--一个题目涉及到的50个Sql语句

--（下面表的结构以给出,自己在数据库中建立表.并且添加相应的数据,数据要全面些. 其中Student表中,SId为学生的ID）

------------------------------------表结构--------------------------------------

--学生表tblStudent（编号StuId、姓名StuName、年龄StuAge、性别StuSex）

--课程表tblCourse（课程编号CourseId、课程名称CourseName、教师编号TeaId）

--成绩表tblScore（学生编号StuId、课程编号CourseId、成绩Score）

--教师表tblTeacher（教师编号TeaId、姓名TeaName）

---------------------------------------------------------------------------------

--问题：

--1、查询“001”课程比“002”课程成绩高的所有学生的学号；

 Select StuId From tblStudent s1

  Where (Select Score From tblScore t1 Where t1.StuId=s1.stuId And t1.CourseId='001')>

   (Select Score From tblScore t2 Where t2.StuId=s1.stuId And t2.CourseId='002')

--2、查询平均成绩大于60分的同学的学号和平均成绩；

 Select StuId,Avg(Score) as AvgScore From tblScore

  Group By StuId

   Having Avg(Score)>60

--3、查询所有同学的学号、姓名、选课数、总成绩；

 Select StuId,StuName,

  SelCourses=(Select Count(CourseId) From tblScore t1 Where t1.StuId=s1.StuId),

  SumScore=(Select Sum(Score) From tblScore t2 Where t2.StuId=s1.StuId)

   From tblStudent s1

--4、查询姓“李”的老师的个数；

 Select Count(\*) From tblTeacher Where TeaName like '李%'

--5、查询没学过“叶平”老师课的同学的学号、姓名；

 Select StuId,StuName From tblStudent

  Where StuId Not In

   (

    Select StuID From tblScore sc

     Inner Join tblCourse cu ON sc.CourseId=cu.CourseId

     Inner Join tblTeacher tc ON cu.TeaId=tc.TeaId

      Where tc.TeaName='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 StuId,StuName From tblStudent st

  Where (Select Count(\*) From tblScore s1 Where s1.StuId=st.StuId And s1.CourseId='001')>0

   And

   (Select Count(\*) From tblScore s2 Where s2.StuId=st.StuId And s2.CourseId='002')>0

--7、查询学过“叶平”老师所教的所有课的同学的学号、姓名；

 Select StuId,StuName From tblStudent st Where not exists

  (

   Select CourseID From tblCourse cu Inner Join tblTeacher tc On cu.TeaID=tc.TeaID

    Where tc.TeaName='叶平' And CourseID not in

    (Select CourseID From tblScore Where StuID=st.StuID)

  )

--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 StuId,StuName From tblStudent s1

  Where (Select Score From tblScore t1 Where t1.StuId=s1.stuId And t1.CourseId='001')>

   (Select Score From tblScore t2 Where t2.StuId=s1.stuId And t2.CourseId='002')

--9、查询所有课程成绩小于60分的同学的学号、姓名；

 Select StuId,StuName From tblStudent st

  Where StuId Not IN

   (Select StuId From tblScore sc Where st.StuId=sc.StuId And Score>60)

--10、查询没有学全所有课的同学的学号、姓名；

 Select StuId,StuName From tblStudent st

  Where (Select Count(\*) From tblScore sc Where st.StuId=sc.StuId)<

   (Select Count(\*) From tblCourse)

--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；

 ------运用连接查询

 Select DistInct st.StuId,StuName From tblStudent st

  Inner Join tblScore sc ON st.StuId=sc.StuId

   Where sc.CourseId IN (Select CourseId From tblScore Where StuId='1001')

 ------嵌套子查询

 Select StuId,StuName From tblStudent

  Where StuId In

  (

   Select Distinct StuId From tblScore Where CourseId In (Select CourseId From tblScore Where StuId='1001')

  )

--12、查询至少学过学号为“1001”同学所有课程的其他同学学号和姓名；

 Select StuId,StuName From tblStudent

  Where StuId In

  (

   Select Distinct StuId From tblScore Where CourseId Not In (Select CourseId From tblScore Where StuId='1001')

--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； (从子查询中获取父查询中的表名，这样也行？？？？)

 --创建测试表

 Select \* Into Sc From tblScore

 go

 Update Sc Set Score=(Select Avg(Score) From tblScore s1 Where s1.CourseId=sc.CourseId)

  Where CourseId IN

   (Select CourseId From tblCourse cs INNER JOIN tblTeacher tc ON cs.TeaID=tc.TeaID WHERE TeaName ='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 StuID,StuName From tblStudent st

