

## DDL – Create Employee Database & Tables

```
mysql> CREATE DATABASE EmployeeDB;
Query OK, 1 row affected (0.14 sec)

mysql> USE EmployeeDB;
Database changed
mysql> CREATE TABLE Department(
    -> DeptID INT PRIMARY KEY,
    -> DeptName VARCHAR(50) NOT NULL
    -> );
Query OK, 0 rows affected (0.12 sec)

mysql> CREATE TABLE Employee (
    -> EmpID INT PRIMARY KEY,
    -> EmpName VARCHAR(50) NOT NULL,
    -> Salary INT CHECK (Salary > 0),
    -> DeptID INT,
    -> Email VARCHAR(50) UNIQUE,
    -> FOREIGN KEY (DeptID) REFERENCES Department(DeptID)
    -> );
Query OK, 0 rows affected (0.09 sec)
```

## DML – Insert, Select, Update, Delete

```
mysql> INSERT INTO Department VALUES (1, 'HR');
Query OK, 1 row affected (0.03 sec)

mysql> INSERT INTO Department VALUES (2, 'IT');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Employee VALUES (101, 'Divij', 30000, 2, 'divij@gmail.com');
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO Employee VALUES (102, 'Rahul', 25000, 1, 'rahul@gmail.com');
Query OK, 1 row affected (0.02 sec)

mysql> SELECT * FROM Employee;
+-----+-----+-----+-----+-----+
| EmpID | EmpName | Salary | DeptID | Email      |
+-----+-----+-----+-----+-----+
|   101 | Divij   | 30000 |       2 | divij@gmail.com |
|   102 | Rahul   | 25000 |       1 | rahul@gmail.com |
+-----+-----+-----+-----+
2 rows in set (0.02 sec)
```

```
mysql> UPDATE Employee SET Salary = 35000 WHERE EmpID = 101;
Query OK, 1 row affected (0.03 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> DELETE FROM Employee WHERE EmpID = 102;
Query OK, 1 row affected (0.02 sec)
```

## DCL – Grant & Revoke Permissions

```
mysql> GRANT SELECT, INSERT ON Employee TO user1;
ERROR 1410 (42000): You are not allowed to create a user with GRANT
mysql> REVOKE INSERT ON Employee FROM user1;
ERROR 1147 (42000): There is no such grant defined for user 'user1' on host '%' on table 'employee'
mysql> START TRANSACTION;
Query OK, 0 rows affected (0.00 sec)
```

## TCL – Transaction Control

```
mysql> INSERT INTO Employee VALUES (103, 'Anita', 28000, 1, 'anita@gmail.com');
Query OK, 1 row affected (0.00 sec)

mysql> SAVEPOINT sp1;
Query OK, 0 rows affected (0.00 sec)

mysql> UPDATE Employee SET Salary = 30000 WHERE EmpID = 103;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> ROLLBACK TO sp1;
Query OK, 0 rows affected (0.01 sec)

mysql> COMMIT;
Query OK, 0 rows affected (0.02 sec)
```

## Joins – Employee & Department

```
mysql> SELECT EmpName, Salary, DeptName
-> FROM Employee
-> INNER JOIN Department
-> ON Employee.DeptID = Department.DeptID;
+-----+-----+-----+
| EmpName | Salary | DeptName |
+-----+-----+-----+
| Anita   | 28000 | HR      |
| Divij   | 35000 | IT      |
+-----+-----+-----+
2 rows in set (0.01 sec)

mysql> SELECT EmpName, DeptName
-> FROM Employee
-> LEFT JOIN Department
-> ON Employee.DeptID = Department.DeptID;
+-----+-----+
| EmpName | DeptName |
+-----+-----+
| Divij   | IT       |
| Anita   | HR       |
+-----+-----+
2 rows in set (0.01 sec)
```

## Trigger – Salary Check Message

```
mysql> DELIMITER //
mysql> CREATE TRIGGER salary_check
-> BEFORE INSERT ON Employee
-> FOR EACH ROW
-> BEGIN
-> IF NEW.Salary < 10000 THEN
-> SIGNAL SQLSTATE '45000'
-> SET MESSAGE_TEXT = 'Salary must be greater than 10000';
-> END IF;
-> END;
-> //
Query OK, 0 rows affected (0.03 sec)
```

