Student(S#,Sname,Sage,Ssex) 学生表
Course(C#,Cname,T#) 课程表
SC(S#,C#,score) 成绩表
Teacher(T#,Tname) 教师表

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.S# from (select s#,score from SC where C#='001') a,(select s#,score
from SC where C#='002') b
where a.score>b.score and a.s#=b.s#;
```

2、查询平均成绩大于 60 分的同学的学号和平均成绩；

```
select S#,avg(score)
from sc
group by S# having avg(score) >60;
```

3、查询所有同学的学号、姓名、选课数、总成绩；

```
select Student.S#,Student.Sname,count(SC.C#),sum(score)
from Student left Outer join SC on Student.S#=SC.S#
group by Student.S#,Sname
```

4、查询姓“李”的老师的个数；

```
select count(distinct(Tname))
from Teacher
where Tname like '李%';
```

5、查询没学过“叶平”老师课的同学的学号、姓名；

```
select Student.S#,Student.Sname
from Student
where S# not in (select distinct( SC.S#) from SC,Course,Teacher where
SC.C#=Course.C# and Teacher.T#=Course.T# and Teacher.Tname='叶平');
```

6、查询学过“001”并且也学过编号“002”课程的同学的学号、姓名；

```
select Student.S#,Student.Sname from Student,SC where Student.S#=SC.S# and
SC.C#='001'and exists( Select * from SC as SC_2 where SC_2.S#=SC.S# and
SC_2.C#='002');
```

7、查询学过“叶平”老师所教的所有课的同学的学号、姓名；

```
select S#,Sname
from Student
where S# in (select S# from SC ,Course ,Teacher where SC.C#=Course.C# and
Teacher.T#=Course.T# and Teacher.Tname='叶平' group by S# having
count(SC.C#)=(select count(C#) from Course,Teacher where Teacher.T#=Course.T#
and Tname='叶平'));
```

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 S#,Sname from (select Student.S#,Student.Sname,score ,(select score from SC
SC_2 where SC_2.S#=Student.S# and SC_2.C#='002') score2
from Student,SC where Student.S#=SC.S# and C#='001') S_2 where score2 <score;
```

9、查询所有课程成绩小于 60 分的同学的学号、姓名；

```
select S#,Sname
```

from Student
where S# not in (select Student.S# from Student,SC where S.S#=SC.S# and score>60);

10、查询没有学全所有课的同学的学号、姓名；

```
select Student.S#,Student.Sname
from Student,SC
where Student.S#=SC.S# group by  Student.S#,Student.Sname having count(C#) <(select count(C#) from Course);
```

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

```
select S#,Sname from Student,SC where Student.S#=SC.S# and C# in select C# from SC where S#='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；

```
select distinct SC.S#,Sname
from Student,SC
where Student.S#=SC.S# and C# in (select C# from SC where S#='001');
```

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.C#=SC.C# ) from Course,Teacher where Course.C#=SC.C# and Course.T#=Teacher.T# and Teacher.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 S# from SC where C# in (select C# from SC where S#='1002')
group by S# having count(*)=(select count(*) from SC where S#='1002');
```

15、删除学习“叶平”老师课的 SC 表记录；

```
Delect SC
from course ,Teacher
where Course.C#=SC.C# and Course.T#= Teacher.T# and 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、2、

号课的平均成绩；

```
Insert SC select S#,'002',(Select avg(score)
from SC where C#='002') from Student where S# not in (Select S# from SC where C#='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 S# as 学生 ID
    ,(SELECT score FROM SC WHERE SC.S#=t.S# AND C#='004') AS 数据库
    ,(SELECT score FROM SC WHERE SC.S#=t.S# AND C#='001') AS 企业管理
    ,(SELECT score FROM SC WHERE SC.S#=t.S# AND C#='006') AS 英语
    ,COUNT(*) AS 有效课程数, AVG(t.score) AS 平均成绩
FROM SC AS t
GROUP BY S#
ORDER BY avg(t.score)
```

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

```
SELECT L.C# As 课程 ID,L.score AS 最高分,R.score AS 最低分
FROM SC L ,SC AS R
WHERE L.C# = R.C# and
    L.score = (SELECT MAX(IL.score)
                    FROM SC AS IL,Student AS IM
                    WHERE L.C# = IL.C# and IM.S#=IL.S#
                    GROUP BY IL.C#)
    AND
    R.Score = (SELECT MIN(IR.score)
                    FROM SC AS IR
                    WHERE R.C# = IR.C#
                GROUP BY IR.C#
                  );
```

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.C# AS 课程号,max(course.Cname)AS 课程名,isnull(AVG(score),0) AS 平均成绩
    ,100 * SUM(CASE WHEN isnull(score,0)>=60 THEN 1 ELSE 0 END)/COUNT(*) AS 及格百分数
FROM SC T,Course
where t.C#=course.C#
GROUP BY t.C#
ORDER BY 100 * SUM(CASE WHEN isnull(score,0)>=60 THEN 1 ELSE 0 END)/COUNT(*) DESC
```

