武汉纺织大学

Java应用开发课程设计

**基于MyBatis的图书馆系统**

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# 1 需求分析

设计一个图书馆系统，实现“登陆”、“借阅”、“归还”、“查询”、“图书维护”、“用户维护”、“密码修改”、“数据导入”、“数据导出”等功能，具体要求如下：

## 1.1用户登陆

当程序运行时，显示“欢迎使用\*\*\*\*图书馆系统，请登陆”，提示用户依次输入用户名及其密码，当用户名及密码不正确时，显示提示信息“用户名或密码不正确，请重新输入”，若不记得密码可选择找回密码，输入正确的真实姓名和学号即可修改密码，**用户最多可以尝试3次，若输入3次均不正确，则给出提示信息“最多只能尝试3次”**，退出系统；

## 1.2主菜单

当用户名及密码正确时，进入系统主界面，如下：

===\*\*\*\*图书馆系统\*\*\*\*===

1. 借阅图书
2. 查询图书
3. 归还图书
4. 图书维护
5. 用户维护
6. 个人中心
7. 借阅信息管理
8. 退出系统

当前用户：\*\*\*\*\*（显示当前账号对应的真实姓名）

请选择（1-8）：

如果输入1-8以外的选择，则显示提示信息“输入无效，只能输入1-8”后，返回主界面。

## 1.3各项功能

### 1.3.1 借阅图书

当选择1时，显示“请输入图书编号（1位大写字母+6位数字字符）：”，用户输入图书编号后，如果输入不符合格式，则提示“图书编号输入格式不正确，请重新输入”，直到输入格式正确，如果输入的图书编号在图书表中存在，则显示“输入借阅时长：”，否则，提示“您输入的图书编号不存在，是否重新输入(否返回上一级)：”。

图书编号和借阅时长输入完毕后在借阅明细表中增加一条记录（各字段信息如下：**借阅号根据规则生成，图书编号和借阅时间为用户输入，图书名称是根据输入的图书编号查找图书表获取的，借阅人为当前登陆账号的真实姓名，借阅时间为系统当前时间yyyy-mm-dd hh:mm:ss，），借阅状态变为“借阅”**，增加成功后显示“成功增加一笔借阅数据”，并修改图书表相应图书的库存量，返回主菜单。

### 1.3.2 查询图书

当选择2时，显示如下子菜单：

===\*\*\*\*图书查询\*\*\*\*===

1、图书名称查询

2、图书编号查询

3、图书类型查询

4、作者名查询

5、出版社名查询

6、显示所有在库图书

7、返回主菜单

请选择（1-7）：

### 1.3.3 归还图书

当选择3时，显示“请输入图书编号（1位大写字母+6位数字字符）：”，用户输入图书编号后，如果输入不符合格式，则提示“图书编号输入格式不正确，请重新输入”，直到输入格式正确，如果输入的图书编号在图书表和借阅表均中存在，且借阅状态为“借阅”，提示“是否还书？”，否则，提示“您输入的图书编号不存在，是否重新输入(否返回上一级)：”。

输入“是”则记录还书时间，计算是否逾期，若逾期则提示“归还成功，您已逾期\*天，长期逾期会降低您的信誉等级”，根据借阅账户号和图书编号及借阅状态确定借书记录，并增加一条还书记录到借阅表，并修改借阅状态为“归还”，提示“成功增加一条还书记录”。

### 1.3.4 图书维护

当选择3时，**如果当前用户所属的角色不是管理员，则显示提示信息，“当前用户没有执行该项功能的权限”**，如果当前的用户角色是管理员角色，则显示如下子菜单：

===\*\*\*\*图书馆图书管理维护\*\*\*\*====

1. 增加图书
2. 删除图书
3. 修改图书
4. 图书查询
5. 图书信息导出

6、返回主菜单

请选择（1-6）：

当选择1时，进入如下子菜单：

===\*\*\*\*增加图书\*\*\*\*====

1、从excel中导入数据

2、从文本文件导入数据

3、从xml文件中导入数据

4、从键盘导入数据

5、返回上一级

请选择（1-5）：

* 当选择1时，程序读取book.xls文件，将所有数据存放于book集合中，然后将集合中的所有数据增加到图书表中，增加的时候要检查每条记录的图书编号在图书表中是否存在，若存在，则不需要增加到数据库中，所有数据增加完毕后，显示“成功从excel文件导入XXX条图书数据”，返回子菜单。
* 当选择2时，程序读取book.txt文件，将所有数据存放于book集合中，然后将集合中的所有数据增加到图书表中，增加的时候要检查每条记录的图书编号在图书表中是否存在，若存在，则不需要增加到数据库中，所有数据增加完毕后，显示“成功从文本文件导入XXX条图书数据”，返回子菜单。
* 当选择3时，程序读取book.xml文件，将所有数据存放于book集合中，然后将集合中的所有数据增加到图书表中，增加的时候要检查每条记录的图书编号在图书表中是否存在，若存在，则不需要增加到数据库中，所有数据增加完毕后，显示“成功从xml文件导入XXX条图书数据”，返回子菜单。
* 当选择4时，程序读取book.json文件，将所有数据存放于book集合中，然后将集合中的所有数据增加到图书表中，增加的时候要检查每条记录的图书编号在图书表中是否存在，若存在，则不需要增加到数据库中，所有数据增加完毕后，显示“成功从json文件导入XXX条图书数据”，返回子菜单。
* 当选择3时，从键盘依次录入图书信息，格式为“图书编号，图书名称，作者，出版社，图书类型，库存量”，如：“A100002，西游记，吴承恩，人民出版社，名著古籍，5”，当输入的图书编号在数据库中已经存在时，显示“图书编号不能重复，请重新输入”，输入完毕后将该信息增加到数据库中，并显示“增加成功”，返回子菜单。输入时要对输入的各项做格式的校验，如果输入项的格式不正确，则给出提示信息“你输入的数据格式不正确，请重新输入”。

当选择2时，进入如下子菜单：

===\*\*\*\*删除图书\*\*\*\*====

1、按图书编号删除

2、按图书名称删除

3、按图书类型删除

4、按作者名删除

5、按出版社删除

6、清空所有在库图书（谨慎操作）

7、返回上一级

请选择（1-7）：

当选择3时，输入要修改的图书编号，若在book表中不存在则提示“该图书不存存在，无法修改！”，否则输入相应修改后的信息进行修改。

当选择4时，与上述图书查询功能类似。

当选择5时，进入如下子菜单：

===\*\*\*\*图书信息导出\*\*\*\*====

1、导出到excel文件

2、导出到文本文件

3、导出到xml文件

4、返回主菜单

请选择（1-4）：

选择要操作的序号，执行相应操作并给出提示信息

当选择6时，返回到主菜单

### 1.3.5 用户维护

当选择5用户维护时，**如果当前用户所属的角色不是管理员，则显示提示信息，“当前用户没有执行该项功能的权限”**，如果当前的用户角色是管理员角色进入如下子菜单：

===\*\*\*\*图书馆用户管理维护\*\*\*\*====

1、增加用户

2、删除用户

3、修改用户

4、用户查询

5、用户信息导出

6、返回主菜单

请选择（1-6）：

当选择1时，进入如下子菜单：

===\*\*\*\*增加用户\*\*\*\*====

1、从excel中导入数据

2、从文本文件导入数据

3、从xml文件中导入数据

4、从键盘导入数据

5、返回上一级

请选择（1-5）：

* 当选择1时，程序读取user.xls文件，将所有数据存放于user集合中，然后将集合中的所有数据增加到用户表中，增加的时候要检查每条记录的账号在用户表中是否存在，若存在，则不需要增加到数据库中，所有数据增加完毕后，显示“成功从excel文件导入XXX条用户数据”，返回子菜单。
* 当选择2时，程序读取user.txt文件，将所有数据存放于user集合中，然后将集合中的所有数据增加到用户表中，增加的时候要检查每条记录的账号在用户表中是否存在，若存在，则不需要增加到数据库中，所有数据增加完毕后，显示“成功从文本文件导入XXX条用户数据”，返回子菜单。
* 当选择3时，程序读取user.xml文件，将所有数据存放于user集合中，然后将集合中的所有数据增加到用户表中，增加的时候要检查每条记录的账号在用户表中是否存在，若存在，则不需要增加到数据库中，所有数据增加完毕后，显示“成功从xml文件导入XXX条用户数据”，返回子菜单。
* 当选择1时，程序读取user.json文件，将所有数据存放于user集合中，然后将集合中的所有数据增加到用户表中，增加的时候要检查每条记录的账号在用户表中是否存在，若存在，则不需要增加到数据库中，所有数据增加完毕后，显示“成功从json文件导入XXX条用户数据”，返回子菜单。

当选择3时，从键盘依次录入用户信息，格式为“账号，密码，真实姓名，学号，所属学院，角色”，如：“JackMa，Mayucong123,马大神，1804240713，数学与计算机学院，学生”，当输入的账号在数据库中已经存在时，显示“账号不能重复，请重新输入”，输入完毕后将该信息增加到数据库中，并显示“增加成功”，返回子菜单。输入时要对输入的各项做格式的校验，如果输入项的格式不正确，则给出提示信息“你输入的数据格式不正确，请重新输入”。

当选择2时，进入如下子菜单：

===\*\*\*\*删除用户\*\*\*\*====

1、按账号删除

2、按姓名删除

3、按学号删除

4、按所属学院删除

5、按用户角色删除

6、清空所有在库用户（谨慎操作）

7、返回上一级

请选择（1-7）：

当选择3时，输入要修改的用户账号，输入相应修改后的信息进行修改。

当选择4时，进入如下子菜单：

===\*\*\*\*用户查询\*\*\*\*===

1、用户账号查询

2、姓名查询

3、学号查询

4、所属学院查询

5、用户角色查询

6、显示所有在库用户

7、返回主菜单

请选择（1-7）：

当选择5时，进入如下子菜单：

===\*\*\*\*用户信息导出\*\*\*\*====

1、导出到excel文件

2、导出到文本文件

3、导出到xml文件

4、返回主菜单

请选择（1-4）：

选择要操作的序号，执行相应操作并给出提示信息

当选择6时，返回上一级

### 1.3.6 个人中心

当选择4时，显示如下子菜单：

===\*\*\*\*个人中心\*\*\*\*====

1、查询借阅记录

2、延长借阅时间

3、修改用户密码

4、修改绑定信息

5、返回主菜单

请选择（1-5）：

* 当选择1时，输入借阅日期，系统将显示当天该账号所有的借还记录
* 当选择2时，输入要续约的借阅号，若存在于该账户的借阅记录中，则提示“请输入要延长借阅的时间：”，输入完毕后修改原借阅记录，否则提示“您输入的借阅号错误或不存在！”。
* 当选择3时，提示“请输入原密码：”，**若输入错误，则给出提示“输入密码有误！”，若连续三次输入错误，给出提示“系统核查到您的身份信息不符，账号已冻结！”**，否则提示“请输入新密码：”，再“请确认密码：”，输入完毕后，提示“密码修改成功，请谨记！”。
* 当选择4时，提示“请输入原账号真实姓名：”，“请输入原账号学号/工号：”，输入完毕后，若验证成功则提示“请输入新的身份信息（姓名+学号）：”，输入完毕后给出提示“身份信息绑定成功，请谨记！”，**否则若连续三次输入错误，给出提示“系统核查到您的身份信息不符，账号已冻结！”**
* 当选择5时，返回上一级。

### 1.3.5 借阅信息管理

当选择5时，**如果当前用户所属的角色不是管理员，则显示提示信息，“当前用户没有执行该项功能的权限”**，如果当前的用户角色是管理员角色则显示如下子菜单，否则提示“您没有权限使用该功能！”

===\*\*\*\*图书馆借阅信息管理\*\*\*\*====

1. 借阅记录查询
2. 借阅记录导出

3、返回主菜单

请选择（1-3）：

* 当选择1时，进入如下子菜单：

===\*\*\*\*图书借阅记录查询\*\*\*\*===

1. 图书名称查询
2. 图书编号查询
3. 账号查询
4. 姓名查询
5. 借阅号查询
6. 借阅时间查询
7. 归还时间查询
8. 显示所有在库借阅记录
9. 返回主菜单

