SQL 数据库面试题以及答案（50 例题）_魂 - 淡 - CSDN 博客_sql 面试 50 题

笔记本： 2.数据记录
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SQL 数据库面试题以及答案（50 例题）

Student(Sid,Sname,Sage,Ssex)学生表
Sid：学号
Sname：学生姓名
Sage：学生年龄
Ssex：学生性别
Course(Cid,Cname,T#)课程表
Cid：课程编号
Cname：课程名称
Tid：教师编号
SC(Sid,Cid,score)成绩表
Sid：学号
Cid：课程编号
score：成绩
Teacher(Tid,Tname)教师表
Tid：教师编号：
Tname：教师名字

问题：

1、查询 “001” 课程比 “002” 课程成绩高的所有学生的学号

```
select a.sid from
(select sid,score from sc where cid='001')a,
```

```
(select sid,score from sc where cid='002')b
where a.sid = b.sid and a.score&gt;b.score;
```

2、查询平均成绩大于 60 分的同学的学号和平均成绩

```
select sid,avg(score) from sc
group by sid
having avg(score)&gt;60;
```

3、查询所有同学的学号、姓名、选课数、总成绩

```
select s.sid,s.sname,count_cid as 选课数,
sum_score  as 总成绩
from student s
left join
(select sid,count(cid) as count_cid,sum(score) as sum_score
from sc group by sid )sc
on s.sid = sc.sid;
```

4、查询姓‘李’的老师的个数：

```
select count(tname)
from teacher
where tname like '李%';
```

5、查询没有学过 “叶平” 老师可的同学的学号、姓名：

```
select s.sid,s.sname
from student as s
where s.sid not in (
    select DISTINCT sid
    from sc as sc
    where sc.cid in (
        select cid
        from course as c
        left join teacher as t on c.tid = t.tid
        where t.tname = '叶平')
);
```

6、查询学过 “叶平” 老师所教的所有课的同学的学号、姓名：

```
select s.sid,s.sname
from student as s
where s.sid in (
```

```
    select distinct sc.sid
  from sc as sc
  where sc.cid in (
    select cid
    from course as c
    left join teacher as t on c.tid = t.tid
    where t.tname = '叶平')
        group by sc.sid
    HAVING count(cid)=
    (select count(cid)
     from course as c left join teacher as t on c.tid = t.tid
     where t.tname = '叶平')
);
```

7、查询学过 “011” 并且也学过编号 “002” 课程的同学的学号、姓名：

```
SELECT s.sid,s.sname
from student as s
left join sc as sc on s.sid = sc.sid
where sc.cid = '001'
and EXISTS(
  select * from sc as sc_2
  where sc.sid = sc_2.sid
  and sc_2.cid='002');

select s.sid,s.sname
from student as s
left join sc as sc
on sc.sid = s.sid
where sc.cid = '001'
and s.sid in (
  select sid from sc as sc_2
  where sc_2.cid='002'
  and sc_2.sid = sc.sid);
```

8、查询课程编号 “002” 的成绩比课程编号 “001” 课程低的所有同学的学号、姓名：

```
select sid,sname
from (select student.sid,student.sname,score,
     (select score from sc as sc_2
      where sc_2.sid = student.sid
      and sc_2.cid = '002') as score2
      from student,sc
```

```
      where student.sid=sc.sid and cid = '001') s_2
where score2&lt;score;
```

9、查询所有课程成绩小于 60 的同学的学号、姓名：

```
select sid,sname
from student
where sid not in
(select s.sid
from student s,sc
where s.sid=sc.sid and score&gt;60 );

select sid,sname
from student s
where not EXISTS (
select s.sid from sc
where sc.sid = s.sid and sc.score&gt;60);
```

10、查询没有学全所有课的同学的学号、姓名：

```
select s.sid,s.sname
from student s ,sc sc
where s.sid = sc.sid
group by s.sid,s.sname
having count(sc.cid)&lt;(
select count(cid)
from course);

select s.sid,s.sname
from student s
right join sc sc on s.sid = sc.sid
group by s.sid,s.sname
having count(sc.cid)&lt;
(select count(cid) from course);
```

11、查询至少有一门课与学号为 “1001” 同学所学相同的同学的学号和姓名：

```
select student.sid,sname
from student,sc
where student.sid = sc.sid
and cid in
(select cid from sc where sid='1001');

select s.sid,s.sname
```

```
from sc sc left join student as s
on sc.sid = s.sid
where sc.cid in (select cid from sc where sid='1001');

select sc_1.sid,s.sname
from sc sc_1 left join student as s
on sc_1.sid = s.sid
where
exists (select sc_2.cid from sc as sc_2
where sc_1.cid = sc_2.cid
and sc_2.sid = '1001');
```

12、查询至少学过学号为 “001” 同学所有一门课的其他同学学号和姓名；

13、把 “SC” 表中 “叶平” 老师教的课的成绩都更改为此课程的平均成绩：

```
update sc set score =
(select avg(sc_2.score) from sc sc_2
where sc_2.cid = sc.cid)
where cid in
(select c.cid from course c
left join teacher t on t.tid = c.tid
where t.tname = '叶平');
```

