

HACETTEPE UNIVERSITY



COMPUTER ENGINEERING

SOFTWARE ENGINEERING LABORATORY

BBM487

Group 17

Members

ID	Name and Surname
21200894	Gismat Kazımlı
21228602	Hiledin Özer
20902958	Rinat Davidov
21228046	Burak Aykanat

Document Version: [Software Design Document](#)

Date: [25.04.2017](#)

Table of contents

1. Revision History	3
2. INTRODUCTION	3
2.1 Purpose and Scope.....	3
2.2 Document Overview	3
2.3 System Overview.....	4
2.4 Definitions, Acronyms, and Abbreviations	4
2.5 References	4
3. Design Constraints and Decisions	5
4. Design Details.....	6
4.1 Software Components	6
4.2 Software Behavior.....	6
4.3 Data Model (E-R Diagram)	10
4.4 User Interface Design.....	10
5. Requirements Traceability	13

1. Revision History

Version	Date	Author	Change Description
1.0	25.04.2017	Group 17	Initial version of document.

2. INTRODUCTION

2.1 Purpose and Scope

In this documentation we plan to describe the improvements and changes we have made in the library system, its definitions, abbreviations, system and interface properties.

2.2 Document Overview

The System Overview includes general features of the system,

From the definitions and abbreviations we use in Definitions, Acronyms, and Abbreviations,

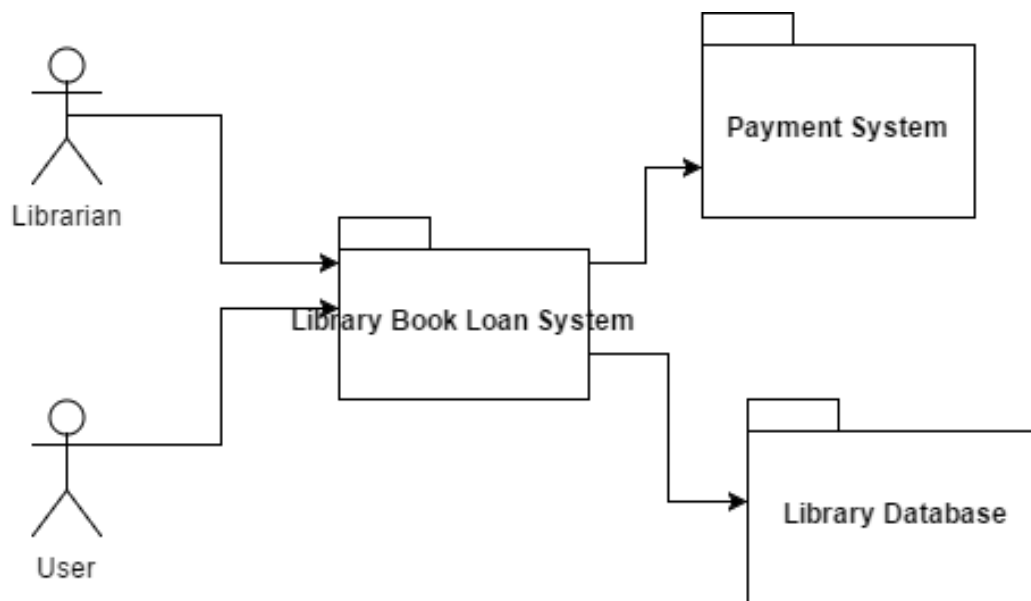
In the References section, from the sources and tools we used while developing the application,

In the Design Constraints and Decisions section, we are talking about the limitations of our application.

In the Design details section, the components, behaviors, data model and interface information of our system are given.

Requirements Traceability provides information on whether the requirements we have mentioned are satisfy.

2.3 System Overview



Our library system is an application that generally consists of users and librarians, which allows to search, reserve and rent books.

2.4 Definitions, Acronyms, and Abbreviations

<i>Term/Acronym</i>	<i>Definition</i>
SWT	Standart Widget Toolkit

2.5 References

<http://epf.eclipse.org/wikis/openup/index.htm>

SOFTWARE ENGINEERING Ninth Edition Ian Sommerville

3. Design Constraints and Decisions

Project constraints require that the project be done within the deadline period as a time constraint.

