四 川 轻 化 工 大 学 实 验 报 告

院：**计算机科学与工程学院**　　课程名称：**数据库系统原理**　　日期：2022.5.25

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实验名称	实验二、数据库的查询和维护实验					成绩评定	

<table>
<tr><td rowspan="2">所用仪器材料</td><td>计算机，

Word 2019，

Visio 2016，

MySQL 8.0.28，

Navicat for MySQL 15</td></tr>
<tr><td>

项目名称：物业管理系统

一、实验目的

1. 熟练掌握使用 SQL 语言进行简单表的数据查询、数据排序和数据联结查询的操作方法。
2. 熟练掌握使用 SQL 语言进行数据库修改数据的操作。
3. 掌握数据库中的视图创建语句，掌握视图查询与操作语句，加深对视图作用的理解。

二、实验内容及要求

1.简单查询操作：包括投影、选择条件表达、数据排序、使用临时表等。

2.连接查询操作：包括等值连接、自然连接、求笛卡尔积、一般连接、外连接、内连接、左连接、右连接和自连接等。

3.数据维护操作：通过 Navicat 实现对数据库库的数据删除和数据修改操作。

4.创建、查看、修改和删除视图。

　　具体内容及要求：根据需求分析规划的每一个功能，编写该功能所涉及的所有查询和修改的相应 SQL 语句。选择 1-2 个用户端操作表建立视图，并进行编写相应的操作语句。

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三、设计过程及结果：

1 本实验涉及的功能

本系统由业主模块、管理员模块两部分组成。

业主模块包括由账户登录\注册、查看消息、投诉/建议、服务申请、缴费、查看房屋信息六部分组成。
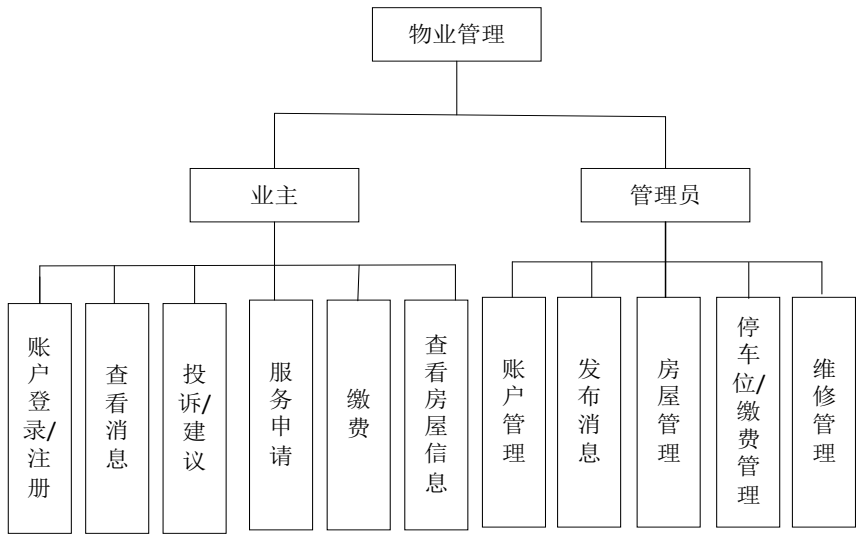
管理员模块包括由查看账户、发布消息、评价管理、维修管理、服务管理五部分组成

图 1-1 系统功能模块

2 每个功能的实现

1．用户登录/注册

登录账户，注册账户

（1）登录	（2）注册

SQL 语句：

（1）存在查询

CREATE PROCEDURE verify_account_up(IN value VARCHAR(50))

BEGIN

　　SELECT IFNULL((SELECT TRUE FROM userinfo WHERE userphone = value LIMIT 1), FALSE) AS result;

END$$

CREATE PROCEDURE verify_account_ue(IN value VARCHAR(50))

BEGIN

　　SELECT IFNULL((SELECT TRUE FROM userinfo WHERE useremail = value LIMIT 1), FALSE) AS result;

```
END$$
```
（2）密码查询
```
CREATE PROCEDURE get_password_up(IN value VARCHAR(50))
BEGIN
    SELECT userpassword FROM userinfo WHERE userphone LIKE value;
END$$
CREATE PROCEDURE get_password_ue(IN value VARCHAR(50))
BEGINE:\MySql_Learn\src\SQL\login.sql
    SELECT userpassword FROM userinfo WHERE useremail LIKE value;
END$$
```
（3）注册（用户插入）
```
INSERT INTO userinfo(username, userpassword, userphone) VALUES
('text', 'test', '00000000000');
INSERT INTO userinfo(username, userpassword, useremail) VALUES
('text', 'test', 'test@test.test');
INSERT INTO userinfo(username, userpassword, userphone, useremail)
VALUES ('text', 'test', '00000000001', 'test1@test.test');
UPDATE userinfo set isactive = 1 WHERE userphone = '00000000000';
UPDATE userinfo set isactive = 1 WHERE useremail = 'test@test.test';
```
执行效果截图：

（1）验证手机号：	
（2）验证邮箱：	
（3）通过手机号获取密码：	
（4）通过邮箱获取密码：	

2．用户查看消息

显示所有与该用户有关的消息，点击可查看详细信息：

（1）显示所有与该用户有关的消息
（2）显示一条消息的详细信息

SQL 语句：

（1） 查询所有与该用户有关的消息
```
SELECT newsid,newstitle,newstime,newsendtime,adminname FROM
newsinfo,admininfo WHERE news_adminid = adminid and newstype = 0
UNION ALL
```

