Exercise 2 Aggregate Function

Table : students

Student_id	Name	AGE	department
1	Alice	20	IT
2	Bob	22	HR
3	Charlie	21	IT
4	Diana	23	Finance
5	Eve	22	HR

① SELECT distinct department
FROM students;

② SELECT department AVG 'age' AS AVG
FROM students
GROUP by department;

③ SELECT department
COUNT (student_id) AS student_count
FROM students
GROUP BY department
HAVING student_count > 1;

④ SELECT student_id, name, age, department
FROM students
~~WHERE department IN 'IT', 'HR'~~ WHERE age between 21 AND 23;

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

⑥ Table: courses

course_id	course_name	department	credits
101	SQL Basic	IT	3
102	Python	IT	4
103	Data Science	IT	4
104	Excel	Finance	2
105	Statistics	HR	3

~~SELECT department, total_credits~~

~~FROM course~~

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

⑦
```
SELECT department, Course_id, course_name, credits
FROM courses
WHERE credits <> 4;
```

⑧
```
SELECT course_id, course_name, credits
FROM course
ORDER BY credits DESC
Limit 3;
```

⑨
```
SELECT MAX(grade) AS max_grade,
       MIN(grade) AS min_grade,
       AVG(grade) AS avg_grade,
       FROM enrollments;
```

⑩
```
SELECT COUNT(*) AS enrollment_count
FROM enrollments
GROUP BY course_id;
```

(11) SELECT

Take: salaries

employee_id	Name	department	Salary	bonus
1	Tom	IT	60000	5000
2	Jerry	HR	55000	4000
3	Spike	Finance	70000	6000
4	Tyke	IT	62000	5500
5	Butch	HR	56000	3500

```
SELECT salary, department, bonus
FROM salaries,
SUM(salary) AS total_salary,
SUM(Bonus) As total_bonus
GROUP BY department;
```

(12) ~~SELECT department, avg_salary~~

```
SELECT department, AVG(salary) As avg_salary
FROM salaries
GROUP BY department
HAVING AVG(salaries) > 5000;
```

(13) SELECT employee_id, name, salary, bonus, total_compensation

```
FROM salaries
~~WHERE~~ (Salary + BONUS) As total_compensation
WHERE (salary + Bonus) > 60000;
```

Table: Projects

(16)

Project_id	Project_name	department	Budget
1	AI App	IT	120000
2	Payroll system	Finance	8000
3	DashBoard	IT	150000
4	Website	Marketing	60000
5	HR Portal	HR	50000

```
SELECT department, AVG(Budget) AS avg_budget
SUM(Budget) AS Global_budget,
FROM Projects
GROUP BY department
HAVING AVG(Budget) > 70000;
```

(18)

```
SELECT project_id, project_name, department, budget
FROM projects
WHERE Budget BETWEEN 50 000 AND 120 000
AND department <> 'Marketing';
```