Roll Number : 31413
Lab : DBMSL

Assignment 3

Aim : SQL queries all types of Join, Sub-Query and View: rite at least10 SQL queries for suitable database pplication using SQL DML statements

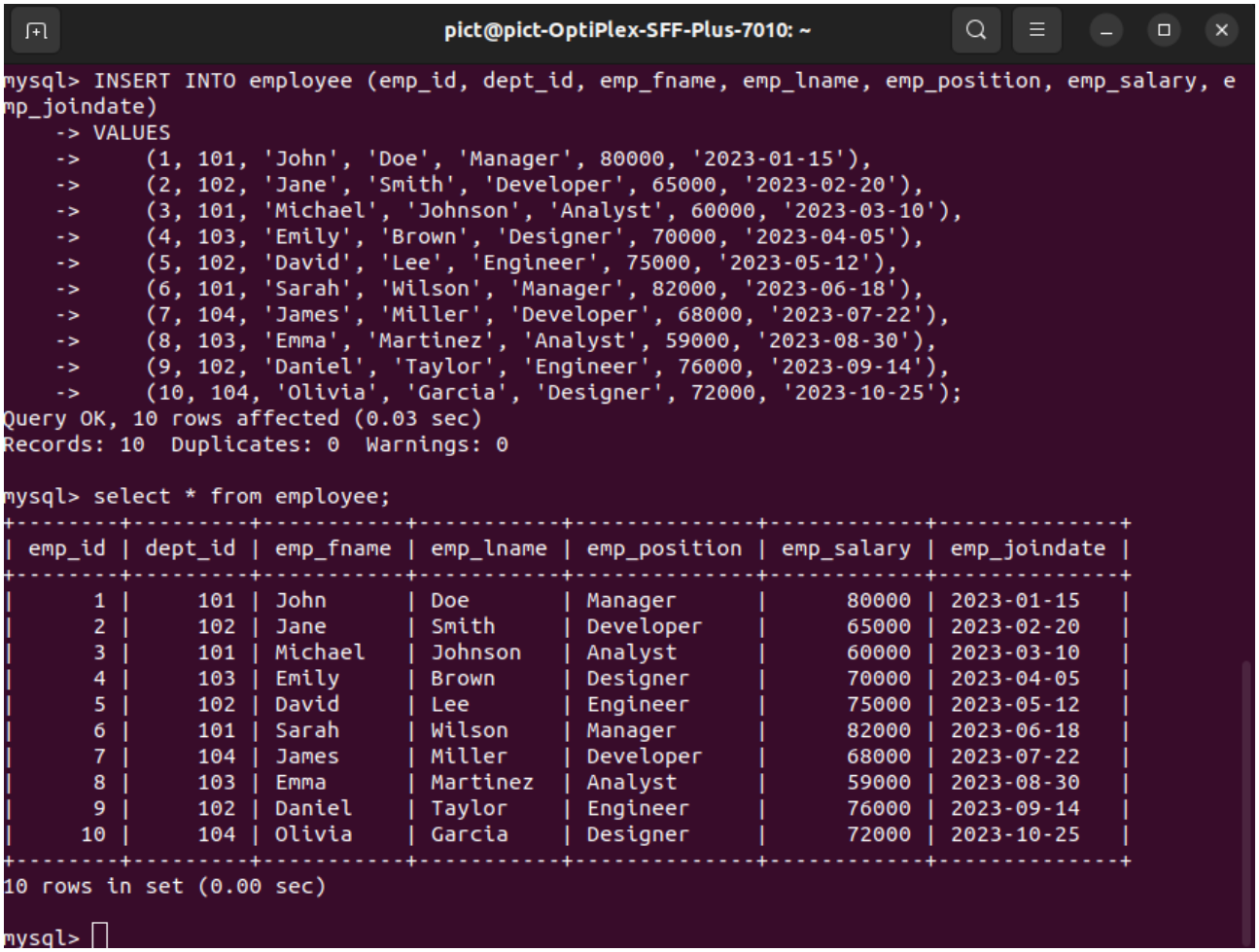
(Based on employee schema)
● Employee(Emp_id, Dept_id, Emp_fname, Emp_lname, Emp_Position, Emp_salary,Emp_JoinDate)
● Dept (Dept_id, Dept_name,location)
● Project(Proj_id,Dept_id ,Proj_Name,Proj_Location,Proj_cost,Proj_year)