SELECT newsid,newstitle,newstime,newsendtime,adminname FROM

admininfo,newsinfo,user_newsrelation WHERE news_adminid = adminid and

un_newsid = newsid   and un_userid = 23

ORDER BY newstime DESC;

（2）　查询一条消息的详细信息

SELECT newsid,newscontent,newstime,newsendtime,adminname FROM

newsinfo,admininfo WHERE news_adminid = adminid and newsid = 1

执行效果截图：

（1）显示所有与该用户有关的消息

（2）显示一条消息的详细信息

3. 用户发表/查看投诉/建议

按发表时间显示该用户的投诉/建议，可发表投诉/建议

（1）查看投诉/建议	（2）发表投诉/建议

SQL 语句：

（1）查询该用户发表的所有投诉/建议

SELECT c_aid,c_acontent,c_atime,c_aobject,adminname FROM

complaint_and_acviceinfo LEFT OUTER JOIN admininfo ON c_a_adminid = adminid

WHERE c_a_userid = 1;

（2）增加一条投诉/建议

INSERT INTO

complaint_and_acviceinfo(c_acontent,c_atime,c_aobject,c_a_userid)

VALUES('xxxxxxx','2022-05-26 05:17:28','xxx', 1);

执行效果截图：

4. 用户申请服务

停车位查询，购买，维修任务申请，查看详情

（1）查看拥有车位	（2）查看未出售车位
（3）车位购买	（4）查看维修任务
（5）查看维修详情	（6）维修申请

SQL 语句：

（1）查询该用户的停车位

SELECT pcarid, pcarloction, buytime, location FROM pcarinfo, houseinfo, user_houserelation WHERE pcar_houseid = houseid and pcar_houseid = uh_relation_houseid and uh_relation_userid = 1;

（2）查询空车位

SELECT pcarid, pcarloction FROM pcarinfo WHERE pcarstate = 0;

（3）修改车位信息

UPDATE pcarinfo SET pcarstate = 1, pcar_houseid = 33, buytime = localtime() WHERE pcarid = 99;

（4）查询维修任务

SELECT taskcontent,taskstate FROM taskinfo WHERE task_houseid = 1;

（5）查询任务详情

SELECT taskcontent,taskstate,taskstarttime,taskendtime,ataskstate

FROM taskinfo LEFT OUTER JOIN admin_taskrelation

ON admin_task_taskid = taskid WHERE taskid = 1;

（6）插入维修任务

INSERT INTO taskinfo(taskstate, taskcontent, task_houseid) VALUES (0, 'test', 1);

执行效果截图：

查询该用户的停车位

mysql> SELECT pcarid, pcarloction, buytime, location FROM pcarinfo, houseinfo, user_houserelation WHERE pcar_houseid = houseid and pcar_houseid = uh_relation_houseid and uh_relation_userid = 1;

pcarid	pcarloction	buytime	location
94	94	2019-01-31 06:03:31	清溪小区1 栋1楼11号
99	99	2022-05-31 19:42:52	清溪小区1 栋1楼11号

2 rows in set (0.00 sec)

查询空车位	
mysql> SELECT pcarid, pcarloction FROM pcarinfo WHERE pcarstate = 0;	

```
+--------+-------------+
| pcarid | pcarloction |
+--------+-------------+
|      4 |           4 |
|      9 |           9 |
|     14 |          14 |
|     15 |          15 |
|     17 |          17 |
|     19 |          19 |
|     20 |          20 |
|     22 |          22 |
|     24 |          24 |
|     25 |          25 |
|     29 |          29 |
|     31 |          31 |
|     32 |          32 |
|     34 |          34 |
|     35 |          35 |
|     38 |          38 |
|     39 |          39 |
```

查询维修任务

```
mysql> SELECT taskcontent,taskstate FROM taskinfo WHERE task_houseid = 1;
+-------------+-----------+
| taskcontent | taskstate |
+-------------+-----------+
| 电路维修     |         1 |
| 配玻璃       |         1 |
| 修门         |         2 |
| 通下水道     |         1 |
| 涂油漆       |         2 |
| test        |         0 |
| test        |         0 |
+-------------+-----------+
7 rows in set (0.00 sec)
```

查询任务详情

```
mysql> SELECT taskcontent, taskstate, taskstarttime, taskendtime, ataskstate
    -> FROM taskinfo LEFT OUTER JOIN admin_taskrelation
    -> ON admin_task_taskid = taskid WHERE taskid = 1;
+-------------+-----------+---------------------+---------------------+------------+
| taskcontent | taskstate | taskstarttime       | taskendtime         | ataskstate |
+-------------+-----------+---------------------+---------------------+------------+
| 暖气故障     |         2 | 2020-09-17 07:55:23 | 2019-03-06 15:25:34 |          1 |
+-------------+-----------+---------------------+---------------------+------------+
1 row in set (0.00 sec)
```

5. 用户缴费

查看费用详情，可线上缴费

（1）费用详情	（2）在线缴费

SQL 语句：

（1）查询房屋费用

SELECT * FROM costinfo, costtypeinfo WHERE cost_costtypeid = costtypeid AND cost_houseid = 1;

（2） 缴费修改

UPDATE costinfo set paytime = localtime() WHERE costid = 88;

