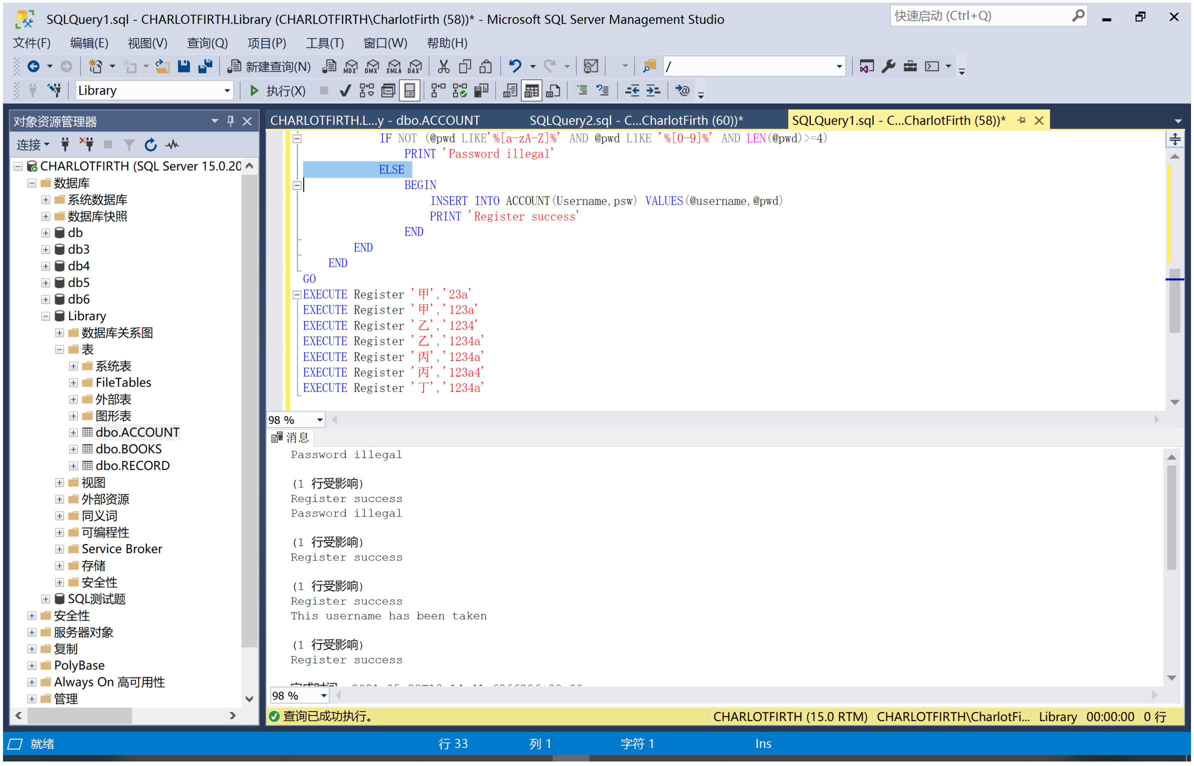
```
--1. 注册（注册时密码必须含有数字和字母，长度大于等于4；用户名冲突时不能注册 ）
CREATE OR ALTER PROCEDURE Register(@username varchar(50),@pwd varchar(50))
AS
    BEGIN
        DECLARE curAccount CURSOR
            FAST_FORWARD
        FOR
            SELECT * FROM ACCOUNT
        DECLARE @flag INT
        SET @flag = 1
        DECLARE @u AS VARCHAR(50)
        DECLARE @p AS VARCHAR(50)
        OPEN curAccount
        FETCH FROM curAccount INTO @u,@p
        WHILE @@FETCH_STATUS=0
        BEGIN
                IF(@u=@username)
                BEGIN
                    SET @flag=0
                    BREAK
                END
                FETCH FROM curAccount INTO @u,@p
        END
        CLOSE curAccount
        DEALLOCATE curAccount
        IF (@flag=0)
            PRINT 'This username has been taken'
        ELSE
        BEGIN
            IF NOT (@pwd LIKE'%[a-zA-Z]%' AND @pwd LIKE '%[0-9]%' AND
LEN(@pwd)>=4)
                PRINT 'Password illegal'
            ELSE
                BEGIN
                    INSERT INTO ACCOUNT(Username,psw) VALUES(@username,@pwd)
                    PRINT 'Register success'
                END
        END
    END
GO
EXECUTE Register '甲','23a'
EXECUTE Register '甲','123a'
EXECUTE Register '乙','1234'
EXECUTE Register '乙','1234a'
EXECUTE Register '丙','1234a'
EXECUTE Register '丙','123a4'
EXECUTE Register '丁','1234a'
```

