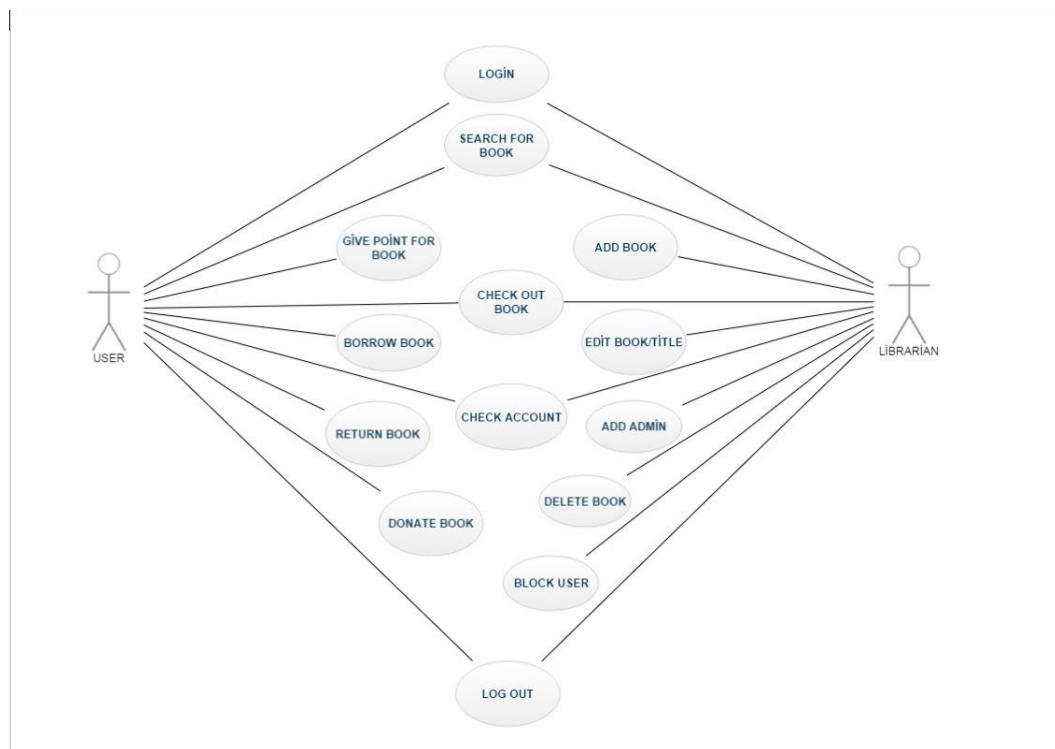| Library Book Loan System	#Del-2 – Group 18
Group Members	Simge Acımış – 21327598 Muhammed İkbal Kılavuz – 21127347 Enes Karabulut - 21328122
Specification	Date: 19-03-2017

Library Book Loan System

1. Introduction

In this step of our project, we worked on drawing diagrams to speed up our progress. We designed these diagrams using the Visual Paradigm program. If we go into the details of our diagrams, we are generally concerned with the people in the system and their tasks in the system. As a result we have drawn up our diagram of use-case, activity, context diagrams and our diagram for our database system.

2. System-Wide Functional Requirements

In this task, we will talk about some things that we can't find in our diagrams. For example, we store usernames and their passwords encrypted in our database for security purposes. In addition, we are paying attention to input validation as a solution to the SQL Injection problem when the user receives user information on our screen. And lastly, we have a reporting system that we can't provide on the diagram for our library system's monthly statistical reports.

