# sql练习题

一、已知有如下表，请用sql语句在mysql里建立相应的表

表1 学生表（student）

|  |  |  |  |
| --- | --- | --- | --- |
| 列名 | 意义 | 类型 | 约束 |
| sno | 学号 | varchar(3) | 主键 |
| sname | 姓名 | varchar(4) | 非空 |
| ssex | 性别 | varchar(2) |  |
| sbirthday | 生日 | datetime |  |
| class | 班级编号 | varchar(5) | 非空 |

表2 课程表（course）

|  |  |  |  |
| --- | --- | --- | --- |
| 列名 | 意义 | 类型 | 约束 |
| cno | 课程号 | varchar(5) | 主键 |
| cname | 课程名 | varchar(10) | 非空 |
| tno | 教师编号 | varchar(10) | 非空 |

表3 成绩表(grade)

|  |  |  |  |
| --- | --- | --- | --- |
| 列名 | 意义 | 类型 | 约束 |
| sno | 学号 | varchar(3) | 主键 |
| cno | 课程号 | varchar(5) | 主键 |
| degree | 分数 | numeric(3) | 非空 |

表4 教师表(teacher)

|  |  |  |  |
| --- | --- | --- | --- |
| 列名 | 意义 | 类型 | 约束 |
| tno | 教师编号 | varchar(3) | 主键 |
| tname | 教师姓名 | varchar(10) | 非空 |
| tsex | 性别 | varchar(2) |  |
| tbirthday | 生日 | datetime |  |
| prof | 职称 | varchar(6) | 非空 |
| depart | 系 | varchar(10) | 非空 |

表5 等级表(rank)

|  |  |  |  |
| --- | --- | --- | --- |
| 列名 | 意义 | 类型 | 约束 |
| down | 分数下届 | numeric(3) | 非空 |
| up | 分数上界 | numeric(3) | 非空 |
| rank | 级别 | varchar(1) | 主键 |

二、将如下数据插入到表里

INSERT INTO STUDENT (SNO,SNAME,SSEX,SBIRTHDAY,CLASS) VALUES (108 ,'曾华' ,'男' , '1977-09-01',95033);

INSERT INTO STUDENT (SNO,SNAME,SSEX,SBIRTHDAY,CLASS) VALUES (105 ,'匡明' ,'男' , '1975-10-02',95031);

INSERT INTO STUDENT (SNO,SNAME,SSEX,SBIRTHDAY,CLASS) VALUES (107 ,'王丽' ,'女' , '1976-01-23',95033);

INSERT INTO STUDENT (SNO,SNAME,SSEX,SBIRTHDAY,CLASS) VALUES (101 ,'李军' ,'男' , '1976-02-20',95033);

INSERT INTO STUDENT (SNO,SNAME,SSEX,SBIRTHDAY,CLASS) VALUES (109 ,'王芳' ,'女' , '1975-02-10',95031);

INSERT INTO STUDENT (SNO,SNAME,SSEX,SBIRTHDAY,CLASS) VALUES (103 ,'陆君' ,'男' , '1974-06-03',95031);

INSERT INTO COURSE(CNO,CNAME,TNO) VALUES ('3-105' ,'计算机导论', '825')

INSERT INTO COURSE(CNO,CNAME,TNO) VALUES ('3-245' ,'操作系统' , '804');

INSERT INTO COURSE(CNO,CNAME,TNO) VALUES ('6-166' ,'数据电路' , '856');

INSERT INTO COURSE(CNO,CNAME,TNO) VALUES ('9-888' ,'高等数学' , '100');

INSERT into grade(SNO,CNO,DEGREE)VALUES ('103','3-245',86);

INSERT into grade(SNO,CNO,DEGREE)VALUES (105,'3-245',75);

INSERT into grade(SNO,CNO,DEGREE)VALUES (109,'3-245',68);

INSERT into grade(SNO,CNO,DEGREE)VALUES (103,'3-105',92);

INSERT into grade(SNO,CNO,DEGREE)VALUES (105,'3-105',88);

INSERT into grade(SNO,CNO,DEGREE)VALUES (109,'3-105',76);

INSERT into grade(SNO,CNO,DEGREE)VALUES (101,'3-105',64);

INSERT into grade(SNO,CNO,DEGREE)VALUES (107,'3-105',91);

INSERT into grade(SNO,CNO,DEGREE)VALUES (108,'3-105',78);

