

Library System Report

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Library System

The library is a hard to be run by one person as it requires a lot of work and some tricky processes like adding new books, checking its availability, borrowing, checking the overdue ones, saving data, searching,.. etc.

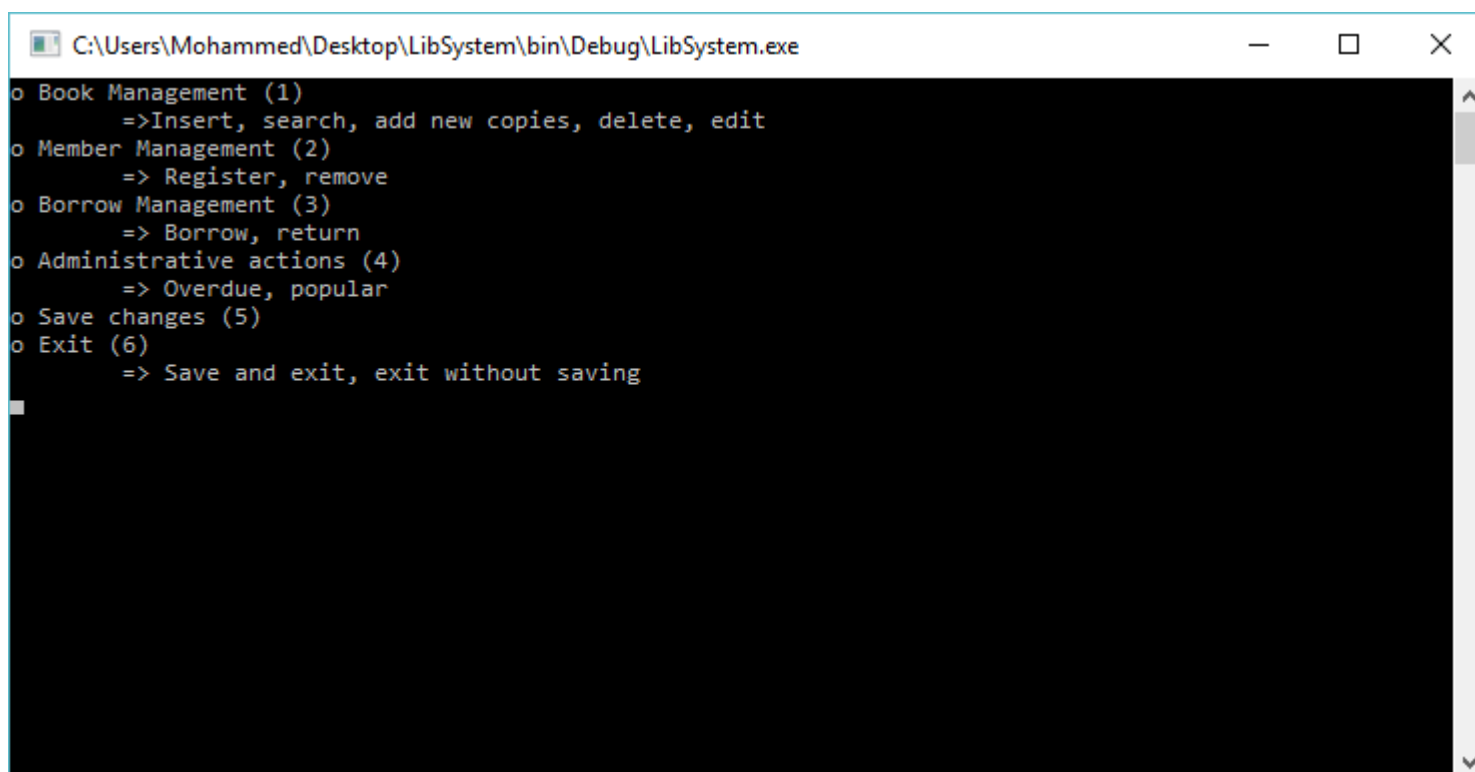
This a user-friendly program that works as a system for libraries. It can handles all of the library work and make these processes much easier.

User Manual:

- 1- Main Menu
- 2- Book Management Menu
- 3- Member Management Menu
- 4- Borrowing Management Menu
- 5- Administrative Actions Menu
- 6- Saving

1- Main Menu

The Main Menu is the home page of the program that contains option to whichever the user wants.

A screenshot of a Windows application window titled "C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe". The window contains a text-based menu with the following options: "o Book Management (1)" with sub-options "=>Insert, search, add new copies, delete, edit"; "o Member Management (2)" with sub-options "=> Register, remove"; "o Borrow Management (3)" with sub-options "=> Borrow, return"; "o Administrative actions (4)" with sub-options "=> Overdue, popular"; "o Save changes (5)"; and "o Exit (6)" with sub-options "=> Save and exit, exit without saving". The cursor is positioned at the end of the "Exit" option.

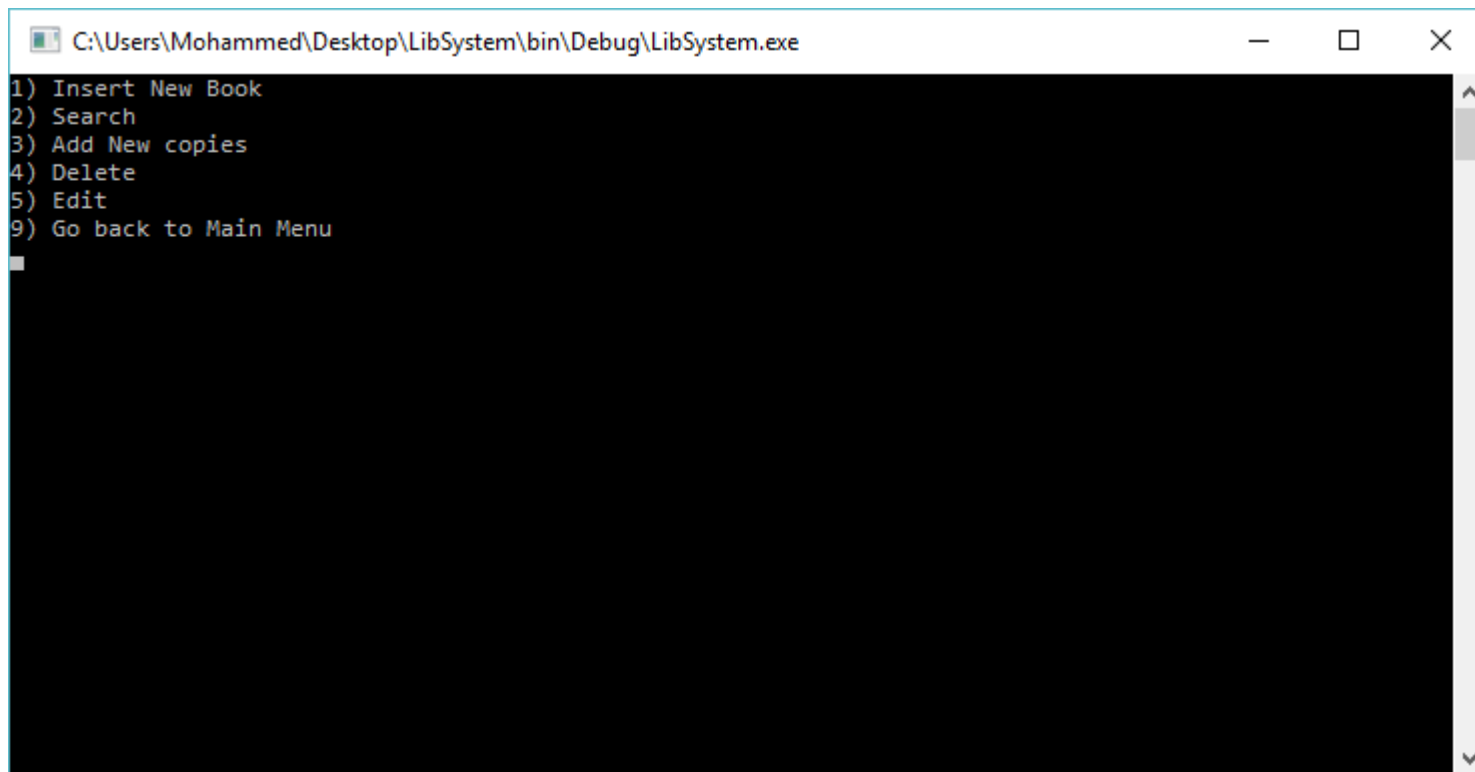
```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
o Book Management (1)
  =>Insert, search, add new copies, delete, edit
o Member Management (2)
  => Register, remove
o Borrow Management (3)
  => Borrow, return
o Administrative actions (4)
  => Overdue, popular
o Save changes (5)
o Exit (6)
  => Save and exit, exit without saving
```

All you have to do is insert the value of the choice you want.

