

EXPERIMENT – 4

AIM : Examples on DML & DCL Commands. INSERT, UPDATE, DELETE, Commands. COMMIT WORK, ROLLBACK, SAVEPOINT Commands.

MYSQL DML Commands (Data Manipulation Language) :

DML commands are used to modify the database. It is responsible for all form of changes in the database. The command of DML is not auto-committed that means it can't permanently save all the changes in the database. They can be rollback.

Here are some commands that come under DML:

- INSERT
- UPDATE
- DELETE

1. **INSERT** : The INSERT statement is a SQL query. It is used to insert data into the row of a table.

a. If we want to insert into a particular columns of table.

Syntax:

```
INSERT INTO TABLE_NAME (col1, col2, col3,... col N)
VALUES (value1, value2, value3, .... valueN);
```

Example:

```
insert into
DEPARTMENT_91(Dname,Dnumber,Mgr_ssn,Mgr_start_date)values
('Reasearch',5,333445555,'1988-05-22'),('Adminstration',4,987654321,'1995-01-
01'),('Headquarters',1,888665555,'1981-06-19');
```

Output:

| | Dname | Dnumber | Mgr_ssn | Mgr_start_date |
|---|---------------|---------|-----------|----------------|
| ▶ | Headquarters | 1 | 888665555 | 1981-06-19 |
| | Adminstration | 4 | 987654321 | 1995-01-01 |
| | Reasearch | 5 | 333445555 | 1988-05-22 |
| ● | NULL | NULL | NULL | NULL |

b. If we want to insert into all columns of table.

INSERT INTO TABLE_NAME VALUES (value1, value2, value3, valueN);

Example :

Syntax:

```
insert into DEPARTMENT_91 values('Reasearch',5,333445555,'1988-05-22'),('Adminstration',4,987654321,'1995-01-01'),('Headquarters',1,888665555,'1981-06-19');
```

Output :

| | Dname | Dnumber | Mgr_ssn | Mgr_start_date |
|---|---------------|---------|-----------|----------------|
| ▶ | Headquarters | 1 | 888665555 | 1981-06-19 |
| | Adminstration | 4 | 987654321 | 1995-01-01 |
| | Reasearch | 5 | 333445555 | 1988-05-22 |
| ● | NULL | NULL | NULL | NULL |

2. **UPDATE** : This command is used to update or modify the value of a column in the table.

Syntax:

UPDATE table_name SET

[column_name1= value1,...column_nameN = valueN]

[WHERE CONDITION] ;

Example :

Syntax: update department_91 set Dnumber='3' where Dname="Adminstration";

Output :

| | Dname | Dnumber | Mgr_ssn | Mgr_start_date |
|---|----------------|---------|-----------|----------------|
| ▶ | Headquarters | 1 | 888665555 | 1981-06-19 |
| ▶ | Administration | 3 | 987654321 | 1995-01-01 |
| ▶ | Research | 5 | 333445555 | 1988-05-22 |
| * | NULL | NULL | NULL | NULL |

3. **DELETE** : It is used to remove one or more row from a table.

Syntax:

DELETE FROM table_name [WHERE condition];

Example :

Syntax: delete from department_91 where Dnumber='3';

Output :

| | Dname | Dnumber | Mgr_ssn | Mgr_start_date |
|---|--------------|---------|-----------|----------------|
| ▶ | Headquarters | 1 | 888665555 | 1981-06-19 |
| ▶ | Research | 5 | 333445555 | 1988-05-22 |
| * | NULL | NULL | NULL | NULL |

MYSQL Transaction Control Language Commands :

TCL commands can only use with DML commands like INSERT, DELETE and UPDATE only. These operations are automatically committed in the database that's why they cannot be used while creating tables or dropping them.

Here are some commands that come under TCL:

- COMMIT
- ROLLBACK
- SAVEPOINT

1. **Commit** : Commit command is used to save all the transactions to the database.

Syntax:

COMMIT;

Example:

```
DELETE from DEPENDENT_91 where dependent_name="abner";
COMMIT;
```

Output :

| | Essn | Dependent_name | Sex | Bdate | Relationship |
|---|-----------|----------------|------|------------|--------------|
| ▶ | 123456789 | Alice | F | 1988-12-30 | Daughter |
| | 123456789 | Elizabeth | F | 1967-05-05 | Spouse |
| | 123456789 | Michael | M | 1988-01-04 | Son |
| | 333445555 | Alice | F | 1986-04-05 | Daughter |
| | 333445555 | Joy | F | 1958-05-03 | Spouse |
| | 333445555 | Theodore | M | 1983-10-25 | Son |
| * | NULL | NULL | NULL | NULL | NULL |

2. Rollback : Rollback command is used to undo transactions that have not already been saved to the database.

Syntax:

```
ROLLBACK;
```

Example:

```
START TRANSACTION;
insert into DEPT_LOCATIONS_91 values(1,'hobert');
select * from DEPT_LOCATIONS_91;
```

| | Dnumber | Dlocation |
|---|---------|-----------|
| ▶ | 1 | hobert |
| | 1 | Houston |
| | 4 | Stafford |
| | 5 | Bellaire |
| | 5 | Houston |
| | 5 | Sugarland |
| * | NULL | NULL |

```
ROLLBACK;
```

```
select * from DEPT_LOCATIONS_91;
```

Output :

| | Dnumber | Dlocation |
|---|---------|-----------|
| ▶ | 1 | Houston |
| | 4 | Stafford |
| | 5 | Bellaire |
| | 5 | Houston |
| | 5 | Sugarland |
| * | NULL | NULL |

3. SAVEPOINT : It is used to roll the transaction back to a certain point without rolling back the entire transaction.

Syntax:

```
SAVEPOINT SAVEPOINT_NAME;
```

Example :

```
START TRANSACTION;

SAVEPOINT s3;

insert into DEPT_LOCATIONS_91 values(1,'hobert');
select * from DEPT_LOCATIONS_91;
```

| | Dnumber | Dlocation |
|---|---------|-----------|
| ▶ | 1 | hobert |
| | 1 | Houston |
| | 4 | Stafford |
| | 5 | Bellaire |
| | 5 | Houston |
| | 5 | Sugarland |
| * | NULL | NULL |

```
rollback to s3;
select * from DEPT_LOCATIONS_91;
```

Output :

| | Dnumber | Dlocation |
|---|---------|-----------|
| ▶ | 1 | Houston |
| | 4 | Stafford |
| | 5 | Bellaire |
| | 5 | Houston |
| | 5 | Sugarland |
| * | NULL | NULL |