10/06/25

Exercise 2 - SQL Aggr functions and SQL Operators

1. SELECT Distinct department,
FROM students;

Output:

department
IT
HR
Finance

2. SELECT department,
AVG (age) AS ~~average age~~ avg_age
GROUP BY department,
FROM students;

Output:

department	~~avg~~ avg_age
IT	20,5
HR	22
Finance	23

3. SELECT department
Count (~~name~~ student_id) AS student_count
GROUP BY department
HAVING student_count > 1
FROM students;

Output

department	student_count
IT	2
HR	2

~~4.~~ ~~3.~~ ~~SELECT~~

4. SELECT *,
FROM students,
WHERE age BETWEEN 21 AND 23;

Student-id	name	age	department
2	~~Alice~~ Bob	22	HR
3	Charlie	21	IT
4	Diana	23	Finance
5	Eve	22	HR

5. SELECT *,
FROM students,
WHERE department ~~can~~ IN ('IT', ~~or~~ 'HR') AND age > 21;
~~WHERE~~ (can we have multiple WHERE statements in SQL?)
~~FROM~~ output:

Student_id	name	age	department
2	Bob	22	HR
5	Eve	22	HR

6. SELECT department
SUM (credits) AS total_credits,
GROUP BY department;
HAVING total_credits > 5;
FROM courses;

Output:

department	total_credits
IT	11

7. SELECT *
FROM courses
WHERE credits != 4;

output:

course_id	course_name	department	credits
101	SQL Basics	IT	3
104	Excel	Finance	2
105	Statistics	HR	3

8. SELECT course_id, course_name, credits,
FROM courses,
ORDERBY credits DESC,
Limit 3;

output

course_id	course_name	credits
102	~~SQ~~ Python	4
103	Data Science	4
101	SQL Basics	3

9. SELECT Max(grade) as max_grade, Min(grade) as min_grade,
AVG(grade) as avg_grade
FROM enrollments;

output:

Max_grade	Min_grade	Avg_grade
90	78	84,6

10 SELECT course_id
~~Cast~~ Count(student_id) AS enrollment_count,
FROM enrollments,
GROUPBY course_id;

output

course_id	enrollment_count
101	1
102	1
103	1
104	1
105	1

11. SELECT department,
SUM (salary) AS total_salary,
SUM (Bonus) AS total_bonus,
FROM salaries,
GROUPBY department;

output

department	total_salary	total_bonus
IT	122000	10500
HR	101000	9500
FINANCE	70 000	6000

12. SELECT department,
AVG (salary) AS avg_salary,
FROM salaries
GROUPBY department
HAVING avg_salary > 55000

Output

Department	avg_salary
IT	61000
Finance	70 000

13. SELECT employee_id, name, salary, bonus, (salary + bonus) AS total compensation,
FROM Salaries
WHERE total compensation > 60000;

Output

employee_id	name	Salary	bonus	total_compensati
1	Tom	60000	5000	65000
3	Spike	70000	6000	76000
4	Tyke	62000	5500	67500

14. SELECT department,
AVG(budget) AS avg_budget,
SUM(budget) AS total_budget,
FROM ~~dep~~ projects,
GROUP BY department,
HAVING Avg_budget > 70000;

output

Department	Avg_budget	Total_budget
IT	135000	270000
Finance	80000	80000

15. SELECT *,
FROM projects,
WHERE budget BETWEEN 50000 ~~AND~~ and 120000,
~~WHERE~~ AND Department != Marketing;

output

project_id	project_name	department	budget
1	AI App	IT	120000
2	Payroll System	Finance	80000
5	HR Portal	HR	50000