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；

SELECT

COUNT(\*)

FROM

student1

GROUP BY sex

1. 查询姓“张”的学生名单；

SELECT \*

FROM

student1

WHERE

student\_name LIKE '张%'

1. 课程平均分从高到低显示

SELECT

subject\_name '课程',

AVG(score) '平均分'

FROM

score1

LEFT JOIN subject1

ON subject1.subject\_id = score1.subject\_id

GROUP BY subject\_name DESC

4.查询有课程成绩小于60分的同学的学号、姓名；

SELECT

st1.student\_id '学号',

st1.student\_name '姓名'

FROM

student1 st1

INNER JOIN score1 sc1

ON st1.student\_id = sc1.student\_id ,

student1

WHERE

score < 60

GROUP BY st1.student\_name

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

st1.student\_id '学号',

st1.student\_name '姓名',

sc1.subject\_id

FROM

student1 st1

INNER JOIN score1 sc1 ON st1.student\_id = sc1.student\_id

WHERE

sc1.subject\_id IN (

SELECT

sc1.subject\_id

FROM

student1 st1

INNER JOIN score1 sc1 ON st1.student\_id = sc1.student\_id

WHERE

st1.student\_id = 1

)

GROUP BY st1.student\_name

ORDER BY st1.student\_id ASC

6.查询出只选修了一门课程的全部学生的学号和姓名；

SELECT

n.student\_id,

n.student\_name

FROM

(

SELECT

st1.student\_id,

st1.student\_name,

COUNT(\*) as a

FROM

student1 st1

INNER JOIN score1 sc1 ON st1.student\_id = sc1.student\_id

GROUP BY

st1.student\_id

)n

WHERE

a = 1

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

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

a.ssid,

a.ssn

FROM

(SELECT

st1.student\_id 'ssid',

st1.student\_name 'ssn',

sc1.score 'ss'

FROM

student1 st1

INNER JOIN score1 sc1

ON st1.student\_id = sc1.student\_id

WHERE

sc1.subject\_id = 2) a,

(SELECT

st1.student\_id 'ssid',

st1.student\_name 'ssn',

sc1.score 'ss'

FROM

student1 st1

INNER JOIN score1 sc1

ON st1.student\_id = sc1.student\_id

WHERE

sc1.subject\_id = 1) b

WHERE

a.ssid = b.ssid

AND

a.ss < b.ss

9.查询“生物”课程比“物理”课程成绩高的所有学生的学号；

SELECT

a.scid '学号'

FROM

(

SELECT

sc1.student\_id 'scid',

sc1.score 'scs'

FROM

subject1 su1

INNER JOIN score1 sc1 ON su1.subject\_id = sc1.subject\_id

WHERE

su1.subject\_name = '生物'

) a,

(

SELECT

sc1.student\_id 'ssid',

sc1.score 'scs'

FROM

subject1 su1

INNER JOIN score1 sc1 ON su1.subject\_id = sc1.subject\_id

WHERE

su1.subject\_name = '物理'

) b

WHERE

a.scid = b.ssid

AND a.scs > b.scs

10.查询平均成绩大于60分的同学的学号和平均成绩;

SELECT\*

FROM

(SELECT

st1.student\_id '学号',

AVG(score) '平均成绩'

FROM

student1 st1

INNER JOIN score1 sc1

ON st1.student\_id = sc1.student\_id

GROUP BY st1.student\_id) a

WHERE

a.`平均成绩` > 60

11.查询所有同学的学号、姓名、选课数、总成绩；

SELECT

st1.student\_id '学号',

st1.student\_name '姓名',

a.ct '选课数',

a.sm '总成绩'

FROM

student1 st1,

(SELECT

sc1.student\_id 'ssid',

COUNT(\*) 'ct',

SUM(sc1.score) 'sm'

FROM

score1 sc1

GROUP BY sc1.student\_id) a

WHERE

st1.student\_id = a.ssid

12.查询姓“李”的老师的个数；

SELECT

COUNT(\*)

FROM

teacher

WHERE

teacher\_name LIKE '李%'

13.查询没学过“张磊老师”课的同学的学号、姓名；

SELECT

st1.student\_id '学号',

st1.student\_name '姓名'

FROM

student1 st1

WHERE

st1.student\_id NOT IN (

SELECT

sc1.student\_id

FROM

score1 sc1

WHERE

sc1.subject\_id = (

SELECT

sub1.subject\_id

FROM

subject1 sub1

INNER JOIN teacher th ON sub1.teacher\_id = th.teacher\_id

WHERE

th.teacher\_name = '张磊老师'

)

)

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

st1.student\_id '学号',

st1.student\_name '姓名'

FROM

student1 st1

WHERE

student\_id in

(SELECT

st1.student\_id 'ssid'

FROM

student1 st1

INNER JOIN score1 sc1

ON st1.student\_id = sc1.student\_id

WHERE

sc1.subject\_id = 1)

AND

st1.student\_id in

(SELECT

st1.student\_id 'ssid'

