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# SQL – Aggregate functions

*WEEK #6*

1. Show the resulting salaries if every employee working on the 'ProductX' project is given a 10% raise.

```
Select ssn, fname, lname, salary as Old_Salary, 1.1*salary as Hiked_Salary
From Employee E, Works_On W, Project P
Where E.ssn = W.essn and W.pno = P.pnumber
and P.pname='ProductX';
```

```
You are now connected to database "company" as user "postgres".
    ssn     | fname |  lname  | old_salary | hiked_salary
-----------+-------+---------+------------+--------------
 123456789 | John  | Smith   |   30000.00 |    33000.000
 453453453 | 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.

```
SELECT SUM (SALARY), MAX (SALARY), MIN (SALARY), AVG (SALARY)
FROM EMPLOYEE, DEPARTMENT
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.

```
SELECT COUNT(DISTINCT SALARY) AS uniq_salary FROM employee;
```

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```
 uniq_salary
-------------
           6
(1 row)
```

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

```sql
SELECT fname, minit, lname
FROM EMPLOYEE
WHERE (SELECT COUNT (*)
FROM DEPENDENT
WHERE SSN = ESSN) >= 2;
```

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

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

```sql
select dno,count(*),avg(salary)
from employee
group by dno;
```

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

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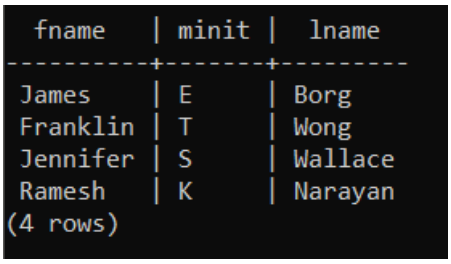
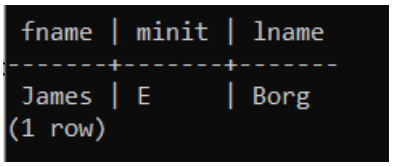
```
select Fname, Minit, Lname
from EMPLOYEE
where Salary > 10000 + (select MIN(Salary)from EMPLOYEE);
```



```
 fname   | minit |  lname
---------+-------+---------
 James   | E     | Borg
 Franklin| T     | Wong
 Jennifer| S     | Wallace
 Ramesh  | K     | 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.

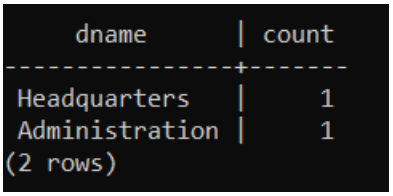
```
select Fname, Minit, Lname
from EMPLOYEE
where Dno = (select Dno from EMPLOYEE
 where Salary = (select MAX(Salary) from employee));
```



```
 fname | minit | lname
-------+-------+-------
 James | E     | Borg
(1 row)
```

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

```
SELECT dname, COUNT (*) FROM department, employee
WHERE dnumber=dno AND salary>40000 GROUP BY dname;
```



```
     dname      | count
----------------+-------
 Headquarters   |     1
 Administration |     1
(2 rows)
```

Link to the SQL file:
https://drive.google.com/file/d/1g4SQ3eY3WK6mheh96I0bNF0znoK5wzUH/view?usp=sharing