  Where StuId <> '1002'

   And

   Not Exists(Select \* From tblScore sc Where sc.StuId=st.StuId And CourseId Not In (Select CourseId From tblScore Where StuId='1002'))

   And

   Not Exists(Select \* From tblScore Where StuId='1002' And CourseId Not In (Select CourseId From tblScore sc Where sc.StuId=st.StuId))

--15、删除学习“叶平”老师课的SC表记录；

 Delete From tblScore Where CourseId IN

  (Select CourseId From tblCourse cs INNER JOIN tblTeacher tc ON cs.TeaId=tc.TeaId Where tc.TeaName='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 tblScore (StuId,CourseId,Score)

  Select StuId,'002',(Select Avg(Score) From tblScore Where CourseId='002') From tblScore Where

   StuId Not In (Select StuId From tblScore Where CourseId='003')

--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 StuId

  ,数据库=(Select Score From tblScore sc Inner Join tblCourse cs On sc.CourseId=cs.CourseId Where CourseName='数据库' And sc.StuID=st.StuId)

  ,企业管理=(Select Score From tblScore sc Inner Join tblCourse cs On sc.CourseId=cs.CourseId Where CourseName='企业管理' And sc.StuID=st.StuId)

  ,英语=(Select Score From tblScore sc Inner Join tblCourse cs On sc.CourseId=cs.CourseId Where CourseName='英语' And sc.StuID=st.StuId)

  ,有效课程数=(Select Count(Score) From tblScore sc Inner Join tblCourse cs On sc.CourseId=cs.CourseId Where (CourseName='数据库' or CourseName='企业管理' or CourseName='英语') And sc.StuID=st.StuId)

  ,有效平均分=(Select Avg(Score) From tblScore sc Inner Join tblCourse cs On sc.CourseId=cs.CourseId Where (CourseName='数据库' or CourseName='企业管理' or CourseName='英语') And sc.StuID=st.StuId)

  From tblStudent st

  Order by 有效平均分 Desc

--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 CourseId as 课程ID, 最高分=(Select Max(Score) From tblScore sc Where sc.CourseId=cs.CourseId ),

  最低分=(Select Min(Score) From tblScore sc Where sc.CourseId=cs.CourseId )

  From tblCourse cs

--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 (百分数后如何格式化为两位小数??)

 Select 课程ID,平均分,及格率 From

  (Select CourseId as 课程ID, 平均分=(Select Avg(Score) From tblScore sc Where sc.CourseId=cs.CourseId ),

   及格率=Convert(varchar(10),((Select Count(\*) From tblScore sc Where sc.CourseId=cs.CourseId And sc.Score>=60)\*10000/(Select Count(\*) From tblScore sc Where sc.CourseId=cs.CourseId))/100)+'%'

   From tblScore cs) as tmp

  Group by 课程ID,平均分,及格率

   Order by 平均分, Convert(float,substring(及格率,1,len(及格率)-1)) 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 课程ID=sc.CourseId,课程名称=cs.CourseName,平均成绩=Avg(Score)

  ,及格率 =Convert(varchar(10),((Select Count(Score) From tblScore Where CourseId=sc.CourseId And Score>=60)\*10000/Count(Score))/100.0)+'%'

  From tblScore sc

  Inner Join tblCourse cs ON sc.CourseId=cs.CourseId

  Where sc.CourseId like '00[1234]'

  Group By sc.CourseId,cs.CourseName

--21、查询不同老师所教不同课程平均分从高到低显示

 Select 课程ID=CourseId,课程名称=CourseName,授课教师=TeaName,平均成绩=(Select Avg(Score) From tblScore Where CourseId=cs.CourseId)

  From tblCourse cs

  Inner Join tblTeacher tc ON cs.TeaId=tc.TeaId

  Order by 平均成绩 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） 格式：[学生ID],[学生姓名],企业管理,马克思,UML,数据库,平均成绩

 Select \* From

  (

   Select Top 6 学生ID=StuId,学生姓名=StuName

    ,企业管理=(Select Score From tblScore sc Inner Join tblCourse cs On sc.CourseId=cs.CourseId Where CourseName='企业管理' And sc.StuID=st.StuId)

    ,马克思=(Select Score From tblScore sc Inner Join tblCourse cs On sc.CourseId=cs.CourseId Where CourseName='马克思' And sc.StuID=st.StuId)

    ,UML=(Select Score From tblScore sc Inner Join tblCourse cs On sc.CourseId=cs.CourseId Where CourseName='UML' And sc.StuID=st.StuId)

