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
3	Eve	22	HR

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

department | Total_credits
IT | 11

7. SELECT course_id, course_name
FROM course
WHERE credits = (
SELECT MAX(credits)
FROM course
);

course_id | course_name
C01 | Java

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	Enrolment_ 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	70000	6000

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

department	avg-salary
IT	61000
Finance	70 000

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	60 000	5000	65 000
3	Spike	70 000	6000	76 000
4	Tyke	62 000	5800	67 800

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	24000	135 000
Finance	80 000	80 000