执行效果截图：

查询房屋费用

```
mysql> SELECT * FROM costinfo, costtypeinfo WHERE cost_costtypeid = costtypeid AND cost_houseid = 1;
+--------+---------------------+---------------------+------------------+--------------+------------+-----------------+------------+----------+
| costid | coststarttime       | paytime             | costmoney        | cost_houseid | cost_userid | cost_costtypeid | costtypeid | costtype |
+--------+---------------------+---------------------+------------------+--------------+------------+-----------------+------------+----------+
|     82 | 2018-03-06 08:56:33 | 2018-03-11 00:07:43 | 466.80712319422355 |            1 |         53 |               1 |          1 | 水费      |
|     86 | 2017-01-26 14:47:47 | NULL                | 897.6112759665315  |            1 |         62 |               2 |          2 | 电费      |
|     88 | 2018-05-23 00:08:34 | 2022-05-31 20:49:25 | 54.88872940176486  |            1 |         93 |               3 |          3 | 气费      |
+--------+---------------------+---------------------+------------------+--------------+------------+-----------------+------------+----------+
3 rows in set (0.00 sec)
```

6. 用户查看房屋信息

显示房屋详细信息

房屋详情

SQL 语句：

（1）查询该用户的房屋信息

SELECT houseid, location, gethousetime, movetime, adminname FROM houseinfo, user_houserelation, admininfo WHERE uh_relation_houseid = houseid and house_adminid = adminid and uh_relation_userid = 1;

执行效果截图：

查询该用户的房屋信息

```
mysql> SELECT houseid, location, gethousetime, movetime, adminname FROM houseinfo, user_houserelation, admin
    -> WHERE uh_relation_houseid = houseid and house_adminid = adminid and uh_relation_userid = 1;
+---------+---------------------+---------------------+---------------------+-----------+
| houseid | location            | gethousetime        | movetime            | adminname |
+---------+---------------------+---------------------+---------------------+-----------+
|      33 | 清溪小区1 栋1楼11号  | 2019-09-23 04:47:23 | 2020-06-07 14:59:05 | 史凝      |
+---------+---------------------+---------------------+---------------------+-----------+
1 row in set (0.00 sec)
```

7. 管理员账户管理

登录管理员账户，查看上司的信息，'删除'无用的用户账户

（1）登录管理员账户	（2）查看上司
（3）删除用户账户	（4）查看下属

SQL 语句：

（1）存在查询

CREATE PROCEDURE verify_account_ap(IN value VARCHAR(50))

BEGIN

　　SELECT IFNULL((SELECT TRUE FROM admininfo WHERE adminphone = value LIMIT 1), FALSE) AS result;

END$$

CREATE PROCEDURE verify_account_ae(IN value VARCHAR(50))

BEGIN

　　SELECT IFNULL((SELECT TRUE FROM admininfo WHERE adminemail = value LIMIT 1), FALSE) AS result;

END$$

（2）密码查询

CREATE PROCEDURE get_password_ap(IN value VARCHAR(50))

BEGIN

　　SELECT adminpassword FROM admininfo WHERE adminphone LIKE value;

END$$

CREATE PROCEDURE get_password_ae(IN value VARCHAR(50))

BEGIN

　　SELECT adminpassword FROM admininfo WHERE adminemail LIKE value;

END$$

（3）上司查询

SELECT adminid, adminname, adminphone, adminemail

FROM admininfo WHERE adminid = (

    SELECT padminid FROM admininfo WHERE adminid = 1);

（4）删除用户账户

UPDATE userinfo SET isactive = 0 WHERE userid = 3;

（5）查询下属

SELECT adminid, adminname, adminphone, adminemail

FROM admininfo WHERE padminid = 21;

执行效果截图：

存在查询	mysql> CALL verify_account_ap('13423874189'); +--------+ | result | +--------+ | 1 | +--------+ 1 row in set (0.00 sec)
密码查询	mysql> CALL get_password_ap('13423874189'); +--------------------+ | adminpassword | +--------------------+ | E+#bWPwIcrjRt^RBCET | +--------------------+ 1 row in set (0.00 sec)

上司查询	mysql> SELECT adminid, adminname, adminphone, adminemail
	    -> FROM admininfo WHERE adminid = (
	    -> SELECT padminid FROM admininfo WHERE adminid = 1);
	+---------+-----------+-------------+-------------+
	| adminid | adminname | adminphone | adminemail |
	+---------+-----------+-------------+-------------+
	| 15 | 曾合美 | 17377237638 | wbu@163.net |
	+---------+-----------+-------------+-------------+
	1 row in set (0.00 sec)

下属查询	mysql> SELECT adminid, adminname, adminphone, adminemail -> FROM admininfo WHERE padminid = 21; +---------+-----------+-------------+------------------+ | adminid | adminname | adminphone | adminemail | +---------+-----------+-------------+------------------+ | 2 | 蒙舒方 | 15734882709 | hdala@56.com | | 7 | 耶齐敏 | 18029828973 | nibao@163.com | | 15 | 曾合美 | 17377237638 | wbu@163.net | | 24 | 都凡之 | 13891263138 | citwbdp@265.com | +---------+-----------+-------------+------------------+ 4 rows in set (0.00 sec)

8. 管理员发发布消息

管理员向用户发送消息

（1）未回复投诉/建议	（2）已回复投诉/建议
（3）发公告	（4）回复投诉/建议
（5）催收费用	（6）维修提醒

SQL 语句：

（1）查询未回复信息

SELECT c_aid, c_a_userid, c_acontent, c_aobject, c_atime

FROM complaint_and_acviceinfo WHERE c_a_adminid IS NULL;

（2）查询已回复投诉建议

SELECT c_aid, c_a_userid, c_acontent, c_aobject, c_atime

FROM complaint_and_acviceinfo WHERE c_a_adminid IS NOT NULL;

