



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Experiment 3

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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.

Code:

--easy question

/*

GENERATE AN EMPLOYEE RELATIN WITH ONLY A ONE ATTRIBUTE I.E, EMP_ID



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TASK: FIND THE MAX EMP_ID, BUT EXCLUDING THE DUPLICATES

*/

CREATE TABLE EMPLOYEE(

EMPID INT

);

INSERT INTO EMPLOYEE(EMPID) VALUES

(1),

(1),

(2),

(2),

(5),

(5),

(6),

(7),

(8),

(8);

SELECT MAX(EMPID) AS [MAX_UNIQUE] FROM Employee WHERE EmpID IN (SELECT EmpID FROM Employee GROUP BY EmpID HAVING count(EmpID)=1);

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),



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UNITPRICE INT,

QUALITYSOLD INT

)

INSERT INTO TBL_PRODUCTS VALUES ('TV','52 INCH BLACK COLOR LCD TV')

INSERT INTO TBL_PRODUCTS VALUES ('LAPTOP','VERY THIN 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

/*

TASK:FIND THE ID, NAME ,DESCRIPTION OF PRODUCT WHICH HAS NOT BEEN SOLD FOR ONCE.

*/

SELECT ID,[NAME],[DESCRIPTION] FROM TBL_PRODUCTS WHERE ID NOT IN
(SELECT DISTINCT PRODUCTID FROM TBL_PRODUCTSALES);

--USING JOIN

SELECT T.*,P.* FROM TBL_PRODUCTS AS T LEFT JOIN

TBL_PRODUCTSALES AS P

ON T.ID=P.PRODUCTID

WHERE PRODUCTID IS NULL;



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/*

TASK: FIND THE TOTAL QUANTITY SOLD FOR EACH RESPECTIVE PRODUCT

*/

```
SELECT T.NAME, (SELECT SUM(QUALITYSOLD) FROM TBL_PRODUCTSALES
WHERE PRODUCTID=T.ID) AS QTY_SOLD FROM TBL_PRODUCTS AS T;
```

```
create database exp4;
```

```
use exp4;
```

```
--medium
```

```
-----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),
```



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```
(2, 'JIM', 90000, 1),
(3, 'HENRY', 80000, 2),
(4, 'SAM', 60000, 2),
(5, 'MAX', 90000, 1);

--main

select d.dept_name,e.name,e.salary from employee as e
inner join department as d on d.id=e.department_id
where e.salary in(
select MAX(e2.salary)
from employee as e2
where e2.department_id=e.department_id
)
order by dept_name;

-- group by approach

select d.dept_name,e.name,e.salary from employee as e
inner join department as d on d.id=e.department_id
where e.salary in(
select MAX(e2.salary)
from employee as e2
group by e2.department_id
);

--Hard Question

CREATE TABLE TableA (
    Empid INT,
    Ename VARCHAR(50),
    Salary INT
);
```



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```
CREATE TABLE TableB (
```

```
    Empid INT,
```

```
    Ename VARCHAR(50),
```

```
    Salary INT
```

```
);
```

```
INSERT INTO TableA VALUES (1, 'AA', 1000), (2, 'BB', 300);
```

```
INSERT INTO TableB VALUES (2, 'BB', 400), (3, 'CC', 100);
```

```
--TIP; AFF OVER NUMBER DATA ONLY IS WRONG
```

```
--TAKE FIRST LETTER OF EMPNAME WILL CONVERT IN ASCII
```

```
select empid, ename ,MIN(salary) AS salary from(
```

```
select * from tableA as a
```

```
union all
```

```
select * from tableB as b
```

```
) as INTERMEDIATE_RESULT
```

```
group by empid,ename;
```

OUTPUT:

EASY:

90 % 29 0 Ln: 15 Ch: 5 MIXED LF

Results Messages

	MAX_UNIQUE
1	7

	ID	NAME	DESCRIPTION
1	1	TV	52 INCH BLACK COLOR LCD TV
2	2	LAPTOP	VERY THIN BLACK COLOR ACER LAPTOP
3	3	DESKTOP	HP HIGH PERFORMANCE DESKTOP

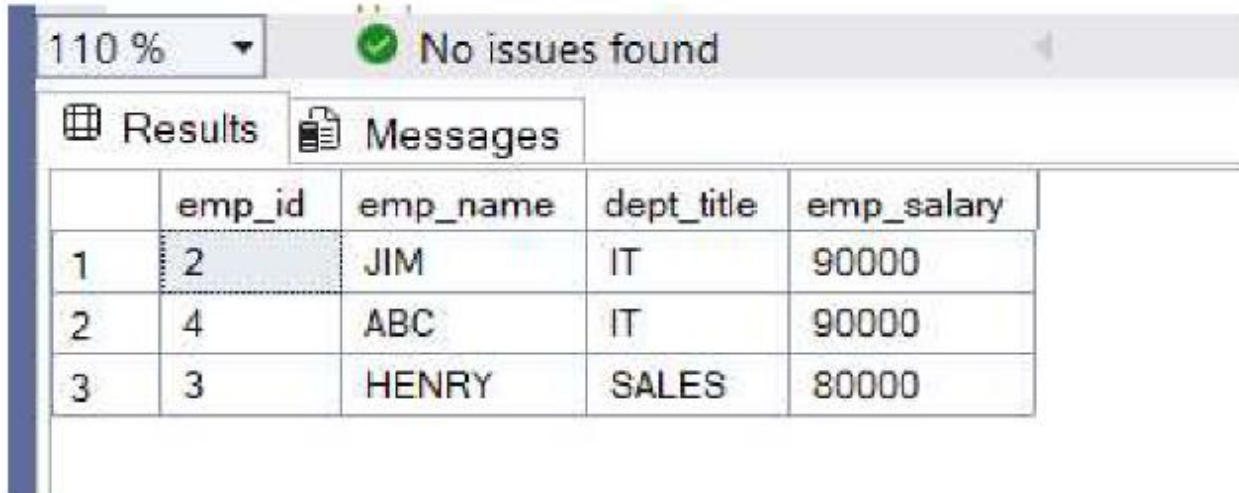
	ID	PRODUCTID	UNITPRICE	QUALITYSOLD
1	1	3	450	5
2	2	2	250	7
3	3	3	450	4
4	4	3	450	9

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

	ID	NAME	DESCRIPTION	ID	PRODUCTID	UNITPRICE	QUALITYSOLD
1	1	TV	52 INCH BLACK COLOR LCD TV	NULL	NULL	NULL	NULL

	NAME	QTY_SOLD
1	TV	NULL
2	LAPTOP	7
3	DESK...	18

MEDIUM



110 % No issues found

	emp_id	emp_name	dept_title	emp_salary
1	2	JIM	IT	90000
2	4	ABC	IT	90000
3	3	HENRY	SALES	80000

HARD

	EmplD	Ename	Min_Salary
1	1	AA	1000
2	2	BB	300
3	3	CC	100