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');

-- NO.1查询男生、女生的人数；

SELECT

sex'性别',

COUNT(student\_id)'人数'

FROM

student1

GROUP BY

sex

-- NO.2查询姓“张”的学生名单；

SELECT

student\_name '姓名'

FROM

student1

WHERE

student\_name like '张%'

-- NO.3课程平均分从高到低显示

SELECT

sub.subject\_name'课程名',

AVG(sc.score)'平均分'

FROM

score1 sc, `subject` sub

WHERE

sc.subject\_id = sub.subject\_id

GROUP BY

sc.subject\_id

ORDER BY

平均分 DESC

-- NO.4查询有课程成绩小于60分的同学的学号、姓名；

SELECT

stu.student\_id'学号',

stu.student\_name'姓名'

FROM

student1 stu, score1 sc

WHERE

stu.student\_id = sc.student\_id

AND

sc.score < 60

-- NO.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；

SELECT \* FROM student1,

(SELECT DISTINCT

score1.student\_id

FROM

score1

WHERE

subject\_id IN(

SELECT

sc.subject\_id

FROM

score1 sc

WHERE

sc.student\_id = '1')) b

WHERE

student1.student\_id = b.student\_id

-- NO.6 查询出只选修了一门课程的全部学生的学号和姓名；

SELECT

stu.student\_id '学号',

stu.student\_name '姓名'

FROM

student1 stu ,

(select sc.student\_id, count(sc.subject\_id)'a'

FROM score1 sc GROUP BY sc.student\_id) b

WHERE

stu.student\_id = b.student\_id

AND

a = 1

-- NO.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；

SELECT

subject\_id '课程Id',

MAX(score) '最高分',

MIN(score) '最低分'

FROM

score1

GROUP BY

subject\_id

-- NO.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；

SELECT

student\_id'学号',

student\_name'姓名'

FROM

student1

WHERE

(SELECT score from score1 WHERE score1.student\_id = student1.student\_id

AND score1.score\_id = 2)<

(SELECT score from score1 WHERE score1.student\_id = student1.student\_id

AND score1.score\_id = 1)

-- NO.9查询“生物”课程比“物理”课程成绩高的所有学生的学号；

SELECT

t1.student\_id

FROM(

(SELECT \* FROM score1 WHERE subject\_id in(SELECT subject\_id FROM `subject` WHERE subject\_name = '生物'))t1

LEFT JOIN

(SELECT \* FROM score1 WHERE subject\_id in(SELECT subject\_id FROM `subject` WHERE subject\_name = '物理'))t2

ON

t1.student\_id = t2.student\_id)

WHERE

t1.score > t2.score;

-- NO.10查询平均成绩大于60分的同学的学号和平均成绩;

SELECT

sc.student\_id'学号',

avg(sc.score)'平均成绩'

FROM

score1 sc

GROUP BY

sc.student\_id

HAVING

平均成绩 >60

-- NO.11查询所有同学的学号、姓名、选课数、总成绩；

SELECT

sc.student\_id '学号',

stu.student\_name '姓名',

count(sc.student\_id) '选课数',

SUM(sc.score)'总成绩'

FROM

student1 stu ,score1 sc

WHERE

stu.student\_id = sc.student\_id

GROUP BY

sc.student\_id

-- NO.12 查询姓“李”的老师的个数

SELECT

COUNT(\*)'数量'

FROM

teacher

WHERE

teacher\_name LIKE '李%'

GROUP BY

teacher\_name

-- NO.13.查询没学过“张磊老师”课的同学的学号、姓名；

SELECT

student\_id'学号',

student\_name'姓名'

FROM

student1

WHERE

student\_id

NOT IN(

SELECT student\_id from score1

WHERE

subject\_id =

(SELECT subject\_id FROM subject

WHERE

teacher\_id =

(

SELECT tea.teacher\_id FROM teacher tea

WHERE teacher\_name = '张磊老师')))

-- NO.14查询学过“1”并且也学过编号“2”课程的同学的学号、姓名

SELECT

sc.student\_id'学号',

stu.student\_name'姓名'

FROM

score1 sc,student1 stu

where

sc.student\_id = stu.student\_id

AND

sc.subject\_id = '1'

AND

sc.student\_id IN

(SELECT student\_id FROM score1 WHERE subject\_id ='2')

-- NO.15 查询学过“李平老师”所教的所有课的同学的学号、姓名；

SELECT

stu.student\_id'学号',

stu.student\_name'姓名'