    ,数据库=(Select Score From tblScore sc Inner Join tblCourse cs On sc.CourseId=cs.CourseId Where CourseName='数据库' And sc.StuID=st.StuId)

    ,平均成绩=(Select Avg(Score) From tblScore sc Inner Join tblCourse cs On sc.CourseId=cs.CourseId Where (CourseName='数据库' or CourseName='企业管理' or CourseName='UML'or CourseName='马克思') And sc.StuID=st.StuId)

    ,排名=Row\_Number() Over(Order by(Select Avg(Score) From tblScore sc Inner Join tblCourse cs On sc.CourseId=cs.CourseId Where (CourseName='数据库' or CourseName='企业管理' or CourseName='UML'or CourseName='马克思') And sc.StuID=st.StuId) DESC)

    From tblStudent st

    Order by 排名

  ) as tmp

  Where 排名 between 3 And 6

--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 课程ID=CourseId, 课程名称=CourseName

  ,[100-85]=(Select Count(\*) From tblScore sc Where CourseId=cs.CourseId And Score between 85 And 100)

  ,[85-70]=(Select Count(\*) From tblScore sc Where CourseId=cs.CourseId And Score between 70 And 84)

  ,[70-60]=(Select Count(\*) From tblScore sc Where CourseId=cs.CourseId And Score between 60 And 69)

  ,[<60]=(Select Count(\*) From tblScore sc Where CourseId=cs.CourseId And Score <60)

  From tblCourse cs

--24、查询学生平均成绩及其名次

 Select 学号=st.StuId, 姓名=StuName,平均成绩=sc.AvgScore,名次=(Dense\_Rank() Over(Order by sc.AvgScore Desc)) From tblStudent st

  Inner Join (Select StuId,Avg(Score) as AvgScore From tblScore Group by StuId) as sc On sc.StuId=st.StuId

  Order by 学号

--25、查询各科成绩前三名的记录:(不考虑成绩并列情况)

 Select 学号=StuId,课程号=CourseId,分数=Score

  From

  (Select Row\_Number() Over(order by CourseId,Score Desc) as i,\* From tblScore) as tmp --得到一个临时的排名表,其中i表示编号

   Where i In

   (

    Select Top 3 i From (Select Row\_Number() Over(order by CourseId,Score Desc) as i,\* From tblScore) as t1 Where t1.CourseId=tmp.CourseId

   )

--26、查询每门课程被选修的学生数

 Select 课程ID=CourseId,选修人数=(Select Count(\*) From (Select Distinct StuId From tblScore Where CourseId=cs.CourseId) as tmp)

  From tblCourse cs

--27、查询出只选修了一门课程的全部学生的学号和姓名

 Select 学号=StuId,姓名=StuName

  From tblStudent st

  Where (Select Count(\*) From (Select Distinct CourseId From tblScore Where StuId=st.StuId) as tmp)=1

--28、查询男生、女生人数

 Select 男生人数=(select Count(\*) From tblStudent Where StuSex='男'),

   女生人数=(select Count(\*) From tblStudent Where StuSex='女')

--29、查询姓“张”的学生名单

 Select \* From tblStudent Where StuName like '张%'

--30、查询同名同性学生名单，并统计同名人数

 Select Distinct 学生姓名=StuName,同名人数=(Select Count(\*) From tblStudent s2 Where s2.StuName=st.StuName) From tblStudent st

  Where (Select Count(\*) From tblStudent s2 Where s2.StuName=st.StuName)>=2

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

 Select \* From tblStudent Where 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 课程ID=CourseId,课程名称=CourseName,平均成绩=(Select Avg(Score) From tblScore Where CourseId=cs.CourseId)

  From tblCourse cs

  Order by 平均成绩,CourseId 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 学号=StuId,姓名=StuName,平均成绩=(Select Avg(Score) From tblScore Where StuId=st.StuId) From tblStudent st

  Where (Select Avg(Score) From tblScore Where StuId=st.StuId)>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 姓名=StuName,分数=Score From tblScore sc

  Inner Join tblStudent st On sc.StuId=st.StuId

  Inner Join tblCourse cs On sc.CourseId=cs.CourseId

  Where CourseName='数据库' And Score<60

--35、查询所有学生的选课情况；

 Select 学号=StuId,选课数=(Select Count(\*) From (Select Distinct CourseId From tblScore Where StuId=st.StuId) as tmp)