We implemented our application through the SWT (Standard Widget Toolkit) using the Eclipse in window builder program during the design process. Therefore, the equipment required for the operation of our application must be loaded with java application in the environment to be used. Also, access to the database is required for the database connection.

Our security rules provide features as Authentication, Authorization and Nonrepudiation.

Authentication: Security will be provided for every user and library officer by entering their own username and unique id .

Authorization: A different interfaces with operations will be showed for each different kind of user.

Non-repudiation: Each user is responsible for their own account changes. Because the account can only be entered with the information that the user knows. So the user can not deny the changes.

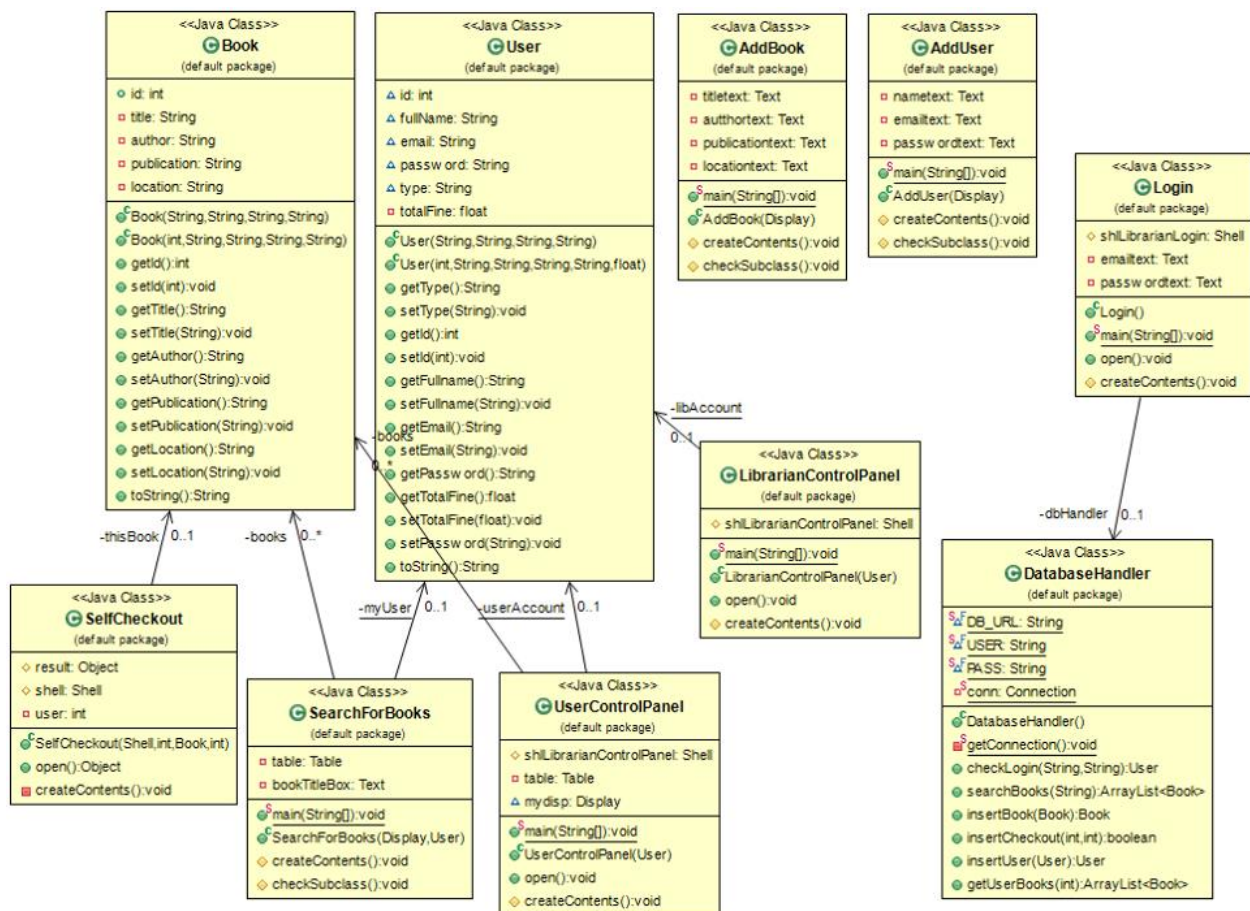
Consistent availability of the system increases reliability. Since we try to keep our system running 24/7 in our architecture, each user will be able to perform their own actions and increase their confidence in the system, since they have not experienced any problems.

