Task 2

Project: Employee Payroll Management System (PostgreSQL)

Objective:

Design and implement an employee payroll system to store, manage, and analyse salary data.

GITHUB: https://github.com/xrahulcrx/Employee_Payroll_Management_System

Database created and selected;

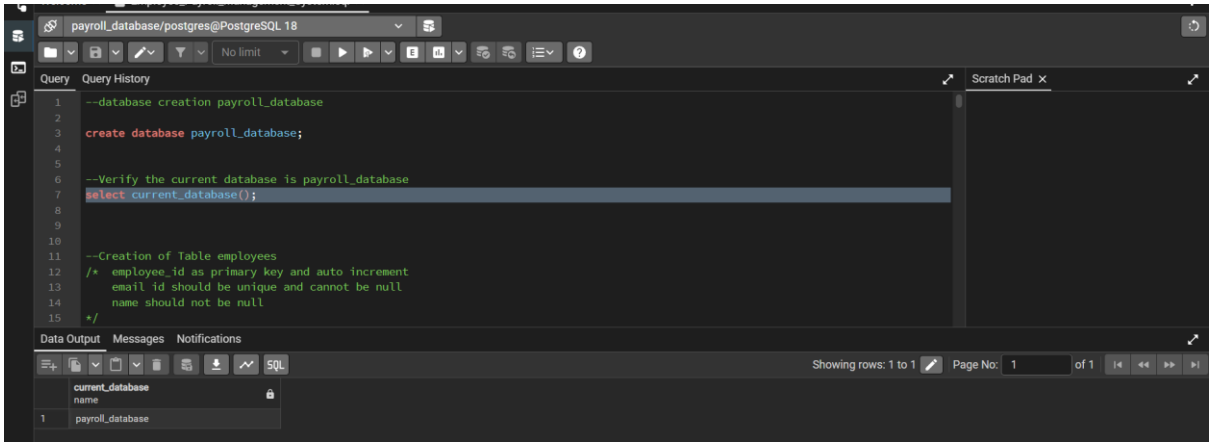
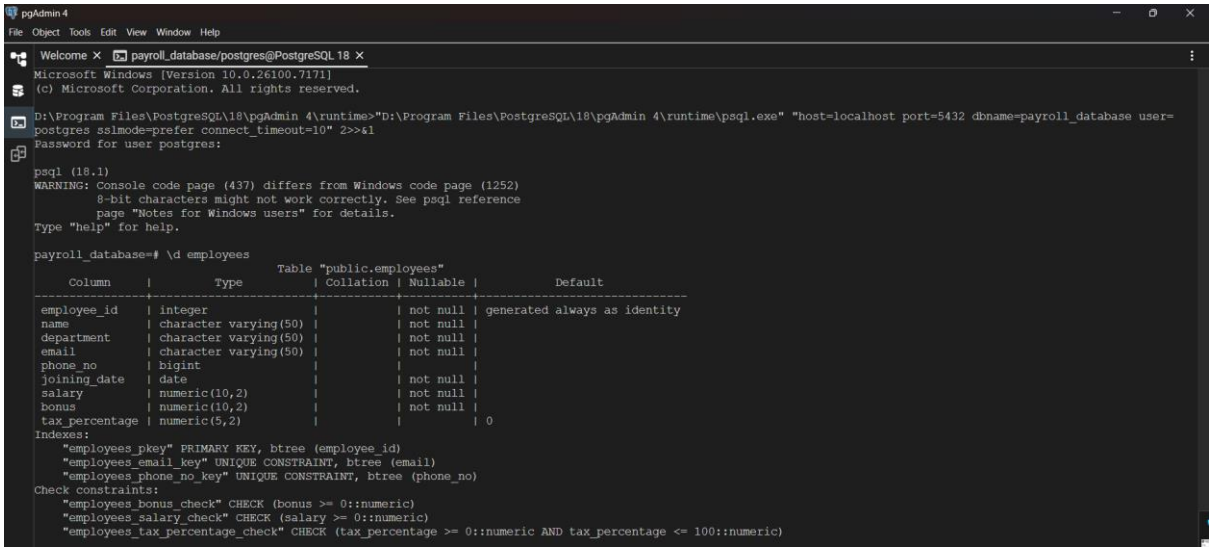
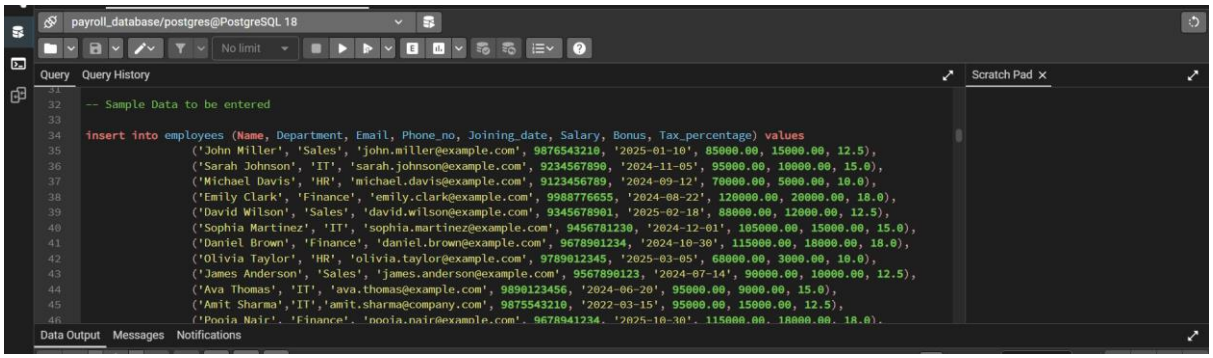