请选择（1-9）：

* 输入相应的提示信息完成查询。
* 当选择2时，进入如下子菜单：

===\*\*\*\*借阅记录导出\*\*\*\*====

1、导出到excel文件

2、导出到文本文件

3、导出到xml文件

4、返回主菜单

请选择（1-4）：

输入相应的提示信息完成导出。

* 选择3时，返回到主菜单

### 1.3.6 退出

选择6时，显示“您确认退出系统吗（y/n）”,输入y，显示“欢迎下次继续使用”，退出程序，输入“n”，返回主菜单。

# **2 系统设计**

## 2.1用户用例图

系统分为用户（包含学生，教师等），管理员两种角色，各角色的用户用例如下图2-1所示：

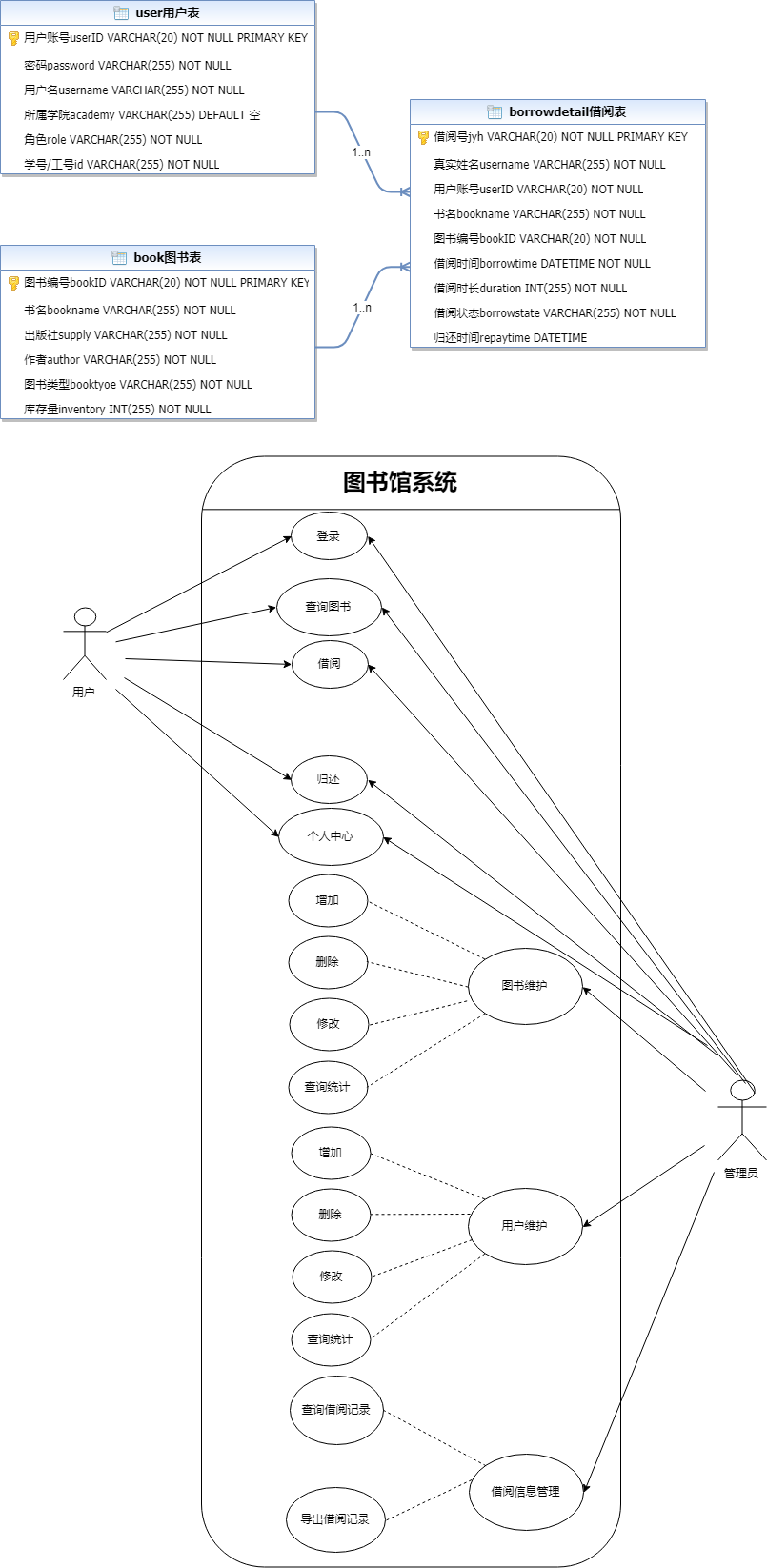


图2-1 用户用例图

## 2.2 ER图

数据库设计3张表，用户表，图书表，借阅记录表，对应的ER图如图3-1所示。

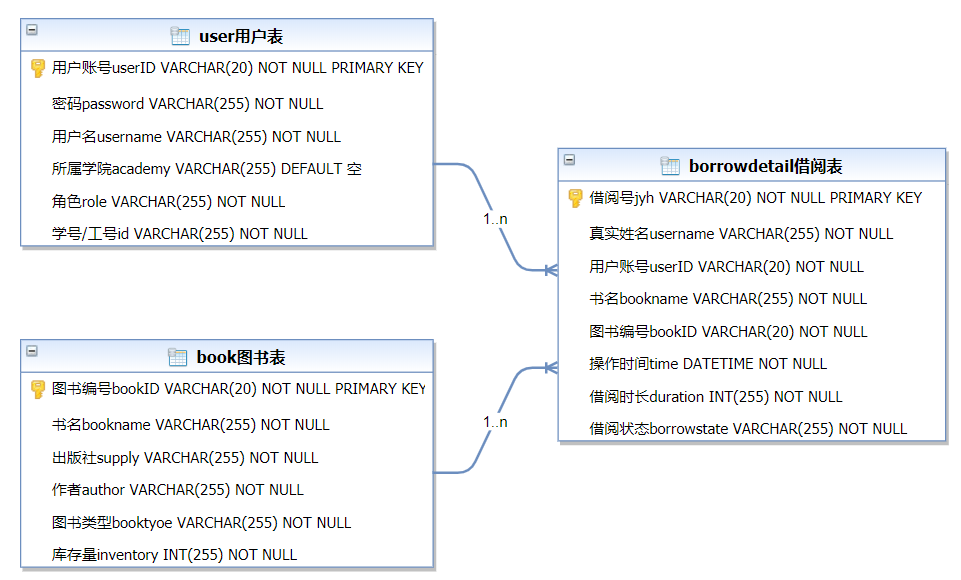
%3CmxGraphModel%3E%3Croot%3E%3CmxCell%20id%3D%220%22%2F%3E%3CmxCell%20id%3D%221%22%20parent%3D%220%22%2F%3E%3Cmysql.table%20entity.table.tableName%3D%22uses%22%20label%3D%22uses%22%20id%3D%222%22%3E%3CmxCell%20style%3D%22swimlane%3BfontStyle%3D0%3BchildLayout%3DstackLayout%3Bhorizontal%3D1%3Bhtml%3D1%3BstartSize%3D26%3BfillColor%3D%23b0e3e6%3BhorizontalStack%3D0%3BresizeParent%3D1%3BresizeParentMax%3D0%3BresizeLast%3D0%3Bcollapsible%3D1%3BmarginBottom%3D0%3BswimlaneFillColor%3D%23ffffff%3Balign%3Dcenter%3BfontSize%3D13%3BstrokeColor%3D%230e8088%3Brounded%3D0%3Bshadow%3D1%3Bcomic%3D0%3Bglass%3D0%3BgradientDirection%3Dsouth%3BgradientColor%3D%23ffffff%3B%22%20vertex%3D%221%22%20connectable%3D%220%22%20parent%3D%221%22%3E%3CmxGeometry%20x%3D%2260%22%20y%3D%2250%22%20width%3D%22310%22%20height%3D%22130%22%20as%3D%22geometry%22%2F%3E%3C%2FmxCell%3E%3C%2Fmysql.table%3E%3Cmysql.column%20entity.column.tableName%3D%22uses%22%20entity.column.name%3D%22userName%22%20entity.column.dataType%3D%22VARCHAR%22%20entity.column.PK%3D%22true%22%20label%3D%22%26lt%3Bimg%20title%3D%26quot%3BPrimary%20Key%26quot%3B%20src%3D%26quot%3Bimg%2Fdb%2Fkey1.png%26quot%3B%20width%3D%26quot%3B16%26quot%3B%20height%3D%26quot%3B16%26quot%3B%20align%3D%26quot%3Btop%26quot%3B%26gt%3B%26amp%3Bnbsp%3B%26lt%3Bfont%20size%3D%26quot%3B1%26quot%3B%20face%3D%26quot%3BTahoma%26quot%3B%26gt%3B%26lt%3Bspan%20style%3D%26quot%3Bfont-size%3A%2013px%26quot%3B%26gt%3B%26lt%3Bb%26gt%3Bid%20int%20primary%20key%26lt%3B%2Fb%26gt%3B%26lt%3B%2Fspan%26gt%3B%26lt%3B%2Ffont%26gt%3B%22%20entity.column.oldName%3D%22id%22%20entity.column.datalen%3D%2220%22%20entity.column.decimals%3D%22%22%20entity.column.autoIncreament%3D%22%22%20entity.column.unsigned%3D%22%22%20entity.column.bin%3D%22%22%20entity.column.ascii%3D%22%22%20entity.column.unicode%3D%22%22%20entity.column.unique%3D%22%22%20entity.column.isNotNull%3D%22NOT%20NULL%22%20entity.column.defaultValue%3D%22%22%20entity.column.comment%3D%22%22%20entity.column.enum%3D%22%22%20entity.column.set%3D%22%22%20entity.column.enumSetValue%3D%22%22%20id%3D%223%22%3E%3CmxCell%20style%3D%22text%3Bhtml%3D1%3BstrokeColor%3Dnone%3BfillColor%3Dnone%3BspacingLeft%3D4%3BspacingRight%3D4%3Boverflow%3Dhidden%3Brotatable%3D0%3BportConstraint%3Deastwest%3BfontSize%3D12%3BverticalAlign%3Dmiddle%3B%22%20vertex%3D%221%22%20parent%3D%222%22%3E%3CmxGeometry%20y%3D%2226%22%20width%3D%22310%22%20height%3D%2226%22%20as%3D%22geometry%22%2F%3E%3C%2FmxCell%3E%3C%2Fmysql.column%3E%3Cmysql.column%20entity.column.tableName%3D%22uses%22%20entity.column.name%3D%22chrName%22%20entity.column.datalen%3D%2220%22%20entity.column.dataType%3D%22VARCHAR%22%20label%3D%22%26lt%3Bimg%20title%3D%26quot%3BPrimary%20Key%26quot%3B%20src%3D%26quot%3Bimages%2Fspacer.gif%26quot%3B%20width%3D%26quot%3B16%26quot%3B%20height%3D%26quot%3B16%26quot%3B%20align%3D%26quot%3Btop%26quot%3B%26gt%3B%26amp%3Bnbsp%3B%26lt%3Bfont%20size%3D%26quot%3B1%26quot%3B%20face%3D%26quot%3BTahoma%26quot%3B%26gt%3B%26lt%3Bspan%20style%3D%26quot%3Bfont-size%3A%2013px%26quot%3B%26gt%3B%26lt%3Bb%26gt%3Bname%20varchar(10)%26lt%3B%2Fb%26gt%3B%26lt%3B%2Fspan%26gt%3B%26lt%3B%2Ffont%26gt%3B%22%20entity.column.oldName%3D%22name%22%20entity.column.decimals%3D%22%22%20entity.column.autoIncreament%3D%22%22%20entity.column.unsigned%3D%22%22%20entity.column.bin%3D%22%22%20entity.column.ascii%3D%22%22%20entity.column.unicode%3D%22%22%20entity.column.PK%3D%22false%22%20entity.column.unique%3D%22%22%20entity.column.isNotNull%3D%22%22%20entity.column.defaultValue%3D%22%22%20entity.column.comment%3D%22%22%20entity.column.enum%3D%22%22%20entity.column.set%3D%22%22%20entity.column.enumSetValue%3D%22%22%20id%3D%224%22%3E%3CmxCell%20style%3D%22text%3Bhtml%3D1%3BstrokeColor%3Dnone%3BfillColor%3Dnone%3BspacingLeft%3D4%3BspacingRight%3D4%3Boverflow%3Dhidden%3Brotatable%3D0%3BportConstraint%3Deastwest%3BfontSize%3D12%3BverticalAlign%3Dmiddle%3B%22%20vertex%3D%221%22%20parent%3D%222%22%3E%3CmxGeometry%20y%3D%2252%22%20width%3D%22310%22%20height%3D%2226%22%20as%3D%22geometry%22%2F%3E%3C%2FmxCell%3E%3C%2Fmysql.column%3E%3Cmysql.column%20entity.column.tableName%3D%22uses%22%20entity.column.name%3D%22password%22%20entity.column.datalen%3D%2250%22%20entity.column.dataType%3D%22VARCHAR%22%20label%3D%22%26lt%3Bimg%20title%3D%26quot%3BPrimary%20Key%26quot%3B%20src%3D%26quot%3Bimages%2Fspacer.gif%26quot%3B%20width%3D%26quot%3B16%26quot%3B%20height%3D%26quot%3B16%26quot%3B%20align%3D%26quot%3Btop%26quot%3B%26gt%3B%26amp%3Bnbsp%3B%26lt%3Bfont%20size%3D%26quot%3B1%26quot%3B%20face%3D%26quot%3BTahoma%26quot%3B%26gt%3B%26lt%3Bspan%20style%3D%26quot%3Bfont-size%3A%2013px%26quot%3B%26gt%3B%26lt%3Bb%26gt%3Bname%20varchar(10)%26lt%3B%2Fb%26gt%3B%26lt%3B%2Fspan%26gt%3B%26lt%3B%2Ffont%26gt%3B%22%20entity.column.oldName%3D%22chrName%22%20entity.column.decimals%3D%22%22%20entity.column.autoIncreament%3D%22%22%20entity.column.unsigned%3D%22%22%20entity.column.bin%3D%22%22%20entity.column.ascii%3D%22%22%20entity.column.unicode%3D%22%22%20entity.column.PK%3D%22false%22%20entity.column.unique%3D%22%22%20entity.column.isNotNull%3D%22%22%20entity.column.defaultValue%3D%22%22%20entity.column.comment%3D%22%E5%AF%86%E7%A0%81%22%20entity.column.enum%3D%22%22%20entity.column.set%3D%22%22%20entity.column.enumSetValue%3D%22%22%20id%3D%225%22%3E%3CmxCell%20style%3D%22text%3Bhtml%3D1%3BstrokeColor%3Dnone%3BfillColor%3Dnone%3BspacingLeft%3D4%3BspacingRight%3D4%3Boverflow%3Dhidden%3Brotatable%3D0%3BportConstraint%3Deastwest%3BfontSize%3D12%3BverticalAlign%3Dmiddle%3B%22%20vertex%3D%221%22%20parent%3D%222%22%3E%3CmxGeometry%20y%3D%2278%22%20width%3D%22310%22%20height%3D%2226%22%20as%3D%22geometry%22%2F%3E%3C%2FmxCell%3E%3C%2Fmysql.column%3E%3Cmysql.column%20entity.column.tableName%3D%22uses%22%20entity.column.name%3D%22role%22%20entity.column.datalen%3D%2220%22%20entity.column.dataType%3D%22VARCHAR%22%20label%3D%22%26lt%3Bimg%20title%3D%26quot%3BPrimary%20Key%26quot%3B%20src%3D%26quot%3Bimages%2Fspacer.gif%26quot%3B%20width%3D%26quot%3B16%26quot%3B%20height%3D%26quot%3B16%26quot%3B%20align%3D%26quot%3Btop%26quot%3B%26gt%3B%26amp%3Bnbsp%3B%26lt%3Bfont%20size%3D%26quot%3B1%26quot%3B%20face%3D%26quot%3BTahoma%26quot%3B%26gt%3B%26lt%3Bspan%20style%3D%26quot%3Bfont-size%3A%2013px%26quot%3B%26gt%3B%26lt%3Bb%26gt%3Bname%20varchar(10)%26lt%3B%2Fb%26gt%3B%26lt%3B%2Fspan%26gt%3B%26lt%3B%2Ffont%26gt%3B%22%20entity.column.oldName%3D%22chrName%22%20entity.column.decimals%3D%22%22%20entity.column.autoIncreament%3D%22%22%20entity.column.unsigned%3D%22%22%20entity.column.bin%3D%22%22%20entity.column.ascii%3D%22%22%20entity.column.unicode%3D%22%22%20entity.column.PK%3D%22false%22%20entity.column.unique%3D%22%22%20entity.column.isNotNull%3D%22%22%20entity.column.defaultValue%3D%22%22%20entity.column.comment%3D%22%E8%A7%92%E8%89%B2%22%20entity.column.enum%3D%22%22%20entity.column.set%3D%22%22%20entity.column.enumSetValue%3D%22%22%20id%3D%226%22%3E%3CmxCell%20style%3D%22text%3Bhtml%3D1%3BstrokeColor%3Dnone%3BfillColor%3Dnone%3BspacingLeft%3D4%3BspacingRight%3D4%3Boverflow%3Dhidden%3Brotatable%3D0%3BportConstraint%3Deastwest%3BfontSize%3D12%3BverticalAlign%3Dmiddle%3B%22%20vertex%3D%221%22%20parent%3D%222%22%3E%3CmxGeometry%20y%3D%22104%22%20width%3D%22310%22%20height%3D%2226%22%20as%3D%22geometry%22%2F%3E%3C%2FmxCell%3E%3C%2Fmysql.column%3E%3Cmysql.table%20entity.table.tableName%3D%22product%22%20label%3D%22product%22%20id%3D%227%22%3E%3CmxCell%20style%3D%22swimlane%3BfontStyle%3D0%3BchildLayout%3DstackLayout%3Bhorizontal%3D1%3Bhtml%3D1%3BstartSize%3D26%3BfillColor%3D%23b0e3e6%3BhorizontalStack%3D0%3BresizeParent%3D1%3BresizeParentMax%3D0%3BresizeLast%3D0%3Bcollapsible%3D1%3BmarginBottom%3D0%3BswimlaneFillColor%3D%23ffffff%3Balign%3Dcenter%3BfontSize%3D13%3BstrokeColor%3D%230e8088%3Brounded%3D0%3Bshadow%3D1%3Bcomic%3D0%3Bglass%3D0%3BgradientDirection%3Dsouth%3BgradientColor%3D%23ffffff%3B%22%20vertex%3D%221%22%20connectable%3D%220%22%20parent%3D%221%22%3E%3CmxGeometry%20x%3D%2260%22%20y%3D%22210%22%20width%3D%22310%22%20height%3D%22130%22%20as%3D%22geometry%22%2F%3E%3C%2FmxCell%3E%3C%2Fmysql.table%3E%3Cmysql.column%20entity.column.tableName%3D%22product%22%20entity.column.name%3D%22barcode%22%20entity.column.dataType%3D%22VARCHAR%22%20entity.column.PK%3D%22true%22%20label%3D%22%26lt%3Bimg%20title%3D%26quot%3BPrimary%20Key%26quot%3B%20src%3D%26quot%3Bimg%2Fdb%2Fkey1.png%26quot%3B%20width%3D%26quot%3B16%26quot%3B%20height%3D%26quot%3B16%26quot%3B%20align%3D%26quot%3Btop%26quot%3B%26gt%3B%26amp%3Bnbsp%3B%26lt%3Bfont%20size%3D%26quot%3B1%26quot%3B%20face%3D%26quot%3BTahoma%26quot%3B%26gt%3B%26lt%3Bspan%20style%3D%26quot%3Bfont-size%3A%2013px%26quot%3B%26gt%3B%26lt%3Bb%26gt%3Bid%20int%20primary%20key%26lt%3B%2Fb%26gt%3B%26lt%3B%2Fspan%26gt%3B%26lt%3B%2Ffont%26gt%3B%22%20entity.column.oldName%3D%22id%22%20entity.column.datalen%3D%2210%22%20entity.column.decimals%3D%22%22%20entity.column.autoIncreament%3D%22%22%20entity.column.unsigned%3D%22%22%20entity.column.bin%3D%22%22%20entity.column.ascii%3D%22%22%20entity.column.unicode%3D%22%22%20entity.column.unique%3D%22%22%20entity.column.isNotNull%3D%22NOT%20NULL%22%20entity.column.defaultValue%3D%22%22%20entity.column.comment%3D%22%22%20entity.column.enum%3D%22%22%20entity.column.set%3D%22%22%20entity.column.enumSetValue%3D%22%22%20id%3D%228%22%3E%3CmxCell%20style%3D%22text%3Bhtml%3D1%3BstrokeColor%3Dnone%3BfillColor%3Dnone%3BspacingLeft%3D4%3BspacingRight%3D4%3Boverflow%3Dhidden%3Brotatable%3D0%3BportConstraint%3Deastwest%3BfontSize%3D12%3BverticalAlign%3Dmiddle%3B%22%20vertex%3D%221%22%20parent%3D%227%22%3E%3CmxGeometry%20y%3D%2226%22%20width%3D%22310%22%20height%3D%2226%22%20as%3D%22geometry%22%2F%3E%3C%2FmxCell%3E%3C%2Fmysql.column%3E%3Cmysql.column%20entity.column.tableName%3D%22product%22%20entity.column.name%3D%22productName%22%20entity.column.datalen%3D%2250%22%20entity.column.dataType%3D%22VARCHAR%22%20label%3D%22%26lt%3Bimg%20title%3D%26quot%3BPrimary%20Key%26quot%3B%20src%3D%26quot%3Bimages%2Fspacer.gif%26quot%3B%20width%3D%26quot%3B16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ty.column.datalen%3D%22%22%20entity.column.dataType%3D%22DATETIME%22%20label%3D%22%26lt%3Bimg%20title%3D%26quot%3BPrimary%20Key%26quot%3B%20src%3D%26quot%3Bimages%2Fspacer.gif%26quot%3B%20width%3D%26quot%3B16%26quot%3B%20height%3D%26quot%3B16%26quot%3B%20align%3D%26quot%3Btop%26quot%3B%26gt%3B%26amp%3Bnbsp%3B%26lt%3Bfont%20size%3D%26quot%3B1%26quot%3B%20face%3D%26quot%3BTahoma%26quot%3B%26gt%3B%26lt%3Bspan%20style%3D%26quot%3Bfont-size%3A%2013px%26quot%3B%26gt%3B%26lt%3Bb%26gt%3Bname%20varchar(10)%26lt%3B%2Fb%26gt%3B%26lt%3B%2Fspan%26gt%3B%26lt%3B%2Ffont%26gt%3B%22%20entity.column.oldName%3D%22count%22%20entity.column.decimals%3D%22%22%20entity.column.autoIncreament%3D%22%22%20entity.column.unsigned%3D%22%22%20entity.column.bin%3D%22%22%20entity.column.ascii%3D%22%22%20entity.column.unicode%3D%22%22%20entity.column.PK%3D%22false%22%20entity.column.unique%3D%22%22%20entity.column.isNotNull%3D%22%22%20entity.column.defaultValue%3D%22%22%20entity.column.comment%3D%22%22%20entity.column.enum%3D%22%22%20entity.column.set%3D%22%22%20entity.column.enumSetValue%3D%22%22%20id%3D%2219%22%3E%3CmxCell%20style%3D%22text%3Bhtml%3D1%3BstrokeColor%3Dnone%3BfillColor%3Dnone%3BspacingLeft%3D4%3BspacingRight%3D4%3Boverflow%3Dhidden%3Brotatable%3D0%3BportConstraint%3Deastwest%3BfontSize%3D12%3BverticalAlign%3Dmiddle%3B%22%20vertex%3D%221%22%20parent%3D%2212%22%3E%3CmxGeometry%20y%3D%22182%22%20width%3D%22280%22%20height%3D%2226%22%20as%3D%22geometry%22%2F%3E%3C%2FmxCell%3E%3C%2Fmysql.column%3E%3CmxCell%20id%3D%2220%22%20value%3D%221..n%22%20style%3D%22edgeStyle%3DentityRelationEdgeStyle%3BfontSize%3D12%3Bhtml%3D1%3BendArrow%3DERoneToMany%3BstrokeWidth%3D2%3BstrokeColor%3D%236c8ebf%3BexitX%3D1%3BexitY%3D0.25%3BentryX%3D0%3BentryY%3D0.5%3B%22%20edge%3D%221%22%20source%3D%224%22%20target%3D%2214%22%20parent%3D%221%22%3E%3CmxGeometry%20relative%3D%221%22%20as%3D%22geometry%22%2F%3E%3C%2FmxCell%3E%3CmxCell%20id%3D%2221%22%20value%3D%221..n%22%20style%3D%22edgeStyle%3DentityRelationEdgeStyle%3BfontSize%3D12%3Bhtml%3D1%3BendArrow%3DERoneToMany%3BstrokeWidth%3D2%3BstrokeColor%3D%236c8ebf%3BexitX%3D1%3BexitY%3D0.5%3BentryX%3D0%3BentryY%3D0.5%3B%22%20edge%3D%221%22%20source%3D%228%22%20target%3D%2216%22%20parent%3D%221%22%3E%3CmxGeometry%20relative%3D%221%22%20as%3D%22geometry%22%2F%3E%3C%2FmxCell%3E%3C%2Froot%3E%3C%2FmxGraphModel%3E

