实验二 检索查询

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实验题目

1-1 找出没有选修任何课程的学生的学号、姓名(即没有选课记录的学生)。

```
create table test2_01 as
select sid,name
from pub.STUDENT
where sid not in (select sid from pub.STUDENT_COURSE)
```

1-2 找出至少选修了学号为“200900130417”的学生所选修的一门课的学生的学号、姓名。

```
create table test2_02 as
select sid,name from pub.STUDENT where sid in
  (select sid from pub.STUDENT_COURSE where cid in
   (select cid from pub.STUDENT_COURSE where sid=200900130417)
  )
```

1-3 找出至少选修了一门其先行课程号为“300002”号课程的学生的学号、姓名。

```
create table test2_03 as
select sid,name from pub.STUDENT where sid in
 (select sid from pub.STUDENT_COURSE where cid in
  (select cid from pub.COURSE where fcid=300002)
 )
```

1-4 找出选修了“操作系统”并且也选修了“数据结构”的学生的学号、姓名。

```
create table test2_04 as
with student_name as
  (select * from pub.STUDENT_COURSE natural join pub.COURSE)
select sid,name from pub.STUDENT where sid in
 (select a.sid from student_name a,student_name b
  where a.sid=b.sid and a.name='操作系统' and b.name='数据结构')
```

1-5 查询 20 岁的所有有选课的学生的学号、姓名、平均成绩(avg_score，此为列名，下同)（平均成绩四舍五入到个位)、总成绩(sum_score)，Test2_05 有四个列，并且列名必须是：sid、name、avg_score、sum_score。通过下面方式实现列名定义： create table test2_05 as select sid,name，（表达式）avg_score,（表达式） sum_score from ……

```
create table test2_05 as
with student_age as
  (select * from pub.STUDENT natural join pub.STUDENT_COURSE)
select sid,name,cast(avg(score) as numeric(38,0)) avg_score,sum(score) sum_score
  from student_age
  where age=20
  group by sid,name
```

1-6 查询所有课的最高成绩、次高成绩（次高成绩一定小于最高成绩)、最高成绩人数，test2_06 有四个列：课程号 cid、课程名称 name、最高成绩 max_score、次高成绩 max_score2、最高成绩人数 max_score_count（一个学生同一门课成绩都是第一，只计一次)。如果没有学生选课，则最高成绩为空值,最高成绩人

数为零。如果没有次高成绩，则次高成绩为空值。

```
create table test2_06 as
with names(cid,name) as
        (select cid,name from pub.COURSE group by cid,name),
    maxs(cid,max_score) as
        (select cid,max(score) from pub.STUDENT_COURSE group by cid),
    max2s(cid,max_score2) as
        (select cid,max(score) from pub.STUDENT_COURSE natural join maxs
        where score<>max_score group by cid),
    maxcounts(cid,max_score_count) as
        (select cid,count(distinct sid)
        from pub.COURSE
            natural left outer join pub.STUDENT_COURSE
            natural full outer join maxs
        where score=max_score group by cid)
select * from names
            natural left outer join maxs
            natural full outer join max2s
            natural full outer join maxcounts
```

1-7 查询所有不姓张、不姓李、也不姓王的学生的学号 sid、姓名 name

```
create table test2_07 as
select sid,name from pub.STUDENT
```

```
where name not like '张%' and name not like '李%' and name not like '王%'
```

1-8 查询学生表中每一个姓氏及其人数（不考虑复姓），test2_08 有两个列：second_name、p_count

```
create table test2_08 as
select substr(name,1,1) second_name,count(*) p_count from pub.STUDENT
group by substr(name,1,1)
```

1-9 查询选修了 300003 号课程的学生的 sid、name、score

```
create table test2_09 as
select s.sid,s.name,sc.score from pub.STUDENT s,pub.STUDENT_COURSE sc
where s.sid=sc.sid and sc.cid='300003'
```

1-10 找出同一个同学同一门课程有两次或以上不及格的所有学生的学号、姓名（即一门课程需要补考两次或以上的学生的学号、姓名）。

```
create table test2_10 as
select sid,name from pub.STUDENT
where sid in
    (select sid from pub.STUDENT_COURSE
    where score<60
    group by sid,cid
    having count(*)>=2)
```