Experiment No. : 3

Title: Implementation of DML statements to insert, delete, update and display records of the tables.

Objectives:

1. To learn SQL Data Manipulation Language (DML) statement- insert, delete, select and update.

Key Concepts: Data Manipulation Language (DML),

Theory:

DATA MANIPULATION LANGUAGE (DML): The Data Manipulation Language (DML) is used to retrieve, insert and modify database information. These commands will be used by all database users during the routine operation of the database. Let's take a brief look at the basic DML commands:

1. INSERT **2. UPDATE** **3. DELETE**

1. INSERT INTO: This is used to add records into a relation. These are three type of INSERT INTO queries which are as

a) Inserting a single record

Syntax: INSERT INTO < relation/table name> (field_1,field_2……field_n)VALUES (data_1,data_2,. ..... data_n);

Example: SQL>INSERT INTO student(sno,sname,class,address)VALUES (1,'Ravi','M.Tech','Palakol');

b) Inserting a single record

Syntax: INSERT INTO < relation/table name>VALUES (data_1,data_2,. ..... data_n);

Example: SQL>INSERT INTO student VALUES (1,'Ravi','M.Tech','Palakol');

c) Inserting all records from another relation

Syntax: INSERT INTO relation_name_1 SELECT Field_1,field_2,field_n FROM relation_name_2 WHERE field_x=data;

Example: SQL>INSERT INTO std SELECT sno,sname FROM student WHERE name = 'Ramu';

2. UPDATE-SET-WHERE: This is used to update the content of a record in a relation.

Syntax: SQL>UPDATE relation name SET Field_name1=data,field_name2=data, WHERE field_name=data;

Example: SQL>UPDATE student SET sname = 'kumar' WHERE sno=1;

3. DELETE-FROM: This is used to delete all the records of a relation but it will retain the structure of that relation.

a) DELETE-FROM: This is used to delete all the records of relation.

Syntax: SQL>DELETE FROM relation_name;

Example: SQL>DELETE FROM std;

b) DELETE -FROM-WHERE: This is used to delete a selected record from a relation.

Syntax: SQL>DELETE FROM relation_name WHERE condition;

Example: SQL>DELETE FROM student WHERE sno = 2;

4. To Retrieve data from tables

SELECT-FROM-WHERE: This statement is used to display/ Retrieve / Fetch data from relation.

Syntax:

```
SELECT A1, A2, ...
FROM r1, r2, ...
WHERE P;
```

Where ri are the relations (tables) ¤ Ai are attributes (columns) ¤ P is the selection predicate

Example: SQL> select deptno, dname, loc FROM dept WHERE deptno<=20;

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS

Data Retrieval using IN

Syntax:
```
select * from Table_name
where column_name [NOT] IN (Value1, value2,....., valuen);
```

Example: SELECT FIRST_NAME, LAST_NAME, DEPARTMENT_ID FROM EMPLOYEES WHERE DEPARTMENT_ID **IN** (100, 110, 120);

Data Retrieval using LIKE

Syntax:
```
select * from Table_name
where column_name [NOT] LIKE pattern;
```

Example: SELECT FIRST_NAME, LAST_NAME FROM EMPLOYEES WHERE LAST_NAME LIKE '%Ma%';;

Data Retrieval using IS NULL

Syntax:
```
select * from Table_name
where column_name IS NULL;
```

LAB WORK:

Q1. Perform following queries on bank database:

1. Insert an account A-978245 at the Park Street branch and that is has a balance of Rs. 12000.
2. Insert an customer Ram who live in street is main street and city is Ichalkarnji
3. Insert at least 5 rows in each table
4. Change the assests of Perryridge branch to 3400
5. Add 2% interest to all bank account balances with a balance of 500 or less
6. Transfer the accounts and loans of Perryridge branch to Downtown branch
7. Transfer Rs. 100 from account A-101 to A-215.
8. Delete the branch Perryridge
9. Remove all the customer who live in “Downtown”
10. Remove all the accounts
11. List all branch names and their assests
12. List all loans with amount greater than 1000.
13. Find bank accounts with a balance under 700
14. List all accounts of Perryridge branch with balance less than1000
15. Find the names of all branches in the loan relation
16. Find all loan numbers for loans made at the Park Street branch with loan amounts greater that Rs. 10000.
17. Find the loan number of those loans with loan amounts between Rs. 10000 and Rs. 50000
18. Find the names of all customers.
19. Find the names of all branches in the loan relation, don't display duplicates.
20. Display the entire Branch table.
21. Find the account number for all accounts where the balance is greater than $700.
22. Find the account number and balance for all accounts from Brighton where the balance is greater than 800.
23. Display the branch name and assets from all branches in thousands of dollars and rename the assets column to 'assets in thousands'.
24. Find the name of all branches with assets between one and four million dollars.
25. Find the names of all customers whose street address includes the substring ‘Main’.
26. List all Accounts where the Bank_Branch begins with a ‘C’ and has ‘a’ as the second character
27. List all Accounts where the Bank_Branch column has ‘a’ as the second character and has at least 3 character.
28. Find all loan numbers that appear in the loan relation with null values for amount.