



In this lab. we'll build a library management system. The core features are - you can add books and rent books.

There can be two types of users. Regular users and special users. Regular users can only rent books for a certain amount of time - 3, 5, or 7 days. Special users can <sup>only</sup> add or delete books to the list.

So, there'll be 6 classes in total in the system.

- Book - ID, Title, Author, Publisher, Quantity

- User - ID, Name, Address [Abstract class]

- Regular Users : User - List<Book>

- Special Users : User -

AddBook (List<Book>, Book)  
DeleteBook (List<Book>, Book)

- Rent - ID, BookID, UserID, Duration

↳ methods

- Static Utility class - RentABook (BookID, UserID, Duration)  
↳ This will insert a Rent instance inside "Rents" List.

There should be 4 lists in total.

1. Books
2. Regular Users
3. Special Users
4. Rents

## Basic UI

ID \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

Add User

Book ID (5) ✓

User ID (3) ✓

Duration ✓

Rent Book ~ (4)

Book ID \_\_\_\_\_

Book Title \_\_\_\_\_

Author \_\_\_\_\_

Publisher \_\_\_\_\_

Quantity \_\_\_\_\_

Current User (1) ✓ ~ ComboBox

Delete Book Add Book ~ Button

ListBox

ID	Title	Author	Qty
1	সত্যজিৎ	সত্যজিৎ	5
2	Sophie's World	Y.G	0

(2)

Show Books

Label

TextBox

① This will show the list of all users including Regular and special. If the selected user is not special user, clicking on Add or Delete Buttons will show a message "Insufficient Rights". If the user is special, it'll add or delete Books.

- ② It is a listBox containing the current or existing Books' information.
- ③ A dropdown or combobox. But, this will only show the list of Regular users.
- ④ will add a RentType of object in the "Rents" List, and decrease corresponding Book Quantity by 1.  
\* Book Quantity can't be negative.
- ⑤ Will only show the books that has a quantity of more than 1.