INSERT into grade(SNO,CNO,DEGREE)VALUES (101,'6-166',85);

INSERT into grade(SNO,CNO,DEGREE)VALUES (107,'6-106',79);

INSERT into grade(SNO,CNO,DEGREE)VALUES (108,'6-166',81);

INSERT into teacher(TNO,TNAME,TSEX,TBIRTHDAY,PROF,DEPART)

VALUES (804,'李诚','男','1958-12-02','副教授','计算机系');

INSERT into teacher(TNO,TNAME,TSEX,TBIRTHDAY,PROF,DEPART)

VALUES (856,'张旭','男','1969-03-12','讲师','电子工程系');

INSERT into teacher(TNO,TNAME,TSEX,TBIRTHDAY,PROF,DEPART)

VALUES (825,'王萍','女','1972-05-05','助教','计算机系');

INSERT into teacher(TNO,TNAME,TSEX,TBIRTHDAY,PROF,DEPART)

VALUES (831,'刘冰','女','1977-08-14','助教','电子工程系');

insert into rank(down,up,rank) values(90,100,'A');

insert into rank(down,up,rank) values(80,89,'B');

insert into rank(down,up,rank) values(70,79,'C');

insert into rank(down,up,rank) values(60,69,'D');

insert into rank(down,up,rank) values(0,59,'E');

三、sql语句练习

1、 查询Student表中的所有记录的Sname、Ssex和Class列。

select sname,ssex,class from student;

2、 查询教师所有的单位即不重复的Depart列。

select distinct depart from teacher;

3、 查询Student表的所有记录。

Select \* from student;

4、 查询Grade表中成绩在60到80之间的所有记录。

select \* from grade where degree between 60 and 80;

5、 查询Grade表中成绩为85，86或88的记录。

select \* from grade where degree in(85,86,88);

6、 查询Student表中“95031”班或性别为“女”的同学记录。

select \* from student where class='95031' or ssex='女';

7、 以Class降序查询Student表的所有记录。

select \* from student order by class desc;

8、 以Cno升序、Degree降序查询Grade表的所有记录。

select \* from grade order by cno,degree desc;

9、 查询“95031”班的学生人数。

select count(sno) from student where class='95031';

10、查询Grade表中的最高分的学生学号和课程号。

select sno,cno from grade order by degree desc limit 1;

select sno,cno from grade where degree=(select max(degree) from grade);

11、查询‘3-105’号课程的平均分。

select avg(degree) from grade where cno='3-105';

12、查询Grade表中至少有5名学生选修的并以3开头的课程的平均分数。

select avg(degree),count(\*) from grade where cno like '3%' group by cno having count(\*)>=5;

13、查询最低分大于70，最高分小于90的Sno列。

select sno from grade group by sno having max(degree)<90 and min(degree)>70;

14、查询所有学生的Sname、Cno和Degree列。

select sname,cno,degree from student,grade where student.sno=grade.sno;

15、查询所有学生的Sno、Cname和Degree列。

select sno,cname,degree from course,grade where course.cno=grade.cno;

16、查询所有学生的Sname、Cname和Degree列。

select sname,cname,degree from student,course,grade where student.sno=gradee.sno and course.cno=grade.cno;

17、查询“95033”班**所选课程**的平均分。

select grade.cno,avg(degree) from student,grade where student.sno=grade.sno o and student.class='95033' group by grade.cno;

---以下题目均需提供两种sql语句

18、查询选修课成绩为A等的学生信息

select s.\* from student s join grade g on s.sno=g.sno join rank on degree>down and degree < up and rank='A';

select s.\* from student s,grade g,rank r where g.degree > r.down and g.degrree < r.up and r.rank='A' and s.sno=g.sno;

19、查询选修“3-105”课程的成绩高于“109”号同学成绩的所有同学的记录。

select s.\*,g.cno,g.degree from student s ,grade g where cno='3-105'and degree >(select degree from grade where cno='3-105' and sno='109') and s.sno=g.sno;

select s.\* from student s join grade g on s.sno=g.sno where cno='3-105' and d degree>(select degree from grade where cno='3-105' and sno='109');

20、查询grade中选学一门以上课程的同学中分数为非最高分成绩的记录。

select \* from grade a where a.degree<(select max(b.degree) from grade b group by b.sno having a.sno=b.sno and count(b.sno)>1);