Table created:



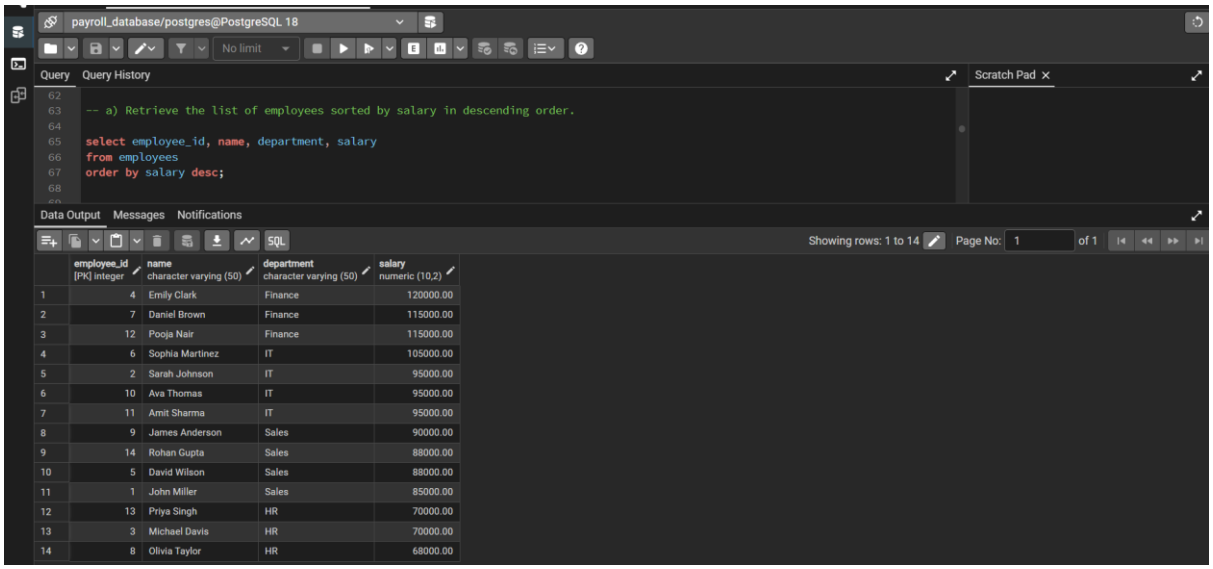
Data Entry:

Insert 10 sample employee records.



