DML Commands in SQL

Overview

DML (Data Manipulation Language) is used to manage and manipulate data within database tables. These commands allow users to insert, update, delete, and retrieve data.

Commands Covered

Command	Description
`INSERT`	Adds new records into a table
`UPDATE`	Modifies existing records in a table
`DELETE`	Removes specific records from a table
`SELECT`	Retrieves data from one or more tables

SQL File: `dml_commands.sql`

1. Create a Database and Table

```
 CREATE DATABASE CompanyDB;
USE CompanyDB;

CREATE TABLE Employees (
    EmpID INT PRIMARY KEY,
    Name VARCHAR(50),
    Age INT,
    Department VARCHAR(50),
    Salary DECIMAL(10,2)
);
```

Creates a database `CompanyDB` and an `Employees` table.

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2. Insert Data into Table

```
 INSERT INTO Employees (EmpID, Name, Age, Department, Salary) VALUES
(1, 'Alice', 30, 'HR', 60000),
(2, 'Bob', 28, 'IT', 70000),
(3, 'Charlie', 35, 'Finance', 75000);
```

Inserts three employee records into the `Employees` table.

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3. Retrieve Data from Table

```
SELECT * FROM Employees;
```

Output:

```
 +------+--------+-----+-----------+--------+
| EmpID | Name   | Age | Department | Salary |
+------+--------+-----+-----------+--------+
|  1   | Alice  | 30  | HR         | 60000  |
|  2   | Bob    | 28  | IT         | 70000  |
|  3   | Charlie| 35  | Finance    | 75000  |
+------+--------+-----+-----------+--------+
```

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4. Update Existing Records

```
 UPDATE Employees SET Salary = 80000 WHERE EmpID = 3;
UPDATE Employees SET Department = 'Operations' WHERE EmpID = 1;
```

Modifies the `Salary` of employee with `EmpID = 3` and changes the `Department` of `EmpID = 1`.

Updated Table:

```
 +------+--------+-----+------------+--------+
| EmpID | Name   | Age | Department | Salary |
+------+--------+-----+------------+--------+
|  1   | Alice  | 30  | Operations | 60000  |
|  2   | Bob    | 28  | IT         | 70000  |
|  3   | Charlie| 35  | Finance    | 80000  |
+------+--------+-----+------------+--------+
```

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5. Delete Specific Records

```
DELETE FROM Employees WHERE EmpID = 2;
```

Removes the employee with `EmpID = 2` from the table.

Updated Table:

```
 +------+--------+-----+------------+--------+
| EmpID | Name   | Age | Department | Salary |
+------+--------+-----+------------+--------+
|  1   | Alice  | 30  | Operations | 60000  |
|  3   | Charlie| 35  | Finance    | 80000  |
+------+--------+-----+------------+--------+
```

Summary

- DML commands manipulate the data stored in tables.
- `INSERT` adds new records into a table.
- `UPDATE` modifies existing records based on conditions.
- `DELETE` removes specific rows from a table.
- `SELECT` retrieves data from tables for analysis and reporting.

Next Step

Run the SQL file in MySQL, PostgreSQL, or SQLite to see how data manipulation works.