FROM

student1 st1

INNER JOIN score1 sc1

ON st1.student\_id = sc1.student\_id

WHERE

sc1.subject\_id = 2)

15.查询学过“李平老师”所教的所有课的同学的学号、姓名；

SELECT

st1.student\_id '学号',

st1.student\_name '姓名'

FROM

student1 st1

WHERE

student\_id IN (

SELECT

sc1.student\_id

FROM

score1 sc1,

(

SELECT

sub1.subject\_id

FROM

teacher th

INNER JOIN subject1 sub1 ON th.teacher\_id = sub1.teacher\_id

WHERE

th.teacher\_name = '李平老师'

) a

WHERE

sc1.subject\_id = a.subject\_id

)

16.查询没有学全所有课的同学的学号、姓名；

SELECT

st1.student\_id '学号',

st1.student\_name '姓名'

FROM

student1 st1,

(SELECT

sc1.student\_id '学号',

COUNT(\*) '课程总数'

FROM

score1 sc1

GROUP BY sc1.student\_id) a,

(SELECT

COUNT(\*) '课程总数'

FROM

subject1) b

WHERE

st1.student\_id = a.`学号`

AND

a.`课程总数` = b.`课程总数`

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

st1.student\_id '学号',

st1.student\_name '姓名'

FROM

student1 st1

INNER JOIN score1 sc1

ON st1.student\_id = sc1.student\_id

WHERE

sc1.student\_id not in

(SELECT

sc1.student\_id

FROM

score1 sc1

WHERE

sc1.subject\_id NOT in

(SELECT

sc1.subject\_id

FROM

score1 sc1

WHERE

sc1.student\_id = 2))

AND

sc1.student\_id != 2

GROUP BY st1.student\_id

HAVING

COUNT(sc1.subject\_id) =

(SELECT

COUNT(sc1.subject\_id)

FROM

score1 sc1

WHERE

sc1.student\_id = 2)

18.删除学习“李平”老师课的SC表记录；

DELETE

FROM

score1 sc1

WHERE

sc1.subject\_id in

(SELECT

sub1.subject\_id

FROM

teacher th

INNER JOIN subject1 sub1

ON th.teacher\_id = sub1.teacher\_id)

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“生物”、“物理”、“体育””美术”四门的课程成绩，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；SELECT

sct.student\_id '学号',

(SELECT

sc1.score '成绩'

FROM

score1 sc1

LEFT JOIN subject1 sub1

ON sc1.subject\_id = sub1.subject\_id

WHERE

sub1.subject\_name = '生物'

AND

sc1.student\_id = sct.student\_id) '生物',

(SELECT

sc2.score '成绩'

FROM

score1 sc2

LEFT JOIN subject1 sub2

ON sc2.subject\_id = sub2.subject\_id

WHERE

sub2.subject\_name = '物理'

AND

sc2.student\_id = sct.student\_id) '物理',

(SELECT

sc3.score '成绩'

FROM

score1 sc3

LEFT JOIN subject1 sub3

ON sc3.subject\_id = sub3.subject\_id

WHERE

sub3.subject\_name = '体育'

AND

sc3.student\_id = sct.student\_id) '体育',

(SELECT

sc4.score '成绩'

FROM

score1 sc4

LEFT JOIN subject1 sub4

ON sc4.subject\_id = sub4.subject\_id

WHERE

sub4.subject\_name = '美术'

AND

sc4.student\_id = sct.student\_id) '美术',

COUNT(sct.score\_id) '有效课程数',

AVG(sct.score) '平均分'

FROM

score1 sct

GROUP BY sct.student\_id

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

score1.subject\_id '课程ID',

MAX(score) '最高分',

MIN(score) '最低分'

FROM

score1

GROUP BY score1.subject\_id

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

sub1.subject\_name,

ROUND((

SELECT

AVG(sc1.score)

FROM

score1 sc1

WHERE

sc1.subject\_id = sub1.subject\_id

),0) ass,

CONCAT(

ROUND(

(SELECT

SUM(sc1.student\_id)

FROM

score1 sc1

WHERE

sc1.score >= 60

AND

sc1.subject\_id = sub1.subject\_id

)/

(

SELECT

SUM(sc1.student\_id)

FROM

score1 sc1

WHERE

sc1.subject\_id = sub1.subject\_id

)\*100,0),'%') pass

FROM

subject1 sub1

GROUP BY sub1.subject\_id

ORDER BY ass aSC,pass DESC

23.查询各科成绩前三名的记录:(不考虑成绩并列情况)

SELECT

sc1.subject\_id,

sc1.score

FROM

score1 sc1

WHERE

sc1.score <=

(

SELECT

score

FROM

score1

WHERE

score1.subject\_id = sc1.subject\_id

ORDER BY score DESC LIMIT 0,1

)

AND

sc1.score >=

(

SELECT

score

FROM

score1

WHERE

score1.subject\_id = sc1.subject\_id

ORDER BY score DESC LIMIT 2,1

)

