SQL Server练习题答案

select A.\*,B.C#,B.score from (select \* from SC where C#='01')A

left join(select \* from SC where C#='02')B

on A.S#=B.S#

where A.score>B.score

--1 查询“ 01 ”课程比" 02 "课程成绩高的学生的信息及课程分数

select \* from (select \* from SC where C#='01')A

left join (select \* from SC where C#='02')B on A.S#=B.S#

where B.S# is not null

--1.1 查询同时存在" 01 "课程和" 02 "课程的情况

select \* from (select \* from SC where C#='01')A

left join (select \* from SC where C#='02')B on A.S#=B.S#

--1.2 查询存在" 01 "课程但可能不存在" 02 "课程的情况(不存在时显示为null)

select \* from SC where C#='02'and S# not in(select S# from SC where C#='01')

--1.3 查询不存在" 01 "课程但存在" 02 "课程的情况

select A.S#,B.Sname,A.dc from(select S#,AVG(score)dc from SC group by S#)A

left join Student B on A.S#=B.S# where A.dc>=60

--2. 查询平均成绩大于等于 60 分的同学的学生编号和学生姓名和平均成绩

select \* from Student where S# in (select distinct S# from SC)

--3. 查询在 SC 表存在成绩的学生信息

select B.S#,B.Sname,A.选课总数,A.总成绩 from

(select S#,COUNT(C#)选课总数,sum(score)总成绩 from SC group by S#)A

right join Student B on A.S#=B.S#

--4. 查询所有同学的学生编号、学生姓名、选课总数、所有课程的总成绩(没成绩的显示为null)

select A.S#,B.Sname,A.选课总数,A.总成绩 from

(select S#,COUNT(C#)选课总数,sum(score)总成绩 from SC group by S#)A

left join Student B on A.S#=B.S#

--4.1 查有成绩的学生信息

select COUNT(\*)李姓老师数量 from Teacher where Tname like '李%'

--5.查询「李」姓老师的数量

select \* from Student

where S# in(select distinct S# from SC

where C#=(select C# from Course

where T#=(select T# from Teacher where Tname='张三')))

--6.查询学过「张三」老师授课的同学的信息

select \* from Student where S# in(select S# from SC group by S# having COUNT(C#)<3)

--7.查询没有学全所有课程的同学的信息

select \* from Student

where S# in(select distinct S# from SC where C# in(select C# from SC where S#='01')

)

--8. 查询至少有一门课与学号为" 01 "的同学所学相同的同学的信息

select \* from Student

where S# in(select S# from SC where C# in(select distinct C# from SC where S#='01') and S#<>'01'

group by S#

having COUNT(C#)>=3)

--9. 查询和" 01 "号的同学学习的课程完全相同的其他同学的信息

select Sname from Student

where S# not in(select S# from SC

where C# in(select C# from Course where T# in(select T# from Teacher where Tname='张三')

)

)--10. 查询没学过「张三」老师讲授的任一门课程的学生姓名

select A.S#,A.Sname,B.平均成绩 from Student A right join

(select S#,AVG(score)平均成绩 from SC where score<60 group by S# having COUNT(score)>=2)B

on A.S#=B.S#--11.查询两门及其以上不及格课程的同学的学号，姓名及其平均成绩

select S#,score from SC where C#='01' and score<60 order by score desc

--12.检索" 01 "课程分数小于 60 ，按分数降序排列的学生信息

select S#,max(case C# when '01' then score else 0 end)'01',

max(case C# when '02' then score else 0 end)'02',

MAX(case C# when '03' then score else 0 end)'03',AVG(score)平均分 from SC

group by S# order by 平均分 desc

--13. （静态写法）按平均成绩从高到低显示所有学生的所有课程的成绩以及平均成绩

select distinct A.C#,Cname,最高分,最低分,平均分,及格率,中等率,优良率,优秀率 from SC A

left join Course on A.C#=Course.C#

left join (select C#,MAX(score)最高分,MIN(score)最低分,AVG(score)平均分 from SC group by C#)B on A.C#=B.C#

left join (select C#,(convert(decimal(5,2),(sum(case when score>=60 then 1 else 0 end)\*1.00)/COUNT(\*))\*100)及格率 from SC group by C#)C on A.C#=C.C#

left join (select C#,(convert(decimal(5,2),(sum(case when score >=70 and score<80 then 1 else 0 end)\*1.00)/COUNT(\*))\*100)中等率 from SC group by C#)D on A.C#=D.C#

left join (select C#,(convert(decimal(5,2),(sum(case when score >=80 and score<90 then 1 else 0 end)\*1.00)/COUNT(\*))\*100)优良率 from SC group by C#)E on A.C#=E.C#