（3）发公告

INSERT INTO newsinfo(news_adminid, newstitle, newscontent, newstime,

newsendtime, newstype)

```
VALUES (12, 'test', 'test', localtime(), localtime(), 0);
## 发单人消息
DELIMITER $$
CREATE PROCEDURE send_news(in inadmin INT, in inuser INT,
in innews INT, in intitle TEXT,
in incontent TEXT, in inendtime TIMESTAMP)
BEGIN
    INSERT INTO newsinfo(news_adminid,newstitle,newscontent,
    newstime,newsendtime,newstype, newsid)
    VALUES (inadmin, intitle, incontent, localtime(),
    inendtime, 2, innews);
    INSERT INTO user_newsrelation(un_newsid, un_userid)
    VALUES (innews, inuser);
END$$
DELIMITER ;
执行效果截图：
```

(1) 查询未回复投诉/建议


```
mysql> SELECT c_aid,c_a_userid,c_acontent,c_aobject,c_atime
    -> FROM complaint_and_acviceinfo WHERE c_a_adminid IS NULL;
+-------+------------+------------+-----------+---------------------+
| c_aid | c_a_userid | c_acontent | c_aobject | c_atime             |
+-------+------------+------------+-----------+---------------------+
|     6 |          4 | xxxxxxx    | xxxxxx    | 2018-08-18 17:34:55 |
|     7 |         43 | xxxxxxx    | xxxxxx    | 2021-05-21 22:25:38 |
|     8 |         62 | xxxxxxx    | xxxxxx    | 2021-09-06 02:20:29 |
|     9 |         87 | xxxxxxx    | xxxxxx    | 2021-10-03 23:58:34 |
|    10 |         38 | xxxxxxx    | xxxxxx    | 2017-07-12 09:47:10 |
|    11 |          3 | xxxxxxx    | xxxxxx    | 2019-02-04 10:46:57 |
|    12 |         71 | xxxxxxx    | xxxxxx    | 2019-08-24 06:59:31 |
|    13 |         79 | xxxxxxx    | xxxxxx    | 2017-04-23 01:38:33 |
|    14 |         18 | xxxxxxx    | xxxxxx    | 2020-01-18 04:29:39 |
|    22 |         13 | xxxxxxx    | xxxxxx    | 2019-09-27 13:09:53 |
|    23 |         76 | xxxxxxx    | xxxxxx    | 2021-01-26 03:32:00 |
|    24 |         62 | xxxxxxx    | xxxxxx    | 2018-02-20 12:17:42 |
|    25 |         87 | xxxxxxx    | xxxxxx    | 2017-02-17 03:16:00 |
|    26 |          1 | xxxxxxx    | xxxxxx    | 2021-05-26 05:17:28 |
|    27 |         72 | xxxxxxx    | xxxxxx    | 2022-04-24 10:57:12 |
|    28 |         70 | xxxxxxx    | xxxxxx    | 2020-12-30 20:07:04 |
|    29 |         48 | xxxxxxx    | xxxxxx    | 2018-03-28 21:10:56 |
|    30 |          9 | xxxxxxx    | xxxxxx    | 2019-04-27 10:05:43 |
|    31 |         95 | xxxxxxx    | xxxxxx    | 2021-09-12 18:39:32 |
|    32 |         62 | xxxxxxx    | xxxxxx    | 2017-04-21 08:21:54 |
```

```
mysql> SELECT c_aid,c_a_userid,c_acontent,c_aobject,c_atime
    -> FROM complaint_and_acviceinfo WHERE c_a_adminid IS NOT NULL;
+-------+------------+------------+-----------+---------------------+
| c_aid | c_a_userid | c_acontent | c_aobject | c_atime             |
+-------+------------+------------+-----------+---------------------+
|     1 |          9 | xxxxxxx    | xxxxxx    | 2018-03-21 06:25:59 |
|     2 |         19 | xxxxxxx    | xxxxxx    | 2017-11-07 09:23:03 |
|     3 |         55 | xxxxxxx    | xxxxxx    | 2019-01-10 16:07:20 |
|     4 |         80 | xxxxxxx    | xxxxxx    | 2018-02-16 13:01:35 |
|     5 |         67 | xxxxxxx    | xxxxxx    | 2020-05-24 16:10:30 |
|    15 |         20 | xxxxxxx    | xxxxxx    | 2018-07-08 06:22:54 |
|    16 |         80 | xxxxxxx    | xxxxxx    | 2017-01-30 14:25:25 |
|    17 |         83 | xxxxxxx    | xxxxxx    | 2021-04-12 04:20:18 |
|    18 |         75 | xxxxxxx    | xxxxxx    | 2021-04-04 20:02:19 |
|    19 |         17 | xxxxxxx    | xxxxxx    | 2022-01-17 09:36:19 |
|    20 |          8 | xxxxxxx    | xxxxxx    | 2019-09-07 13:29:48 |
|    21 |         72 | xxxxxxx    | xxxxxx    | 2020-06-11 18:03:29 |
|    37 |         12 | xxxxxxx    | xxxxxx    | 2022-04-10 23:18:01 |
|    38 |         84 | xxxxxxx    | xxxxxx    | 2021-04-24 09:16:32 |
|    39 |         54 | xxxxxxx    | xxxxxx    | 2019-05-14 22:36:09 |
|    40 |          1 | xxxxxxx    | xxxxxx    | 2018-05-27 02:18:47 |
|    41 |         84 | xxxxxxx    | xxxxxx    | 2018-07-30 14:28:58 |
|    42 |         80 | xxxxxxx    | xxxxxx    | 2021-12-31 22:55:40 |
|    43 |         25 | xxxxxxx    | xxxxxx    | 2019-09-05 06:39:23 |
|    44 |         99 | xxxxxxx    | xxxxxx    | 2020-04-23 05:19:37 |
|    56 |         91 | xxxxxxx    | xxxxxx    | 2019-12-15 18:25:13 |
|    57 |         54 | xxxxxxx    | xxxxxx    | 2022-02-06 20:12:49 |
|    58 |         46 | xxxxxxx    | xxxxxx    | 2018-05-17 01:35:20 |
|    59 |         30 | xxxxxxx    | xxxxxx    | 2018-11-26 06:22:31 |
```

