1、设有如图所示的三个关系S、C和SC，将下列关系代数表达式用汉语表示出来，并求其结果。

S

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 学号 | 姓名 | 年龄 | 性别 | 籍贯 |
| 98601 | 王晓燕 | 20 | 女 | 北京 |
| 98602 | 李波 | 23 | 男 | 上海 |
| 98603 | 陈志坚 | 21 | 男 | 长沙 |
| 98604 | 张兵 | 20 | 男 | 上海 |
| 98605 | 张兵 | 22 | 女 | 武汉 |

C

|  |  |  |  |
| --- | --- | --- | --- |
| 课程号 | 课程名 | 教师姓名 | 办公室 |
| C601 | 高等数学 | 周振兴 | 416 |
| C602 | 数据结构 | 刘建平 | 415 |
| C603 | 操作系统 | 刘建平 | 415 |
| C604 | 编译原理 | 王志伟 | 415 |

SC

|  |  |  |
| --- | --- | --- |
| 学号 | 课程号 | 成绩 |
| 98601 | C601 | 90 |
| 98601 | C602 | 90 |
| 98601 | C603 | 85 |
| 98601 | C604 | 87 |
| 98602 | C601 | 90 |
| 98603 | C601 | 75 |
| 98603 | C602 | 70 |
| 98603 | C604 | 56 |
| 98604 | C601 | 90 |
| 98604 | C604 | 85 |
| 98605 | C601 | 95 |
| 98605 | C603 | 80 |

1）∏学号，姓名，课程号(σ籍贯=‘上海’(S∞SC))

2）∏姓名，课程号，成绩(S∞SC∞σ课程名=‘操作系统’（C）)

2、设有如图所示的关系S、SC和C,试用关系代数表达式表示下列查询语句:

    S                   C                        SC

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  | | --- | --- | --- | --- | | S# | SNAME | AGE | SEX | | 1 | 李强 | 23 | 男 | | 2 | 刘丽 | 22 | 女 | | 5 | 张友 | 22 | 男 | | |  |  |  | | --- | --- | --- | | C# | CNAME | TEACHER | | k1 | C语言 | 王华 | | k5 | 数据库原理 | 程军 | | k8 | 编译原理 | 程军 | | |  |  |  | | --- | --- | --- | | S# | C# | GRADE | | 1 | k1 | 83 | | 2 | k1 | 85 | | 5 | k1 | 92 | | 2 | k5 | 90 | | 5 | k5 | 84 | | 5 | k8 | 80 | |

(1) 检索“程军”老师所授课的课程号(C#)和课程名(CNAME)。

(2) 检索年龄大于21的男学生学号(S#)和姓名(SNAME)。

(3) 检索“数据库原理”课程的学生学号(S#)和成绩(GRADE)。

(4) 检索选修课程名为“C语言”的学生学号(S#)和姓名(SNAME)。