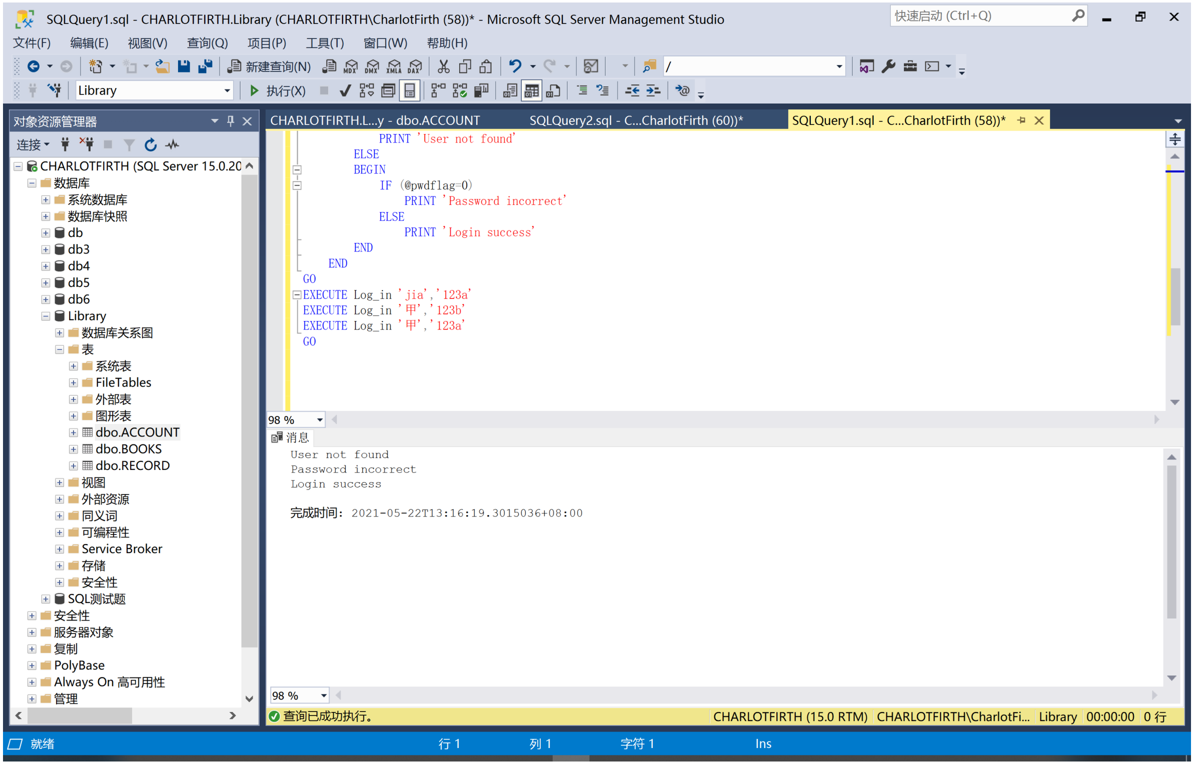


```
            IF NOT (@pwd LIKE'%[a-zA-Z]%' AND @pwd LIKE '%[0-9]%' AND LEN(@pwd)>=4)
                PRINT 'Password illegal'
            ELSE
                BEGIN
                    INSERT INTO ACCOUNT(Username,psw) VALUES(@username,@pwd)
                    PRINT 'Register success'
                END
        END
    END
GO
EXECUTE Register '甲','23a'
EXECUTE Register '甲','123a'
EXECUTE Register '乙','1234'
EXECUTE Register '乙','1234a'
EXECUTE Register '丙','1234a'
EXECUTE Register '丙','123a4'
EXECUTE Register '丁','1234a'
```

```
Password illegal

(1 行受影响)
Register success
Password illegal

(1 行受影响)
Register success

(1 行受影响)
Register success
This username has been taken

(1 行受影响)
Register success
```