(2) 查询已回复投诉/建议

9. 管理员更新房屋信息

管理员修改所有权

（1）空房查询	（2）空房出售
（3）房屋转手	

SQL 语句：

（1）空房查询

SELECT houseid, location, house_adminid FROM houseinfo

WHERE housestate = 0;

（2）新房出售

DELIMITER $$

CREATE PROCEDURE updata_new(IN inhouse INT, IN inuser INT, IN inadmin INT, in content TEXT)

    BEGIN

        ##修改房屋状态，添加用户

        UPDATE houseinfo SET housestate = 1 WHERE houseid = inhouse;

        INSERT INTO user_houserelation(uh_relation_userid, uh_relation_houseid, gethousetime)

            VALUES(inuser, inhouse, localtime());

        ##记录修改

        INSERT INTO updatarelation(updatacontent, updatatime, updata_houseid, updata_adminid)

        VALUES(content, localtime(), inhouse, inadmin);

    END$$

    DELIMITER ;

（3）旧房转卖

DELIMITER $$

CREATE PROCEDURE updata_old(IN inhouse INT, IN inuser INT, IN inadmin INT, in content TEXT)

    BEGIN

        ##清空该房屋的费用，车位

        UPDATE costinfo SET paytime = localtime() WHERE paytime IS NULL;

        UPDATE costinfo SET istrue = 0 WHERE cost_houseid = inhouse;

        UPDATE pcarinfo SET pcarstate = 0, buytime = NULL, pcar_houseid = NULL WHERE pcar_houseid = inhouse;

        ##添加记录

        INSERT INTO user_houserelation(uh_relation_userid, uh_relation_houseid, gethousetime)

VALUES(inuser, inhouse, localtime());

　　　　##记录修改

　　　　INSERT INTO updatarelation(updatacontent, updatatime, updata_houseid, updata_adminid)

　　　　VALUES(content, localtime(), inhouse, inadmin);

　　END$$

　　DELIMITER ;

　　执行效果截图：

```
mysql> SELECT houseid, location, house_adminid FROM houseinfo
    -> WHERE housestate = 0;
+---------+--------------------+---------------+
| houseid | location           | house_adminid |
+---------+--------------------+---------------+
|      16 | 清溪小区5 栋3楼16号   |            17 |
|      17 | 清溪小区2 栋5楼17号   |            14 |
|      19 | 清溪小区5 栋11楼16号  |            12 |
|      41 | 清溪小区1 栋10楼11号  |             3 |
|      42 | 清溪小区1 栋3楼11号   |            13 |
|      43 | 清溪小区5 栋10楼15号  |            10 |
|      44 | 清溪小区1 栋6楼18号   |            20 |
|      45 | 清溪小区2 栋7楼10号   |            17 |
|      46 | 清溪小区3 栋3楼19号   |             4 |
|      47 | 清溪小区1 栋12楼14号  |            10 |
|      48 | 清溪小区2 栋4楼13号   |             9 |
|      49 | 清溪小区5 栋10楼16号  |            11 |
|      50 | 清溪小区5 栋3楼18号   |            18 |
|      51 | 清溪小区5 栋9楼10号   |            30 |
|      52 | 清溪小区1 栋4楼10号   |            16 |
|      53 | 清溪小区3 栋10楼13号  |            20 |
|      54 | 清溪小区3 栋2楼12号   |            30 |
|      55 | 清溪小区2 栋2楼9号    |             6 |
|      56 | 清溪小区3 栋4楼13号   |             8 |
|      57 | 清溪小区2 栋11楼19号  |            28 |
|      58 | 清溪小区2 栋5楼11号   |            13 |
|      59 | 清溪小区4 栋2楼14号   |            20 |
|      60 | 清溪小区2 栋1楼18号   |             4 |
|      61 | 清溪小区1 栋4楼16号   |            17 |
|      62 | 清溪小区1 栋10楼19号  |             5 |
```

　　空房查询

10．管理员其他管理

查看停车位状态，缴费状态

（1）已出售停车位	（2）未出售停车位
（3）未缴费	（4）已缴费

　　SQL 语句：

　　（1）查询未购车位

　　SELECT pcarid, pcarloction FROM pcarinfo WHERE pcarstate<>2;

　　（2）查询已购车位

　　SELECT pcarid, pcar_houseid, buytime, pcarloction FROM pcarinfo where pcarstate=2;

　　（3）查询已缴费

　　SELECT costid, cost_houseid, costmoney, coststarttime, paytime, costtype FROM costinfo, costtypeinfo WHERE cost_costtypeid = costtypeid and paytime is NOT NULL;

（4）查询未缴费

SELECT costid,cost_houseid,costmoney,coststarttime,costtype FROM costinfo,costtypeinfo WHERE cost_costtypeid = costtypeid and paytime is NULL;