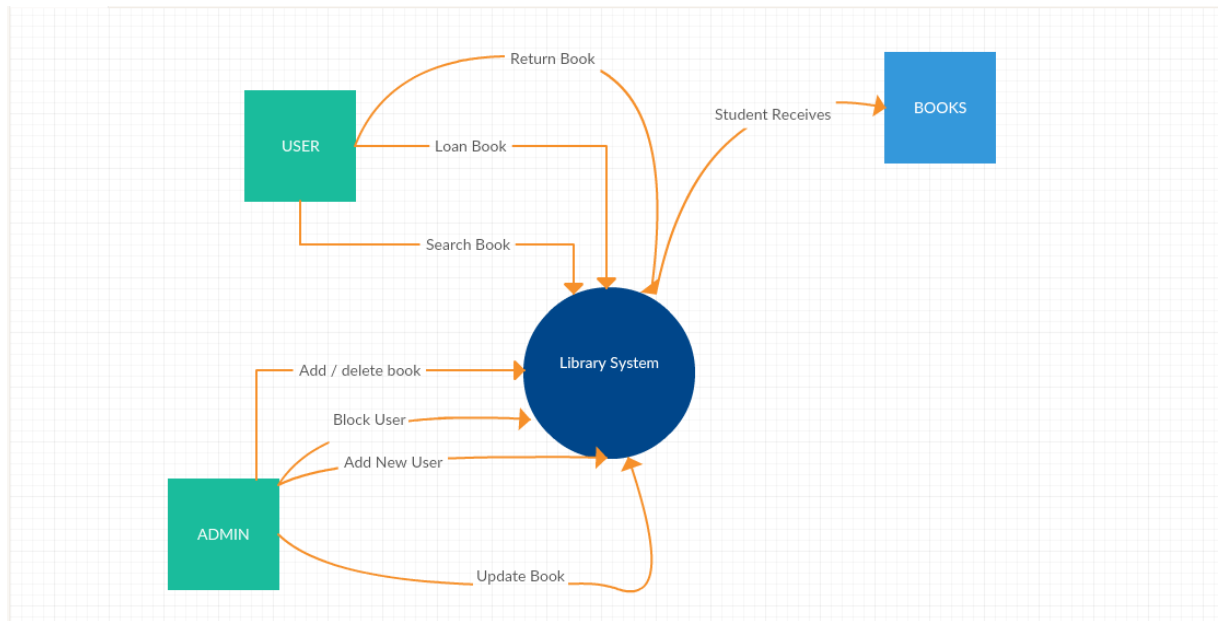| Library Book Loan System	#Del-2 – Group 18
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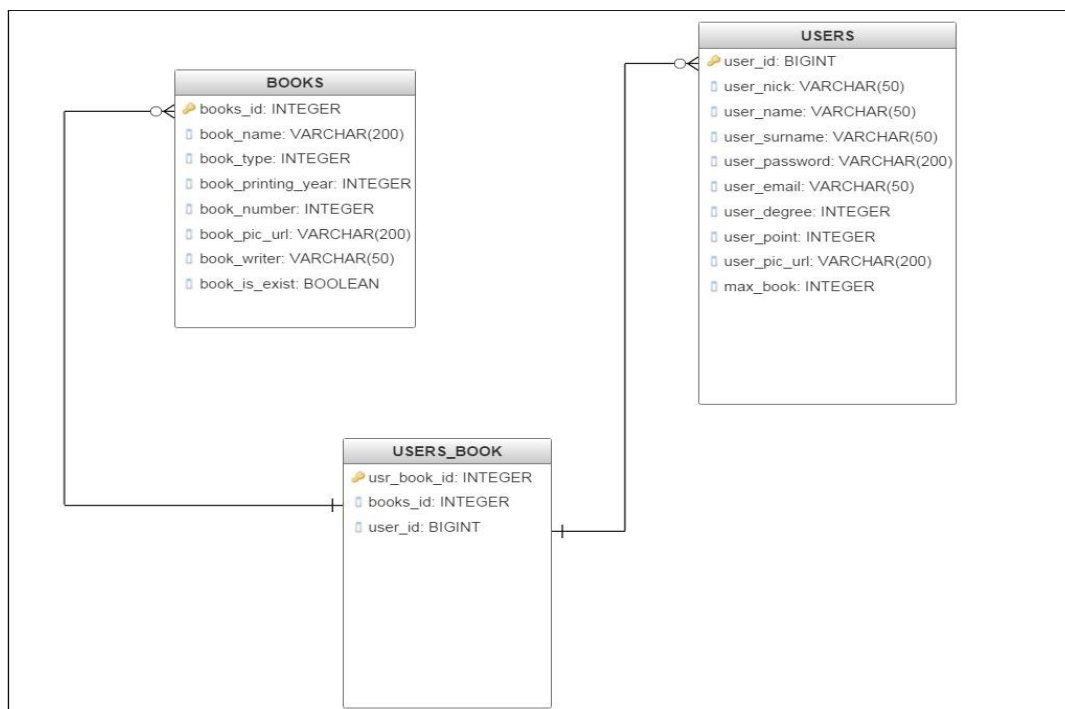And