

作业三、四、五

1. 查询'1'系的全体学生的学号、姓名和宿舍情况，结果按宿舍号升序排列。

```
SELECT SNo, SName, DORMNo
FROM STUDENT
WHERE DNo = '1'
ORDER BY DORMNo ASC;
```

STUDENT 1 ×

SELECT SNo,SName,DORMNo | Enter a SQL expression to filter results (use Ctrl+Space)

	SNo	SName	DORMNo	Value
1	990101	原野	2101	9901
2	990102	张原	2101	
3	990103	李军	2101	
4	990104	汪远	2101	
5	990105	齐欣	2101	
6	980301	张扬	2303	

2. 查询'1'系的全体学生的详细记录，结果按性别升序、年龄降序排列。

```
SELECT *
FROM STUDENT
WHERE DNo = '1'
ORDER BY sex ASC, SAge DESC;
```

STUDENT 1 ×

SELECT * FROM STUDENT V | Enter a SQL expression to filter results (use Ctrl+Space)

	SNo	SName	sex	SAge	DNo	DORMNo
1	980301	张扬	女	21	1	2303
2	990101	原野	男	21	1	2101
3	990102	张原	男	21	1	2101
4	990103	李军	男	20	1	2101
5	990104	汪远	男	20	1	2101
6	990105	齐欣	男	20	1	2101

3. 查询'2'系的姓名和其出生年月(以 2003 年为标准), 并用"BIRTHDAY"改变结果标题。

```
/*3.*/  
SELECT SName, 2003-SAge BIRTHDAY  
FROM STUDENT s  
WHERE DNo = '2';
```

STUDENT 1 ×

SELECT SName, 2003-SAge | Enter a SQL expression to filter results (use Ctrl+Space)

	SName	BIRTHDAY
1	徐东	1,984
2	王大鸣	1,984

4. 查询 GRADE 表中所有被学生选修课程号。

```
/*4.*/  
SELECT DISTINCT CNo  
FROM GRADE;
```

GRADE 1 ×

SELECT DISTINCT CNo FROM | Enter a SQL expression to filter results (use Ctrl+Space)

	CNo
1	01
2	02
3	03
4	04
5	06
6	07

5. 查询年龄在 21-23 之间 (包括 21 和 23) 的学生姓名, 宿舍号。

```
/*5.*/  
SELECT SName, DORMNo  
FROM STUDENT  
WHERE SAge BETWEEN 21 AND 23;
```

STUDENT 1 ×

SELECT SName, DORMNo FROM | Enter a SQL expression to filter results (use Ctrl+Space)

	SName	DORMNo
1	张扬	2303
2	原野	2101
3	张原	2101
4	明天	2404

6. 查询'2'系、'3'系和'4'系的学生姓名。

```

/*6.* /
SELECT SName
FROM STUDENT
WHERE DNo IN ('2','3','4');

```

STUDENT 1 ×

SELECT SName FROM STUDENT Enter a SQL expression to filter results (use Ctrl+Space)

	ABC SName
1	徐东
2	王大鸣
3	于洋
4	姚志旬
5	高明镜
6	明天

7. 查询所有姓张'的学生情况。

```

/*7.* /
SELECT *
FROM STUDENT
WHERE SName like '张%';

```

STUDENT 1 ×

SELECT * FROM STUDENT V Enter a SQL expression to filter results (use Ctrl+Space)

	ABC SNo	ABC SName	ABC sex	123 SAge	ABC DNo	ABC DORMNo
1	980301	张扬	女	21	1	2303
2	990102	张原	男	21	1	2101

8. 查询姓名中第二个字为“明”的学生情况

```

/*8.* /
SELECT *
FROM STUDENT
WHERE SName like '_明%';

```

STUDENT 1 ×

SELECT * FROM STUDENT V Enter a SQL expression to filter results (use Ctrl+Space)

	ABC SNo	ABC SName	ABC sex	123 SAge	ABC DNo	ABC DORMNo
1	990401	高明镜	男	19	4	[NULL]

9. 查询 COURSE 表中没有先修课程的课程名和教师情况

```

/*9.* /
SELECT CName ,teacher
FROM COURSE
WHERE CPno IS NULL ;

```

COURSE 1 ×

SELECT CName ,teacher FROM COURSE WHERE CPno IS NULL ; Enter a SQL expression to filter results (use Ctrl+Space)

	ABC CName	ABC teacher
1	高等数学	张风
2	算法设计	黄海

10. 查询'1'系的所有男学生的信息

```

/*10.* /
SELECT *
FROM STUDENT
WHERE sex = '男' AND DNo = '1';

