

# 数据库 SQL 语法基础测验

学生表 student

id	num	name	sex	grade	college
1	stu-001	张三	男	2010	计算机学院
...	...	...	...	...	...
100	stu-100	李四	男	2012	信息学院
...	...	...	...	...	...

老师表 teacher

id	num	name	sex	title	college
1	tea-001	王老师	男	讲师	计算机学院
...	...	...	...	...	...
100	tea-100	张老师	男	教授	信息学院
...	...	...	...	...	...

课程表 course(credit:学分, hour:学时)

id	num	name	credit	hour	college
1	C-001	数据库	4	32	计算机学院
...	...	...	...	...	...
100	C-100	JAVA 编程	3	32	信息学院
...	...	...	...	...	...

学生选课表 student\_course(score:成绩)

id	studentid	courseid	score
1	1	1	40
...	...	...	...
100	22	88	30
...	...	...	...

老师课程表

id	teacherid	courseid
1	2	4
...	...	...
100	98	37
...	...	...

1. 查询 2010 级学生名单, 列出学号,姓名,学院.
2. 查询选修了课程号为 C-001 课程的学生名单, 列出学号,姓名,年级,学院.
3. 查询教师号为 tea-001 教师教授的课程列表, 列出教师编号, 姓名, 学院.
4. 查询选修了教师号为 tea-001 教师教授课程的学生名单, 列出学号, 姓名, 课程名.
5. 统计选修了教师号为 tea-001 教师教授课程的各年级学生人数.
6. 统计选修了教师号为 tea-001 教师教授课程的学生, 按课程,年级统计人数.
7. 统计选修了教师号为 tea-001 教师教授课程的各年级学生人数, 仅列出人数超过 10 的统计结果.
8. 统计没有选修教师号为 tea-001 教师教授课程的各年级学生人数, 并按人数升序排序.
9. 统计没有选修教师号为 tea-001 教师教授课程的各年级学生人数, 仅列出人数超过 10 的统计结果.

## 参考答案

1. 查询 2010 级学生名单, 列出学号, 姓名, 学院.  

```
select num, name, college
from student
where grade = '2010'
```
2. 查询选修了课程号为 C-001 课程的学生名单, 列出学号, 姓名, 年级, 学院.  

```
select m.num, m.name, m.grade, m.college
from student_course t, student m, course n
where t.studentid = m.id and t.courseid = n.id and n.num = 'C-001'
```
3. 查询教师号为 tea-001 教师教授的课程列表, 列出教师编号, 姓名, 学院.  

```
select m.num, m.name, m.college
from teach_course t, teacher m, course n
where t.teacherid = m.id and t.courseid = n.id and m.num = 'tea-001'
```
4. 查询选修了教师号为 tea-001 教师教授课程的学生名单, 列出学号, 姓名, 课程名.  

```
select distinct m.id, m.num, m.name, o.name
from student_course t, student m, teacher_course n, teacher o
where t.studentid = m.id and t.courseid = n.courseid and n.teacherid = o.id and o.num = 'tea-001'
```
5. 统计选修了教师号为 tea-001 教师教授课程的各年级学生人数.  

```
select t.grade, count(*)
from student t
where exists(
    select 1
    from student_course m, teacher_course n, teacher o
    where t.id = m.studentid and m.courseid = n.courseid and n.teacherid = o.id and o.num = 'tea-001'
)
group by t.grade
```
6. 统计选修了教师号为 tea-001 教师教授课程的学生, 按课程, 年级统计人数.  

```
select p.name, t.grade, count(*)
from student_course t, student m, teacher_course n, teacher o, course p
where t.studentid = m.id and t.courseid = n.courseid and n.teacherid = o.id and o.num = 'tea-001' and
n.courseid = p.id
group by p.id, m.grade
```
7. 统计选修了教师号为 tea-001 教师教授课程的各年级学生人数, 仅列出人数超过 10 的统计结果.  

```
select t.grade, count(*)
from student_course t, student m, teacher_course n, teacher o
where t.studentid = m.id and t.courseid = n.courseid and n.teacherid = o.id and o.num = 'tea-001'
group by m.grade having count(*) > 10
```
8. 统计没有选修教师号为 tea-001 教师教授课程的各年级学生人数, 并按人数升序排序.  

```
select t.grade, count(*)
from student t where not exists(
    select 1 from student_course m, teacher_course n, teacher o
    where m.studentid = t.id and m.courseid = n.courseid and o.num = 'tea-001'
)
group by t.grade order by count(*)
```
9. 统计没有选修教师号为 tea-001 教师教授课程的各年级学生人数, 仅列出人数超过 10 的统计结果.  

```
select t.grade, count(*)
from student t where not exists(
    select 1 from student_course m, teacher_course n, teacher o
    where m.studentid = t.id and m.courseid = n.courseid and o.num = 'tea-001'
) group by t.grade having count(*) > 10
```