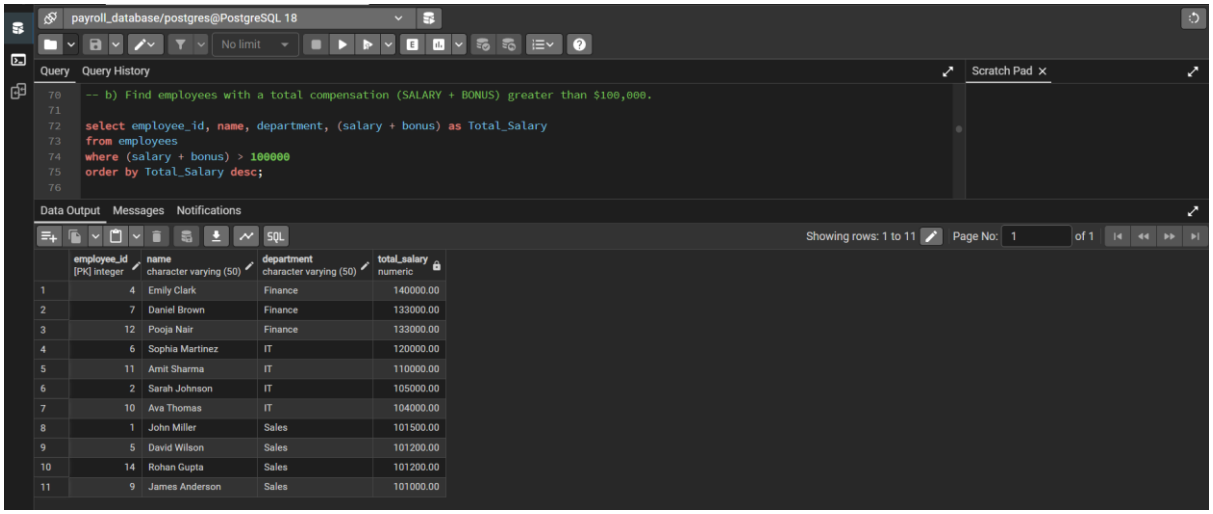
Payroll Queries:

a) Retrieve the list of employees sorted by salary in descending order.



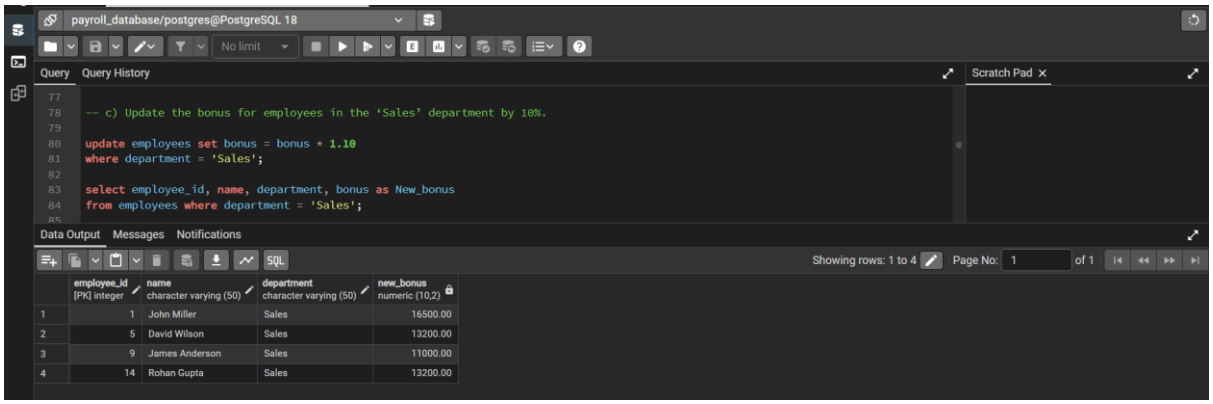
	employee_id [PK] integer	name character varying (50)	department character varying (50)	salary numeric (10,2)
1	4	Emily Clark	Finance	120000.00
2	7	Daniel Brown	Finance	115000.00
3	12	Pooja Nair	Finance	115000.00
4	6	Sophia Martinez	IT	105000.00
5	2	Sarah Johnson	IT	95000.00
6	10	Ava Thomas	IT	95000.00
7	11	Amit Sharma	IT	95000.00
8	9	James Anderson	Sales	90000.00
9	14	Rohan Gupta	Sales	88000.00
10	5	David Wilson	Sales	88000.00
11	1	John Miller	Sales	85000.00
12	13	Priya Singh	HR	70000.00
13	3	Michael Davis	HR	70000.00
14	8	Olivia Taylor	HR	68000.00