SQLQuery1.sql - CHARLOTFIRTH.Library (CHARLOTFIRTH\CharlotFirth (58))* - Microsoft SQL Server Management Studio
文件(F) 编辑(E) 视图(V) 查询(Q) 项目(P) 工具(T) 窗口(W) 帮助(H)
新建查询(N)
执行(X)
Library
对象资源管理器
连接
CHARLOTFIRTH (SQL Server 15.0.20
数据库
系统数据库
数据库快照
db
db3
db4
db5
db6
Library
数据库关系图
表
系统表
FileTables
外部表
图形表
dbo.ACCOUNT
dbo.BOOKS
dbo.RECORD
视图
外部资源
同义词
可编程性
Service Broker
存储
安全性
SQL测试题
安全性
服务器对象
复制
PolyBase
Always On 高可用性
管理
CHARLOTFIRTH.L...y - dbo.ACCOUNT
SQLQuery2.sql - C...CharlotFirth (60))*
SQLQuery1.sql - C...CharlotFirth (58))*
98 %
消息
查询已成功执行。
CHARLOTFIRTH (15.0 RTM) CHARLOTFIRTH\CharlotFi... Library 00:00:00 0 行
就绪
行 33
列 1
字符 1
Ins

```
--2.登录
CREATE OR ALTER PROCEDURE Log_in(@username varchar(50),@pwd varchar(50))
AS
    BEGIN
        DECLARE curAccount CURSOR
            FAST_FORWARD
        FOR
            SELECT * FROM ACCOUNT
        DECLARE @flag INT
        DECLARE @pwdflag INT
        SET @flag = 0
        SET @pwdflag = 0
        DECLARE @u AS VARCHAR(50)
        DECLARE @p AS VARCHAR(50)
        OPEN curAccount
        FETCH FROM curAccount INTO @u,@p
        WHILE @@FETCH_STATUS=0
        BEGIN
                IF(@u=@username)
                BEGIN
                    SET @flag=1
                    IF(@p=@pwd)
                        SET @pwdflag=1
                    BREAK
                END
                FETCH FROM curAccount INTO @u,@p
        END
        CLOSE curAccount
        DEALLOCATE curAccount
        IF (@flag=0)
            PRINT 'User not found'
        ELSE
        BEGIN
            IF (@pwdflag=0)
                PRINT 'Password incorrect'
            ELSE
                PRINT 'Login success'
        END
    END
GO
EXECUTE Log_in 'jia','123a'
EXECUTE Log_in '甲','123b'
EXECUTE Log_in '甲','123a'
GO
```



```
            PRINT 'User not found'
        ELSE
        BEGIN
            IF (@pwdflag=0)
                PRINT 'Password incorrect'
            ELSE
                PRINT 'Login success'
        END
    END
GO
EXECUTE Log_in 'jia','123a'
EXECUTE Log_in '甲','123b'
EXECUTE Log_in '甲','123a'
GO
```

```
User not found
Password incorrect
Login success

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```
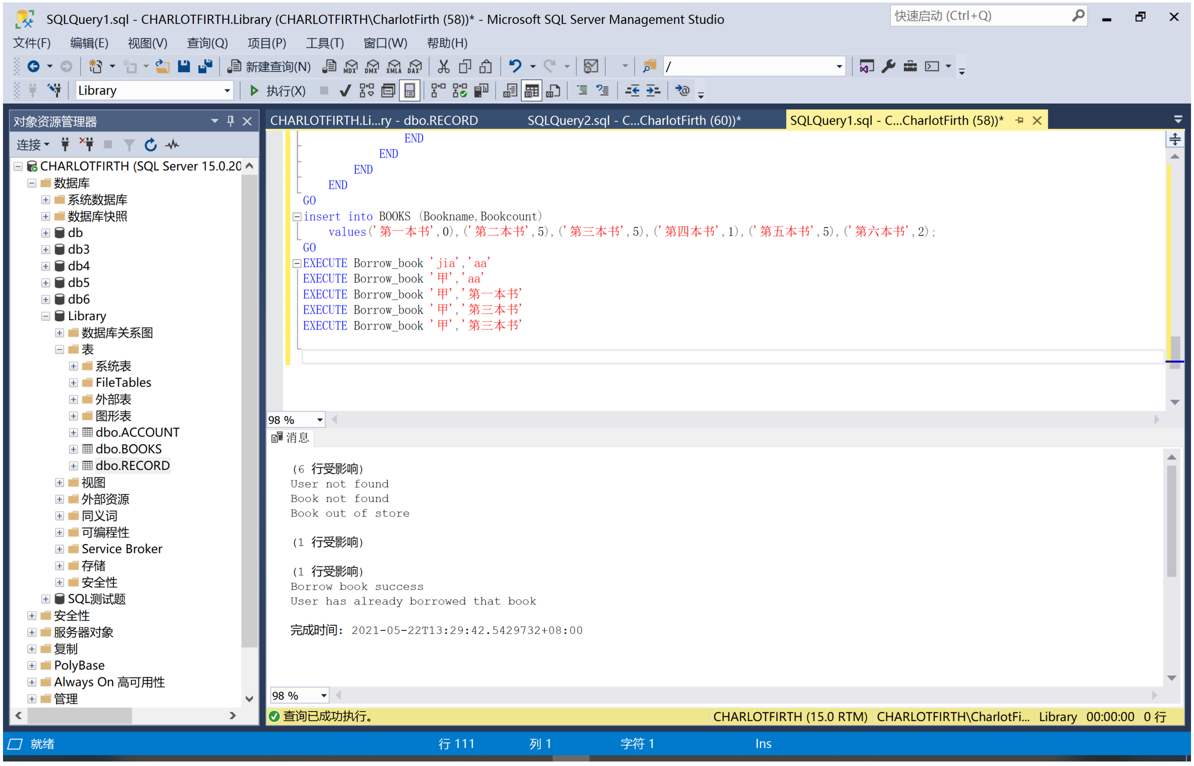