14、查询和 “1002” 号的同学学习的课程完全相同的其他同学学号和姓名：

```
select sc_1.sid
from (select cid from sc where sid='1002')a
left join sc sc_1 on a.cid = sc_1.cid
where sc_1.sid&lt;&gt;'1002'
group by sc_1.sid
having count(sc_1.cid) =
(select count(cid) from sc where sid='1002');

select a.sid,s.sname from
(select sid,GROUP_CONCAT(cid order by cid separator ',') as cid_str
from sc where sid='1002')b,
(select sid,GROUP_CONCAT(cid order by cid separator ',') as cid_str
from sc group by sid)a
left join student s
on a.sid = s.sid
where a.cid_str = b.cid_str and a.sid&lt;&gt;'1002';
```

15、删除学习 “叶平” 老师课的 SC 表记录：

```
delete from sc WHERE
cid in (
select c.cid from course c
LEFT JOIN teacher t on c.tid=t.tid
where t.tname = '叶平');
```

16、向 SC 表中插入一些记录，这些记录要求符合以下条件：没有上过编号 “003” 课程的同学学号、002 号课的平均成绩：

```
insert into sc select sid,'002',
(select avg(score) from sc where cid='0022')
from student
where sid not in (select sid from sc where cid='002');
```

17、按平均成绩从高到低显示所有学生的 “数据库”、“企业管理”、“英语” 三门的课程成绩，按如下形式显示：学生 ID，数据库，企业管理，英语，有效课程数，有效平均分：

```
select sid as 学生id,
(SELECT score from sc
where sc.sid = t.sid and cid='004') as 数据库,
(select score from sc
where sc.sid = t.sid and cid='001') as 企业管理,
(select score from sc
where sc.sid = t.sid and cid='015') as 英语,
count(cid) as 有效课程数, avg(t.score) as 平均成绩
from sc as t
group by sid
order by avg(t.score);
```

18、查询各科成绩最高和最低的分：以如下的形式显示：课程 ID，最高分，最低分

```
select l.cid as 课程id,l.score as 最高分,
r.score as 最低分
from sc l,sc r
where l.cid = r.cid
and l.score =
(select max(t.score) from sc t
where l.cid = t.cid group by t.cid)
and r.score = (select min(t.score) from sc t
where r.cid = t.cid group by t.cid)
```

```
order by l.cid;

select cid as 课程id,max(score) as 最高分,
min(score) as 最低分
from sc
group by cid;
```

19、按各科平均成绩从低到高和及格率的百分数从高到低顺序：

```
SELECT t.cid as 课程号,
c.cname as 课程名,
COALESCE(avg(score),0) as 平均成绩,
100*sum(case
when COALESCE(score,0)&gt;=60
then 1 else 0 END)/count(*) as 及格百分数
from sc t
left join course c
on t.cid = c.cid
group by t.cid
order by 100*sum(case
when COALESCE(score,0)&gt;=60
then 1 else 0 END)/count(*);
```

20、查询如下课程平均成绩和及格率的百分数 (用”1 行” 显示): 企业管理（001），马克思（002），OO&UML （003），数据库（004）：

21、查询不同老师所教不同课程平均分从高到低显示：

```
select t.tid as 教师id,
t.tname as 教师姓名,
sc.cid as 课程id,
avg(score) as 平均成绩
from sc as sc
LEFT JOIN course c on sc.cid = c.cid
left join teacher t on c.tid = t.tid
group by sc.cid
order by avg(sc.score) desc;
```

22、查询如下课程成绩第 3 名到第 6 名的学生成绩单：企业管理 (001)，马克思 (002)，UML(003)，数据库 (004)：

23、统计下列各科成绩，各分数段人数：课程 ID，课程名称，[100-85],[85-70],[70-60],[小于 60] ：

```
select sc.cid as 课程id,cname as 课程名称,
sum(case when score between 85 and 100 then 1 else 0 end) as '[100-85]',
sum(case when score between 70 and 85 then 1 else 0 end) as '[85-70]',
sum(case when score between 60 and 70 then 1 else 0 end) as '[70-60]',
sum(case when score&lt;60 then 1 else 0 end) as '[60-0]'
from sc as sc
left join course as c
on sc.cid = c.cid
group by sc.cid;
```

24、查询学生平均成绩及其名次：

```
select 1+(select count(distinct 平均成绩)
from (select sid,avg(score) as 平均成绩
from sc group by sid)t1
where 平均成绩&gt;t2.平均成绩) as 名次,
sid as 学生学号,平均成绩
from (select sid,avg(score) 平均成绩 from sc group by sid) as t2
order by 平均成绩 desc;
```

25、查询各科成绩前三名的记录（不考虑成绩并列情况）：

```
select sid,cid,score
from sc sc_1
where (
select count(3) from sc sc_2
where sc_1.cid = sc_2.cid
and sc_2.score&gt;=sc_1.score)&lt;=2
order by sc_1.cid
);
```