this is the activity diagram for the use-case you see above ;
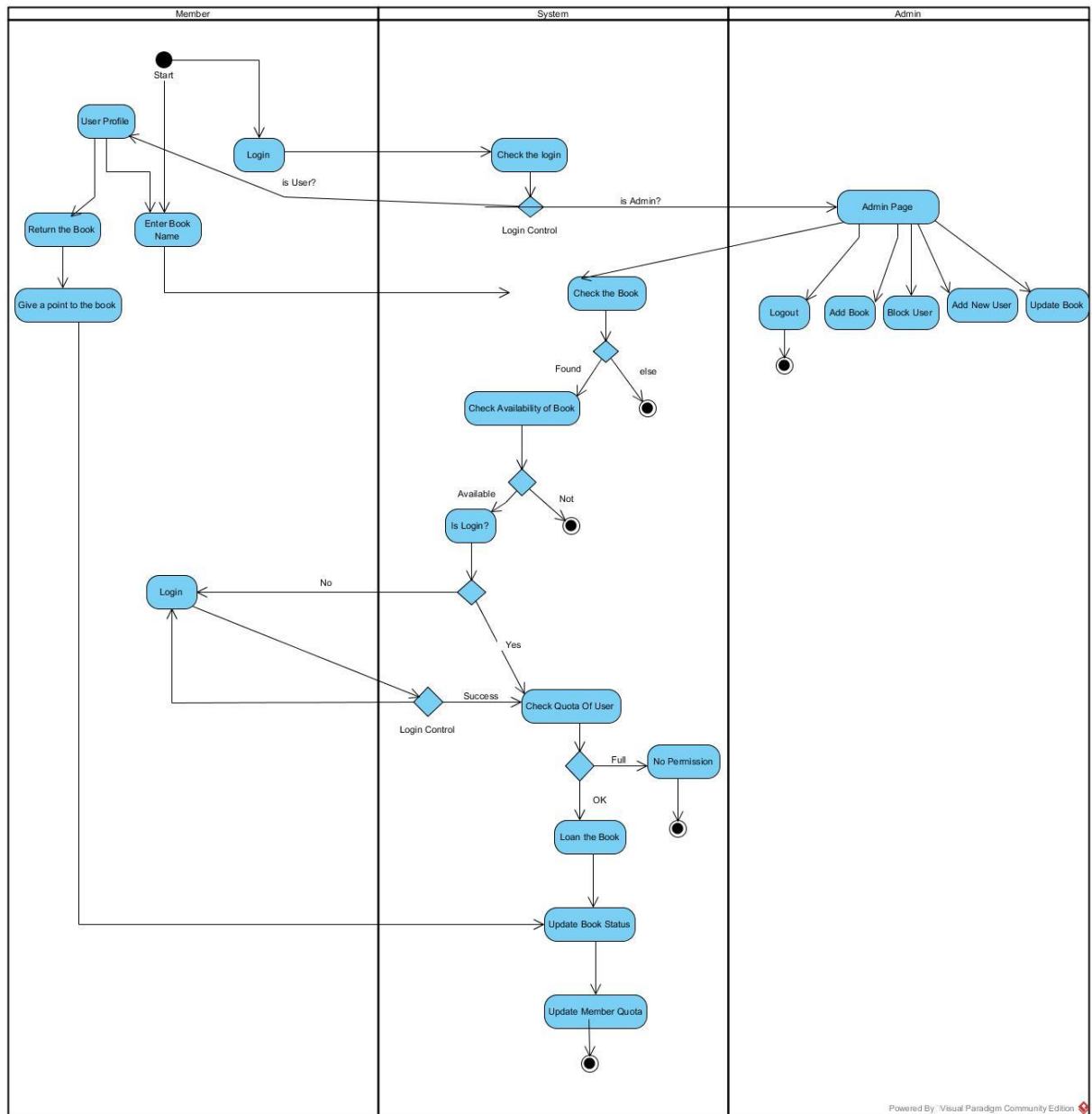
Library Loan System Activity Diagram

