【Experiment name】 Database Experiment 3 - Data Query

【Experimental content】

Data used in this experiment:

A101_Student

	Sno	Sname	Ssex	Sage	Sdept
	201215121	李伟	男	21	CS
	201215122	刘晨	女	20	CS
	201215123	王芳	女	18	MA
	201215125	张立	男	19	IS
▶*	NULL	NULL	NULL	NULL	NULL

A101_Course

	Cno	Cname	Cpno	Ccredit
▶	1	数据库	5	4
	2	数学	NULL	2
	3	信息系统	1	4
	4	操作系统	6	3
	5	数据结构	7	4
	6	数据处理	NULL	2
	7	PASCAL语言	6	4
*	NULL	NULL	NULL	NULL

A101_SC

	Sno	Cno	Grade
▶	201215122	3	80
	201215121	2	85
	201215121	3	88
	201215122	2	90
	201215121	1	96
*	NULL	NULL	NULL

A101_SS

	SNO	SNAME	STATUS	CITY
	S1	精益	20	天津
	S2	盛锡	10	北京
	S3	东方红	30	北京
	S4	丰泰盛	20	天津
	S5	为民	30	上海
▶*	NULL	NULL	NULL	NULL

A101_PP

	PNO	PNAME	COLOR	WEIGHT
	P1	螺母	红	12
	P2	螺栓	绿	17
	P3	螺丝刀	蓝	14
	P4	螺丝刀	红	14
	P5	凸轮	蓝	40
	P6	齿轮	红	30
▶*	NULL	NULL	NULL	NULL

A101_JJ

	JNO	JNAME	CITY
▶	J1	三建	北京
	J2	一汽	长春
	J3	弹簧厂	天津
	J4	造船厂	天津
	J5	机车厂	唐山
	J6	无线电厂	常州
	J7	半导体厂	南京
*	NULL	NULL	NULL

A101_SPJ

	SNO	PNO	JNO	QTY
	S1	P1	J3	100
	S1	P2	J2	100
	S2	P5	J2	100
	S4	P5	J1	100
	S5	P2	J4	100
	S1	P1	J1	200
	S2	P3	J2	200
	S3	P1	J1	200
	S3	P3	J1	200
	S4	P6	J4	200
	S5	P3	J1	200
	S5	P6	J2	200
	S4	P6	J3	300
	S2	P3	J1	400
	S2	P3	J5	400
	S2	P5	J1	400
	S2	P3	J4	500
	S5	P6	J4	500
	S1	P1	J4	700
▶*	NULL	NULL	NULL	NULL

Task one:

1. For the student course database, perform various connection queries.
2. Inquire about the course selection of "Zhang Min";
3. Query the course selection of the "Database Principles" course;
4. Query the average score of the "Operating System" course;
5. Query the average score of "Li Wei";
6. Query the credits of "Li Wei" student's course selection;
7. Inquire about the failure of all students' course selection results (results include course name, student name, and grade);
8. Check the details of all course selections (results include course names, student names, and grades);
9. Query information about the top three students in the "Operating System" course.

```
-- 1. Inquire about the course selection of "Zhang Min";
 SELECT  Cno
 FROM    A101_Student , A101_SC _ _
 WHERE  A101 _Student . Sno = A101 _SC . Sno AND A101 _Student . Sname
= 'Zhang Min' ;

-- 2. Query the course selection of the "Database Principles" course;
```

```
 SELECT  Snow
 FROM    A101_Course , A101_SC _ _
 WHERE  A101 _Course . Cno = A101 _SC . Cno AND A101 _Course . Cname =
'Database Principles' ;

-- 3. Query the average score of the "Operating System" course;
 SELECT  AVG ( Grade )
 FROM    A101_Course , A101_SC _ _
 WHERE   A101 _Course . Cname = 'Operating System' AND A101_Course.Cno
= A101_SC.Cno ; _ _ _ _ _ _

-- 4. Query the average score of "Li Wei";
SELECT AVG ( Grade )
FROM   A101_Student , A101_SC _ _
WHERE   A101 _Student . Sname = 'Li Wei' AND A101_Student.Sno =
A101_SC.Sno ; _ _ _ _ _ _

-- 5. Inquire about the credits of "Li Wei" students;
SELECT A101 _Course . Cno , Ccredit
FROM   A101 _Student , A101 _SC , A101 _Course
WHERE  A101 _Student . Sname = 'Li Wei' AND A101_Student.Sno = A101_SC.Sno
_ _ _ _ _ _ AND A101_Course.Cno = A101_SC.Cno ; _ _ _ _ _ _

-- 6. Query the failure of all students' course selection results (results
include course name, student name, and grade);
SELECT Cname , Sname , Grade
FROM   A101 _Student , A101 _Course , A101 _SC
WHERE  A101_Student.Sno = A101_SC.Sno _ _ _ _ _ _ AND A101 _Course . Cno
= A101 _SC . Cno AND Grade < 60 ;

-- 7. Query the details of all course selections (results include course
name, student name, grades);
SELECT Cname , Sname , Grade
FROM   A101 _Student , A101 _Course , A101 _SC
WHERE  A101_Student.Sno = A101_SC.Sno _ _ _ _ _ _ AND A101 _Course . Cno
= A101 _SC . Cno ;

-- 8. Query the information of the top three in the "Operating System"
course.
SELECT TOP 3 A101 _Student . Sno , Sname , Ssex , Sage , Sdept , Grade
FROM   A101 _Student , A101 _Course , A101 _SC
WHERE  A101_Student.Sno = A101_SC.Sno _ _ _ _ _ _ AND A101 _Course . Cno
= A101 _SC . Cno AND Cname = 'operating system'
ORDER BY Grade DE A101_SC ; _
```

Screenshot of the experiment result: