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University Library & Book Bank Management System

Overview of Project

You are required to develop a University Library & Book Bank Management System. It is like a library management system but has more features than Library Management System such that apart from management of books issuance to students, it also supports the donations of books from the students and then issuing those books to deserving students for the tenure of one semester. Currently only one type of user can login to the system which is librarian. Librarian will have unique user name and password. More than one librarians are also supported for the system.

Phase 3

In this phase you are required to complete the following tasks

Task 1:

- First task of the project is to make the authorized access to the system. To accomplish this tasks, first create the file users.csv manually using notepad that include the data of user in the following format(username,password):

```
alimuhammad@gmail.com,ali123
muhammadumer@hotmail.com,abc456
```

- Create the struct User with attribute of userName and password
- Create the function to load data from users.csv
  void loadUser(User arr[], int size)
- Create a function that returns the true if the user exists in user array with particular username and password
  bool findUser(User arr[], int size, User toFind)
- When the program is loaded, instead of displaying the menu to the user, ask the user to enter the username and password. If the user name is correct, then display the menu. Otherwise, show the message that "username or password is incorrect" and ask the credentials again.
- Changes output is as follow

```
** Welcome to University Library Management System **
Kindly enter the credentials to access the system features
Username: alimuhammad@gmail.com
Password: abc456
You have been successfully logged in to the system
Choose the following option
1     Category Management(A,E,L,D)
2     Books Management(A,E,L,D)
3     Book Copies Management(A,E,L,D)
4     Student Management(A,E,L,D)
0     Exit Program(0E)

Choose the option:
```

Task 2:

- Define the following enums in the project

Enum Name	Values
Month	List of 12 months with January assigned the value 1
BookStatus	Issued, Returned

- Update the definition of struct Date to the following

Date	int day Month month int year

- Add the definition of BookIssue struct

BookIssue	char regNo[] char bookCopyId[] BookStatus status Date issueDate

Task 3:

Update the menu as follow

```
Choose the following option
1     Category Management(A,E,L,D)
2     Books Management(A,E,L,D)
3     Book Copies Management(A,E,L,D)
4     Student Management(A,E,L,D)
5     Book Issue Management(I,R,S,B)
9     Logout(9L)
0     Exit Program(0E)

Choose the option:
```

Task 4:

Add the following functions

- bool issueBook(BookIssue arr[], int size, BookIssue toIssue)
- int returnBook(BookIssue arr[], int size, char copyIdtoReturn[])
  This function return zero if the user return book within 14 days of book issue, otherwise return the (numberOfExtraDays * 10) 10 times fine of the extra days that the user have used the book
- void studentCurrentBook(BookIssue arr[], int size, char regNo[])
  This function prints "User currently has no books" if the user have no pending books whose status is issued, otherwise output will be display with the list of books that user currently holds. See the output for details
- void checkBookStatus(BookIssue arr[], BookCopy arr[], int issueSize, int bookCopySize, char copyId[])
  This function prints "Book copy is available" if copyId is currently not issued to anyone. Otherwise prints the registration number of student who has the book.
- void loadBookIssue(BookIssue arr[], int size)

This function reads the data from the file bookhistory.csv

- void saveBookIssue(BookIssue arr[] int size)
  This function save the data in bookhistory.csv in comma separated format.

Task 5:

Output will be updated as follow

- When user enters 5 then book issue management options will be available.

```
Choose the option: 5I
Enter the details(studentRegNo bookCopyId) : 2011-CS-543 098-EN-12345#001
Book has been issued to 2011-CS-543
```

```
Choose the option: 5R
Enter the copy id to return: 098-EN-12345#001
Student 2011-CS-543 has returned the book with zero fine
```

```
Choose the option: 5R
Enter the copy id to return: 098-EN-12345#001
Student 2011-CS-543 has returned the book with late return. Student has been PKR 30.
```

```
Choose the option: 5S
Enter the registration Number of student: 2011-CS-543
2011-CS-543 has the following issued books
       Copy Id                 Issue Date
       098-EN-21456#003        15-01-2020
       043-UR-32145#010        10-01-2020
```

```
Choose the option: 5B
Enter the Copy Id of the book: 098-EN-13245#001
The book is currently issued to the student 2011-CS-898.
Expected return date is 28-01-2020
```

```
Choose the option: 5B
Enter the Copy Id of the book: 098-EN-13245#002
The book is available
```

- When the user press 9L, all the data will be saved to files and login screen will be displayed.

Task 6:

- Apply the validations to login email id
- Apply the validations on the inputs in book issue.

Task 7:

This is the bonus task

- When the user enters the password, instead of displaying the password on the screen, * should be shown.