

National School of Business Management

B.Sc – University College Dublin

Assignment

Deadline : Monday 14<sup>th</sup> August, 2017

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# OOP with Java

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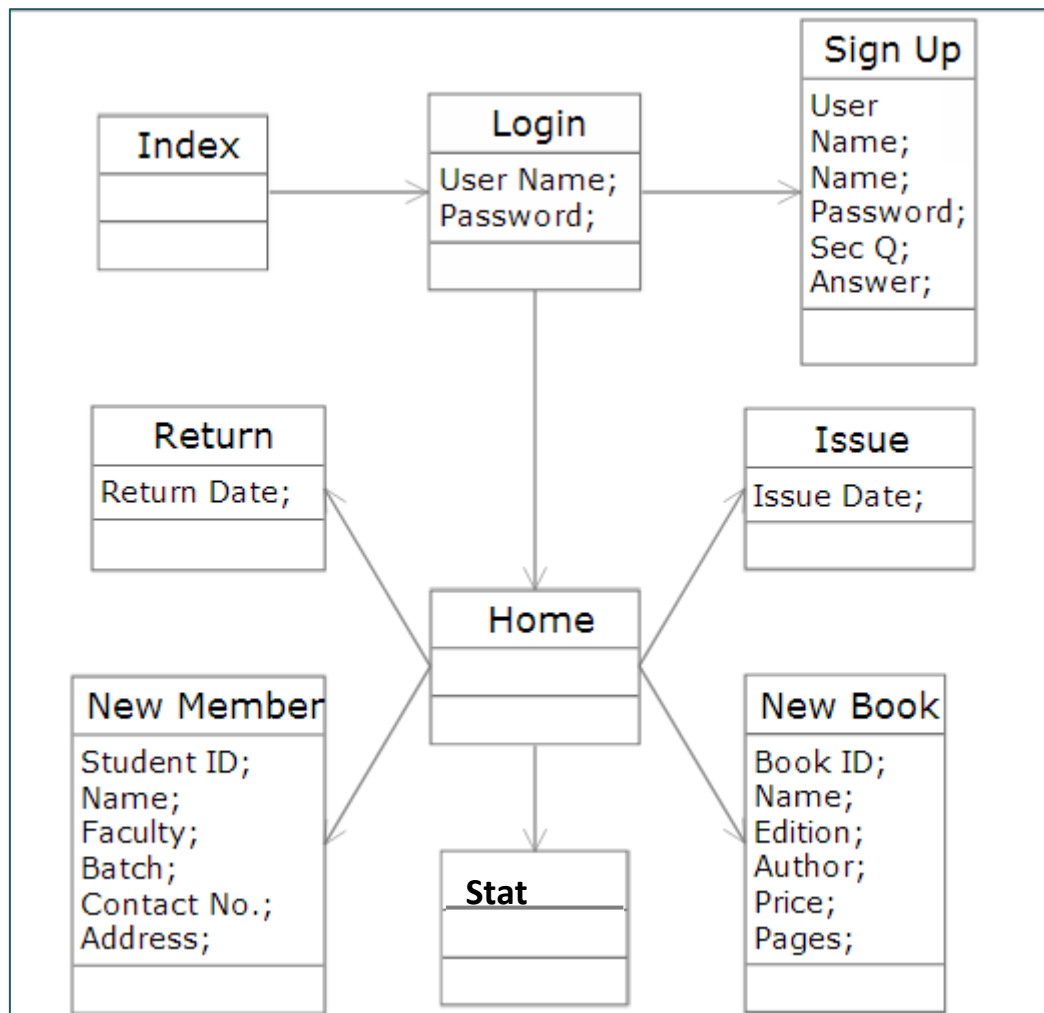
## Acknowledgement

I am really grateful because I managed to complete my Java assignment within the time given by my lecturer Mrs. Manoja Weerasekara. This assignment I have done as an individual project because all the other assignments we had group assignments. I am sincerely thank my lecturer of Mrs. Manoja Weerasekara for the guidance and encouragement in finishing this assignment and also teaching me in this module.