  From tblStudent st

 Select distinct 姓名=StuName,选修课程=CourseName From tblScore sc

  Inner Join tblStudent st On sc.StuId=st.StuId

  Inner Join tblCourse cs On sc.CourseId=cs.CourseId

--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 姓名=StuName,课程名称=CourseName,分数=Score From tblScore sc

  Inner Join tblStudent st On sc.StuId=st.StuId

  Inner Join tblCourse cs On sc.CourseId=cs.CourseId

  Where Score>=70

--37、查询不及格的课程，并按课程号从大到小排列

 Select \* From tblScore Where Score<60 order by CourseId Desc

--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 StuId,StuName From tblStudent

  Where StuId in

   (Select StuId From tblScore Where CourseId='003' And Score>=80)

--39、求选了课程的学生人数

 Select 选了课程的学生人数=Count(\*) From tblStudent st Where StuId IN (Select StuID From tblScore)

--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 CourseId,CourseName

 ,该科最高学生=(Select StuName From tblStudent Where StuId in (Select Top 1 StuID From tblScore Where CourseId=cs.CourseId Order by Score Desc))

 ,成绩=(Select Top 1 Score From tblScore Where CourseId=cs.CourseId Order by Score Desc)

 From tblCourse cs Inner Join tblTeacher tc ON cs.TeaId=tc.TeaId

 Where TeaName='叶平'

--41、查询各个课程及相应的选修人数

 Select 课程ID=CourseId,选修人数=(Select Count(\*) From (Select Distinct StuId From tblScore Where CourseId=cs.CourseId) as tmp)

  From tblCourse cs

--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 学号=StuId, 课程号=CourseId, 成绩=Score From tblScore sc

  Where Exists (Select \* From tblScore Where Score=sc.Score And StuId=sc.StuId And CourseId <>sc.CourseId)

  Order by 学号,成绩

--43、查询每门功成绩最好的前两名

 Select 课程号=CourseId,

  第1名=(Select Top 1 StuId From tblScore Where CourseId=cs.CourseId Order by Score DESC),

  第2名=(Select Top 1 StuID From (Select Top 2 StuId,Score From tblScore Where CourseId=cs.CourseId Order by Score DESC) as tmp Order by Score)

  From tblCourse cs

--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，若人数相同，按课程号升序排列

 Select 课程ID=CourseId,选修人数=(Select Count(\*) From (Select Distinct StuId From tblScore Where CourseId=cs.CourseId) as tmp)

  From tblCourse cs

  Where (Select Count(\*) From (Select Distinct StuId From tblScore Where CourseId=cs.CourseId) as tmp)>=10

  Order by 选修人数 DESC, 课程ID

--45、检索至少选修两门课程的学生学号

 Select StuId from tblScore Group by Stuid having Count(\*)>=2 --没有重复课程数据时可用此方法

 --有重复课程时用此方法(如补考)

 Select StuId from tblStudent st Where

  (Select Count(\*) From (Select Distinct CourseId From tblScore Where StuId=st.StuId) as tmp)>=2

--46、查询全部学生都选修的课程的课程号和课程名

 Select CourseId,CourseName From tblCourse cs

  Where Not Exists

  (

   Select \* From tblStudent Where StuId Not In     --没学过本课程的学生是否存在

   (Select StuId From tblScore Where CourseId=cs.CourseId)

  )

--47、查询没学过“叶平”老师讲授的任一门课程的学生姓名

 Select StuId,StuName From tblStudent

  Where StuId Not In

   (

    Select StuID From tblScore sc

     Inner Join tblCourse cu ON sc.CourseId=cu.CourseId

     Inner Join tblTeacher tc ON cu.TeaId=tc.TeaId

      Where tc.TeaName='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 StuID as 学号,Avg(Score) as 平均成绩 From tblScore sc

  Where (Select Count(\*) From tblScore s1 Where s1.StuId=sc.StuId And Score<60)>=2

  Group By StuId

--49、检索“004”课程分数小于60，按分数降序排列的同学学号 (ok)

 Select StuID,Score From tblScore Where CourseId='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 StuId='1002' And CourseId='001'

----------------------SC为删除数据临时表

Select \* INTO SC From tblScore

Select \* from sc Where stuId='1018'

Insert Sc(Stuid,courseId,Score) Select StuID,'009',74 From tblStudent

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  建库建表建约束，插入测试数据  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

Use master

go

if db\_id('MySchool') is not null

 Drop Database MySchool

Create Database MySchool

go

Use MySchool

go

create table tblStudent

(

 StuId varchar(5) primary key,

 StuName nvarchar(10) not null,

 StuAge int,

 StuSex nchar(1) not null

)

create table tblTeacher

(

 TeaId varchar(3) primary key,

 TeaName varchar(10) not null

)

create table tblCourse

(

 CourseId varchar(3) primary key,

 CourseName nvarchar(20) not null,

 TeaId varchar(3) not null foreign key references tblTeacher(teaId)

