Library System

COMP 4004 - Assignment 1

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Overview

This project involves a simple library system with two types of actors: a single librarian and multiple library patrons.

The librarian is responsible for collection development (adding and removing books), circulation control (loaning, renewing and returning books) and fee collection.

The patrons are able to borrow, renew, return books and pay fines when applicable.

Goals

1. Build and test the library system at the unit level to assure sanity throughout the development process
2. Design and implement a series of tests at the acceptance level to assure validation and verification of the system

Use Case Scenarios

The following section displays typical scenarios in which the librarian and patrons interact with system.

Librarian scenarios

1.) As librarian, add item to library system.

Success case:

- Librarian enters ISBN into the system
- The title exists
- The title information is displayed on the screen
- The item is added to the library and an itemId is assigned

Trace:

@2017-10-10 00:39:38 INFO LibServer:63 - Waiting for a client ...

@2017-10-10 00:39:38 INFO LibServer:102 - Input from 127.0.0.1:59754 Hello

@2017-10-10 00:39:38 INFO LibServer:119 - Output to 127.0.0.1:59754 Who Are you?Clerk or User?

@2017-10-10 00:39:38 INFO LibServer:102 - Input from 127.0.0.1:59754 Clerk

@2017-10-10 00:39:38 INFO LibServer:111 - Output to 127.0.0.1:59754 Please Input The Password:

@2017-10-10 00:39:38 INFO LibServer:102 - Input from 127.0.0.1:59754 admin

@2017-10-10 00:39:38 INFO LibServer:111 - Output to 127.0.0.1:59754 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System.

@2017-10-10 00:39:38 INFO LibServer:102 - Input from 127.0.0.1:59754 Create Item

@2017-10-10 00:39:38 INFO LibServer:111 - Output to 127.0.0.1:59754 Please Input Item Info:'ISBN'

@2017-10-10 00:39:38 INFO LibServer:102 - Input from 127.0.0.1:59754 9781442668584

@2017-10-10 00:39:38 INFO String:49 - Operation:Create New Item;Item Info:[9781442668584,2];State:Success

@2017-10-10 00:39:38 INFO LibServer:111 - Output to 127.0.0.1:59754 ISBN#: 9781442668584 Book title: Harry Potter

Title does not exist case:

- Librarian enters ISBN into the system
- The title does not exist
- The librarian is asked to enter title to the system
- The title information is displayed on the screen
- The item is added to the library and an itemId is assigned

Trace:

@2017-10-10 00:39:38 INFO LibServer:102 - Input from 127.0.0.1:59753 Hello

@2017-10-10 00:39:38 INFO LibServer:119 - Output to 127.0.0.1:59753 Who Are you?Clerk or User?

@2017-10-10 00:39:38 INFO LibServer:102 - Input from 127.0.0.1:59753 =Clerk

@2017-10-10 00:39:38 INFO LibServer:111 - Output to 127.0.0.1:59753 Please Input The Password:

@2017-10-10 00:39:38 INFO LibServer:102 - Input from 127.0.0.1:59753 admin

@2017-10-10 00:39:38 INFO LibServer:111 - Output to 127.0.0.1:59753 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System.

@2017-10-10 00:39:38 INFO LibServer:102 - Input from 127.0.0.1:59753 Create Item

@2017-10-10 00:39:38 INFO LibServer:111 - Output to 127.0.0.1:59753 Please Input Item Info:'ISBN'

@2017-10-10 00:39:38 INFO LibServer:102 - Input from 127.0.0.1:59753 3731442668584

@2017-10-10 00:39:38 INFO String:55 - Operation:Create New Item;Item Info:[3731442668584,N/A];State:Fail;Reason:No such ISBN existed.

@2017-10-10 00:39:38 INFO LibServer:111 - Output to 127.0.0.1:59753 The Title Does Not Exists! Please add it to the library

@2017-10-10 00:39:38 INFO LibServer:102 - Input from 127.0.0.1:59753 Create Title

@2017-10-10 00:39:38 INFO LibServer:111 - Output to 127.0.0.1:59753 Your input

should in this format:'ISBN,title',ISBN should be a 13-digit number

@2017-10-10 00:39:38 INFO LibServer:102 - Input from 127.0.0.1:59753 3731442668584,book

@2017-10-10 00:39:38 INFO String:49 - Operation:Create New Title;Title Info:[3731442668584,book];State:Success

@2017-10-10 00:39:38 INFO LibServer:111 - Output to 127.0.0.1:59753 Success!

2.) As librarian, add title to library system.

Success case:

- Librarian enters title information into the system
- The title doesn't exist
- The item is added to the library and an itemId is assigned

Trace:

@2017-10-10 00:39:38 INFO LibServer:63 - Waiting for a client ...