b) Find employees with a total compensation (SALARY + BONUS) greater than $100,000.



	employee_id [PK] integer	name character varying (50)	department character varying (50)	total_salary numeric
1	4	Emily Clark	Finance	140000.00
2	7	Daniel Brown	Finance	133000.00
3	12	Pooja Nair	Finance	133000.00
4	6	Sophia Martinez	IT	120000.00
5	11	Amit Sharma	IT	110000.00
6	2	Sarah Johnson	IT	105000.00
7	10	Ava Thomas	IT	104000.00
8	1	John Miller	Sales	101500.00
9	5	David Wilson	Sales	101200.00
10	14	Rohan Gupta	Sales	101200.00
11	9	James Anderson	Sales	101000.00

c) Update the bonus for employees in the 'Sales' department by 10%.



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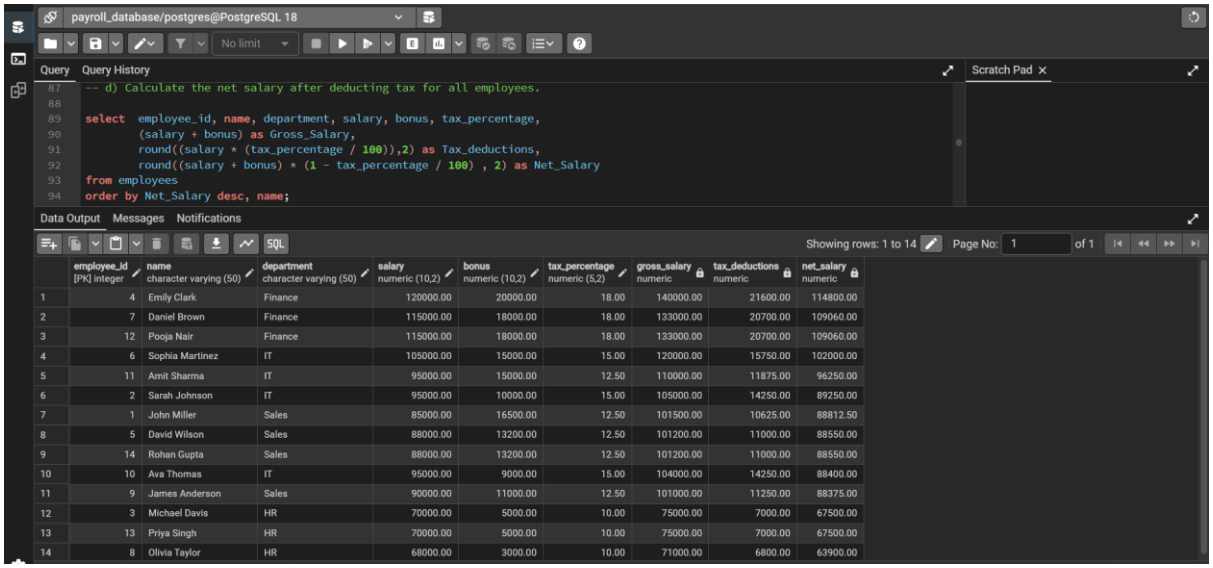
-- c) Update the bonus for employees in the 'Sales' department by 10%.

