

Exercise 2 SQL Aggregate Functions & SQL Operations

1. SELECT DISTINCT department
FROM students

Expected Output:

Department

IT

HR

Finance

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

Expected Output

department	Avg_age
IT	20.5
HR	22.0
Finance	23.0

3. SELECT department, COUNT(*) AS student count
 FROM students
 GROUP BY department
 HAVING COUNT(*) > 1;

department	Student _ count
IT	2
HR	2

4. SELECT student id, name, age, department
 FROM students
 WHERE age BETWEEN 21 and 23;

student id	name	age	department
2	Bob	22	HR
3	Charlie	21	IT
4	Diana	23	Finance
5	Eve	22	HR

5. SELECT student id, name, age, department
 FROM students
 WHERE (department IN ('IT', 'HR')) AND age > 21;

student id	name	age	department
2	Bob	22	HR
5	Eve	22	HR


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

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department	Total credits
IT	11

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7. SELECT      course_id, COUNT(*) AS num_sections
FROM          course
WHERE         credits > 5;

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course_id	num_sections
101	2
102	2
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9 SELECT max(grade) AS max-grade
 min(grade) AS min-grade
 AVG(grade) AS avg-grade
 FROM enrollments;

Max-grade	Min-grade	Avg-grade
90	78	84.6

10 SELECT course_id,
 COUNT(*) AS enrollment-count
 FROM enrollments
 GROUP BY course_id;

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
 GROUP BY department;

department	Total-salary	Total-bonus
IT	122 000	10 300
HR	109 000	7500
Finance	10000	6000

12. SELECT department, AVG(salary) AS avg-salary
 FROM salaries
 GROUP BY department
 HAVING AVG(salary) > 55000;

department	avg-salary
IT	61000
Finance	70000

13. SELECT employee_id, name, salary, bonus, (salary + bonus)
 AS total-compensation
 FROM salaries
 WHERE (salary + bonus) > 6000

Emp-id	name	salary	bonus	Total-compensation
1	Tom	60000	5000	65000
3	Spike	70000	6000	76000
4	Tyke	62000	8500	70500

14. SELECT department
 SUM(budget) AS total-budget
 AVG(budget) AS avg-budget
 FROM projects
 GROUP BY department
 HAVING AVG(budget) > 7000

department	Total-budget	Avg-budget
IT	27000	135000
Finance	80000	80000