图3-1 数据库ER图

## 2.3 UML类图（Class Diagram）

对于用户功能模块，共设计如下6个类。

* 主配置文件mybatis-config.xml：存放指定的资源文件，日志文件和接口映射文件等
* VO实体类User，Book,Borrowdetail：与数据库结构进行映射的类。主要由属性，setter, getter方法组成，VO类中的属性与表中的字段相对应，每一个VO类的对象都表示表中的每一条记录
* DAO接口IUserDAO,IBookDAO,IBorrowdetailDAO：主要定义操作的接口，定义一系列数据库的原子性操作，例如增删改查（通常称为CRUD）等。
* DAO接口映射文件UserMapper.xml,BookMapper.xml,BorrowdetailMapper.xml：将DAO接口的真实实现放入XML文件中，主要完成具体数据库操作，但不负责数据库的打开和关闭。
* 业务逻辑实现类UserService,BookService,BorrowdetailService：对于数据层的原子操作进行整合。还要接收数据库的连接对象，负责数据库的打开与关闭（不管是否出异常，数据库都要关闭）。
* Driver客户端界面类：提供使用界面给客户提示输入，接受客户输入的信息并调用相应服务类进行实现
* 存放全局变量的Global类：常量、文件及调用主配置文件打开数据库返回连接的方法
* 打印所有菜单的Menu类。

各类的结构及类之间的关系如图2-5所示：

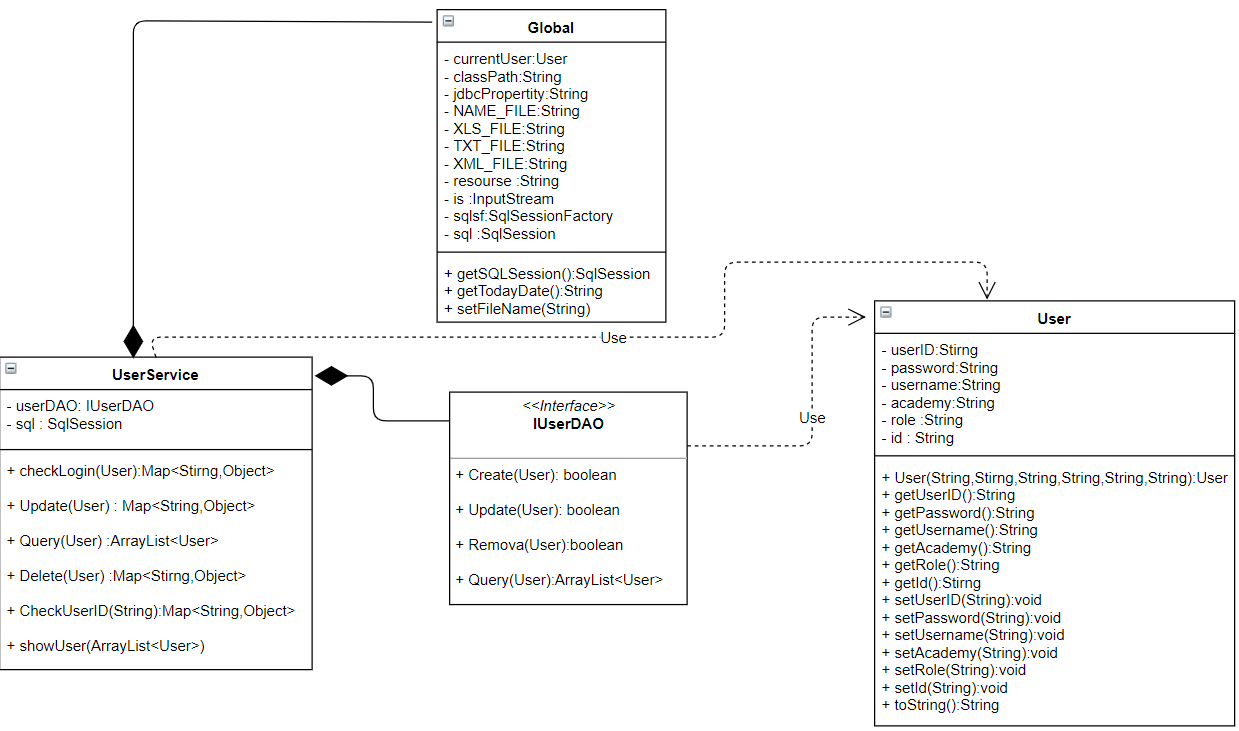


图2-5 用户功能类图

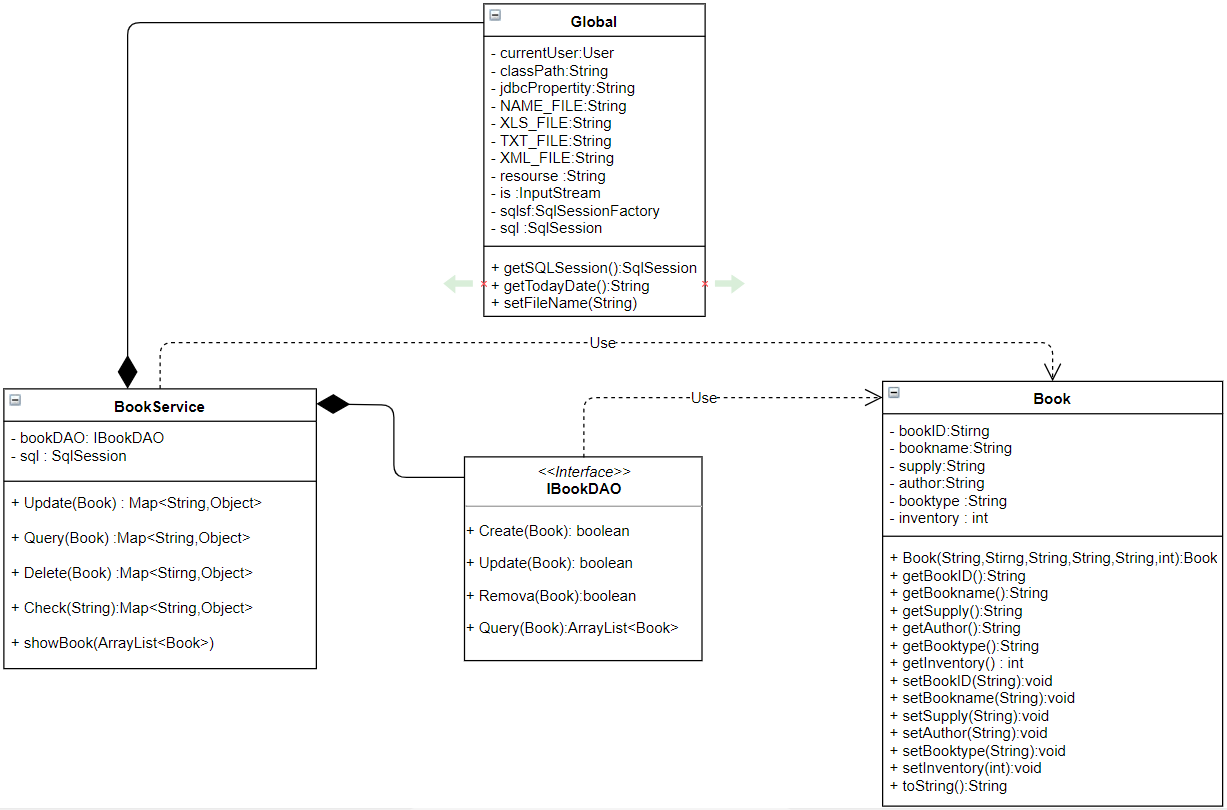


图2-6 图书功能类图

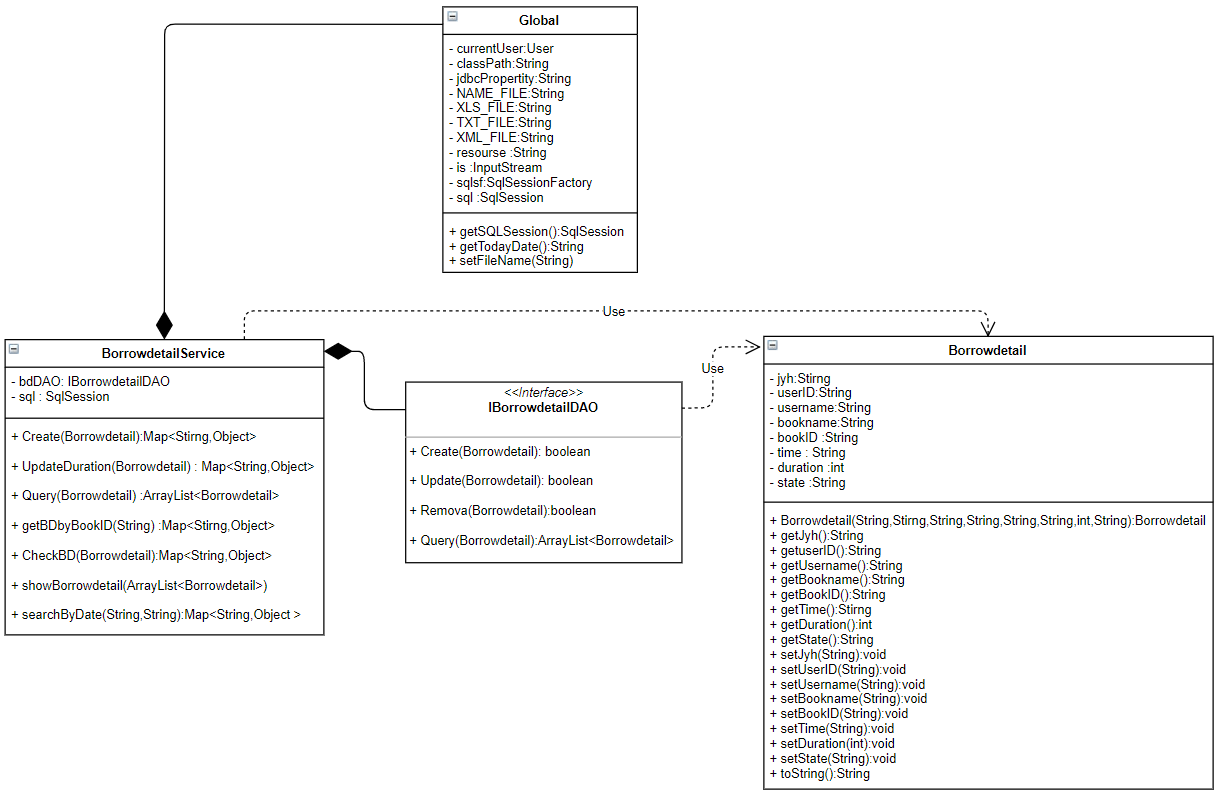
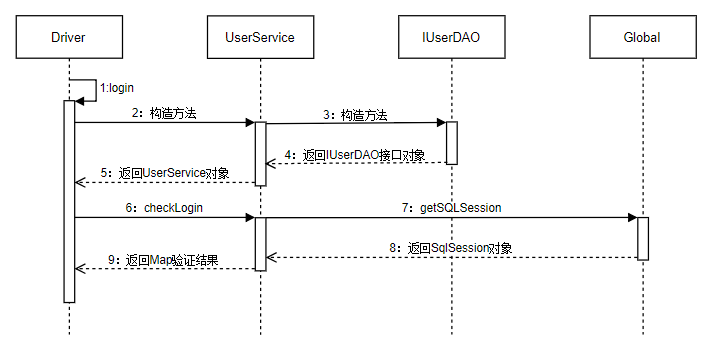