Mysql>create table employee(emp_id int,dept_id int,emp_fname varchar(20),emp_lname varchar(20), emp_position varchar(20),emp_salary int,emp_joindate date);
Query OK, 0 rows affected (0.14 sec)

mysql> create table department(dept_id int,dept_name varchar(20),location varchar(20));
Query OK, 0 rows affected (0.28 sec)

mysql> create table project(proj_id int,proj_name varchar(20),proj_location varchar(20),proj_cost int,proj_year int);
Query OK, 0 rows affected (0.17 sec)

INSERT INTO employee (emp_id, dept_id, emp_fname, emp_lname, emp_position, emp_salary, emp_joindate) VALUES (1, 101, 'John', 'Doe', 'Manager', 80000, '2023-01-15'), (2, 102, 'Jane', 'Smith', 'Developer', 65000, '2023-02-20'), (3, 101, 'Michael', 'Johnson', 'Analyst', 60000, '2023-03-10'), (4, 103, 'Emily', 'Brown', 'Designer', 70000, '2023-04-05'), (5, 102, 'David', 'Lee', 'Engineer', 75000, '2023-05-12'), (6, 101, 'Sarah', 'Wilson', 'Manager', 82000, '2023-06-18'), (7, 104, 'James', 'Miller', 'Developer', 68000, '2023-07-22'), (8, 103, 'Emma', 'Martinez', 'Analyst', 59000, '2023-08-30'), (9, 102, 'Daniel', 'Taylor', 'Engineer', 76000, '2023-09-14'), (10, 104, 'Olivia', 'Garcia', 'Designer', 72000, '2023-10-25');



INSERT INTO department (dept_id, dept_name, location)
VALUES
(101, 'Engineering', 'New York'),
(102, 'Marketing', 'San Francisco'),
(103, 'Finance', 'Chicago'),
(104, 'Human Resources', 'Los Angeles'),
(105, 'Operations', 'Seattle'),
(106, 'Research and Development', 'Boston'),
(107, 'Sales', 'Dallas'),
(108, 'Customer Support', 'Houston'),
(109, 'Legal', 'Washington, D.C.'),
(110, 'IT', 'Atlanta');

```
mysql> INSERT INTO department (dept_id, dept_name, location) VALUES     (101, 'Engineering', 'N
ew York'),     (102, 'Marketing', 'San Francisco'),     (103, 'Finance', 'Chicago'),     (104,
'Human Resources', 'Los Angeles'),     (105, 'Operations', 'Seattle'),     (106, 'Research', 'B
oston'),     (107, 'Sales', 'Dallas'),     (108, 'Customer Support', 'Houston'),     (109, 'Leg
al', 'Washington, D.C.'),     (110, 'IT', 'Atlanta');
Query OK, 10 rows affected (0.04 sec)
Records: 10  Duplicates: 0  Warnings: 0

mysql> select * from department;
+---------+-----------------+-----------------+
| dept_id | dept_name       | location        |
+---------+-----------------+-----------------+
|     101 | Engineering     | New York        |
|     102 | Marketing       | San Francisco   |
|     103 | Finance         | Chicago         |
|     104 | Human Resources | Los Angeles     |
|     105 | Operations      | Seattle         |
|     106 | Research        | Boston          |
|     107 | Sales           | Dallas          |
|     108 | Customer Support | Houston        |
|     109 | Legal           | Washington, D.C. |
|     110 | IT              | Atlanta         |
+---------+-----------------+-----------------+
10 rows in set (0.00 sec)

mysql>
```