```

STUDENT 1 ×

SELECT * FROM STUDENT WHERE sex = '男' AND DNo = '1'; Enter a SQL expression to filter results (use Ctrl+Space)

	ABC SNo	ABC SName	ABC sex	123 SAge	ABC DNo	ABC DORMNo
1	990101	原野	男	21	1	2101
2	990102	张原	男	21	1	2101
3	990103	李军	男	20	1	2101
4	990104	汪远	男	20	1	2101
5	990105	齐欣	男	20	1	2101

11. 查询所有'1'系的学生人数。

```

/*11.* /
SELECT COUNT(*)
FROM STUDENT
WHERE DNo = '1';

```

Results 1 ×

SELECT COUNT(*) FROM STUDENT WHERE DNo = '1'; Enter a SQL expression to filter results

	123 COUNT(*)
1	6

12. 查询'1'系选修'01'号课程的最高分、最低分和平均分。

```

/*12.*/
SELECT
    MAX(score), MIN(score), AVG(score)
FROM GRADE

```

Results 1 ×

SELECT MAX(score), MIN(score), AVG(score) FROM GRADE

	123 MAX(score)	123 MIN(score)	123 AVG(score)
1	85	0	63.73684

13. 查询选修了 4 门以上课程的学生学号、姓名。

```

/*13.*/
SELECT SNo, SName
FROM STUDENT s
WHERE 4 < (
    SELECT COUNT(*)
    FROM GRADE g
    WHERE g.SNo = s.SNo
);

```

STUDENT 1 ×

SELECT SNo, SName FROM STUDENT s WHERE 4 < (SELECT COUNT(*) FROM GRADE g WHERE g.SNo = s.SNo);

	ABC SNo	ABC SName
1	990103	李军

14. 给出所有院系领导检查学生宿舍的所有可能。

/*14.* /

```
SELECT head , DORMNo
FROM DEPARTMENT, DORM;
```

DEPARTMENT(+) 1 ×

SELECT head , DORMNo FROM DEPARTMENT, DORM; Enter a SQL expression to filter results (use Ctrl+Space)

	head	DORMNo
1	秦峰	2101
2	唐键	2101
3	李永军	2101
4	王凯峰	2101
5	秦峰	2202
6	唐键	2202
7	李永军	2202
8	王凯峰	2202
9	秦峰	2303
10	唐键	2303
11	李永军	2303
12	王凯峰	2303
13	秦峰	2404
14	唐键	2404
15	李永军	2404
16	王凯峰	2404
17	秦峰	2505
18	唐键	2505
19	李永军	2505
20	王凯峰	2505

15. 查询所有学生及其宿舍情况。

```

/*15.*/
SELECT s.SName ,d.DORMNo ,d.TELE
FROM STUDENT s JOIN DORM d
ON s.DORMNo = d.DORMNo

```

STUDENT(+)

Grid	ABC SName	ABC DORMNo	ABC TELE
1	原野	2101	8302101
2	张原	2101	8302101
3	李军	2101	8302101
4	汪远	2101	8302101
5	齐欣	2101	8302101
6	徐东	2202	8302202
7	王大鸣	2202	8302202
8	张扬	2303	8302303
9	于洋	2303	8302303
10	姚志旬	2404	8302404
11	明天	2404	8302404

16. 查询所有课程的间接先修课。

```

/*16.*/
SELECT c.CNo ,c.CName ,c1.CName
FROM COURSE c LEFT JOIN COURSE c
ON c1.CNo = c.CPno ;

```

COURSE 1

Grid	ABC CNo	ABC CName	ABC PRE
1	01	数据库原理	数据结构
2	02	高等数学	[NULL]
3	03	信息系统	数据库原理
4	04	操作系统	算法设计
5	05	数据结构	C 语言
6	06	算法设计	[NULL]
7	07	C 语言	算法设计

17. 查询所有学生及其选修课程情况。

```

/*17.*/
SELECT s.SName,c.CNo ,c.CName
FROM STUDENT s JOIN GRADE g
ON s.SNo = g.SNo JOIN COURSE c
ON g.CNo = c.CNo ;

```

STUDENT(+) 1 ×

SELECT s.SName,c.CNo,c.CName Enter a SQL expression to filter results (use Ctrl+Space)