At the same time, while performing user transactions, another user will not be able to see his transactions. Thus, reliability will be ensure.

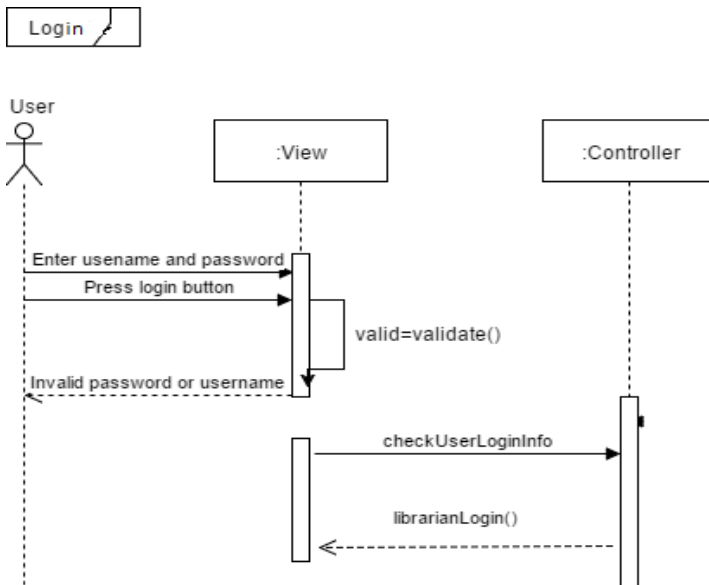
In addition, these two features are very similar with usability. Reliability allows the user to make their requests at any time and when reliability doing that, usability provided convenience when securing.