update employees set bonus = bonus * 1.10
where department = 'Sales';

select employee_id, name, department, bonus as New_bonus
from employees where department = 'Sales';
```

	employee_id [PK] integer	name character varying (50)	department character varying (50)	new_bonus numeric (10,2)
1	1	John Miller	Sales	16500.00
2	5	David Wilson	Sales	13200.00
3	9	James Anderson	Sales	11000.00
4	14	Rohan Gupta	Sales	13200.00

d) Calculate the net salary after deducting tax for all employees.



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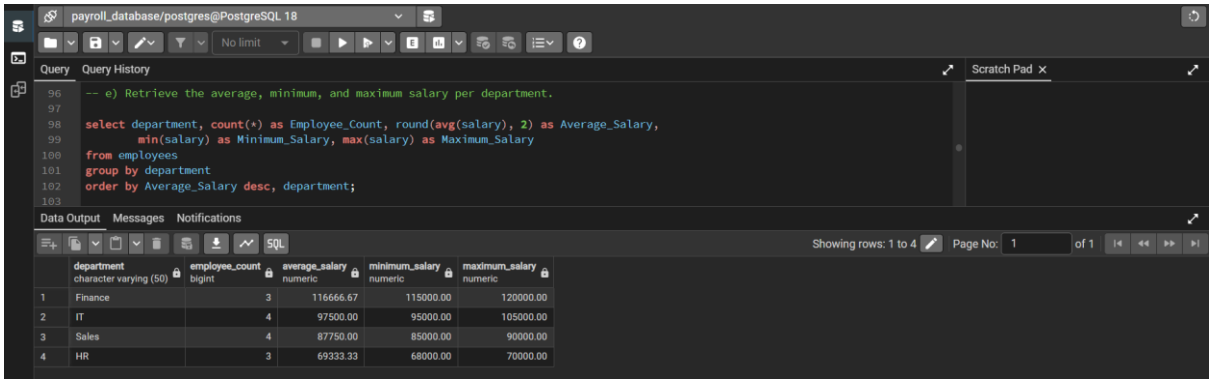
-- d) Calculate the net salary after deducting tax for all employees.

select  employee_id, name, department, salary, bonus, tax_percentage,
        (salary + bonus) as Gross_Salary,
        round((salary * (tax_percentage / 100)),2) as Tax_deductions,
        round((salary + bonus) * (1 - tax_percentage / 100) , 2) as Net_Salary
from employees
order by Net_Salary desc, name;
```

	employee_id [PK] integer	name character varying (50)	department character varying (50)	salary numeric (10,2)	bonus numeric (10,2)	tax_percentage numeric (5,2)	gross_salary numeric	tax_deductions numeric	net_salary numeric
1	4	Emily Clark	Finance	120000.00	20000.00	18.00	140000.00	21600.00	114800.00
2	7	Daniel Brown	Finance	115000.00	18000.00	18.00	133000.00	20700.00	109060.00
3	12	Pooja Nair	Finance	115000.00	18000.00	18.00	133000.00	20700.00	109060.00
4	6	Sophia Martinez	IT	105000.00	15000.00	15.00	120000.00	15750.00	102000.00
5	11	Amit Sharma	IT	95000.00	15000.00	12.50	110000.00	11875.00	96250.00
6	2	Sarah Johnson	IT	95000.00	10000.00	15.00	105000.00	14250.00	89250.00
7	1	John Miller	Sales	85000.00	16500.00	12.50	101500.00	10625.00	88812.50
8	5	David Wilson	Sales	88000.00	13200.00	12.50	101200.00	11000.00	88550.00
9	14	Rohan Gupta	Sales	88000.00	13200.00	12.50	101200.00	11000.00	88550.00
10	10	Ava Thomas	IT	95000.00	9000.00	15.00	104000.00	14250.00	88400.00
11	9	James Anderson	Sales	90000.00	11000.00	12.50	101000.00	11250.00	88375.00
12	3	Michael Davis	HR	70000.00	5000.00	10.00	75000.00	7000.00	67500.00
13	13	Priya Singh	HR	70000.00	5000.00	10.00	75000.00	7000.00	67500.00
14	8	Olivia Taylor	HR	68000.00	3000.00	10.00	71000.00	6800.00	63900.00