- | | | |
|--------------------------------|--------------------------|-----------------------------|
| 1-Book Management | 2-Member Management Menu | 3-Borrowing Management Menu |
| 4- Administrative Actions Menu | 5-Saving | 6-Exiting |

2- Book Management Menu

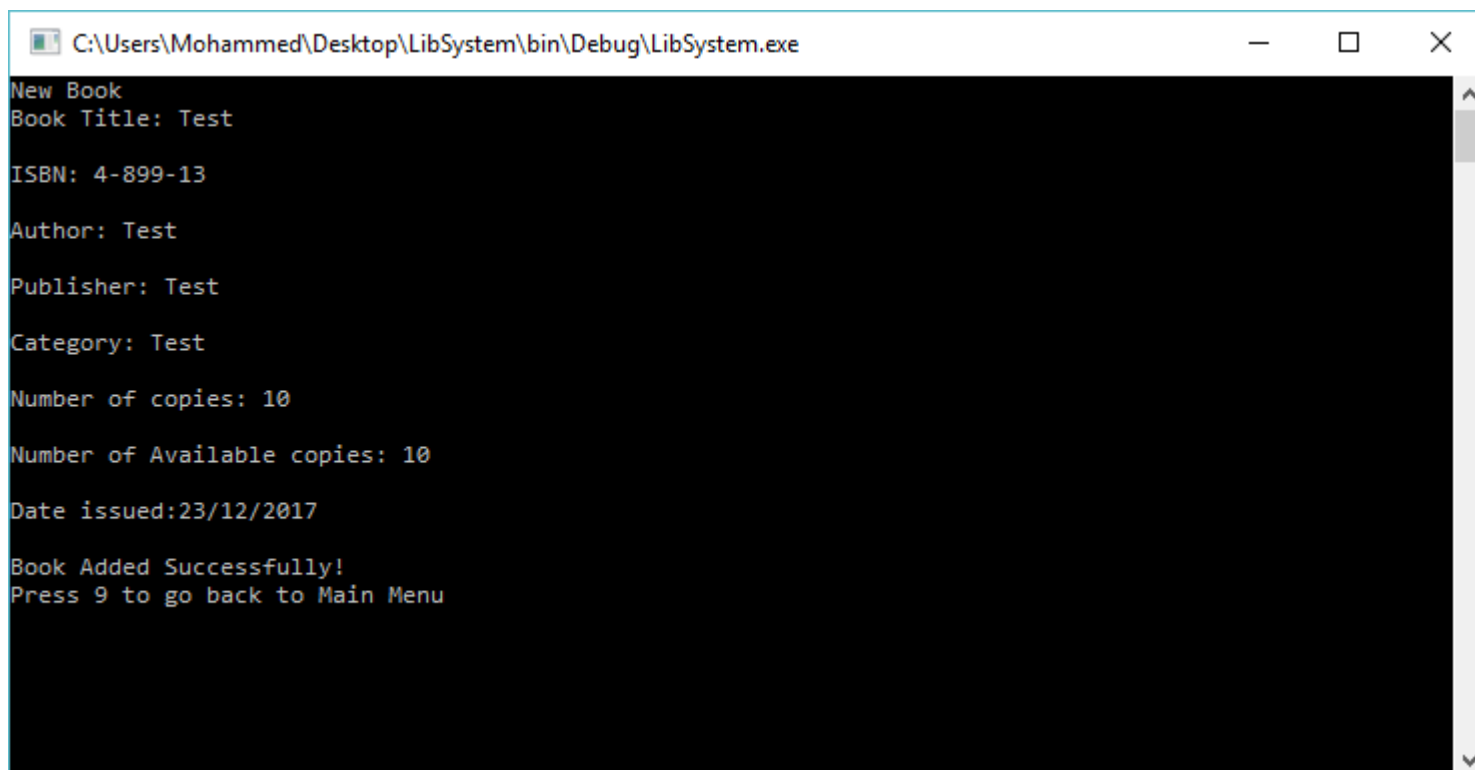
This Menu Allows you to Add new books, Search for a book, add new copies to a current book, Delete books or edit them.



```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
1) Insert New Book
2) Search
3) Add New copies
4) Delete
5) Edit
9) Go back to Main Menu
```

a) Add a book

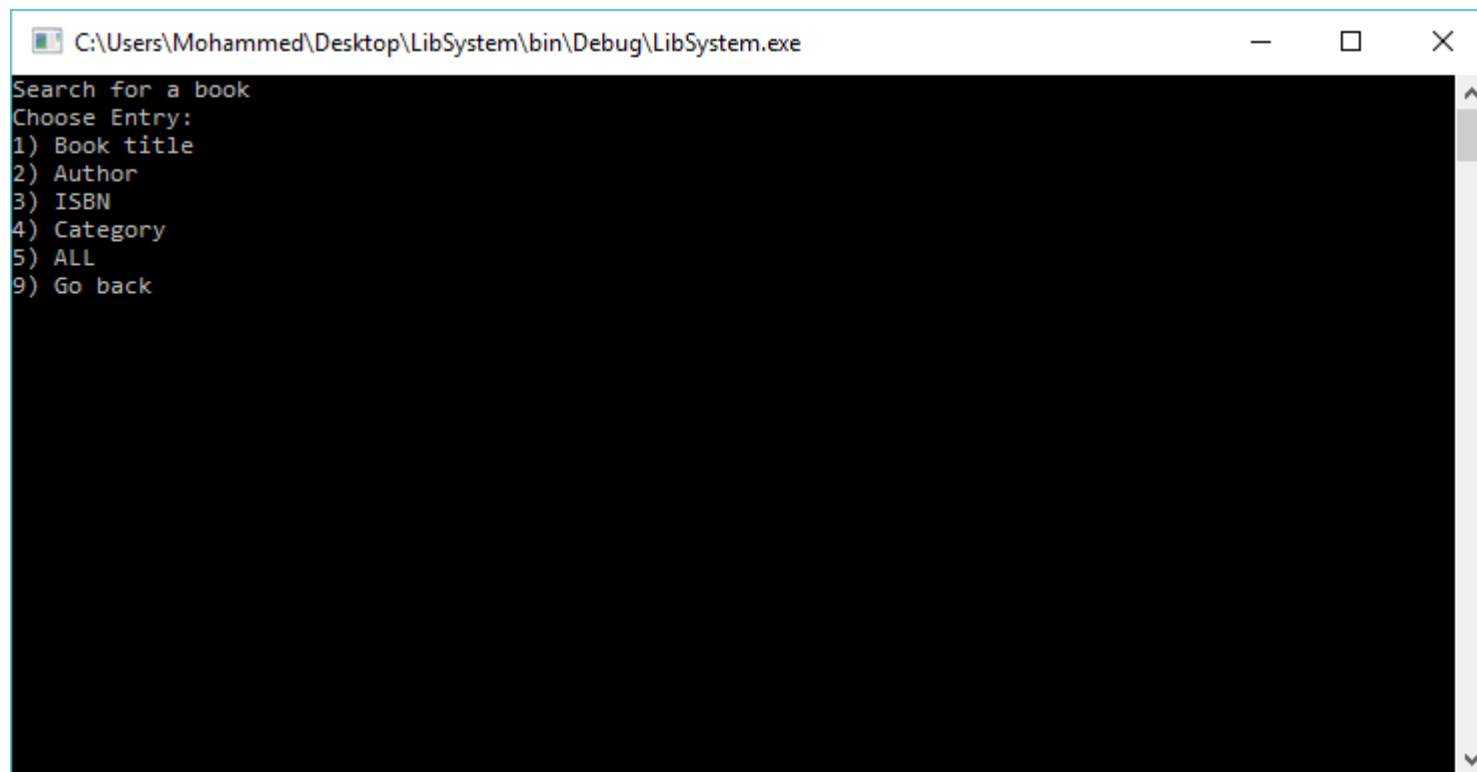
All you have to do is insert the books data correctly as shown.



```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
New Book
Book Title: Test
ISBN: 4-899-13
Author: Test
Publisher: Test
Category: Test
Number of copies: 10
Number of Available copies: 10
Date issued:23/12/2017
Book Added Successfully!
Press 9 to go back to Main Menu
```

b) Search for a book

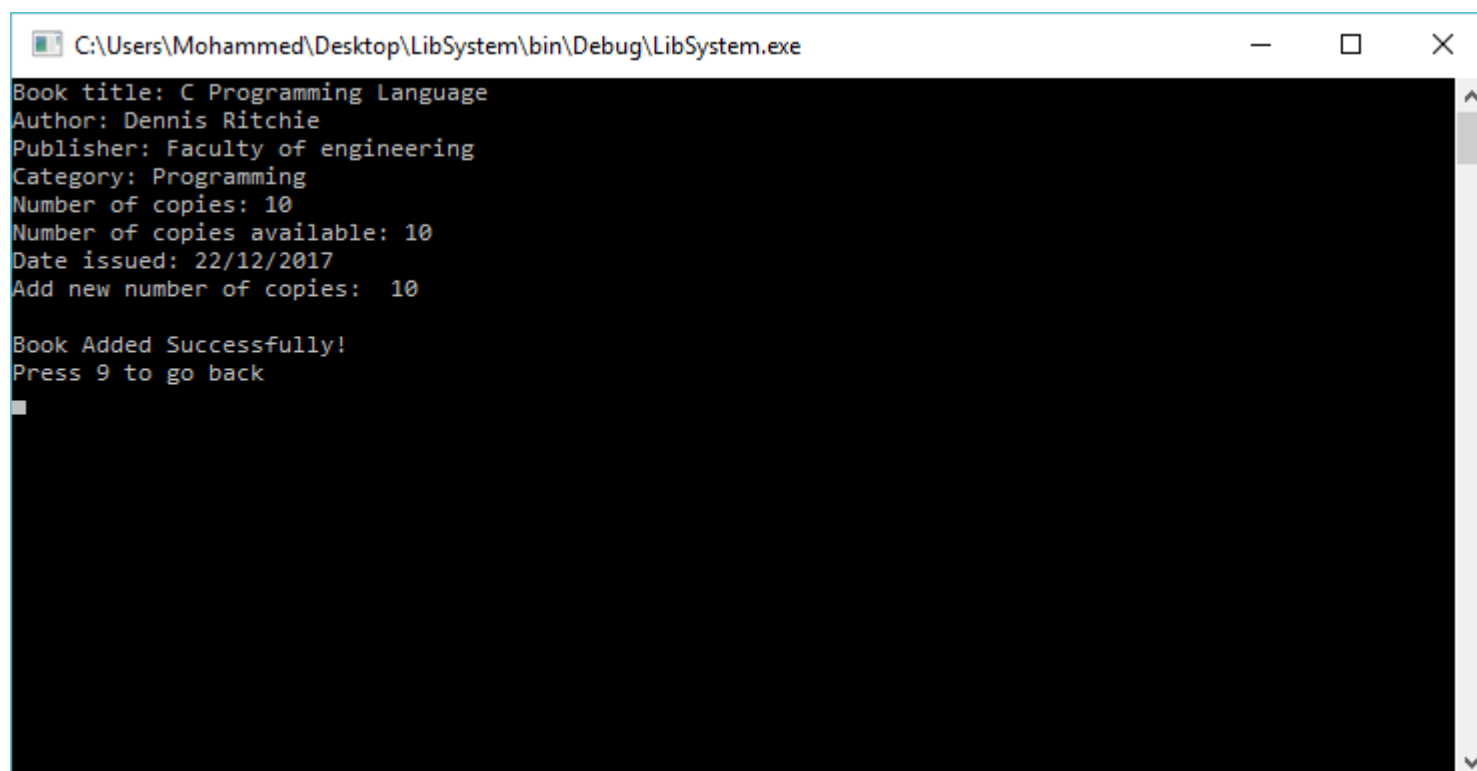
This option allows you to search for book using the field you want to search like book's title, isbn, author, category or you can search in of the fields as you want you just choose the field and search for the book you want.



```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
Search for a book
Choose Entry:
1) Book title
2) Author
3) ISBN
4) Category
5) ALL
9) Go back
```

c) Add new copies

This option allows you to add copies to a current available books only
All you have to do is search for the book isbn and update the number of copies.