	ABC SName	ABC CNo	ABC CName
1	张扬	01	数据库原理
2	原野	01	数据库原理
3	张原	01	数据库原理
4	李军	01	数据库原理
5	汪远	01	数据库原理
6	于洋	01	数据库原理
7	高明镜	01	数据库原理
8	张扬	02	高等数学
9	张原	02	高等数学
10	李军	02	高等数学
11	汪远	02	高等数学
12	原野	03	信息系统
13	汪远	03	信息系统
14	齐欣	03	信息系统
15	原野	04	操作系统
16	张原	04	操作系统
17	李军	04	操作系统
18	李军	06	算法设计
19	齐欣	06	算法设计
20	原野	07	C 语言
21	李军	07	C 语言

18. 查询所有已选修课程的学生的学号、姓名、选修的课程名和授课教师信息。


```
SELECT
s.SNo , s.SName, c.CName, c.teacher
FROM STUDENT s JOIN GRADE g
ON s.SNo = g.SNo JOIN COURSE c
ON g.CNo = c.CNo ;
```

STUDENT(+) 1 ×

Enter a SQL expression to filter results (use Ctrl+Space)

Grid	ABC SNo	ABC SName	ABC CName	ABC teacher
1	980301	张扬	数据库原理	王凯
2	990101	原野	数据库原理	王凯
3	990102	张原	数据库原理	王凯
4	990103	李军	数据库原理	王凯
5	990104	汪远	数据库原理	王凯
6	990302	于洋	数据库原理	王凯
7	990401	高明镜	数据库原理	王凯
8	980301	张扬	高等数学	张风
9	990102	张原	高等数学	张风
10	990103	李军	高等数学	张风
11	990104	汪远	高等数学	张风
12	990101	原野	信息系统	李明
13	990104	汪远	信息系统	李明
14	990105	齐欣	信息系统	李明
15	990101	原野	操作系统	许强
16	990102	张原	操作系统	许强
17	990103	李军	操作系统	许强
18	990103	李军	算法设计	黄海
19	990105	齐欣	算法设计	黄海
20	990101	原野	C 语言	高达
21	990103	李军	C 语言	高达

19. 查询是系主任'秦峰'的学生的姓名和宿舍联系电话。

```

SELECT s.SName ,d.TELE
FROM STUDENT s JOIN DORM d
ON s.DORMNo = d.DORMNo
WHERE s.DNo = (
    SELECT d2.DNo
    FROM DEPARTMENT d2
    WHERE d2.head = '秦峰'
);

```

STUDENT(+) 1 ×

SELECT s.SName ,d.TELE FRC Enter a SQL expression to filter results (use Ctrl+Space)

	ABC SName	ABC TELE
1	姚志旬	8302404
2	明天	8302404

20. 查询其他系比'计算机系'所有学生年龄大的学生姓名和年龄。

```

/*20.* /
SELECT s.SName ,s.SAge
FROM STUDENT s
WHERE s.SAge > (
    SELECT MAX(s2.SAge)
    FROM STUDENT s2
    WHERE s2.DNo = (
        SELECT DNo
        FROM DEPARTMENT d
        WHERE d.DName = '计算机系'
    )
);

```

STUDENT 1 ×

SELECT s.SName ,s.SAge FRC Enter a SQL expression to filter results (use Ctrl+Space)

	ABC SName	123 SAge
--	-----------	----------

21. 查询选修课程库没有不及格分数的学生。

```
/*21.*/
SELECT SName
FROM STUDENT s
WHERE EXISTS (
    SELECT *
    FROM GRADE g
    WHERE g.score >60
        AND g.SNo = s.SNo
        AND g.CNo = (
            SELECT c.CNo
            FROM COURSE c
            WHERE c.CName = '数据库原理'
        )
);
```

STUDENT 1 ×

SELECT SName FROM STUDENT | Enter a SQL expression to filter results (use Ctrl+Space)

Grid	ABC SName
1	原野
2	李军
3	于洋

22. 查询至少选修了'1'号和'2'号课程的学生号码。

```
/*22.*/  
SELECT g.SNo  
FROM GRADE g  
WHERE g.CNo = '01'  
INTERSECT  
SELECT g2.SNo  
FROM GRADE g2  
WHERE g2.CNo = '02';
```

Results 1 ×

SELECT g.SNo FROM GRADE g WHERE g.CNo = '01' INTERSECT SELECT g2.SNo FROM GRADE g2 WHERE g2.CNo = '02'; Enter a SQL expression to filter results (use Ctrl+Space)