e) Retrieve the average, minimum, and maximum salary per department.



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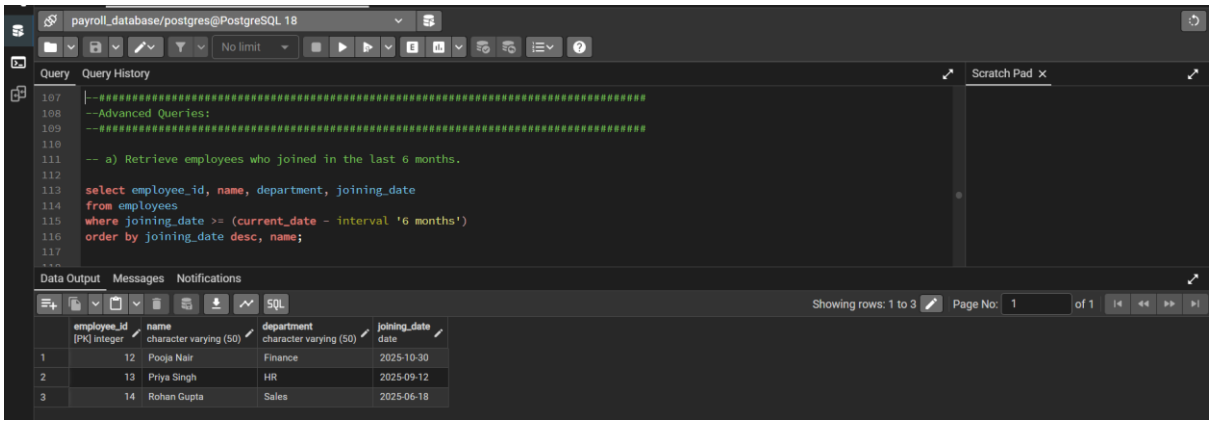
-- e) Retrieve the average, minimum, and maximum salary per department.