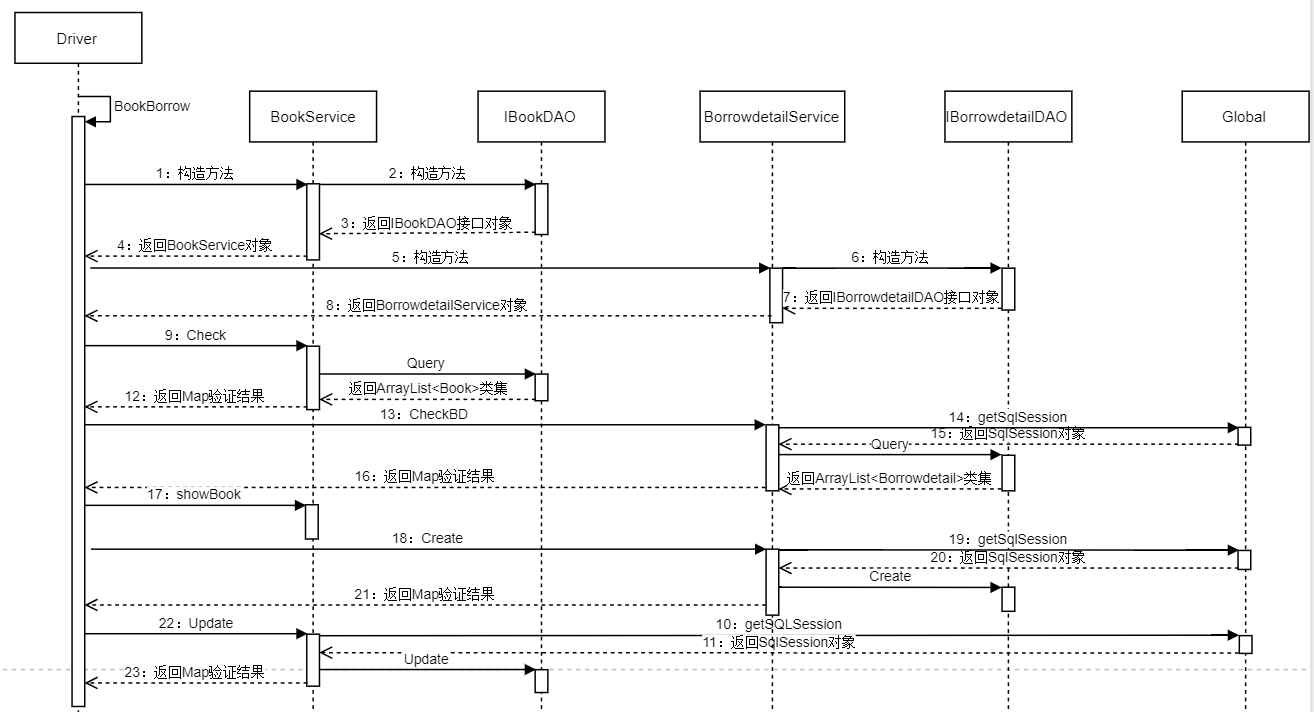
图2-7 借阅记录功能类图

## 2.4 UML时序图（Sequence Diagram）

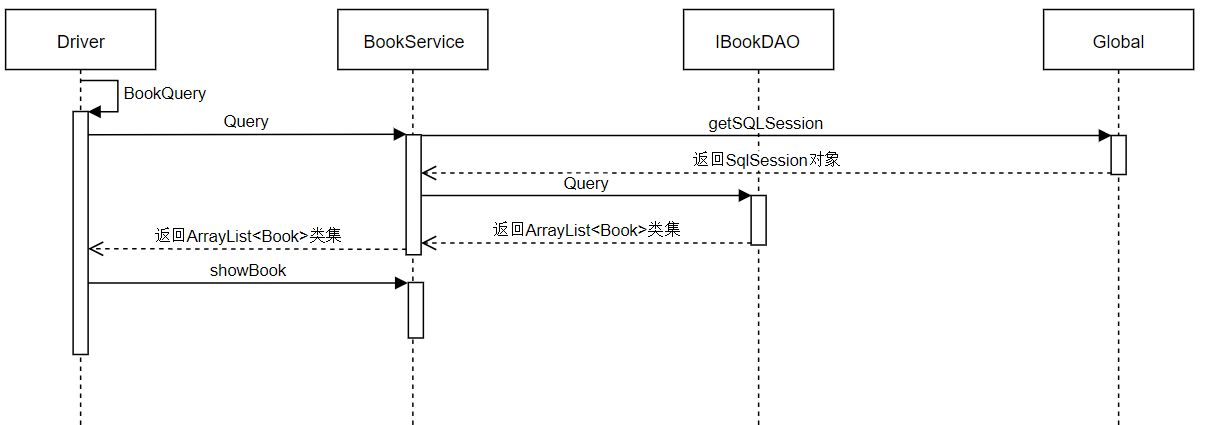
### 2.4.1 系统登录



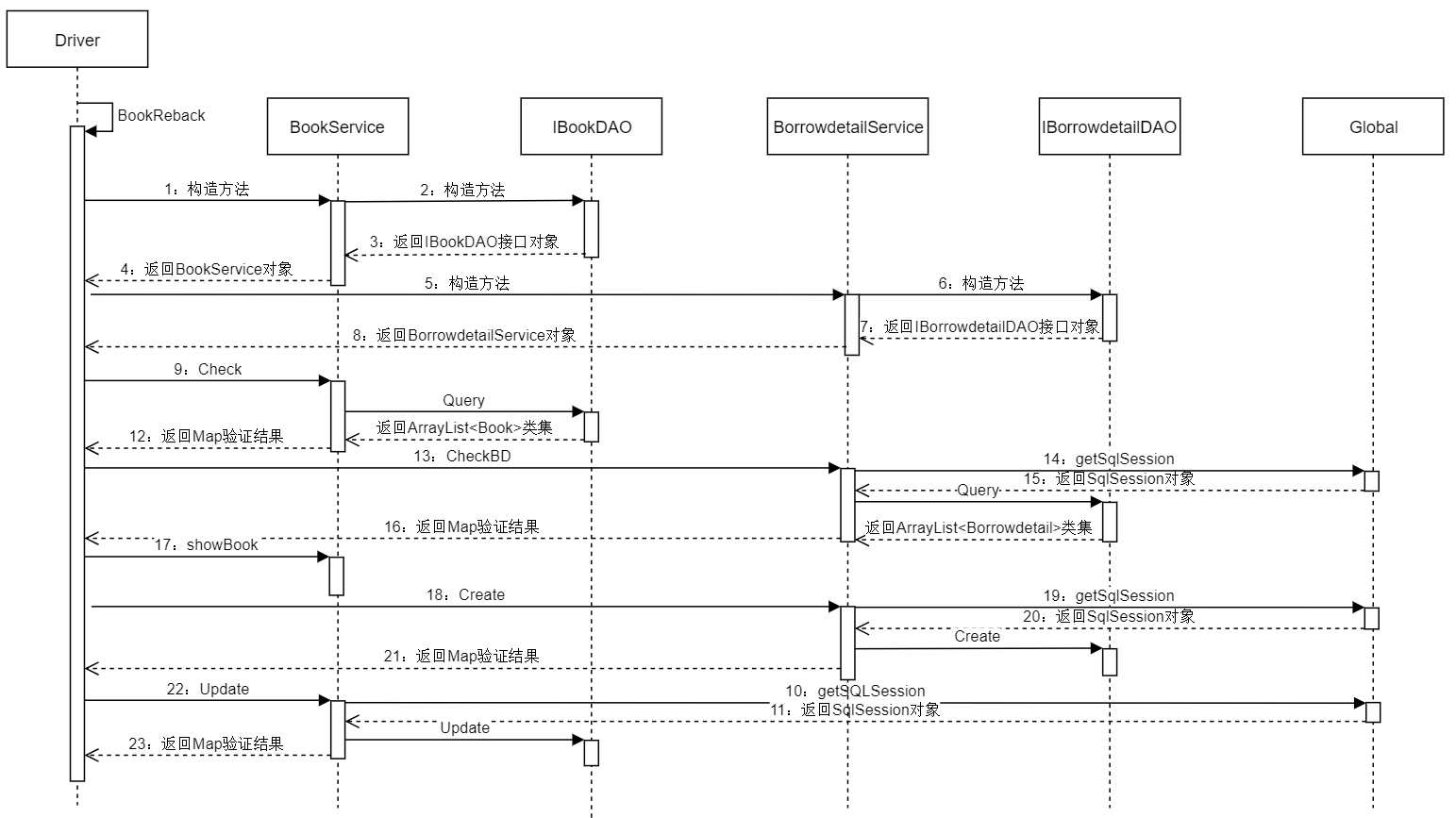
### 2.4.2 借阅图书



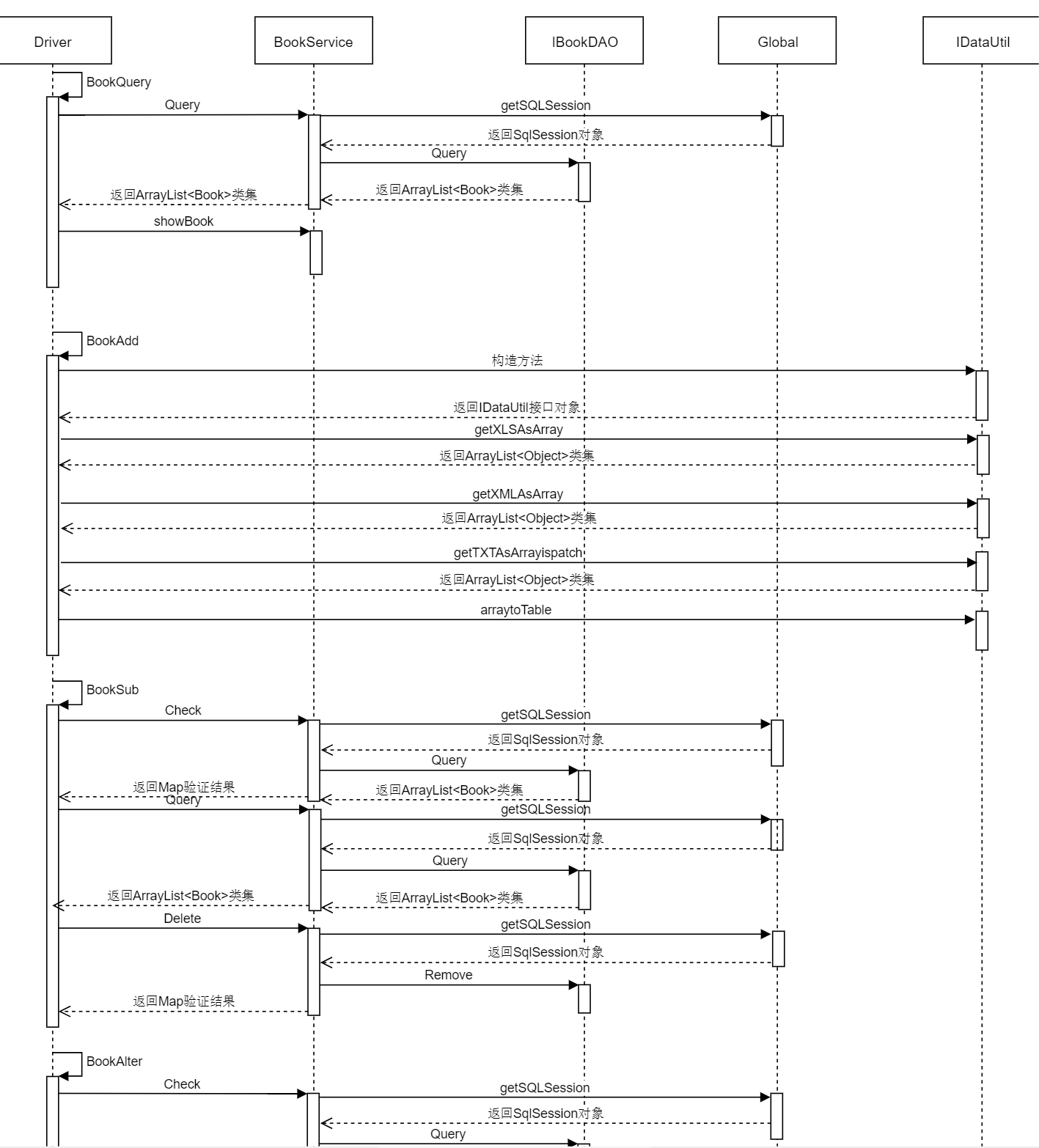
### 2.4.3 查询图书

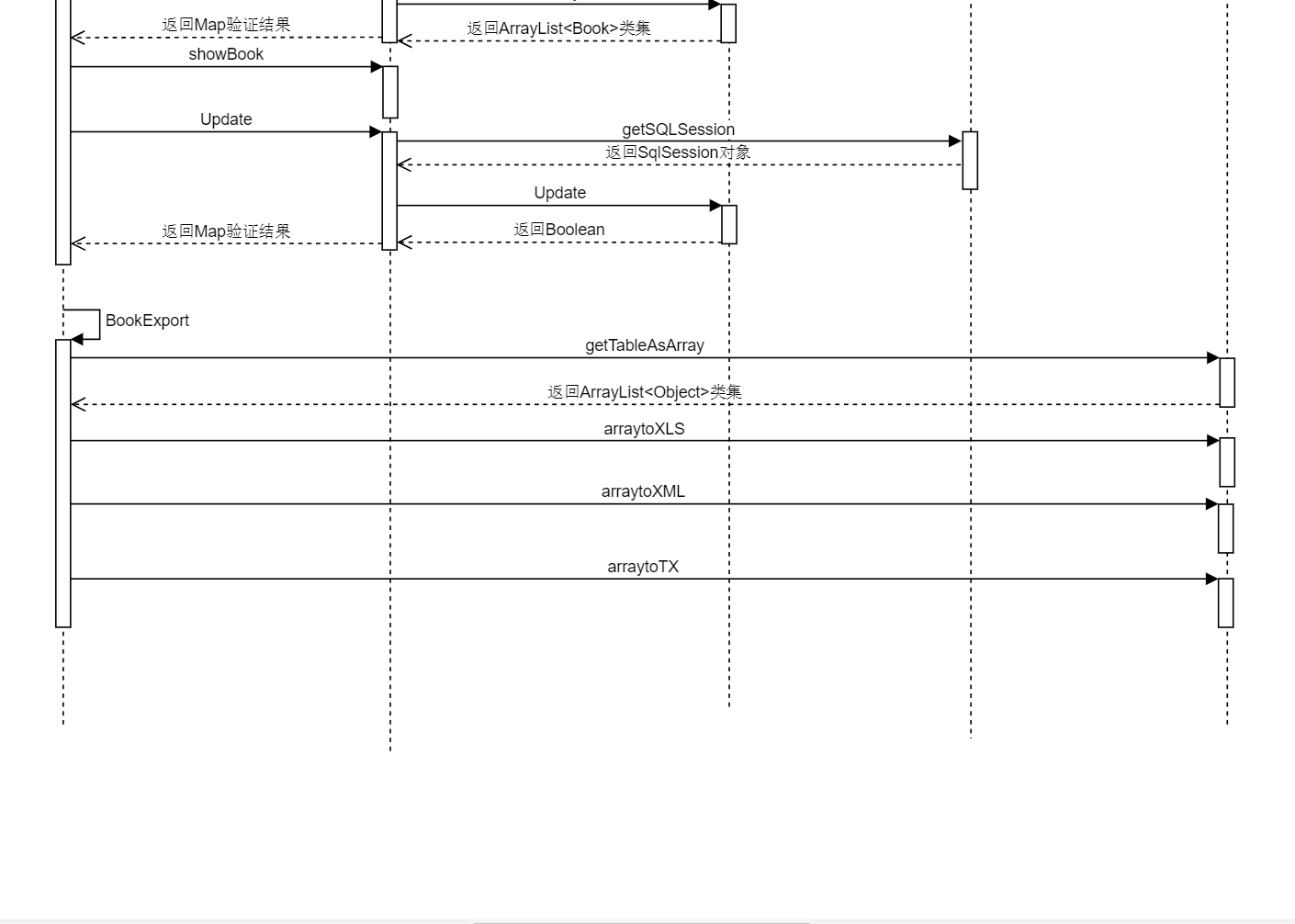


### **2.4.4 归还图书**

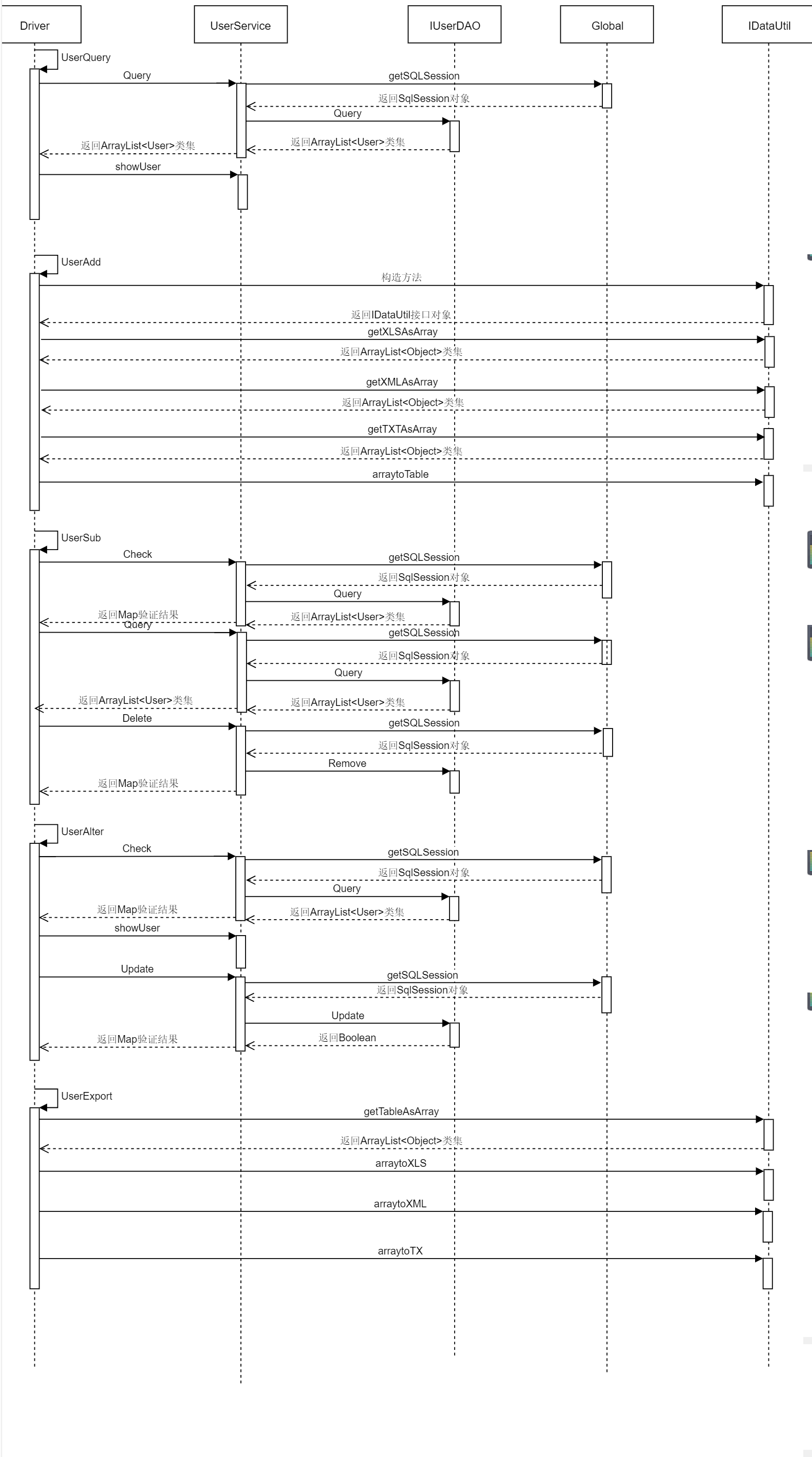


### **2.4.5 图书维护**



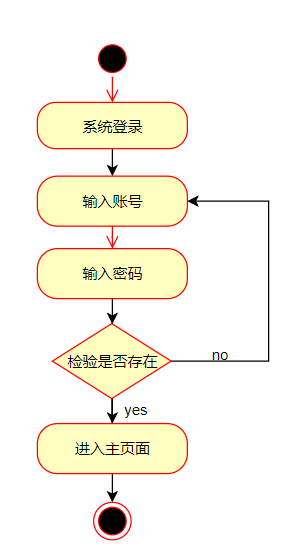


### **2.4.6 用户维护**

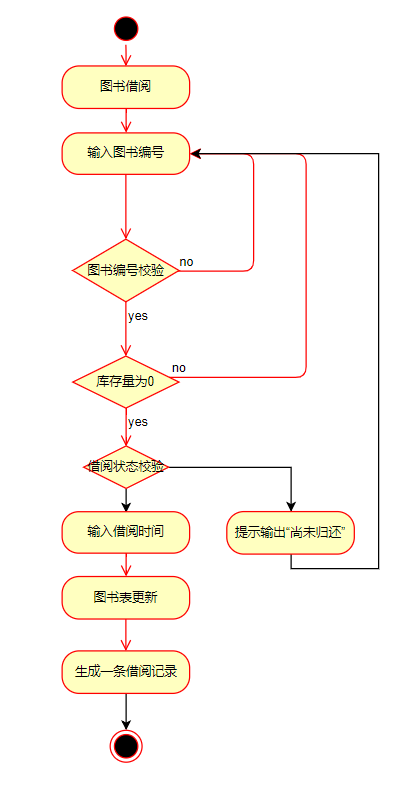


## 2.5 UML活动图（Activity Diagram）

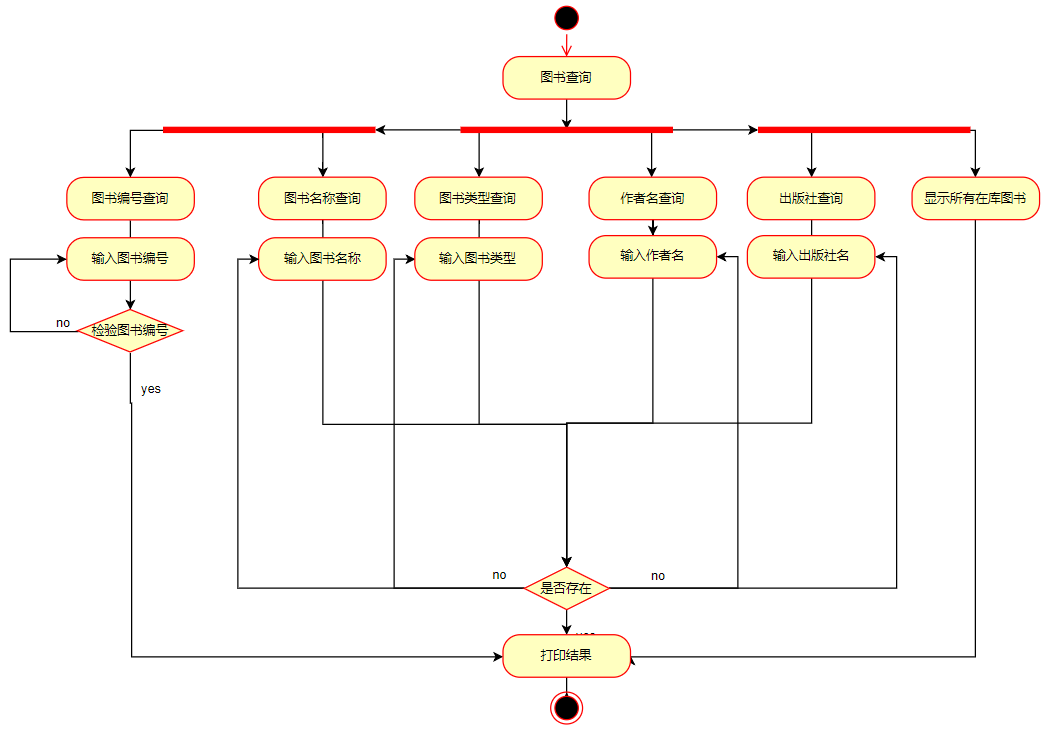
### 2.5.1 系统登录



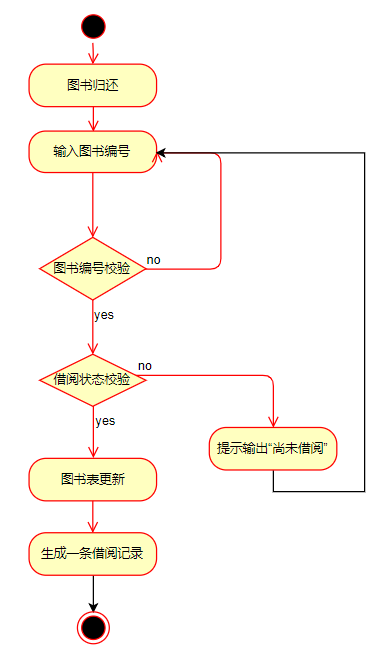
### 2.5.2 借阅图书



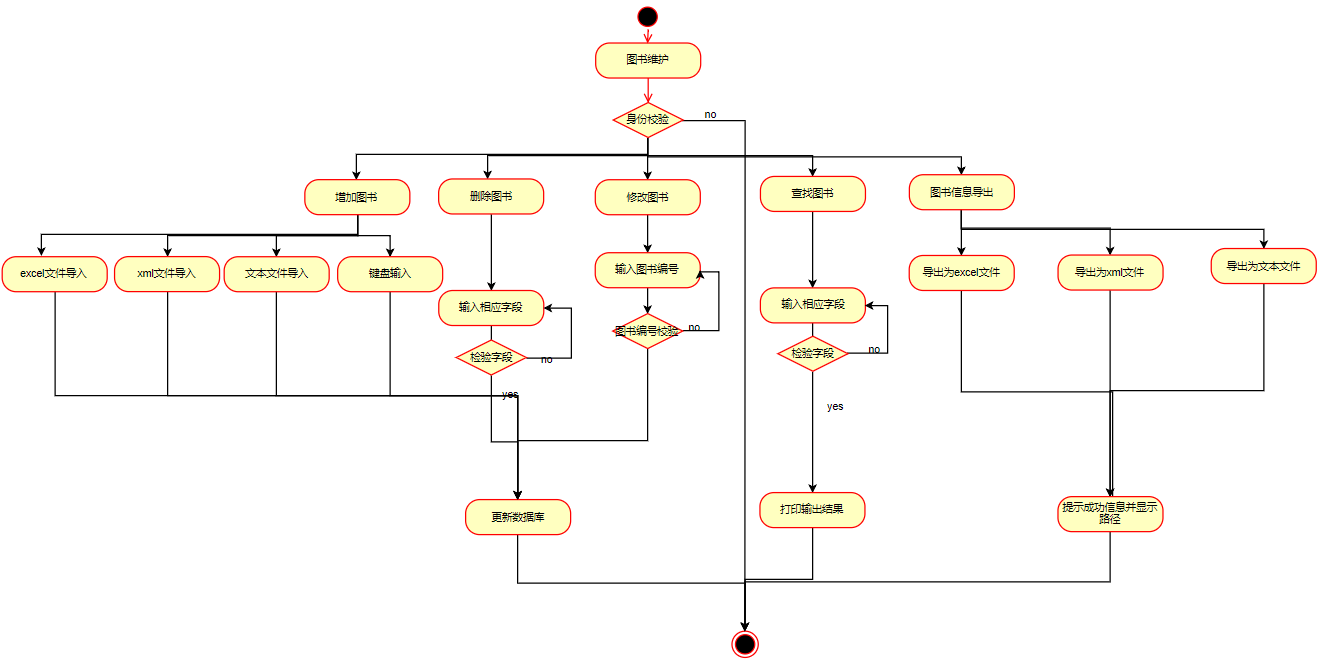
### 2.5.3 查询图书



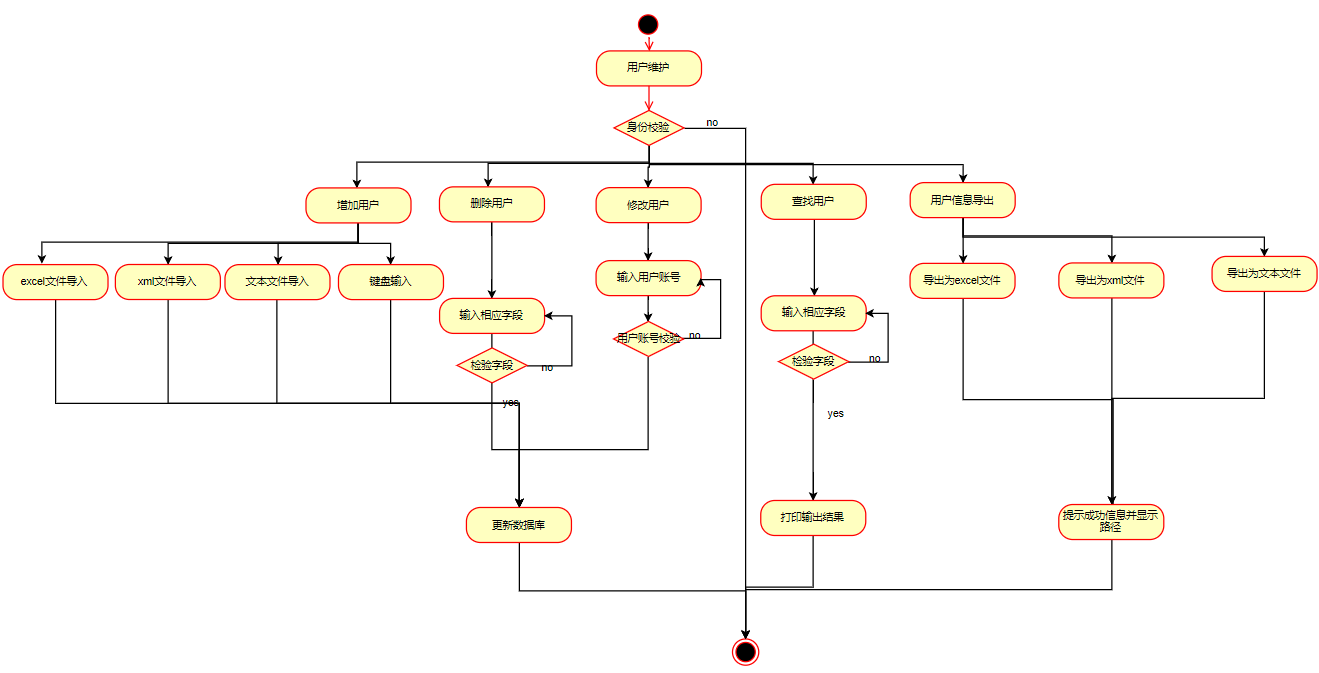
### **2.5.4 归还图书**



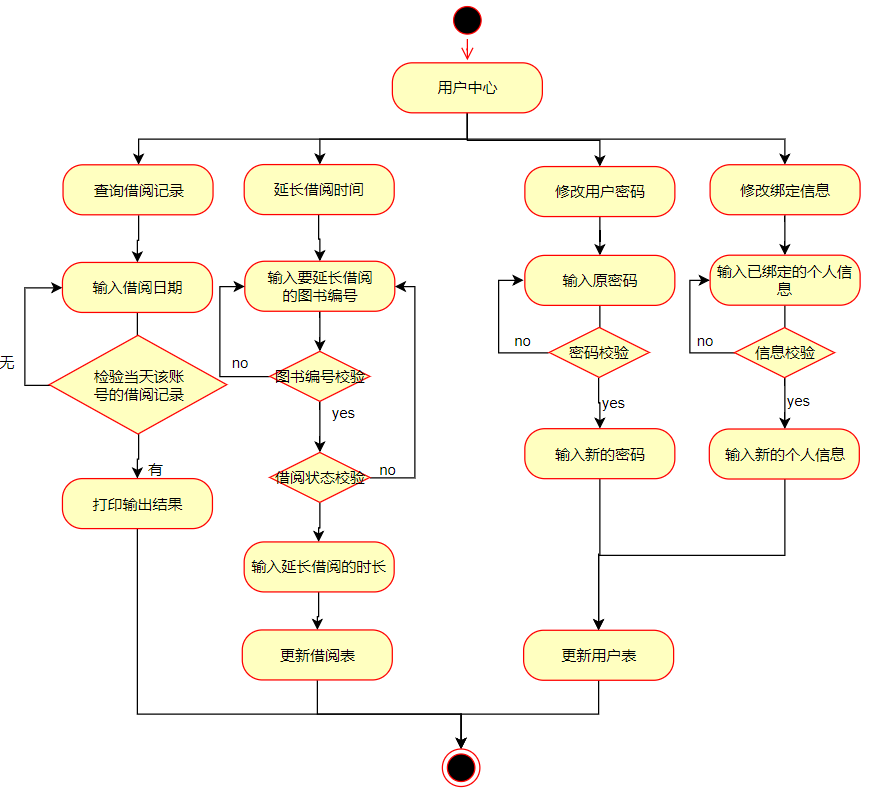
### **2.5.5 图书维护**



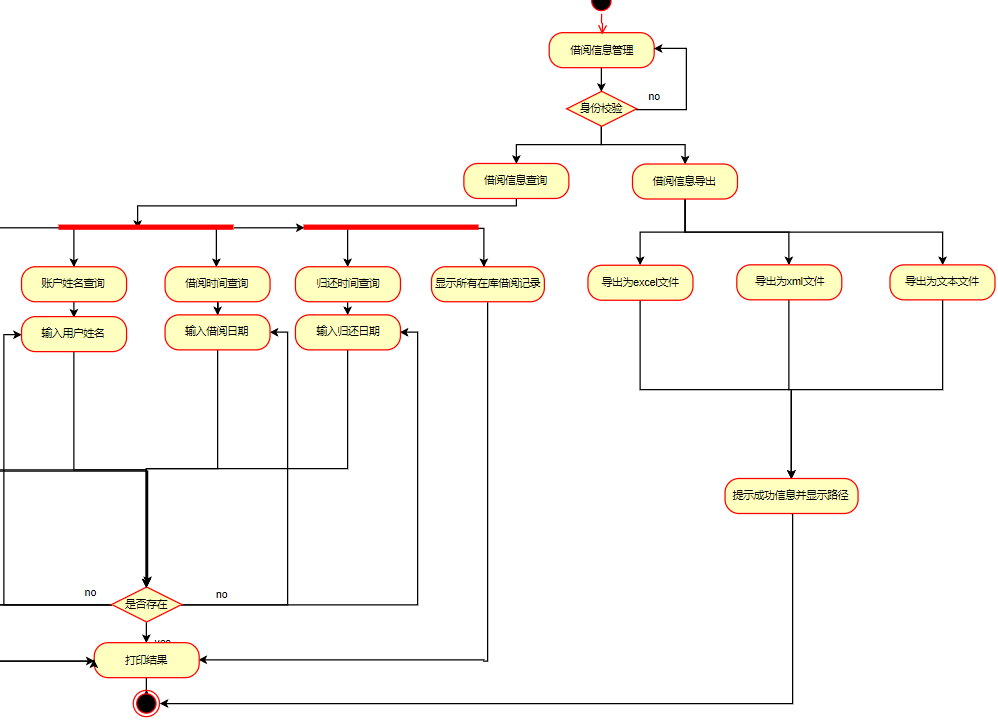
### **2.5.6 用户维护**



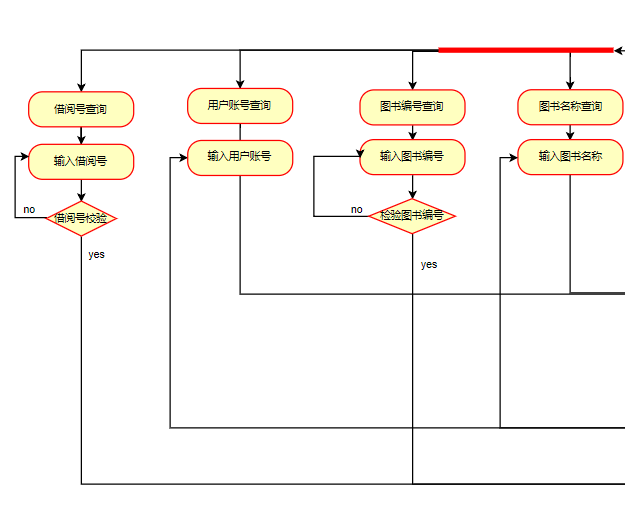