4. Design Details

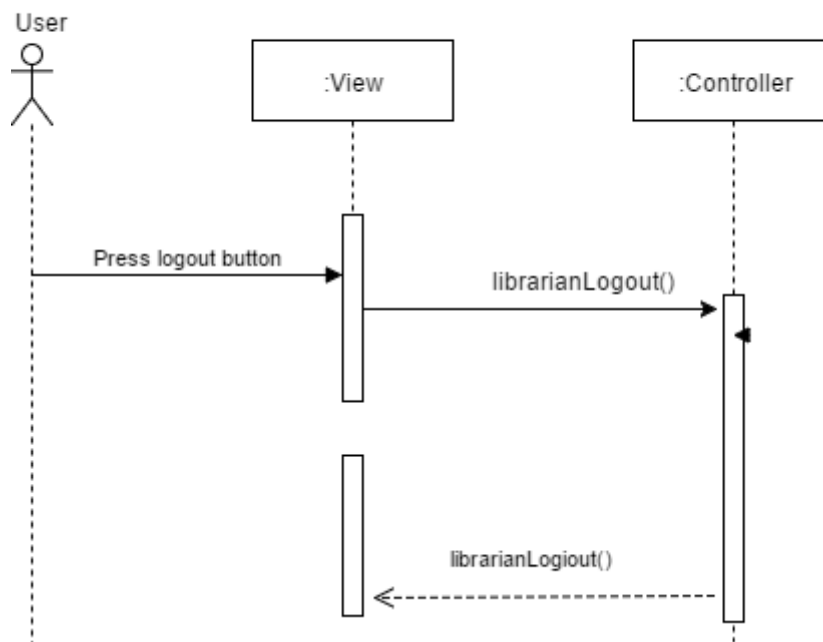
4.1 Software Components



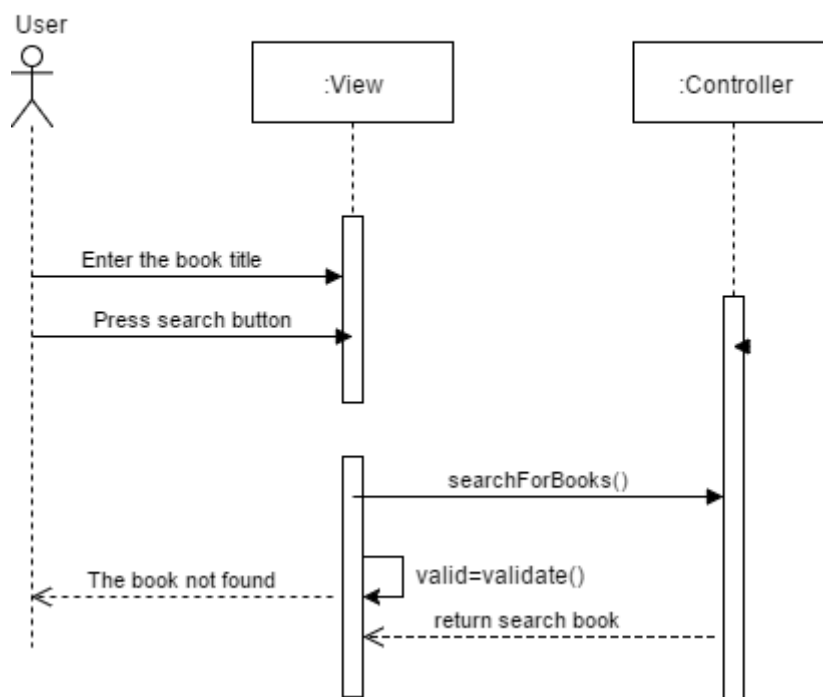
4.2 Software Behavior



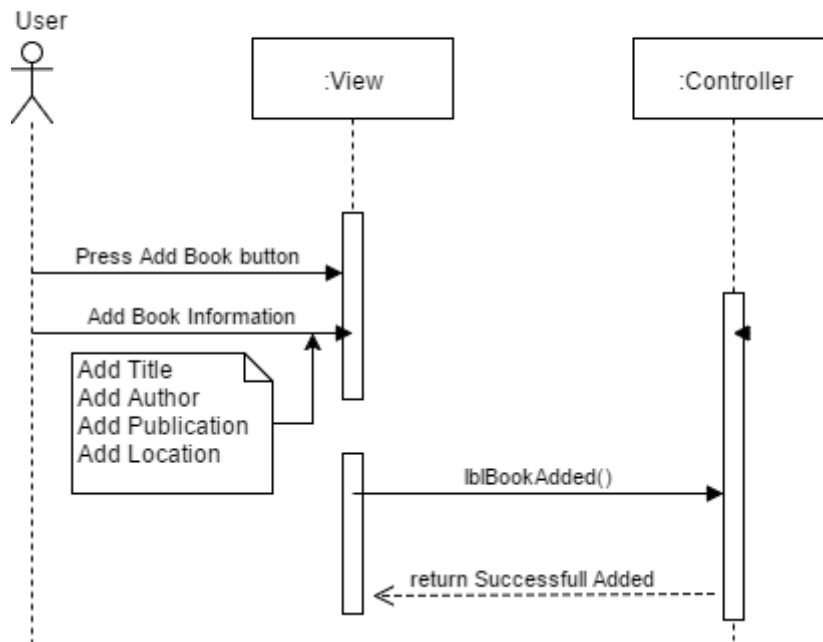
Logout



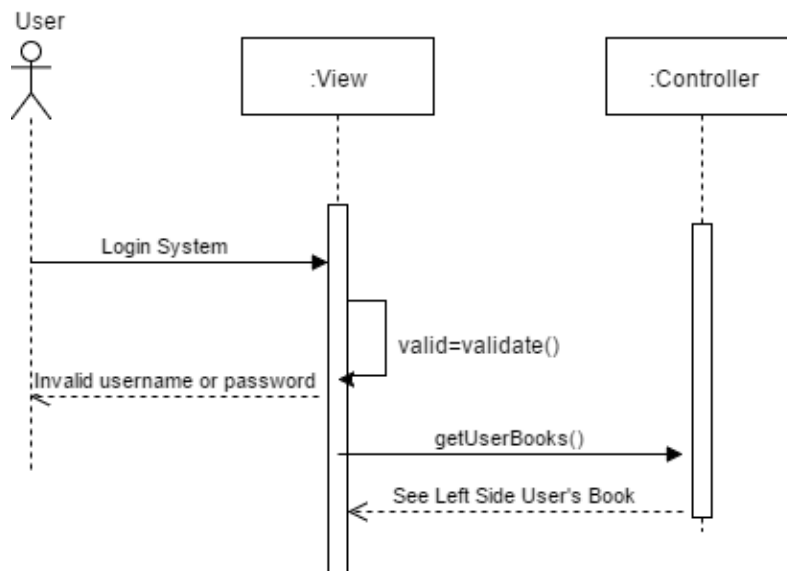
Search For Book



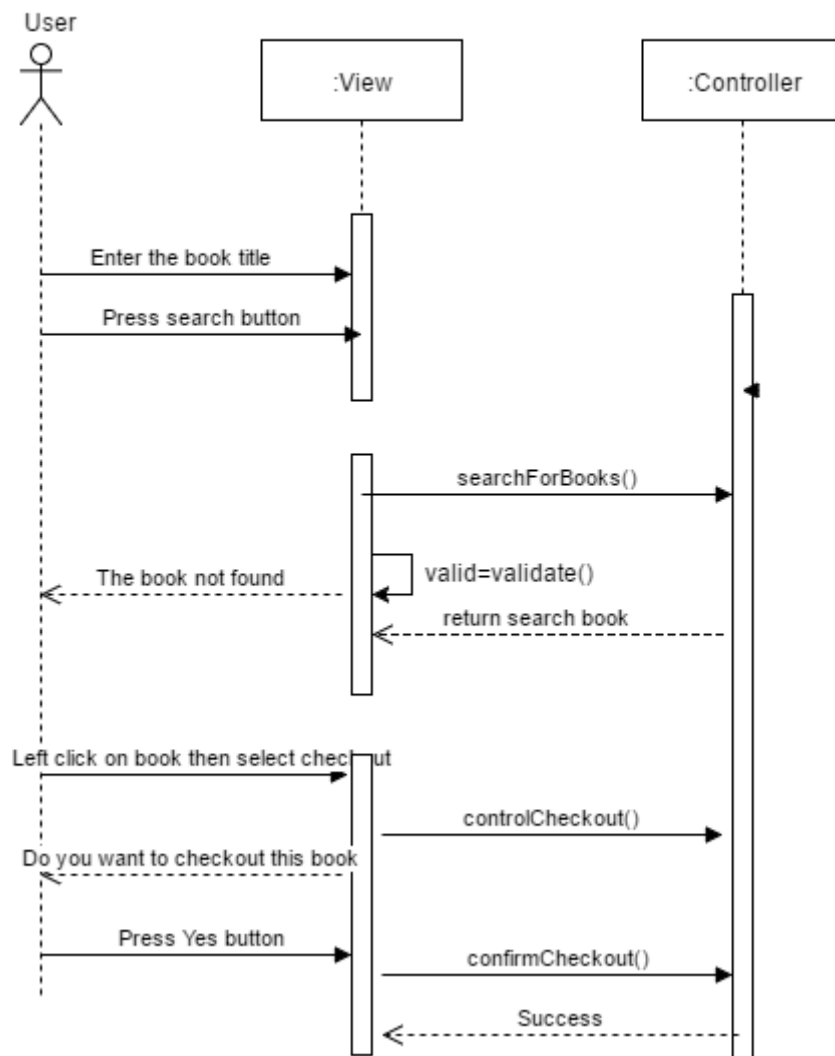
Manipulate Book



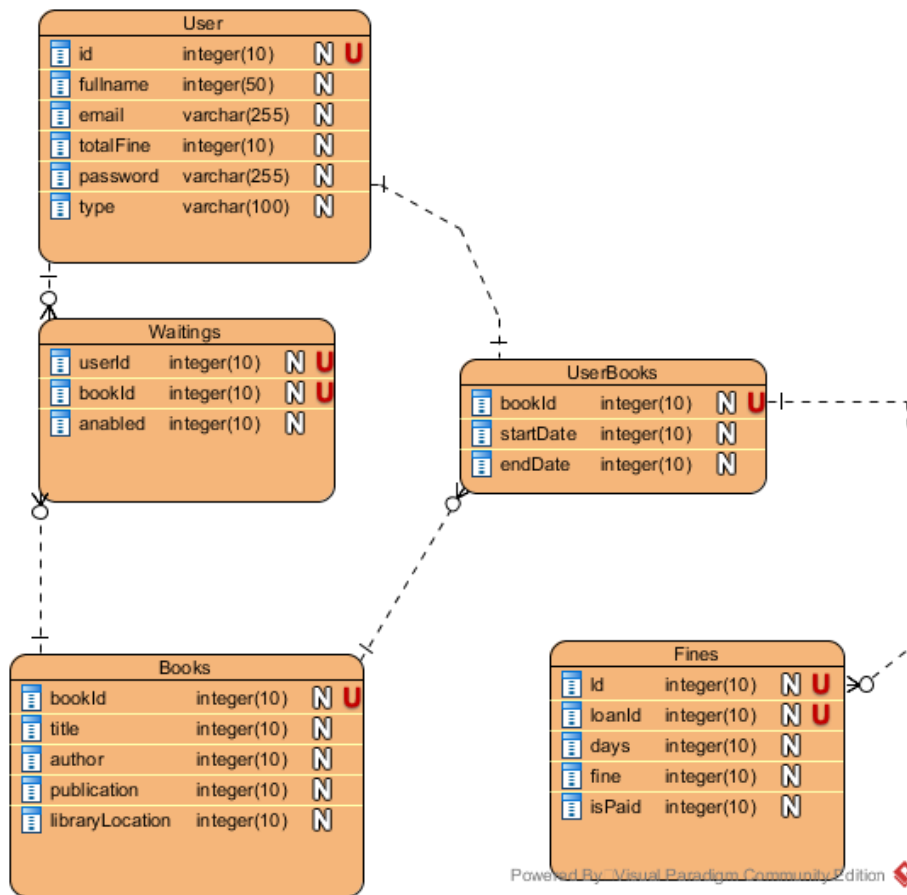
View My Books



