## ****DML (Data Manipulation Language) USING MySql****

1. ****Insert**  insert into statement is used to add value into database table**
   1. **Insert a single row**

**Syntax:**

**INSERT INTO table\_name (column1, column2, column3, ...)  
VALUE (value1, value2, value3, ...);**

* 1. **Insert a multiple rows**

**Syntax :**

**INSERT INTO table\_name (column1, column2, column3, ...)  
 VALUES (value1, value2, value3, ...);**

**Example :**

**insert into Dept(dept\_id,dept\_name) value (1,”maths”);**

**insert into Dept(dep\_id,dept\_name) values**

**(2,”social”),**

**(3,”computer science”),**

**(4,”English”);**

1. ****Update****

**Update statements is used to modify the existing records in table.**

**Add condition to modify a specific values else entire row will get changed**

**Syntax :**

**UPDATE table\_name  
 SET column1 = value1, column2 = value2, ...  
 WHERE condition;**

**Example :**

**UPDATE Dept**

**SET dept\_name = “commerce”**

**WHERE dept\_id = 2;**

1. ****Delete****

The DELETE statement is used to delete existing records in a table.

Syntax :**DELETE FROM table\_name WHERE condition;**

Example : **DELETE FROM Dept WHERE dept\_id = 2;**

To delete all records :**DELETE FROM table\_name;**

**Example :**

Step 1: create database

**CREATE DATABASE lfschool;**

Step 2: select database

**USE lfschool;**

Step 3: create table to store student details

**CREATE TABLE std\_details(**

**id INT PRIMARY KEY,**

**std\_name VARCHAR(200) NOT NULL,**

**std\_email VARCHAR(400) UNIQUE,**

**std\_dob DATE NOT NULL,**

**std\_age INT CHECK ( std\_age >= 17) ,**

**std\_gen VARCHAR(50) CHECK (std\_gen IN ('M','F') ),**

**std\_sub INT**

**);**

Step 4: create table to store subject details

**CREATE TABLE sub\_details(**

**sub\_id INT PRIMARY KEY,**

**sub\_name VARCHAR(200)**

**);**

Step 5: alter table std\_details to add foreign key

**ALTER TABLE std\_details**

**ADD CONSTRAINT fk\_std\_sub**

**FOREIGN KEY (std\_sub) REFERENCES sub\_details(sub\_id);**

Step 6: insert values to sub\_details

**INSERT INTO sub\_details(sub\_id,sub\_name) VALUES**

**(1,"maths"),**

**(2,"science"),**

**(3,"english"),**

**(4,"computer science"),**

**(5,"arts");**

Step 7:insert details std\_details

**INSERT INTO std\_details(id,std\_name,std\_email,std\_dob,std\_age,std\_gen,std\_sub) VALUES**

**(1,"alan","alan@gmail.com",'2001-01-01',23,"M",1),**

**(2,"amal","amal@gmail.com",'2001-02-01',23,"M",2),**

**(3,"anju","anju@gmail.com",'2000-01-13',24,"F",3),**

**(4,"achu","achu@gmail.com",'2002-10-01',22,"F",4),**

**(5,"joy","joy@gmail.com",'2003-12-01',21,"M",5),**

**[(6,"alan","alanjoy@gmail.com",'2001-01-01',18,"M",1);](mailto:(6,\"alan\",\"alanjoy@gmail.com\",'2001-01-01',18,\"M\",1);)**

Step 8: update a row

**UPDATE std\_details**

**SET std\_name = "joyalan" , std\_email = "joyalan@gmail.com"**

**WHERE id = 6 ;**

Step 9: delete a row

**DELETE FROM std\_details**

**WHERE id = 6;**

## ****DML (Data Manipulation Language) USING PYTHON****

1. **INSERT**
   * 1. insert a single value

**import mysql.connector  
  
mydb = mysql.connector.connect(  
  host="localhost",  
  user="yourusername",  
  password="yourpassword",  
  database="mydatabase"  
)  
  
mycursor = mydb.cursor()  
  
sql = "INSERT INTO customers (name, address) VALUES (%s, %s)"  
val = ("John", "Highway 21")  
mycursor.execute(sql, val)  
 **mydb.**commit**()**  
print(mycursor.rowcount, "record inserted.")**

* + 1. insert multiple value

**import mysql.connector  
  
mydb = mysql.connector.connect(  
  host="localhost",  
  user="yourusername",  
  password="yourpassword",  
  database="mydatabase"  
)  
  
mycursor = mydb.cursor()  
  
sql = "INSERT INTO customers (name, address) VALUES (%s, %s)"  
val = [  
  ('Peter', 'Lowstreet 4'),  
  ('Amy', 'Apple st 652'),  
  ('Hannah', 'Mountain 21'),  
  ('Michael', 'Valley 345'),  
  ('Sandy', 'Ocean blvd 2'),  
  ('Betty', 'Green Grass 1')  
]  
  
mycursor.executemany(sql, val)  
  
mydb.commit()  
  
print(mycursor.rowcount, "was inserted.")**

1. **UPDATE** 
   * 1. using query

**import mysql.connector  
  
mydb = mysql.connector.connect(  
  host="localhost",  
  user="yourusername",  
  password="yourpassword",  
  database="mydatabase"  
)  
  
mycursor = mydb.cursor()  
  
sql = "UPDATE customers SET address = 'Canyon 123' WHERE address = 'Valley 345'"  
  
mycursor.execute(sql)  
  
mydb.commit()  
  
print(mycursor.rowcount, "record(s) affected")**

* + 1. using sql injection

**import mysql.connector  
   
mydb = mysql.connector.connect(  
  host="localhost",  
  user="yourusername",  
  password="yourpassword",  
  database="mydatabase"  
)  
  
mycursor = mydb.cursor()  
  
sql = "UPDATE customers SET address = %s WHERE address = %s"  
val = ("Valley 345", "Canyon 123")  
  
mycursor.execute(sql, val)  
  
mydb.commit()  
  
print(mycursor.rowcount, "record(s) affected")**

1. **DELETE**
   * 1. delete using query

**import mysql.connector  
  
mydb = mysql.connector.connect(  
  host="localhost",  
  user="yourusername",  
  password="yourpassword",  
  database="mydatabase"  
)  
  
mycursor = mydb.cursor()  
  
sql = "DELETE FROM customers WHERE address = 'Mountain 21'"  
  
mycursor.execute(sql)  
  
mydb.commit()  
  
print(mycursor.rowcount, "record(s) deleted")**

* + 1. delete using sql injection

**import mysql.connector  
  
mydb = mysql.connector.connect(  
  host="localhost",  
  user="yourusername",  
  password="yourpassword",  
  database="mydatabase"  
)  
  
mycursor = mydb.cursor()  
  
sql = "DELETE FROM customers WHERE address = %s"  
adr = ("Yellow Garden 2", )  
  
mycursor.execute(sql, adr)  
  
mydb.commit()  
  
print(mycursor.rowcount, "record(s) deleted")**