#### 华东师范大学软件工程学院实验报告

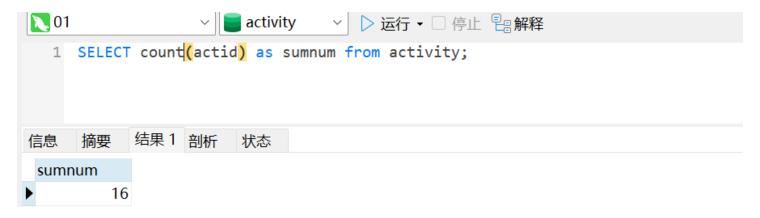
实验课程:数据库实践	姓名: 黄凯勋	学号: 10235101576
实验名称: SQL-Homework-Lab01	实验日期: 2025.3.18	指导老师:姚俊杰

based on database activity

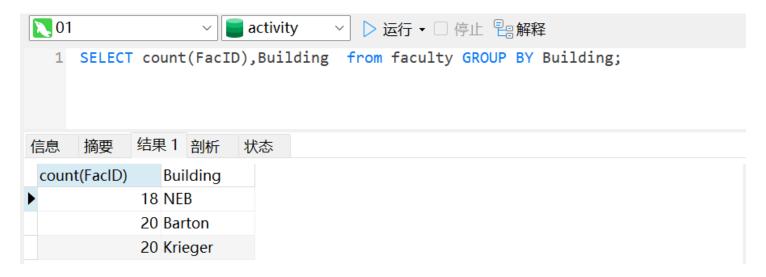
# Question 0: Give me the number of faculty members who participate in an activity (easy)



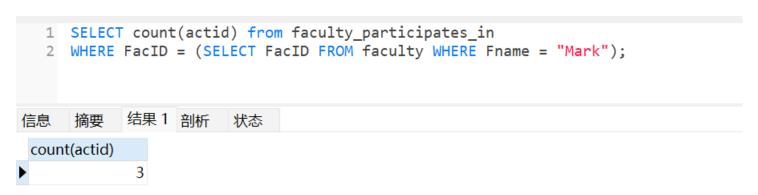
#### Question 1: How many activities do we have? (easy)



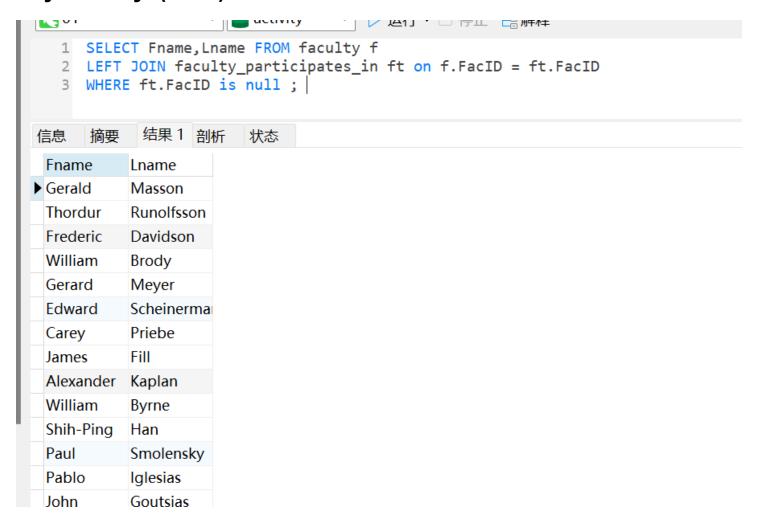
## Question 2: How many faculty members does each building have? List the result with the name of the building. (medium)



# Question 3: How many activities does Mark Giuliano participate in? (medium)



# Question 4: Show the ids of the faculty who don't participate in any activity. (hard)



# Question 5: What are the ids of the faculty members who do not advise any student. (hard)

```
1 SELECT f.FacID FROM faculty f
  2 LEFT JOIN student s on f.FacID = s.Advisor
  3 WHERE s.Advisor is null :
           结果 1 剖析
信息
     摘要
                        状态
FacID
     1082
     1172
     1177
     1193
     1823
     2028
     2119
     2291
     2738
     2881
     3457
     4230
     4432
     6112
```

# Question 6: Find the name of the activity that has the largest number of student participants. (extra)



#### Question 7: What are the first name and last name of Linda Smith's advisor? (extra)

```
1 SELECT f.Fname, f.Lname FROM faculty F
2 LEFT JOIN student s on f.FacID = s.Advisor
3 where s.Fname = "Linda";
信息 摘要 结果 1 剖析 状态
Fname Lname
Michael Goodrich
```