@2017-10-10 00:39:38 INFO LibServer:102 - Input from 127.0.0.1:59754 Hello

@2017-10-10 00:39:38 INFO LibServer:119 - Output to 127.0.0.1:59754 Who Are you?Clerk or User?

Title does not exist case:

- Librarian enters ISBN into the system
- The title does not exist

- The librarian is asked to enter title to the system
- The title information is displayed on the screen
- The item is added to the library and an itemId is assigned

Trace:

@2017-10-10 01:06:05 INFO LibServer:63 - Waiting for a client …

@2017-10-10 01:06:05 INFO LibServer:102 - Input from 127.0.0.1:59834 Hello

@2017-10-10 01:06:05 INFO LibServer:119 - Output to 127.0.0.1:59834 Who Are you?Clerk or User?

@2017-10-10 01:06:05 INFO LibServer:102 - Input from 127.0.0.1:59834 Clerk

@2017-10-10 01:06:05 INFO LibServer:111 - Output to 127.0.0.1:59834 Please Input The Password:

@2017-10-10 01:06:05 INFO LibServer:102 - Input from 127.0.0.1:59834 admin

@2017-10-10 01:06:05 INFO LibServer:111 - Output to 127.0.0.1:59834 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System.

@2017-10-10 01:06:05 INFO LibServer:102 - Input from 127.0.0.1:59834 Create title

@2017-10-10 01:06:05 INFO LibServer:111 - Output to 127.0.0.1:59834 Please Input Title Info:'ISBN,title'

@2017-10-10 01:06:05 INFO LibServer:102 - Input from 127.0.0.1:59834 '123456789985,gud book'

@2017-10-10 01:06:05 INFO String:49 - Operation:Create New Title;Title Info:['123456789985,gud book'];State:Success

@2017-10-10 01:06:05 INFO LibServer:111 - Output to 127.0.0.1:59834 Success!

Title does exist case:

- Librarian enters ISBN into the system
- The title does exist
- The librarian is alerted of the previous entry

Trace:

@2017-10-10 01:06:05 INFO LibServer:63 - Waiting for a client …

@2017-10-10 01:06:05 INFO LibServer:102 - Input from 127.0.0.1:59832 Hello

@2017-10-10 01:06:05 INFO LibServer:119 - Output to 127.0.0.1:59832 Who Are you?Clerk or User?

@2017-10-10 01:06:05 INFO LibServer:102 - Input from 127.0.0.1:59832 Clerk

@2017-10-10 01:06:05 INFO LibServer:111 - Output to 127.0.0.1:59832 Please Input The Password:

@2017-10-10 01:06:05 INFO LibServer:102 - Input from 127.0.0.1:59832 admin

@2017-10-10 01:06:05 INFO LibServer:111 - Output to 127.0.0.1:59832 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System.

@2017-10-10 01:06:05 INFO LibServer:102 - Input from 127.0.0.1:59832 Create title

@2017-10-10 01:06:05 INFO LibServer:111 - Output to 127.0.0.1:59832 Please Input Title Info:'ISBN,title'

@2017-10-10 01:06:05 INFO LibServer:102 - Input from 127.0.0.1:59832 9781442668584,Harry Potter

@2017-10-10 01:06:05 INFO String:52 - Operation:Create New Title;Title Info:[9781442668584,Harry Potter];State:Fail;Reason:The ISBN already existed.

@2017-10-10 01:06:05 INFO LibServer:111 - Output to 127.0.0.1:59832 The Title Already Exists!

3.) As librarian, add user to library system.

Success case:

- Librarian enters username and password into the system
- The user does not exist
- The user is added to the library and an userId is assigned

Trace:

@2017-10-10 00:20:14 INFO LibClient:32 - 59681 : Connected to server: /127.0.0.1

@2017-10-10 00:20:14 INFO LibClient:33 - 59681 : Connected to portid: 59681

@2017-10-10 00:20:14 INFO LibServer:63 - Waiting for a client ...

@2017-10-10 00:20:14 INFO LibServer:102 - Input from 127.0.0.1:59681 Hello

@2017-10-10 00:20:14 INFO LibServer:119 - Output to 127.0.0.1:59681 Who Are you?Clerk or User?

@2017-10-10 00:20:14 INFO LibServer:102 - Input from 127.0.0.1:59681 Clerk

@2017-10-10 00:20:14 INFO LibServer:111 - Output to 127.0.0.1:59681 Please Input The Password:

@2017-10-10 00:20:14 INFO LibServer:102 - Input from 127.0.0.1:59681 admin

@2017-10-10 00:20:14 INFO LibServer:111 - Output to 127.0.0.1:59681 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System.

