



Experiment 3

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1. Aim:

Q.1. Generate an employee relation with only one attribute i.e., EMP_ID. Then, find the max EMP_ID, but excluding the duplicates.

Q.2. Create two tables, Department(ID, name) and Employees(ID, name, salary, deptID). Then output the highest earners from each department.

Q.3. Create two tables A and B with the attributes (EmpID, EmpName, Salary) and output the lowest salary of each employee across the two tables.

2. Requirements (Hardware/Software):

Microsoft SQL server

3. Procedure:

Q.1. Code:

```
CREATE TABLE TBL_EMPLOYEE(  
    EMP_ID INT  
);
```

```
INSERT INTO TBL_EMPLOYEE VALUES (2),(4),(4),(6),(6),(7),(8),(8);
```

```
SELECT MAX(EMP_ID) as [Greatest Unique ID] FROM TBL_EMPLOYEE WHERE  
EMP_ID IN  
(SELECT EMP_ID FROM TBL_EMPLOYEE GROUP BY EMP_ID HAVING  
COUNT(EMP_ID)=1);
```

Q.2. Code:

```
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(salary) from employee group by department_id);
```

Q.3. Code:

```
create table tbl_A (  
    empid int PRIMARY key,  
    empname varchar(20),  
    salary int  
)
```

```

insert into tbl_A values (1,'AA',1000), (2, 'BB',300);
create table tbl_B (
  empid int PRIMARY key,
  empname varchar(20),
  salary int
)
insert into tbl_B values (2, 'BB',400), (3,'CC',100);

select empid, min(empname) as empname, min(salary) as min_salary from
(select * FROM
tbl_A
UNION
select * from
tbl_b) as UNI
group by empid;

```

4. Output:

Q.1.

```

Output:

Greatest Unique ID
-----
7

```

Q.2.

```

Output:

dept_name                                     name
-----
IT                                             JIM
IT                                             MAX
SALES                                         HENRY

```

Q.3.

```

Output:

empid      empname      min_salary
-----
      1 AA          1000
      2 BB           300
      3 CC           100

```

5. Learning Outcome:

- **Understand the role of sub-queries in simplifying complex SQL operations.**
- **Apply sub-queries in SELECT, WHERE, and FROM clauses to retrieve specific data.**
- **Utilize sub-queries for filtering, aggregation, and conditional logic.**
- **Analyze query performance implications when using sub-queries versus joins.**