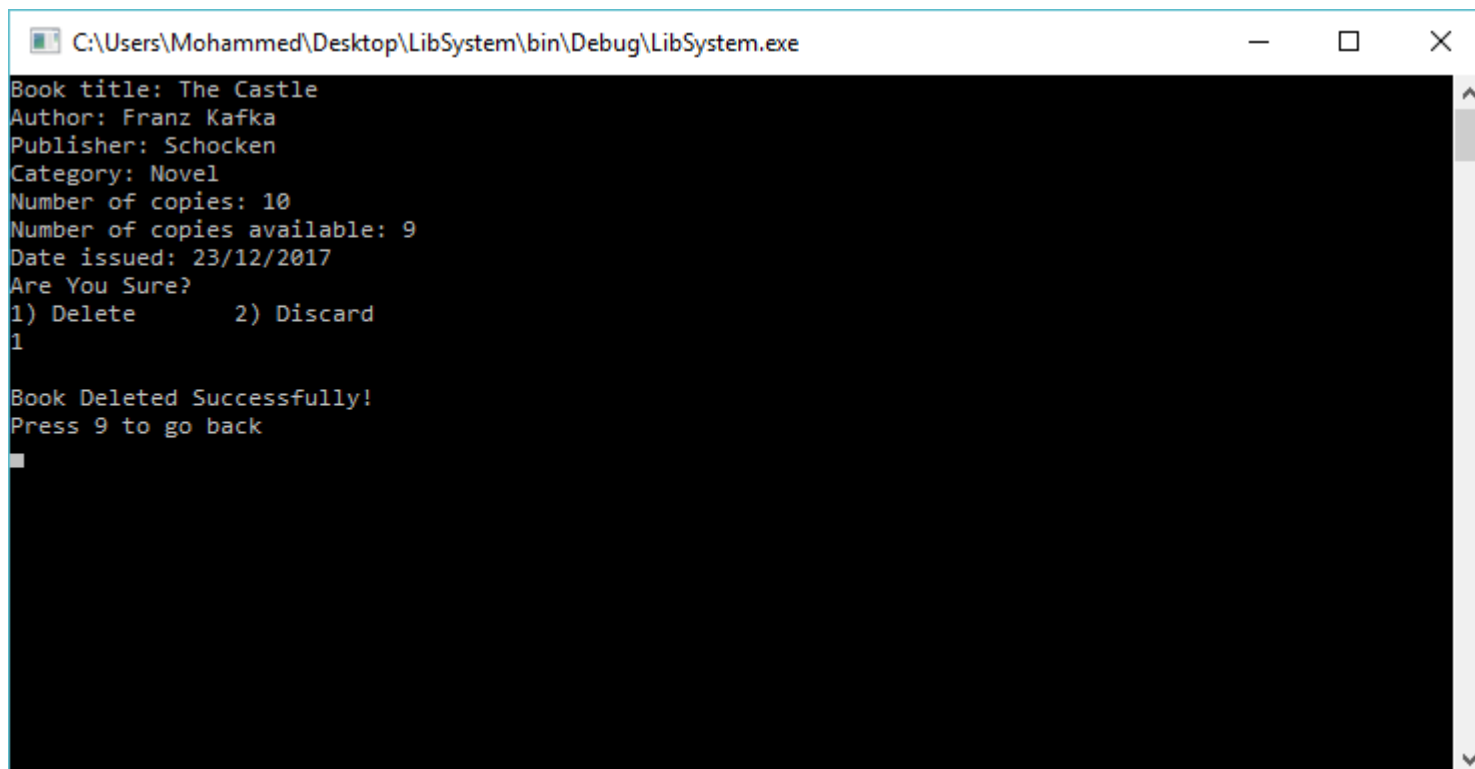


```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
Book title: C Programming Language
Author: Dennis Ritchie
Publisher: Faculty of engineering
Category: Programming
Number of copies: 10
Number of copies available: 10
Date issued: 22/12/2017
Add new number of copies: 10

Book Added Successfully!
Press 9 to go back
```

d) Delete a book

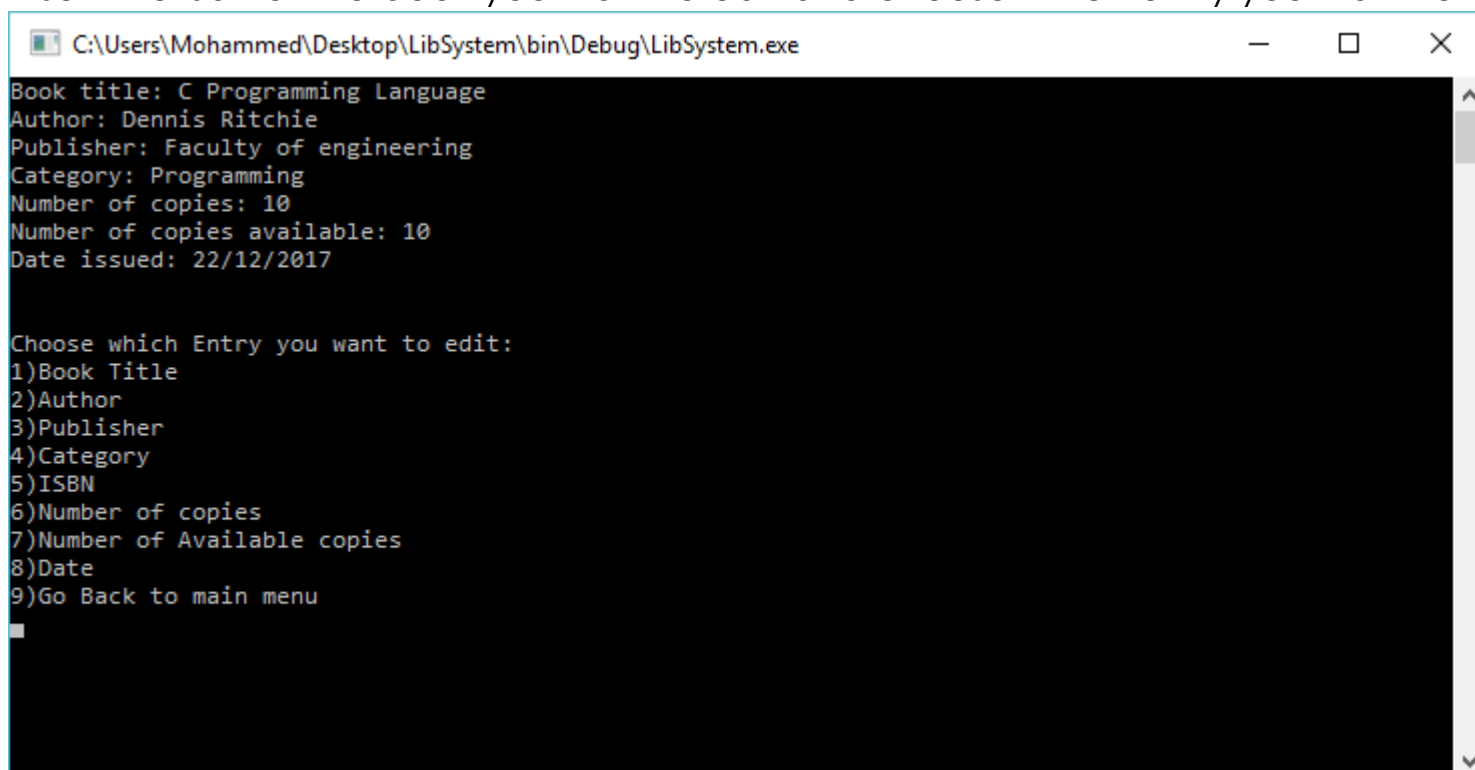
You have to insert the isbn for the book you want to delete make sure you got the right one and delete it.



```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
Book title: The Castle
Author: Franz Kafka
Publisher: Schocken
Category: Novel
Number of copies: 10
Number of copies available: 9
Date issued: 23/12/2017
Are You Sure?
1) Delete      2) Discard
1
Book Deleted Successfully!
Press 9 to go back
```

e) Edit a book

Insert the isbn of the book you want to edit and choose which entry you want to edit.