### **2.5.7 个人中心**



### **2.5.8 借阅信息管理**

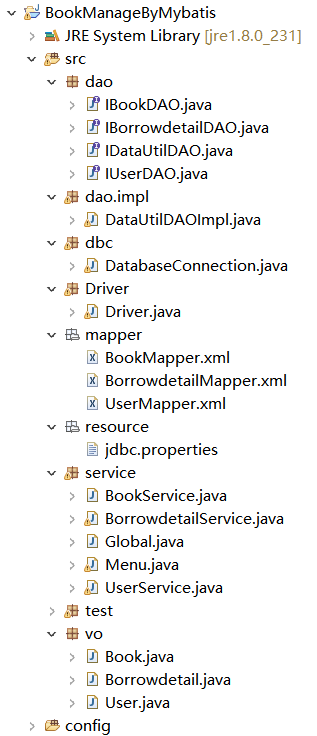


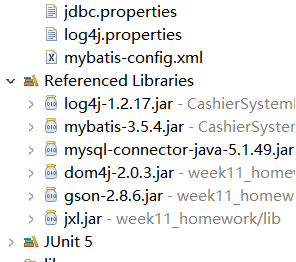
接上图的左部分



# **3 系统实现**

## 3.1 项目结构





## 3.2 配置文件

### 3.2.1 jdbc.properties文件

该配置文件主要是以文件形式保存数据库的驱动类名称，连接数据库的URL地址，访问数据库的用户名及对应的密码，程序运行时会读取该文件相关信息，避免硬编码，当相关信息发生变化时，只需修改配置文件而不用修改源代码，增加程序的可扩展型。

DBDRIVER=com.mysql.jdbc.Driver

DBURL=jdbc:mysql://localhost:3306/testdb?useUnicode=true&characterEncoding=UTF-8

DBUSER=root

PASSWORD=huawei@123

### 3.2.2 log4j.properties文件

描述该文件作用，并对里面的配置进行解释

log4j.rootLogger=DEBUG, stdout

log4j.appender.stdout=org.apache.log4j.ConsoleAppender

log4j.appender.stdout.layout=org.apache.log4j.PatternLayout

log4j.appender.stdout.layout.ConversionPattern=%5p [%t] - %m%n

### 3.2.3 mybatis-config.xml文件

描述该文件作用，并对里面的配置进行解释

<?xml version="1.0" encoding="UTF-8"?>

<!DOCTYPE configuration

PUBLIC "-//mybatis.org//DTD Config 3.0//EN"

