Mysql练习题

**Class表的定义**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **字段名** | **字段描述** | **数据类型** | **主键** | **外键** | **非空** | **唯一** | **自增** |
| class\_id | 编号 | INT(10) | 是 | 否 | 是 | 是 | 是 |
| class\_name | 班级名称 | VARCHAR(64) | 否 | 否 | 是 | 否 | 否 |

INSERT INTO `class` VALUES ('1', '三年二班'), ('2', '三年三班'), ('3', '一年二班'), ('4', '二年九班');

**Subject表的定义**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **字段名** | **字段描述** | **数据类型** | **主键** | **外键** | **非空** | **唯一** | **自增** |
| subject\_id | 编号 | INT(10) | 是 | 否 | 是 | 是 | 是 |
| subject\_name | 班级名称 | VARCHAR(64) | 否 | 否 | 是 | 否 | 否 |
| teacher\_id | 教师id | INT(10) | 否 | 否 | 否 | 否 | 否 |

INSERT INTO `course` VALUES ('1', '生物', '1'), ('2', '物理', '2'), ('3', '体育', '3'), ('4', '美术', '2');

**Score表的定义**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **字段名** | **字段描述** | **数据类型** | **主键** | **外键** | **非空** | **唯一** | **自增** |
| score\_id | 编号 | INT(10) | 是 | 否 | 是 | 是 | 是 |
| subject\_id | 课程id | INT(10) | 否 | 否 | 是 | 否 | 否 |
| student\_id | 学生id | INT(10) | 否 | 否 | 否 | 否 | 否 |
| score | 分数 | INT(10) | 否 | 否 | 否 | 否 | 否 |

INSERT INTO `score` VALUES ('1', '1', '1', '10'), ('2', '1', '2', '9'), ('5', '1', '4', '66'), ('6', '2', '1', '8'), ('8', '2', '3', '68'), ('9', '2', '4', '99'), ('10', '3', '1', '77'), ('11', '3', '2', '66'), ('12', '3', '3', '87'), ('13', '3', '4', '99'), ('14', '4', '1', '79'), ('15', '4', '2', '11'), ('16', '4', '3', '67'), ('17', '4', '4', '100'), ('18', '5', '1', '79'), ('19', '5', '2', '11'), ('20', '5', '3', '67'), ('21', '5', '4', '100'), ('22', '6', '1', '9'), ('23', '6', '2', '100'), ('24', '6', '3', '67'), ('25', '6', '4', '100'), ('26', '7', '1', '9'), ('27', '7', '2', '100'), ('28', '7', '3', '67'), ('29', '7', '4', '88'), ('30', '8', '1', '9'), ('31', '8', '2', '100'), ('32', '8', '3', '67'), ('33', '8', '4', '88'), ('34', '9', '1', '91'), ('35', '9', '2', '88'), ('36', '9', '3', '67'), ('37', '9', '4', '22'), ('38', '10', '1', '90'), ('39', '10', '2', '77'), ('40', '10', '3', '43'), ('41', '10', '4', '87'), ('42', '11', '1', '90'), ('43', '11', '2', '77'), ('44', '11', '3', '43'), ('45', '11', '4', '87'), ('46', '12', '1', '90'), ('47', '12', '2', '77'), ('48', '12', '3', '43'), ('49', '12', '4', '87'), ('52', '13', '3', '87');

**Student表的定义**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **字段名** | **字段描述** | **数据类型** | **主键** | **外键** | **非空** | **唯一** | **自增** |
| student\_id | 编号 | INT(10) | 是 | 否 | 是 | 是 | 是 |
| sex | 性别 | VARCHAR(64) | 否 | 否 | 是 | 否 | 否 |
| class\_id | 班级id | INT(10) | 否 | 否 | 否 | 否 | 否 |
| student\_name | 学生姓名 | VARCHAR(64) | 否 | 否 | 否 | 否 | 否 |

INSERT INTO `student` VALUES ('1', '男', '1', '理解'), ('2', '女', '1', '钢蛋'), ('3', '男', '1', '张三'), ('4', '男', '1', '张一'), ('5', '女', '1', '张二'), ('6', '男', '1', '张四'), ('7', '女', '2', '铁锤'), ('8', '男', '2', '李三'), ('9', '男', '2', '李一'), ('10', '女', '2', '李二'), ('11', '男', '2', '李四'), ('12', '女', '3', '如花'), ('13', '男', '3', '刘三'), ('14', '男', '3', '刘一'), ('15', '女', '3', '刘二'), ('16', '男', '3', '刘四');

