

【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 Sno
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:

The screenshot shows the Microsoft SQL Server Management Studio interface. The central pane displays the results of a query executed against the 'E11714076\_SC' database. The query is a SELECT statement that filters for a specific student and course. The results pane shows a single row with the value '97' under the column 'Cno'.

```
SQLQuery3.sql - Lo...ministrator (52)
--1. 查询'张民'同学的选课情况;
SELECT Cno
FROM E11714076_Student, E11714076_SC
WHERE E11714076_Student.Sno = E11714076_SC.Sno AND E11714076_Student.Sname='张民';

--2. 查询'数据库原理'课程的选课情况;
SELECT Sno
FROM E11714076_Course, E11714076_SC
WHERE E11714076_Course.Cno = E11714076_SC.Cno AND E11714076_Course.Cname='数据库原理';

--3. 查询'操作系统'课程的平均分;
SELECT AVG(Grade)
FROM E11714076_Course, E11714076_SC
WHERE E11714076_Course.Cname='操作系统' AND E11714076_Course.Cno=E11714076_SC.Cno;
```

Cno
1
2

Sno
1
2

(无列名)
1
97

Localhost (10.0 RTM) | A76\Administrator (52) | E11714076\_SC | 00:00:00 | 5 行

The screenshot shows the Microsoft SQL Server Management Studio interface. The central pane displays the results of a query executed against the 'E11714076\_SC' database. The query is a SELECT statement that filters for a specific student and course. The results pane shows a single row with the value '89' under the column 'Cno'.

```
SQLQuery3.sql - Lo...ministrator (52)
--4. 查询'李伟'同学的平均分;
SELECT AVG(Grade)
FROM E11714076_Student, E11714076_SC
WHERE E11714076_Student.Sname='李伟' AND E11714076_Student.Sno=E11714076_SC.Sno;

--5. 查询'李伟'同学选课的学分情况;
SELECT E11714076_Course.Cno, Grade
FROM E11714076_Student, E11714076_SC, E11714076_Course
WHERE E11714076_Student.Sname='李伟' AND E11714076_Student.Sno=E11714076_SC.Sno AND E11714076_Course.Cno=E11714076_SC.Cno;

--6. 查询所有学生选课成绩不及格的情况 (结果含课程名、学生名, 成绩);
SELECT Cname, Sname, Grade
FROM E11714076_Student, E11714076_Course, E11714076_SC
WHERE E11714076_Student.Sno=E11714076_SC.Sno AND E11714076_Course.Cno=E11714076_SC.Cno AND Grade < 60 ;
```

(无列名)
1
89

Cno	Credit
1	4
2	2
3	4
4	3

Cname	Sname	Grade
数据库结构	王敏	59

Localhost (10.0 RTM) | A76\Administrator (52) | E11714076\_SC | 00:00:00 | 6 行