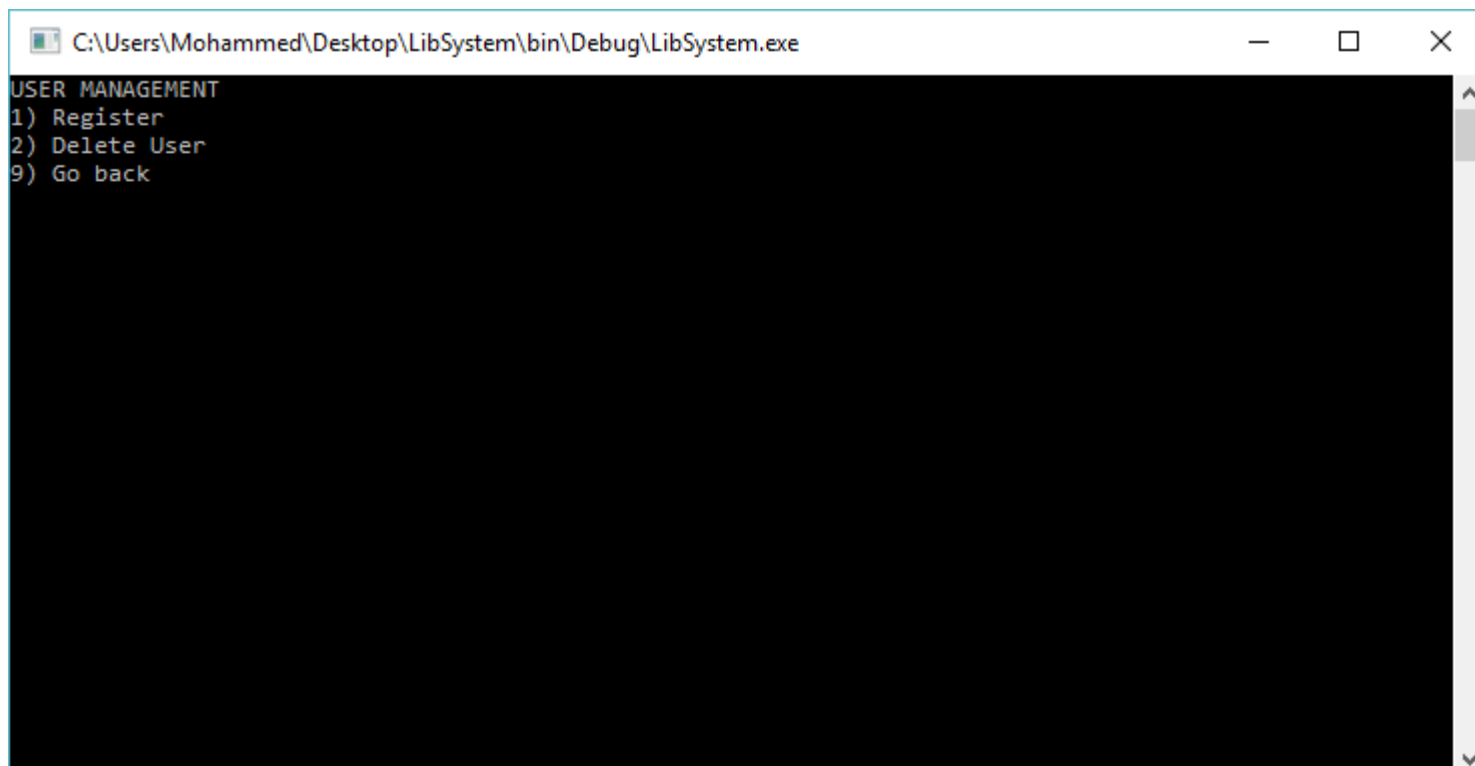


```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
Book title: C Programming Language
Author: Dennis Ritchie
Publisher: Faculty of engineering
Category: Programming
Number of copies: 10
Number of copies available: 10
Date issued: 22/12/2017

Choose which Entry you want to edit:
1)Book Title
2)Author
3)Publisher
4)Category
5)ISBN
6)Number of copies
7)Number of Available copies
8)Date
9)Go Back to main menu
```

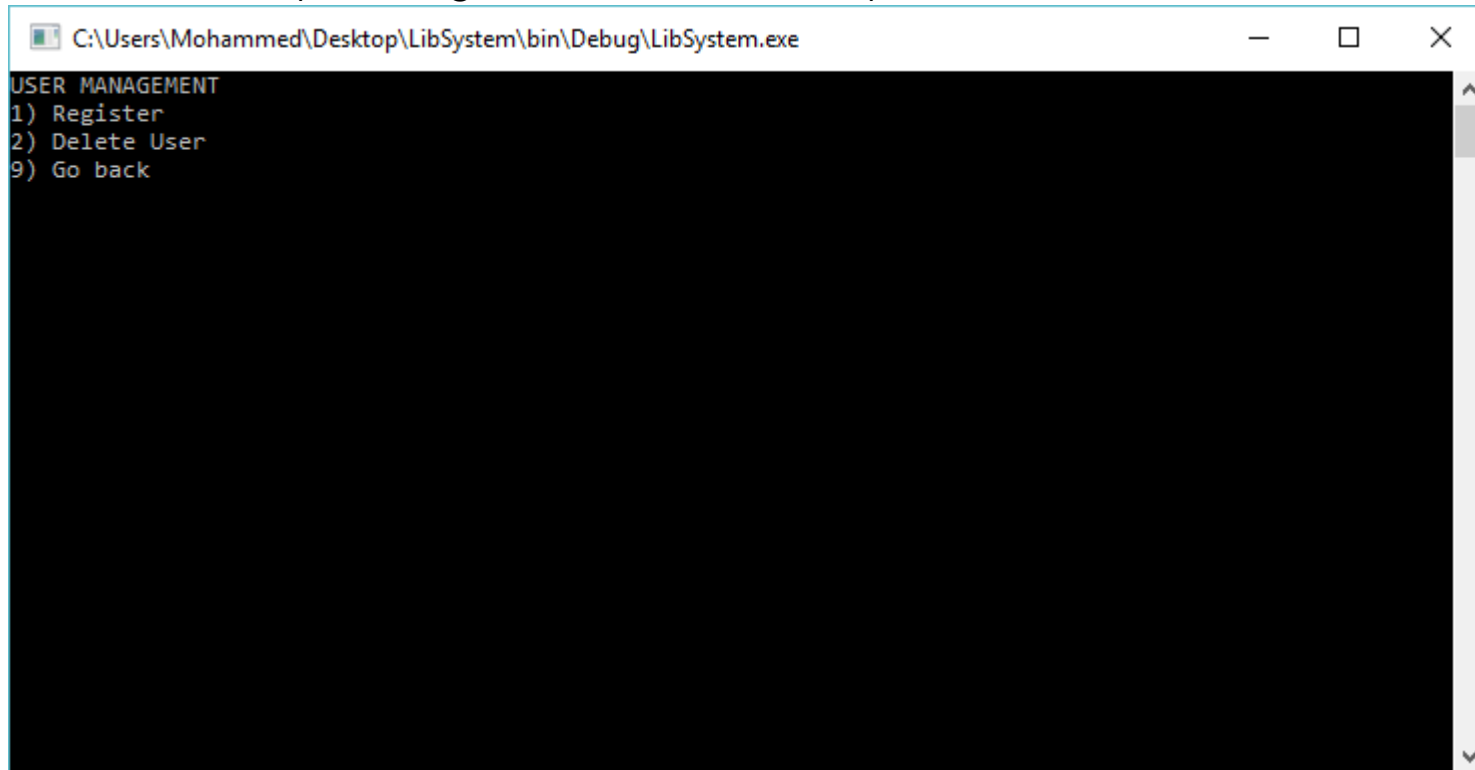
3- Member Management Menu

Menu to Add or Delete a user.



```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
USER MANAGEMENT
1) Register
2) Delete User
9) Go back
```