left join (select C#,(convert(decimal(5,2),(sum(case when score >=90 then 1 else 0 end)\*1.00)/COUNT(\*))\*100)优秀率

from SC group by C#)F on A.C#=F.C#

--14.查询各科成绩最高分、最低分和平均分：

--以如下形式显示：课程 ID ，课程 name ，最高分，最低分，平均分，及格率，中等率，优良率，优秀率

--及格为>=60，中等为：70-80，优良为：80-90，优秀为：>=90

select \*,RANK()over(order by score desc)排名 from SC

--15. 按各科成绩进行排序，并显示排名，Score 重复时保留名次空缺

select \*,DENSE\_RANK()over(order by score desc)排名 from SC

--15.1 按各科成绩进行排序，并显示排名，Score 重复时合并名次

select \*,RANK()over(order by 总成绩 desc)排名 from(

select S#,SUM(score)总成绩 from SC group by S#)A

--16. 查询学生的总成绩，并进行排名，总分重复时保留名次空缺

select \*,dense\_rank()over(order by 总成绩 desc)排名 from(

select S#,SUM(score)总成绩 from SC group by S#)A

--16.1 查询学生的总成绩，并进行排名，总分重复时不保留名次空缺

select distinct A.C#,B.Cname,C.[100-85],C.所占百分比,D.[85-70],D.所占百分比,E.[70-60],E.所占百分比,F.[60-0],F.所占百分比

from SC A

left join Course B ON A.C#=B.C#

left join (select C#,sum(case when score>85 and score<=100 then 1 else null end)[100-85],

convert(decimal(5,2),(sum(case when score>85 and score<100 then 1 else null end))\*1.00/COUNT(\*))\*100 所占百分比 from SC group by C#)C on A.C#=C.C#

left join (select C#,sum(case when score>70 and score<=85 then 1 else null end)[85-70],

convert(decimal(5,2),(sum(case when score>70 and score<=85 then 1 else null end))\*1.00/COUNT(\*))\*100 所占百分比 from SC group by C#)D on A.C#=D.C#

left join (select C#,sum(case when score>60 and score<=70 then 1 else null end)[70-60],

convert(decimal(5,2),(sum(case when score>60 and score<=70 then 1 else null end))\*1.00/COUNT(\*))\*100 所占百分比 from SC group by C#)E on A.C#=E.C#

left join (select C#,sum(case when score>0 and score<=60 then 1 else null end)[60-0],

convert(decimal(5,2),(sum(case when score>0 and score<=60 then 1 else null end))\*1.00/COUNT(\*))\*100 所占百分比 from SC group by C#)F on A.C#=F.C#

--17. 统计各科成绩各分数段人数：课程编号，课程名称，[100-85]，[85-70]，[70-60]，[60-0] 及所占百分比

select \* from(select \*,rank()over (partition by C# order by score desc)A from SC)B where B.A<=3

--18. 查询各科成绩前三名的记录（方法 1）

select a.S#,a.C#,a.score from SC a

left join SC b on a.C#=b.C# and a.score<b.score

group by a.S#,a.C#,a.score

having COUNT(b.S#)<3

order by a.C#,a.score desc

--18. 查询各科成绩前三名的记录（取 a 的最高分与本表比较）（方法 2）

select \* from SC a where (select COUNT(\*)from SC where C#=a.C# and score>a.score)<3

order by a.C#,a.score desc

--18. 查询各科成绩前三名的记录（取 a）(方法 3)

select C#,COUNT(S#)学生数 from SC group by C#

--19. 查询每门课程被选修的学生数

select S#,Sname from Student

where S# in(select S# from(select S#,COUNT(C#)课程数 from SC group by S#)A where A.课程数=2)

--20. 查询出只选修两门课程的学生学号和姓名

select Ssex,COUNT(Ssex)人数 from Student group by Ssex

--21. 查询男生、女生人数

select \* from Student where Sname like '%风%'

--22. 查询名字中含有「风」字的学生信息

select A.\*,B.同名人数 from Student A

left join (select Sname,Ssex,COUNT(\*)同名人数 from Student group by Sname,Ssex)B

on A.Sname=B.Sname and A.Ssex=B.Ssex

where B.同名人数>1

--23. 查询同名同性学生名单，并统计同名人数

select \* from Student where YEAR(Sage)=1990

--24.查询 1990 年出生的学生名单

select C#,AVG(score)平均成绩 from SC group by C# order by 平均成绩 desc,C#

--25. 查询每门课程的平均成绩，结果按平均成绩降序排列，平均成绩相同时，按课程编号升序排列

select A.S#,A.Sname,B.平均成绩 from Student A

left join (select S#,AVG(score)平均成绩 from SC group by S#)B on A.S#=B.S#

where B.平均成绩>85

--26. 查询平均成绩大于等于 85 的所有学生的学号、姓名和平均成绩

select B.Sname,A.score from(select \* from SC where score<60 and C#=(select C# from Course where Cname='数学'))A