#### Question 8: Give me the first and last name of the faculty who advises the most students. (extra)



### Question 9: Find the ids of the students who participate in Canoeing and Kayaking. (extra)

```
1 SELECT DISTINCT s.StuID
2 FROM student s
3 JOIN participates_in sp1 ON s.StuID = sp1.stuid AND sp1.actid IN (SELECT actid FROM activity WHERE activity_name = 'Canoeing')
4 JOIN participates_in sp2 ON s.StuID = sp2.stuid AND sp2.actid IN (SELECT actid FROM activity WHERE activity_name = 'Kayaking')
WHERE sp1.stuid = sp2.stuid;

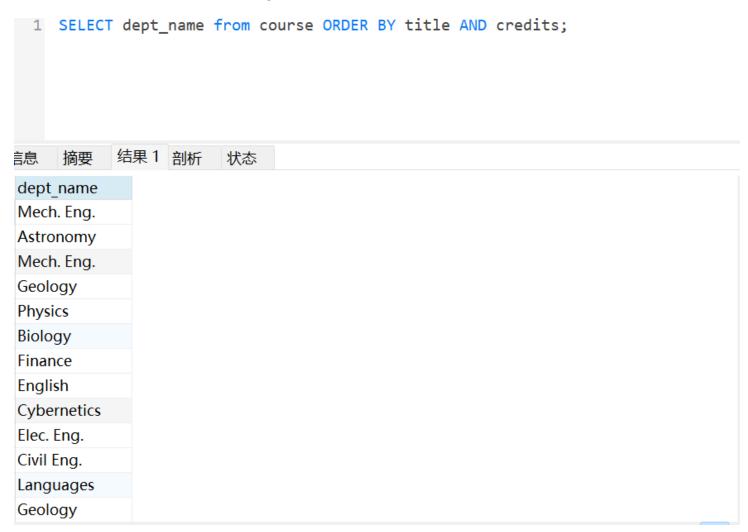
1 簡要 结果 1 剖析 状态

StuID

1002
```

based on database college

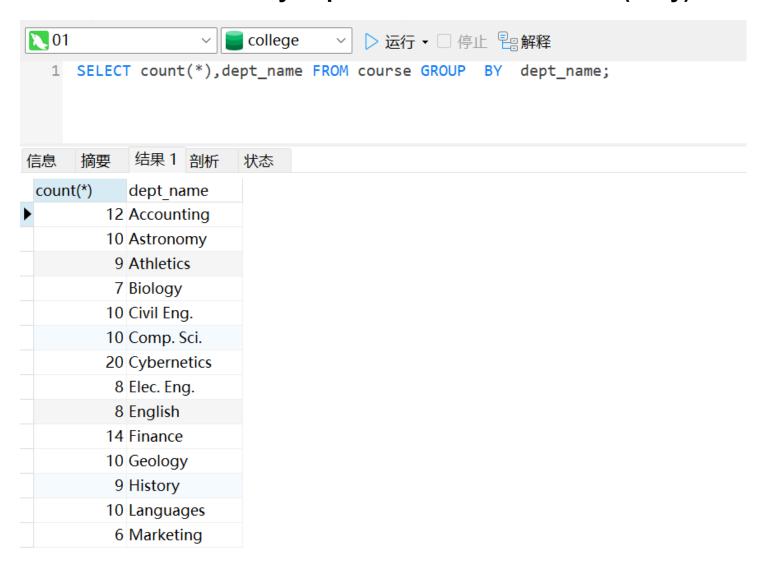
# Question 10: List the names of all courses ordered by their titles and credits. (easy)



# Question 11: Count the number of students who have advisors. (easy)



#### Question 12: How many departments offer courses? (easy)



# Question 13: List the information of all instructors ordered by their salary in ascending order. (easy)

SELECT \* FROM instructor ORDER BY salary ASC; 1 结果1 剖析 息 摘要 状态 ID name dept name salary 14365 Lembr Accounting 32241.56 Konstantinides Languages 32570.50 50885 Vicentino Elec. Eng. 42782 34272.67 English 28097 Kean 35023.18 36897 Morris Marketing 43770.36 Accounting 57180 Hau 43966.29 64871 Gutierrez Statistics 45310.53 Queiroz Biology 80759 45538.32 72553 Yin English 46397.59 Accounting 79081 Ullman 47307.10 Desyl Languages 59795 48803.38 Tung 41930 Athletics 50482.03 Bertolino Mech. Eng. 97302 51647.57 95030 Arinb Statistics 54805.11