"http://mybatis.org/dtd/mybatis-3-config.dtd">

<!-- 根标签 -->

<configuration>

<!-- 指定资源文件 -->

<properties resource="jdbc.properties"></properties>

<!-- 设置Mybatis的log实现为LOG4J -->

<settings>

<setting name="logImpl" value="LOG4J" />

</settings>

<!-- 环境，可以配置多个，default：指定采用哪个环境 -->

<environments default="Driver">

<!-- id：唯一标识 -->

<environment id="Driver">

<!-- 事务管理器，JDBC类型的事务管理器 -->

<transactionManager type="JDBC" />

<!-- 数据源，池类型的数据源 -->

<dataSource type="POOLED">

<property name="driver" value="${DBDriver}" />

<property name="url" value="${DBUrl}" />

<property name="username" value="${DBUser}" />

<property name="password" value="${DBPassword}" />

</dataSource>

</environment>

</environments>

<!-- 配置mapper映射文件 -->

<mappers>

<mapper resource="mapper/UserMapper.xml" />

<mapper resource="mapper/BookMapper.xml" />

<mapper resource="mapper/BorrowdetailMapper.xml" />

</mappers>

</configuration>

## 3.3 VO类

### 3.3.1User.java

描述该文件作用，并对里面的关键代码进行解释

**public** **class** User {

**private** String userID;

**private** String password;

**private** String username;

**private** String academy;

**private** String role;

**private** String id;

**public** User() {

**super**();

// **TODO** Auto-generated constructor stub

}

**public** User(String userID, String password, String username, String academy, String role, String id) {

**this**.userID = userID;

**this**.password = password;

**this**.username = username;

**this**.academy = academy;

**this**.role = role;

**this**.id = id;

}

**public** String getUserID() {

**return** userID;

}

**public** **void** setUserID(String userID) {

**this**.userID = userID;

}

**public** String getPassword() {

**return** password;

}

**public** **void** setPassword(String password) {

**this**.password = password;

}

**public** String getUsername() {

**return** username;

}

**public** **void** setUsername(String username) {

**this**.username = username;

}

**public** String getAcademy() {

**return** academy;

}

**public** **void** setAcademy(String academy) {

**this**.academy = academy;

}

**public** String getRole() {

**return** role;

}

**public** **void** setRole(String role) {

**this**.role = role;

}

**public** String getId() {

**return** id;

}

**public** **void** setId(String id) {

**this**.id = id;

}

**public** String toString() {

**return** userID + "\t" + password + "\t" + username + "\t" + academy + "\t" + role + "\t" + id;

}

}

### 3.3.2Book.java

**package** vo;

**public** **class** Book {

**private** String bookID;

**private** String bookname;

**private** String supply;

**private** String author;

**private** String booktype;

**private** **int** inventory;

**public** Book() {

**super**();

// **TODO** Auto-generated constructor stub

}

**public** Book(String bookID, String bookname, String supply, String author, String booktype, **int** inventory) {

**this**.bookID = bookID;

**this**.bookname = bookname;

**this**.supply = supply;

**this**.author = author;

**this**.booktype = booktype;

**this**.inventory = inventory;

}

**public** String getBookID() {

**return** bookID;

}

**public** **void** setBookID(String bookID) {

**this**.bookID = bookID;

}

**public** String getBookname() {

**return** bookname;

}

**public** **void** setBookname(String bookname) {

**this**.bookname = bookname;

}

**public** String getSupply() {

**return** supply;

}

**public** **void** setSupply(String supply) {

**this**.supply = supply;

}

**public** String getAuthor() {

**return** author;

}

**public** **void** setAuthor(String author) {

**this**.author = author;

}

**public** String getBooktype() {

**return** booktype;

}

**public** **void** setBooktype(String booktype) {

**this**.booktype = booktype;

}

**public** **int** getInventory() {

**return** inventory;

}

**public** **void** setInventory(**int** inventory) {

**this**.inventory = inventory;

}

**public** String toString() {

**return** bookID + "\t" + bookname + "\t" + supply + "\t" + author

+ "\t" + booktype + "\t" + inventory ;

}

}

### **3.3.3Borrowdetail.java**

**public** **class** Borrowdetail {

**private** String jyh;

**private** String username;

**private** String userID;

**private** String bookname;

**private** String bookID;

**private** String time;

**private** **int** duration;

**private** String state;

**public** Borrowdetail() {

**super**();

// **TODO** Auto-generated constructor stub

}

**public** Borrowdetail(String jyh, String username, String userID, String bookname, String bookID, String time,

**int** duration, String state) {

**this**.jyh = jyh;

**this**.username = username;

**this**.userID = userID;

**this**.bookname = bookname;

**this**.bookID = bookID;

**this**.time = time;

**this**.duration = duration;

**this**.state = state;

}

**public** String getJyh() {

**return** jyh;

}

**public** **void** setJyh(String jyh) {

**this**.jyh = jyh;

}

**public** String getUsername() {

**return** username;

}

**public** **void** setUsername(String username) {

**this**.username = username;

}

**public** String getUserID() {

**return** userID;

}

**public** **void** setUserID(String userID) {

**this**.userID = userID;

}

**public** String getBookname() {

**return** bookname;

}

**public** **void** setBookname(String bookname) {

**this**.bookname = bookname;

}

**public** String getBookID() {

**return** bookID;

}

**public** **void** setBookID(String bookID) {

**this**.bookID = bookID;

}

**public** String getTime() {

**return** time;

}

**public** **void** setTime(String time) {

**this**.time = time;

}

**public** **int** getDuration() {

**return** duration;

}

**public** **void** setDuration(**int** duration) {

**this**.duration = duration;

}

**public** String getState() {

**return** state;

}

**public** **void** setState(String state) {

**this**.state = state;

}

**public** String toString() {

**return** jyh + "\t" + username + "\t" + userID + "\t" + bookname

+ "\t" + bookID + "\t" + time + "\t" + duration + "\t" + state;

}

}

## 3.4 DAO接口类

### 3.4.1 IUserDAO.java

**public** **interface** IUserDAO {

//创建

**public** **boolean** Create(User user) **throws** Exception;

//修改

**public** **boolean** Update(User user) **throws** Exception;

//删除

**public** **boolean** Remove(User user) **throws** Exception;

//查找，所有条件均可查询，不再单为某一属性设立

**public** ArrayList<User> Query(User user) **throws** Exception;

}

### **3.4.2 IBookDAO.java**

**public** **interface** IBookDAO {

// 创建

**public** **boolean** Create(Book book) **throws** Exception;

// 修改

**public** **boolean** Update(Book book) **throws** Exception;

// 删除

**public** **boolean** Remove(Book book) **throws** Exception;

// 查找，所有条件均可查询，不再单为某一属性设立

**public** ArrayList<Book> Query(Book book) **throws** Exception;

}

### **3.4.3 IBorrowdetailDAO.java**

**public** **interface** IBorrowdetailDAO {

//创建

**public** **boolean** Create(Borrowdetail bd) **throws** Exception;

//修改

**public** **boolean** Update(Borrowdetail bd) **throws** Exception;

//删除

**public** **boolean** Remove(Borrowdetail bd) **throws** Exception;

//查找，所有条件均可查询，不再单为某一属性设立

**public** ArrayList<Borrowdetail> Query(Borrowdetail bd) **throws** Exception;

// 得到当天的最大借阅号

**public** String GetMaxJyh(String day) **throws** Exception;

}

### **3.4.4 IDataUtilDAO.java**

**public** **interface** IDataUtilDAO {

// 将给定的任意（未设置属性）的XML文件中的数据转换为集合

**public** ArrayList<Object> getXMLAsArray(String path, String className) **throws** Exception;

// 将给定的任意txt文件中的数据转换为集合

**public** ArrayList<Object> getTXTAsArray(String path, String className) **throws** Exception;

// 将给定的任意xls文件中的数据转换为集合

**public** ArrayList<Object> getXLSAsArray(String path, String className) **throws** Exception;

// 将给定的任意数据库表中的数据转换为集合

**public** ArrayList<Object> getTableAsArray(String tableName, String className) **throws** Exception;

// 将任意的集合写入到数据库指定的表中

**public** **void** arraytoTable(ArrayList<Object> list, String className, String tableName) **throws** Exception;

// 将任意的集合写入到指定的XML文件中

**public** **void** arraytoXML(ArrayList<Object> list, String className, String path) **throws** Exception;

// 将任意的集合写入到指定的txt文件中

**public** **void** arraytoTXT(ArrayList<Object> list, String className, String path) **throws** Exception;

// 将任意的集合写入到指定的xls文件中

**public** **void** arraytoXLS(ArrayList<Object> list, String className, String path) **throws** Exception;

}

## 3.5 接口映射文件

### 3.5.1 UserMapper.xml

描述该文件作用，并对里面的关键信息进行解释

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<!DOCTYPE mapper

PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"

"http://mybatis.org/dtd/mybatis-3-mapper.dtd">

<mapper namespace=*"dao.IUserDAO"*>

<insert id=*"Create"* parameterType=*"vo.User"* >

insert into user(userID,password,username,academy,role,id)

values(#{userID},#{password},#{username},#{academy},#{role},#{id})

</insert>

<update id=*"Update"* parameterType=*"vo.User"*>

update user

<set>

<if test=*"username !=null and username!='' "*>username=#{username},</if>

<if test=*"password != null and password!='' "*>password=#{password},</if>

<if test=*"academy != null and academy!='' "*>academy=#{academy},</if>

<if test=*"role != null and role!='' "*>role=#{role},</if>

<if test=*"id != null and id!='' "*>id=#{id}</if>

</set>

<where >userID = #{userID}</where>

</update>

<delete id=*"Remove"* parameterType=*"vo.User"*>

delete from user

<where>

<if test=*"userID!=null and userID!='' "*>and userID=#{userID}</if>

<if test=*"username !=null and username!='' "*>and username=#{username}</if>

<if test=*"password!=null and password!='' "*>and password=#{password}</if>

<if test=*"academy != null and academy!='' "*>academy=#{academy}</if>

<if test=*"role!=null and role!='' "*>and role=#{role}</if>

<if test=*"id != null and id!='' "*>and id=#{id}</if>

</where>

</delete>

<select id=*"Query"* parameterType=*"vo.User"* resultType=*"vo.User"*>

select \* from user

<where>

<if test=*"userID!=null and userID!='' "*>and userID=#{userID}</if>

<if test=*"username !=null and username!='' "*>and username=#{username}</if>

<if test=*"password!=null and password!='' "*>and password=#{password}</if>

<if test=*"academy != null and academy!='' "*>academy=#{academy}</if>

<if test=*"role!=null and role!='' "*>and role=#{role}</if>

<if test=*"id != null and id!='' "*>and id=#{id}</if>

</where>

</select>

</mapper>

### **3.5.2 BookMapper.xml**

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<!DOCTYPE mapper

PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"

"http://mybatis.org/dtd/mybatis-3-mapper.dtd">

<mapper namespace=*"dao.IBookDAO"*>

<insert id=*"Create"* parameterType=*"vo.Book"* >

insert into book(bookID,bookname,supply,author,booktype,inventory)

values(#{bookID},#{bookname},#{supply},#{author},#{booktype},#{inventory})

</insert>

<update id=*"Update"* parameterType=*"vo.Book"*>

update book

<set>

<if test=*"bookname !=null and bookname!='' "*>bookname=#{bookname},</if>

<if test=*"supply != null and supply!='' "*>supply=#{supply},</if>

<if test=*"author != null and author!='' "*>author=#{author},</if>

<if test=*"booktype != null and booktype!='' "*>booktype=#{booktype},</if>

<if test=*"inventory >=0 "*>inventory=#{inventory}</if>

</set>

<where >bookID = #{bookID}</where>

</update>

<delete id=*"Remove"* parameterType=*"vo.Book"*>

delete from book

<where>

<if test=*"bookID!=null and bookID!='' "*>and bookID=#{bookID}</if>

<if test=*"bookname !=null and bookname!='' "*>and bookname=#{bookname}</if>

<if test=*"supply != null and supply!='' "*>and supply=#{supply}</if>

<if test=*"author != null and author!='' "*>and author=#{author}</if>

<if test=*"booktype != null and booktype!='' "*>and booktype=#{booktype}</if>

<if test=*"inventory >=0 "*>and inventory=#{inventory}</if>

</where>

</delete>

<select id=*"Query"* parameterType=*"vo.Book"* resultType=*"vo.Book"*>

select \* from book

<where>

<if test=*"bookID!=null and bookID!='' "*>and bookID=#{bookID}</if>

<if test=*"bookname !=null and bookname!='' "*>and bookname like '%${bookname}%'</if>

<if test=*"supply != null and supply!='' "*>and supply like '%${supply}%'</if>

<if test=*"author != null and author!='' "*>and author like '%${author}%'</if>

<if test=*"booktype != null and booktype!='' "*>and booktype like '%${booktype}%'</if>

<if test=*"inventory >=0 and inventory !=null and inventory!='' "*>and inventory=#{inventory}</if>

</where>

</select>

</mapper>

### **3.5.3 BorrowdetailMapper.xml**

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<!DOCTYPE mapper

PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"

"http://mybatis.org/dtd/mybatis-3-mapper.dtd">

<mapper namespace=*"dao.IBorrowdetailDAO"*>

<insert id=*"Create"* parameterType=*"vo.Borrowdetail"* >

insert into borrowdetail(jyh,username,userID,bookname,bookID,time,duration,state)

values(#{jyh},#{username},#{userID},#{bookname},#{bookID},#{time},#{duration},#{state})

</insert>

<update id=*"Update"* parameterType=*"vo.Borrowdetail"*>

update borrowdetail

<set>

<if test=*"username !=null and username!='' "*>username=#{username},</if>

<if test=*"userID != null and userID!='' "*>userID=#{userID},</if>

<if test=*"bookname !=null and bookname!='' "*>bookname=#{bookname},</if>

<if test=*"bookID != null and bookID!='' "*>bookID=#{bookID},</if>

<if test=*"time != null and time!='' "*>time=#{time},</if>

<if test=*"duration >0 "*>duration=#{duration},</if>

<if test=*"state != null and state!='' "*>state=#{state}</if>

</set>

<where >jyh = #{jyh}</where>

</update>

<delete id=*"Remove"* parameterType=*"vo.Borrowdetail"*>

delete from borrowdetail

<where>

<if test=*"jyh !=null and jyh!='' "*>and jyh=#{jyh}</if>

<if test=*"username !=null and username!='' "*>and username=#{username}</if>

<if test=*"userID != null and userID!='' "*>and userID=#{userID}</if>

<if test=*"bookname !=null and bookname!='' "*>and bookname=#{bookname}</if>

<if test=*"bookID != null and bookID!='' "*>and bookID=#{bookID}</if>

<if test=*"time != null and time!='' "*>and time=#{time}</if>

<if test=*"duration >0 "*>and duration=#{duration}</if>

<if test=*"state != null and state!='' "*>and state=#{state}</if>

</where>

</delete>

<select id=*"Query"* parameterType=*"vo.Borrowdetail"* resultType=*"vo.Borrowdetail"*>

select \* from borrowdetail

<where>

<if test=*"jyh !=null and jyh!='' "*>and jyh=#{jyh}</if>

<if test=*"username !=null and username!='' "*>and username=#{username}</if>

<if test=*"userID != null and userID!='' "*>and userID=#{userID}</if>

<if test=*"bookname !=null and bookname!='' "*>and bookname=#{bookname}</if>

<if test=*"bookID != null and bookID!='' "*>and bookID=#{bookID}</if>

<if test=*"time != null and time!='' "*>and left(time,10)=#{time}</if>

<if test=*"duration >0 "*>and duration=#{duration}</if>

<if test=*"state != null and state!='' "*>and state=#{state}</if>

</where>

</select>

<select id=*"GetMaxJyh"* parameterType=*"String"* resultType=*"String"*>

select max(right(jyh,4)) as

maxJyh

from borrowdetail

where left(jyh,8)=#{day}

</select>

</mapper>

## 3.6 工具包Util

### 3.6.1 MybatisUtils.java

描述该文件作用，并对里面的关键代码进行解释

/\*\*

\* 为服务层提供sqlSession对象

\*/

**public** **class** MybatisUtils {

**private** **static** SqlSessionFactory *sqlSessionFactory*;

**public** MybatisUtils() {

**super**();

}

/\*

\* SqlSessionFactory一旦被创建,应该在应用执行期间都存在.在应用运行期间不要重复创建多次

\*/

**static** {

String resourse = "mybatis-config.xml";

**try** {

InputStream inputStream = Resources.*getResourceAsStream*(resourse);

*sqlSessionFactory* = **new** SqlSessionFactoryBuilder().build(inputStream);

} **catch** (IOException e) {

e.printStackTrace();

}

}

**public** **static** SqlSession getSqlSession() {

// 如果不设置参数或者参数为false就是手动提交事务，参数设置为true就是自动提交事务

SqlSession sqlSession = *sqlSessionFactory*.openSession();

**return** sqlSession;

}

}

## 3.7 服务层

### 3.7.1 UserService.java

**public** **class** UserService {

**private** IUserDAO userDAO;

**public** User userforQuery = **new** User();

**public** Map<String, Object> checkLogin(User user) **throws** Exception {

Map<String, Object> mapResult = **new** HashMap<String, Object>();

SqlSession sql = Global.*getSQLSession*();

**this**.userDAO = sql.getMapper(IUserDAO.**class**);

**try** {

userforQuery.setUserID(user.getUserID());

ArrayList<User> foundUserlist = **this**.userDAO.Query(userforQuery);

**if** (foundUserlist.isEmpty()) {

mapResult.put("code", 1);

mapResult.put("msg", "账号不存在!");

} **else** {

User foundUser = foundUserlist.get(0);

**if** (!foundUser.getPassword().equals(user.getPassword())) {

mapResult.put("code", 1);

mapResult.put("msg", "密码不正确!");

} **else** {

mapResult.put("code", 0);

mapResult.put("msg", "登录成功!");

Global.*currentUser* = foundUser;

}

}

} **catch** (Exception e) {

mapResult.put("code", 2);

mapResult.put("msg", e.getMessage());

} **finally** {

sql.close();

}

**return** mapResult;

}

**public** Map<String, Object> Update(User user) **throws** Exception {

// **TODO** Auto-generated method stub

Map<String, Object> map = **new** HashMap<String, Object>();

SqlSession sql = Global.*getSQLSession*();