INSERT INTO project (proj_id, proj_name, proj_location, proj_cost, proj_year) VALUES (1, 'Project A', 'New York', 100000, 2023), (2, 'Project B', 'Los Angeles', 150000, 2022), (3, 'Project C', 'Chicago', 120000, 2024), (4, 'Project D', 'San Francisco', 180000, 2021), (5, 'Project E', 'Miami', 90000, 2025);

```
mysql> INSERT INTO project (proj_id, proj_name, proj_location, proj_cost, proj_year)
    -> VALUES
    ->     (1, 'Project A', 'New York', 100000, 2023),
    ->     (2, 'Project B', 'Los Angeles', 150000, 2022),
    ->     (3, 'Project C', 'Chicago', 120000, 2024),
    ->     (4, 'Project D', 'San Francisco', 180000, 2021),
    ->     (5, 'Project E', 'Miami', 90000, 2025);
Query OK, 5 rows affected (0.02 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> select * from project;
+---------+-----------+---------------+-----------+-----------+
| proj_id | proj_name | proj_location | proj_cost | proj_year |
+---------+-----------+---------------+-----------+-----------+
|       1 | Project A | New York      |    100000 |      2023 |
|       2 | Project B | Los Angeles   |    150000 |      2022 |
|       3 | Project C | Chicago       |    120000 |      2024 |
|       4 | Project D | San Francisco |    180000 |      2021 |
|       5 | Project E | Miami         |     90000 |      2025 |
+---------+-----------+---------------+-----------+-----------+
5 rows in set (0.00 sec)

mysql>
```

1) Find Employee details and Department details using NATURAL JOIN.
Query:
select * from employee natural join department;

```
mysql> select * from employee natural join department;
+---------+--------+-----------+-----------+--------------+------------+--------------+-----------------+---------------+
| dept_id | emp_id | emp_fname | emp_lname | emp_position | emp_salary | emp_joindate | dept_name       | location      |
+---------+--------+-----------+-----------+--------------+------------+--------------+-----------------+---------------+
|     101 |      1 | John      | Doe       | Manager      |      80000 | 2023-01-15   | Engineering     | New York      |
|     101 |      3 | Michael   | Johnson   | Analyst      |      60000 | 2023-03-10   | Engineering     | New York      |
|     101 |      6 | Sarah     | Wilson    | Manager      |      82000 | 2023-06-18   | Engineering     | New York      |
|     102 |      2 | Jane      | Smith     | Developer    |      65000 | 2023-02-20   | Marketing       | San Francisco |
|     102 |      5 | David     | Lee       | Engineer     |      75000 | 2023-05-12   | Marketing       | San Francisco |
|     102 |      9 | Daniel    | Taylor    | Engineer     |      76000 | 2023-09-14   | Marketing       | San Francisco |
|     103 |      4 | Emily     | Brown     | Designer     |      70000 | 2023-04-05   | Finance         | Chicago       |
|     103 |      8 | Emma      | Martinez  | Analyst      |      59000 | 2023-08-30   | Finance         | Chicago       |
|     104 |      7 | James     | Miller    | Developer    |      68000 | 2023-07-22   | Human Resources | Los Angeles   |
|     104 |     10 | Olivia    | Garcia    | Designer     |      72000 | 2023-10-25   | Human Resources | Los Angeles   |
+---------+--------+-----------+-----------+--------------+------------+--------------+-----------------+---------------+
10 rows in set (0.00 sec)

mysql>
```

2)Find the emp_fname,Emp_position,location,Emp_JoinDate who have same Dept id
query:
select e.emp_fname,e.emp_position,d.location,e.emp_joindate from employee e join department d on e.dept_id=d.dept_id;

```
mysql> select e.emp_fname,e.emp_position,d.location,e.emp_joindate from employee e join depa
rtment d on e.dept_id=d.dept_id;
+-----------+--------------+---------------+--------------+
| emp_fname | emp_position | location      | emp_joindate |
+-----------+--------------+---------------+--------------+
| John      | Manager      | New York      | 2023-01-15   |
| Michael   | Analyst      | New York      | 2023-03-10   |
| Sarah     | Manager      | New York      | 2023-06-18   |
| Jane      | Developer    | San Francisco | 2023-02-20   |
| David     | Engineer     | San Francisco | 2023-05-12   |
| Daniel    | Engineer     | San Francisco | 2023-09-14   |
| Emily     | Designer     | Chicago       | 2023-04-05   |
| Emma      | Analyst      | Chicago       | 2023-08-30   |
| James     | Developer    | Los Angeles   | 2023-07-22   |
| Olivia    | Designer     | Los Angeles   | 2023-10-25   |
+-----------+--------------+---------------+--------------+
10 rows in set (0.00 sec)

mysql>
```