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## UML Diagram for Library Management System



## Welcome to The LMS

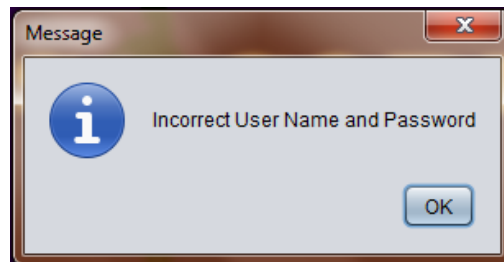


- This is the first frame of my library management system.
- Using Login button you can enter to the login frame.
- Using close button you can leave the frame.

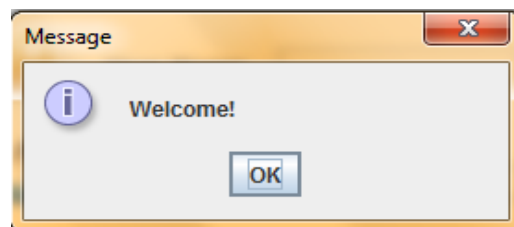
## Login Frame



- This is the login form for the library management system.
- If you have an account you can simply enter your user name & password.
- Then click the login button.
- If you don't have an account you can sign up.

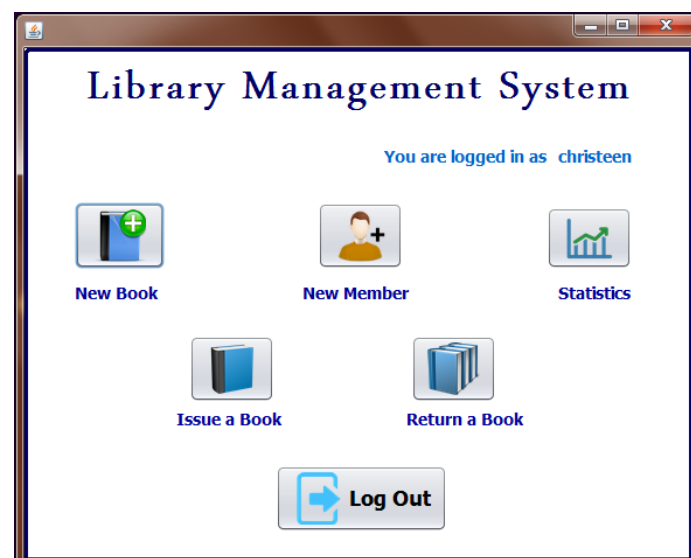


- If you enter your user name or password incorrect, you can see the alert message like this.



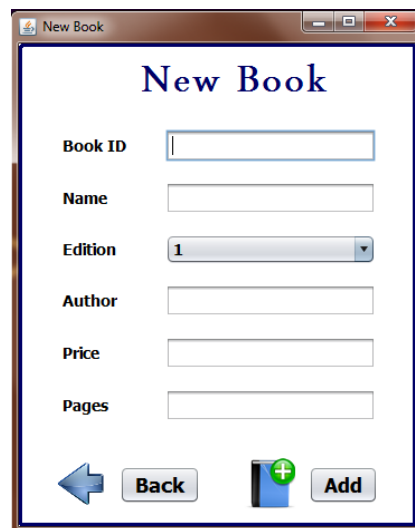
- If you enter your username and password correct, you can see this alert message.

## Home Frame

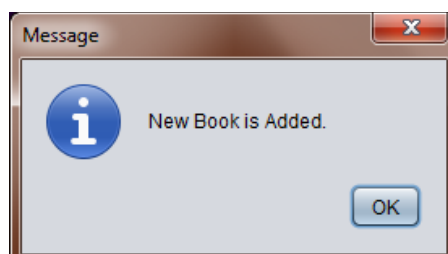


- This is the home frame for my library management system.
- There are 6 buttons
  1. New Book
  2. New Member
  3. Statistics
  4. Issue a Book
  5. Return a Book
  6. Log out

## New Book



- This frame is use to add a new book.
- Using this you can add any no of new books to the library.
- Book ID is the primary key.