执行效果截图：

```
mysql> SELECT pcarid,pcarloction  FROM pcarinfo  WHERE pcarstate<>2;
+--------+-------------+
| pcarid | pcarloction |
+--------+-------------+
|      1 | 1           |
|      2 | 2           |
|      3 | 3           |
|      4 | 4           |
|      5 | 5           |
|      6 | 6           |
|      7 | 7           |
|      8 | 8           |
|     10 | 10          |
|     11 | 11          |
|     12 | 12          |
|     13 | 13          |
|     14 | 14          |
|     15 | 15          |
|     16 | 16          |
|     17 | 17          |
|     18 | 18          |
|     19 | 19          |
|     20 | 20          |
|     21 | 21          |
|     22 | 22          |
|     23 | 23          |
|     24 | 24          |
|     25 | 25          |
|     26 | 26          |
|     27 | 27          |
|     28 | 28          |
|     29 | 29          |
|     30 | 30          |
```
查询未购车位

查询已购车位
```
mysql> SELECT pcarid,pcar_houseid,buytime,pcarloction  FROM pcarinfo
    -> WHERE pcarstate=2;
+--------+--------------+---------------------+-------------+
| pcarid | pcar_houseid | buytime             | pcarloction |
+--------+--------------+---------------------+-------------+
|      9 |           12 | 2022-05-31 21:55:55 | 9           |
+--------+--------------+---------------------+-------------+
1 row in set (0.00 sec)
```

查询已缴费
```
mysql> SELECT costid,cost_houseid,costmoney,coststarttime,paytime,costtype
    -> FROM costinfo,costtypeinfo WHERE cost_costtypeid = costtypeid
    -> and paytime is NOT NULL;
+--------+--------------+--------------------+---------------------+---------------------+----------+
| costid | cost_houseid | costmoney          | coststarttime       | paytime             | costtype |
+--------+--------------+--------------------+---------------------+---------------------+----------+
|     15 |           15 | 614.9094148357829  | 2017-04-05 02:03:19 | 2017-04-06 14:11:59 | 水费     |
|     31 |           28 | 201.37774959341309 | 2018-05-23 17:53:11 | 2018-05-25 09:04:54 | 水费     |
|     35 |           26 | 722.0372814197307  | 2021-12-23 23:32:40 | 2021-12-27 00:38:30 | 水费     |
|     40 |           26 | 959.4884199609421  | 2018-03-17 17:59:48 | 2018-03-20 07:08:58 | 水费     |
|     50 |           30 | 417.8054663740341  | 2021-12-17 01:57:13 | 2021-12-18 23:24:10 | 水费     |
|     69 |           13 | 325.00998247720935 | 2018-01-10 04:18:15 | 2022-06-01 00:46:33 | 水费     |
|     82 |            1 | 466.80712319422355 | 2018-03-06 08:56:33 | 2018-03-11 00:07:43 | 水费     |
|    101 |           10 | 100                | 2022-05-31 20:35:59 | 2022-06-01 00:46:33 | 水费     |
|      4 |           24 | 932.2156533715017  | 2018-04-12 18:46:59 | 2022-06-01 00:46:33 | 电费     |
|      5 |           39 | 563.5173007753338  | 2017-05-16 17:22:13 | 2022-06-01 00:46:33 | 电费     |
|      8 |           11 | 140.75144300916793 | 2017-01-16 05:45:53 | 2017-01-21 17:27:24 | 电费     |
|      9 |           31 | 67.16266014073472  | 2019-03-13 06:39:08 | 2019-03-13 20:50:08 | 电费     |
|     48 |           39 | 821.2854989942734  | 2017-01-09 14:39:18 | 2017-01-11 07:44:17 | 电费     |
|     58 |           23 | 640.1048565403491  | 2019-04-16 04:29:41 | 2019-04-16 02:33:00 | 电费     |
|     83 |           39 | 504.0933335759113  | 2020-12-05 20:14:08 | 2020-12-07 00:17:33 | 电费     |
|     86 |            1 | 897.6112759665315  | 2017-01-26 14:47:47 | 2022-06-01 00:46:33 | 电费     |
|     14 |            3 | 689.2280843847824  | 2017-07-10 19:08:57 | 2017-07-11 00:39:13 | 气费     |
|     18 |           31 | 683.4879600654581  | 2018-10-20 20:04:22 | 2018-10-24 20:45:18 | 气费     |
|     26 |           34 | 982.3063084614839  | 2021-08-27 08:39:32 | 2021-08-31 22:57:32 | 气费     |
|     29 |            2 | 649.2653092680033  | 2020-06-23 00:41:21 | 2020-06-25 10:09:01 | 气费     |
|     53 |           29 | 617.3028222212279  | 2020-11-07 19:59:14 | 2020-11-07 12:29:18 | 气费     |
|     54 |           39 | 413.8481879143577  | 2017-05-14 11:15:04 | 2017-05-18 06:40:51 | 气费     |
|     71 |           33 | 695.5755040742082  | 2018-05-13 05:41:10 | 2018-05-18 13:18:41 | 气费     |
|     72 |            5 | 67.4593103187982   | 2021-02-26 03:18:06 | 2021-03-01 23:32:42 | 气费     |
+--------+--------------+--------------------+---------------------+---------------------+----------+
```

```
mysql> SELECT costid, cost_houseid, costmoney, coststarttime, costtype
    -> FROM costinfo, costtypeinfo WHERE cost_costtypeid = costtypeid
    -> and paytime is NULL;
+--------+--------------+---------------------+---------------------+----------+
| costid | cost_houseid | costmoney           | coststarttime       | costtype |
+--------+--------------+---------------------+---------------------+----------+
|     11 |           35 | 474.0209763188665   | 2018-10-03 19:03:41 | 气费     |
|     12 |           25 | 42.92830215026217   | 2017-12-09 15:11:06 | 清洁费   |
|     13 |            4 | 572.8319477305392   | 2022-03-28 21:48:06 | 电费     |
|     20 |           12 | 440.5860535207093   | 2019-01-16 22:20:12 | 清洁费   |
|     21 |            4 | 298.33395305470407  | 2018-11-06 10:51:51 | 电费     |
|     25 |           38 | 632.9744265115065   | 2017-12-25 10:15:08 | 维修费   |
|     28 |           20 | 547.902663687483    | 2020-05-30 04:33:19 | 清洁费   |
|     30 |            4 | 260.537003198367    | 2019-09-11 22:07:43 | 气费     |
|     32 |            3 | 396.6768477596746   | 2019-10-27 02:50:37 | 水费     |
|     37 |           38 | 646.4171789956071   | 2020-03-02 07:20:20 | 维修费   |
|     43 |           40 | 190.2724154359426   | 2018-01-30 13:53:01 | 气费     |
|     44 |           10 | 433.1952327240465   | 2021-07-15 00:24:15 | 维修费   |
|     45 |           32 | 96.34578323039699   | 2017-07-07 03:22:58 | 水费     |
|     52 |           25 | 396.47588747903274  | 2018-10-19 05:54:51 | 水费     |
|     55 |           11 | 395.30886611109736  | 2022-04-08 15:42:32 | 气费     |
|     56 |           11 | 425.31703541416465  | 2018-07-17 11:26:30 | 清洁费   |
|     60 |           31 | 345.7036761398346   | 2017-08-14 05:20:40 | 电费     |
|     61 |           29 | 791.8842891061352   | 2018-02-22 11:49:02 | 气费     |
|     65 |            8 | 109.85669550685681  | 2017-02-28 04:55:38 | 清洁费   |
|     68 |            3 | 404.9153753982554   | 2021-03-13 16:53:17 | 水费     |
|     73 |           32 | 99.42877596938852   | 2020-05-18 05:13:19 | 水费     |
|     75 |           29 | 705.8814753640555   | 2019-08-27 08:06:07 | 水费     |
|     77 |           39 | 560.7228130003988   | 2017-12-05 15:55:28 | 物管费   |
|     78 |           25 | 53.239796771716215  | 2020-02-26 14:18:16 | 电费     |
|     81 |            5 | 210.01914817563892  | 2022-04-25 23:30:49 | 气费     |
|     87 |            4 | 338.9852896939696   | 2019-02-10 14:40:25 | 清洁费   |
|     88 |            1 | 54.88872940176486   | 2018-05-23 00:08:34 | 气费     |
|     89 |           38 | 777.8718875134501   | 2022-01-28 11:50:38 | 清洁费   |
|     90 |           30 | 338.06986040053664  | 2017-08-15 07:39:12 | 清洁费   |
|     91 |           20 | 61.50304073030302   | 2021-05-09 14:44:06 | 水费     |
|     92 |           28 | 596.0408967486004   | 2019-01-19 06:37:35 | 清洁费   |
+--------+--------------+---------------------+---------------------+----------+
31 rows in set (0.00 sec)
```

