C and DS project

PROJECT TITLE : CRANES LIBRARY

Batch : ITAP248

Project Members :

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Project Abstract

- This project is made using file handling and linked list concept of C language.

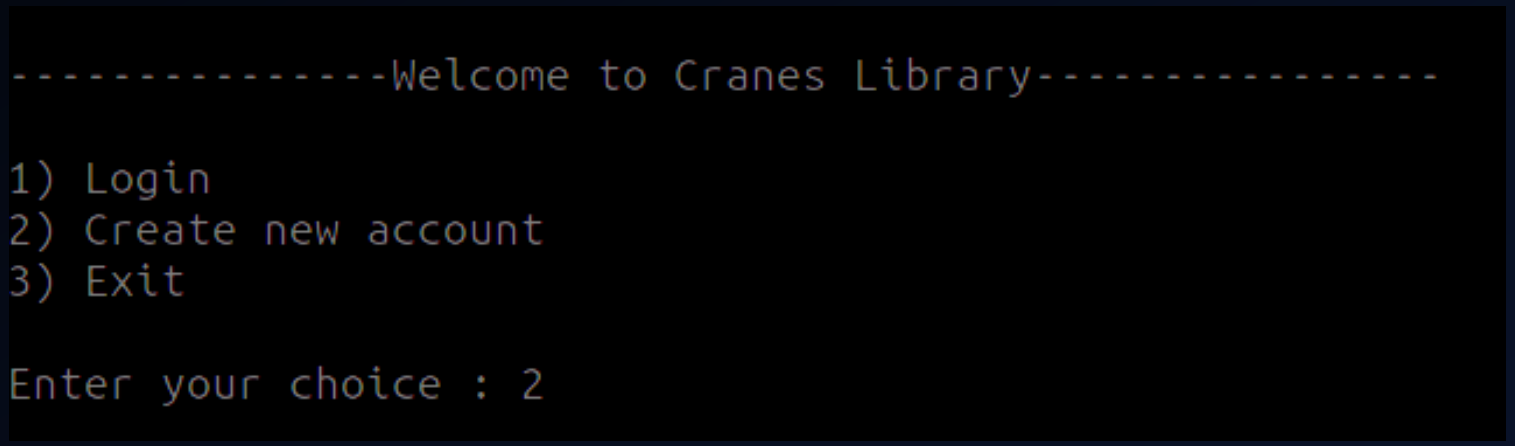
- The name of the project is CRANES LIBRARY, file handling is used to write and read user login data from a user database text file, and the linked list is used to create our own library, i.e., adding books anywhere and delete books from anywhere in the working.

Working of project

1) First, we have to create our account for the cranes library by entering a new username and password.
2) Login into the account.
3) Add a book anywhere in the library
4) Delete a book from anywhere in the library.
5) Search for a book in the library.
6) View the complete book list.

1) Creating new account

- The maximum length for a new username and password is 10. If the entered string length is greater than ten, then an error message will be shown, and the program will again ask for a new username and password.



```
------------------Create new Account--------------------

Instructions

1) max. length of name and password is 10
2) no space in between name and password

Enter name : username_12345

ERROR : length of name is greater than 10, re-enter name

Enter name :
```

```
Enter name : user_1
Enter new password : password_1234

ERROR : length of password is greater than 10, re-enter password

Enter new password :
```

- The new username entered should be unique, i.e., this program will check in the user database text file whether the same username exists or not.
- If the same username already exists, then an error message will be shown, and the program will again ask for a new username and password.

