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

sex,

count(\*) AS '数量'

FROM

student

GROUP BY sex

1. 查询姓“张”的学生名单；

SELECT\*

FROM

student

WHERE

student\_name LIKE '张%'

1. 课程平均分从高到低显示

SELECT

su.subject\_name as 课程,+

avg (score)AS 平均分

FROM

Score sc,SUBJECT Su

WHERE sc.subject\_id = su.subject\_id

GROUP BY sc.subject\_id

ORDER BY avg(score) DESC

1. 查询有课程成绩小于60分的同学的学号、姓名；

SELECT

stu.student\_name as 名字,

stu.student\_id AS 学号

FROM

Score sc,student stu

WHERE sc.student\_id = stu.student\_id

AND sc.score<60

1. 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

SELECT DISTINCT

stu.student\_id,

stu.student\_name

FROM

(

SELECT

\*

FROM

score

WHERE

subject\_id IN (

SELECT

subject\_id

FROM

score

WHERE

student\_id = '1'

)

) a,

student stu

WHERE

a.student\_id = stu.student\_id

1. 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\_name AS 姓名,

stu.student\_id AS 学号

FROM

score sc,student stu

WHERE sc.student\_id = stu.student\_id

GROUP BY stu.student\_id

HAVING COUNT(stu.student\_id)=1

1. 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

su.subject\_id AS 课程id,

MAX(score) AS 最高分,

MIN(score) AS 最低分

FROM

score sc,subject su

WHERE sc.subject\_id = su.subject\_id

GROUP BY su.subject\_id

1. 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

stu.student\_id '学号',

stu.student\_name '姓名'

FROM

student stu,

(

SELECT

a.student\_id,

a.score

FROM

( SELECT \* FROM score WHERE subject\_id = 1 ) a,

( SELECT \* FROM score WHERE subject\_id = 2 ) b

WHERE

a.student\_id = b.student\_id

AND a.score > b.score

) c

WHERE

stu.student\_id = c.student\_id

1. 查询“生物”课程比“物理”课程成绩高的所有学生的学号；

SELECT

stu.student\_id AS 学号,

stu.student\_name AS 姓名

FROM

(

SELECT

a.student\_id

FROM

(

SELECT

student\_id,

score

FROM

score

WHERE

subject\_id = (SELECT subject\_id

FROM

SUBJECT

WHERE

subject\_name LIKE '生物' )

) a,

(

SELECT

student\_id,

score

FROM

score

WHERE

subject\_id = (SELECT subject\_id

FROM

SUBJECT

WHERE

subject\_name LIKE '物理' )

) b

WHERE

a.student\_id = b.student\_id

AND a.score > b.score

) c,

student stu

WHERE

c.student\_id = stu.student\_id11.查询所有同学的学号、姓名、选课数、总成绩；

SELECT

stu.student\_id AS '学号',

stu.student\_name AS '姓名',

count(sc.subject\_id) AS '选课数',

sum(sc.score) AS '总成绩'

FROM

score sc,student stu

WHERE sc.student\_id = stu.student\_id

group BY stu.student\_id

12.查询姓“李”的老师的个数；

SELECT

count(teacher\_name) as 姓张老师个数

FROM

teacher

WHERE teacher\_name LIKE '张%'

13.查询没学过“张磊老师”课的同学的学号、姓名；

SELECT

stu.student\_name AS 名字,

stu.student\_id AS ID,

sc.subject\_id AS 选课

FROM

score sc

INNER JOIN student stu ON sc.student\_id = stu.student\_id

GROUP BY

sc.student\_id

HAVING

subject\_id != 1

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

stu.student\_id AS 学号,

stu.student\_name AS 姓名

FROM(

SELECT a.student\_id

FROM

(SELECT student\_id ,score FROM score WHERE subject\_id = 1)a,

(SELECT student\_id ,score FROM score WHERE subject\_id = 2)b

WHERE a.student\_id = b.student\_id

)c , student stu

WHERE c.student\_id = stu.student\_id

15.查询学过“李平老师”所教的所有课的同学的学号、姓名；

teacher\_name LIKE '李平老师'

) a, SELECT

stu.student\_name AS 名字,

stu.student\_id AS 学号

FROM

(

SELECT

b.student\_id

FROM

(

SELECT

teacher\_id

FROM

teacher te

WHERE

(

SELECT

subject\_id,

student\_id

FROM

score

) b

WHERE

a.teacher\_id = b.subject\_id

) c,

student stu

WHERE

stu.student\_id = c.student\_id

16.查询没有学全所有课的同学的学号、姓名；

SELECT

stu.student\_name

FROM

(SELECT

student\_id,

COUNT(subject\_id)

FROM

score

GROUP BY student\_id

HAVING COUNT(subject\_id)<4)a,student stu

WHERE a.student\_id = stu.student\_id

17.（写一半）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

subject\_id

FROM

score

WHERE student\_id = 2

WHERE b.subject\_id = a.subject\_id

18.删除学习“叶平”老师课的SC表记录；

DELETE

FROM

score

WHERE

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

19（不用写）.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

student\_id AS 学生id,

COUNT(score) AS 有效课程数,

avg(score) AS 有效平均分

FROM

score

GROUP BY student\_id

ORDER BY AVG(score)

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 AS 课程id,

MAX(score) AS 最高分,

MIN(score) AS 最低分

FROM

score

WHERE subject\_id in (1,2,3,4)