查询未缴费

11. 管理员管理维修任务

分配维修任务

（1）未接取任务	（2）已开始任务
（3）已完成任务	（4）修改任务状态

SQL 语句：

（1）未接取任务查询

SELECT task_houseid, taskcontent FROM taskinfo where taskstate = 0;

（2）已开始任务查询

SELECT task_houseid, taskstarttime, taskcontent, ataskstate

FROM taskinfo, admin_taskrelation where taskid=admin_task_taskid

AND taskstate = 1;

（3）已完成任务查询

SELECT task_houseid, taskstarttime, taskendtime, taskcontent

FROM taskinfo, admin_taskrelation where taskid=admin_task_taskid

AND taskstate = 2;

（4）接取未开始任务

DELIMITER $$

CREATE PROCEDURE receive_task(IN intask INT, IN inadmin INT)

BEGIN

    UPDATE taskinfo SET taskstate = 1 WHERE taskid = intask;

    INSERT INTO admin_taskrelation (ataskstate, taskstarttime,

    admin_task_taskid, admin_task_adminid)

    VALUES(0, localtime(), intask, inadmin);

```
        END$$
    DELIMITER ;
    （5）维修完成
    DELIMITER $$
    CREATE PROCEDURE successful_task(IN inatr INT)
    BEGIN
        UPDATE taskinfo SET taskstate = 2 WHERE  taskid = (
            SELECT admin_task_taskid FROM admin_taskrelation
            WHERE admin_taskid = inatr);
        UPDATE admin_taskrelation SET ataskstate = 1, taskendtime =
localtime()
        WHERE admin_taskid =  inatr;
    END$$
    DELIMITER ;
    （6）维修失败
    DELIMITER $$
    DELIMITER $$
    CREATE PROCEDURE fail_task(IN inatr INT)
    BEGIN
        UPDATE taskinfo SET taskstate = 0 WHERE  taskid = (
            SELECT admin_task_taskid FROM admin_taskrelation
            WHERE admin_taskid = inatr);
        UPDATE admin_taskrelation SET ataskstate = 2
        WHERE admin_taskid =  inatr;
    END$$
    DELIMITER ;
    执行效果截图：
```