**Teacher表的定义**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **字段名** | **字段描述** | **数据类型** | **主键** | **外键** | **非空** | **唯一** | **自增** |
| teacher\_id | 编号 | INT(10) | 是 | 否 | 是 | 是 | 是 |
| teacher\_name | 姓名 | VARCHAR(64) | 否 | 否 | 是 | 否 | 否 |

INSERT INTO `teacher` VALUES ('1', '张磊老师'), ('2', '李平老师'), ('3', '刘海燕老师'), ('4', '朱云海老师'), ('5', '李杰老师');

1.查询男生、女生的人数；

2.查询姓“张”的学生名单；

3.课程平均分从高到低显示

4.查询有课程成绩小于60分的同学的学号、姓名；

5.查询至少有一门课与学号为1的同学所学课程相同的同学的学号和姓名；

6.查询出只选修了一门课程的全部学生的学号和姓名；

7.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；

8.查询课程编号“2”的成绩比课程编号“1”课程低的所有同学的学号、姓名；

9.查询“生物”课程比“物理”课程成绩高的所有学生的学号；

10.查询平均成绩大于60分的同学的学号和平均成绩;

11.查询所有同学的学号、姓名、选课数、总成绩；

12.查询姓“李”的老师的个数；

13.查询没学过“张磊老师”课的同学的学号、姓名；

14.查询学过“1”并且也学过编号“2”课程的同学的学号、姓名；

15.查询学过“李平老师”所教的所有课的同学的学号、姓名；

16.查询没有学全所有课的同学的学号、姓名；

17.查询和“002”号的同学学习的课程完全相同的其他同学学号和姓名；

18.删除学习“叶平”老师课的SC表记录；

19.向SC表中插入一些记录，这些记录要求符合以下条件：①没有上过编号“002”课程的同学学号；②插入“002”号课程的平均成绩；

20.按平均成绩从低到高显示所有学生的“语文”、“数学”、“英语”三门的课程成绩，按如下形式显示： 学生ID,语文,数学,英语,有效课程数,有效平均分；

21.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；

22.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；

23.查询各科成绩前三名的记录:(不考虑成绩并列情况)

24.查询每门课程被选修的学生数；

25.查询同名同姓学生名单，并统计同名人数；

26.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；

27.查询平均成绩大于85的所有学生的学号. 姓名和平均成绩；

28.查询课程名称为“数学”，且分数低于60的学生姓名和分数；

29.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；

30.求选了课程的学生人数

31.查询选修“杨艳”老师所授课程的学生中，成绩最高的学生姓名及其成绩；

32.查询各个课程及相应的选修人数；

33.查询不同课程但成绩相同的学生的学号、课程号、学生成绩；

34.查询每门课程成绩最好的前两名；

35.检索至少选修两门课程的学生学号；

36.查询全部学生都选修的课程的课程号和课程名；

37.查询没学过“叶平”老师讲授的任一门课程的学生姓名；

38.查询两门以上不及格课程的同学的学号及其平均成绩；

39.检索“004”课程分数小于60，按分数降序排列的同学学号；

40.删除“002”同学的“001”课程的成绩；

create table Class(

class\_id int(10) primary key not null auto\_increment,

class\_name varchar(64) not null

)

INSERT INTO `class` VALUES('1','三年二班'),('2','三年三班'),('3','一

年二班'),('4','二年九班');

create table Subject(

subject\_id int(10) primary key not null auto\_increment,

subject\_name varchar(64) not null,

teacher\_id int(10)

)

INSERT INTO `subject` VALUES('1','生物','1'),('2','物理','2'),('3',

'体育','3'),('4','美术','2');

create table Score(

score\_id int(10) primary key not null auto\_increment,

subject\_id int(10) not null,

student\_id int(10),

score int(10)

)

INSERT INTO `score` (score\_id,student\_id,subject\_id,score)VALUES ('1', '1', '1', '10'), ('2', '1', '2', '9'), ('5', '1', '4', '66'), ('6', '2', '1', '8'), ('8', '2', '3', '68'), ('9', '2', '4', '99'), ('10', '3', '1', '77'), ('11', '3', '2', '66'), ('12', '3', '3', '87'), ('13', '3', '4', '99'), ('14', '4', '1', '79'), ('15', '4', '2', '11'), ('16', '4', '3', '67'), ('17', '4', '4', '100'), ('18', '5', '1', '79'), ('19', '5', '2', '11'), ('20', '5', '3', '67'), ('21', '5', '4', '100'), ('22', '6', '1', '9'), ('23', '6', '2', '100'), ('24', '6', '3', '67'), ('25', '6', '4', '100'), ('26', '7', '1', '9'), ('27', '7', '2', '100'), ('28', '7', '3', '67'), ('29', '7', '4', '88'), ('30', '8', '1', '9'), ('31', '8', '2', '100'), ('32', '8', '3', '67'), ('33', '8', '4', '88'), ('34', '9', '1', '91'), ('35', '9', '2', '88'), ('36', '9', '3', '67'), ('37', '9', '4', '22'), ('38', '10', '1', '90'), ('39', '10', '2', '77'), ('40', '10', '3', '43'), ('41', '10', '4', '87'), ('42', '11', '1', '90'), ('43', '11', '2', '77'), ('44', '11', '3', '43'), ('45', '11', '4', '87'), ('46', '12', '1', '90'), ('47', '12', '2', '77'), ('48', '12', '3', '43'), ('49', '12', '4', '87'), ('52', '13', '3', '87');