Library Book Loan System	#Del-2 – Group 18
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And this is our's system's last diagram. It is context diagram.

And we use database system to store user records. And this is our database's ER diagram.

3. System Qualities

3.1 Usability

We have been very careful to have an easy interface so that the project we are developing can appeal to every group. So we took care to design the colors and names of the buttons we used in the interface, the type of fonts and the images we use in an understandable way. And finally, we tried not to use the user without using too many page transitions.

3.2 Reliability

In general, we have given credibility to the system by paying attention to security problems that are not included in the projects and providing solutions to these problems. We also used the information we obtained from reliable sources in the book information we added to the system. Therefore, users who use this system will not be misinformed in the light of this neutral information.

3.3 Performance

We will be mindful of the algorithm and the system's response time to tender, which we will use primarily to put the user on the performance side too long and offer them what they want to do in a while. Also, by not using images and objects in too many sizes, we will enable the user to leave the system comfortably, quickly and satisfactorily.
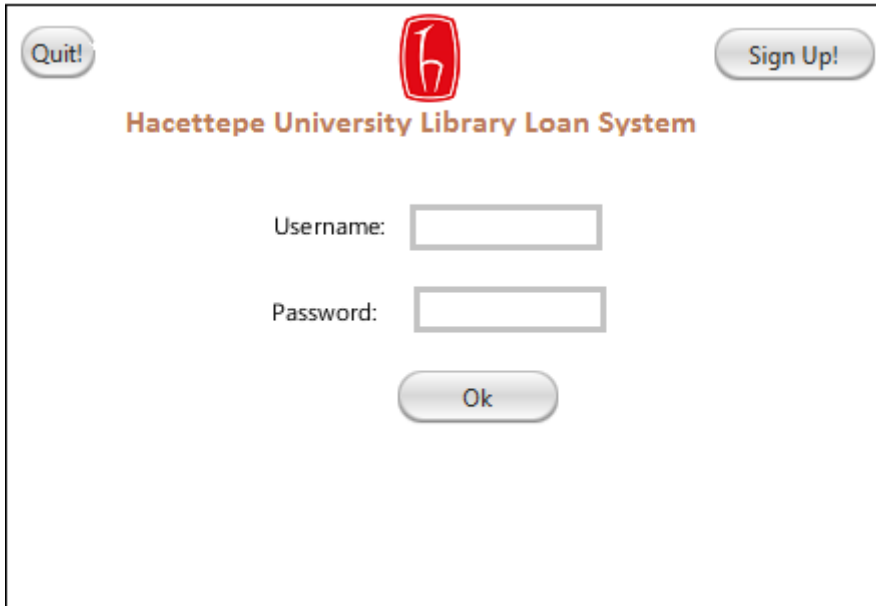
3.4 Supportability