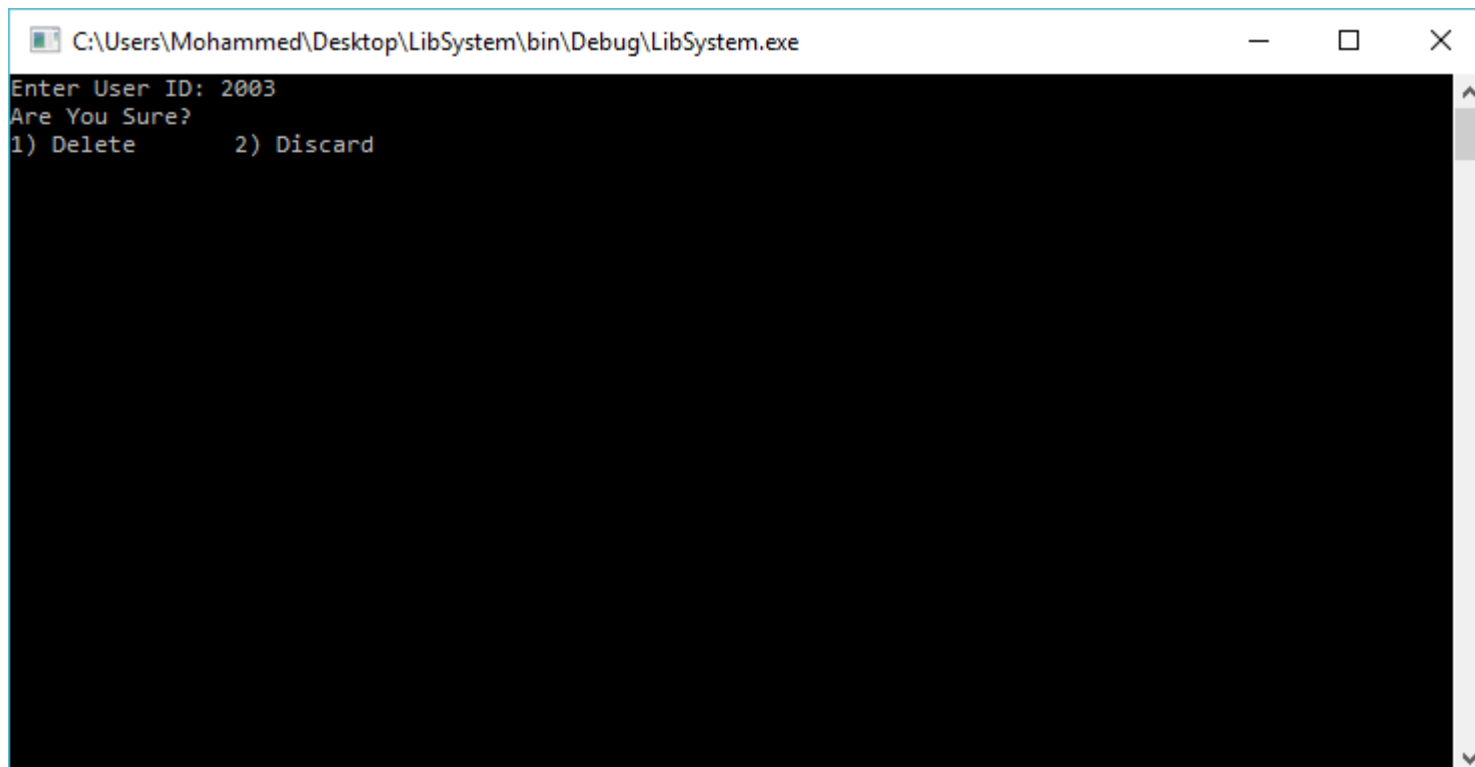
Add new user by inserting all of its data correctly as shown



```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe

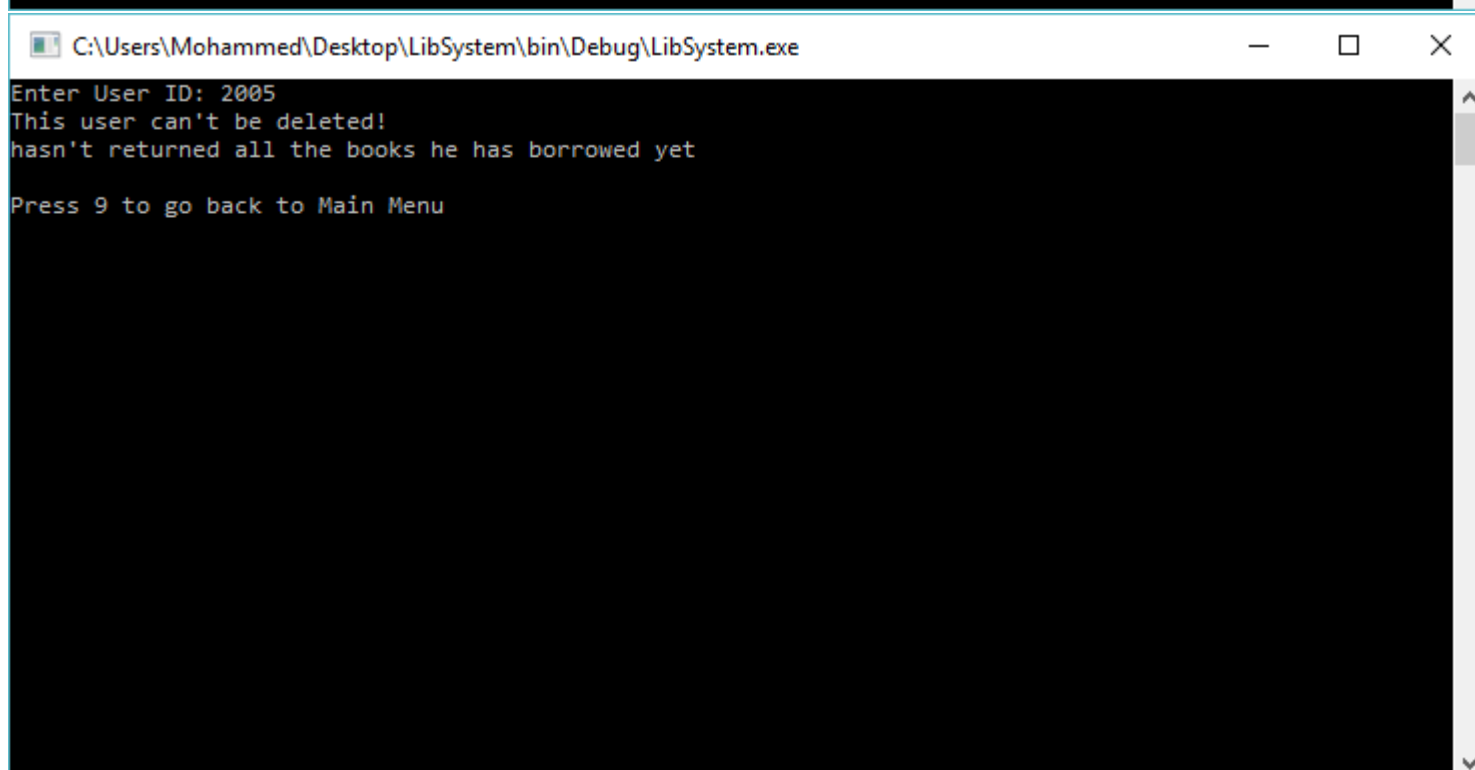
USER MANAGEMENT
1) Register
2) Delete User
9) Go back
```

Delete user by inserting member's ID –Make sure he has returned all the books he had borrowed - and delete it.



```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe

Enter User ID: 2003
Are You Sure?
1) Delete      2) Discard
```



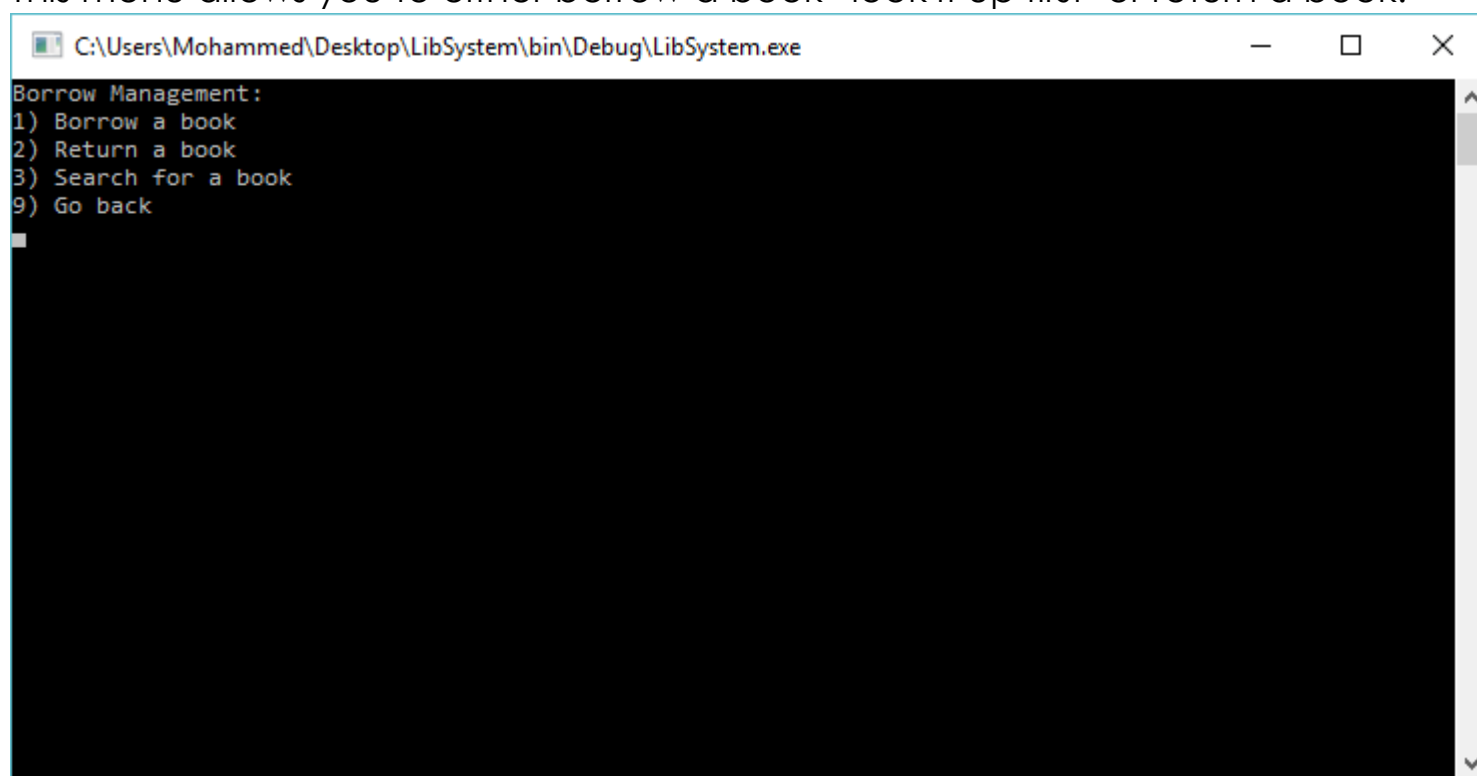
```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe

Enter User ID: 2005
This user can't be deleted!
hasn't returned all the books he has borrowed yet

Press 9 to go back to Main Menu
```