create table Student(

student\_id int(10) primary key not null auto\_increment,

sex varchar(64) not null,

class\_id int(10),

student\_name VARCHAR(64)

)

INSERT INTO `student` VALUES('1','男','1','理解'),('2','女','1','

钢蛋'),('3','男','1','张三'),('4','男','1','张一'),('5','女','1',

'张二'),('6','男','1','张四'),('7','女','2','铁锤'),('8','男','2',

'李三'),('9','男','2','李一'),('10','女','2','李二'),('11','男',

'2','李四'),('12','女','3','如花'),('13','男','3','刘三'),('14',

'男','3','刘一'),('15','女','3','刘二'),('16','男','3','刘四');

create table Teacher(

teacher\_id int(10) primary key not null auto\_increment,

teacher\_name VARCHAR(64) not null

)

INSERT INTO `teacher` VALUES('1','张磊老师'),('2','李平老师'),('3','

刘海燕老师'),('4','朱云海老师'),('5','李杰老师');

-- 1

select sex,count(\*) '人数' from student group by sex;

-- 2

select \* from student where student\_name like '张%';

-- 3

select subject\_id '课程',avg(score) '平均分' from score GROUP BY subject\_id order by avg(score) desc;

-- 4

select distinct stu.student\_id,stu.student\_name from student stu inner join score sc on stu.student\_id=sc.student\_id where sc.score < 60;

-- 5

select distinct stu.student\_id,stu.student\_name from student stu,score sc where stu.student\_id =sc.student\_id and sc.subject\_id in(

select DISTINCT sc.subject\_id from student stu,score sc where stu.student\_id =sc.student\_id and stu.student\_id=1)

-- 6

select student\_id,student\_name from student where student\_id in (select sc.student\_id from student stu inner join score sc on sc.student\_id = stu.student\_id group by sc.student\_id having count(sc.student\_id) = 1)

-- 7

SELECT subject\_id,MAX(score) ,MIN(score) FROM score GROUP BY subject\_id;

-- 8

SELECT DISTINCT sc1.student\_id,st.student\_name FROM score sc1,student st

WHERE subject\_id=1 AND score>

(SELECT score FROM score sc2 WHERE subject\_id=2 AND sc2.student\_id=sc1.student\_id)

AND sc1.student\_id=st.student\_id

-- 9

SELECT DISTINCT sc1.student\_id FROM score sc1,subject sj WHERE subject\_name='生物'

AND score> (SELECT score FROM score sc2,subject sj2 WHERE subject\_name='物理'

AND sc2.student\_id=sc1.student\_id AND sc2.subject\_id=sj2.subject\_id)

AND sc1.subject\_id=sj.subject\_id

-- 10

select student\_id,avg(score) from score group by student\_id having avg(score)>60;

-- 11

select stu.student\_id, stu.student\_name, count(sc.subject\_id), sum(sc.score) from student stu inner join score sc on stu.student\_id = sc.student\_id group by student\_id;

-- 12

select count(\*) from teacher where teacher\_name like '李%';

-- 13

select student\_id,student\_name from student where student\_id not in (select student\_id from score where subject\_id in ( select teacher\_id from `subject` where teacher\_id in (select teacher\_id from teacher where teacher\_name = '张磊老师')));

-- 14

select student\_id, student\_name from student where student\_id in (select student\_id from score where subject\_id=1 and student\_id in (select student\_id from score where subject\_id=2 ));

-- 15

select student\_id,student\_name from student where student\_id in (select student\_id from score where subject\_id in ( select teacher\_id from teacher where teacher\_id in (select teacher\_id from teacher where teacher\_name = '李平老师')));

-- 16

select student\_id,student\_name from student where student\_id in (select student\_id from score group by student\_id having count(subject\_id) < (select count(teacher\_id) from teacher));

