Name : Tejas Kumar S

SRN : PES2UG19CS428

SEM : 5

SEC : G

WEEK 6: SQL – Aggregate functions.

Problem Statement:

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 fname,lname,gender,1.1*salary as salary1
company-# from employee,works_on,project where ssn=essn and pno=pnumber
company-# and pname='ProductX';
 fname |  lname  | gender |  salary1
-------+---------+--------+-----------
 John  | Smith   | M      | 33000.000
 Joyce | English | F      | 27500.000
(2 rows)

company=#
```

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 sum(Salary)
company-# from employee,department
company-# where dname = 'Research' and dno = dnumber;
    sum
-----------
 133000.00
(1 row)

company=# select max(Salary),min(Salary),avg(Salary)
company-# from employee,department
company-# where dname='Research' and dno = dnumber;
   max    |   min    |         avg
----------+----------+--------------------
 40000.00 | 25000.00 | 33250.000000000000
(1 row)

company=#
```

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

```
company=# select count(distinct Salary) from employee;
 count
-------
     6
(1 row)

company=#
```

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

```
company=# select distinct fname,lname
company-# from employee,dependent
company-# where (select count(essn)
company(# from dependent where ssn=essn)>1;
  fname   | lname
----------+-------
 Franklin | Wong
 John     | Smith
(2 rows)

company=#
```

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

```
company=# select dno as number,count(dno) as count,avg(salary) as average_salary
company-# from employee group by dno;
 number | count |   average_salary
--------+-------+--------------------
      5 |     4 | 33250.000000000000
      4 |     3 | 31000.000000000000
      1 |     1 | 55000.000000000000
(3 rows)

company=#
```

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 fname,lname
company-# from employee
company-# where salary >= ((select min(salary) from employee)+10000);
  fname   |  lname
----------+---------
 James    | Borg
 Franklin | Wong
 Jennifer | Wallace
 Ramesh   | Narayan
(4 rows)

company=#
```

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 fname,lname,salary,dno
company-# from employee
company-# where salary in(select max(salary) from employee group by dno);
  fname   |  lname  |  salary  | dno
----------+---------+----------+-----
 James    | Borg    | 55000.00 |   1
 Franklin | Wong    | 40000.00 |   5
 Jennifer | Wallace | 43000.00 |   4
(3 rows)

company=# select fname,lname
company-# from employee
company-# where dno=(select dno from employee
company(#       where salary = (select max(salary) from employee));
 fname | lname
-------+-------
 James | Borg
(1 row)

company=#
```

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

```
company=# select dno,count(*)
company-# from employee
company-# where salary >= 40000 group by dno;
 dno | count
-----+-------
   4 |     1
   1 |     1
   5 |     1
(3 rows)

company=#
```