```
--3.借书（需要考虑没有足够的书或者用户不存在等特殊情况，规定一个人不能同时借两本同样的书）
CREATE OR ALTER PROCEDURE Borrow_book(@username varchar(50),@Bookname
varchar(50))
AS
    BEGIN
        DECLARE curAccount CURSOR
            FAST_FORWARD
        FOR
            SELECT * FROM ACCOUNT
        DECLARE @flag INT
        SET @flag = 0
        DECLARE @u AS VARCHAR(50)
        DECLARE @p AS VARCHAR(50)
        OPEN curAccount
        FETCH FROM curAccount INTO @u,@p
        WHILE @@FETCH_STATUS=0
        BEGIN
                IF(@u=@username)
                BEGIN
                    SET @flag=1
                    BREAK
                END
                FETCH FROM curAccount INTO @u,@p
        END
        CLOSE curAccount
        DEALLOCATE curAccount
        IF (@flag=0)
            PRINT 'User not found'
        ELSE
        BEGIN
            DECLARE curBook CURSOR
                FAST_FORWARD
            FOR
                SELECT * FROM BOOKS
            DECLARE @bookflag INT
            DECLARE @countflag INT
            SET @bookflag = 0
            SET @countflag = 1
            DECLARE @b AS VARCHAR(50)
            DECLARE @c AS VARCHAR(50)
            OPEN curBook
            FETCH FROM curBook INTO @b,@c
            WHILE @@FETCH_STATUS=0
            BEGIN
                    IF(@b=@Bookname)
                    BEGIN
                        SET @bookflag=1
                        IF (@c<1)
                            SET @countflag = 0
                        BREAK
                    END
                    FETCH FROM curBook INTO @b,@c
            END
            CLOSE curBook
            DEALLOCATE curBook
            IF (@bookflag=0)
                PRINT  'Book not found'
            ELSE
            BEGIN
                IF (@countflag=0)
                    PRINT 'Book out of store'
                ELSE
                BEGIN
                    DECLARE curRecord CURSOR
                    FAST_FORWARD
                    FOR
                        SELECT * FROM RECORD