@2017-10-10 00:20:14 INFO LibServer:102 - Input from 127.0.0.1:59681 Create User

@2017-10-10 00:20:14 INFO LibServer:111 - Output to 127.0.0.1:59681 Please Input User Info:'username,password'

@2017-10-10 00:20:14 INFO LibServer:102 - Input from 127.0.0.1:59681 r@gmail,pass

@2017-10-10 00:20:14 INFO String:45 - Operation:Create New User;User Info:[r@gmail,pass];State:Success

@2017-10-10 00:20:14 INFO LibServer:111 - Output to 127.0.0.1:59681 Success!

User already exists case:

- Librarian enters username and password into the system
- The user does exist
- The user is not added to the library system

Trace:

@2017-10-10 00:20:14 INFO LibClient:32 - 59682 : Connected to server: /127.0.0.1

@2017-10-10 00:20:14 INFO LibServer:72 - Client accepted : Client Address : [/127.0.0.1:59682] Client Socket: [59682]

@2017-10-10 00:20:14 INFO LibClient:33 - 59682 : Connected to portid: 59682

@2017-10-10 00:20:14 INFO LibServer:63 - Waiting for a client ...

@2017-10-10 00:20:14 INFO LibServer:102 - Input from 127.0.0.1:59682 Hello

@2017-10-10 00:20:14 INFO LibServer:119 - Output to 127.0.0.1:59682 Who Are you?Clerk or User?

@2017-10-10 00:20:14 INFO LibServer:102 - Input from 127.0.0.1:59682 Clerk

@2017-10-10 00:20:14 INFO LibServer:111 - Output to 127.0.0.1:59682 Please Input The Password:

@2017-10-10 00:20:14 INFO LibServer:102 - Input from 127.0.0.1:59682 admin

@2017-10-10 00:20:14 INFO LibServer:111 - Output to 127.0.0.1:59682 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System.

@2017-10-10 00:20:14 INFO LibServer:102 - Input from 127.0.0.1:59682 Create User
@2017-10-10 00:20:14 INFO LibServer:111 - Output to 127.0.0.1:59682 Please Input User Info:'username,password'

@2017-10-10 00:20:14 INFO LibServer:102 - Input from 127.0.0.1:59682 Rob@carleton.ca,Rob

@2017-10-10 00:20:14 INFO String:48 - Operation:Create New User;User Info:[Rob@carleton.ca,Rob];State:Fail;Reason:The User already existed.

@2017-10-10 00:20:14 INFO LibServer:111 - Output to 127.0.0.1:59682 The User Already Exists!

4.) As librarian, borrow loan copy from library system.

Success case:

- Librarian enters username, ISBN, and copy number into the system
- The book is loaned out

Trace:

@2017-10-10 20:55:29 INFO LibServer:63 - Waiting for a client …

@2017-10-10 20:55:29 INFO LibServer:102 - Input from 127.0.0.1:59051 Hello

@2017-10-10 20:55:29 INFO LibServer:119 - Output to 127.0.0.1:59051 Who Are you?Clerk or User?

@2017-10-10 20:55:29 INFO LibServer:102 - Input from 127.0.0.1:59051 Clerk

@2017-10-10 20:55:29 INFO LibServer:111 - Output to 127.0.0.1:59051 Please Input

The Password:

@2017-10-10 20:55:29 INFO LibServer:102 - Input from 127.0.0.1:59051 admin

@2017-10-10 20:55:29 INFO LibServer:111 - Output to 127.0.0.1:59051 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System,Collect Fine,Borrow Loancopy,Renew Loan,Return Loancopy.

@2017-10-10 20:55:29 INFO LibServer:102 - Input from 127.0.0.1:59051 borrow loancopy

@2017-10-10 20:55:29 INFO LibServer:111 - Output to 127.0.0.1:59051 Please Input User Info:'useremail,ISBN,copynumber'

@2017-10-10 20:55:29 INFO LibServer:102 - Input from 127.0.0.1:59051 Gail@carleton.ca,9781442667181,1

@2017-10-10 20:55:29 INFO String:63 - Operation:Borrow Item;Loan Info:[4,9781442667181,1,2017-10-10 08:55:29];State:Success

@2017-10-10 20:55:29 INFO LibServer:111 - Output to 127.0.0.1:59051 Success!

ISBN invalid case:

- Librarian enters username, ISBN, and copy number into the system
- The ISBN is invalid

Trace:

@2017-10-10 20:55:28 INFO LibServer:63 - Waiting for a client ...

@2017-10-10 20:55:28 INFO LibServer:102 - Input from 127.0.0.1:59048 Hello

@2017-10-10 20:55:28 INFO LibServer:119 - Output to 127.0.0.1:59048 Who Are you?Clerk or User?

