Experiment No: 3

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Question 1 :Easy Level Problem

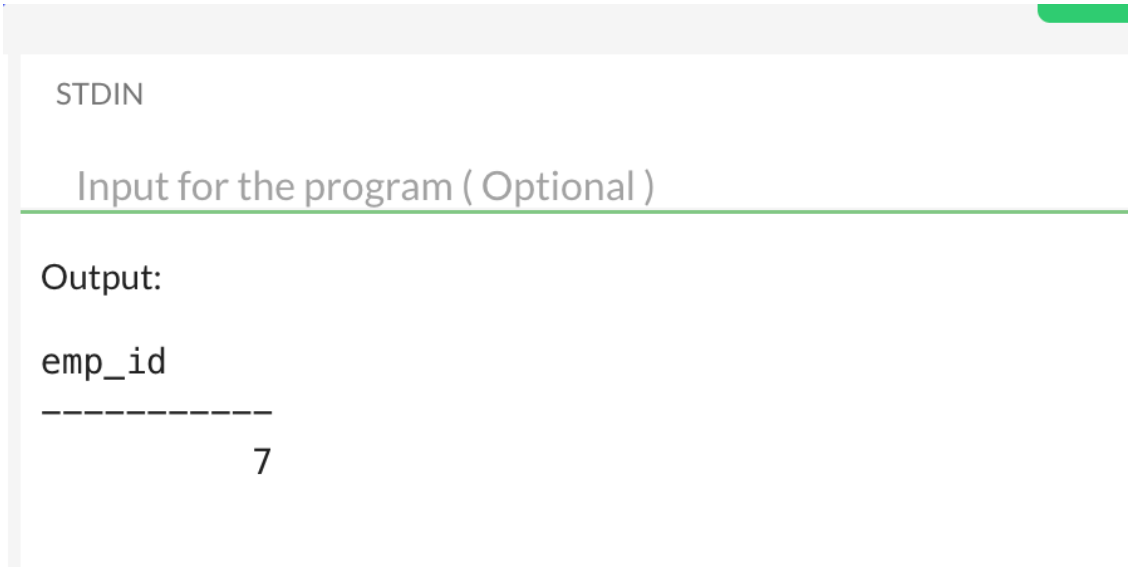
Consider the following employees table , Write a query to find the maximum employee id that is not duplicated in the table (i.e., the largest id that occurs only once).

Solution:

```
create table employees (
    id int
);
INSERT INTO employees VALUES (2),(4),(4),(6),(6),(7),(8),(8);

select max(id) as emp_id
from employees
where id not in (
    select id
    from employees
    group by id
    having count(*) > 1
);
```

Output



Question 2 :Medium Level Problem

Problem Title: Department Salary Champions

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.

Solution:

```
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);

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.id
```

Output :

Input for the program (Optional)

Output:

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

Question 3 :Hard Level Problem

Problem Title: Merging Employee Histories: Who Earned Least? (Hard)

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.

Solution :

```
create table a (
        empid int primary key,
        ename varchar(23),
        salary int
        );

create table b (
        empid int primary key,
        ename varchar(23),
        salary int
        );

insert into a (empid, ename, salary) values
(1, 'aa', 1000),
(2, 'bb', 300);

insert into b (empid, ename, salary) values
(2, 'bb', 400),
(3, 'cc', 100);

select empid, ename, min(salary)
from
(
select * from a
union all
select * from b
```

) as intermediate_result
group by empid, ename

Output:

Output:

```
empid       ename
----------- ---------------------- -----------
          1 aa                            1000
          2 bb                             300
          3 cc                             100
```