**Lab Exercise 2 - Practicing DDL and DML Commands in MySQL**

**Objective:**

To understand and perform **DDL (Data Definition Language)** and **DML (Data Manipulation Language)** operations in MySQL.

**Software Required:**

* MySQL Server (or MySQL Workbench / phpMyAdmin)
* Any SQL client or terminal

**Part A: DDL Commands (Data Definition Language)**

**Task 1: Create a Database**

CREATE DATABASE CompanyDB;

USE CompanyDB;

**Task 2: Create Tables**

CREATE TABLE Department (

dept\_id INT PRIMARY KEY,

dept\_name VARCHAR(50) NOT NULL

);

CREATE TABLE Employee (

emp\_id INT PRIMARY KEY,

emp\_name VARCHAR(50),

emp\_email VARCHAR(100),

emp\_salary DECIMAL(10,2),

emp\_join\_date DATE,

dept\_id INT,

FOREIGN KEY (dept\_id) REFERENCES Department(dept\_id)

);

**Task 3: Alter Table**

Add a new column emp\_phone to the Employee table:

ALTER TABLE Employee ADD emp\_phone CHAR(10);

**Task 4: Rename a Column**

Rename emp\_email to email:

ALTER TABLE Employee CHANGE emp\_email email VARCHAR(100);

**Task 5: Drop a Column**

Drop the emp\_phone column:

ALTER TABLE Employee DROP COLUMN emp\_phone;

**Part B: DML Commands (Data Manipulation Language)**

**Task 6: Insert Data**

**Insert into Department Table:**

INSERT INTO Department (dept\_id, dept\_name) VALUES

(1, 'Human Resources'),

(2, 'Finance'),

(3, 'Engineering');

**Insert into Employee Table:**

INSERT INTO Employee (emp\_id, emp\_name, email, emp\_salary, emp\_join\_date, dept\_id) VALUES

(101, 'Alice', 'alice@company.com', 60000.00, '2022-01-15', 1),

(102, 'Bob', 'bob@company.com', 70000.00, '2021-03-20', 3),

(103, 'Charlie', 'charlie@company.com', 65000.00, '2023-06-10', 2);

**Task 7: Update Data**

Update salary of employee Alice:

UPDATE Employee SET emp\_salary = 62000.00 WHERE emp\_id = 101;

**Task 8: Delete Data**

Delete employee with ID 103:

DELETE FROM Employee WHERE emp\_id = 103;

**Part C: Querying the Data**

**Task 9: Retrieve All Employees**

SELECT \* FROM Employee;

**Task 10: Find Employees in 'Engineering' Department**

SELECT emp\_name, emp\_salary

FROM Employee

JOIN Department ON Employee.dept\_id = Department.dept\_id

WHERE dept\_name = 'Engineering';

**Task 11: Display Employees with Salary Greater than 60000**

SELECT emp\_name, emp\_salary FROM Employee WHERE emp\_salary > 60000;

**Learning Outcomes:**

By the end of this lab, you should be able to:

* Use DDL commands to define and modify database structures
* Use DML commands to insert, update, and delete records
* Write SQL queries to retrieve and join data
* Understand database relationships using foreign keys