Practice SQL Group Functions

This page provides exercises and solutions to help you practice SQL Group Functions. These exercises are based on the Oracle HR schema, and may be performed online or by running the sample schema scripts on your local database server. For additional exercises in other subjects, use this link.

Part 1 – Basic Usage

1. Display the lowest last name alphabetically (*Employees* table).
2. Display the highest last name alphabetically (*Employees* table).
3. Display the number of rows in *Employees* table.
4. Display the number of values (exclude NULLs) in commission_pct column (*Employees* table).
5. Display the number of NULL values in commission_pct column (Employees table).
6. Display the highest, lowest, and average salary.

Part 2 – GROUP BY and HAVING clauses

1. Average salary per department
   1. Display the department number and average salary for each department.
   2. Modify your query to display the results only for departments 50 or 80.

2. Numer of employees per job id
   1. Display the job id and the number of employees for each job id.
   2. Modify your query to display the results only for employees whose salary is greater the 10000.
   3. Modify your query again, this time display the results only for jobs with more than 2 people.

3. Display the department number, job id, and the average salary for each department and job id.
4. Managers and highest salary
    1. Display the manager number and the highest salary for each manager number.
    2. Modify your query to display the results only for employees whose salary is greater than 10000.

5. Display the job id and minimum salary for each job id, for all jobs whose minimum salary is greater than 7000.
6. Display the department number, and the average salary for each department, for all departments whose number is in the range of 20 and 80, and their average salary is greater than 9000.

Solutions – Oracle

These solutions apply to Oracle and SQL Server.

```
01    -- 1.
02    SELECT MIN(last_name)
03    FROM employees
04    -- 2.
05    SELECT MAX(last_name)
06    FROM employees
07    -- 3.
08    SELECT COUNT(*) FROM employees
09    -- 4.
10    SELECT COUNT(commission_pct) FROM employees
11    -- 5.
12    SELECT COUNT(*) - COUNT(commission_pct) FROM employees
13    -- 6.
14    SELECT MIN(salary) , MAX(salary) , AVG(salary)
15    FROM employees
16    -- 7.
17    -- a
18    SELECT department_id , AVG(salary)
19    FROM employees
20    GROUP BY department_id
21    -- b
```

```
22   SELECT department_id , AVG(salary)
23   FROM employees
24   WHERE department_id IN (50, 80)
25   GROUP BY department_id
26   -- 8.
27   -- a
28   SELECT job_id , COUNTI(*)
29   FROM employees
30   GROUP BY job_id
31   -- b
32   SELECT job_id , COUNT(*)
33   FROM employees
34   WHERE salary > 10000
35   GROUP BY job_id
36   -- c
37   SELECT job_id , COUNT(*)
38   FROM employees
39   WHERE salary > 10000
40   GROUP BY job_id
41   HAVING count(*) > 2
42   -- 9.
43   SELECT AVG(salary) , department_id , job_id
44   FROM employees
45   GROUP BY department_id , job_id
46   -- 10.
47   -- b
48   SELECT MAX(salary) , manager_id
49   FROM employees
50   GROUP BY manager_id
51   -- b
52   SELECT MAX(salary) , manager_id
53   FROM employees
54   GROUP BY manager_id
55   HAVING MAX(salary) > 10000
56   -- 11.
57   SELECT MIN(salary) , job_id
58   FROM employees
59   GROUP BY job_id
60   HAVING MIN(salary) > 7000
```

```
61   -- 12.
62   SELECT AVG(salary) , department_id
63   FROM employees
64   WHERE department_id BETWEEN 20 AND 80
65   GROUP BY department_id
66   HAVING AVG(salary) > 9000
```

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