3)Find the Employee details ,Proj_id,Project cost who does not have Project location as ‘Hyderabad’.
Query:
SELECT e.emp_fname, pd.proj_id, p.proj_cost FROM employee e JOIN project_details pd ON e.emp_id = pd.emp_id JOIN project p ON pd.proj_id = p.proj_id WHERE p.proj_location <> 'Hyderabad';

```
mysql> CREATE TABLE project_details (
    ->     emp_id INT,
    ->     proj_id INT
    -> );
Query OK, 0 rows affected (0.18 sec)

mysql> INSERT INTO project_details (emp_id, proj_id)
    -> VALUES
    ->     (1, 1),
    ->     (1, 2),
    ->     (2, 3),
    ->     (3, 4);
Query OK, 4 rows affected (0.03 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> select * from project_details;
+--------+---------+
| emp_id | proj_id |
+--------+---------+
|      1 |       1 |
|      1 |       2 |
|      2 |       3 |
|      3 |       4 |
+--------+---------+
4 rows in set (0.00 sec)

mysql>
```

```
mysql> SELECT e.emp_fname, pd.proj_id, p.proj_cost FROM employee e JOIN project_details pd O
N e.emp_id = pd.emp_id JOIN project p ON pd.proj_id = p.proj_id WHERE p.proj_location <> 'Hy
derabad';
+-----------+---------+-----------+
| emp_fname | proj_id | proj_cost |
+-----------+---------+-----------+
| John      |       1 |    100000 |
| John      |       2 |    150000 |
| Jane      |       3 |    120000 |
| Michael   |       4 |    180000 |
+-----------+---------+-----------+
4 rows in set (0.01 sec)

mysql>
```

4)Find Department Name ,employee name, Emp_position for which project year is 2020,

query:

UPDATE project SET dept_id = CASE proj_id WHEN 1 THEN 101 WHEN 2 THEN 102 WHEN 3 THEN 101 WHEN 4 THEN103 ELSE NULL END;

```
END' at line 1
mysql> UPDATE project SET dept_id = CASE proj_id WHEN 1 THEN 101 WHEN 2 THEN 102   WHEN 3 THEN 101 WHEN 4 THEN 103 ELSE NULL  END;
Query OK, 4 rows affected (0.04 sec)
Rows matched: 5  Changed: 4  Warnings: 0

mysql> select * from project;
+---------+---------+-----------+---------------+-----------+-----------+
| proj_id | dept_id | proj_name | proj_location | proj_cost | proj_year |
+---------+---------+-----------+---------------+-----------+-----------+
|       1 |     101 | Project A | New York      |    100000 |      2023 |
|       2 |     102 | Project B | Los Angeles   |    150000 |      2022 |
|       3 |     101 | Project C | Chicago       |    120000 |      2024 |
|       4 |     103 | Project D | San Francisco |    180000 |      2021 |
|       5 |    NULL | Project E | Miami         |     90000 |      2025 |
+---------+---------+-----------+---------------+-----------+-----------+
5 rows in set (0.01 sec)
```

```
pict@pict-OptiPlex-SFF-Plus-7010: ~
Rows matched: 5  Changed: 4  Warnings: 0

mysql> select * from project;
+---------+---------+-----------+---------------+-----------+-----------+
| proj_id | dept_id | proj_name | proj_location | proj_cost | proj_year |
+---------+---------+-----------+---------------+-----------+-----------+
|       1 |     101 | Project A | New York      |    100000 |      2023 |
|       2 |     102 | Project B | Los Angeles   |    150000 |      2022 |
|       3 |     101 | Project C | Chicago       |    120000 |      2024 |
|       4 |     103 | Project D | San Francisco |    180000 |      2021 |
|       5 |    NULL | Project E | Miami         |     90000 |      2025 |
+---------+---------+-----------+---------------+-----------+-----------+
5 rows in set (0.01 sec)

mysql> select e.emp_fname, e.emp_position ,d.dept_name from employee e join department d on e.dep
t_id= d.dept_id join project p on p.dept_id=d.dept_id where p.proj_year in(2022,2024);
+-----------+--------------+-------------+
| emp_fname | emp_position | dept_name   |
+-----------+--------------+-------------+
| John      | Manager      | Engineering |
| Michael   | Analyst      | Engineering |
| Sarah     | Manager      | Engineering |
| Jane      | Developer    | Marketing   |
| David     | Engineer     | Marketing   |
| Daniel    | Engineer     | Marketing   |
+-----------+--------------+-------------+
```