User ID	Name	Password
1	user_1	pass_1
2	user_2	pass_2
3	user_3	pass_3
4	user_4	pass_4

This is user data base text file

```
------------------Create new Account--------------------

Instructions

1) max. length of name and password is 10
2) no space in between name and password

Enter name : user_2

ERROR : user_2 already exits

Enter name :
```

```
Enter name : user_4

ERROR : user_4 already exits

Enter name :
```

- For confirmation, this program will ask to re-enter the new password.
- If it does not match with the new password previously entered, then an error message will be shown, and the program will ask again for a new username and password.

```
------------------Create new Account--------------------

Instructions

1) max. length of name and password is 10
2) no space in between name and password

Enter name : user_5
Enter new password : pass_5
Re-enter new password : pass_6

ERROR : Re-enter password doesn't match new password entered, re-enter name

Enter name :
```

- If the new username and password follow all the above-mentioned conditions, then a new account is created, and a confirmation will be displayed.
- This new account data is written into the user database text file. The user id is automatically updated by reading the id of previous user.

```
Enter name : user_6
Enter new password : pass_6
Re-enter new password : pass_6

New account is created succesfully!!

New Account details

User ID : 5
Username : user_6
Password : pass_6

--------------------------------------------------

Press any key to continue
```

User ID	Name	Password
1	user_1	pass_1
2	user_2	pass_2
3	user_3	pass_3
4	user_4	pass_4

User data base text file before adding new user

User ID	Name	Password
1	user_1	pass_1
2	user_2	pass_2
3	user_3	pass_3
4	user_4	pass_4
5	user_6	pass_6

