Vidyavardhini's College of Engineering and Technology, Vasai

Department of Artificial Intelligence & Data Science

**AY: 2024-25**

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|---|---|---|---|
| **Class:** | **SE** | **Semester:** | **IV** |
| **Course Code:** | **CSL402** | **Course Name:** | **DBMS Lab** |

| | |
|---|---|
| **Name of Student:** | **Shravani Sandeep Raut** |
| **Roll No. :** | **48** |
| **Experiment No.:** | **4** |
| **Title of the Experiment:** | **Apply DML commands for the specified system** |
| **Date of Performance:** | **12/02/2025** |
| **Date of Submission:** | **05/03/2025** |

## Evaluation

| Performance Indicator | Max. Marks | Marks Obtained |
|---|---|---|
| Performance | 5 | |
| Understanding | 5 | |
| Journal work and timely submission | 10 | |
| Total | 20 | |

| Performance Indicator | Exceed Expectations (EE) | Meet Expectations (ME) | Below Expectations (BE) |
|---|---|---|---|
| Performance | 4-5 | 2-3 | 1 |
| Understanding | 4-5 | 2-3 | 1 |
| Journal work and timely submission | 8-10 | 5-8 | 1-4 |

**Checked by**

**Name of Faculty : Ms. Neha Raut**

**Signature :**

**Date:**

**Aim :-** Write insert query to insert rows for each table created of your database management system. Use update and delete commands to manipulate the inserted values in the table.

**Objective :-** To learn commands of Data Manipulation Language(DML) to insert, update or delete the values in the database system.

## Theory:

Data Manipulation Language (DML) is a subset of SQL (Structured Query Language) used for managing data within relational database management systems (RDBMS). DML commands are used to perform operations such as inserting, updating, and deleting data from database tables.

1. Inserting Data

The INSERT statement is used to add new rows of data into a table. It specifies the table to insert data into and provides values or expressions for each column in the new row. If a column list is not specified, values must be provided for all columns in the table in the order they were defined.

Syntax:-

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

2. Updating Data

The UPDATE statement is used to modify existing data within a table. It allows you to change the values of one or more columns in one or more rows based on specified conditions. If no condition is specified, all rows in the table will be updated.

Syntax:

UPDATE table_name SET column1 = value1, column2 = value2 WHERE condition;

3. Deleting Data

The DELETE statement is used to remove one or more rows from a table based on specified conditions. If no condition is specified, all rows in the table will be deleted.

Syntax:

DELETE FROM table_name WHERE condition;