ORDER BY sc1.subject\_id asc ,sc1.score DESC

24.查询每门课程被选修的学生数；

SELECT

sub1.subject\_name '课程',

COUNT(sc1.student\_id) '学生数'

FROM

score1 sc1

INNER JOIN subject1 sub1

on sc1.subject\_id = sub1.subject\_id

GROUP BY sc1.subject\_id

25.查询同名同姓学生名单，并统计同名人数；

SELECT

st1.student\_name,

COUNT(\*)

FROM

student1 st1

WHERE

st1.student\_name =

(

SELECT

student1.student\_name

FROM

student1

WHERE

student1.student\_id != st1.student\_id

AND

student1.student\_name = st1.student\_name

)

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

sc1.subject\_id,

AVG(sc1.score) ass

FROM

score1 sc1

GROUP BY sc1.subject\_id

ORDER BY ass asc,subject\_id DESC

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

st1.student\_id '学号',

st1.student\_name '姓名',

AVG(sc1.score) '平均成绩'

FROM

student1 st1

INNER JOIN score1 sc1

ON st1.student\_id = sc1.student\_id

WHERE

'平均成绩' >= 85

28.查询课程名称为“数学”，且分数低于60的学生姓名和分数；

SELECT

st1.student\_name '姓名',

sc1.score '分数'

FROM

score1 sc1

INNER JOIN student1 st1

ON sc1.student\_id = st1.student\_id

WHERE

sc1.subject\_id =

(SELECT

sub1.subject\_id

FROM

subject1 sub1

WHERE

sub1.subject\_name = '物理')

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

st1.student\_id '学号',

st1.student\_name '姓名'

FROM

score1 sc1

INNER JOIN student1 st1

ON sc1.student\_id = st1.student\_id

WHERE

sc1.subject\_id = 3

AND

sc1.score > 80

30.求选了课程的学生人数

SELECT

COUNT(DISTINCT student\_id)

FROM

score1

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

st1.student\_name '姓名',

sc1.subject\_id '课程',

sc1.score '成绩'

FROM

score1 sc1

INNER JOIN student1 st1

ON sc1.student\_id = st1.student\_id

WHERE

sc1.subject\_id in

(SELECT

sub1.subject\_id

FROM

teacher th

INNER JOIN subject1 sub1

ON th.teacher\_id = sub1.teacher\_id

WHERE

th.teacher\_name = '李平老师')

32.查询各个课程及相应的选修人数；

SELECT

sc1.subject\_id '课程编号',

sub1.subject\_name '课程',

COUNT(sc1.student\_id) '选修人数'

FROM

score1 sc1

INNER JOIN subject1 sub1

ON sc1.subject\_id = sub1.subject\_id

GROUP BY sc1.subject\_id

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

DISTINCT

a.subject\_id,

a.score,

b.subject\_id,

b.score

FROM

score1 a,

score1 b

WHERE

a.subject\_id != b.subject\_id

AND

a.score = b.score

34.查询每门课程成绩最好的前两名；

SELECT

sc1.subject\_id,

sc1.student\_id,

sc1.score

FROM

score1 sc1

WHERE

sc1.score <=

(

SELECT

score

FROM

score1

WHERE

score1.subject\_id = sc1.subject\_id

ORDER BY score DESC LIMIT 0,1

)

AND

sc1.score >=

(

SELECT

score

FROM

score1

WHERE

score1.subject\_id = sc1.subject\_id

ORDER BY score DESC LIMIT 1,1

)

ORDER BY sc1.subject\_id asc ,sc1.score DESC

35.检索至少选修两门课程的学生学号；

SELECT

sc1.student\_id

FROM

score1 sc1

GROUP BY sc1.student\_id

HAVING

COUNT(sc1.subject\_id) > 1

36.查询全部学生都选修的课程的课程号和课程名；

SELECT

sc1.subject\_id '课程号',

sub1.subject\_name '课程'

FROM

score1 sc1

INNER JOIN subject1 sub1

ON sc1.subject\_id = sub1.subject\_id

GROUP BY sc1.subject\_id

HAVING

COUNT(sc1.student\_id) =

(SELECT

COUNT(st2.student\_id)

FROM

student1 st2)

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

FROM

student1

WHERE

student\_id NOT IN (

SELECT DISTINCT

student\_id

FROM

score1

WHERE

subject\_id IN (

SELECT

subject\_id

FROM

subject1

WHERE

teacher\_id IN (

SELECT

teacher\_id

FROM

teacher

WHERE

teacher\_name = '李平老师'

)

)

);

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,

avg(score)

FROM score1

WHERE

score < 60

GROUP BY

student\_id

HAVING

count(score)>=2;

39.检索“004”课程分数小于60，按分数降序排列的同学学号；

SELECT

sc1.student\_id

FROM

score1 sc1

WHERE

sc1.subject\_id = 4

AND

sc1.score < 60

ORDER BY sc1.score DESC

40.删除“002”同学的“001”课程的成绩；

DELETE

FROM

score1

WHERE

subject\_id = 1

AND

student\_id = 2