FROM

(SELECT student\_id, subject\_id FROM score1 WHERE subject\_id IN

(SELECT sub.subject\_id FROM `subject` sub

LEFT JOIN teacher tea ON tea.teacher\_id = sub.teacher\_id

WHERE tea.teacher\_name = '李平老师')

) t1 LEFT JOIN student1 stu ON t1.student\_id = stu.student\_id

GROUP BY stu.student\_id HAVING COUNT(stu.student\_id)>1

-- NO.16 查询没有学全所有课的同学的学号、姓名；

SELECT

stu.student\_id '学号',

stu.student\_name'姓名'

FROM

student1 stu ,score1 sc

WHERE

stu.student\_id = sc.student\_id

GROUP BY

stu.student\_id,stu.student\_name

HAVING

COUNT(subject\_id) < (SELECT COUNT(\*) FROM `subject`)

-- NO.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

SELECT

stu.student\_id '学号',

stu.student\_name'姓名'

FROM

student1 stu ,score1 sc

WHERE

sc.student\_id NOT IN(

SELECT student\_id FROM score1 WHERE subject\_id NOT IN(

SELECT subject\_id FROM score1 WHERE sc.student\_id = 2

)

)AND sc.student\_id != 2

GROUP BY

stu.student\_id

HAVING COUNT(subject\_id) =

(SELECT COUNT(subject\_id) FROM score1 WHERE student\_id = 2)

-- NO.18

-- NO.19

-- NO.20按平均成绩从低到高显示所有学生的“生物”、“体育”、“物理”

-- 三门的课程成绩，按如下形式显示： 学生ID,生物,体育,物理,

-- 有效课程数,有效平均分；

SELECT

sc1.student\_id'学生ID',

a1.socre'生物',

a2.score'体育',

a3.score'物理',

COUNT(sc1.subject\_id)'有效课程数',

AVG(sc1.score)'有效平均分'

FROM

score1 sc1 ,

(SELECT sc.student\_id,sc.score FROM score1 sc WHERE subject\_id =

(SELECT subject\_id FROM `subject`

WHERE subject\_name = '生物')) a1,

(SELECT sc.student\_id,sc.score FROM score1 sc WHERE subject\_id =

(SELECT subject\_id FROM `subject`

WHERE subject\_name = '体育')) a2,

(SELECT sc.student\_id,sc.score FROM score1 sc WHERE subject\_id =

(SELECT subject\_id FROM `subject`

WHERE subject\_name = '物理')) a3

WHERE

sc1\_student\_id = a1.student\_id

AND a1.student\_id = a2.student\_id

AND a2.student\_id = a3.student\_id

GROUP BY

sc1.student\_id

ORDER BY

有效平均分 DESC

-- NO.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

SELECT

subject\_id '课程ID',

MAX(score)'最高分',

MIN(score)'最低分'

FROM

score1

GROUP BY

subject\_id

-- NO.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；

SELECT

sub.subject\_name'科目',

avg(sc.score)'平均分',

pass.p1/COUNT(sub.subject\_id)\*100'及格率'

FROM

`subject` sub,score1 sc,

(SELECT student\_id,COUNT(subject\_id) as p1 FROM score1 WHERE score>=60 GROUP BY student\_id) pass

WHERE

sub.subject\_id = sc.subject\_id AND sc.student\_id = pass.student\_id

GROUP BY

sc.subject\_id

ORDER BY

平均分 DESC

-- NO.23 查询各科成绩前三名的记录:(不考虑成绩并列情况)

SELECT

sc.student\_id'学号',

stu.student\_name'姓名',

sc.subject\_id'科目',

sc.score'成绩'

FROM

student1 stu,score1 sc

WHERE

stu.student\_id = sc.student\_id

GROUP BY

sc.student\_id,sc.subject\_id

ORDER BY

sc.score desc

-- NO.24查询每门课程被选修的学生数；

SELECT

sub.subject\_name'课程',

COUNT(sc.student\_id)'已选人数'

FROM

`subject` sub,score1 sc

WHERE

sub.subject\_id = sc.subject\_id

GROUP BY

sub.subject\_id

-- NO.25 查询同名同姓学生名单，并统计同名人数；

SELECT

student\_name'姓名',

COUNT(\*)'人数'

FROM

student1

GROUP BY

student\_name

HAVING COUNT(\*) > 1

-- NO.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

SELECT

sub.subject\_name'课程',

avg(sc.score)'平均成绩'