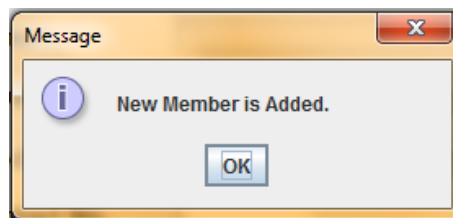
- After you complete the new book form you can see the alert message like this.

## New Member



A screenshot of a 'New Member' form window. The window has a title bar with the text 'New Member' and standard minimize, maximize, and close buttons. The form itself has a title 'New Member' in a large, bold, serif font. Below the title, there are several input fields: 'Student ID' (a text box), 'Name' (a text box), 'Faculty' (a dropdown menu with 'Computing' selected), 'Batch' (a dropdown menu with '12.1' selected), 'Contact No.' (a text box), and 'Address' (a text box). At the bottom of the form, there are two buttons: 'Back' (with a left-pointing arrow icon) and 'Add' (with a person icon and a plus sign).

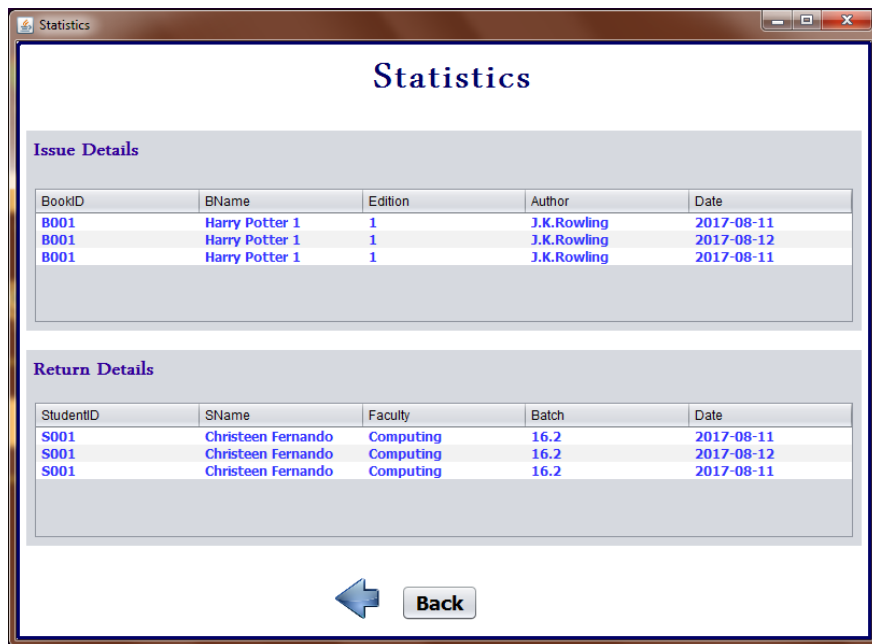
- This frame is use to add a new member.
- Using this you can add any no of new members to the library.
- Student ID is the primary key.



- After you complete the new member form you can see the alert message like this.



## Statistics Frame




The Statistics Frame displays two tables: Issue Details and Return Details. The Issue Details table lists book issues with columns for BookID, BName, Edition, Author, and Date. The Return Details table lists book returns with columns for StudentID, SName, Faculty, Batch, and Date. A Back button is located at the bottom.

