

Experiment 3

Student Name: Muskan

UID:23BAI70172

Branch: BE-AIT-CSE

Section/Group:23AML-1(A)

Semester:5th

Date of Performance:20 August ,2025

Subject Name:ADBMS

Subject Code:23CSP-333

Medium-Level

1. **Problem Title: Department Salary Champions**
2. **Problem Description:** In a bustling corporate organization, each department strives to retain the most talented (and well-compensated) employees. You have access to two key records: one lists every employee along with their salary and department, while the other details the names of each department. Your task is to identify the top earners in every department. If multiple employees share the same highest salary within a department, all of them should be celebrated equally. The final result should present the department name, employee name, and salary of these top-tier professionals arranged by department.
3. **SQL Commands:**

a. Create table and insert values:

```
-----EXPERIMENT 03: (MEDIUM LEVEL)
CREATE TABLE department (
    id INT PRIMARY KEY,
    dept_name VARCHAR(50)
);

-- Create Employee Table
CREATE TABLE employee (
    id INT,
    name VARCHAR(50),
    salary INT,
    department_id INT,
    FOREIGN KEY (department_id) REFERENCES department(id)
);
```

```

-- Insert into Department Table
INSERT INTO department (id, dept_name) VALUES
(1, 'IT'),
(2, 'SALES');

-- Insert into Employee Table
INSERT INTO employee (id, name, salary, department_id) VALUES
(1, 'JOE', 70000, 1),
(2, 'JIM', 90000, 1),
(3, 'HENRY', 80000, 2),
(4, 'SAM', 60000, 2),
(5, 'MAX', 90000, 1);

```

b. Writing the Solution using Subquery

```

Select D.dept_name,e.name,e.salary,D.id
from employee as e
INNER JOIN
Department as d
on e.department_id = D.id
where e.salary IN(
Select max(E2.salary)
from employee as E2
where E2.department_id = E.department_id
)
order by D.dept_name;

```

Outputs:

department and employee table:

	id	dept_name
1	1	IT
2	2	SALES

	id	name	salary	department_id
1	1	JOE	70000	1
2	2	JIM	90000	1
3	3	HENRY	80000	2
4	4	SAM	60000	2
5	5	MAX	90000	1

result after subquery:

Results		Messages		
	dept_name	name	salary	id
1	IT	MAX	90000	1
2	IT	JIM	90000	1
3	SALES	HENRY	80000	2

Learning Outcome:

- I learned how to perform join with subquery
- I learned how joins work with subqueries
- Learnt the working and order of implementation of subqueries

Hard - Level

- Problem Title: Merging Employee Histories: Who Earned Least?**
- Problem Description:** Two legacy HR systems (A and B) have separate records of employee salaries. These records may overlap. Management wants to merge these datasets and identify each unique employee (by EmpID) along with their lowest recorded salary across both systems.

Objective

- Combine two tables A and B.
- Return each EmpID with their lowest salary, and the corresponding Ename.

SQL Commands:

- Create table and insert values:

```

-----hard level-----
create table A(
  empId int,
  E_name varchar(20),
  salary int
);

insert into A values(1, 'AA', 1000);
insert into A values(2, 'BB', 300);

create table B(
  empId int,
  E_name varchar(20),
  salary int
);

insert into B values(1, 'BB', 400);
insert into B values(2, 'CC', 100);

```

b. Writing the solution with Subqueries:

```

SELECT E_name, MIN(salary) AS Salary
FROM (
  SELECT empId, E_name, salary FROM A
  UNION
  SELECT empId, E_name, salary FROM B
) AS inter_result
GROUP BY E_name;

```

Outputs:

table A and table B

100 %			
Results			
	empId	E_name	salary
1	1	AA	1000
2	2	BB	300

Results			
	empId	E_name	salary
1	1	BB	400
2	2	CC	100

result after subquery:

	E_name	Salary
1	AA	1000
2	BB	300
3	CC	100

Learning Outcome:

- a. I learned how to perform union with the subquery.
- b. I learned how to store the intermediate result and then perform queries on it