5)Display emp_position,D_name who have Project cost >30000
query:
select e.emp_position, d.dept_name from employee e right join department d on e.dept_id=d.dept_id join project p on p.dept_id=d.dept_id where p.proj_cost>100000;

```
mysql> select e.emp_position, d.dept_name from employee e right join department d on e.
dept_id=d.dept_id join project p on p.dept_id=d.dept_id where p.proj_cost>100000;
+--------------+-------------+
| emp_position | dept_name   |
+--------------+-------------+
| Manager      | Engineering |
| Developer    | Marketing   |
| Analyst      | Engineering |
| Designer     | Finance     |
| Engineer     | Marketing   |
| Manager      | Engineering |
| Analyst      | Finance     |
| Engineer     | Marketing   |
+--------------+-------------+
8 rows in set (0.01 sec)

mysql>
```

6)ind the names of all the Projects that started in the year 2015.
query:
select * from project where proj_year=2024;

```
mysql> select * from project where proj_year=2024;
+---------+---------+-----------+---------------+-----------+-----------+
| proj_id | dept_id | proj_name | proj_location | proj_cost | proj_year |
+---------+---------+-----------+---------------+-----------+-----------+
|       3 |     101 | Project C | Chicago       |    120000 |      2024 |
+---------+---------+-----------+---------------+-----------+-----------+
1 row in set (0.00 sec)

mysql>
```

7)List the Dept_name having no_of_emp=10
query:
select d.dept_name from department d inner join employee e on d.dept_id=e.dept_id;

```
mysql> select d.dept_name from department d inner join employee e on d.dept_id=e.dept_i
d;
+-----------------+
| dept_name       |
+-----------------+
| Engineering     |
| Marketing       |
| Engineering     |
| Finance         |
| Marketing       |
| Engineering     |
| Human Resources |
| Finance         |
| Marketing       |
| Human Resources |
+-----------------+
10 rows in set (0.00 sec)
```

8)Display the total number of employee who have joined any project before 2009
query :
select count(distinct e.dept_id) as total_emp from employee e left join project
p on e.dept_id=p.dept_id where p.proj_year < '2024';

```
mysql> select count(distinct e.dept_id) as total_emp from employee e left join project
p on e.dept_id=p.dept_id where p.proj_year < '2024';
+-----------+
| total_emp |
+-----------+
|         3 |
+-----------+
1 row in set (0.00 sec)

mysql>
```

9)
Create a view showing the employee and Department details.

```
mysql> create view emp_dept as select e.emp_id,e.emp_fname ,e.emp_position,d.dept_name
from employee e join department d on e.dept_id=d.dept_id;
Query OK, 0 rows affected (0.03 sec)

mysql> select * from emp_dept;
+--------+-----------+--------------+-----------------+
| emp_id | emp_fname | emp_position | dept_name       |
+--------+-----------+--------------+-----------------+
|      1 | John      | Manager      | Engineering     |
|      3 | Michael   | Analyst      | Engineering     |
|      6 | Sarah     | Manager      | Engineering     |
|      2 | Jane      | Developer    | Marketing       |
|      5 | David     | Engineer     | Marketing       |
|      9 | Daniel    | Engineer     | Marketing       |
|      4 | Emily     | Designer     | Finance         |
|      8 | Emma      | Analyst      | Finance         |
|      7 | James     | Developer    | Human Resources |
|     10 | Olivia    | Designer     | Human Resources |
+--------+-----------+--------------+-----------------+
10 rows in set (0.01 sec)
```