left join Student B on A.S#=B.S#

-- 27. 查询课程名称为「数学」，且分数低于 60 的学生姓名和分数

select A.S#,B.C#,B.score from Student A left join SC B on A.S#=B.S#

-- 28. 查询所有学生的课程及分数情况（存在学生没成绩，没选课的情况）

select A.Sname,D.Cname,D.score from

(select B.\*,C.Cname from(select \* from SC where score>70)B left join Course C on B.C#=C.C#)D

left join Student A on D.S#=A.S#

-- 29. 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 \* from SC where score<60

-- 30. 查询不及格的课程

select A.S#,B.Sname from (select \* from SC where score>80 and C#=01)A

left join Student B on A.S#=B.S#

--31. 查询课程编号为01且课程成绩在80分以上的学生的学号和姓名

select C#,COUNT(\*)学生人数 from SC group by C#

--32. 求每门课程的学生人数

select top 1\* from SC

where C#=(select C# from Course where T#=(select T# from Teacher where Tname='张三'))

order by score desc

--33. 成绩不重复，查询选修「张三」老师所授课程的学生中，成绩最高的学生信息及其成绩

select \*from(select \*,DENSE\_RANK()over (order by score desc)A

from SC

where C#=(select C# from Course where T#=(select T# from Teacher where Tname='张三')))B

where B.A=1

--34. 成绩有重复的情况下，查询选修「张三」老师所授课程的学生中，成绩最高的学生信息及其成绩

select C.S#,max(C.C#)C#,max(C.score)score from SC C

left join(select S#,avg(score)A from SC group by S#)B

on C.S#=B.S#

where C.score=B.A

group by C.S#

having COUNT(0)=(select COUNT(0)from SC where S#=C.S#)

--35. 查询不同课程成绩相同的学生的学生编号、课程编号、学生成绩

select \* from

(select \*,ROW\_NUMBER()over(partition by C# order by score desc)A from SC)B

where B.A<3

--36. 查询每门功成绩最好的前两名

select C#,COUNT(S#)选修人数 from SC

group by C#

having COUNT(S#)>5

order by 选修人数 desc,C#

--37.统计每门课程的学生选修人数（超过5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列，若人数相同，按课程号升序排列

select S# from SC

group by S#

having COUNT(C#)>=2

--38. 检索至少选修两门课程的学生学号

select S# from SC

group by S#

having count(C#)=(select distinct COUNT(0)a from Course)

--39. 查询选修了全部课程的学生信息

select S#,datediff(yy,Sage,GETDATE())年龄 from Student

--40. 查询各学生的年龄，只按年份来算

select \*,(case when convert(int,'1'+substring(CONVERT(varchar(10),Sage,112),5,8))

<convert(int,'1'+substring(CONVERT(varchar(10),GETDATE(),112/\*112是将格式转化为yymmdd\*/),5,8))

then datediff(yy,Sage,GETDATE())

else datediff(yy,Sage,GETDATE())-1

end)age

from Student

--41. 按照出生日期来算，当前月日 < 出生年月的月日则，年龄减一

--方法是把时间转化成 Int 格式来做条件比较大小，判断是否超期，

select \*,(case when datename(wk,convert(datetime,(convert(varchar(10),year(GETDATE()))+substring(convert(varchar(10),Sage,112),5,8))))=DATENAME(WK,GETDATE())

then 1 else 0 end)生日提醒

from Student

--42. 查询本周过生日的学生

--方法：采取将生日转化为当年日期，再转化为本年中的第几个星期进行判断搜出结果

select \*,(case when datename(wk,convert(datetime,(convert(varchar(10),year(GETDATE()))+

substring(convert(varchar(10),Sage,112),5,8))))=DATENAME(WK,GETDATE())+1

then 1 else 0 end)生日提醒

from Student

--43. 查询下周过生日的学生

select \*,(case when month(convert(datetime,(convert(varchar(10),year(GETDATE()))+substring(convert(varchar(10),Sage,112),5,8))))=month(GETDATE())

then 1 else 0 end)生日提醒

from Student

--44. 查询本月过生日的学生

select \*,(case when month(convert(datetime,(convert(varchar(10),year(GETDATE()))+substring(convert(varchar(10),Sage,112),5,8))))=month(GETDATE())+1

then 1 else 0 end)生日提醒

from Student

--45. 查询下月过生日的学生