未接取任务查询

```
mysql> SELECT task_houseid, taskstarttime, taskcontent, ataskstate
    -> FROM taskinfo, admin_taskrelation where taskid=admin_task_taskid AND taskstate = 1;
```

task_houseid	taskstarttime	taskcontent	ataskstate
1	2018-01-12 04:43:12	电路维修	1
1	2018-04-26 11:44:30	配玻璃	1
1	2019-03-03 12:38:47	通下水道	1
2	2017-01-12 19:38:44	暖气故障	1
4	2019-03-06 03:13:01	涂油漆	1
4	2020-10-07 05:07:59	修空调	1
4	2017-07-29 19:15:31	修水龙头	1
5	2019-11-17 16:14:02	配玻璃	2
5	2019-02-03 21:58:19	配玻璃	1
6	2019-10-20 00:56:31	更换过梁	1
6	2020-06-07 01:19:39	修水龙头	1
7	2020-11-21 01:44:15	暖气故障	1
8	2018-07-21 08:57:44	电路维修	1
8	2017-01-01 19:28:22	配玻璃	1
10	2017-08-28 06:44:55	更换过梁	1
10	2019-09-03 12:09:25	修补屋面	2
10	2019-06-24 19:04:37	修补屋面	1
10	2019-05-11 16:37:37	换窗纱	1
10	2021-08-04 18:50:38	修门	1
11	2020-02-23 21:48:25	修补屋面	1
11	2021-10-31 17:57:03	拆换五金	1
11	2019-09-26 16:22:54	修水龙头	1
12	2019-11-16 14:42:54	换窗纱	1
13	2022-01-06 05:47:01	通下水道	0
13	2020-02-20 05:11:10	涂油漆	0
13	2020-07-28 20:51:09	修空调	0
16	2022-04-17 20:38:41	水管破裂	0
16	2019-10-18 05:32:04	修门	0

28 rows in set (0.00 sec)

已开始任务查询

```
mysql> SELECT task_houseid, taskstarttime, taskendtime, taskcontent
    -> FROM taskinfo, admin_taskrelation where taskid=admin_task_taskid
    -> AND taskstate = 2;
```

task_houseid	taskstarttime	taskendtime	taskcontent
2	2020-09-17 07:55:23	2019-03-06 15:25:34	暖气故障
1	2017-10-20 02:02:32	2017-08-01 05:42:02	修门
1	2020-12-29 15:04:01	NULL	涂油漆
1	2022-05-01 11:42:56	2020-01-18 04:36:16	涂油漆
2	2020-02-21 05:32:29	2019-05-25 09:15:55	暖气故障
3	2019-03-02 22:21:54	2020-12-24 10:25:32	通下水道
3	2019-01-10 08:51:42	2018-08-05 10:55:12	水管破裂
3	2018-05-04 00:18:40	2019-01-27 12:37:58	电路维修
4	2018-01-04 11:18:45	2019-01-18 05:22:27	修水龙头
4	2021-10-18 17:24:20	2022-01-24 05:11:25	换窗纱
5	2018-11-20 02:31:18	2017-04-30 02:19:06	电路维修
5	2018-10-08 04:39:59	2022-05-07 05:00:38	修补屋面
6	2021-01-18 17:00:09	2018-10-04 20:35:48	暖气故障
6	2020-12-17 11:07:05	2018-05-20 16:31:03	配玻璃
7	2020-11-20 14:33:24	2020-05-18 05:16:49	更换过梁
7	2021-10-09 00:06:30	2019-12-24 15:09:14	修门
8	2017-10-04 17:26:16	2020-08-08 01:38:52	维修天然气
8	2020-08-07 11:54:58	2018-12-13 17:33:27	修水龙头
9	2021-04-29 12:29:23	2019-12-03 17:52:53	拆换五金
9	2020-09-23 21:03:48	2017-08-12 10:27:41	水管破裂
9	2020-06-30 10:10:24	2019-12-19 09:30:28	修空调
10	2018-12-05 08:00:02	2022-03-16 01:45:19	房屋漏水
10	2020-09-21 18:47:59	2020-10-30 12:44:50	修补楼地面面层
11	2020-08-21 15:31:22	2018-12-07 08:17:22	通下水道
11	2020-09-21 04:06:04	2021-07-17 16:42:18	通下水道
11	2019-11-29 06:55:44	2017-10-08 05:28:22	更换过梁
12	2020-05-31 11:44:20	2022-04-22 05:04:22	水管破裂
13	2017-02-18 04:26:39	NULL	涂油漆
13	2021-04-18 00:33:45	NULL	涂油漆
13	2020-06-21 17:20:20	NULL	房屋漏水
16	2022-05-12 14:40:29	2020-10-11 03:14:43	通下水道
16	2022-05-31 21:22:22	2022-05-06 23:08:59	通下水道
25	2020-01-24 17:39:23	NULL	配玻璃

33 rows in set (0.00 sec)

已完成任务查询

附原始实验记录	**四、实验总结**

四、实验总结

　　1．在用户查看消息时，不知道什么消息属于该用户，通过添加消息-用户管理表（user_newsrelation）解决该问题

　　2．维修任务与用户无关，应与房屋关联

　　3．在更新房屋信息时，考虑到新住户不能查看旧住户的缴费信息但缴费信息又不能删除，通过在缴费信息表（costinfo）中添加费用是否为当前住户(0:否，1:是)（istrue）字段解决

　　4．考虑到实际功能需求，对管理员模块做了大幅度修改

　　5．有些功能在写程序时还将修改

　　6．数据存在一些问题