We will design another page that provides additional information to the user in order to support and maintain the system. This page will contain additional information and facilities for using the program.
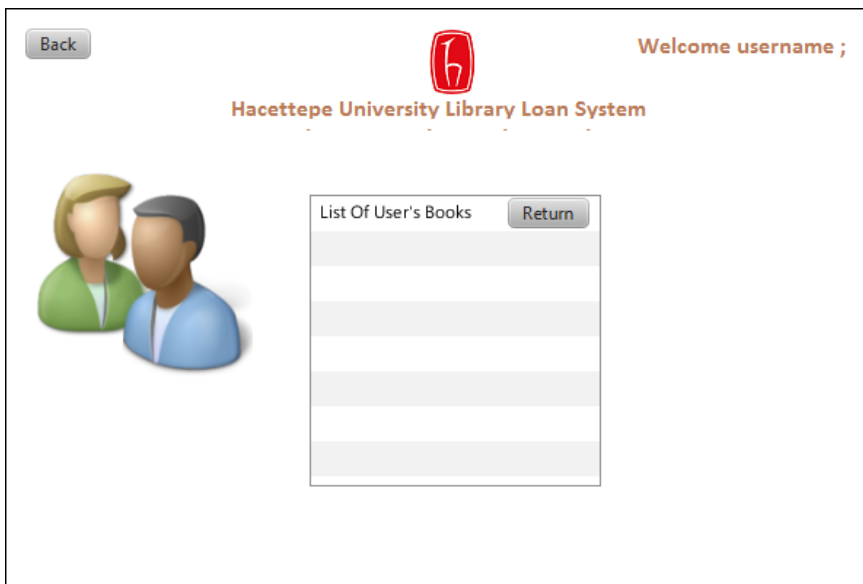
Library Book Loan System	#Del-2 – Group 18
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Enes Karabulut - 21328122 |
| Specification | Date: 19-03-2017 |

