EXPERIMENT NO : 10 **DATE : 21-09-24**

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AGGREGATING DATAUSING GROUP FUNCTIONS

Find the Solution for the following:

Determine the validity of the following three statements. Circle either True or False.

1. Group functions work across many rows to produce one resultper group. True/False - TRUE

2. Group functions include nulls in calculations. True/False - FALSE

3. The WHERE clause restricts rows prior to inclusion in a group calculation. True/False - FALSE

4) Find the highest, lowest, sum, and average salary of all employees. Label the columns Maximum, Minimum, Sum, and Average, respectively. Round your results tothe nearest whole number

```
SELECT ROUND(MAX(salary)) AS Maximum, ROUND(MIN(salary)) AS Minimum,
ROUND(SUM(salary)) AS Sum, ROUND(AVG(salary)) AS Average
FROM employees;
```

MAXIMUM	MINIMUM	SUM	AVERAGE
13500	1100	254300	7706

1 rows returned in 0.02 seconds Download

5) Modify the above query to display the minimum, maximum, sum, and average salaryfor each job type.

```
SELECT ROUND(MAX(salary)) AS Maximum, ROUND(MIN(salary)) AS Minimum,
ROUND(SUM(salary)) AS Sum, ROUND(AVG(salary)) AS Average
FROM employees
join department
on department.dept_id = employees.department_idgroup
```

```
by dept_name;
```

MAXIMUM	MINIMUM	SUM	AVERAGE
4000	2500	6500	3250
13500	13500	13500	13500
7800	4500	12300	6150
13500	5200	26700	8900
7000	1100	8100	4050
6500	5500	12000	6000
13500	6000	19500	9750
13500	13500	13500	13500
13500	3500	40500	8100

6) Write a query to display the number of people with the same job. Generalize thequery so that
the user in the HR department is prompted for a job title.

```
SELECT d.dept_name , COUNT(*) AS NumberOfEmployeesFROM
Employees e
join department d on e.department_id = d.dept_idgroup by
d.dept_name;
```

DEPT_NAME	NUMBEROFEMPLOYEES
accounts manager	2
IT support	1
admin manager	2
HR	3
stock clerk	2
sales manager	2
manager	2
developer	1
executive	5
data analyst	3

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7) Determine the number of managers without listing them. Label the column Numberof Managers

```
SELECT COUNT(DISTINCT MANAGER_ID) AS "Number of Managers"
FROM Employees
WHERE MANAGER_ID IS NOT NULL;
```

Number of Managers
15

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8) Find the difference between the highest and lowest salaries. Label the column DIFFERENCE.

```
select max(salary) - min(salary) as "DIFFERENCE"from
employees;
```

DIFFERENCE
12400

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9) Create a report to display the manager number and the salary of the lowest-paid employee for that manager. Exclude anyone whose manager is not known. Exclude anygroups where the minimum salary is $6,000 or less. Sort the output in descending orderof salary.

```
SELECT MANAGER_ID, MIN(SALARY) AS "Lowest Salary"
FROM Employees
WHERE MANAGER_ID IS NOT NULL
GROUP BY MANAGER_ID
HAVING MIN(SALARY) > 6000
ORDER BY "Lowest Salary" DESC;
```

MANAGER_ID	Lowest Salary
350	8000
150	7700
500	7500
800	7300
600	6900
550	6500

6 rows returned in 0.01 seconds Download

10) Create a query to display the total number of employees and, of that total, thenumber of employees hired in 1995, 1996, 1997, and 1998. Create appropriate column headings.

```
SELECT EXTRACT(YEAR FROM hire_date) AS "yearly wise employment", COUNT(*)
FROM employees
GROUP BY EXTRACT(YEAR FROM hire_date)
HAVING EXTRACT(YEAR FROM hire_date) IN (1995, 1996, 1997, 1998);
```

yearly wise employment	COUNT(*)
1996	2
1995	1

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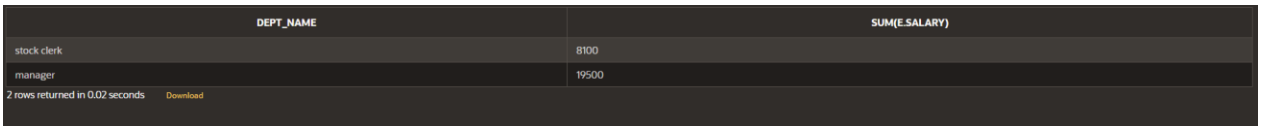
11) Create a matrix query to display the job, the salary for that job based on departmentnumber, and the total salary for that job, for departments 20, 50, 80, and 90, giving eachcolumn an appropriate heading.

```
select d.dept_name , sum(e.salary)
from employees e
join department d on e.department_id = d.dept_idwhere
department_id in (20,50,80,90)
group by d.dept_name;
```



DEPT_NAME	SUM(E.SALARY)
stock clerk	8100
manager	19500

2 rows returned in 0.02 seconds Download

12) Write a query to display each department‘s name, location, number of employees,and the average salary for all the employees in that department. Label the column name-Location, Number of people, and salary respectively. Round the average salary to two decimalplaces.

```
SELECT d.dept_name AS "Name", d.Location_id AS "Location", COUNT(e.department_id)
AS "Number of People", ROUND(AVG(e.Salary), 2) AS"Salary"
FROM department d
JOIN employees e ON d.dept_id = e.department_id
```

GROUP BY d.dept_name, d.location_id;

Name	Location	Number of People	Salary
sales manager	7	2	6000
data analyst	1700	3	9733.33
stock clerk	19	2	4050
HR	2	3	8900
admin manager	16	2	6150
manager	10	2	9750
accounts manager	7	2	3250
executive	4	3	6333.33
developer	1	1	13500
executive	10	2	10750

More than 10 rows available. Increase rows selector to view more rows.

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