@2017-10-10 20:55:28 INFO LibServer:102 - Input from 127.0.0.1:59048 Clerk

@2017-10-10 20:55:28 INFO LibServer:111 - Output to 127.0.0.1:59048 Please Input The Password:

@2017-10-10 20:55:28 INFO LibServer:102 - Input from 127.0.0.1:59048 admin

@2017-10-10 20:55:28 INFO LibServer:111 - Output to 127.0.0.1:59048 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System,Collect Fine,Borrow Loancopy,Renew Loan,Return Loancopy.

@2017-10-10 20:55:28 INFO LibServer:102 - Input from 127.0.0.1:59048 borrow loancopy

@2017-10-10 20:55:28 INFO LibServer:111 - Output to 127.0.0.1:59048 Please Input User Info:'useremail,ISBN,copynumber'

@2017-10-10 20:55:28 INFO LibServer:102 - Input from 127.0.0.1:59048 Gail@carleton.ca,4444442667181,1

@2017-10-10 20:55:28 INFO String:53 - Operation:Borrow Item;Loan Info:[4,4444442667181,1,2017-10-10 08:55:28];State:Fail;Reason:Invalid ISBN.

@2017-10-10 20:55:28 INFO LibServer:111 - Output to 127.0.0.1:59048 ISBN Invalid!

5.) As librarian, delete item from library system.

Success case:

- Librarian enters username, ISBN, and copy number into the system
- This item is successfully deleted

Trace:

@2017-10-10 13:13:42 INFO LibServer:63 - Waiting for a client ...

@2017-10-10 13:13:42 INFO LibServer:102 - Input from 127.0.0.1:62872 Hello

@2017-10-10 13:13:42 INFO LibServer:119 - Output to 127.0.0.1:62872 Who Are you?Clerk or User?

@2017-10-10 13:13:42 INFO LibServer:102 - Input from 127.0.0.1:62872 Clerk

@2017-10-10 13:13:42 INFO LibServer:111 - Output to 127.0.0.1:62872 Please Input The Password:

@2017-10-10 13:13:42 INFO LibServer:102 - Input from 127.0.0.1:62872 admin

@2017-10-10 13:13:42 INFO LibServer:111 - Output to 127.0.0.1:62872 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System.

@2017-10-10 13:13:42 INFO LibServer:102 - Input from 127.0.0.1:62872 Delete Item

@2017-10-10 13:13:42 INFO LibServer:111 - Output to 127.0.0.1:62872 Please Input Item Info:'ISBN,copynumber'

@2017-10-10 13:13:42 INFO LibServer:102 - Input from 127.0.0.1:62872 9781611687910,1

@2017-10-10 13:13:42 INFO String:110 - Operation:Delete Item;Item Info:[9781611687910,N/A];State:Success

@2017-10-10 13:13:42 INFO LibServer:111 - Output to 127.0.0.1:62872 Success!

Active loan exists case:
- Librarian enters username, ISBN, and copy number into the system
- This item is out on loan and can't be removed

Trace:

@2017-10-10 13:13:42 INFO LibServer:63 - Waiting for a client ...

@2017-10-10 13:13:42 INFO LibServer:102 - Input from 127.0.0.1:62871 Hello

@2017-10-10 13:13:42 INFO LibServer:119 - Output to 127.0.0.1:62871 Who Are you?Clerk or User?

@2017-10-10 13:13:42 INFO LibServer:102 - Input from 127.0.0.1:62871 Clerk

@2017-10-10 13:13:42 INFO LibServer:111 - Output to 127.0.0.1:62871 Please Input The Password:

@2017-10-10 13:13:42 INFO LibServer:102 - Input from 127.0.0.1:62871 admin

@2017-10-10 13:13:42 INFO LibServer:111 - Output to 127.0.0.1:62871 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System.

@2017-10-10 13:13:42 INFO LibServer:102 - Input from 127.0.0.1:62871 Delete Item

@2017-10-10 13:13:42 INFO LibServer:111 - Output to 127.0.0.1:62871 Please Input Item Info:'ISBN,copynumber'

@2017-10-10 13:13:42 INFO LibServer:102 - Input from 127.0.0.1:62871 9781442668584,1

@2017-10-10 13:13:42 INFO String:113 - Operation:Delete Item;Item Info:[9781442668584,1];State:Fail;Reason:The item is currently on loan.

@2017-10-10 13:13:42 INFO LibServer:111 - Output to 127.0.0.1:62871 Active Loan Exists!

6.) As librarian, delete title from library system.

Success case:

- Librarian enters ISBN into the system
- This title is successfully deleted

Trace:

@2017-10-10 13:56:10 INFO LibServer:63 - Waiting for a client ...

@2017-10-10 13:56:10 INFO LibServer:102 - Input from 127.0.0.1:63004 Hello

@2017-10-10 13:56:10 INFO LibServer:119 - Output to 127.0.0.1:63004 Who Are you?Clerk or User?