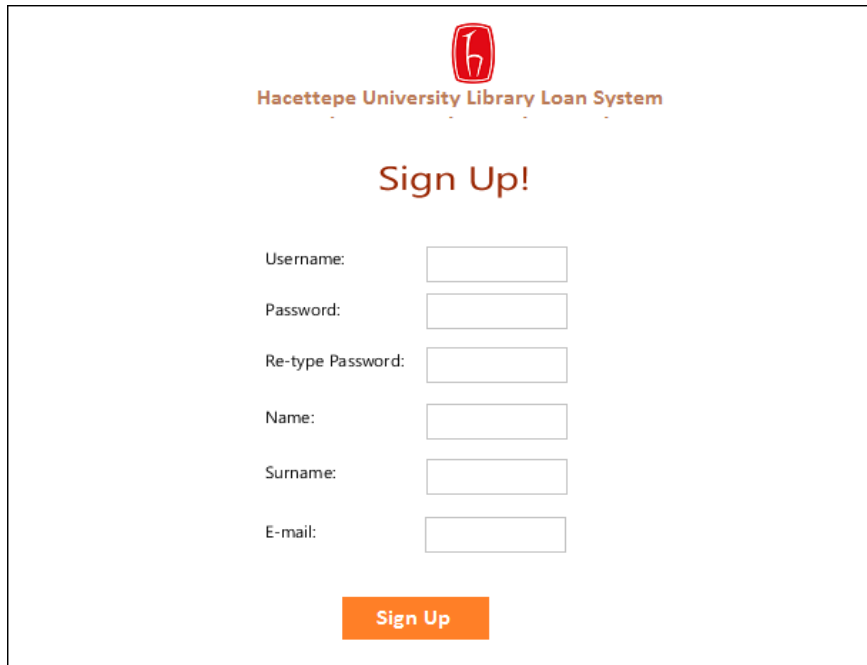## 4. System Interfaces

4.1 User Interfaces

Login Screen

User Page Screen

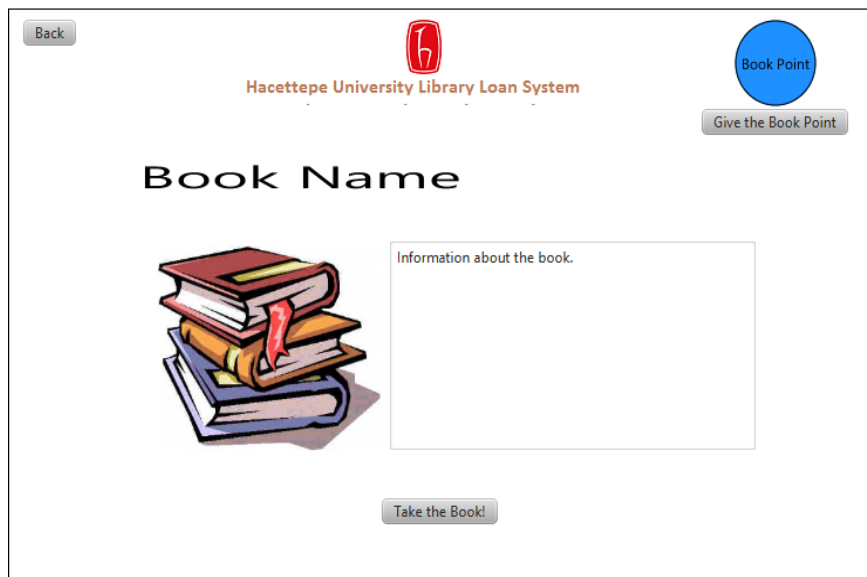| Library Book Loan System	#Del-2 – Group 18
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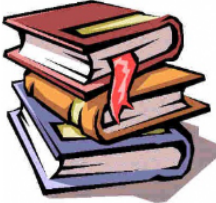
User Sign Up Screen

Book Information Screen
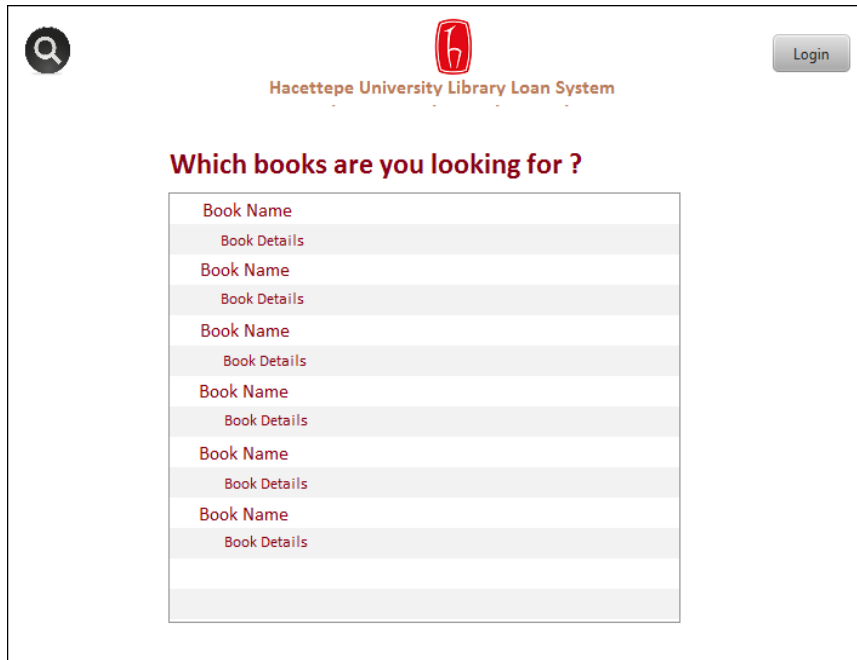
Home Page Screen

4.1.1   *Look & Feel*

When we designed our system, we first considered it to be simple and useful. While we were doing this, we chose the colors we used in the interface with care and without sinking. We made our design thinking that our system appeals to every segment.

4.1.2   *Layout and Navigation Requirements*

The user can view the details of the book he/she wants using the book information page. He/She can also borrow any book on this page. And according to the situation of the book, this page can do scoring for the book.

4.1.3   *Consistency*

When designing our project, we made sure that our system is stable. In order to do this, we tried to use the same type of font and button style on all pages. And finally, we used the same list type for user information, book information, and other detail pages.