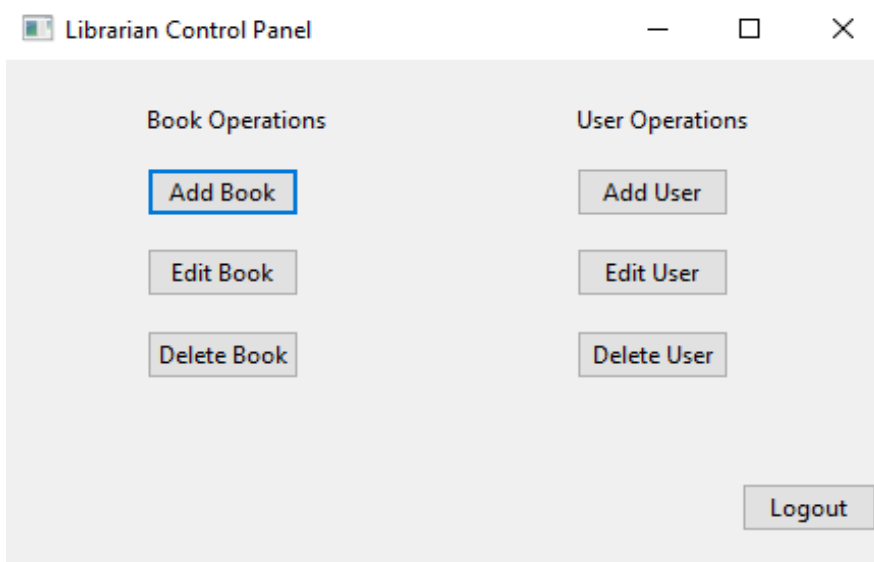
Self Checkout




4.3 Data Model (E-R Diagram)



4.4 User Interface Design



 — □ ×

Please enter the book information

Title

Author

Publication

Location

asdasd asdasddas

Do you want to checkout this book ?

Book Search

Book Search

Enter the book title:

Barcode	Title	Author	Publication	Location
1	asdasd	asdasddas	asdadsads	asdsad

User home

Library Book Loan System

My Books

Barcode	Title
4	asdasd

< >

Book Search

Pay Fine

Logout

Please enter the user information

Full name

Email

Password

☐ Librarian

5. Requirements Traceability

Requirements	Priority	Condition
Login	1	Working
Logout	3	Working
Manipulate Book	2	Working
Search for Book	2	Working
Self Checkout	3	Working
View My Books	2	Working
Manipulate User	1	Working