@2017-10-10 13:56:10 INFO LibServer:102 - Input from 127.0.0.1:63004 Clerk

@2017-10-10 13:56:10 INFO LibServer:111 - Output to 127.0.0.1:63004 Please Input The Password:

@2017-10-10 13:56:10 INFO LibServer:102 - Input from 127.0.0.1:63004 admin

@2017-10-10 13:56:10 INFO LibServer:111 - Output to 127.0.0.1:63004 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System.

@2017-10-10 13:56:10 INFO LibServer:102 - Input from 127.0.0.1:63004 Delete title

@2017-10-10 13:56:10 INFO LibServer:111 - Output to 127.0.0.1:63004 Please Input Title Info:'ISBN'

@2017-10-10 13:56:10 INFO LibServer:102 - Input from 127.0.0.1:63004 9781317594277

@2017-10-10 13:56:10 INFO String:98 - Operation:Delete Title;Title Info:[9781317594277,Atlas Shrugged];State:Success

@2017-10-10 13:56:10 INFO LibServer:111 - Output to 127.0.0.1:63004 Success!

Title does not exist case:

- Librarian enters ISBN into the system
- This title does not exist

Trace:

@2017-10-10 13:56:10 INFO LibServer:63 - Waiting for a client ...

@2017-10-10 13:56:10 INFO LibServer:102 - Input from 127.0.0.1:63005 Hello

@2017-10-10 13:56:10 INFO LibServer:119 - Output to 127.0.0.1:63005 Who Are you?Clerk or User?

@2017-10-10 13:56:10 INFO LibServer:102 - Input from 127.0.0.1:63005 Clerk

@2017-10-10 13:56:10 INFO LibServer:111 - Output to 127.0.0.1:63005 Please Input The Password:

@2017-10-10 13:56:10 INFO LibServer:102 - Input from 127.0.0.1:63005 admin

@2017-10-10 13:56:10 INFO LibServer:111 - Output to 127.0.0.1:63005 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System.

@2017-10-10 13:56:10 INFO LibServer:102 - Input from 127.0.0.1:63005 Delete title

@2017-10-10 13:56:10 INFO LibServer:111 - Output to 127.0.0.1:63005 Please Input Title Info:'ISBN'

@2017-10-10 13:56:10 INFO LibServer:102 - Input from 127.0.0.1:63005 1123456789985

@2017-10-10 13:56:10 INFO String:105 - Operation:Delete Title;ISBN Info:[1123456789985];State:Fail;Reason:The Title Does Not Exist.

@2017-10-10 13:56:10 INFO LibServer:111 - Output to 127.0.0.1:63005 The Title Does Not Exist!

7.) As librarian, delete user from library system.

Success case:

- Librarian enters username into the system
- This user is successfully deleted

Trace:

@2017-10-10 12:50:23 INFO LibServer:63 - Waiting for a client ...

@2017-10-10 12:50:23 INFO LibServer:102 - Input from 127.0.0.1:62796 Hello

@2017-10-10 12:50:23 INFO LibServer:119 - Output to 127.0.0.1:62796 Who Are you?Clerk or User?

@2017-10-10 12:50:23 INFO LibServer:102 - Input from 127.0.0.1:62796 Clerk

@2017-10-10 12:50:23 INFO LibServer:111 - Output to 127.0.0.1:62796 Please Input The Password:

@2017-10-10 12:50:23 INFO LibServer:102 - Input from 127.0.0.1:62796 admin

@2017-10-10 12:50:23 INFO LibServer:111 - Output to 127.0.0.1:62796 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System.

@2017-10-10 12:50:23 INFO LibServer:102 - Input from 127.0.0.1:62796 Delete User

@2017-10-10 12:50:23 INFO LibServer:111 - Output to 127.0.0.1:62796 Please Input User Info:'useremail'

@2017-10-10 12:50:23 INFO LibServer:102 - Input from 127.0.0.1:62796 Alice@carleton.ca

@2017-10-10 12:50:23 INFO String:104 - Operation:Delete User;User Info:[Alice@carleton.ca,Alice];State:Success

@2017-10-10 12:50:23 INFO LibServer:111 - Output to 127.0.0.1:62796 Success!

Outstanding fees case:

- Librarian enters username into the system
- This user has outstanding fees and cannot be deleted

Trace:

@2017-10-10 12:50:23 INFO LibServer:63 - Waiting for a client ...

@2017-10-10 12:50:23 INFO LibServer:102 - Input from 127.0.0.1:62795 Hello

@2017-10-10 12:50:23 INFO LibServer:119 - Output to 127.0.0.1:62795 Who Are you?Clerk or User?

