

## EXERCISE 2: Aggregate Functions + Grouping

1. `SELECT COUNT (id) AS number_of_employees`  
`FROM employees;`

output:

number_of_employees
10

2. `SELECT SUM (salary) AS tot_salary, department`  
`FROM employees`  
`WHERE`  
~~`GROUP`~~ `BY department = 'IT';`

output:

tot_salary	department
220 000	IT

3. `SELECT AVG (salary) AS Average_salary, department`  
`FROM employees`  
`WHERE department = 'HR';`

output:

Average_salary	department
49 500	HR

4. `SELECT MIN (salary) AS min_salary`  
`FROM employees;`

output:

min_salary
48 200

`SELECT MAX (salary) AS max_salary`  
`FROM employees;`

output:

max_salary
62 000



5. ~~SELECT~~ <sup>CANT</sup> ~~sum~~(id) AS tot-employees  
 FROM employees  
 GROUP BY department;

atpt:

tot-employees	department	tot-sal
4	IT	220 000
2	HR	99 000
2	Finance	119 000
2	Marketing	105 000

6. SELECT COUNT(id) AS tot-employees, city  
 FROM employees  
 GROUP BY city;

atpt

tot-employees	city
2	New York
3	Chicago
2	Los Angeles
2	San Francisco
1	Houston

7. SELECT AVG(salary) AS Average-salary, department  
 FROM employees  
 GROUP BY department  
 ORDER BY ~~ASC~~ ~~AVG(salary)~~ Average-salary DESC;

atpt:

Average-salary	department
55 000	IT
54 500	Finance
52 500	Marketing
49 500	HR



8. SELECT SUM(salary) AS tot-salary, department  
FROM employees  
GROUP BY department  
HAVING  $\frac{\text{sum(salary)}}{\text{tot-salary}} > 100000$  ;

Do I have to  
put the aggregate  
function or  
what it is renamed/  
labelled as?

dept: tot-salary	department
220000	IT
119000	Finance
105000	Marketing

9. SELECT COUNT(id) AS no-of-employees, city  
FROM employees  
GROUP BY city  
ORDER BY no-of-employees DESC  
HAVING COUNT(id) > 1 ;

Does ORDER BY  
have to be  
written after  
HAVING?

dept: no-of-employees	city
3	Chicago
2	New York
2	Los Angeles
2	San Francisco

10. SELECT AVG(salary) AS avg-salary, department  
FROM employees  
GROUP BY department  
LIMIT 1 ;

dept: Avg-salary	department
59500	Finance