	ABC SNo
1	980301
2	990102
3	990103
4	990104

23. 查询至少选修了'990102'学生的全部课程的学生学号。

```
SELECT DISTINCT g.SNo
FROM GRADE g
WHERE (
    SELECT COUNT(*)
    FROM GRADE g2
    WHERE SNo = '990102'
) IN (
    SELECT COUNT(*)
    FROM GRADE g3
    WHERE g3.SNo = g.SNo
        AND g3.CNo IN (
            SELECT g4.CNo
            FROM GRADE g4
            WHERE g4.SNo = '990102'
        )
);
```

GRADE 1 ×

SELECT DISTINCT g.SNo FROM GRADE g WHERE SNo = '990102' Enter a SQL expression to filter results (use Ctrl+Space)

Grid	SNo
1	990102
2	990103

Text

24. 查询'1'系的学生与年龄大于 20 岁的学生的差集。

```

/*24.* /
SELECT s.SName
FROM STUDENT s
WHERE s.DNo = '1'
EXCEPT
SELECT s2.SName
FROM STUDENT s2
WHERE s2.SAge >20;

```

Results 1 ×

SELECT s.SName FROM STU | Enter a SQL expression to filter results (use Ctrl+Space)

	ABC SName
1	李军
2	汪远
3	齐欣

25. 查询选修“数据库原理”的学生与选修“高等数学”的学生的交集。

```

FROM STUDENT s
WHERE EXISTS (
    SELECT *
    FROM GRADE g
    WHERE g.SNo = s.SNo AND
           g.CNo IN (
               SELECT c.CNo
               FROM COURSE c
               WHERE c.CName = '数据库原理'
           )
)
INTERSECT
SELECT s.SName
FROM STUDENT s
WHERE EXISTS (
    SELECT *

```

```

FROM GRADE g
WHERE g.SNo = s.SNo AND
      g.CNo IN (
        SELECT c.CNo
        FROM COURSE c
        WHERE c.CName = '高等数学'
      )
)

```

Results 1 ×

SELECT s.SName FROM STU

	SName
1	张扬
2	张原
3	李军
4	汪远

26. 创建“计算机”系的所有男生的视图 VIEW_1（要求反映出学生的出生年份）。

```

/*26.*/
CREATE VIEW VIEW_1
AS
SELECT *, 2003-SAge BIRTHDAY
FROM STUDENT;

```

Statistics 1 ×

Name	Value
Updated Rows	0
Query	/*26.*/ CREATE VIEW VIEW_1 AS SELECT *, 2003-SAge BIRTHDAY FROM STUDENT
Start time	Wed Mar 29 13:27:51 CST 2023
Finish time	Wed Mar 29 13:27:51 CST 2023

27. 在视图 VIEW_1 中找出名字中有“原”字的学生学号、姓名、宿舍号。

```

/*27.*/
SELECT v.SNo ,v.SName ,v.DNo
FROM VIEW_1 v
WHERE v.SName like '原%';

```

VIEW_1 1 ×

SELECT v.SNo ,v.SName ,v.DNo Enter a SQL expression to filter results (use Ctrl+Space)

	ABC SNo	ABC SName	ABC DNo
1	990101	原野	1
2	990102	张原	1

28. 修改视图 VIEW_1 中的学生“李军”的年龄为 23，宿舍号为“2202”。

```

/*28.*/
UPDATE VIEW_1
SET SAge = 23, DORMNo = '2202'
WHERE SName = '李军';

```

Statistics 1 ×

Name	Value
Updated Rows	1
Query	/*28.*/ UPDATE VIEW_1 SET SAge = 23, DORMNo = '2202' WHERE SName = '李军'
Start time	Wed Mar 29 13:32:51 CST 2023
Finish time	Wed Mar 29 13:32:51 CST 2023

代码汇总

```

/*1.*/
SELECT SNo,SName,DORMNo
FROM STUDENT
WHERE DNo = '1'
ORDER BY DORMNo ASC;

/*2.*/
SELECT *
FROM STUDENT
WHERE DNo = '1'
ORDER BY sex ASC,SAge DESC;

/*3.*/
SELECT SName, 2003-SAge BIRTHDAY
FROM STUDENT s
WHERE DNo = '2';

