

Library management system

Implement a C program to manage a library.

The library system should have three Modes :

- user mode
- admin mode
- owner mode

➤ Owner Mode

- The owner mode is only accessed via
 - ✓ Name : Owner
 - ✓ Password : 1234
- Owner can add/remove admins
- Owner can give/deny permissions from admins, permissions are :
 - ✓ Add/remove member
 - ✓ Add/remove book
 - ✓ Make a book reservation
- All permissions are given by default

➤ Admin Mode

- The admin mode is accessed via list of admins by user:pass as follows:
 1. Admin1:1010
 2. Admin2:2020
 3. Admin3:3030
- After logging in successfully as a **user**, it should be able to :
 1. View all users' data
 - username
 - user id
 - requested books
 - borrowed books
 2. View all books with all data
 3. Add/remove a book to/from the library
 4. Add/remove users
 5. Edit user id
 6. Search for a book, admin should choose which search method to use :
 - book name - book id - book author
 - In case of search by author, list all books of that author
 - search results appear, all info of book and its status (available or not)

7. Make a reservation of books
 - Requested books form users
 - ✓ Check book availability
 - ✓ Check number of books borrowed from this user
 - ✓ Reserve the book if all conditions are fine.
 - Reserve a book
 - ✓ Users should be listed
 - ✓ Admin chooses the user
 - ✓ Books should be listed
 - ✓ Admin chooses a book or more to reserve to that user
8. Make a reserved book available in stock again
9. Logout

Notes :

- There are some permissions controlled by the owner of library, check the owner part above.
- Maximum number of borrowed books by the same user is 2

➤ User Mode

- After logging in successfully as a **user**, he should be able to
 1. View the user data
 - ❖ username
 - ❖ user id
 - ❖ borrowed books (if available)
 - ❖ library card id (if available)
 2. Change user password
 - ❖ requests new login after the change
 3. View all books
 - ❖ beside each book the status (available or not available)
 4. Search for a book, user should choose which search method to use :
 - ❖ book name - book id - book author
 - ❖ In case of search by author, list all books of that author
 - ❖ search results appear, all info of book and its status (available or not)
 5. Make a request to borrow an available book
 - ❖ available books are shown, and user chooses the book id he wants.
 - ❖ the request must be approved by admin firstly before he could borrow it
 6. Buy an available book
 - ❖ a list of available books should appear, beside the price for each one.
 - ❖ user can buy one or more books
 - ❖ total price should appear to user, paying with cash or library card
 - ❖ for library card, user must enter his card id and password
 - ❖ you should check his current balance before approving the transaction

7. Request a new book to be provided in the future
 - ❖ user provides the book name and its author
8. Show current user borrow requests
 - ❖ Showing requests status (approved – waiting – denied)
9. Logout

List of Books

1. Hamlet	William Shakespeare
2. Richard II	William Shakespeare
3. As You Like It	William Shakespeare
4. King Lear	William Shakespeare
5. The Tempest	William Shakespeare
6. Ulysses	James Joyce
7. Finn's Hotel	James Joyce
8. Dubliners	James Joyce
9. Finnegans Wake	James Joyce
10. Chamber Music	James Joyce
11. Stephen Hero	James Joyce
12. Tomb of Sand	Geetanjali Shree's
13. Between Two Worlds	Geetanjali Shree's
14. War and Peace	Leo Tolstoy
15. The Great Gatsby	F. Scott Fitzgerald
16. Don Quixote	Miguel de Cervantes
17. Hear Yourself	Prem Rawat
18. Lal Salam	Smriti Irani
19. Queen of Fire	Devika Rangachari
20. When Breath Becomes Air	Paul Kalanithi

Notes :

- All data (books / users / admins) are dynamic
- Dividing the project features into functions is a must
- Dividing the whole project into files is a must
- “main.c” file should not have any complex code, just a call of a big function which implicitly calls others and controls the flow of the program.
- One user can't borrow more than two books at the same time

Bonus task : use file handling to handle users and books database (optional)

Deadline : 30/09/2022 at 11:59 pm

Best of luck 