BookID	BName	Edition	Author	Date
B001	Harry Potter 1	1	J.K.Rowling	2017-08-11
B001	Harry Potter 1	1	J.K.Rowling	2017-08-12
B001	Harry Potter 1	1	J.K.Rowling	2017-08-11

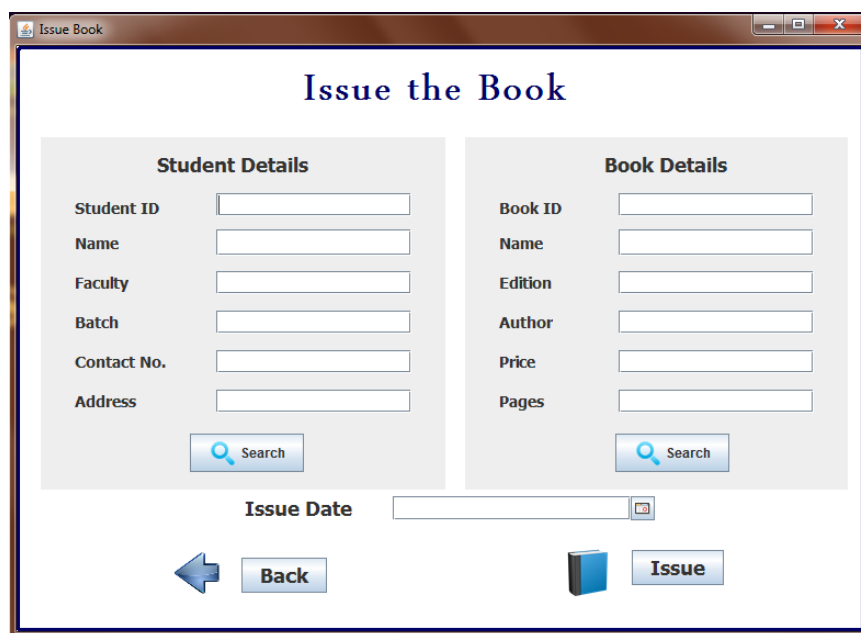
  

StudentID	SName	Faculty	Batch	Date
S001	Christeen Fernando	Computing	16.2	2017-08-11
S001	Christeen Fernando	Computing	16.2	2017-08-12
S001	Christeen Fernando	Computing	16.2	2017-08-11


 **Back**


- This frame shows all the return and issue data of library.


## Book Issue Frame





The Book Issue Frame contains two sections: Student Details and Book Details. Each section has input fields for various attributes and a Search button. Below these sections is an Issue Date field and a calendar icon. At the bottom are Back and Issue buttons.

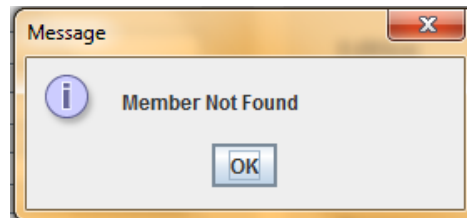
**Student Details**  
Student ID:   
Name:   
Faculty:   
Batch:   
Contact No.:   
Address:   
 **Search**

**Book Details**  
Book ID:   
Name:   
Edition:   
Author:   
Price:   
Pages:   
 **Search**

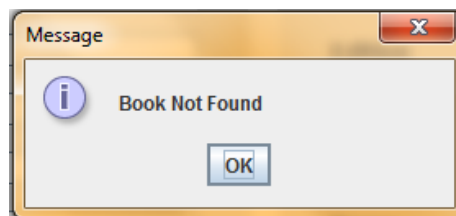
**Issue Date**  

 **Back**  **Issue**

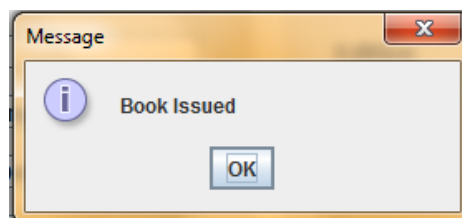
- This frame is use to enter the data of the issued book and the person.
- You just have to enter the student id and click the search button. If it is a valid student id, other fields will automatically fill.
- Do the same thing for book.
- By clicking issue button the data of the book and person will be save in the database.



- If the member id that you entered is incorrect you will see this alert.