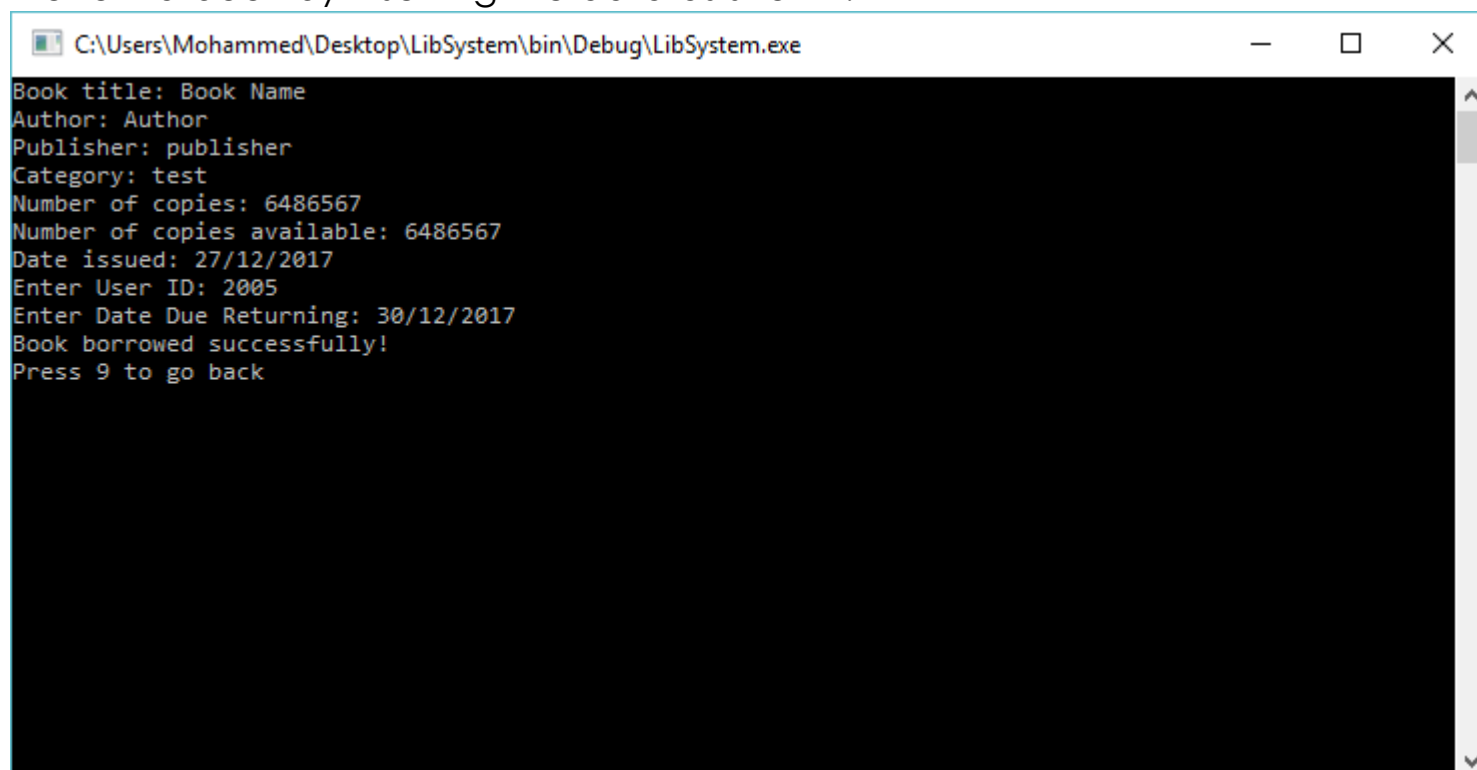
4- Borrow Management

This menu allows you to either borrow a book –look it up first- or return a book.



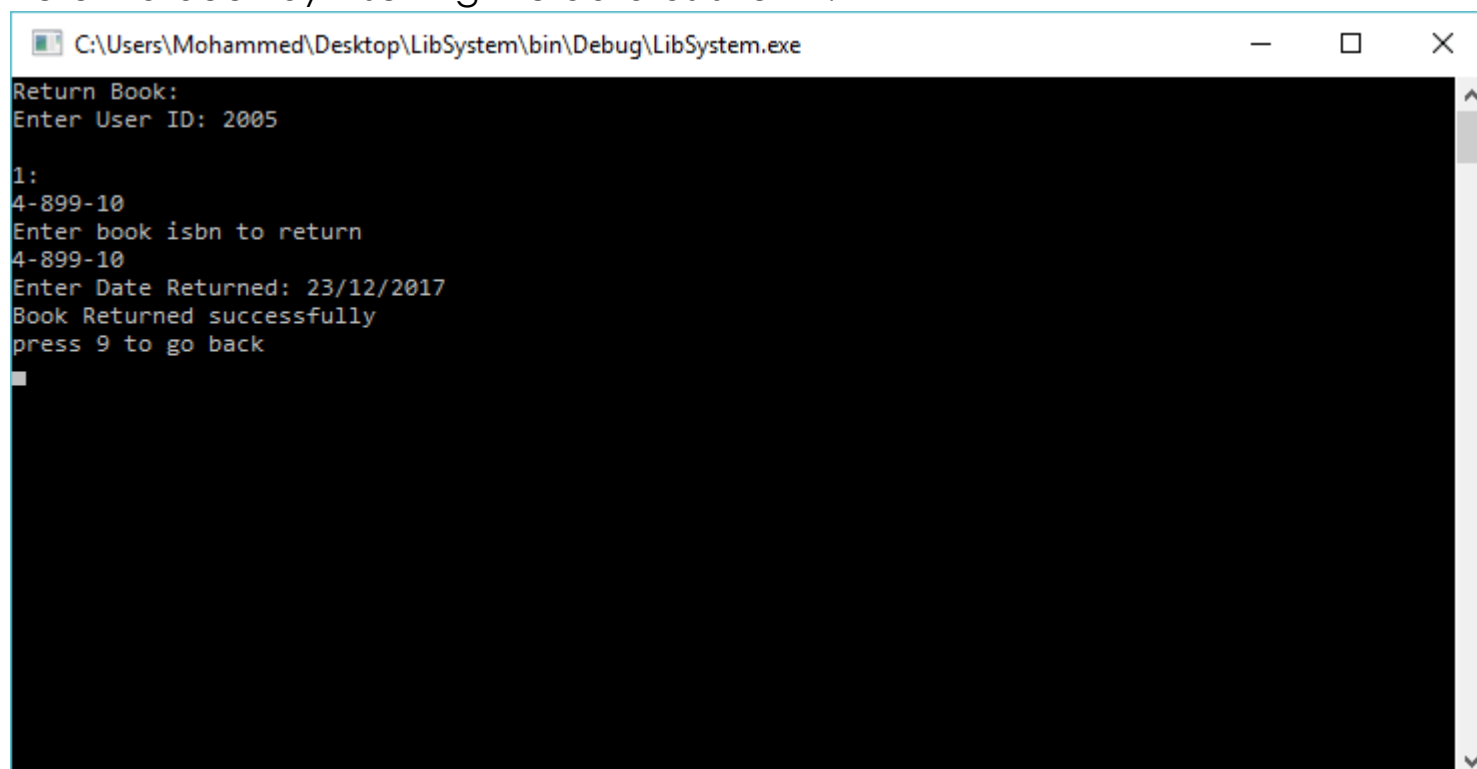
```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
Borrow Management:
1) Borrow a book
2) Return a book
3) Search for a book
9) Go back
```

Borrow a book by inserting the data as shown.



```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
Book title: Book Name
Author: Author
Publisher: publisher
Category: test
Number of copies: 6486567
Number of copies available: 6486567
Date issued: 27/12/2017
Enter User ID: 2005
Enter Date Due Returning: 30/12/2017
Book borrowed successfully!
Press 9 to go back
```

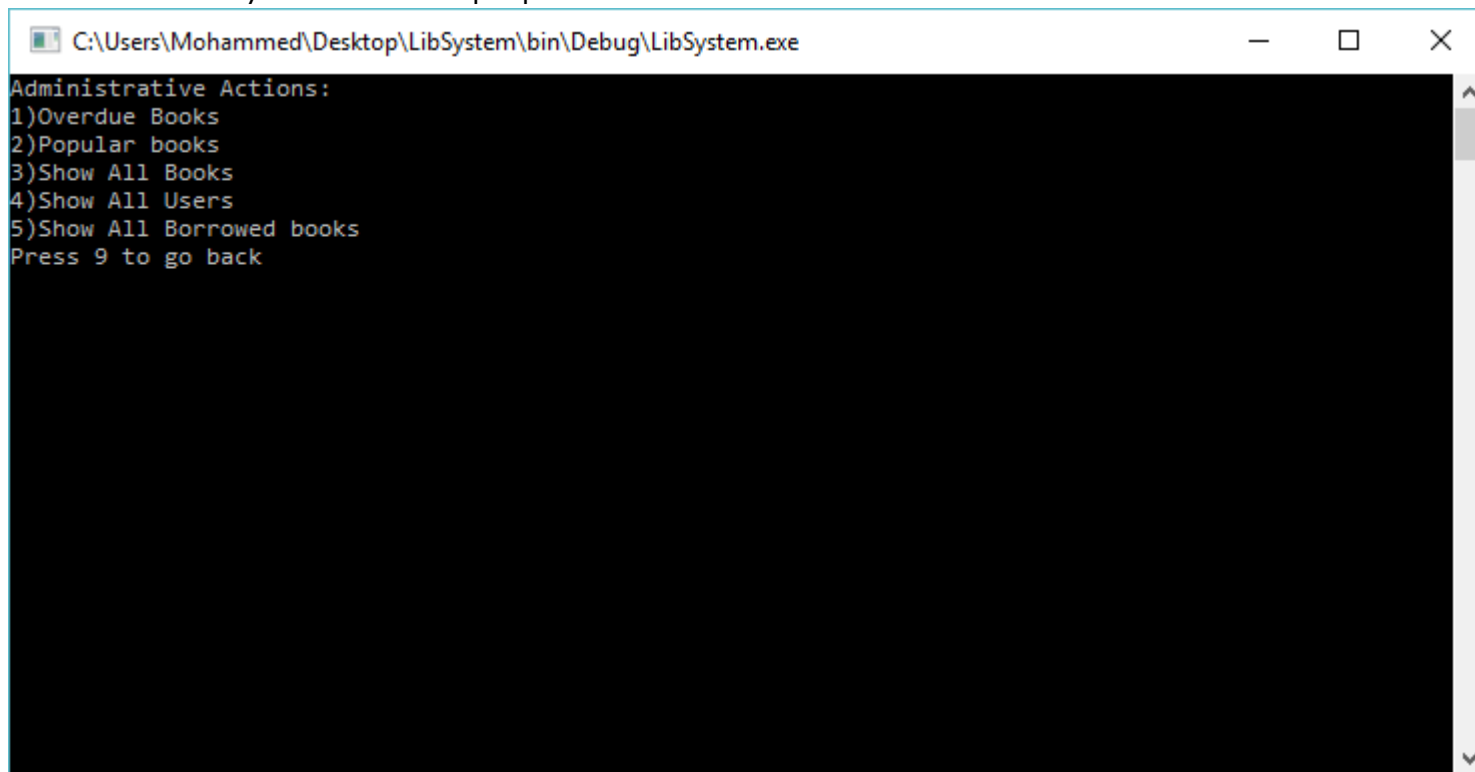
Return a book by inserting the data as shown.



```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
Return Book:
Enter User ID: 2005
1:
4-899-10
Enter book isbn to return
4-899-10
Enter Date Returned: 23/12/2017
Book Returned successfully
press 9 to go back
```