4.1.4   *User Personalization & Customization Requirements*

The user can search for books without logging into the system. But he has to log in if he wants to loan the book. It also can not score a book without logging in to the system.

4.2 Interfaces to External Systems or Devices
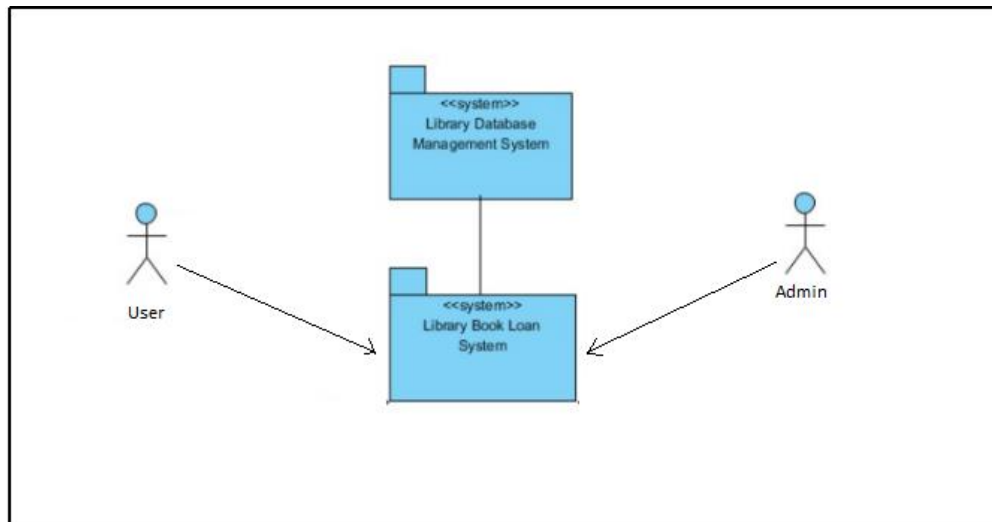
We need a database system so we can store information on our system. Therefore, as seen in the figure above, we have a general management system and interface connected to our database system, which enables communication between user and admin first.

4.2.1 *Software Interfaces*

For each user and book transaction in the system, we need some queries to write the data into the database. In order to meet the needs of our system, these queries need to be sent to the database and operated there.

4.2.2 *Hardware Interfaces*

Our program will work with mobile base. So we also do not need a web interface. But we need a server that we will use to access my database. This server will provide us convenience for some internet-required operations. And finally, we need a device with an android operating system to run the application on.

4.2.3 *Communications Interfaces*

In order for our program to work stably, we have to make it possible to communicate with the server without any problems. And when we want to extract information from our database and add information to our database, we need to communicate with our program and database system to achieve this.

5. Business Rules

5.1 <Loan a Book>

5.1.1 *Limit of Book*

Up to 10 books can be defined by the system on the user. If the user wants to get the 11th book, this is not allowed. However, 1 book can take your new book with it.

5.2 <Create New Account>

5.2.1 *Unique Membership*

Since the user uses the email address and phone number when signing up, the same information can't be registered to the system once more.

6. System Constraints

Our system will serve as a mobile application. And an internet connection is required for the operations on the system to take place. And since we have contact addresses for users at any question, we will be able to send them an information message.

7. System Compliance

7.1 Licensing Requirements

We will use the Java-based Android language during the system development phase. And our application will be available for Android 4.0 operating system and above. We will use MySQL for our database system.

7.2 Legal, Copyright, and Other Notices

And the softwares we use are open source. So we will not encounter any license problems.

7.3 Applicable Standards

Our software will have IEEE standards about to software architecture.

8. System Documentation

We will create a user guide to make it easier for users to use the system at the end of the day. Users will be able to use this guide with ease and they will be able to give us feedback about it.

- Create New Account
- Login/Logout
- Loan/Return a Book
- Score for a Book