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DBMS Lab Week6

Week6 SQL Aggregate Functions

Problem Statements:

Write the SQL query using aggregate functions for the following.

1. Show the resulting salaries if every employee working on the ‘ProductX’ project is given a 10%
Raise.

```
company=# select e.fname as First_Name,1.1*e.salary as new_salary
from works_on w
inner join project p
on w.pno=p.pnumber
inner join employee e
on e.ssn=w.essn
where p.pname='ProductX';
 first_name | new_salary
------------+------------
 John       |  33000.000
 Joyce      |  27500.000
(2 rows)

company=# pes1ug19cs123-chandradhar
```

2. Find the sum of the salaries of all employees of the ‘Research’ department, as well as the maximum salary, the minimum salary, and the average salary in this department.

```
company=# select COUNT(d.dnumber) as num_of_employees,
MAX(e.salary) as max_salary,
SUM(e.salary) as totoal_Salary,
MIN(e.salary) as min_salary,
AVG(e.salary) as avg_salary
from employee e
inner join department d
on e.dno=d.dnumber
where d.dname='Research'
group by d.dname;
```

```
 num_of_employees | max_salary | totoal_salary | min_salary |     avg_salary
------------------+------------+---------------+------------+--------------------
                4 |   40000.00 |     133000.00 |   25000.00 | 33250.000000000000
(1 row)
```

3. Count the number of distinct salary values in the database.

```
company=# select COUNT(e.salary)
from (
select distinct salary
from employee
) as e;
```

```
 count
-------
     6
(1 row)

company=#
```

4.Retrieve the names of all employees who have two or more dependents.

```
company=# select e.fname,e.lname
from employee e
where (
select COUNT(*)
from dependent d
where d.essn=e.ssn
)>=2;
```

```
  fname   | lname
----------+-------
 John     | Smith
 Franklin | Wong
(2 rows)

company=#
```

5. For each department, retrieve the department number, the number of employees in the
department, and their average salary.

```
company=# select e.dno,
AVG(e.salary),
COUNT(e.ssn)
from employee e
group by e.dno;
```

```
 dno |         avg          | count
-----+----------------------+-------
   5 | 33250.000000000000 |     4
   4 | 31000.000000000000 |     3
   1 | 55000.000000000000 |     1
(3 rows)
```

6. Retrieve the names of employees who make at least $10,000 more than the employee who is paid the least in the company.

```
company=# select e.fname,e.lname,e.salary
from employee e
where e.salary - (
select MIN(e1.salary)
from employee e1
)>10000;
```

```
  fname   |  lname   |  salary
----------+----------+----------
 James    | Borg     | 55000.00
 Franklin | Wong     | 40000.00
 Jennifer | Wallace  | 43000.00
 Ramesh   | Narayan  | 38000.00
(4 rows)
```

7. Retrieve the names of all employees who work in the department that has the employee with the highest salary among all employees.

```
company=# select e.fname,e.dno,e.salary
from employee e
where e.dno = (
select dno
from Employee emp
where emp.salary=(select MAX(salary) from employee)
);
```

```
 fname | dno |  salary
-------+-----+----------
 James |   1 | 55000.00
(1 row)
```

8. Count the total number of employees whose salaries exceed $40,000 in each department

```
company=# select COUNT(e.ssn) as num_emps,
d.dname as dept_name
from employee e
inner join department d
on e.dno= d.dnumber
where e.salary > 40000
group by d.dname;
```

```
 num_emps |   dept_name
----------+----------------
        1 | Headquarters
        1 | Administration
(2 rows)
```