-- 17

select stu.student\_id,stu.student\_name from student stu,score sc Where sc.subject\_id <> 2 and sc.student\_id=stu.student\_id GROUP BY sc.student\_id

having sum(sc.subject\_id)=(select sum(s1.subject\_id)from score s1 where s1.student\_id=2)

-- 18

DELETE FROM score WHERE subject\_id IN(SELECT c.subject\_id FROM score c,

teacher t WHERE c.subject\_id = t.teacher\_id AND t.teacher\_name = '叶平')

-- 19

-- 20

select sc.student\_id,

(select score from score sc1 left join `subject` sub on sc1.subject\_id = sub.subject\_id where sub.subject\_name = '生物'and sc.student\_id=sc1.student\_id) as '生物',

(select score from score sc2 left join `subject` sub on sc2.subject\_id = sub.subject\_id where sub.subject\_name = '物理' and sc.student\_id=sc2.student\_id) as '物理',

(select score from score sc3 left join `subject` sub on sc3.subject\_id = sub.subject\_id where sub.subject\_name = '体育' and sc.student\_id=sc3.student\_id) as '体育',

(select score from score sc4 left join `subject` sub on sc4.subject\_id = sub.subject\_id where sub.subject\_name = '美术' and sc.student\_id=sc4.student\_id) as '美术',

count(sc.subject\_id) '有效课程数',

avg(sc.score) '有效平均分'

from score sc

group by sc.student\_id

-- 21

select subject\_id, max(score), min(score) from score group by subject\_id;

-- 22

SELECT subject\_id,COUNT(subject\_id),AVG(score),SUM( score.score > 60 )/COUNT(subject\_id)\*100 '及格率' FROM score GROUP BY subject\_id ORDER BY SUM( score.score > 60 )/COUNT(subject\_id)\*100 DESC

-- 23

select t1.student\_id,t1.subject\_id,t1.score from score t1 where (select count(1)from score t2 where t1.subject\_id=t2.subject\_id and t1.score<t2.score)<3 order by t1.subject\_id desc,t1.score desc

-- 24

select subject\_id,count(student\_id) from score group by subject\_id;

-- 25

select count(student\_name),student\_name from student group by student\_name;

-- 26

select subject\_id,avg(score) from score group by subject\_id order by avg(score) asc,subject\_id desc;

-- 27

select stu.student\_id,stu.student\_name,avg(sc.score) from score sc,student stu where sc.student\_id=stu.student\_id group by sc.student\_id having avg(sc.score) > 85;

-- 28

SELECT stu.student\_name,sc.score FROM score sc,subject sub,student stu WHERE sc.subject\_id=sub.subject\_id AND sc.student\_id = stu.student\_id AND sub.subject\_name = '生物' AND sc.score < 60

-- 29

select stu.student\_id,stu.student\_name from score sc,student stu where stu.student\_id=sc.student\_id and sc.subject\_id = 3 and sc.score > 80;

-- 30

SELECT COUNT(DISTINCT student\_id) FROM score

-- 31

SELECT stu.student\_name,sc.score FROM score sc, student stu where sc.student\_id = stu.student\_id and sc.score =(select max(score) from score where subject\_id in(select subject\_id from `subject` where teacher\_id in (select teacher\_id from teacher where teacher\_name='李平老师')))

-- 32

select sub.subject\_name,count(1) from score

left join subject sub on score.subject\_id=sub.subject\_id

group by sub.subject\_id;

-- 33

select DISTINCT s1.subject\_id,s2.subject\_id,s1.score,s2.score from score

as s1,score as s2 where s1.score=s2.score and s1.subject\_id!=

s2.subject\_id;

-- 34

select t1.student\_id,t1.subject\_id,t1.score from score t1 where (select count(1)from score t2 where t1.subject\_id=t2.subject\_id and t1.score<t2.score)<2 order by t1.subject\_id desc,t1.score desc

-- 35

SELECT student\_id FROM score GROUP BY student\_id HAVING COUNT(subject\_id)>=2;

-- 36

select sc.subject\_id,sub.subject\_name from score sc,subject sub where sc.subject\_id=sub.subject\_id group by sc.subject\_id having count(sc.student\_id) = (select count(student\_id) from student);

-- 37

select student\_id,student\_name from student where student\_id not in(select student\_id from score where subject\_id in(select subject\_id from `subject` where teacher\_id in(select teacher\_id from teacher where teacher\_name ='李平老师')));

-- 38

SELECT student\_id,AVG(score) FROM score where score<60 GROUP BY student\_id HAVING COUNT(\*)>=2;

-- 39

select student\_id from score where score<60 and subject\_id=4 order by score desc;

-- 40

delete from score where student\_id=2 and subject\_id=1;