**Implementation**

```
use Student_mangement;


create table Student(
Student_ID int auto_increment primary key,
First_name varchar(20),
```

```
Middle_name varchar(20),
Last_name varchar(20),
DOB date,
Address varchar(100),
Stud_Email varchar(45)
);

create table Student_PhoneNumber(
Student_ID int,
PhoneNumber varchar(15),
foreign key (Student_ID) references Student(Student_ID)
);

create table Course(
Course_Id int primary key auto_increment,
Course_Name varchar(15),
Credits int
);

create table Marks(
Student_ID int,
Marks_Obtained int,
Total int,
Grade varchar(5),
Result varchar(10),
foreign key (Student_ID) references Student(Student_ID)
);

create table Department(
```

```
Dept_ID int primary key,
Dept_Name varchar(30),
Established_Year varchar(10)
);

create table Faculty(
Faculty_Id int primary key,
First_Name varchar(20),
Middle_name varchar(20),
Last_name varchar(20),
Dept_ID int,
foreign key (Dept_ID) references Department(Dept_ID),
Course_Id int,
foreign key (Course_Id) references Course(Course_Id),
Email varchar(20)
);

create table Faculty_Phone(
Faculty_Id int,
Phone varchar(15),
foreign key (Faculty_Id) references Faculty(Faculty_Id)
);

alter table Student
add column Course_Id int;

alter table Student
add foreign key (Course_Id) references Course(Course_Id);
```

```
alter table Course
add column Dept_ID int,
add foreign key (Dept_ID) references Department(Dept_ID);

rename table Marks to Student_Marks;

insert into Department values(1001, "Artificial intelligence", "2003");
insert into Department values(1002, "Information Technology", "1997");
insert into Department values(1003, "Computer Science", "2000");
insert into Department values(1004, "Civil Enginnering", "19982");

insert into Course values(101, "Mathematics", "3", 1001);
insert into Course values(102, "Mathematics", "3", 1002);
insert into Course values(103, "Mathematics", "3", 1003);
insert into Course values(104, "Mathematics", "3", 1004);
insert into Course values(105, "Mechanics", "3", 1003);
insert into Course values(106, "Mechanics", "3", 1004);
insert into Course values(107, "Graphics", "3", 1002);

insert into Student values (1, "Anjali", "Ninad", "Sharma", "2005-07-23", "122/ B wing ShantiKunj
Building, Vasai West", "anjali@gmail.com", 101);
insert into Student values (2, "Aaryan", "Dhruv", "Shetty", "2005-03-21", "222/ A wing KalaKutir
Building, Malad Eest", "aaryan@gmail.com", 101);
insert into Student values (3, "Nitya", "Sandy", "Raut", "2005-07-23", "522/ A wing ShantiKunj
Building, Vasai West", "rautns@gmail.com", 105);

insert into Student_Marks values (1, 560, 800, 'B', 'Pass');
insert into Student_Marks values (2, NULL, NULL, NULL, NULL);

insert into Student_PhoneNumber values (1, '+91 2345617882');
```

```
insert into Student_PhoneNumber values (2, '+91 7656772882');
insert into Student_PhoneNumber values (1, '+91 7656772882');

insert into Faculty values (01, "Aaradhya", "Kisan", "Rathi", 1001, 103, 'aaradhya@edu.in');
insert into Faculty values (02, "Nidhi", "Nihit", "Shart", 1002, 102, 'nidhinis@edu.in');

insert into Faculty_Phone values (01, '8997889992');
insert into Faculty_Phone values (02, '8997889992');
insert into Faculty_Phone values (01, '9996889992');

update Course
set Course_Name = 'Iot'
where Course_Id = 101;                    -- primary key

update Course
set Course_Name = 'Data Science'
where Course_Id in (102, 103, 104, 106);

update Department
set Established_Year = 1995
where Dept_Id = 1004;

delete from Student_Marks
where Student_ID = 2;

delete from Course
where Course_Id = 107;
```

**Conclusion**

## 1. Explain DML commands with syntax.

Data Manipulation Language (DML) is a subset of SQL (Structured Query Language) used for managing data within relational database management systems (RDBMS). DML commands are used to perform operations such as inserting, updating, and deleting data from database tables.

1**. Inserting Data**

The INSERT statement is used to add new rows of data into a table.

Syntax:-

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

**2. Updating Data**

The UPDATE statement is used to modify existing data within a table.

Syntax:

UPDATE table_name SET column1 = value1, column2 = value2 WHERE condition;

**3. Deleting Data**

The DELETE statement is used to remove one or more rows from a table based on specified conditions. If no condition is specified, all rows in the table will be deleted.

Syntax:

DELETE FROM table_name WHERE condition;

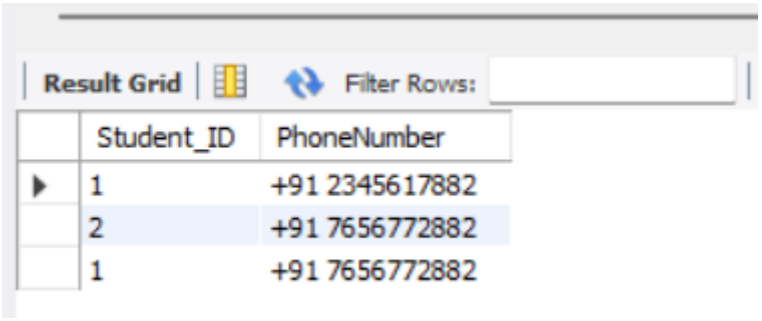
## 2. Show results of operations performed.