**try** {

**this**.userDAO = sql.getMapper(IUserDAO.**class**);

**if** (**this**.userDAO.Update(user)) {

map.put("code", 0);

map.put("msg", "修改成功!");

sql.commit();

} **else** {

map.put("code", 1);

map.put("msg", "修改失败!");

}

} **catch** (Exception e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

}

sql.close();

**return** map;

}

**public** ArrayList<User> Query(User user) **throws** Exception {

// **TODO** Auto-generated method stub

SqlSession sql = Global.*getSQLSession*();

**this**.userDAO = sql.getMapper(IUserDAO.**class**);

ArrayList<User> userlist = **this**.userDAO.Query(user);

**if**(userlist.isEmpty()) {

System.***out***.println("找不到满足条件的用户!");

sql.close();

**return** userlist;

}

sql.close();

**return** userlist;

}

**public** Map<String, Object> Delete(User user) **throws** Exception {

// **TODO** Auto-generated method stub

Map<String, Object> map = **new** HashMap<String, Object>();

SqlSession sql = Global.*getSQLSession*();

**this**.userDAO = sql.getMapper(IUserDAO.**class**);

**if**(**this**.userDAO.Remove(user)) {

sql.commit();

map.put("code", 0);

map.put("msg", "数据删除成功!");

} **else** {

map.put("code", 2);

map.put("msg", "删除发生了异常，请稍后重试!");

}

sql.close();

**return** map;

}

**public** Map<String, Object> CheckUserID(String userID) **throws** Exception {

// **TODO** Auto-generated method stub

Map<String, Object> map = **new** HashMap<String, Object>();

User user = **new** User();

SqlSession sql = Global.*getSQLSession*();

**this**.userDAO = sql.getMapper(IUserDAO.**class**);

user.setUserID(userID);

ArrayList<User> userlist = **new** ArrayList<User>();

userlist = **this**.userDAO.Query(user);

**if**(userlist.isEmpty()) {

map.put("code", 2);

map.put("msg", "输入的用户账号不存在，请确认后重新输入(输入返回回到主菜单)：");

}**else** {

map.put("code", 0);

map.put("msg", userlist);

}

sql.close();

**return** map;

}

**public** **void** showBook(ArrayList<User> userlist) {

// **TODO** Auto-generated method stub

System.***out***.println("用户账号\t用户密码\t用户姓名\t\t所属学院\t角色\t学号/工号");

**for** (User user : userlist) {

System.***out***.println(user.toString());

}

}

}

### **3.7.2 BookService.java**

**public** **class** BookService {

**private** IBookDAO bookDAO;

**public** Map<String, Object> Update(Book book) **throws** Exception {

// **TODO** Auto-generated method stub

Map<String, Object> map = **new** HashMap<String, Object>();

SqlSession sql = Global.*getSQLSession*();

**this**.bookDAO = sql.getMapper(IBookDAO.**class**);

**if**(**this**.bookDAO.Update(book)) {

sql.commit();

map.put("code", 0);

map.put("msg", "数据库更新成功!");

}**else** {

map.put("code", 2);

map.put("msg", "更新发生了异常，请稍后重试!");

}

sql.close();

**return** map;

}

**public** Map<String, Object> Check(String bookID) **throws** Exception {

// **TODO** Auto-generated method stub

Map<String, Object> map = **new** HashMap<String, Object>();

Book book = **new** Book();

SqlSession sql = Global.*getSQLSession*();

**this**.bookDAO = sql.getMapper(IBookDAO.**class**);

Pattern p = Pattern.*compile*("^\\d{6}$");

Matcher m = p.matcher(bookID);

**if** (!m.find()) {

map.put("code", 1);

map.put("msg", "图书编号输入格式不正确，请重新输入(输入返回回到主菜单)：");

}**else** {

book.setBookID(bookID);

ArrayList<Book> booklist = **new** ArrayList<Book>();

booklist = **this**.bookDAO.Query(book);

**if**(booklist.isEmpty()) {

map.put("code", 2);

map.put("msg", "输入的图书编号不存在，请确认后重新输入(输入返回回到主菜单)：");

}**else** {

map.put("code", 0);

map.put("msg", booklist);

}

}

sql.close();

**return** map;

}

**public** **void** showBook(ArrayList<Book> booklist) {

// **TODO** Auto-generated method stub

System.***out***.println("图书编号\t图书名称\t出版社\t\t作者\t图书类型\t库存");

**for** (Book book : booklist) {

System.***out***.println(book.toString());

}

}

**public** ArrayList<Book> Query(Book book) **throws** Exception {

// **TODO** Auto-generated method stub

SqlSession sql = Global.*getSQLSession*();

**this**.bookDAO = sql.getMapper(IBookDAO.**class**);

ArrayList<Book> booklist = **this**.bookDAO.Query(book);

**if**(booklist.isEmpty()) {

System.***out***.println("找不到满足条件的图书!");

sql.close();

**return** booklist;

}

sql.close();

**return** booklist;

}

**public** Map<String, Object> Delete(Book book) **throws** Exception {

// **TODO** Auto-generated method stub

Map<String, Object> map = **new** HashMap<String, Object>();

SqlSession sql = Global.*getSQLSession*();

**this**.bookDAO = sql.getMapper(IBookDAO.**class**);

**if**(**this**.bookDAO.Remove(book)) {

sql.commit();

map.put("code", 0);

map.put("msg", "数据删除成功!");

} **else** {

map.put("code", 2);

map.put("msg", "删除发生了异常，请稍后重试!");

}

sql.close();

**return** map;

}

}

### **3.7.3 BorrowdetailService.java**

**public** **class** BorrowdetailService {

**private** IBorrowdetailDAO bdDAO;

**public** Map<String, Object> Create(Borrowdetail bd) **throws** Exception {

// **TODO** Auto-generated method stub

**int** duration = bd.getDuration();

Map<String, Object> map = **new** HashMap<String, Object>();

SqlSession sql = Global.*getSQLSession*();

**this**.bdDAO = sql.getMapper(IBorrowdetailDAO.**class**);

Borrowdetail bd1 = **new** Borrowdetail();

ArrayList<Borrowdetail> bdlist = **new** ArrayList<Borrowdetail>();

bd1.setBookID(bd.getBookID());

bd1.setUserID(Global.*currentUser*.getUserID());

bdlist = **this**.bdDAO.Query(bd1);

// 获得借阅号日期

SimpleDateFormat df = **new** SimpleDateFormat("yyyyMMdd");

Date today = **new** Date();

String todayStr = df.format(today);

**int** Count;

// 获得当天最大借阅号的后四位

**if** (**this**.bdDAO.GetMaxJyh(todayStr) == **null**) {

Count = 0;

} **else** {

Count = Integer.*parseInt*(**this**.bdDAO.GetMaxJyh(todayStr));

}

Count = Count + 1;

String si = String.*valueOf*(Count);

String s = "0000";

si = s.substring(0, 4 - si.length()) + si;

// 操作时间

SimpleDateFormat df2 = **new** SimpleDateFormat("yyyy-MM-dd hh:mm:ss");

Date date = **new** Date();

Timestamp time = **new** Timestamp(date.getTime());

String Time = **new** SimpleDateFormat("yyyy-MM-dd HH:mm:ss").format(time);

**if** (bdlist.isEmpty()) {

// 借阅号

bd.setJyh(todayStr + "B" + si);

// 状态

bd.setState("借阅");

} **else** {

bd = bdlist.get(bdlist.size()-1);

bd.setDuration(duration);

**if** (bd.getState().equals("借阅")) {

bd.setJyh(todayStr + "R" + si);

bd.setState("归还");

} **else** {

// 借阅号

bd.setJyh(todayStr + "B" + si);

// 状态

bd.setState("借阅");

}

}

bd.setUserID(Global.*currentUser*.getUserID());

bd.setUsername(Global.*currentUser*.getUsername());

bd.setTime(Time);

**if** (**this**.bdDAO.Create(bd)) {

sql.commit();

map.put("code", 0);

map.put("msg", "成功增加一条借阅记录！");

} **else** {

map.put("code", 2);

map.put("msg", "创建发生了异常，请重新试一下！");

}

sql.close();

**return** map;

}

**public** Map<String, Object> CheckBD(Borrowdetail bd) **throws** Exception {

// **TODO** Auto-generated method stub

Map<String, Object> map = **new** HashMap<String, Object>();

SqlSession sql = Global.*getSQLSession*();

**this**.bdDAO = sql.getMapper(IBorrowdetailDAO.**class**);

ArrayList<Borrowdetail> bdlist = **new** ArrayList<Borrowdetail>();

bd.setBookID(bd.getBookID());

bd.setUserID(Global.*currentUser*.getUserID());

bdlist = **this**.bdDAO.Query(bd);

**int** c = 0;

**for** (Borrowdetail b : bdlist) {

**if** (b.getState().equals("借阅")) {

c++;

}

**if** (b.getState().equals("归还")) {

c++;

}

}

**if** (c % 2 == 0) {

// 偶数借

map.put("code", 0);

map.put("msg", "您未借阅该图书!");

} **else** {

// 奇数还

map.put("code", 1);

map.put("msg", "您未归还该图书!");

}

sql.close();

**return** map;

}

**public** Map<String, Object> UpdateDuration(Borrowdetail bd) **throws** Exception {

// **TODO** Auto-generated method stub

Map<String, Object> map = **new** HashMap<String, Object>();

SqlSession sql = Global.*getSQLSession*();

**this**.bdDAO = sql.getMapper(IBorrowdetailDAO.**class**);

// 更新操作时间

SimpleDateFormat df2 = **new** SimpleDateFormat("yyyy-MM-dd hh:mm:ss");

Date date = **new** Date();

Timestamp time = **new** Timestamp(date.getTime());

String Time = **new** SimpleDateFormat("yyyy-MM-dd HH:mm:ss").format(time);

bd.setTime(Time);

**if**(**this**.bdDAO.Update(bd)) {

sql.commit();

map.put("code", 0);

map.put("msg", "成功更新一条借阅记录！");

} **else** {

map.put("code", 2);

map.put("msg", "更新发生了异常，请重新试一下！");

}

sql.close();

**return** map;

}

**public** Map<String, Object> getBDbyBookID(String bookID) **throws** Exception {

// **TODO** Auto-generated method stub

Map<String, Object> map = **new** HashMap<String, Object>();

Borrowdetail bd = **new** Borrowdetail();

bd.setBookID(bookID);

SqlSession sql = Global.*getSQLSession*();

**this**.bdDAO = sql.getMapper(IBorrowdetailDAO.**class**);

Pattern p = Pattern.*compile*("(\\d){6}");

Matcher m = p.matcher(bookID);

**if**(!m.find()) {

map.put("code", 2);

map.put("msg", "图书编号格式不正确,请检查是否输入错误!");

}**else** {

**if** (**this**.bdDAO.Query(bd).isEmpty()) {

map.put("code", 1);

map.put("msg", "未找到图书编号为:" + bookID + "的借阅记录,请检查是否输入错误!");

} **else** {

**if**(**this**.bdDAO.Query(bd).get(**this**.bdDAO.Query(bd).size()-1).getState().equals("借阅")) {

map.put("code", 0);

map.put("msg", **this**.bdDAO.Query(bd).get(**this**.bdDAO.Query(bd).size()-1));

}**else** {

map.put("code", 3);

map.put("msg", "图书已归还,续约失败!");

}

}

}

sql.close();

**return** map;

}

**public** **void** showBorrowdetail(ArrayList<Borrowdetail> bdlist) {

// **TODO** Auto-generated method stub

System.***out***.println("借阅号\t\t用户姓名\t用户账号\t图书名称\t图书编号\t操作时间\t\t\t借阅天数\t借阅状态");

**for**(Borrowdetail bd : bdlist) {

System.***out***.println(bd.toString());

}

}

**public** ArrayList<Borrowdetail> Query(Borrowdetail bd) **throws** Exception {

// **TODO** Auto-generated method stub

SqlSession sql = Global.*getSQLSession*();

**this**.bdDAO = sql.getMapper(IBorrowdetailDAO.**class**);

ArrayList<Borrowdetail> bdlist = **this**.bdDAO.Query(bd);

**if**(bdlist.isEmpty()) {

System.***out***.println("找不到满足条件的借阅记录!");

sql.close();

**return** bdlist;

}

sql.close();

**return** bdlist;

}

**public** Map<String, Object> searchByDate(String date,String state) **throws** Exception {

// **TODO** Auto-generated method stub

Map<String, Object> map = **new** HashMap<String, Object>();

Borrowdetail bd = **new** Borrowdetail();

ArrayList<Borrowdetail> bdlist = **new** ArrayList<Borrowdetail>();

SqlSession sql = Global.*getSQLSession*();

**this**.bdDAO = sql.getMapper(IBorrowdetailDAO.**class**);

Pattern p = Pattern.*compile*(

"((((19|20)\\d{2})-(0?[13578]|1[02])-(0?[1-9]|[12]\\d|3[01]))|(((19|20)\\d{2})-(0?[469]|11)-(0?[1-9]|[12]\\d|30))|(((19|20)\\d{2})-0?2-(0?[1-9]|1\\d|2[0-8])))");

Matcher m = p.matcher(date);

bd.setTime(date);

**if**(!m.find()) {

map.put("code", 1);

map.put("msg", "输入日期格式有误,请检查并重新输入!");

}**else** {

**if**(**this**.bdDAO.Query(bd).isEmpty()) {

map.put("code", 2);

map.put("msg", "未找到日期为:"+date+"当天的借阅记录!");

}**else** {

**for**(Borrowdetail b : **this**.bdDAO.Query(bd)) {

**if**(b.getState().equals(state)) {

bdlist.add(b);

}

}

**if**(state.equals("借阅")&&bdlist.isEmpty()) {

map.put("code", 2);

map.put("msg", "未找到日期为"+date+"当天的借阅记录!");

}**else** **if**(state.equals("归还")&&bdlist.isEmpty()) {

map.put("code", 2);

map.put("msg", "未找到日期为"+date+"当天的归还记录!");

}**else** {

map.put("code", 0);

map.put("msg", bdlist);

}

}

}

sql.close();

**return** map;

}

}

### **3.7.4 Menu.java**

**public** **class** Menu {

**private** **static** **int** *choice*;

**public** **static** Scanner *sc* = **new** Scanner(System.***in***);

**public** **static** **int** Main\_Menu() {

System.***out***.println("===\*\*\*\*图书馆系统\*\*\*\*===\r\n" +

"1、借阅图书\r\n" +

"2、查询图书\r\n" +

"3、归还图书\r\n" +

"4、图书维护\r\n" +

"5、用户维护\r\n" +

"6、个人中心\r\n" +

"7、借阅信息管理\r\n" +

"8、退出系统\r\n"+

"当前用户："+Global.*currentUser*.getUsername()+"\r\n" +

"请选择（1-8）：");

*choice* = *sc*.nextInt();

**return** *choice*;

}

**public** **static** **int** QueryBook\_Menu() {

System.***out***.println("===\*\*\*\*图书查询\*\*\*\*===\r\n" +

"1、图书名称查询\r\n" +

"2、图书编号查询\r\n" +

"3、图书类型查询\r\n" +

"4、作者名查询\r\n" +

"5、出版社名查询\r\n" +

"6、显示所有在库图书\r\n" +

"7、返回主菜单\r\n" +

"请选择（1-7）：");

*choice* = *sc*.nextInt();

**return** *choice*;

}

**public** **static** **int** Maintainbook\_Menu() {

System.***out***.println("===\*\*\*\*图书馆图书管理维护\*\*\*\*====\r\n" +

"1、增加图书\r\n" +

"2、删除图书\r\n" +

"3、修改图书\r\n" +

"4、图书查询 \r\n" +

"5、图书信息导出\r\n" +

"6、返回主菜单\r\n" +

"请选择（1-6）：");

*choice* = *sc*.nextInt();

**return** *choice*;

}

**public** **static** **int** Addbook\_Menu() {

System.***out***.println("===\*\*\*\*增加图书\*\*\*\*====\r\n" +

"1、从excel中导入数据\r\n" +

"2、从文本文件导入数据\r\n" +

"3、从xml文件中导入数据\r\n" +

"4、从键盘导入数据\r\n" +

"5、返回上一级\r\n" +

"请选择（1-5）：");

*choice* = *sc*.nextInt();

**return** *choice*;

}

**public** **static** **int** Subbook\_Menu() {

System.***out***.println("===\*\*\*\*删除图书\*\*\*\*====\r\n" +

"1、按图书名称删除\r\n" +

"2、按图书编号删除\r\n" +

"3、按图书类型删除\r\n" +

"4、按作者名删除\r\n" +

"5、按出版社删除\r\n" +

"6、清空所有在库图书（谨慎操作）\r\n" +

"7、返回上一级\r\n" +

"请选择（1-7）：");

*choice* = *sc*.nextInt();

**return** *choice*;

}

**public** **static** **int** Exportbook\_Menu() {

System.***out***.println("===\*\*\*\*图书信息导出\*\*\*\*====\r\n" +

"1、导出到excel文件\r\n" +

"2、导出到文本文件\r\n" +

"3、导出到xml文件\r\n" +

"4、返回主菜单\r\n" +

"请选择（1-4）：");

*choice* = *sc*.nextInt();

**return** *choice*;

}

**public** **static** **int** PersonalCenter\_Menu() {

System.***out***.println("===\*\*\*\*个人中心\*\*\*\*====\r\n" +

"1、查询借阅记录\r\n" +

"2、延长借阅时间\r\n" +

"3、修改用户密码\r\n" +

"4、修改绑定信息\r\n" +

"5、返回主菜单\r\n" +

"请选择（1-5）：");

*choice* = *sc*.nextInt();