- If the book id that you entered is incorrect you will see this alert.



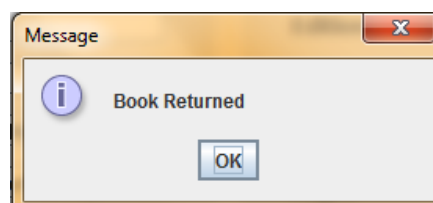
## Book Return Frame

**Return the Book**

Student Details	Book Details
Student ID <input type="text"/>	Book ID <input type="text"/>
Name <input type="text"/>	Name <input type="text"/>
Faculty <input type="text"/>	Edition <input type="text"/>
Batch <input type="text"/>	Author <input type="text"/>
Contact No. <input type="text"/>	Price <input type="text"/>
Address <input type="text"/>	Pages <input type="text"/>

Return Date

- This frame is use to enter the data of the returned book and the person.
- You just have to enter the student id and click the search button. If it is a valid student id, other fields will automatically fill.
- Do the same thing for book.
- By clicking issue button the data of the book and person will be save in the database.



## OOP Methods

### Encapsulation

```
public class Homeclass {  
    private static String uname;  
  
    public void setuname(String uname){  
        this.uname=uname;  
    }  
    public String getuname(){  
        return uname;  
    }  
}
```

- I used this encapsulation method to display the user name of the user.






### Overriding

```
public Home() {  
    super("Home");  
    initComponents();  
}  
  
public Home(Homeclass hc){  
    initComponents();  
    jLabel10.setText(String.valueOf(hc.getuname()));  
}
```






- I used this overriding method to display the user name of the user.

## Database Connection








### Log in

	UserName	Password
  Edit  Copy  Delete	christeen	1234










### Account

	UserName	Name	Password	SecQ	Answer
  Edit  Copy  Delete	christeen	Christeen Fernando	1234	Mother's Middle Name	Nayana

### Member

	StudentID	Name	Faculty	Batch	ContactNo	Address
  Edit  Copy  Delete	S001	Christeen Fernando	Computing	16.2	0763539046	536/2,Pitipana North,Negombo
  Edit  Copy  Delete	s002	nathaliya	Computing	16.2	0763539046	377/1,Homagama

### Book

	BookID	Name	Edition	Author	Price	Pages
  Edit  Copy  Delete	B001	Harry Potter 1	1	J.K.Rowling	200	223
  Edit  Copy  Delete	B002	Harry Potter 2	1	J. K. Rowling	200	251

### Issue

BookID	BName	Edition	Author	Price	Pages	StudentID	SName	Faculty	Batch	ContactNo	Address	Date
B001	Harry Potter 1	1	J.K.Rowling	200	223	S001	Christeen Fernando	Computing	16.2	0763539046	536/2,Pitipana North,Negombo	2017-08-11

### Return

BookID	BName	Edition	Author	Price	Pages	StudentID	SName	Faculty	Batch	ContactNo	Address	Date
B001	Harry Potter 1	1	J.K.Rowling	200	223	S001	Christeen Fernando	Computing	16.2	0763539046	536/2,Pitipana North,Negombo	2017-08-11

- I have used encapsulation and overriding concepts to show the user name of the user in home frame.
- But I would like to develop these codes and use other concepts as well.
- I didn't need a super class or any abstract class to inherit any method.
- I have created the database connection and the data will insert to that.

## Conclusion

It is a matter of great pleasure, honor and challenge to have this opportunity to have this project and able to complete successfully, while developing this project I have learnt lots of things related to Library management system. I have also learnt how to analyze and design a system user friendly. During this development process I studied carefully and understood how to design and implement a new system. I also realized the importance of maintaining errors.

## References

Video Tutorials : [https://www.youtube.com/playlist?list=PL\\_Ke9hJMFeR\\_TWfBOug40-2uSANxa8dtE](https://www.youtube.com/playlist?list=PL_Ke9hJMFeR_TWfBOug40-2uSANxa8dtE)