Experiment No 04: Execute DML Commands to manipulate data using SQL

I. **Practical Significance**: A data manipulation language (DML) is used for adding (inserting), deleting, and modifying (updating) data in a database. This practical allows students to deal with modifying data in the database schema for a given application.

II. **INDUSTRY / EMPLOYER EXPECTED OUTCOME:**

To execute DML Commands to manipulate data using SQL on the given database using any RDBMS package.

III. **COURSE LEVEL LEARNING OUTCOMES (COS)**:CO3

- Manage database using SQL.

IV. **LABORATORY LEARNING OUTCOME:**

Execute DML Commands to manipulate data using SQL.

V. **Relevant Affective Domain related outcome(s)**

a. Follow precautionary measures.

b. Follow installation steps.

c. Follow ethical practices.

VI. **Relevant Theoretical Background**

Data Manipulation Language (DML) Commands are used to manage and manipulate data in a database. These commands include INSERT, UPDATE, DELETE, and SELECT, which help you add, modify, remove, and retrieve data from tables, respectively.

1. INSERT

Explanation: The INSERT command is used to add new rows of data to a table.

Syntax:

1)INSERT INTO table_name (column1, column2, column3, ...)VALUES (value1, value2, value3, ...);

2) INSERT INTO table_name VALUES (value1, value2, value3, ...);

3) INSERT INTO table_name (column2, column3, ...)VALUES (value2, value3 , ...);

Example:

1) INSERT INTO emp (empno, name, age) VALUES (1, 'Aditya Shinde', 20);
2) INSERT INTO emp VALUES (1, 'Aditya Shinde', 20);
3) INSERT INTO emp (empno , Age) VALUES (1, 20);

2. UPDATE

Explanation: The UPDATE command is used to modify existing data in a table.

Syntax:

UPDATE table_name

SET column1 = value1, column2 = value2, ...

WHERE condition;

Example:

UPDATE emp

SET age = 21

WHERE empno = 1;

3. DELETE

Explanation: The DELETE command is used to remove existing rows from a table.

Syntax:

DELETE FROM table_name

WHERE condition;

Example:

```
DELETE FROM emp
WHERE empno = 1;
```

4. SELECT

Explanation: The SELECT command is used to retrieve data from a table.

The following syntax is used to display data of specific columns from the table.

Syntax:

1)SELECT column1, column2, ...
FROM table_name;

Example:

```
SELECT Name, Age
FROM emp;
```

The following syntax is used to display data of the entire table

Syntax:

2)SELECT * FROM table_name;

Example:

```
SELECT * FROM emp;
```

- **Summary Table:**

Command	Description	Example
INSERT	Add new rows to a table	INSERT INTO Students (ID, Name, Age) VALUES (...);
UPDATE	Modify existing rows in a table	UPDATE Students SET Age = 21 WHERE ID = 1;

DELETE	Remove rows from a table	DELETE FROM Students WHERE ID = 1;

VII. Required Resources/apparatus/equipment with specifications

Sr. No	Equipment Name with Broad Specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard, and RDBMS applications such as Oracle Express Edition, MySql, SQLite,Oracle Live SQL etc.	All

VIII. Procedure

1. Create Database for given application
2. Follow syntax to modify the table according to question.

IX. Result(s)

In this practical we learn DML command to manipulate data using SQL

X. Practical related questions (Provide space for answers)

Note: Below are a few sample questions for reference. Teacher must design more suchquestions to ensure the achievement of identified CO.

1. Describe check constraint.
2. Describe referential integrity constraint.
3. Explain the differences between the DELETE, DROP, and TRUNCATE commands in SQL.

