Experiment 3

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Subject Name: ADBMS

Subject Code: 23CSP-333

1. **AIM:** 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 & 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.

2. **Tools Used:**

   SQL Server Management Studio 21 (SSMS) code editor.

3. **Experiment:**

   Medium-Level

   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.

   Hard-Level

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

4. Solution:

Medium-Level

```
CREATE TABLE department (
     id INT flRIMARY KEY,
     dept_name  VARCHAR(50)
);

CREATE TABLE employee (
     id INT,
     name VARCHAR(50),
     salary INT,
     department_id INT,
     FOREIGN KEY (department_id) REFERENCES department(id)
);


INSERT INTO department (id, dept_name) VALUES
(1, 'IT'),
(2, 'SALES');


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);



select d.dept_name, e.name, e.salary
   from employee e INNER JOIN department d on e.department_id = d.id
   where salary in
   (
           select max(e2.salary)
                   from employee e2 where e2.department_id = e.department_id
   )
   order by d.dept_name;


select d.dept_name, e.name, e.salary
   from employee e INNER JOIN department d on e.department_id = d.id
   where salary in
   (
           select max(e2.salary)
                   from employee e2 group by e2.department_id
   )

   order by d.dept_name;
```

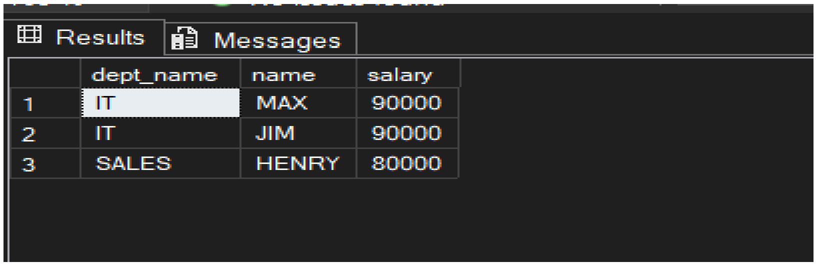
Hard-Level

```
create table tab_a(
   EmpID int primary key,
   Ename varchar(5),
   Salary int
);
```

```
create table tab_b(
    EmpID int primary key,
    Ename varchar(5),
    Salary int
);


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

insert into tab_b values(2, 'BB', 400), (3, 'CC', 100);


with res_set as
(  select a.* from tab_a a
    UNION ALL
    select b.* from tab_b b
)
select EmpID, Ename, min(Salary) as Salary from res_set r
    group by EmpID, Ename;
```

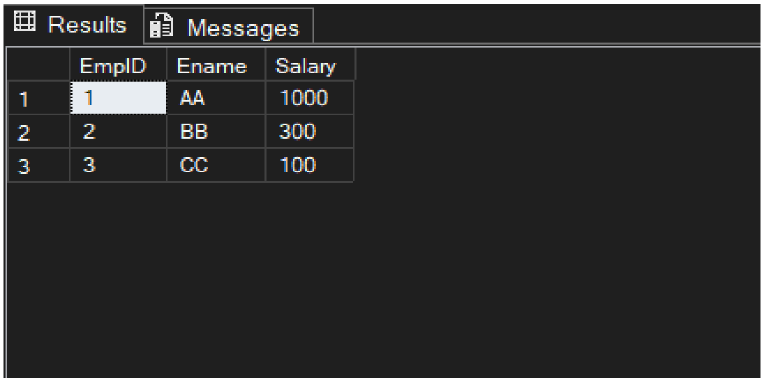
5. Output:

Medium-Level



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

Hard-Level



	EmpID	Ename	Salary
1	1	AA	1000
2	2	BB	300
3	3	CC	100

6. Learning Outcomes:

- Learn’t about Sub-Queries and it’s types.
- Learn’t about their use cases and execution procedure.
- Lean’t about how to apply Common Table Expression (WITH).
- Understood how to deal with large datasets.