select department, count(*) as Employee_Count, round(avg(salary), 2) as Average_Salary,
       min(salary) as Minimum_Salary, max(salary) as Maximum_Salary
from employees
group by department
order by Average_Salary desc, department;
```

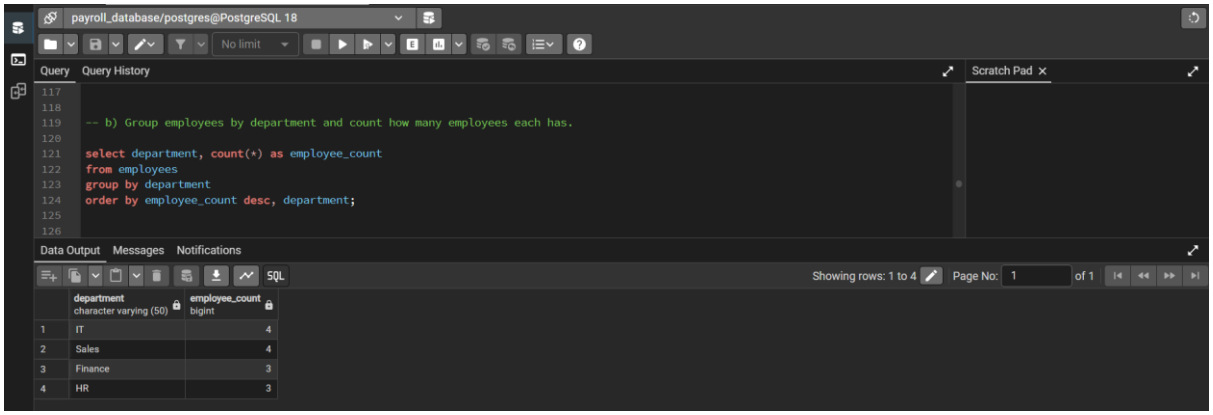
	department character varying (50)	employee_count bigint	average_salary numeric	minimum_salary numeric	maximum_salary numeric
1	Finance	3	116666.67	115000.00	120000.00
2	IT	4	97500.00	95000.00	105000.00
3	Sales	4	87750.00	85000.00	90000.00
4	HR	3	69333.33	68000.00	70000.00

Advanced Queries:

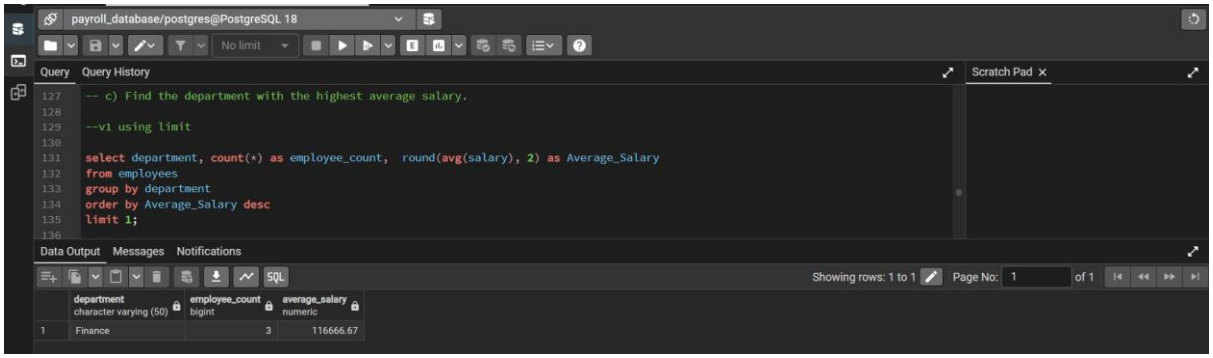
a) Retrieve employees who joined in the last 6 months.

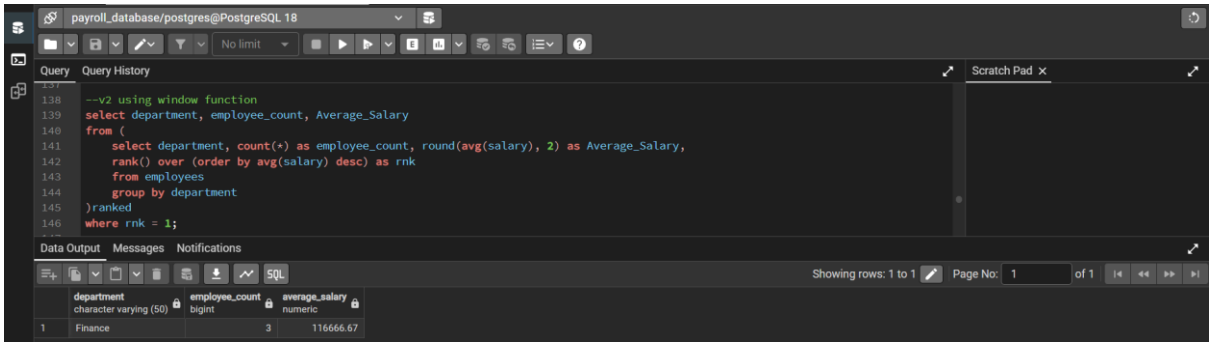


b) Group employees by department and count how many employees each has.



c) Find the department with the highest average salary.





d) Identify employees who have the same salary as at least one other employee.