**Provide a detailed document for delete command in PostgreSQL along with theory, syntax, 2 clear examples and best practices.**

The DELETE command in PostgreSQL is used to remove rows from a table. It's a powerful **Data Manipulation Language (DML)** statement that permanently removes data from your database.

**Theory**

The DELETE command works by identifying specific rows in a table and removing them. The crucial part of a DELETE statement is the **WHERE clause**, which specifies the condition for which rows to delete. If you omit the WHERE clause, the DELETE command will remove *all* rows from the table, effectively emptying it. This is a very destructive action, so it's essential to use a WHERE clause carefully.

**Syntax**

The basic syntax for the DELETE command is:

SQL

DELETE FROM table\_name

WHERE condition;

* DELETE FROM table\_name: Specifies the table from which you want to delete rows. The FROM keyword is optional in some SQL versions but is good practice to include in PostgreSQL.
* WHERE condition: This is the filter that determines which rows to delete. Rows that meet this condition are removed.

**Clear Examples**

Let's assume we have a table named employees with columns employee\_id, first\_name, last\_name, and status.

**Example 1: Deleting a specific row**

To delete the employee with an employee\_id of 101:

SQL

DELETE FROM employees

WHERE employee\_id = 101;

This command will find the row where employee\_id equals 101 and permanently remove it from the employees table.

**Example 2: Deleting multiple rows**

To delete all employees who have a status of 'Inactive':

SQL

DELETE FROM employees

WHERE status = 'Inactive';

This command will remove all rows where the status column contains the value 'Inactive'.

**Best Practices**

* **Use a WHERE clause**: Always use a WHERE clause to avoid accidentally deleting all data from a table. If you want to delete all rows, it's better to use TRUNCATE TABLE which is faster and resets the table, but DELETE is acceptable too.
* **Test with SELECT**: Before executing a DELETE statement, it's a good practice to run a SELECT statement with the same WHERE clause to verify that you are selecting the correct rows.

SQL

-- First, check which rows will be deleted

SELECT \* FROM employees WHERE status = 'Inactive';

-- If the result is correct, then run the DELETE command

DELETE FROM employees WHERE status = 'Inactive';

* **Use Transactions**: Wrap your DELETE commands in a **transaction**. This allows you to ROLLBACK the changes if you realize you made a mistake.

SQL

BEGIN;

DELETE FROM employees WHERE employee\_id = 101;

-- Check if the deletion was correct

-- If not, use ROLLBACK;

-- If so, use COMMIT;

* **Back up your data**: Always have recent backups of your database, especially before running a major DELETE or other data-altering commands.