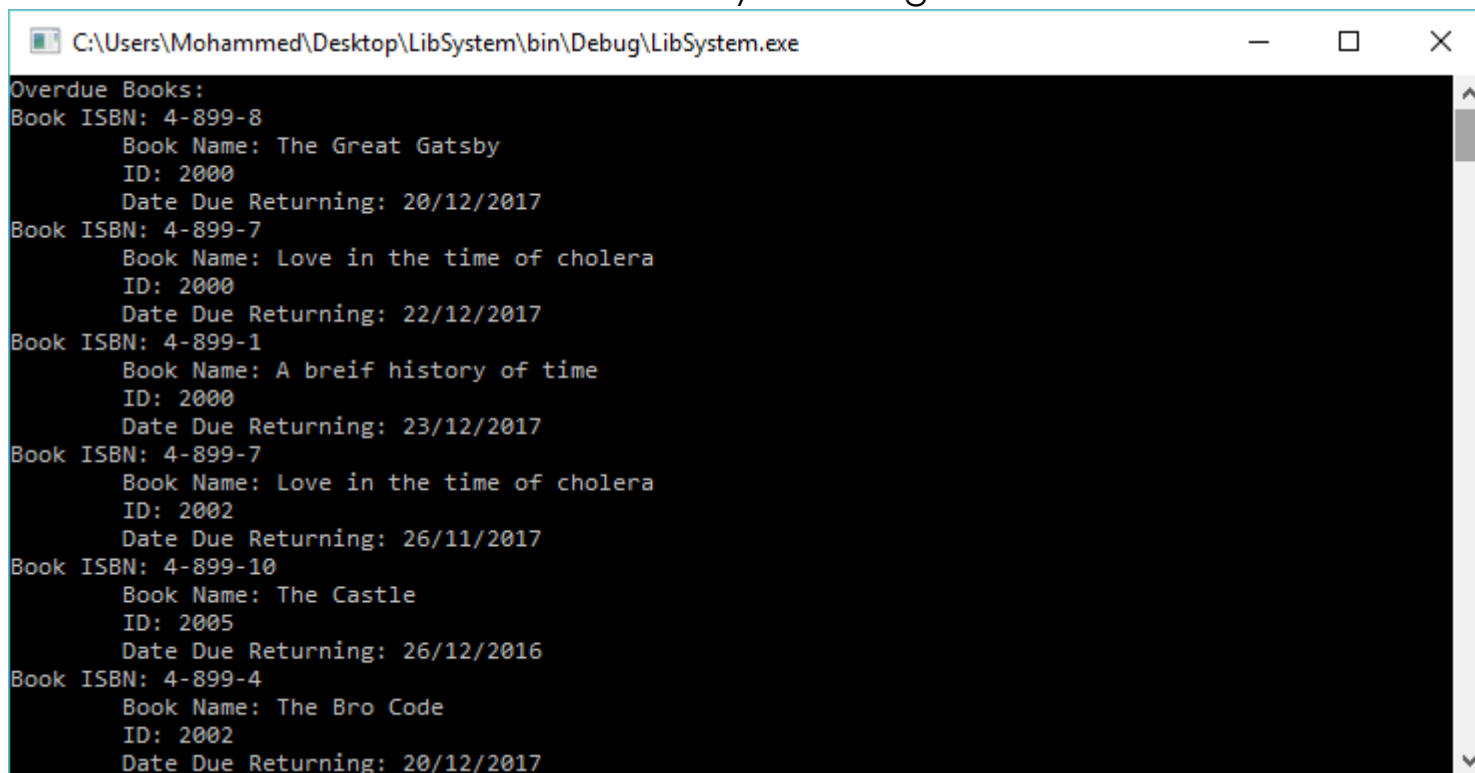
5- Administrative Actions

This Menu allows you to show all books, all users and all the borrowed books in the data base. Also it allows you to show popular and overdue books.



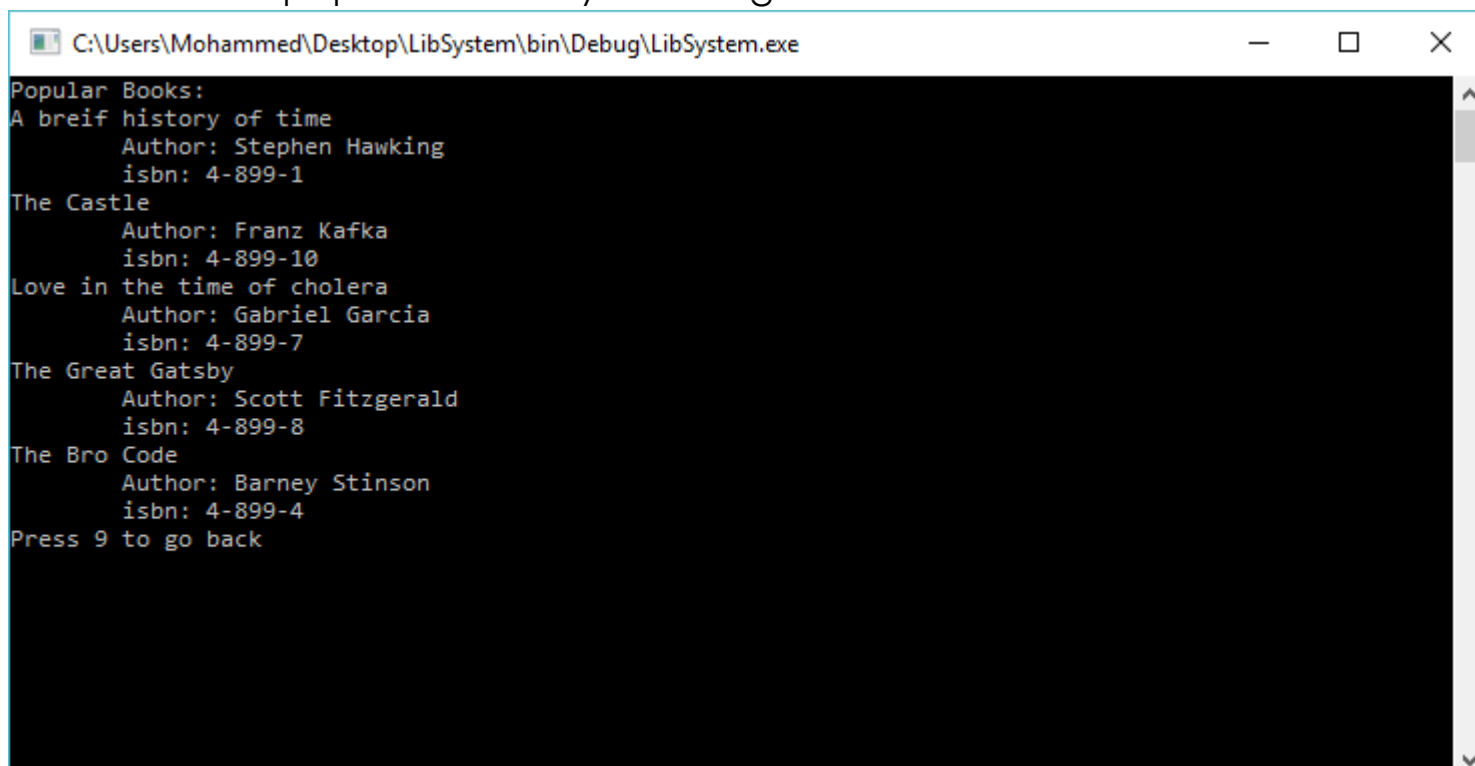
```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
Administrative Actions:
1)Overdue Books
2)Popular books
3)Show All Books
4)Show All Users
5)Show All Borrowed books
Press 9 to go back
```

Show overdue books and its due date by choosing 1



```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
Overdue Books:
Book ISBN: 4-899-8
    Book Name: The Great Gatsby
    ID: 2000
    Date Due Returning: 20/12/2017
Book ISBN: 4-899-7
    Book Name: Love in the time of cholera
    ID: 2000
    Date Due Returning: 22/12/2017
Book ISBN: 4-899-1
    Book Name: A breif history of time
    ID: 2000
    Date Due Returning: 23/12/2017
Book ISBN: 4-899-7
    Book Name: Love in the time of cholera
    ID: 2002
    Date Due Returning: 26/11/2017
Book ISBN: 4-899-10
    Book Name: The Castle
    ID: 2005
    Date Due Returning: 26/12/2016
Book ISBN: 4-899-4
    Book Name: The Bro Code
    ID: 2002
    Date Due Returning: 20/12/2017
```

Show the most popular books by choosing 2



```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
Popular Books:
A breif history of time
    Author: Stephen Hawking
    isbn: 4-899-1
The Castle
    Author: Franz Kafka
    isbn: 4-899-10
Love in the time of cholera
    Author: Gabriel Garcia
    isbn: 4-899-7
The Great Gatsby
    Author: Scott Fitzgerald
    isbn: 4-899-8
The Bro Code
    Author: Barney Stinson
    isbn: 4-899-4
Press 9 to go back
```


Show all books by choosing 3

```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
ALL BOOKS:
Book 1:
Name: C Programming Language
Author: Dennis Ritchie
Publisher: Faculty of engineering
Category: Programming
ISBN: 4-899-0
Number of copies: 10
Number of copies available: 10
Date issued: 22/12/2017
Book 2:
Name: A breif history of time
Author: Stephen Hawking
Publisher: Warner Bros.
Category: Physics
ISBN: 4-899-1
Number of copies: 15
Number of copies available: 14
Date issued: 21/12/2017
Book 3:
Name: The Hidden Reality
Author: Brian Greene
Publisher: Alfred A. Knopf
Category: Physics
ISBN: 4-899-2
```

