Data Manipulation Language (DML) in SQL

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SQL (Structured Query Language) is a programming language that is often used by analysts due to its robustness and reliable functions. SQL is easy to learn and is also used to update and retrieve data in the database.

SQL has some commands known as **DDL** (Data Definition Language) and **DML** (Data Manipulation Language), Data analysts rely on DML statements to accomplish their work of editing, adding, and removing data stored in the database.

Features of DML (Data Manipulation Language).

DML is a group of commands used in the database to retrieve and modify data allowing it to perform actions like selecting specific data, adding new data, removing existing data, and updating the data.

The DML Commands are as follows:

The DML Commands

SELECT	INSERT
DELETE	UPDATE

Let us understand these commands with the help of syntax and an example,

SELECT command:

This command is used to select the data from the database, it allows users to get the information from the database using their computer's operating system, SELECT is used to retrieve data from one or more tables in a database, users get benefit in extracting data without shifting everything in the database.

SYNTAX:

SELECT *
FROM <table_name>;

Example:
Q) Retrieve all the data from **'STUDENTS'**.

>> SELECT *
>> FROM STUDENTS;

where '**STUDENTS**' is name of the table.

INSERT command:

It is a tool, used to insert data into specific columns of a database, it allows users to insert new data into the database. It can be used to entry few or bulk records. This command is also used to attach additional information like tags, to existing documents in the database.

SYNTAX:

INSERT INTO <table_name> ('column_name_1' <datatype>, 'column_name_2' <datatype>)
VALUES ('Value1', 'Value2');

Example:
Q) insert **'Roll_numer'** and **'NAMES**' into **'STUDENTS**'

>> INSERT INTO STUDENTS ('Roll_number' int (5), 'NAMES' varchar (25))
>> VALUES ('001', 'Arya');

where '001' and 'Arya' are data inserted in respective columns of the table.

DELETE command:

This command is used to delete data from tables in the database. If the <u>WHERE</u> clause is specified, only the specified data gets deleted in the database, this command deletes elements of rows, and the purpose of this command is to remove unwanted data from the database.

SYNTAX:

DELETE FROM <table_name>
WHERE Condition;

Example:
Q) Delete **NAMES** in **STUDENTS** that are assigned as 'NULL'.

>> DELETE FROM STUDENTS
>> WHERE NAMES = 'NULL'

WHERE is a condition that specifies what to delete in the table.

UPDATE command:

This command is used to change or modify existing records in a table within a database. It is beneficial for users to change existing information stored in the database and it is also helpful to keep data up-to-date.

SYNTAX:

Update <table_name>
SET (column_name = 'value')
WHERE Condition;

EXAMPLE:
Update the **Fee** value to 10000 of **STUDENTS** whose **Grade** is 3

>> UPDATE STUDENTS
>> SET Fee = 10000
>> WHERE Grade= 3;

WHERE is a condition that specifies what to update in the table , by setting a value.

ADVANTAGES and DISADVANTAGES of DML (DATA MANIPULATION LANGUAGE):

ADVANTAGES:
With the help of commands, we can modify the data that is contained or stored in a database. These commands allow users to specify the data they need; these commands provide flexibility to users in manipulating data in a database.

DISADVANTAGES:
These commands are not used to change the structure of the data in the database. These commands allow access to the data without saving it in the database. There is a risk of errors due to data inconsistencies

BIBLIOGRAPHY:

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