User data base text file after adding new user

2) Login into account

- After creating a new account, we have to login into it.
- First, we have to enter the username and password.
- The program will read into the user database text file. Whether entered username and password match from the database or not, if not, then an error message will be displayed, and the program will display the main menu again.

```
--------------Welcome to Cranes Library----------------

1) Login
2) Create new account
3) Exit

Enter your choice : 1

-------------------------Login-----------------------------

Enter user name :
```

```
-------------------------Login-----------------------------

Enter user name : user_10
Enter password : pass_10

ERROR : Incorrect login credentials

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Press any key to continue
```
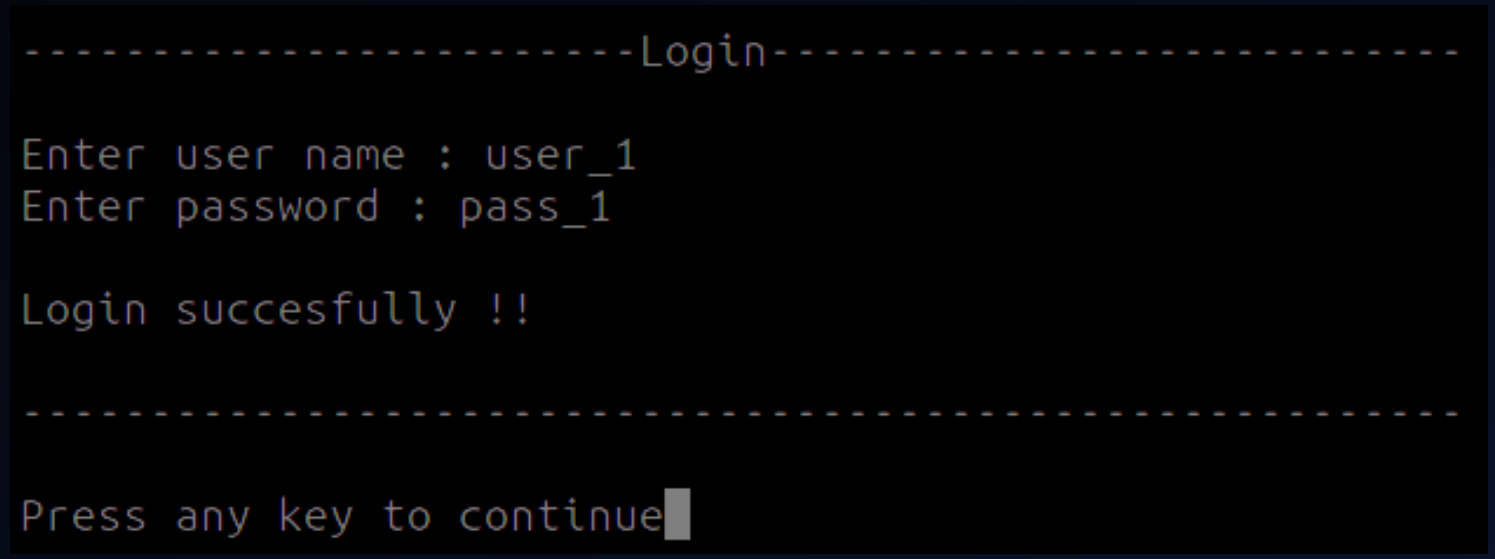
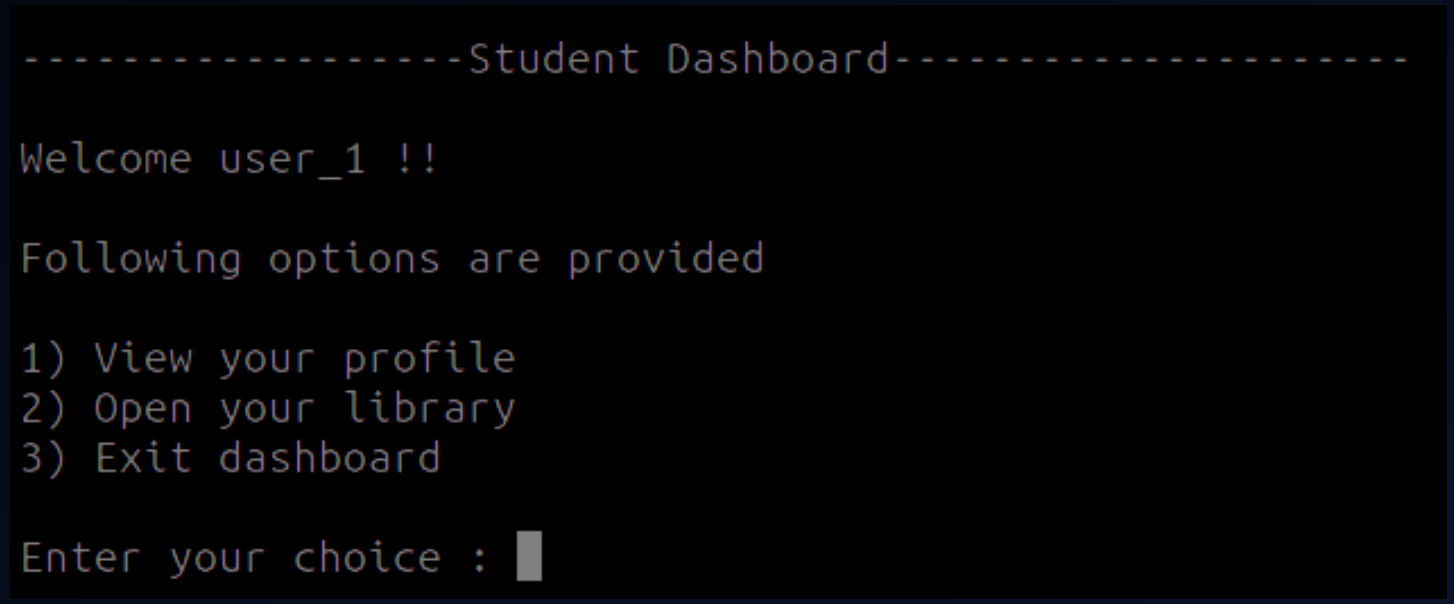

- If entered username and password is correct, then a confirmation message will be displayed.