**return** *choice*;

}

**public** **static** **int** MaintainUser\_Menu() {

System.***out***.println("===\*\*\*\*图书馆用户管理维护\*\*\*\*====\r\n" +

"1、增加用户\r\n" +

"2、删除用户\r\n" +

"3、修改用户\r\n" +

"4、用户查询 \r\n" +

"5、用户信息导出\r\n" +

"6、返回主菜单\r\n" +

"请选择（1-6）：");

*choice* = *sc*.nextInt();

**return** *choice*;

}

**public** **static** **int** AddUser\_Menu() {

System.***out***.println("===\*\*\*\*增加用户\*\*\*\*====\r\n" +

"1、从excel中导入数据\r\n" +

"2、从文本文件导入数据\r\n" +

"3、从xml文件中导入数据\r\n" +

"4、从键盘导入数据\r\n" +

"5、返回上一级\r\n" +

"请选择（1-5）：");

*choice* = *sc*.nextInt();

**return** *choice*;

}

**public** **static** **int** SubUser\_Menu() {

System.***out***.println("===\*\*\*\*删除用户\*\*\*\*====\r\n" +

"1、按账号删除\r\n" +

"2、按姓名删除\r\n" +

"3、按学号删除\r\n" +

"4、按所属学院删除\r\n" +

"5、按用户角色删除\r\n" +

"6、清空所有在库用户（谨慎操作）\r\n" +

"7、返回上一级\r\n" +

"请选择（1-7）：");

*choice* = *sc*.nextInt();

**return** *choice*;

}

**public** **static** **int** QueryUser\_Menu() {

System.***out***.println("===\*\*\*\*用户查询\*\*\*\*===\r\n" +

"1、用户账号查询\r\n" +

"2、姓名查询\r\n" +

"3、学号查询\r\n" +

"4、所属学院查询\r\n" +

"5、用户角色查询\r\n" +

"6、显示所有在库用户\r\n" +

"7、返回主菜单\r\n" +

"请选择（1-7）：");

*choice* = *sc*.nextInt();

**return** *choice*;

}

**public** **static** **int** ExportUser\_Menu() {

System.***out***.println("===\*\*\*\*用户信息导出\*\*\*\*====\r\n" +

"1、导出到excel文件\r\n" +

"2、导出到文本文件\r\n" +

"3、导出到xml文件\r\n" +

"4、返回主菜单\r\n" +

"请选择（1-4）：");

*choice* = *sc*.nextInt();

**return** *choice*;

}

**public** **static** **int** BorrowdetailManage\_Menu() {

System.***out***.println("===\*\*\*\*图书馆借阅信息管理\*\*\*\*====\r\n" +

"1、借阅记录查询\r\n" +

"2、借阅记录导出\r\n" +

"3、返回主菜单\r\n" +

"请选择（1-3）：");

*choice* = *sc*.nextInt();

**return** *choice*;

}

**public** **static** **int** QureyBorrowdetail\_Menu() {

System.***out***.println("===\*\*\*\*图书借阅记录查询\*\*\*\*===\r\n" +

"1.图书名称查询\r\n" +

"2.图书编号查询\r\n" +

"3.账号查询\r\n" +

"4.姓名查询\r\n" +

"5.借阅号查询\r\n" +

"6.借阅时间查询\r\n" +

"7.归还时间查询\r\n" +

"8.显示所有在库借阅记录\r\n" +

"9.返回主菜单\r\n" +

"请选择（1-9）：");

*choice* = *sc*.nextInt();

**return** *choice*;

}

**public** **static** **int** ExportBorrowdetail\_Menu() {

System.***out***.println("===\*\*\*\*借阅记录导出\*\*\*\*====\r\n" +

"1、导出到excel文件\r\n" +

"2、导出到文本文件\r\n" +

"3、导出到xml文件\r\n" +

"4、返回主菜单\r\n" +

"请选择（1-4）：");

*choice* = *sc*.nextInt();

**return** *choice*;

}

}

### **3.7.5 Global.java**

**public** **class** Global {

**public** **static** User *currentUser*;

**public** **static** String *classPath* = "D:\\JAVA\_projects\\BookManageByMybatis\\src\\data";

**public** **static** String *jdbcPropertity* = "D:\\JAVA\_projects\\BookManageByMybatis\\config\\jdbc.properties";

**public** **static** String *NAME\_FILE* = "";//导出文件名称

//导入文件的存放目录

**public** **static** String *XLS\_FILE* = "D:\\"+*NAME\_FILE*+".xls";

**public** **static** String *TXT\_FILE* = "D:\\"+*NAME\_FILE*+".txt";

**public** **static** String *XML\_FILE* = "D:\\"+*NAME\_FILE*+".xml";

**public** **static** String *resource* = "mybatis-config.xml";

**public** **static** InputStream *is*;

**public** **static** SqlSessionFactory *sqlsf*;

**public** **static** SqlSession *sql*;

**public** **static** SqlSession getSQLSession() **throws** Exception {

*is* = Resources.*getResourceAsStream*(*resource*);

*sqlsf* = **new** SqlSessionFactoryBuilder().build(*is*);

*sql* = *sqlsf*.openSession();

**return** *sql*;

}

**public** **static** String getTodayDate() {

SimpleDateFormat df = **new** SimpleDateFormat("yyyyMMdd");

Date today = **new** Date();

String todayStr = df.format(today);

**return** todayStr;

}

**public** **static** **void** setFileName(String name) {

*XLS\_FILE* = "D:\\"+name+".xls";

*TXT\_FILE* = "D:\\"+name+".txt";

*XML\_FILE* = "D:\\"+name+".xml";

}

}

## 3.8 用户界面Driver.java

**由于此处主体结构太长，加上一些非功能调用性的代码过多，不易在文档展示，将只展示main函数中的部分内容**

**public** **static** **void** main(String[] args) {

// **TODO** Auto-generated method stub

UserService userService = **new** UserService();

BookService bookService = **new** BookService();

BorrowdetailService bdService = **new** BorrowdetailService();

**try** {

**if** (!*login*(userService)) {

System.***out***.println("你已经尝试了三次，程序退出！欢迎下次访问！");

System.*exit*(0);

}

} **catch** (Exception e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

System.***out***.println("登录异常！");

}

**while** (**true**) {

**switch** (Menu.*Main\_Menu*()) {

**case** 1:

*BookBorrow*(bookService, bdService);

**break**;

**case** 2:

*BookQuery*(bookService);

**break**;

**case** 3:

*BookReback*(bookService, bdService);

**break**;

**case** 4:

*BookMaintain*(bookService);

**break**;

**case** 5:

*UserMaintain*(userService);

**break**;

**case** 6:

*PersonalCenter*(userService, bdService);

**break**;

**case** 7:

*BorrowdetailManage*(bdService);

**break**;

**case** 8:

System.***out***.println("退出成功!");

System.*exit*(0);

**break**;

**default**:

System.***out***.println("输入无效，只能输入1-8！");

**break**;

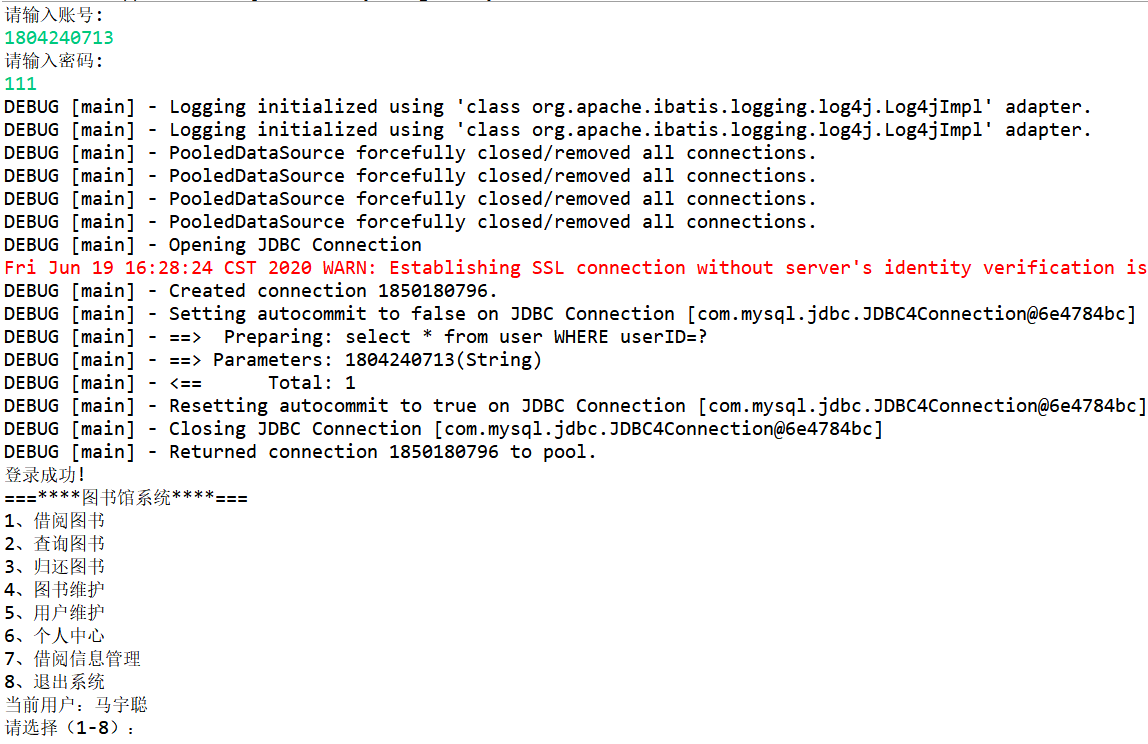
}

}

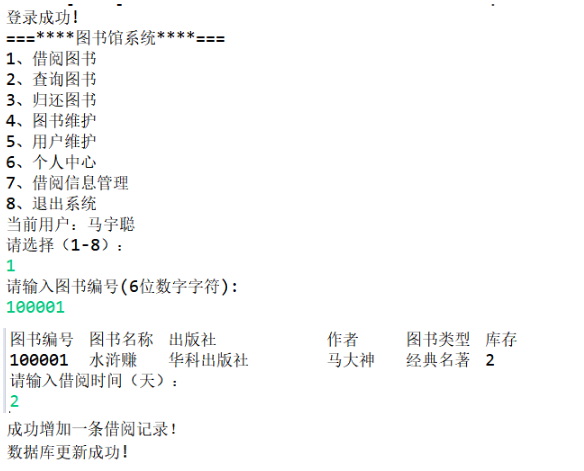
}

# **4 系统测试**

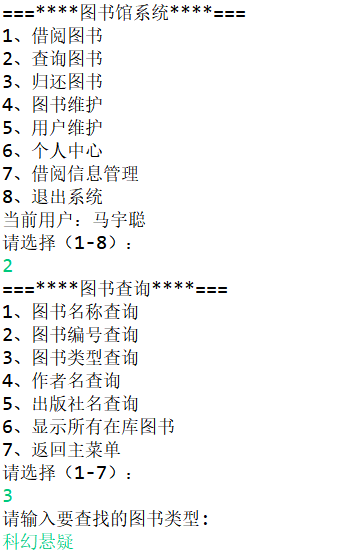
**用户登录**

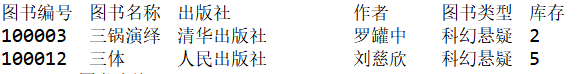


**借阅图书**



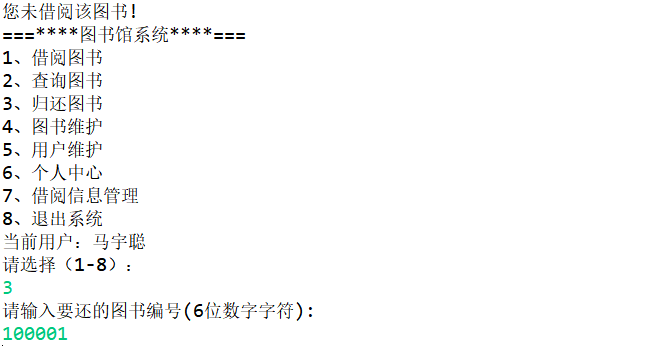
**图书查询**





**图书归还**

# 

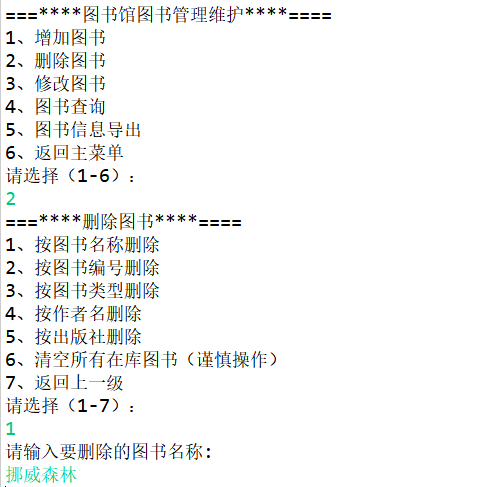






**图书维护**

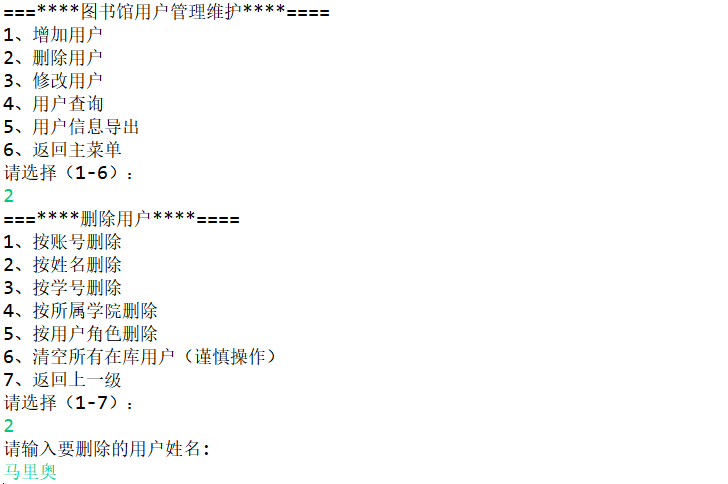
# 





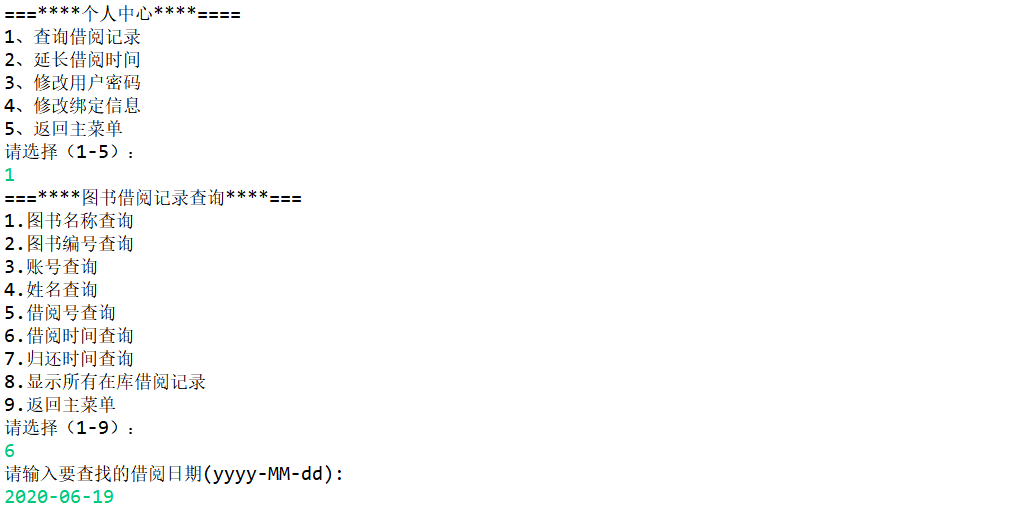
**用户维护**

# 





**个人中心**





# 







**借阅信息管理**

# 

# **5 系统总结**

此次课程大设计，是接触这个专业以来第一次完整的书写一份软件开发说明书，以及相应的代码实现，以我的体会来说，**此次最大的难点不是敲代码完成系统的实现，而是如何书写一份完善的，符合要求规格的详细开发说明书**，在刚开始拿到题目时，脑袋里有个基本大概的思路想法，但是在实际做的时候发现**很难甚至无法做到面面俱到的把各个功能，各个部分一五一十的书写出来**，总是出现各种纰漏，框架很熟悉，就是些**细小的地方问题没有解决，功能实用性不大**，只能说是去练手尝试着了解和做这整个过程。

系统的问题的话，就是一些小的功能部分不太完善，**不完全输入正确会导致出现错误**，因为写代码的时候不是一次完成的，**中间部分功能结构中有些问题**，但是由于细节太多，没来得及发现和修改完，再就是报告里的UML类图、时序图和流程图不够详细，甚至有些错误，但是因为对这方面的了解还不够全面，没有专门的去研究学习这个，所以只是凭现有的知识和参照画出来的，对画图软件的使用也比较生疏，在此花费了大量时间，结果却差强人意，这也是后期要加强的地方。

从设计到实现，到最后交出一份自己觉得还不错的答卷的时候，还是会有一种很强烈的满足感，同时也为未来担忧，这么一个生活中很看不上眼的一个系统竟然如此难以完整的做出来，以后面对更加复杂、多元和实用化的程序或软件该如何面对？有了这种设计程序的框架之后也不能自我满足，**如何追求、实现和学习更高效的、更简便的程序设计方法**，这都是我值得思考和认真探究的地方。

收获：这学期的java课程是我入校以来觉得**学的最有劲以及最富有实用性和即时性**的一门课，以往的程序设计语言课程只讲解了相关语法，这次课却是把重点放在实践上，也全程是以一种不断闯关获得满足感的方式学习，这种理论实践结合的方式也会对以后的学习很有帮助，也认识到自身的不足，比如脑袋清晰但不能准确的表达等，都还值得继续努力。

自评：95