Lab: Data Aggregation

This document defines the **lab exercise assignments** for the PostgreSQL course @ Software University.

Submit your solutions in the SoftUni Judge System.

Create a database **restaurant**. Download and import the file **restaurant.sql**. Get familiar with the **restaurant** database and its **tables**. You will use them in the following assignments. Focus on table **employees**.

1. Departments Info (by id)

Write a query to **count** the number of employees **in each department by id**. Order the information by **department_id**. Submit your queries.

Example

department_id	employee_count
1	2
2	4
3	4
4	1

2. Departments Info (by salary)

Write a query to **count** the number of employees **in each department by salary**. Order the information by **department_id**. Submit your queries.

Note, the **NULL** values for salary will be **ignored**.

Example

department_id	employee_count
1	2
2	4
3	2
4	0

3. Sum Salaries per Department

Write a query to **sum** the salaries of employees **in each department**. Order the information by **department_id**. Submit your queries.

Example

department_id	total_salaries
1	4100.00
2	4360.00
3	1430.00
4	NULL

4. Maximum Salary per Department

Write a query to retrieve information about the departments grouped by **department_id** with their **maximum salary**. Order the information by **department_id**. Submit your queries.

Example

department_id	max_salary
1	2400.00
2	1350.00
3	780.00
4	NULL

5. Minimum Salary per Department

Write a query to retrieve information about the departments grouped by **department_id** with their **minimum salary**. Order the information by **department_id**.

Submit your queries.

Example

department_id	min_salary
1	1700.00
2	780.00
3	650.00
4	NULL

6. Average Salary per Department

Write a query to calculate the **average salary** in each department. Order the information by **department_id**. Submit your queries.

Example

department_id	avg_salary
1	2050.0000000000000000
2	1090.0000000000000000
3	715.0000000000000000
4	NULL

7. Filter Total Salaries

Write a query to filter the **total salary** per department, where the **total salary** is **less than 4200**. Submit your queries, ordered by **department_id**.

Example

department_id	Total Salary
1	4100.00
3	1430.00

8. Department Names

Write a query to retrieve information from table **employees** about the **department names,** according to **department_id**. The output should have the following fields:

- **id** of the employee
- **first_name**
- **last_name**
- **salary** – formatted to the second decimal place.
- **department_id**
- **department_name** – use **Simple CASE Expression**
  - **1 – "Management"**
  - **2 – "Kitchen Staff"**
  - **3 – "Service Staff"**
  - **any other number – "Other"**

See the **examples** for more information. **Format** the salary to **2 digits after the decimal point**. Submit your queries, ordered by employee **id**.

Example

id	first_name	last_name	salary	department_id	department_name
1	Jasmine	Maggot	1250.00	2	Kitchen Staff
2	Nancy	Olson	1350.00	2	Kitchen Staff
3	Karen	Bender	2400.00	1	Management
4	Pricilia	Parker	980.00	2	Kitchen Staff
5	Stephen	Bedford	780.00	2	Kitchen Staff
6	Jack	McGee	1700.00	1	Management
7	Clarence	Willis	650.00	3	Service Staff
8	Michael	Boren	780.00	3	Service Staff
9	Lila	Young	NULL	4	Other
…	…	…	…	…	…