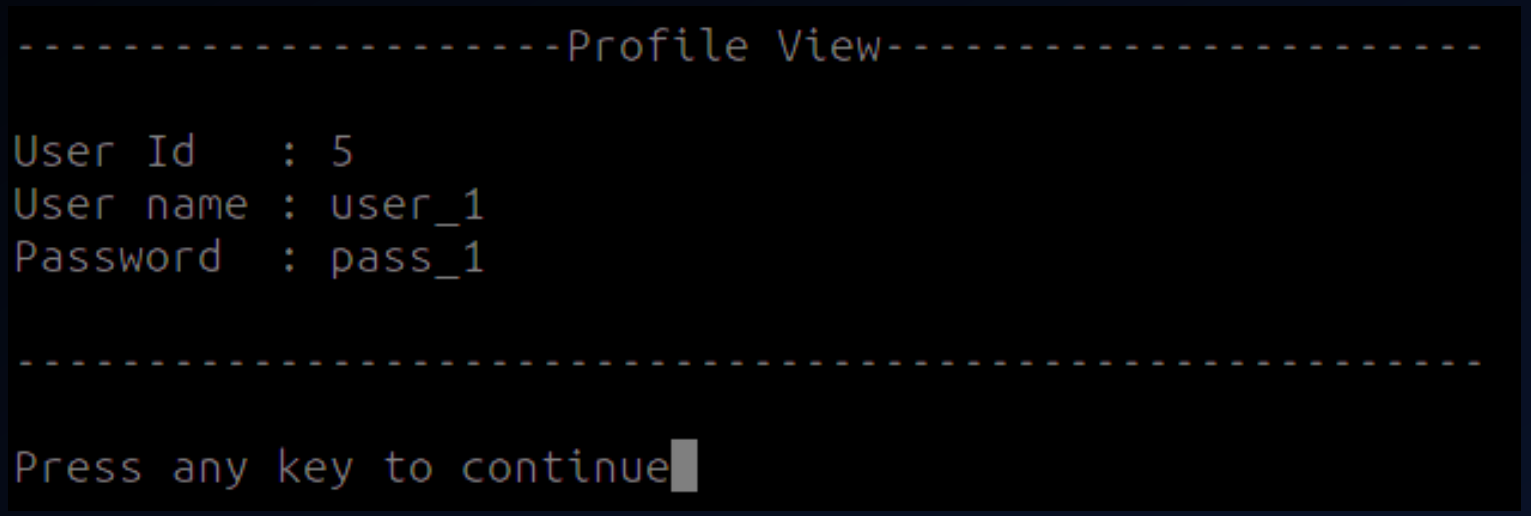
3) Student dashboard

- In the student dashboard following functionalities are provided.
- a) View profile.
- b) Open library.



a) View profile

- In the view profile, user details, i.e., username, password, and id, will be displayed.



b) Open library

- Library is implemented using linked list.
- In the Open library, following functionalities are provided.

1) Add a new book.
2) Open a book.
3) Open list of books.
4) Delete a book.

```
------------------Student Dashboard--------------------

Welcome user_1 !!

Following options are provided

1) View your profile
2) Open your library
3) Exit dashboard

Enter your choice : 2
```

```
------------------------Library-------------------------

Library is implemented using double Linked list

Following operations can be done on library

1) Add a new book
2) Open a book
3) Open list of books
4) Delete a book
5) Exit from library

Enter your choice :
```

1) Add a new book

- Using this, we can add a new book anywhere into our linked list.
- A new book contains, following information

  a) Book id .

  b) Author name (max. 20 characters) .

  c) Book content (max. 200 characters) .

```
----------------------Add a book-----------------------

Instructions

1) Max. length of name and author is 20 characters
2) Max. length of content is 200 characters

Enter new book id : 1
Enter new book name : book_name_1
Enter name of author : author_name_1
Enter content of new book : this is content of book 1.

Where to add this book?

1) Add at start
2) Add at middle
3) Add at end

Enter your choice : 1


New book is added at the begining of the list, book name : book_name_1

-------------------------------------------------------

Press any key to continue
```

Adding at first

```
New book is added at the begining of the list, book name : book_name_2
```