10)Perform Manipulation on simple view-Insert, update, delete, drop view

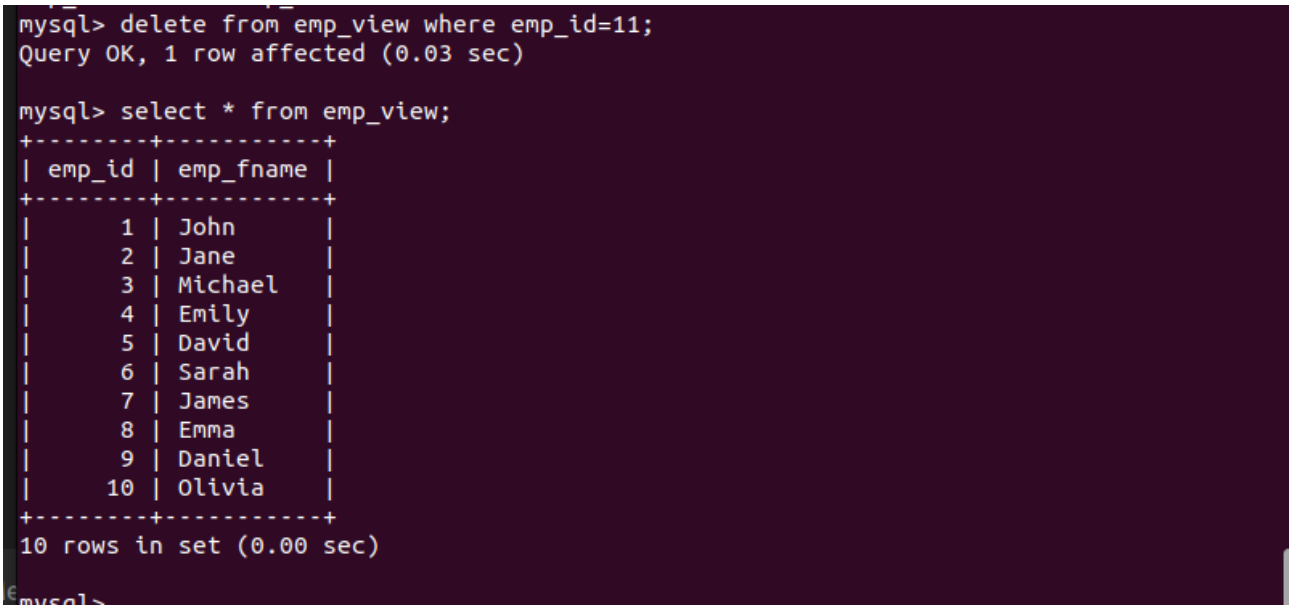
```
mysql> create view emp_view as select emp_id, emp_fname from employee ;
Query OK, 0 rows affected (0.02 sec)

mysql> select * from emp_view;
+--------+-----------+
| emp_id | emp_fname |
+--------+-----------+
|      1 | John      |
|      2 | Jane      |
|      3 | Michael   |
|      4 | Emily     |
|      5 | David     |
|      6 | Sarah     |
|      7 | James     |
|      8 | Emma      |
|      9 | Daniel    |
|     10 | Olivia    |
+--------+-----------+
10 rows in set (0.00 sec)

mysql>
```

Insert into view:

Update view :



Delete view:

```
mysql> update emp_view set emp_fname='jullydeq' where emp_id=11;
Query OK, 1 row affected (0.03 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from emp_view;
+--------+-----------+
| emp_id | emp_fname |
+--------+-----------+
|      1 | John      |
|      2 | Jane      |
|      3 | Michael   |
|      4 | Emily     |
|      5 | David     |
|      6 | Sarah     |
|      7 | James     |
|      8 | Emma      |
|      9 | Daniel    |
|     10 | Olivia    |
|     11 | jullydeq  |
+--------+-----------+
11 rows in set (0.00 sec)

mysql>
```

Drop view:

```
mysql> drop view emp_view;
Query OK, 0 rows affected (0.01 sec)

mysql> select * from emp_view;
ERROR 1146 (42S02): Table 'te31413_db.emp_view' doesn't exist
mysql>
```