)

create table tblScore

(

 StuId varchar(5) not null foreign key references tblStudent(stuId),

 CourseId varchar(3) not null foreign key references tblCourse(CourseId),

 Score float

)

----------------------------------表结构----------------------------------------------------

--学生表tblStudent（编号StuId、姓名Stuname、年龄Stuage、性别Stusex）

--课程表tblCourse（课程编号CourseId、课程名称CourseName、教师编号TeaId）

--成绩表tblScore（学生编号StuId、课程编号CourseId、成绩Score）

--教师表tblTeacher（教师编号TeaId、姓名TeaName）

--------------------------------插入数据-------------------------------------------------

insert into tblStudent

select '1000','张无忌',18,'男' union

select '1001','周芷若',19,'女' union

select '1002','杨过',19,'男' union

select '1003','赵敏',18,'女' union

select '1004','小龙女',17,'女' union

select '1005','张三丰',18,'男' union

select '1006','令狐冲',19,'男' union

select '1007','任盈盈',20,'女' union

select '1008','岳灵珊',19,'女' union

select '1009','韦小宝',18,'男' union

select '1010','康敏',17,'女' union

select '1011','萧峰',19,'男' union

select '1012','黄蓉',18,'女' union

select '1013','郭靖',19,'男' union

select '1014','周伯通',19,'男' union

select '1015','瑛姑',20,'女' union

select '1016','李秋水',21,'女' union

select '1017','黄药师',18,'男' union

select '1018','李莫愁',18,'女' union

select '1019','冯默风',17,'男' union

select '1020','王重阳',17,'男' union

select '1021','郭襄',18,'女'

go

insert  into tblTeacher

select '001','姚明' union

select '002','叶平' union

select '003','叶开' union

select '004','孟星魂' union

select '005','独孤求败' union

select '006','裘千仞' union

select '007','裘千尺' union

select '008','赵志敬' union

select '009','阿紫' union

select '010','郭芙蓉' union

select '011','佟湘玉' union

select '012','白展堂' union

select '013','吕轻侯' union

select '014','李大嘴' union

select '015','花无缺' union

select '016','金不换' union

select '017','乔丹'

go

insert into tblCourse

select '001','企业管理','002' union

select '002','马克思','008' union

select '003','UML','006' union

select '004','数据库','007' union

select '005','逻辑电路','006' union

select '006','英语','003' union

select '007','电子电路','005' union

select '008','毛泽东思想概论','004' union

select '009','西方哲学史','012' union

select '010','线性代数','017' union

select '011','计算机基础','013' union

select '012','AUTO CAD制图','015' union

select '013','平面设计','011' union

select '014','Flash动漫','001' union

select '015','Java开发','009' union

select '016','C#基础','002' union

select '017','Oracl数据库原理','010'

go

insert into tblScore

select '1001','003',90 union

select '1001','002',87 union

select '1001','001',96 union

select '1001','010',85 union

select '1002','003',70 union

select '1002','002',87 union

select '1002','001',42 union

select '1002','010',65 union

select '1003','006',78 union

select '1003','003',70 union

select '1003','005',70 union

select '1003','001',32 union

select '1003','010',85 union

select '1003','011',21 union

select '1004','007',90 union

select '1004','002',87 union

select '1005','001',23 union

select '1006','015',85 union

select '1006','006',46 union

select '1006','003',59 union

select '1006','004',70 union

select '1006','001',99 union

select '1007','011',85 union

select '1007','006',84 union

select '1007','003',72 union

select '1007','002',87 union

select '1008','001',94 union

select '1008','012',85 union

select '1008','006',32 union

select '1009','003',90 union

select '1009','002',82 union

select '1009','001',96 union

select '1009','010',82 union

select '1009','008',92 union

select '1010','003',90 union

select '1010','002',87 union

select '1010','001',96 union

select '1011','009',24 union

select '1011','009',25 union

select '1012','003',30 union

select '1013','002',37 union

select '1013','001',16 union

select '1013','007',55 union

select '1013','006',42 union

select '1013','012',34 union

select '1000','004',16 union

select '1002','004',55 union

select '1004','004',42 union

select '1008','004',34 union

select '1013','016',86 union

select '1013','016',44 union

select '1000','014',75 union

select '1002','016',100 union

select '1004','001',83 union

select '1008','013',97

go