                    DECLARE @recordflag INT
                    SET @recordflag = 1
                    DECLARE @un AS VARCHAR(50)
                    DECLARE @bn AS VARCHAR(50)
                    DECLARE @lt AS DATE
                    DECLARE @dt AS DATE
                    OPEN curRecord
                    FETCH FROM curRecord INTO @un,@bn,@lt,@dt
                    WHILE @@FETCH_STATUS=0
                    BEGIN
                        IF(@bn=@Bookname AND @un=@username)
                        BEGIN
                            SET @recordflag=0
                            BREAK
                        END
                        FETCH FROM curRecord INTO @un,@bn,@lt,@dt
                    END
                    CLOSE curRecord
                    DEALLOCATE curRecord
                    IF (@recordflag=0)
                        PRINT 'User has already borrowed that book'
                    ELSE
                    BEGIN
                        INSERT INTO RECORD(Username,Bookname)
                        VALUES(@username,@Bookname)
                        UPDATE BOOKS
                        SET Bookcount=Bookcount-1
                        WHERE Bookname=@Bookname
                        PRINT 'Borrow book success'
                    END
                END
            END
        END
    END
GO
insert into BOOKS (Bookname,Bookcount)
    values('第一本书',0),('第二本书',5),('第三本书',5),('第四本书',1),('第五本书',5),
('第六本书',2);
GO
EXECUTE Borrow_book 'jia','aa'
EXECUTE Borrow_book '甲','aa'
EXECUTE Borrow_book '甲','第一本书'
EXECUTE Borrow_book '甲','第三本书'
EXECUTE Borrow_book '甲','第三本书'
```



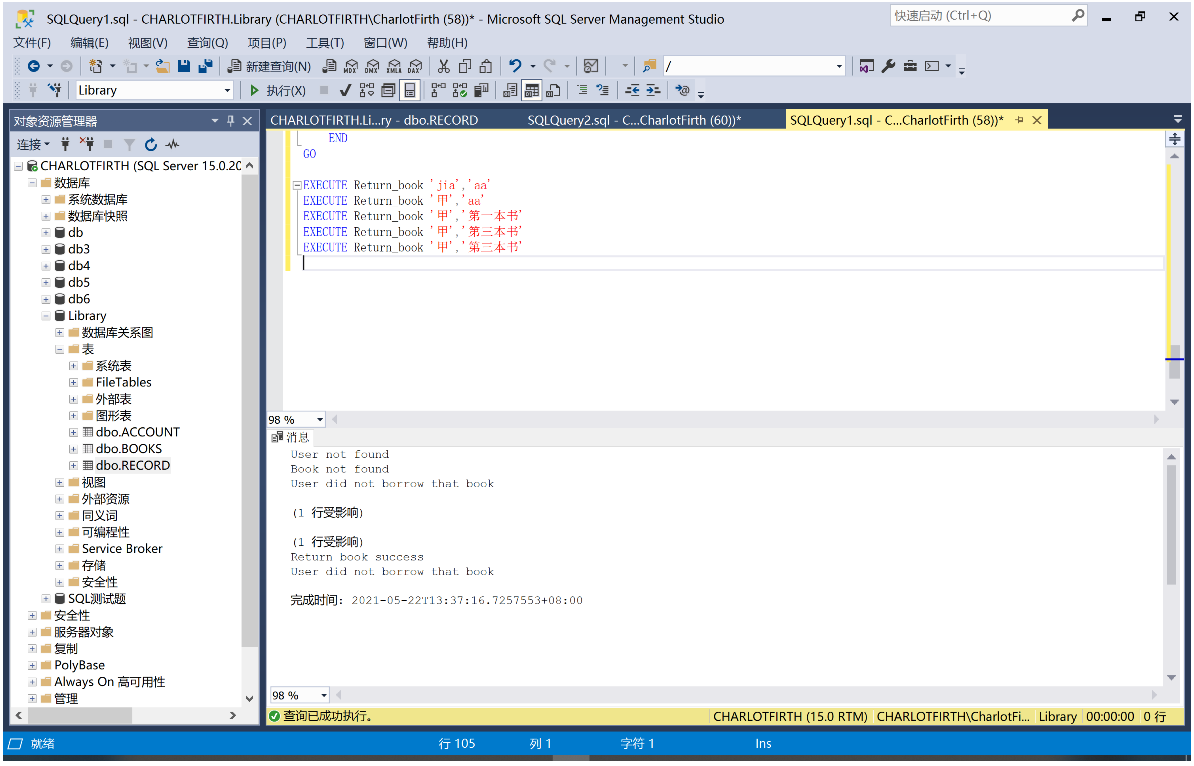
```
                END
            END
        END
    END
GO
insert into BOOKS (Bookname,Bookcount)
    values('第一本书',0),('第二本书',5),('第三本书',5),('第四本书',1),('第五本书',5),('第六本书',2);
GO
EXECUTE Borrow_book 'jia','aa'
EXECUTE Borrow_book '甲','aa'
EXECUTE Borrow_book '甲','第一本书'
EXECUTE Borrow_book '甲','第三本书'
EXECUTE Borrow_book '甲','第三本书'
```

