多表查询的功能分析实验内容

select sname, sbirth

from student

where sSex= (

select sSex

from student

where sName='刘卫平')

/\*找到跟刘卫平一样性别的人的姓名和出生日期\*/

select sno,sname,ssex

from student

where student.sNO in (

select sNO

from student\_course

where ccNO in ('0324091007','0324051013')

)

/\*查询选修了课程号为‘’或‘’的学生的学号姓名性别\*/

select sno,sname

from student s

where exists(

select \*

from student\_course sc

where sc.sNO = s.sNO and ccNO='0324091007'

)

and exists (

select \*

from student\_course sc

where sc.sNO = s.sNO and ccNO='0312091006'

)

/\*查询选修了课程号为‘’和‘’的学生的学号和姓名\*/

/\*区别？一个是或一个是和\*/

SELECT ccNo,mark

FROM student\_course

WHERE sNo ='100212201' AND mark >ANY

(SELECT mark

FROM student\_course

WHERE sNo ='100212208' )

/\*查询学号为01的学生成绩高于学号为08的学生最高分的课程的课程号和成绩\*/

SELECT sNo,sName,mName

FROM student AS s, major AS m

WHERE s.mNo=m.mNo AND s.sNo IN

(SELECT sNo

FROM student\_course

WHERE mark<60)

/\*查询成绩低于60分的学生学号姓名和专业名\*/

SELECT sName

FROM student s

WHERE NOT EXISTS(

SELECT \*

FROM student\_course sc,course\_class cc,teacher t

WHERE sc.ccNo=cc.ccNo AND cc.tno=t.tno AND

sc.sNo=s.sNo AND t.tName='李明')

/\*查询没有被李明老师教的学生的姓名\*/

SELECT distinct s.sNo,sName,mName

FROM student s,major m,student\_course sc

WHERE s.mNo=m.mNo AND s.sNo=sc.sNo AND mark<60

/\*查询有不及格课程的学生学号、姓名和专业名称\*/

SELECT sc1.sNo ,sc1.mark,sc2.mark

FROM student\_course sc1,student\_course sc2

WHERE sc1.ccNo='2009010101'

AND sc2.ccNo='2009010201'

AND sc1.mark>sc2.mark

AND sc1.sNO = sc2.sno

/\*查询同一个学生的“010101”号课程的成绩比“010102”号课程的成绩高的所有学生的学号及其两门课的成绩。\*/

SELECT s.sNo,s.sName

FROM student s

WHERE sNo IN (

SELECT sc.sNo

FROM student\_course sc,course\_class cc,course c

WHERE sc.ccNo=cc.ccNo AND cc.cno=c.cno

AND c.cname IN('计算机网络','金融学')

GROUP BY sNo

HAVING count(\*)=2)

/\*查询既选修过“计算机网络”课程，又选修过“金融学”课程的所有学生学号及姓名。\*/

SELECT s.sName, AVG(sc1.mark)

FROM student s,student\_course sc1

WHERE s.sNo=sc1.sNo AND s.sNo IN(

SELECT sNo

FROM student\_course sc2

WHERE sc1.Mark<60

GROUP BY sNo

HAVING COUNT(\*)>=2)

GROUP BY s.sName

/\*查询有二门以上（含两门）课程不及格的学生姓名及其平均成绩。\*/

SELECT sNo,sName

FROM student s

WHERE sNo IN(

SELECT sNo

FROM student\_course sc

RIGHT JOIN course\_class cc ON sc.ccNo=cc.ccNo

GROUP BY sNo

HAVING COUNT(\*)=(

select COUNT(\*)

from course

group by cno

/\*?????\*/

))

SELECT cName,tName

FROM course c,teacher t,course\_class cc

WHERE c.cNo=cc.cNo AND cc.tNo=t.tNo AND ccNo=(

SELECT top 1 ccNo

FROM student\_course

GROUP BY ccNo

ORDER BY AVG(mark) DESC )

/\*查询学生平均分最高的课程名称及任课教师。\*/

（二）单表查询测验

根据下面的要求，写出其 SQL 语句，然后在查询分析器中运行该语句，并根据得到的结果验证语句的正确性。

1、查询有课程不及格的学生的学号。

select distinct sno

from student\_course

where mark < 60

2、查询出广东和海南的学生信息。

select \*

from student

where snative like'[广东,海南]%'

3、查询出偏瘦的学生姓名，性别，身高，体重及 BMI 指数（女生 BMI<=19，男生 BMI<=20,BMI= 体重/（身高×身高），要求体重单位为公斤，身高单位为米）。

注：student 表中学生的身高单位为厘米。

select sname,ssex,sheight,sweight,(sweight/(sheight\*sheight\*0.0001)) as BMI

from student

where (ssex='女' and (sweight/(sheight\*sheight\*0.0001)) <= 19) or (ssex = '男' and (sweight/(sheight\*sheight\*0.0001)) <= 20)

4、查询出每门课程的平均分、最低分、最高分。

select avg(mark) as '平均分', min(mark) as '最低分',max(mark) as '最高分'

from student\_course

group by ccNO

5、查询出平均分大于 80 分，且至少选修了 2 门课程的学生学号

select sno

from student\_course

group by sno

having (avg(mark) > 80 and count(\*) >= 2)



（三）多表查询测验

根据下面的要求，写出其 SQL 语句，然后在查询分析器中运行该语句，并根据得到的结果验证语句的正确性。请尽量思考多种写法。

1、查询出跟“张凡”同一个藉贯，且年龄比她大的学生。

select \*

from student

where snative = (

select sNative

from student

where sname = '张凡'

)

and

('2019/10/27' - sbirth) > (

select ('2019/10/27' - sbirth) as '年龄'

from student

where sname='张凡'

)

2、求其他系中比计算机系所有学生年龄都小的学生。

select \*

from department,student

where dname!= '计算机系' and year(GETDATE()) - year(sbirth) < (

select min(year(GETDATE()) - year(sbirth)) as '最小年龄'

from department,student

where dname='计算机系'

)

3、查询每一个学生的课程选修情况（包括没选课的），要求显示学号，姓名，开课编号及成绩，优先显示没选课的同学信息。

select s.sno,sname,ccno,mark

from student s,student\_course sc

where s.sno=sc.sno

group by s.sno,sname,ccno,mark

order by mark asc

4、查询出高等数学课程的成绩高于刘晨成绩的学生学号和成绩。

select sno,mark

from student\_course sc,course c,course\_class cc

where cc.ccNO = sc.ccNO and c.cNO = cc.cNO and c.cname = '高等数学' and sc.mark > (

select mark

from student s, student\_course sc,course c,course\_class cc

where s.sname='刘晨' and s.sno = sc.sno and sc.ccno = cc.ccno and c.cname = '高等数学'and c.cNO = cc.cNO

)

5、求至少选修了学号为“090120206”的学生所选修全部课程的学生学号和姓名。

select distinct s.sno,sname

from student s,student\_course sc

where not exists

(

select \*

from student\_course y

where y.Sno='090120206' and not exists

(

select \*

from student\_course Z

where z.Ccno=y.Ccno and

z.Sno=sc.Sno

)

)