

Experiment No. 8

Problem Statement:

Execute DDL/DML statements which demonstrate the use of views. Update the base table using its corresponding view. Also consider restrictions on updatable views and perform view creation from multiple tables.

Objective:

Learn and practice the creation of views, updating base tables through views, and creating views from multiple tables.

Instructions:

- Open your preferred SQL environment (e.g., MySQL Workbench, SQL Server Management Studio).
- Create a new database (if not already existing) and use it.

Theory:

Step 1: Create a Simple View

1. **Objective:** Create a basic view on the 'employees' table.
2. **DDL Statement:**

-- Creating a view that selects specific columns from the 'employees' table

```
CREATE VIEW employee_view AS SELECT employee_id, first_name, last_name, salary  
FROM employees;
```

3. **Verification:**

- Execute a **SELECT * FROM employee_view;** statement to verify the view has been created.

Step 2: Update Base Table Through the View

1. **Objective:** Update the salary of an employee through the view.
2. **DML Statement:**

-- Updating the salary of an employee through the view

```
UPDATE employee_view SET salary = 60000 WHERE employee_id = 101;
```

3. Verification:

- Execute a **SELECT * FROM employees WHERE employee_id = 101;** statement to verify the update.

Step 3: Consider Restrictions on Updatable Views

1. **Objective:** Understand restrictions on updatable views.

2. Explanation:

- Views with complex queries involving multiple tables, aggregates, or subqueries might not be directly updatable.

Step 4: Create a View from Multiple Tables

1. **Objective:** Create a view that combines data from 'employees' and 'departments' tables.

2. DDL Statement:

-- Creating a view that combines data from 'employees' and 'departments' tables

```
CREATE VIEW employee_department_view AS SELECT e.employee_id, e.first_name,  
e.last_name, e.salary, d.department_name FROM employees e JOIN departments d ON  
e.department_id = d.department_id;
```

3. Verification:

- Execute a **SELECT * FROM employee_department_view;** statement to verify the view.

Step 5: Update Base Tables Through the View with a JOIN

1. **Objective:** Update the salary of an employee through the view that involves a JOIN.

2. DML Statement:

-- Updating the salary of an employee through the view with a

```
JOIN UPDATE employee_department_view SET salary = 65000 WHERE employee_id = 102;
```

3. Verification:

- Execute a **SELECT * FROM employees WHERE employee_id = 102;** statement to verify the update.

Conclusion:

The lab covered the creation of views, updating base tables through views, and creating views from multiple tables. Understanding the limitations on updatable views and practicing with real-world scenarios enhances your SQL skills for database management.