

System Design Document
LibraryHub
Group 2

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CRC Cards

Class Name: Main	
Parent Class (if any): Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none">- Main class of the project- Main method runs upon application execution to instantiate LoginView for user to interact with the application	Collaborators: <ul style="list-style-type: none">- Instantiates LoginView

Views

Class Name: LoginView	
Parent Class (if any): Subclasses (if any): Uses: LoginController	
Responsibilities: <ul style="list-style-type: none">- 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: <ul style="list-style-type: none">- 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	Collaborators: - Uses LoginController to listen to button clicks

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: - Presents library admin with homepage interface to view book inventory and return books - 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

Controllers

Class Name: LoginController	
Parent Class (if any): Subclasses (if any):	
Responsibilities: - Receive username and password text entry from user - Redirect user to home page if login is successful - Redirect user to registration page if they click to register button	Collaborators: - Login Controller sends requests to UserService class validate user logins and handle user registrations

Class Name: User Service	
Parent Class (if any): Subclasses (if any):	

Responsibilities: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - Receives requests from LoginController for user login and registration - Sends requests to UserRepository class for User database manipulation
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Models

Class Name: UserRepository	
Parent Class (if any): Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none"> - Executes SQL statements to handle manipulation of user database - Adds users to database - Gets users from database by their ID, username - Searches through user database to validate username and password entry - Removes users from user database 	Collaborators: <ul style="list-style-type: none"> - Executes SQL queries on behalf of UserService Class - Retrieves information from database User Table for UserService Class

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

Responsibilities: - Represents a user - Holds first name, last name, username, and password of user	Collaborators: - Used by UserService and UserRepository to communicate User information
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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