@2017-10-10 12:50:23 INFO LibServer:102 - Input from 127.0.0.1:62795 Clerk

@2017-10-10 12:50:23 INFO LibServer:111 - Output to 127.0.0.1:62795 Please Input The Password:

@2017-10-10 12:50:23 INFO LibServer:102 - Input from 127.0.0.1:62795 admin

@2017-10-10 12:50:23 INFO LibServer:111 - Output to 127.0.0.1:62795 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System.

@2017-10-10 12:50:23 INFO LibServer:102 - Input from 127.0.0.1:62795 Delete User

@2017-10-10 12:50:23 INFO LibServer:111 - Output to 127.0.0.1:62795 Please Input User Info:'useremail'

@2017-10-10 12:50:23 INFO LibServer:102 - Input from 127.0.0.1:62795 Rob@carleton.ca

@2017-10-10 12:50:23 INFO String:107 - Operation:Delete User;User Info:[Rob@carleton.ca,Rob];State:Fail;Reason:Outstanding Fee Exists.

@2017-10-10 12:50:23 INFO LibServer:111 - Output to 127.0.0.1:62795 Outstanding Fee Exists!

8.) As librarian, renew loan copy from library system.

Success case:

- Librarian enters username, ISBN, and copy number into the system
- This loan is successfully renewed

Trace:

@2017-10-10 21:13:15 INFO LibServer:63 - Waiting for a client ...

@2017-10-10 21:13:15 INFO LibServer:102 - Input from 127.0.0.1:59156 Hello

@2017-10-10 21:13:15 INFO LibServer:119 - Output to 127.0.0.1:59156 Who Are you?Clerk or User?

@2017-10-10 21:13:15 INFO LibServer:102 - Input from 127.0.0.1:59156 Clerk

@2017-10-10 21:13:15 INFO LibServer:111 - Output to 127.0.0.1:59156 Please Input The Password:

@2017-10-10 21:13:15 INFO LibServer:102 - Input from 127.0.0.1:59156 admin

@2017-10-10 21:13:15 INFO LibServer:111 - Output to 127.0.0.1:59156 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System,Collect Fine,Borrow Loancopy,Renew Loan,Return Loancopy.

@2017-10-10 21:13:15 INFO LibServer:102 - Input from 127.0.0.1:59156 renew loan

@2017-10-10 21:13:15 INFO LibServer:111 - Output to 127.0.0.1:59156 Please Input Item Info:'useremail,ISBN,copynumber'

@2017-10-10 21:13:15 INFO LibServer:102 - Input from 127.0.0.1:59156 Gail@carleton.ca,9781442668584,1

@2017-10-10 21:13:15 INFO String:213 - Operation:Renew Item;Loan Info:[4,9781442668584,1,2017-10-10 09:13:15];State:Success

@2017-10-10 21:13:15 INFO LibServer:111 - Output to 127.0.0.1:59156 Success!

Outstanding fees exist case:

- Librarian enters username, ISBN, and copy number into the system
- The user has outstanding fees
- The loan is denied

Trace:

@2017-10-10 21:13:15 INFO LibServer:63 - Waiting for a client ...

@2017-10-10 21:13:15 INFO LibServer:102 - Input from 127.0.0.1:59156 Hello

@2017-10-10 21:13:15 INFO LibServer:119 - Output to 127.0.0.1:59156 Who Are you?Clerk or User?

@2017-10-10 21:13:15 INFO LibServer:102 - Input from 127.0.0.1:59156 Clerk

@2017-10-10 21:13:15 INFO LibServer:111 - Output to 127.0.0.1:59156 Please Input The Password:

@2017-10-10 21:13:15

9.) As librarian, return loan copy to library system.

Success case:

- Librarian enters username, ISBN, and copy number into the system
- This loan is successfully returned

Trace:

@2017-10-10 21:04:14 INFO LibServer:63 - Waiting for a client ...

@2017-10-10 21:04:14 INFO LibServer:102 - Input from 127.0.0.1:59112 Hello

@2017-10-10 21:04:14 INFO LibServer:119 - Output to 127.0.0.1:59112 Who Are you?Clerk or User?

@2017-10-10 21:04:14 INFO LibServer:102 - Input from 127.0.0.1:59112 Clerk

@2017-10-10 21:04:14 INFO LibServer:111 - Output to 127.0.0.1:59112 Please Input The Password:

@2017-10-10 21:04:14 INFO LibServer:102 - Input from 127.0.0.1:59112 admin

@2017-10-10 21:04:14 INFO LibServer:111 - Output to 127.0.0.1:59112 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System,Collect Fine,Borrow Loancopy,Renew Loan,Return Loancopy.