21、查询成绩高于学号为“109”、课程号为“3-105”的成绩的所有记录。

select \* from grade where degree > (select degree from grade where sno='109' and cno='3-105');

22、查询和学号为108的同学同年出生的所有学生的Sno、Sname和Sbirthday列。

select sno,sname,sbirthday from student where year(sbirthday)=(select year(sbirthday) from student where sno='108');

23、查询“张旭“教师任课的学生成绩。

select degree from grade g,course c where g.cno=(select cno from course c,teteacher t where tname='张旭' and c.tno=t.tno) and c.cno=g.cno;

select degree from grade g join course c on c.cno=g.cno where g.cno=(selec

t cno from course c join teacher t on c.tno=t.tno where tname='张旭' );

24、查询选修某课程的同学人数多于5人的教师姓名

select tname from course c,teacher t where c.tno=t.tno and cno=(select cno

from grade group by cno having count(\*)>5);

select tname from course c join teacher t on c.tno=t.tno where cno=(select cno from grade group by cno having count(\*)>5);

25、查询95033班和95031班全体学生的记录。

select \* from student where class='95033' or class='95031' order by class asc;

select distinct a.\* from student a,student b where a.sno=b.sno and a.class='95033' or a.class='95031';

26、查询存在有85分以上成绩的课程Cno.

select distinct cno from grade where degree>85;

select distinct a.cno from grade a,grade b where a.sno=b.sno and a.degree>8585;

27、查询出“计算机系“教师所教课程的成绩表。

select g.\* from grade g,course c,teacher t where g.cno=c.cno and c.tno=t.tno and depart='计算机系';

select g.\* from grade g join course c on g.cno=c.cno join teacher t on c.tno=t.tno where depart='计算机系';

28、查询“计算机系”与“电子工程系“不同职称的教师的Tname和Prof。

mysql> select tname,prof from teacher where depart='计算机系' or depart='电子工程系';

select distinct a.tname,a.prof from teacher a,teacher b where a.tno=b.tno and a.depart='计算机系' or a.depart='电子工程系';

29、查询选修编号为“3-105“课程且成绩至少高于选修编号为“3-245”的同学的Cno、Sno和Degree,并按Degree从高到低次序排序。

select \* from grade a where cno = '3-105' and a.degree>(select b.degree from grade b where cno = '3-245'and a.sno=b.sno) order by degree desc;

30、查询选修编号为“3-105”且成绩高于选修编号为“3-245”课程的同学的Cno、Sno和Degree.

31、查询所有教师和同学的name、sex和birthday.

select sname,ssex,sbirthday from student

-> union

-> select tname,tsex,tbirthday from teacher;

32、查询所有“女”教师和“女”同学的name、sex和birthday.

select sname,ssex,sbirthday from student where ssex='女'

-> union

-> select tname,tsex,tbirthday from teacher where tsex='女';

33、查询成绩比该课程平均成绩低的同学的成绩表。

select degree from grade a where a.degree<(select avg(b.degree) from grade b group by b.cno having a.cno=b.cno);

34、查询所有任课教师的Tname和Depart.

select tname,depart from teacher t,course c where t.tno=c.tno;

35 查询所有未讲课的教师的Tname和Depart.

select tname,depart from teacher t where t.tno not in(select tno from course );

36、查询至少有2名男生的班号。

select class,count(ssex) from student where ssex='男' group by class having count(ssex)>=2;)>=2;

37、查询Student表中不姓“王”的同学记录。

select \* from student where sname not like '王%';

38、查询Student表中每个学生的姓名和年龄。

select sname,year(now())-year(sbirthday) from student;

39、查询Student表中最大和最小的Sbirthday日期值

select max(sbirthday),min(sbirthday) from student;。

40、以班号和年龄从大到小的顺序查询Student表中的全部记录。

select \* from student order by class , sbirthday;

41、查询“男”教师及其所上的课程。

42、查询最高分同学的Sno、Cno和Degree列。

43、查询和“李军”同性别的所有同学的Sname.

44、查询和“李军”同性别并同班的同学Sname.

45、查询所有选修“计算机导论”课程的“男”同学的成绩表

46、查询计算机系教师所教课程成绩为B等的课程信息

47、查询成绩在C等以上的学生的所在班级

48、查询班里B等以上学生人数最多的班级信息