Experiment 3

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1. AIM

1. Max Value without Duplicates [EASY]
    - Create a table of Employee IDs.
    - Insert sample IDs (with duplicates).
    - Write a query to return the maximum EmpID excluding duplicate values using subqueries.
2. Department Salary Champions [MEDIUM]
    - Create dept and employee tables with a relationship.
    - Insert sample department and employee data.
    - Use subqueries to find the employee(s) with the highest salary in each department.
    - If multiple employees share the max salary in a department, include all.
3. Merging Employee Histories: Who Earned Least? [HARD]
    - Create two legacy tables (TableA and TableB).
    - Insert sample records (some overlapping).
    - Merge both tables and find the minimum salary per employee using subqueries.

2. Tool Used

1. MS SQL Server
2. Data Grip

3. SQL Code

```
-- Easy Task
-- Generate employee relation with only 1 attribute (  ID )
-- Find the max id but excluding the duplicates

create table employees_tbl(
    e_id int
);

insert into employees_tbl values
(1), (1), (2), (3), (3), (4), (5), (5), (6), (7), (7);
```

```
select max(a.e_id) as max_distinct_id from (select e_id, count(e_id)
as id_cnt from employees_tbl group by e_id) as a where a.id_cnt = 1;

---- Task 2:
-- select product which has not been sold once
-- find the total quantity of sold for each respective product
CREATE TABLE TBL_PRODUCTS
(
      ID INT PRIMARY KEY IDENTITY,
      [NAME] NVARCHAR(50),
      [DESCRIPTION] NVARCHAR(250)
)


CREATE TABLE TBL_PRODUCTSALES
(
      ID INT PRIMARY KEY IDENTITY,
      PRODUCTID INT FOREIGN KEY REFERENCES TBL_PRODUCTS(ID),
      UNITPRICE INT,
      QUALTITYSOLD INT
)


INSERT INTO TBL_PRODUCTS VALUES ('TV','52 INCH BLACK COLOR LCD TV')
INSERT INTO TBL_PRODUCTS VALUES ('LAPTOP','VERY THIIN BLACK COLOR
ACER LAPTOP')
INSERT INTO TBL_PRODUCTS VALUES ('DESKTOP','HP HIGH PERFORMANCE
DESKTOP')


INSERT INTO TBL_PRODUCTSALES VALUES (3,450,5)
INSERT INTO TBL_PRODUCTSALES VALUES (2,250,7)
INSERT INTO TBL_PRODUCTSALES VALUES (3,450,4)
INSERT INTO TBL_PRODUCTSALES VALUES (3,450,9)


select * from TBL_PRODUCTS
select * from TBL_PRODUCTSALES


select * from TBL_PRODUCTS where TBL_PRODUCTS.ID not in (select
distinct PRODUCTID from TBL_PRODUCTSALES);
```

```
select Name, (select SUM(TBL_PRODUCTSALES.QUALTITYSOLD) from
TBL_PRODUCTSALES where PRODUCTID = TBL_PRODUCTS.ID) as [PRODUCT
SALES] from TBL_PRODUCTS;


--------------------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);

SELECT e.salary, e.name, t.m_salary, t.dept_name
FROM employee e
JOIN (
    SELECT e.department_id, d.dept_name, max(e.salary) AS m_salary
    FROM employee e
    JOIN department d
    ON e.department_id = d.id
    GROUP BY e.department_id, d.dept_name
) AS t
ON t.department_id = e.department_id
    AND t.m_salary = e.salary;

-- Hard level
```

```
create table emp_a_tbl(
    empid int,
    empname varchar(255),
    salary int
);

create table emp_b_tbl(
    empid int,
    empname varchar(255),
    salary int
);

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

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

SELECT t.empid, min(t.empname), min(t.salary)
FROM (
    SELECT *
    FROM emp_a_tbl
    UNION (SELECT * FROM emp_b_tbl)
) t
GROUP BY t.empid;
```

4. Output

	max_distinct_id
1	6

	ID	NAME	DESCRIPTION
1	1	TV	52 INCH BLACK COLOR LCD TV

	Name	[PRODUCT SALES]
1	TV	<null>
2	LAPTOP	7
3	DESKTOP	18

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

	empid	<anonymous>	<anonymous>
1	1	AA	1000
2	2	BB	300
3	3	CC	100