University of British Columbia, Department of Computer Science

CPSC 304

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Project Part __3__

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above.
In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia.

System Introduction

Our library application is written in Java and communicates with an Oracle SQL database using the JDBC library. There are two packages, libraryGUI and sqlFunctions. The sqlFunctions package contains a Connector class, which creates a connection to the Oracle database, and four other classes that contain functions to execute different SQL statements. These classes separate the SQL functions into those required by the different types of users. The libraryGUI package contains the code for the user interface, calling the SQL functions, and displaying the results of the queries.

User Manual

When the program runs, the user is first presented with a login screen. They must pick their user type ("Borrower", "Clerk", or "Librarian") and enter their username and password. For borrowers, their username is the borrower ID which appears on their library card. Once the user has logged in, the main window appears, where they can choose what task they want to complete.

We have not implemented any clerk or librarian account system; if either of these user types are selected, the user can log on with any username and password. In addition, there is no authorization implemented, so once logged in, any user can access any function (including a borrower checking information about another borrower's account).

Clerk Menu

Add Borrower:

The "Add Borrower" window has text boxes to enter each piece of information about a borrower. Every field must be completed. Phone numbers are entered in the format "5551234", with no area code or punctuation. The clerk selects which type of borrower they are adding and clicks "Add". If the borrower is added successfully, a dialog will appear with the new borrower ID.

Check Out Items:

In the "Check Out Items" window, the clerk must enter the borrower ID of the person trying to check out items. They must also enter the call number and copy number of each book, clicking "Add" each time to add it to the list of call numbers below. Once they have add all the call numbers, they click "Check Out". If the borrower ID does not exist in the system, an error message will appear. If some of the books cannot be checked out (perhaps because they are on hold), an error message will appear with the list of these books. If any of the books are checked out successfully, a note will appear with the due date and the list of call numbers.

Return Item:
The “Return Item” window has a text box for a call number and a copy number. The clerk enters both of these and clicks “Return”. If some user had a hold request for this item, a message will pop up alerting the clerk that an email was sent to that borrower. If the item is late, a message will appear stating how much the borrower has been charged.

Check Overdue Items:
The “Check Overdue Items” window displays the call numbers and titles of all overdue items, as well as the email address of the borrower who has checked it out. If there are no overdue items, this table will be empty.

Borrower Menu

Search Library:
The “Search Library” window has text boxes for title, author, and subject. If the user enters values for more than one of these fields, they will all be used (i.e. the search will be more restrictive). If any fields are left blank, they are simply ignored. Searches are case insensitive. Once the user clicks “Search”, a new window should appear with the results of the search.

Check Account:
When a borrower clicks “Check Account”, they must enter their borrower ID and click “Confirm” before seeing the details of their account. There are three tables displayed – the first shows the books they have currently checked out, the second shows their fines, and the third shows their hold requests.

Hold Request:
In order to make a hold request, the borrower must enter their borrower ID and the call number of the book they wish to put on hold (without a specific copy number). A message will appear either stating that the hold request was made or that an error occurred (e.g. the call number was not found).

Pay Fine:
In order to pay a fine, the borrower should first look at the “Check Account” window and make note of the fine ID they want to pay. Then, they should open the “Pay Fine” window, enter the fine ID, and click “Pay Fine” to pay it in full.

Librarian Menu

Add Book:
To add a new book or a new copy of an existing book, the librarian opens the “Add Book” window. In this window, they add the appropriate information for the book. Only the call number and ISBN are required. If the call number does not yet exist in the database, a new book will be added as well as one book copy. If the call number does exist, the system will add a new copy of the book and ignore all other information entered.

Generate Report:
The “Generate Report” window has two options. The first option is to create a report of the currently checked out books. The librarian can optionally enter a subject, and then click “Generate Report” to generate the report. The second option is to create a report of the most popular items. The librarian enters a year and a number n, and the system displays the top n books borrowed the most times during that year, ordered by the number of times they were borrowed.