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）

```
SELECT SUM(CASE WHEN C# ='001' THEN score ELSE 0 END)/SUM(CASE C# WHEN '001' THEN 1 ELSE 0 END) AS 企业管理平均分
    ,100 * SUM(CASE WHEN C# = '001' AND score >= 60 THEN 1 ELSE 0 END)/SUM(CASE WHEN C# = '001' THEN 1 ELSE 0 END) AS 企业管理及格百分数
    ,SUM(CASE WHEN C# = '002' THEN score ELSE 0 END)/SUM(CASE C# WHEN '002' THEN 1 ELSE 0 END) AS 马克思平均分
    ,100 * SUM(CASE WHEN C# = '002' AND score >= 60 THEN 1 ELSE 0 END)/SUM(CASE WHEN C# = '002' THEN 1 ELSE 0 END) AS 马克思及格百分数
    ,SUM(CASE WHEN C# = '003' THEN score ELSE 0 END)/SUM(CASE C# WHEN '003' THEN 1 ELSE 0 END) AS UML 平均分
    ,100 * SUM(CASE WHEN C# = '003' AND score >= 60 THEN 1 ELSE 0 END)/SUM(CASE WHEN C# = '003' THEN 1 ELSE 0 END) AS UML 及格百分数
    ,SUM(CASE WHEN C# = '004' THEN score ELSE 0 END)/SUM(CASE C# WHEN '004' THEN 1 ELSE 0 END) AS 数据库平均分
    ,100 * SUM(CASE WHEN C# = '004' AND score >= 60 THEN 1 ELSE 0 END)/SUM(CASE WHEN C# = '004' THEN 1 ELSE 0 END) AS 数据库及格百分数
  FROM SC
```

21、查询不同老师所教不同课程平均分从高到低显示

```
SELECT max(Z.T#) AS 教师 ID,MAX(Z.Tname) AS 教师姓名,C.C# AS 课程 I
```

```
D,MAX(C.Cname) AS 课程名称,AVG(Score) AS 平均成绩
    FROM SC AS T,Course AS C ,Teacher AS Z
    where T.C#=C.C# and C.T#=Z.T#
  GROUP BY C.C#
  ORDER BY AVG(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）

```
    [学生 ID],[学生姓名],企业管理,马克思,UML,数据库,平均成绩
    SELECT  DISTINCT top 3
      SC.S# As 学生学号,
        Student.Sname AS 学生姓名 ,
      T1.score AS 企业管理,
      T2.score AS 马克思,
      T3.score AS UML,
      T4.score AS 数据库,
      ISNULL(T1.score,0) + ISNULL(T2.score,0) + ISNULL(T3.score,0) +
ISNULL(T4.score,0) as 总分
      FROM Student,SC  LEFT JOIN SC AS T1
                  ON SC.S# = T1.S# AND T1.C# = '001'
            LEFT JOIN SC AS T2
                  ON SC.S# = T2.S# AND T2.C# = '002'
            LEFT JOIN SC AS T3
                  ON SC.S# = T3.S# AND T3.C# = '003'
            LEFT JOIN SC AS T4
                  ON SC.S# = T4.S# AND T4.C# = '004'
      WHERE student.S#=SC.S# and
      ISNULL(T1.score,0) + ISNULL(T2.score,0) + ISNULL(T3.score,0) +
ISNULL(T4.score,0)
      NOT IN
      (SELECT
            DISTINCT
            TOP 15 WITH TIES
            ISNULL(T1.score,0) + ISNULL(T2.score,0) + ISNULL(T3.score,0) +
ISNULL(T4.score,0)
      FROM sc
            LEFT JOIN sc AS T1
                  ON sc.S# = T1.S# AND T1.C# = 'k1'
            LEFT JOIN sc AS T2
                  ON sc.S# = T2.S# AND T2.C# = 'k2'
            LEFT JOIN sc AS T3
                  ON sc.S# = T3.S# AND T3.C# = 'k3'
            LEFT JOIN sc AS T4
                  ON sc.S# = T4.S# AND T4.C# = 'k4'
      ORDER BY ISNULL(T1.score,0) + ISNULL(T2.score,0) + ISNULL(T3.score,0) +
```

```
ISNULL(T4.score,0) DESC);
```

23、统计列印各科成绩,各分数段人数:课程 ID,课程名称,[100-85],[85-70],[70-60],[<60]