Show all users by choosing 4

```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
ALL USERS:
User 1:
Name: Hamdy, Ahmed
ID: 2000
Address: 35, Shatby, Alexandria
Phone Number: 0123456789
Age: 26
E-mail: ahmed@gmail.com
User 2:
Name: Adel, Mohamed
ID: 2002
Address: 5,Muharram bek.,alexandria
Phone Number: 01019265177
Age: 20
E-mail: Mohamedadel@gmail.com
User 3:
Name: Ahmed, Mohamed
ID: 2003
Address: 5,EL prince,Alexandria
Phone Number: 01222222
Age: 19
E-mail: mohamedahmed@gmail.com
```

Show all borrowed books by choosing 5

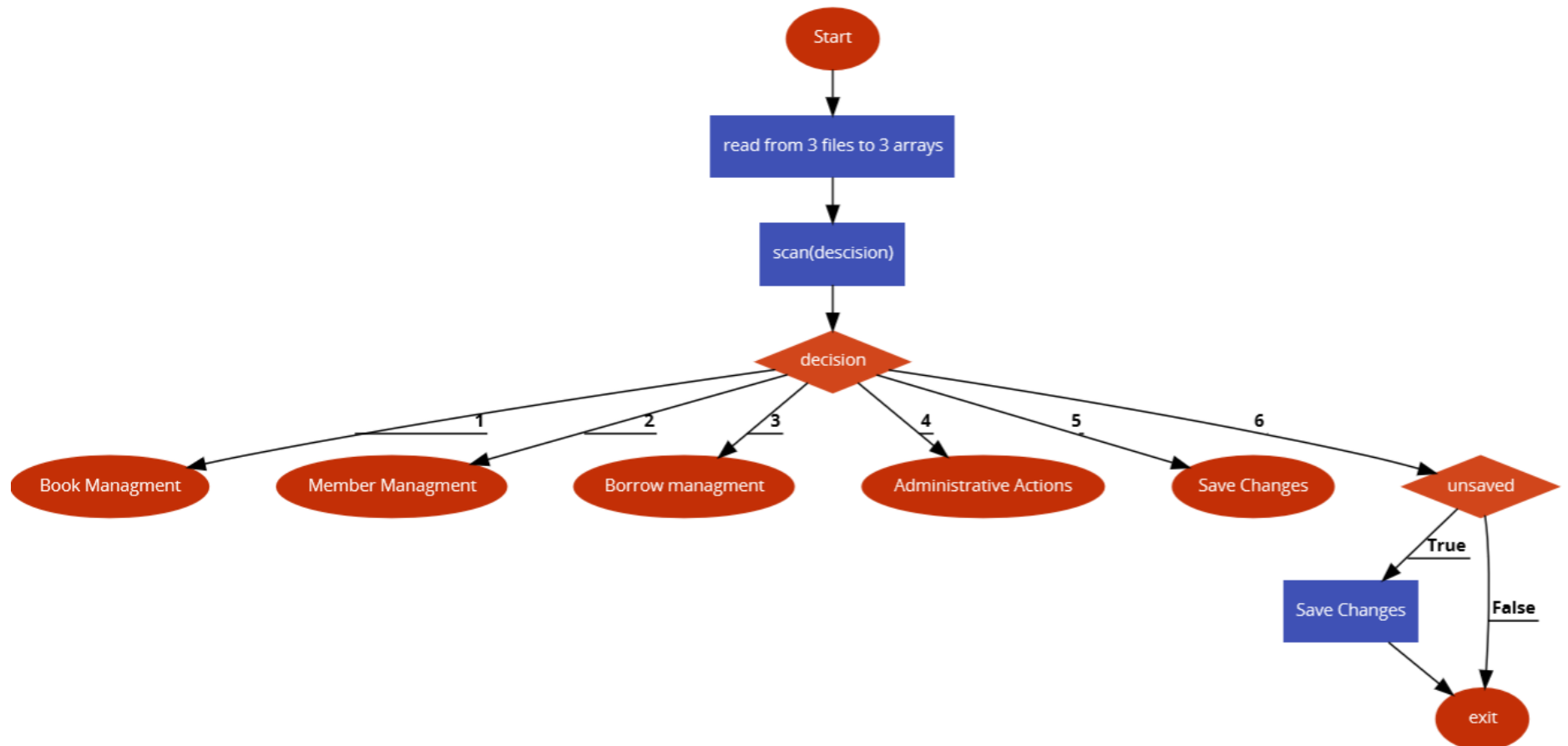
```
C:\Users\Mohammed\Desktop\LibSystem\bin\Debug\LibSystem.exe
ALL Borrowed Books:
Book 1:
ISBN: 4-899-0
USER ID: 2000
Date Borrowed: 22/12/2017
Date Due: 25/12/2017
Date Returned: 22/12/2017
Book 2:
ISBN: 4-899-1
USER ID: 2002
Date Borrowed: 23/12/2017
Date Due: 25/12/2017
Date Returned: 24/12/2017
Book 3:
ISBN: 4-899-8
USER ID: 2000
Date Borrowed: 18/12/2017
Date Due: 20/12/2017
Date Returned: NOT Returned yet
Book 4:
ISBN: 4-899-10
USER ID: 2000
```

6- Saving changes

Saves all the changes you have done.

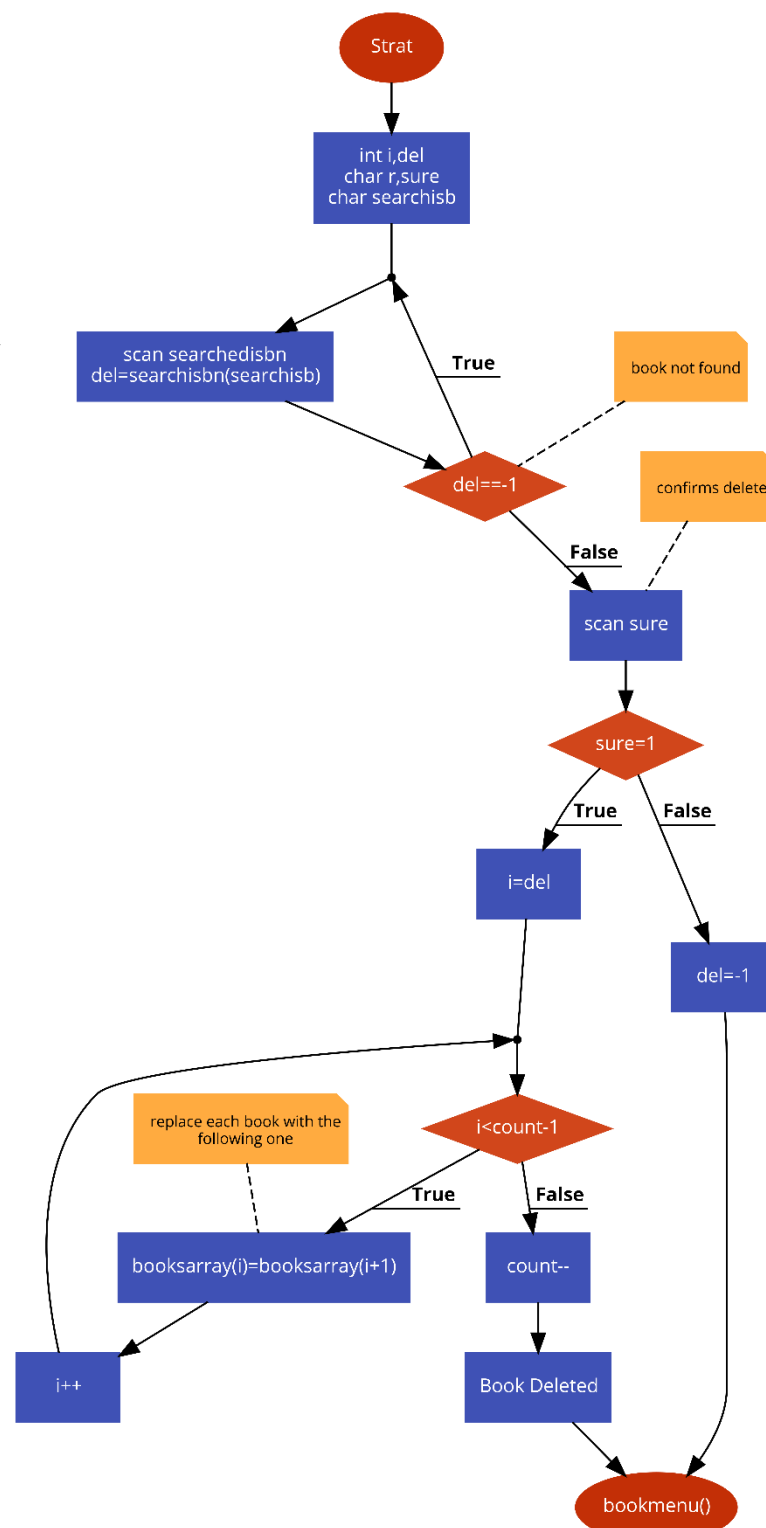
Code Description

- First step would be read from three main files (Books file – Users file – Borrowed books file) which contain the database and put the data into three main arrays of structs (Books array – Users array – Borrowed books array) to deal with only arrays the whole program.
- Scan decision from the user to toggle through the program.



Some of the main algorithms used

- Delete book function
 - 1) Scan isbn
 - 2) Searches for isbn
 - 3) If (not found) scan isbn
 - 4) If (found) confirm deleting
 - 5) Replace each book in the books array with following book
 - 6) Reduce the array size by one
 - 7) Return



-Searching for a Book

- 1) Scan searched string
- 2) Copy books name string in temp strings
- 3) `strlwr(temp string),strlwr(searched string)` to use `strstr`
- 4) Check if searched is subset from temp string
- 5) print book's name