26、查询每门课程被选修的学生数：

```
select cid, count(sid)
from sc
group by cid;
```

27、查询出只选修一门课程的全部学生的学号和姓名：

```
select sc.sid,s.sname,
count(sc.cid) as 课程数
from sc as sc
LEFT JOIN student as s
on sc.sid = s.sid
```

```
group by sc.sid
having count(sc.cid)=1;
```

28、查询男生、女生人数：

```
select count(ssex) as 男生人数
from student
group by ssex
having ssex = '男';
select count(2) from student
where ssex = '女';
```

29、查询姓 “张” 的学生名单：

```
select sid,sname
from student
where sname like '张%';
```

30、查询同名同姓的学生名单，并统计同名人数：

```
select sname,count(8)
from student
group by sname
having count(8)&gt;1;
```

31、1981 年出生的学生名单（注：student 表中 sage 列的类型是 datetime）：

32、查询平均成绩大于 85 的所有学生的学号、姓名和平均成绩：

```
select s.sname,sc.sid,avg(sc.score) as 平均成绩
from sc as sc
left join student as s
on sc.sid = s.sid
group by sc.sid
having avg(sc.score)&gt;85;
```

33、查询每门课程的平均成绩，结果按平均成绩升序排序，平均成绩相同时，按课程号降序排列：

```
select cid,avg(score)
from sc
group by cid
order by avg(score),cid desc;
```

34、查询课程名称为 “数据库”，且分数低于 60 的学生名字和分数：

```
select c.cname,s.sid,s.sname,sc.score
from course c
left join sc on sc.cid = c.cid
LEFT JOIN student s on s.sid = sc.sid
where c.cname = ’数据库’ and sc.score&lt;60;
```

35、查询所有学生的选课情况：

```
select sc.sid,sc.cid,s.sname,c.cname
from sc
LEFT JOIN course c on sc.cid = c.cid
left join student s on sc.sid = s.sid;
```

36、查询任何一门课程成绩在 70 分以上的姓名、课程名称和分数：

```
select distinct s.sid,s.sname,sc.cid,sc.score
from sc
left join student s on sc.sid = s.sid
left join course c on sc.cid = c.cid
where sc.score&gt;70;
```

37、查询不及格的课程，并按课程号从大到小的排列：

```
select cid
from sc
where score&lt;60
ORDER BY cid;
```

38、查询课程编号为 “003” 且课程成绩在 80 分以上的学生的学号和姓名：

```
select sc.sid,s.sname
from sc
left join student s on sc.sid = s.sid
where sc.cid = ’003’ and sc.score&gt;80;
```

39、求选了课程的学生人数：

```
select count(2) from
(select distinct sid from sc)a;
```

40、查询选修 “叶平” 老师所授课程的学生中，成绩最高的学生姓名及其成绩：

```
select s.sname,sc.score
from sc sc
left join student s on sc.sid = s.sid
left join course c on sc.cid = c.cid
left join teacher t on c.tid = t.tid
where t.tname = '叶平'
and sc.score = (
select max(score)
from sc sc_1
where sc.cid = sc_1.cid);
```

41、查询各个课程及相应的选修人数：

```
select cid,count(*) from sc group by cid;
```

42、查询不同课程成绩相同的学生和学号、课程号、学生成绩：

```
select DISTINCT a.sid,a.cid,a.score
from sc as a ,sc as b
where a.score = b.score
and a.cid &lt;&gt; b.cid;
```

43、查询每门课程成绩最好的前两名：

44、统计每门课程的学生选修人数 (超过 10 人的课程才统计)。要求输出课程号和选修人数，查询结果按人数降序排序，若人数相同，按课程号升序排序：

```
select cid as 课程号,count(8) as 选修人数
from sc
group by cid
HAVING count(sid)&gt;10
order by count(8) desc,cid;
```

45、检索至少选修两门课程的学生学号：

```
select sid
from sc
group by sid
having count(8)&gt;=2;
```

46、查询全部学生选修的课程和课程号和课程名：

```
select cid,cname
from course
where cid in (select cid from sc group by cid);
```

47、查询没学过“ 叶平” 老师讲授的任一门课程的学生姓名：

```
select sname
from student
where sid not in (
    select sid
    from sc,course,teacher
    where course.tid = teacher.tid and sc.cid = course.cid
    and teacher.tname='叶平'
);
```

48、查询两门以上不及格课程的同学的学号以及其平均成绩：

```
select sid,avg(COALESCE(score,0))
from sc
where sid in (
    select sid
    from sc
    where score&lt;60
    group by sid
    having count(8)&gt;2
)
group by sid;
```

49、检索 “004” 课程分数小于 60，按分数降序排列的同学学号：

```
select sid,score
from sc
where cid='004'
and score&lt;60
order by score desc;
```

50、删除 “002” 同学的 “001” 课程的成绩：

```
delete from sc
where sid = '002'
and cid = '001';
```