Exercise 2

1.
```
SELECT
DISTINCT department
FROM students
```

Department
IT
HR
finance

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

department	Avg_age
IT	20,2
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,
FROM studentsdepartment
WHERE age BETWEEN 21 and 28;

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	2	HR

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

department	total_credits
IT	11

7. SELECT course_id,
course_name,
department,
credits
FROM courses
WHERE credits < 4;

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
ORDER BY credits DESC
LIMIT 3;

course_id	course_name	credits
102	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;

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	122000	10500
HR	109000	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	70000

13. SELECT employee_id,
name,
Salary,
Bonus,
(salary + bonus) AS total_compensation
FROM salaries
WHERE (salary + bonus) > 60000;

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

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

department	total_budget	Avg_budget
IT	270000	135000
finance	80000	80000

15. SELECT
project_id,
project_name,

department,
budget
FROM projects
WHERE budget BETWEEN 50000 AND 120000
AND department <> 'Marketing';

project_id	project_name	department	budget
1	AI APP	IT	120000
2	Payroll system	finance	80000
5	HR Portal	HR	50000