GROUP BY subject\_id

22.（待研究）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

t\_out1.subject\_id,

t\_out1.avgnum,

t\_out2.pass\_per

FROM

(

SELECT

subject\_id,

avg(score) avgnum

FROM

score

GROUP BY

subject\_id

) t\_out1

LEFT JOIN (

SELECT

t1.subject\_id,

t1.count1 / t2.count2 pass\_per

FROM

(

SELECT

subject\_id,

count(subject\_id) count1

FROM

score

WHERE

score > 60

GROUP BY

subject\_id

) t1

LEFT JOIN (

SELECT

subject\_id,

count(subject\_id) count2

FROM

score

GROUP BY

subject\_id

) t2 ON t1.subject\_id = t2.subject\_id

) t\_out2 ON t\_out1.subject\_id = t\_out2.subject\_id

ORDER BY

avgnum,

pass\_per DESC;

23.（待研究）查询各科成绩前三名的记录:(不考虑成绩并列情况)

select

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

left join

(

select score\_id,subject\_id,

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

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

(select score from score as s2 where s2.subject\_id = s1.subject\_id order by score desc limit 2, 1) as third\_num

from score as s1

) t2

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

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

24.查询每门课程被选修的学生数；

SELECT

su.subject\_name AS 课程名称,

COUNT(student\_id) AS 选课人数

FROM

score sc,subject su

WHERE sc.subject\_id = su.subject\_id

AND sc.subject\_id IN(1,2,3,4)

GROUP BY sc.subject\_id

25.查询同名同姓学生名单，并统计同名人数；

SELECT

student\_name AS 名字,

count(student\_name) AS 数量

from

student

GROUP BY student\_name

26.（没懂）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

subject\_id,

avg(IF(isnull(score), 0, score)) AS avg

FROM

score

GROUP BY

subject\_id

ORDER BY

avg 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

sc.student\_id AS 学号,

stu.student\_name AS 姓名,

avg(sc.score) AS 平均成绩

FROM

score sc,student stu

WHERE sc.student\_id = stu.student\_id

GROUP BY sc.student\_id

HAVING AVG(sc.score)>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

stu.student\_name AS 名字,

a.avg AS 分数

FROM

(

SELECT

AVG(score) AS avg,

student\_id

FROM

score

WHERE

subject\_id = (

SELECT

su.teacher\_id

FROM

SUBJECT su,

teacher te

WHERE

su.teacher\_id = te.teacher\_id

AND su.subject\_name LIKE '美术'

)

GROUP BY

student\_id

HAVING

AVG(score) < 60

) a,

student stu

WHERE

a.student\_id = stu.student\_id

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\_id AS 学号,

stu.student\_name AS 名字

FROM

(

SELECT

AVG(score) AS avg,

student\_id

FROM

score

WHERE

subject\_id = 3

GROUP BY

student\_id

HAVING

AVG(score) > 80

) a,

student stu

WHERE

a.student\_id = stu.student\_id

30.求选了课程的学生人数

SELECT

count(a.count) AS 选课人数

FROM

(

SELECT

COUNT(subject\_id) AS count,

student\_id

FROM

score

GROUP BY

student\_id

)a

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；

SELECT

max(sc.score),

stu.student\_name AS 名字

FROM

score sc,student stu

where sc.student\_id = stu.student\_id

and subject\_id = (SELECT teacher\_id FROM teacher WHERE teacher\_name LIKE '刘海燕%')

32.查询各个课程及相应的选修人数；

SELECT

su.subject\_name AS 课程,

a.count as 选修人数

from

(SELECT

subject\_id ,

COUNT(subject\_id) AS COUNT

FROM

score

WHERE subject\_id in(1,2,3,4)

GROUP by subject\_id )a,subject su

WHERE a.subject\_id = su.subject\_id

33（待研究）.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 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（待研究）.查询每门课程成绩最好的前两名；

select

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

left join

(

select score\_id,subject\_id,

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

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

from score as s1

) t2

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

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

35.检索至少选修两门课程的学生学号；

SELECT

sc.student\_id AS 学号

FROM

(

SELECT

student\_id,

count(subject\_id) AS count

FROM

score

GROUP BY

student\_id

) a,

score sc

WHERE

a.student\_id = sc.student\_id

AND a.count > 1

GROUP BY

sc.student\_id

36.查询全部学生都选修的课程的课程号和课程名；

SELECT

subject\_name

FROM

(SELECT

COUNT(subject\_id),

subject\_id

FROM

score

GROUP BY

subject\_id

HAVING count(subject\_id)=12)a,subject su

WHERE a.subject\_id = su.subject\_id

37.查询没学过“叶平”老师讲授的任一门课程的学生姓名；

SELECT

stu.student\_name

FROM

(

SELECT

student\_id

FROM

score

GROUP BY

student\_id

HAVING

student\_id NOT IN (

SELECT

student\_id

FROM

score

WHERE

subject\_id = (

SELECT

teacher\_id

FROM

teacher

WHERE

teacher\_name LIKE '李平%'

)

ORDER BY

student\_id

)

) a,

student stu

WHERE

a.student\_id = stu.student\_id

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

stu.student\_name

FROM

(SELECT

student\_id ,

COUNT(student\_id) AS count

FROM

score

WHERE score < 60

GROUP BY student\_id)a,

student stu

WHERE a.student\_id = stu.student\_id AND count>1

39.检索“004”课程分数小于60，按分数降序排列的同学学号；

SELECT

\*

FROM

score

WHERE subject\_id = 4 AND score<60

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