```
SELECT SC.C# 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 < 60 THEN 1 ELSE 0 END) AS [60 -]
FROM SC,Course
where SC.C#=Course.C#
GROUP BY SC.C#,Cname;
```

24、查询学生平均成绩及其名次

```
  SELECT 1+(SELECT COUNT( distinct 平均成绩)
          FROM (SELECT S#,AVG(score) AS 平均成绩
                  FROM SC
                GROUP BY S#
                ) AS T1
          WHERE 平均成绩 > T2.平均成绩) as 名次,
  S# as 学生学号,平均成绩
FROM (SELECT S#,AVG(score) 平均成绩
          FROM SC
    GROUP BY S#
    ) 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 t1.S# as 学生 ID,t1.C# as 课程 ID,Score as 分数
  FROM SC t1
  WHERE score IN (SELECT TOP 3 score
          FROM SC
          WHERE t1.C#= C#
        ORDER BY score DESC
          )
  ORDER BY t1.C#;
```

26、查询每门课程被选修的学生数

```
select c#,count(S#) from sc group by C#;
```

27、查询出只选修了一门课程的全部学生的学号和姓名

```
select SC.S#,Student.Sname,count(C#) AS 选课数
from SC ,Student
where SC.S#=Student.S# group by SC.S# ,Student.Sname having count(C#)=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(Ssex) as 女生人数 from Student group by Ssex having Ssex='女';

29、查询姓“张”的学生名单

SELECT Sname FROM Student WHERE Sname like '张%';

30、查询同名同性学生名单，并统计同名人数

select Sname,count(*) from Student group by Sname having count(*)>1;;

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

select Sname, CONVERT(char (11),DATEPART(year,Sage)) as age
from student
where CONVERT(char(11),DATEPART(year,Sage))='1981';

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

Select C#,Avg(score) from SC group by C# order by Avg(score),C# DESC ;

33、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 Sname,SC.S# ,avg(score)
from Student,SC
where Student.S#=SC.S# group by SC.S#,Sname having avg(score)>85;

34、查询课程名称为“数据库”，且分数低于 60 的学生姓名和分数

Select Sname,isnull(score,0)
from Student,SC,Course
where SC.S#=Student.S# and SC.C#=Course.C# and Course.Cname='数据库'and score <60;

35、查询所有学生的选课情况；

SELECT SC.S#,SC.C#,Sname,Cname
FROM SC,Student,Course
where SC.S#=Student.S# and SC.C#=Course.C# ;

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 student.S#,student.Sname,SC.C#,SC.score
FROM student,Sc
WHERE SC.score>=70 AND SC.S#=student.S#;

37、查询不及格的课程，并按课程号从大到小排列

select c# from sc where scor e <60 order by C# ;

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.S#,Student.Sname from SC,Student where SC.S#=Student.S# and Score>80 and C#='003';

39、求选了课程的学生人数

select count(*) from sc;

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 Student.Sname,score
from Student,SC,Course C,Teacher
where Student.S#=SC.S# and SC.C#=C.C# and C.T#=Teacher.T# and Teacher.Tname='叶平' and SC.score=(select max(score)from SC where C#=C.C#);

41、查询各个课程及相应的选修人数

```
select count(*) from sc group by C#;
```

42、查询不同课程成绩相同的学生的学号、课程号、学生成绩

```
select distinct A.S#,B.score from SC A ,SC B where A.Score=B.Score and A.C#
<>B.C# ;
```

43、查询每门功成绩最好的前两名

```
SELECT t1.S# as 学生 ID,t1.C# as 课程 ID,Score as 分数
  FROM SC t1
  WHERE score IN (SELECT TOP 2 score
            FROM SC
            WHERE t1.C#= C#
          ORDER BY score DESC
            )
  ORDER BY t1.C#;
```

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列，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 C# as 课程号,count(*) as 人数
from sc
group by C#
order by count(*) desc,c#
```

45、检索至少选修两门课程的学生学号

```
select S#
from sc
group by s#
having count(*) > = 2
```

46、查询全部学生都选修的课程的课程号和课程名

```
select C#,Cname
from Course
where C# in (select c# from sc group by c#)
```

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 S# not in (select S# from Course,Teacher,SC
where Course.T#=Teacher.T# and SC.C#=course.C# and Tname='叶平');
```

48、查询两门以上不及格课程的同学的学号及其平均成绩

```
select S#,avg(isnull(score,0)) from SC where S# in (select S# from SC where score
<60 group by S# having count(*)>2)group by S#;
```

49、检索“004”课程分数小于 60，按分数降序排列的同学学号

```
select S# from SC where C#='004'and score <60 order by score desc;
```

50、删除“002”同学的“001”课程的成绩

```
delete from Sc where S#='001'and C#='001';
```