@2017-10-10 21:04:14 INFO LibServer:102 - Input from 127.0.0.1:59112 return loancopy

@2017-10-10 21:04:14 INFO LibServer:111 - Output to 127.0.0.1:59112 Please Input Item Info:'useremail,ISBN,copynumber'

@2017-10-10 21:04:14 INFO LibServer:102 - Input from 127.0.0.1:59112 Gail@carleton.ca,9781442668584,1

@2017-10-10 21:04:14 INFO String:251 - Operation:Return Item;Loan Info:[4,9781442668584,1,2017-10-10 09:04:14];State:Success

@2017-10-10 21:04:14 INFO LibServer:111 - Output to 127.0.0.1:59112 Success!

Loan doesn't exist case:

- Librarian enters username, ISBN, and copy number into the system
- This loan does not exist

Trace:

@2017-10-10 21:04:14 INFO LibServer:63 - Waiting for a client ...

@2017-10-10 21:04:14 INFO LibServer:102 - Input from 127.0.0.1:59113 Hello

@2017-10-10 21:04:14 INFO LibServer:119 - Output to 127.0.0.1:59113 Who Are you?Clerk or User?

@2017-10-10 21:04:14 INFO LibServer:102 - Input from 127.0.0.1:59113 Clerk

@2017-10-10 21:04:14 INFO LibServer:111 - Output to 127.0.0.1:59113 Please Input The Password:

@2017-10-10 21:04:14 INFO LibServer:102 - Input from 127.0.0.1:59113 admin

@2017-10-10 21:04:14 INFO LibServer:111 - Output to 127.0.0.1:59113 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System,Collect Fine,Borrow Loancopy,Renew Loan,Return Loancopy.

@2017-10-10 21:04:14 INFO LibServer:102 - Input from 127.0.0.1:59113 return loancopy

@2017-10-10 21:04:14 INFO LibServer:111 - Output to 127.0.0.1:59113 Please Input Item Info:'useremail,ISBN,copynumber'

@2017-10-10 21:04:14 INFO LibServer:102 - Input from 127.0.0.1:59113 rob@carleton.ca,1234567891230,1

@2017-10-10 21:04:14 INFO String:258 - Operation:Return Item;Loan Info:[0,1234567891230,1,2017-10-10 09:04:14];State:Fail;Reason:The Loan Does Not Exist.

@2017-10-10 21:04:14 INFO LibServer:111 - Output to 127.0.0.1:59113 The Loan Does Not Exist!

@2017-10-10 21:04:14 INFO LibServer:102 - Input from 127.0.0.1:59113 rob@carleton.ca,1234567891230,1

@2017-10-10 21:04:14 INFO String:258 - Operation:Return Item;Loan Info:[0,1234567891230,1,2017-10-10 09:04:14];State:Fail;Reason:The Loan Does Not Exist.

@2017-10-10 21:04:14 INFO LibServer:111 - Output to 127.0.0.1:59113 The Loan Does Not Exist!

10.) As librarian, collect fine from patron.

Success case:

- Librarian enters the patrons username
- The fee is paid and the patrons debt is cleared

Trace:

@2017-10-12 23:56:00 INFO LibServer:63 - Waiting for a client ...

@2017-10-12 23:56:00 INFO LibServer:102 - Input from 127.0.0.1:55921 Hello

@2017-10-12 23:56:00 INFO LibServer:119 - Output to 127.0.0.1:55921 Who Are you?Clerk or User?

@2017-10-12 23:56:00 INFO LibServer:102 - Input from 127.0.0.1:55921 Clerk

@2017-10-12 23:56:00 INFO LibServer:111 - Output to 127.0.0.1:55921 Please Input The Password:

@2017-10-12 23:56:00 INFO LibServer:102 - Input from 127.0.0.1:55921 admin

@2017-10-12 23:56:00 INFO LibServer:111 - Output to 127.0.0.1:55921 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System,Collect Fine,Borrow Loancopy,Renew Loan,Return Loancopy

@2017-10-12 23:56:00 INFO LibServer:102 - Input from 127.0.0.1:55921 collect fine

@2017-10-12 23:56:00 INFO LibServer:111 - Output to 127.0.0.1:55921 Please Input User Info:'useremail'

@2017-10-12 23:56:00 INFO LibServer:102 - Input from 127.0.0.1:55921

rob@carleton.ca

@2017-10-12 23:56:00 INFO String:156 - Operation:Pay Fine;Fee Info:[0,0];State:Success

@2017-10-12 23:56:00 INFO LibServer:111 - Output to 127.0.0.1:55921 Success!

User does not exist case:

- Librarian enters the patrons username
- The user does not exist

Trace:

@2017-10-12 23:56:00 INFO LibServer:63 - Waiting for a client …

@2017-10-12 23:56:00 INFO LibServer:102 - Input from 127.0.0.1:55922 Hello

@2017-10-12 23:56:00 INFO LibServer:119 - Output to 127.0.0.1:55922 Who Are you?Clerk or User?