```



```

/*4.*/
SELECT DISTINCT CNo
FROM GRADE;

/*5.*/
SELECT SName,DORMNo
FROM STUDENT
WHERE SAge BETWEEN 21 AND 23;

/*6.*/
SELECT SName
FROM STUDENT
WHERE DNo IN ('2','3','4');

/*7.*/
SELECT *
FROM STUDENT
WHERE SName like '张%';

/*8.*/
SELECT *
FROM STUDENT
WHERE SName like '_明%';

/*9.*/
SELECT CName ,teacher
FROM COURSE
WHERE CPho IS NULL ;

/*10.*/
SELECT *
FROM STUDENT
WHERE sex = '男' AND DNo = '1';

/*11.*/
SELECT COUNT(*)
FROM STUDENT
WHERE DNo = '1';

/*12.*/
SELECT
    MAX(score),MIN(score),AVG(score)
FROM GRADE

/*13.*/
SELECT SNo,SName
FROM STUDENT s
WHERE 4<(
    SELECT COUNT(*)
    FROM GRADE g
    WHERE g.SNo = s.SNo
);

/*14.*/

```

```

SELECT head ,DORMNo
FROM DEPARTMENT,DORM;

/*15.*/
SELECT s.SName ,d.DORMNo ,d.TELE
FROM STUDENT s JOIN DORM d
ON s.DORMNo = d.DORMNo

/*16.*/
SELECT c.CNo ,c.CName ,c1.CName PRE
FROM COURSE c LEFT JOIN COURSE c1
ON c1.CNo = c.CPno ;

/*17.*/
SELECT s.SName,c.CNo ,c.CName
FROM STUDENT s JOIN GRADE g
ON s.SNo = g.SNo JOIN COURSE c
ON g.CNo = c.CNo ;

/*18.*/
SELECT
s.SNo ,s.SName,c.CName,c.teacher
FROM STUDENT s JOIN GRADE g
ON s.SNo = g.SNo JOIN COURSE c
ON g.CNo = c.CNo ;

/*19.*/
SELECT s.SName ,d.TELE
FROM STUDENT s JOIN DORM d
ON s.DORMNo = d.DORMNo
WHERE s.DNo =(
    SELECT d2.DNo
    FROM DEPARTMENT d2
    WHERE d2.head = '秦峰'
);

/*20.*/
SELECT s.SName ,s.SAge
FROM STUDENT s
WHERE s.SAge >(
    SELECT MAX(s2.SAge)
    FROM STUDENT s2
    WHERE s2.DNo =(
        SELECT DNo
        FROM DEPARTMENT d
        WHERE d.DName = '计算机系'
    )
);

/*21.*/
SELECT SName
FROM STUDENT s
WHERE EXISTS (
    SELECT *

```

```

FROM GRADE g
WHERE g.score >60
      AND g.SNo = s.SNo
      AND g.CNo =(
          SELECT c.CNo
          FROM COURSE c
          WHERE c.CName = '数据库原理'
      )
);

```

```

/*22.*/
SELECT g.SNo
FROM GRADE g
WHERE g.CNo = '01'
INTERSECT
SELECT g2.SNo
FROM GRADE g2
WHERE g2.CNo = '02';

```

```

/*23*/
SELECT DISTINCT g.SNo
FROM GRADE g
WHERE (
    SELECT COUNT(*)
    FROM GRADE g2
    WHERE SNo = '990102'
)IN (
    SELECT COUNT(*)
    FROM GRADE g3
    WHERE g3.SNo = g.SNo
          AND g3.CNo IN (
              SELECT g4.CNo
              FROM GRADE g4
              WHERE g4.SNo = '990102'
          )
);

```

```

/*24.*/
SELECT s.SName
FROM STUDENT s
WHERE s.DNo = '1'
EXCEPT
SELECT s2.SName
FROM STUDENT s2
WHERE s2.SAge >20;

```

```

/*25.*/
SELECT s.SName
FROM STUDENT s
WHERE EXISTS (
    SELECT *
    FROM GRADE g
    WHERE g.SNo = s.SNo AND
          g.CNo IN (
              SELECT c.CNo

```

```

        FROM COURSE c
        WHERE c.CName = '数据库原理'
    )
)
INTERSECT
SELECT s.SName
FROM STUDENT s
WHERE EXISTS (
    SELECT *
    FROM GRADE g
    WHERE g.SNo = s.SNo AND
        g.CNo IN (
            SELECT c.CNo
            FROM COURSE c
            WHERE c.CName = '高等数学'
        )
)

/*26.*/
CREATE VIEW VIEW_1
AS
SELECT *,2003-SAge BIRTHDAY
FROM STUDENT;

/*27.*/
SELECT v.SNo ,v.SName ,v.DNo
FROM VIEW_1 v
WHERE v.SName like '%原%';

/*28.*/
UPDATE VIEW_1
SET SAge = 23, DORMNo = '2202'
WHERE SName = '李军'

```