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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 as First_Name, lname as Last_Name,
company-# salary as Old_Salary, 1.1*salary as New_Salary
company-# From Employee E, Works_On W, Project P
company-# Where E.ssn = W.essn and W.pno = P.pnumber
company-# and P.pname='ProductX';
 first_name | last_name | old_salary | new_salary
------------+-----------+------------+------------
 John       | Smith     |   30000.00 |  33000.000
 Joyce      | English   |   25000.00 |  27500.000
(2 rows)
```

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), MAX (SALARY), MIN (SALARY), AVG (SALARY)
company-# FROM EMPLOYEE, DEPARTMENT
company-# WHERE DNO = DNUMBER AND DNAME = 'Research';
    sum    |   max    |   min    |        avg
-----------+----------+----------+--------------------
 133000.00 | 40000.00 | 25000.00 | 33250.000000000000
(1 row)
```

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

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

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

```
company=# SELECT LNAME, FNAME
company-# FROM EMPLOYEE
company-# WHERE (SELECT COUNT (*)
company(# FROM DEPENDENT
company(# WHERE SSN = ESSN) >= 2;
 lname |  fname
-------+----------
 Smith | John
 Wong  | Franklin
(2 rows)
```

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

```
company=# SELECT DNO, COUNT (*), AVG (SALARY)
company-# FROM EMPLOYEE
company-# GROUP BY DNO;
 dno | count |         avg
-----+-------+---------------------
   5 |     4 | 33250.000000000000
   4 |     3 | 31000.000000000000
   1 |     1 | 55000.000000000000
(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 FNAME,LNAME FROM EMPLOYEE WHERE SALARY >= 10000 +
company-# ( SELECT MIN(SALARY) FROM EMPLOYEE);
  fname   |  lname
----------+---------
 James    | Borg
 Franklin | Wong
 Jennifer | Wallace
 Ramesh   | Narayan
(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 LNAME FROM EMPLOYEE WHERE DNO =
company-# ( SELECT DNO FROM EMPLOYEE WHERE SALARY =
company(# ( SELECT MAX(SALARY) FROM EMPLOYEE) );
 lname
-------
 Borg
(1 row)
```

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

```
company=# select count(ssn) from employee where salary>=40000;
 count
-------
     3
(1 row)
```