(Space for answer)

1] →

The check constraint to use the source that attribute value satisfy specific condition as specified by data required

Syntax: CREATE TABLE Student
(CNAME varchar (50) not null
gender char (1) Check (gender in "M" "F");

2] →

In case we have unique constraint no two tuple can have equal value for same attribute

3] →

Delete Command	DROP Command	TRUNCATE Command
Delete Command is data manipulation language Command	The drop Command is data definition language Command	The truncate Command is a data definition language Command
Syntax: Delete From <table_name> Where Condition	Syntax: Droptable <table_name>	Syntax: truncate table <table_name>

* Exercise :

3] →

To delete the record of Smith form the EMP table you can use the following Command

```
DELETE FROM EMP
WHERE ENAME = "SMITH";
```

4] →

To change the job of ADAMS to manager in the Emp table you can use the following Command

```
UPDATE EMP
SET JOB = "MANAGER";
WHERE ENAME = "ADAMS";
```

5] →

To display the concelent of Emp-no & Sal Column in Emp table

```
SELECT EMP_NO, SAL
```

Foom Emp;

Syntax! - CREATE TABLE Coustomer
(Name Varchar (25) Default;
Unknoon email Char (50) unique;

1] →

insert into Emp Values (7876, 'ADAMS', 'Research', 'CLERK', 23-may-87, 'DALLAS');

insert into Emp Values (7499, 'ALLEN', 'Sales', 'Salesman', 20-Feb-81, 'CHICAGO');

insert into Emp Values (7698, 'SMITH', Sales', 'manager', 1-may-81, 'CHICAGO');

insert into Emp Values (7782, 'cleark', 'Accounting', 'manager', 9-Jun-81, 'New york');

2] →

inbert into Emp Values (7902, 'FORD', 'Research', 'Analyst', 03-Dec-81, 'DALLAS') AND (7900, 'James', 'Sales', 'clerk', 03-Dec-81, 'CHICAGO') And (7566, 'JONES', 'Research', 'manager', 2-Apr-8), 'DALLAS') AND (7839, 'KING', 'Accounting', 'PRESIDENT', 17-NOV-81, 'Newyork');

.....
.....
.....
.....
.....

XI. Exercise

1. Using various syntax of insert command insert the following rows of data in the EMP table.

EMPNO	ENAME	DNAME	JOB	HIREDATE	LOC
7876	ADAMS	RESEARCH	CLERK	23-MAY-87	DALLAS
7499	ALLEN	SALES	SALESMAN	20-FEB-81	CHICAGO
7698	SMITH	SALES	MANAGER	01-MAY-81	CHICAGO
7782	CLARK	ACCOUNTING	MANAGER	09-JUN-81	NEW YORK

2. Insert the multiple records in the EMP table using single insert command.

EMPNO	ENAME	DNAME	JOB	HIREDATE	LOC
7902	FORD	RESEARCH	ANALYST	03-DEC-81	DALLAS
7900	JAMES	SALES	CLERK	03-DEC-81	CHICAGO
7566	JONES	RESEARCH	MANAGER	02-APR-81	DALLAS
7839	KING	ACCOUNTING	PRESIDENT	17-NOV-81	NEW YORK

3. Delete record of SMITH from the above table
4. Change the job of ADAMS to MANAGER
5. Display contents of empno and sal

XII. References/Suggestions for further reading: include websites/links

1. https://www.youtube.com/watch?v=yGU4YfSSjdM
2. https://www.javatpoint.com/dml-commands-in-sql
3. https://www.tutorialspoint.com/what-are-the-dml-commands-in-dbms

XIII. Assessment Scheme

Performance indicators		Weightage
Sr. No	**Process related (10 Marks)**	**30%**
1.	Tool Selection Ability	20%
2.	Follow Ethical Practices	10%
	Product related (15 Marks)	**70%**
3.	Verifying System Requirement for Installation	20%
4.	Correctness in Use of Command Tools	15%
5.	Use of Attribute/s Options	15%
6.	Timely Submission	10%
7.	Answering Sample Questions	10%
	Total (50 Marks)	**100%**

List of student Team Members

1. Vaishnavi
2. .....
3. .....

Marks Obtained			Dated signature of Teacher
Process Related (15)	**Product Related (35)**	**Total (50)**	
		45	