### Student

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

| Student_ID | First_name | Middle_name | Last_name | DOB | Address | Stud_Email | Course_Id |
|---|---|---|---|---|---|---|---|
| 1 | Anjali | Ninad | Sharma | 2005-07-23 | 122/ B wing ShantiKunj Building, Vasai West | anjali@gmail.com | 101 |
| 2 | Aaryan | Dhruv | Shetty | 2005-03-21 | 222/ A wing KalaKutir Building, Malad Eest | Aaryan@gmail.com | 101 |
| 3 | Nitya | Sandy | Raut | 2005-07-23 | 522/ A wing ShantiKunj Building, Vasai West | rautns@gmail.com | 105 |
| NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL |

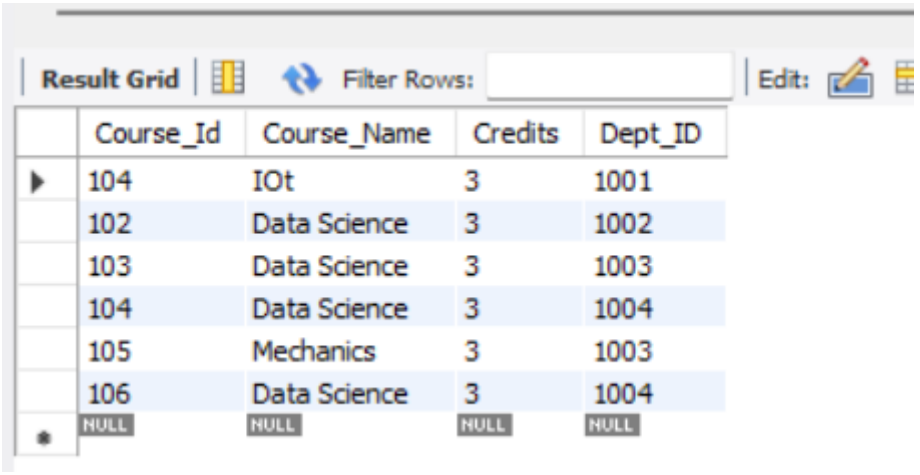
**Student_PhoneNumber**



Result Grid | Filter Rows:

| Student_ID | PhoneNumber |
|---|---|
| 1 | +91 2345617882 |
| 2 | +91 7656772882 |
| 1 | +91 7656772882 |

**Course**



Result Grid | Filter Rows: | Edit:

| Course_Id | Course_Name | Credits | Dept_ID |
|---|---|---|---|
| 104 | IOt | 3 | 1001 |
| 102 | Data Science | 3 | 1002 |
| 103 | Data Science | 3 | 1003 |
| 104 | Data Science | 3 | 1004 |
| 105 | Mechanics | 3 | 1003 |
| 106 | Data Science | 3 | 1004 |
| NULL | NULL | NULL | NULL |

**Department**

Result Grid | Filter Rows: | Edit:

| Dept_ID | Dept_Name | Established_Year |
|---|---|---|
| 1001 | Artificial intelligence | 2003 |
| 1002 | Information Technology | 1997 |
| 1003 | Computer Science | 2000 |
| 1004 | Civil Enginnering | 1995 |
| NULL | NULL | NULL |

**Stud_Marks**

Result Grid | Filter Rows: | Export:

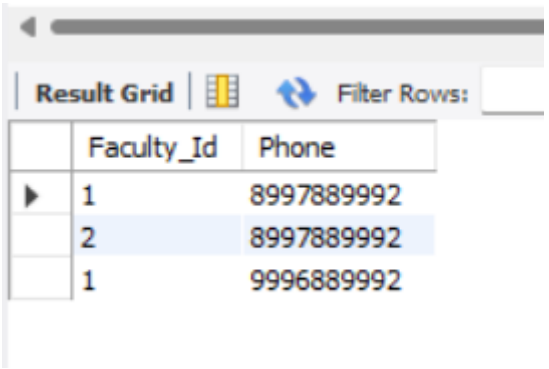
| Student_ID | Marks_Obtained | Total | Grade | Result |
|---|---|---|---|---|
| 1 | 560 | 800 | B | Pass |

**Faculty**

Result Grid | Filter Rows: | Edit: | Export/Import:

| Faculty_Id | First_Name | Middle_name | Last_name | Dept_ID | Course_Id | Email |
|---|---|---|---|---|---|---|
| 1 | Aaradhya | Kisan | Rathi | 1001 | 103 | aaradhya@edu.in |
| 2 | Nidhi | Nihit | Shart | 1002 | 102 | nidhinis@edu.in |
| NULL | NULL | NULL | NULL | NULL | NULL | NULL |

**Faculty_Phone**



Result Grid | Filter Rows:

| Faculty_Id | Phone |
|---|---|
| 1 | 8997889992 |
| 2 | 8997889992 |
| 1 | 9996889992 |