@2017-10-12 23:56:00 INFO LibServer:102 - Input from 127.0.0.1:55922 Clerk

@2017-10-12 23:56:00 INFO LibServer:111 - Output to 127.0.0.1:55922 Please Input The Password:

@2017-10-12 23:56:00 INFO LibServer:102 - Input from 127.0.0.1:55922 admin

@2017-10-12 23:56:00 INFO LibServer:111 - Output to 127.0.0.1:55922 What can I do for you?Menu:Create User/Title/Item,Delete User/Title/Item,Monitor System,Collect Fine,Borrow Loancopy,Renew Loan,Return Loancopy.

@2017-10-12 23:56:00 INFO LibServer:102 - Input from 127.0.0.1:55922 collect fine

@2017-10-12 23:56:00 INFO LibServer:111 - Output to 127.0.0.1:55922 Please Input User Info:'useremail'

@2017-10-12 23:56:00 INFO LibServer:102 - Input from 127.0.0.1:55922 mike@carleton.ca

@2017-10-12 23:56:00 INFO LibServer:111 - Output to 127.0.0.1:55922 The User Does Not Exist!

User scenarios

1.) As User, borrow from the library system.

Success case:

- User enters login requests to borrow
- Successfully borrows title

Trace:

2017-10-13 00:22:31 INFO LibServer:63 - Waiting for a client ...

@2017-10-13 00:22:31 INFO LibServer:102 - Input from 127.0.0.1:56020 Hello

@2017-10-13 00:22:31 INFO LibServer:119 - Output to 127.0.0.1:56020 Who Are you?Clerk or User?

@2017-10-13 00:22:31 INFO LibServer:102 - Input from 127.0.0.1:56020 user

@2017-10-13 00:22:31 INFO LibServer:111 - Output to 127.0.0.1:56020 Please Input Username and Password:'username,password'

@2017-10-13 00:22:31 INFO LibServer:102 - Input from 127.0.0.1:56020 Alice@carleton.ca,Alice

@2017-10-13 00:22:31 INFO LibServer:111 - Output to 127.0.0.1:56020 What can I do for you?Menu:Borrow,Renew,Return,Pay Fine.

@2017-10-13 00:22:31 INFO LibServer:102 - Input from 127.0.0.1:56020 borrow

@2017-10-13 00:22:31 INFO LibServer:111 - Output to 127.0.0.1:56020 Please Input User Info:'useremail,ISBN,copynumber'

@2017-10-13 00:22:31 INFO LibServer:102 - Input from 127.0.0.1:56020 Alice@carleton.ca,9781611687910,1

@2017-10-13 00:22:31 INFO String:63 - Operation:Borrow Item;Loan Info:[2,9781611687910,1,2017-10-13 12:22:31];State:Success

@2017-10-13 00:22:31 INFO LibServer:111 - Output to 127.0.0.1:56020 Success!

Copy number invalid case:
- User enters requests to borrow
- Invalid copy number is entered

Trace:

@2017-10-13 00:25:12 INFO LibServer:63 - Waiting for a client ...

@2017-10-13 00:25:12 INFO LibServer:102 - Input from 127.0.0.1:56028 Hello

@2017-10-13 00:25:12 INFO LibServer:119 - Output to 127.0.0.1:56028 Who Are you?Clerk or User?

@2017-10-13 00:25:12 INFO LibServer:102 - Input from 127.0.0.1:56028 user

@2017-10-13 00:25:12 INFO LibServer:111 - Output to 127.0.0.1:56028 Please Input Username and Password:'username,password'

@2017-10-13 00:25:12 INFO LibServer:102 - Input from 127.0.0.1:56028 Alice@carleton.ca,Alice

@2017-10-13 00:25:12 INFO LibServer:111 - Output to 127.0.0.1:56028 What can I do for you?Menu:Borrow,Renew,Return,Pay Fine.

@2017-10-13 00:25:12 INFO LibServer:102 - Input from 127.0.0.1:56028 borrow

@2017-10-13 00:25:12 INFO LibServer:111 - Output to 127.0.0.1:56028 Please Input User Info:'useremail,ISBN,copynumber'

@2017-10-13 00:25:12 INFO LibServer:102 - Input from 127.0.0.1:56028 Alice@carleton.ca,9781317594277,1

@2017-10-13 00:25:12 INFO String:56 - Operation:Borrow Item;Loan Info:[2,9781317594277,1,2017-10-13 12:25:12];State:Fail;Reason:Invalid Copynumber.

@2017-10-13 00:25:12 INFO LibServer:111 - Output to 127.0.0.1:56028 Copynumber Invalid!