FROM

`subject` sub, score1 sc

WHERE

sub.subject\_id = sc.subject\_id

GROUP BY

sc.subject\_id

ORDER BY

平均成绩 DESC,sub.subject\_id ASC

-- NO.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

SELECT

stu.student\_id'学号',

stu.student\_name'姓名',

avg(sc.score)'平均成绩'

FROM

student1 stu , score1 sc

WHERE

stu.student\_id = sc.student\_id

AND

sc.score>85

GROUP BY

sc.student\_id

-- NO.28 查询课程名称为“生物”，且分数低于60的学生姓名和分

SELECT

stu.student\_name'姓名',

sc.score'成绩'

FROM

student1 stu,score1 sc

WHERE

stu.student\_id = sc.student\_id

AND

sc.subject\_id =

(SELECT subject\_id from `subject` WHERE subject\_name = '生物')

AND

sc.score<60

-- NO.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

SELECT

stu.student\_name'姓名',

sc.score'成绩'

FROM

student1 stu,score1 sc

WHERE

stu.student\_id = sc.student\_id

AND sc.subject\_id = '3'

AND sc.score>80

-- NO.30 求选了课程的学生人数

SELECT

COUNT(DISTINCT student\_id)'总数'

FROM

score1

GROUP BY

'总数'

-- NO.31查询选修“李平”老师所授课程的学生中，成绩最高的学生姓名及其成绩

SELECT

stu.student\_name '姓名',

t1.subject\_id'课程',

t1.score'成绩'

FROM

(SELECT DISTINCT student\_id,score,subject\_id FROM score1

WHERE score = (SELECT MAX(score) FROM score1 WHERE subject\_id IN

(SELECT subject\_id FROM `subject` WHERE teacher\_id =

(SELECT teacher\_id FROM teacher WHERE teacher\_name = '李平老师')))) t1

LEFT JOIN

student1 stu

ON

stu.student\_id = t1.student\_id

-- NO.32 查询各个课程及相应的选修人数

SELECT

sub.subject\_name'课程',

COUNT(sc.student\_id)'人数'

FROM

score1 sc, `subject` sub

WHERE

sc.subject\_id = sub.subject\_id

GROUP BY

sub.subject\_id

-- NO.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；

SELECT

s1.student\_id'学号',

s1.subject\_id'课程号',

s1.score'学生成绩'

FROM

score1 s1, score1 s2

WHERE

s1.score = s2.score

AND

s1.subject\_id <> s2.subject\_id

-- NO.34 查询每门课程成绩最好的前两名

select

t1.student\_id,t1.subject\_id,t1.score from score1 t1

left join

(

select score\_id,subject\_id,

(select score from score1 as s2 where s2.subject\_id = s1.subject\_id order by score desc limit 0, 1) as first\_num,

(select score from score1 as s2 where s2.subject\_id = s1.subject\_id order by score desc limit 1, 1) as second\_num

from score1 as s1

) t2

on t1.score\_id = t2.score\_id

where t1.score = t2.first\_num or t1.score = t2.second\_num ;

-- NO.35 检索至少选修两门课程的学生学号；

SELECT

student\_id'学号'

FROM

score1

GROUP BY

student\_id

HAVING COUNT(student\_id)>1

-- NO.36查询全部学生都选修的课程的课程号和课程名

SELECT

sc.subject\_id'课程号',

sub.subject\_name'课程名'

FROM

`subject` sub,score1 sc

WHERE

sc.subject\_id = sub.subject\_id

GROUP BY

sc.subject\_id

HAVING COUNT(student\_id) =

(SELECT COUNT(student\_id) FROM student1)

-- NO.37 查询没学过“李平”老师讲授的任一门课程的学生姓名；

SELECT

student\_name'姓名'

FROM

student1

WHERE

student\_id

NOT IN

(SELECT student\_id FROM score1 WHERE subject\_id IN

(SELECT subject\_id FROM `subject` WHERE teacher\_id =

(SELECT teacher\_id FROM teacher WHERE teacher\_name = '李平老师')))

-- NO.38查询两门以上不及格课程的同学的学号及其平均成绩；

SELECT

student\_id'学号',

avg(score)'平均成绩'

FROM

score1

WHERE

score <60

GROUP BY

student\_id

HAVING

COUNT(score)>=2

-- NO.39检索“004”课程分数小于60，按分数降序排列的同学学号

SELECT

student\_id

FROM

score1

WHERE

score <60

AND subject\_id = '4'

ORDER BY

score DESC

40.删除“002”同学的“001”课程的成绩；

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