## SQL CLAUSES (Employee Database)

```
SELECT * FROM Employee
WHERE Salary > 3' at line 1
mysql> SELECT * FROM Employee
      -> WHERE Salary > 30000;
+-----+-----+-----+-----+
| EmpID | EmpName | Salary | DeptID | Email          |
+-----+-----+-----+-----+
|   101 | Divij    | 35000 |       2 | divij@gmail.com |
+-----+-----+-----+-----+
1 row in set (0.02 sec)

mysql> SELECT EmpName, Salary FROM Employee;
+-----+-----+
| EmpName | Salary |
+-----+-----+
| Divij   | 35000 |
| Anita   | 28000 |
+-----+-----+
2 rows in set (0.00 sec)

mysql> SELECT * FROM Employee;
+-----+-----+-----+-----+
| EmpID | EmpName | Salary | DeptID | Email          |
+-----+-----+-----+-----+
|   101 | Divij    | 35000 |       2 | divij@gmail.com |
|   103 | Anita    | 28000 |       1 | anita@gmail.com |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM Employee
    -> ORDER BY Salary;
+-----+-----+-----+-----+-----+
| EmpID | EmpName | Salary | DeptID | Email      |
+-----+-----+-----+-----+-----+
|   103 | Anita   | 28000 |      1 | anita@gmail.com |
|   101 | Divij    | 35000 |      2 | divij@gmail.com |
+-----+-----+-----+-----+
2 rows in set (0.01 sec)

mysql> SELECT * FROM Employee
    -> ORDER BY Salary DESC;
+-----+-----+-----+-----+-----+
| EmpID | EmpName | Salary | DeptID | Email      |
+-----+-----+-----+-----+-----+
|   101 | Divij    | 35000 |      2 | divij@gmail.com |
|   103 | Anita   | 28000 |      1 | anita@gmail.com |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> SELECT DeptID, COUNT(*) AS TotalEmployees
    -> FROM Employee
    -> GROUP BY DeptID;
+-----+-----+
| DeptID | TotalEmployees |
+-----+-----+
|      1 |              1 |
|      2 |              1 |
+-----+-----+
2 rows in set (0.02 sec)
```

```
mysql> SELECT DeptID, AVG(Salary) AS AvgSalary
-> FROM Employee
-> GROUP BY DeptID
-> HAVING AVG(Salary) > 30000;
+-----+-----+
| DeptID | AvgSalary |
+-----+-----+
|      2 | 35000.0000 |
+-----+-----+
1 row in set (0.01 sec)

mysql> SELECT DISTINCT DeptID FROM Employee;
+-----+
| DeptID |
+-----+
|      1 |
|      2 |
+-----+
2 rows in set (0.00 sec)

mysql> SELECT * FROM Employee
-> LIMIT 3;
+-----+-----+-----+-----+-----+
| EmpID | EmpName | Salary | DeptID | Email      |
+-----+-----+-----+-----+-----+
|   101 | Divij    | 35000  |      2 | divij@gmail.com |
|   103 | Anita    | 28000  |      1 | anita@gmail.com |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM Employee
-> WHERE EmpName LIKE 'D%';
+-----+-----+-----+-----+
| EmpID | EmpName | Salary | DeptID | Email      |
+-----+-----+-----+-----+
|   101 | Divij   | 35000 |       2 | divij@gmail.com |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> SELECT * FROM Employee
-> WHERE DeptID IN (1, 2);
+-----+-----+-----+-----+
| EmpID | EmpName | Salary | DeptID | Email      |
+-----+-----+-----+-----+
|   103 | Anita   | 28000 |       1 | anita@gmail.com |
|   101 | Divij   | 35000 |       2 | divij@gmail.com |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> SELECT * FROM Employee
-> WHERE Salary BETWEEN 20000 AND 40000;
+-----+-----+-----+-----+
| EmpID | EmpName | Salary | DeptID | Email      |
+-----+-----+-----+-----+
|   101 | Divij   | 35000 |       2 | divij@gmail.com |
|   103 | Anita   | 28000 |       1 | anita@gmail.com |
+-----+-----+-----+-----+
2 rows in set (0.01 sec)
```

```
mysql> SELECT * FROM Employee
-> WHERE DeptID IS NULL;
Empty set (0.01 sec)
```