System Design Document LibraryHub Group 2

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CRC Cards

Class Name: Main	
Parent Class (if any):	
Subclasses (if any):	
Responsibilities:	Collaborators:
- Main class of the project	- Instantiates LoginView
- Main method runs upon application	
execution to instantiate LoginView for user	
to interact with the application	
Views	
Class Name: LoginView	
Parent Class (if any):	
Subclasses (if any):	

Responsibilities:

Uses: LoginController

- Presents user with interface to Login to application
- Listens for Register button clicks to send user to Register View
- -Listens to Login button clicks, retrieves login information from text fields upon button click and passes it to LoginController for login validation
- Sends user to Application class (Homepage) if login successful

Collaborators:

- Creates an instance RegisterView upon Register Button Click
- Uses LoginController to listen to button clicks
- Instantiates Application class upon successful login

Class Name: RegisterView

Parent Class (if any):
Subclasses (if any):

Responsibilities:
- Presents user with interface to Register as a new user
- Upon Register button click, sends text information from text fields (first name, last name, username, password) to
LoginController to handle User Registration
- View closes upon successful registration, stays open if login fails

Class Name: Application

Parent Class (if any):

Subclasses (if any):

Responsibilities:

- Presents user with homepage interface to search for books (clients)
- Displays list of books that library owns and if they are checked out or not upon click of show database button
- Displays list of books whose title matches text field entry upon click of search button

Collaborators:

- Uses DatabaseManager class to listen to the search button and show database button clicks. DatabaseManager retrieves all books from database while Application parses books

Class Name: Application_Admin	
Parent Class (if any):	
Subclasses (if any):	
Responsibilities:	Collaborators:
- Presents library admin with homepage	- Uses DatabaseManager class to listen to
interface to view book inventory and return	the search button and show database button
books	clicks. DatabaseManager retrieves all books
- Displays list of books that library owns	from database while Application parses
and if they are checked out or not upon click	books
of show database button	
- Displays list of books whose title matches	
text field entry upon click of search button	
Controllers	
Class Name: LoginController	
Class Name. Logincontroller	
Parent Class (if any):	
Subclasses (if any):	
Subclasses (If any).	
Responsibilities:	Collaborators:
- Receive username and password text entry	- Login Controller sends requests to
from user	UserService class validate user
- Redirect user to home page if login is	logins and handle user registrations
successful	
- Redirect user to registration page if they	
click to register button	
Class Name: User Service	
Parent Class (if any):	
Subclasses (if any):	

Responsibilities:

- Adapter class that handles requests from other classes that require information from the user Repository database
- handles UserLogin requests by calling on userRepository.validateUser
- handles user registration by adding new users to database and checking to see if users already exist, making sure no required entries are missing for user creation

Collaborators:

- Receives requests from LoginController for user login and registration
- Sends requests to UserRepository class for User database manipulation

Models

Class Name: User

Parent Class (if any): Subclasses (if any):

Class Name: UserRepository Parent Class (if any): Subclasses (if any): Responsibilities: Collaborators: - Executes SQL statements to handle Executes SQL queries on behalf of manipulation of user database UserService Class - Adds users to database Retrieves information from database - Gets users from database by their ID, User Table for UserService Class username - Searches through user database to validate username and password entry - Removes users from user database

Responsibilities:

- Represents a user
- Holds first name, last name, username, and password of user

Collaborators:

 Used by UserService and UserRepository to communicate User information

Class Name: DatabaseManager

Parent Class (if any):

Subclasses (if any):

Responsibilities:

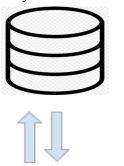
- Executes SQL statements to handle manipulation of book database
- Updates book and user tables when book is checked out
- Updates book and user tables when book is returned
- Adds new books to databases when added by user

Collaborators:

- Used by Application and ApplicationAdmin classes upon search button click to retrieve books for Application class to look through and see if there's a book with a title that matches the search
- Used by Application class to update user and book tables upon user checkout button click
- -Used by ApplicationAdmin to to update user and book tables upon admin return button click

Software Architecture Diagram

Library Test Database



Models

Classes: DatabaseManager, UserRepository,

- Run SQL Updates and Queries on LibraryTest database
- Responsibilties include adding books to books table, updating users in suer table



Controllers

Listen to button clicks from View classes and handles the corresponding request

Classes: LoginController, UserService, Application



Views

Provides interactive user interface. Presents book information and inventory, presents search results. Allows user to send requests to application

Classes: RegisterView, LoginView