

## MySQL Project: Grouping by Ekaterina(Kate) Rogatina

In this short project, I am going through some SQL problems on Grouping. The SQL problems in this project involve usage of SQL Aggregate functions AVG and COUNT. AVG is a function that can be used to calculate the Average or Mean of all values of a specified column in the result set.

I am going to take data from HR database. This HR database schema consists of 5 tables called **EMPLOYEES**, **JOB\_HISTORY**, **JOBS**, **DEPARTMENTS** and **LOCATIONS**.

Problem:

1. For each department retrieve the number of employees in the department, and the average employee salary in the department.

Solution:

```
SELECT DEP_ID, COUNT(*), AVG(SALARY)
FROM EMPLOYEES
GROUP BY DEP_ID;
```

Output:

☐ Show all | Number of rows: 25

+ Options

2	3	86666.666667
5	4	65000.000000
DEP_ID	COUNT(*)	AVG(SALARY)

☐ Show all | Number of rows: 25

To retrieve the number of employees in the department, I USE SELECT COUNT(\*) FROM EMPLOYEES;

To retrieve the average salary for all employees in EMPLOYEES table , I USE SELECT AVG(SALARY) FROM EMPLOYEES

Problem:

2. Label the computed columns in the result set of SQL problem 1 as NUM\_EMPLOYEES and AVG\_SALARY, order the result set by Average Salary.

Solution:

```
Solution: SELECT DEP_ID, COUNT(*) AS "NUM_EMPLOYEES", AVG(SALARY) AS
"AVG_SALARY"
FROM EMPLOYEES
GROUP BY DEP_ID
ORDER BY AVG_SALARY;
```

Output:

Show query box

```
✓ Showing rows 0 - 2 (3 total, Query took 0.0004 seconds.)

SELECT DEP_ID, COUNT(*) as 'NUM_EMPLOYEES', AVG(SALARY) AS 'AVG_SALARY'
FROM EMPLOYEES GROUP BY DEP_ID

Profiling [Edit inline] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh]
```

☐ Show all | Number of rows: 25

+ Options

2	3	86666.666667
5	4	65000.000000
DEP_ID	NUM_EMPLOYEES	AVG_SALARY

I use ORDER BY  
after the  
GROUP BY to  
get this result

Problem:

3. Problem: In SQL problem 3, limit the result to departments with fewer than 4 employees.

Solution:

```
SELECT DEP_ID, COUNT(*) AS "NUM_EMPLOYEES", AVG(SALARY) AS "AVG_SALARY"
FROM EMPLOYEES
GROUP BY DEP_ID
HAVING count(*) < 4
ORDER BY AVG_SALARY;
```

Output:

Show query box

```
✓ Showing rows 0 - 1 (2 total, Query took 0.0005 seconds.)

SELECT DEP_ID, COUNT(*) AS "NUM_EMPLOYEES", AVG(SALARY) AS "AVG_SALARY"
FROM EMPLOYEES GROUP BY DEP_ID HAVING count(*) < 4 ORDER BY AVG_SALARY

Profiling [Edit inline] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh]
```

☐ Show all | Number of rows: 25

+ Options

7	3	66666.666667
DEP_ID	NUM_EMPLOYEES	AVG_SALARY

I use HAVING  
after the  
GROUP BY,  
and the  
count()  
function in the  
HAVING  
clause