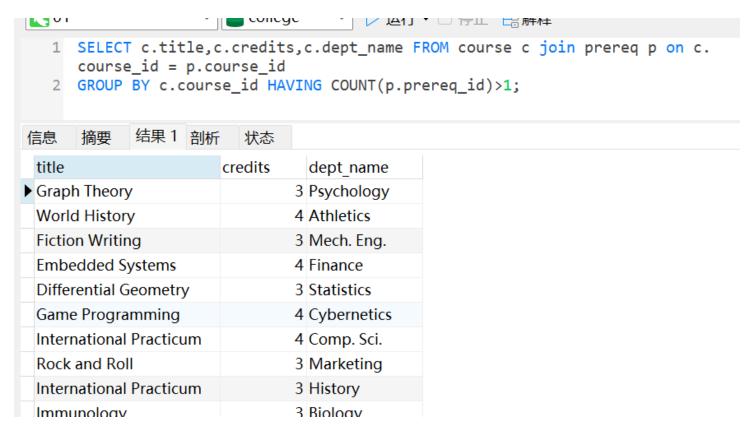
### Question 14: How many different courses offered by Physics department? (easy)



#### Question 15: What are the titles for courses with two prerequisites? (medium)

```
1 SELECT c.title FROM course c join prereq p on c.course_id = p.course_id
   2 GROUP BY c.course_id HAVING COUNT(p.prereq_id)=2;
             结果 1 剖析
信息
      摘要
                          状态
 title
► Graph Theory
 World History
 Embedded Systems
 Differential Geometry
 Game Programming
 International Practicum
 Rock and Roll
 International Practicum
 Immunology
```

### Question 16: What is the title, credit value, and department name for courses with more than one prerequisite? (medium)



## Question 17: Give the title of the course offered in Chandler during the Fall of 2010. (medium)

```
1 SELECT c.title FROM course c
2 LEFT JOIN section s on c.course_id = s.course_id
3 WHERE s.`year` = 2010 and s.building ="Chandler" and s.semester = 'Fall';
信息 摘要 结果 1 剖析 状态

title
International Trade
```

# Question 18: List the names and buildings of all departments sorted by the budget from large to small. (medium)



# Question 19: Find the names and average salaries of all departments whose average salary is greater than 42000. (medium)

```
1 SELECT i.dept name, AVG(i.salary) as asy FROM instructor i
   2 GROUP BY i.dept name HAVING asy > 42000;
            结果 1 剖析
信息
      摘要
                         状态
 dept name
               asy
Accounting
                   48716.592500
 Astronomy
                   79070.080000
 Athletics
                   77098.198000
 Biology
                   61287.250000
 Comp. Sci.
                   98133.470000
 Cybernetics
                   96346.567500
 Elec. Eng.
                   74162.740000
 English
                   72089.050000
 Finance
                  105311.380000
 Geology
                   99382.590000
```

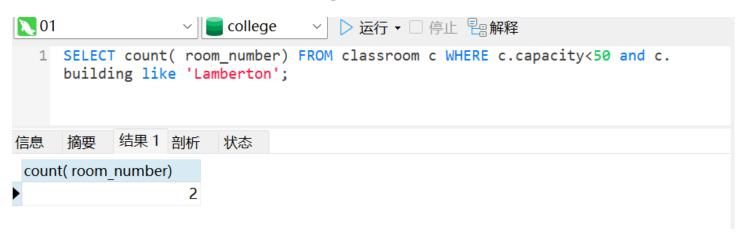
#### Question 20: Find the number of rooms with more than 50 capacity for each building. (medium)



#### Question 21: Find the total number of students in each department. (medium)

1 SELECT dept\_name,COUNT(ID) FROM student GROUP BY dept\_name; 信息 摘要 结果 1 剖析 状态 COUNT(ID) dept name ▶ Accounting 99 Astronomy 106 Athletics 92 Biology 100 Civil Eng. 120 Comp. Sci. 108 Cybernetics 86 Elec. Eng. 98 English 95 Finance 96

