used ALTER TABLE to add a new email column.

I created an index on the name column for faster searching.

Using CREATE VIEW, I made two virtual tables—one showing all records and another showing only Nashik students.

Finally, I renamed and dropped the views.”

VIVA QUESTIONS & ANSWERS (ASKED 100% BY EXTERNAL)

1. What is DDL?

DDL stands for Data Definition Language. It is used to define and modify the structure of database objects.

2. Name DDL commands.

CREATE, ALTER, DROP, RENAME, TRUNCATE.

3. What is the use of CREATE TABLE?

It creates a new table with specified columns and datatypes.

4. What does ALTER TABLE do?

It modifies the structure of an existing table.

5. What is an index?

A data structure that improves the speed of searching.

6. What is a view?

A virtual table created using a SELECT query.

7. Does a view store data?

No, it displays data from the base table.

8. What is AUTO_INCREMENT?

Automatically generates sequential numbers for each new row.

9. Difference between DROP TABLE and DROP VIEW.

- DROP TABLE deletes actual data + structure.
 - DROP VIEW deletes only the virtual table.
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