```
(6 行受影响)
User not found
Book not found
Book out of store

(1 行受影响)

(1 行受影响)
Borrow book success
User has already borrowed that book

完成时间: 2021-05-22T13:29:42.5429732+08:00
```

```
--4.还书（同样需要考虑参数不合法情况）
CREATE OR ALTER PROCEDURE Return_book(@username varchar(50),@Bookname
varchar(50))
AS
```

```
BEGIN
    DECLARE curAccount CURSOR
        FAST_FORWARD
    FOR
        SELECT * FROM ACCOUNT
    DECLARE @flag INT
    SET @flag = 0
    DECLARE @u AS VARCHAR(50)
    DECLARE @p AS VARCHAR(50)
    OPEN curAccount
    FETCH FROM curAccount INTO @u,@p
    WHILE @@FETCH_STATUS=0
    BEGIN
            IF(@u=@username)
            BEGIN
                SET @flag=1
                BREAK
            END
            FETCH FROM curAccount INTO @u,@p
    END
    CLOSE curAccount
    DEALLOCATE curAccount
    IF (@flag=0)
        PRINT 'User not found'
    ELSE
    BEGIN
        DECLARE curBook CURSOR
            FAST_FORWARD
        FOR
            SELECT * FROM BOOKS
        DECLARE @bookflag INT
        DECLARE @countflag INT
        SET @bookflag = 0
        SET @countflag = 1
        DECLARE @b AS VARCHAR(50)
        DECLARE @c AS VARCHAR(50)
        OPEN curBook
        FETCH FROM curBook INTO @b,@c
        WHILE @@FETCH_STATUS=0
        BEGIN
                IF(@b=@Bookname)
                BEGIN
                    SET @bookflag=1
                    IF (@c<1)
                        SET @countflag = 0
                    BREAK
                END
                FETCH FROM curBook INTO @b,@c
        END
        CLOSE curBook
        DEALLOCATE curBook
        IF (@bookflag=0)
            PRINT  'Book not found'
        ELSE
        BEGIN
            DECLARE curRecord CURSOR
            FAST_FORWARD
            FOR
```

```
                    SELECT * FROM RECORD
                DECLARE @recordflag INT
                SET @recordflag = 0
                DECLARE @un AS VARCHAR(50)
                DECLARE @bn AS VARCHAR(50)
                DECLARE @lt AS DATE
                DECLARE @dt AS DATE
                OPEN curRecord
                FETCH FROM curRecord INTO @un,@bn,@lt,@dt
                WHILE @@FETCH_STATUS=0
                BEGIN
                    IF(@bn=@Bookname AND @un=@username)
                    BEGIN
                        SET @recordflag=1
                        BREAK
                    END
                    FETCH FROM curRecord INTO @un,@bn,@lt,@dt
                END
                CLOSE curRecord
                DEALLOCATE curRecord
                IF (@recordflag=0)
                    PRINT 'User did not borrow that book'
                ELSE
                BEGIN
                    DELETE
                    FROM RECORD
                    WHERE @Bookname=Bookname AND Username=@username
                    UPDATE BOOKS
                    SET Bookcount=Bookcount+1
                    WHERE Bookname=@Bookname
                    PRINT 'Return book success'
                END
            END
        END
    END
GO
EXECUTE Return_book 'jia','aa'
EXECUTE Return_book '甲','aa'
EXECUTE Return_book '甲','第一本书'
EXECUTE Return_book '甲','第三本书'
EXECUTE Return_book '甲','第三本书'
```



```sql
    END
GO

EXECUTE Return_book 'jia','aa'
EXECUTE Return_book '甲','aa'
EXECUTE Return_book '甲','第一本书'
EXECUTE Return_book '甲','第三本书'
EXECUTE Return_book '甲','第三本书'
```

```
User not found
Book not found
User did not borrow that book

(1 行受影响)

(1 行受影响)
Return book success
User did not borrow that book

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```