# Question 22: How many rooms whose capacity is less than 50 does the Lamberton building have? (medium)



## Question 23: What are the names of students who have more than one advisor? (medium)

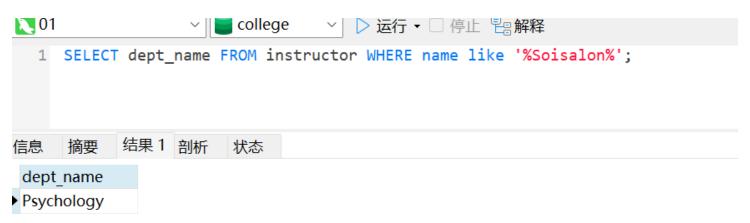
```
1 SELECT s.`name` FROM student s join advisor a on s.ID = a.s_ID
2 GROUP BY s.ID HAVING count(a.i_ID) > 1;

信息 摘要 结果 1 剖析 状态

name

▶ (N/A)
```

# Question 24: Find the department name of the instructor whose name contains 'Soisalon'. (medium)



#### Question 25: Give the name of the department with the lowest budget. (medium)



# Question 26: What is the title of the course that is a prerequisite for Mobile Computing? (hard)

```
1 SELECT c.title AS prerequisite title
   2 FROM course c
   3 JOIN prereq p ON c.course id = p.prereq id
   4 □WHERE p.course id in (
   5
          SELECT course id
   6
          FROM course
   7
          WHERE title = 'Mobile Computing'
   8
     └);
             结果 1 剖析
信息
      摘要
                         状态
 prerequisite title
▶ Differential Equations
 Sanitary Engineering
```

#### Question 27: What are the names of the 3 departments with the most courses? (hard)



# Question 28: Find the id of the courses that do not have any prerequisite? (hard)



# Question 29: What are the names of students who took a course in the Fall of 2003? (hard)



# Question 30: Find the semester and year which has the least number of student taking any class. (hard)



# Question 31: Find the id of instructors who didn't teach any courses? (hard)



### Question 32: Find the name of students who took some course offered by Statistics department. (hard)



# Question 33: What are the titles of courses without prerequisites? (hard)



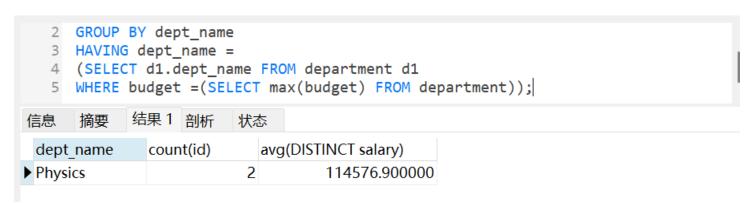
# Question 34: Find names of instructors with salary greater than that of some (at least one) instructor in the Biology department. (hard)

```
1 SELECT DISTINCT i1.name FROM instructor i1
2 WHERE i1.salary > (SELECT min(i2.salary) FROM instructor i2
3 WHERE i2.dept_name like 'Bio%')
4 limit 1;
信息 摘要 结果 1 剖析 状态

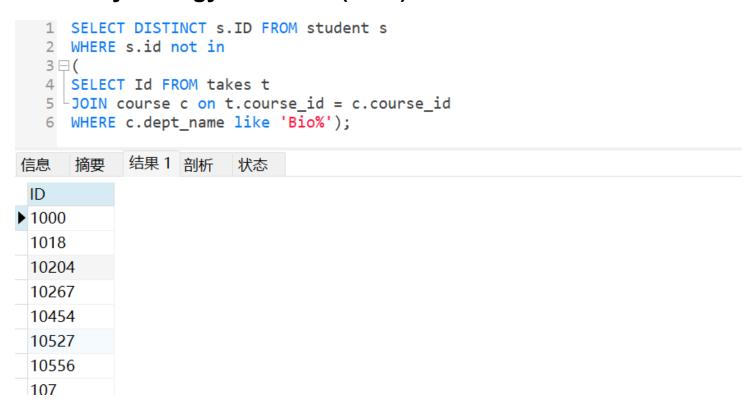
name

Bawa
```

#### Question 35: How many instructors are in the department with the highest budget, and what is their average salary? (hard)



#### Question 36: What are the names of students who haven't taken any Biology courses? (hard)



# Question 37: Give the title of the prerequisite to the course International Finance. (hard)



# Question 38: What is the name of the department with the most credits? (hard)

```
1 SELECT dept_name, sum(credits) s FROM course
2 GROUP BY dept_name
3 ORDER BY s DESC
4 LIMIT 1;

信息 摘要 结果 1 剖析 状态

dept_name s

Cybernetics 67
```

# Question 39: Give the name and building of the departments with greater than average budget. (extra)