Adding at last

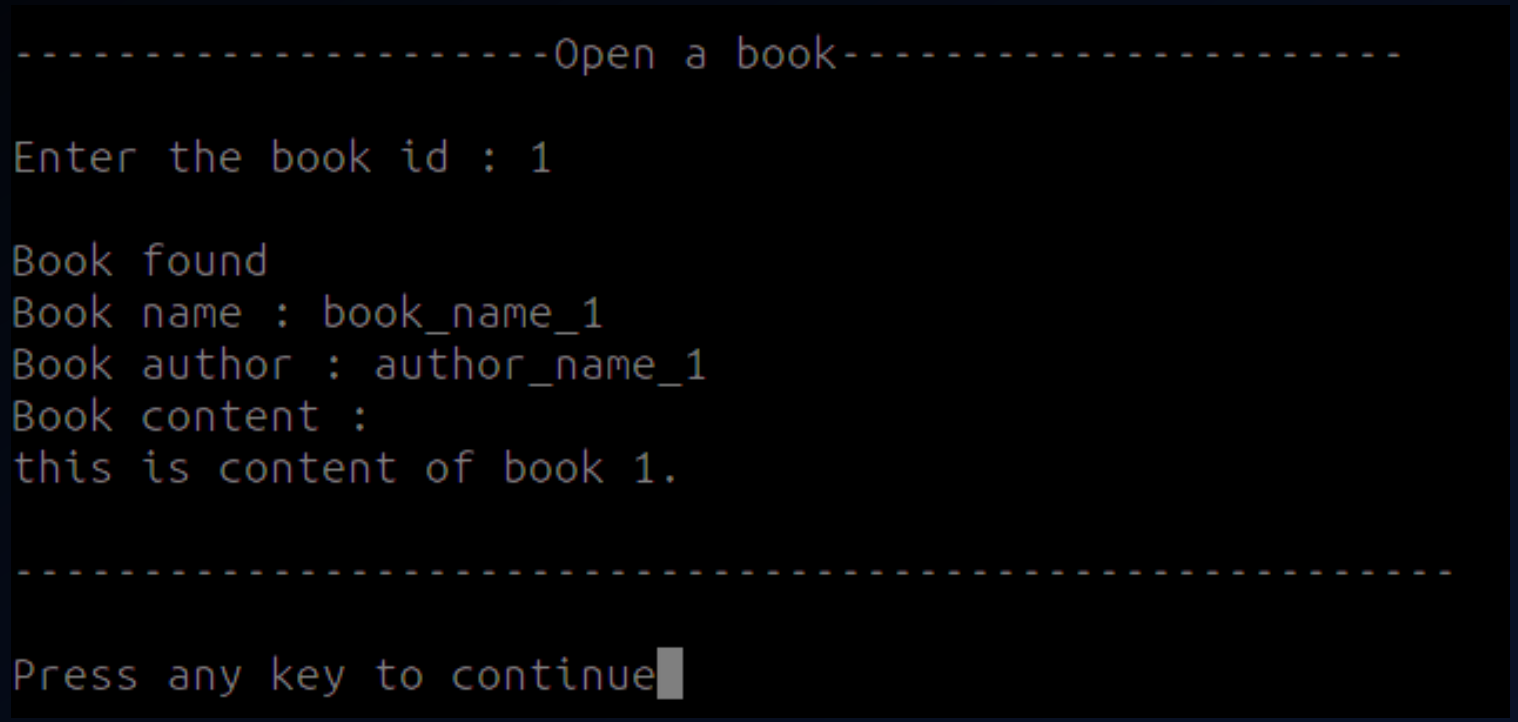
```
New book is added at the last of the list, book name : book_name_3
```

Adding at middle

```
New book added, book name : book_name_4
Added after, book name : book_name_2
```

2) Open a book

- Using this, we can open a book by entering book id.



3) Open list of books

- Using this, we can open complete list of books present in the linked list.

```
----------------------List of books----------------------

Book Id : 2
Book name : book_name_2
Book author : author_name_2

Book Id : 4
Book name : book_name_4
Book author : author_name_4

Book Id : 1
Book name : book_name_1
Book author : author_name_1

Book Id : 3
Book name : book_name_3
Book author : author_name_3

----------------------------------------------------------
```

4) Delete a book

- Using this, we can delete a book from anywhere in linked list.

```
------------------------Library--------------------------

Library is implemented using double Linked list

Following operations can be done on library

1) Add a new book
2) Open a book
3) Open list of books
4) Delete a book
5) Exit from library

Enter your choice : 4
```

```
Front book is deleted, book name : book_name_2

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Press any key to continue
```

```
Last book is deleted, book name : book_name_3

------------------------------------------------------------

Press any key to continue
```

```
Enter book id : 4

Book Deleted after, book name : book_name_4

Book deleted, book name : book_name_1
```

GitHub link for source code

https://github.com/RehanShakoor/cranes