EXPERIMENT 2

Aim of the Session

To understand and implement SQL SELECT queries using various clauses such as WHERE, ORDER BY, GROUP BY, and HAVING for efficient retrieval, filtering, grouping, and analysis of data from relational database tables.

Objective of the Session

- Write SQL SELECT statements effectively
- Apply filtering conditions using the WHERE clause
- Sort query results using the ORDER BY clause
- Group records using the GROUP BY clause
- Filter grouped data using the HAVING clause
- Analyze data using aggregate functions such as COUNT(), SUM(), AVG(), MIN(), and MAX()

Practical / Experiment Steps

- Create an **EMPLOYEE** table with appropriate attributes
- Insert sample employee records into the table
- Filter employees based on salary conditions
- Calculate department-wise average salary
- Display only departments satisfying the given conditions
- Sort the final result in descending order of average salary

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Procedure of the Experiment

1. Start the system and log in to the computer.
2. Open PostgreSQL using **pgAdmin**.
3. Create or select the required database.
4. Create the **EMPLOYEE** table using the CREATE TABLE command.
5. Insert sample employee records using INSERT statements.
6. Execute SQL queries using:
    - WHERE clause
    - GROUP BY clause

- HAVING clause
- ORDER BY clause

7. Verify the output generated by the queries.
8. Save the work and take screenshots of the execution results.

I/O Analysis (Input / Output Analysis)

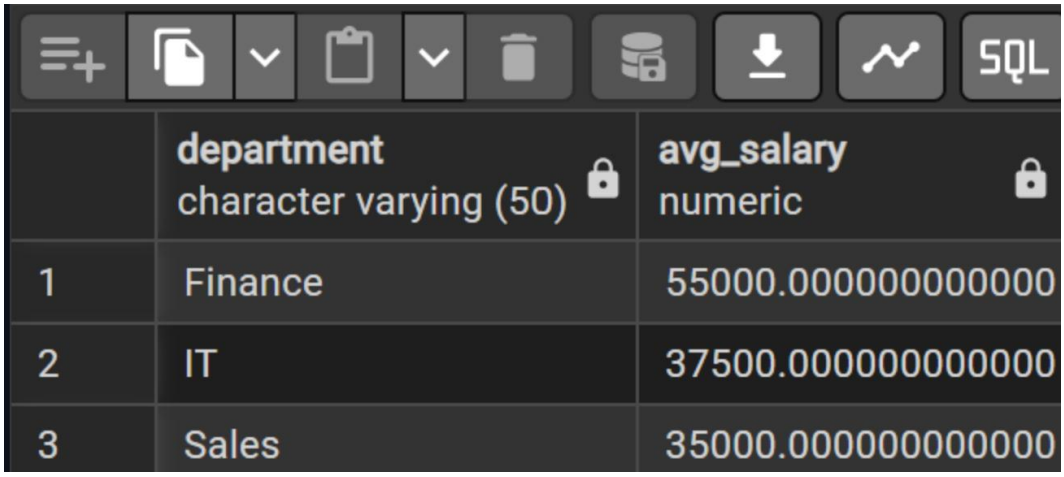
Input Provided

- Employee details including:
  - Employee ID
  - Employee Name
  - Department
  - Salary
  - Joining Date
- SQL queries applying filtering, grouping, and sorting conditions

Output Generated

- Department names along with their average salary
- Display of only those departments where:
  - Employee salary is greater than 20,000
  - Average department salary is greater than 30,000
- Output sorted in descending order of average salary

	emp_id [PK] numeric	emp_name character varying (50)	department character varying (50)	salary numeric	joining_date date
1	1	Amit	HR	25000	2021-06-15
2	2	Riya	HR	35000	2020-03-10
3	3	Suresh	IT	45000	2019-01-25
4	4	Neha	IT	30000	2022-07-18
5	5	Karan	Finance	20000	2021-11-05
6	6	Pooja	Finance	55000	2018-09-12
7	7	Rahul	Sales	28000	2020-02-20
8	8	Anita	Sales	42000	2019-08-30



	department character varying (50)	avg_salary numeric
1	Finance	55000.000000000000
2	IT	37500.000000000000
3	Sales	35000.000000000000

Learning Outcome

- How to filter records using the WHERE clause
- How to group records using the GROUP BY clause
- How to apply conditions on grouped data using the HAVING clause
- How to sort query results using the ORDER BY clause
- Practical use of aggregate functions for data analysis