

Book Management

2012

# Book Management

Project Plan

10/14/2012

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# Introduction

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This section brings you the background information of our developing team which belongs to the IUSoftware Company, the abstract description about the project especially the purpose of the software which our team will design. Furthermore, the constraints which will affect our project is also included in this part.

## 1.1 About us

<b><u>Company Name:</u></b>	IUSoftware
<b><u>Team Name:</u></b>	2TMA which includes 4 members.
<b><u>Business:</u></b>	Develop web application, create book management online service.
<b><u>Customer:</u></b>	International University – Viet Nam National University Ho Chi Minh City.
<b><u>Previous product:</u></b>	<a href="http://www.sereferences.com">www.sereferences.com</a>
<b><u>Contact:</u></b>	Main office: 6th floor, Vincom Center, district 1, Ho Chi Minh city. Email: <a href="mailto:tnkhanhminh.itcs@gmail.com">tnkhanhminh.itcs@gmail.com</a> . Tel: 0983120292

## 1.2 Purpose of the software

Nowadays, the library in the university is the best learning place for every student. In the library, a student has the quiet environment to upgrade the knowledge through books, magazine, newspaper, etc.

International University (IU), which belongs to Vietnam National University, is the university teaching in English, so this university has the library which has many English materials. Besides the development of IU, IU's library also expands the amount of materials, which makes difficult for students to search exactly the materials they want in a short time. In this case, the IU's library needs the solution to manage library's resources.

We provide the software - book management system, which runs on the web browser and can help the library to manage the resource easily. This is the newest version with many functions inside such as searching for the book name, checking books for borrow, arranging the resources, etc. This software will create a comfortable and convenient feeling for students when they use it as well as the good of management system for librarians.

The new software goes along with new and different functions when compared with older software. Example, students can check the book which they want to borrow at home, and at the same time the librarians collect their requests to prepare the books, it makes the borrowing service faster and easier.

## 1.3 Constraints

### 1.3.1 Time:

This project will be done on 19/11/2012. There are only 8 weeks to implement this project. Moreover, the time constraint will be fixed as the project is in progress, and after the contract is signed.

### 1.3.2 Budget

To implement this project, our team is going to need an amount of budget. This amount is separated into three kinds: hardware budget, software budget, human budget. The estimated cost is shown below:

- Hardware budget: \$2544
- Software budget: \$6902
- Human budget: \$2000/months
- Additional budget: \$1,000
- Total cost estimated: \$13000

The detail cost will be presented in section 3 – Resources Requirement.

## Organization

This section describes how our team is organized. The responsibilities and contact details are shown also. The team contains 4 members from IUSoftware Company. If you have any further questions, or require any additional information, please contact any of our members listed below.

Member	Phone number	Responsibility	Email
<b>Nguyễn Đức Trí</b>	01689207592	Project Manager	dr.tringuyenzmc@gmail.com
<b>Trần Ngọc Khánh Minh</b>	0983120292	Business Analyst	tnkhanhminh.itcs@gmail.com
<b>Trần Hữu Phương Tài</b>	01993556782	Software Designer	thptai.itc@gmail.com
<b>Diệp Sở Anh</b>	0938385573	Software Engineer	diep.soanh@gmail.com

Table 2 - Organization

# Resource Requirement

Requirement for the project is divided into 3 parts: hardware resource, software resource including the quantity and the total cost, and human resource including the salary for each member.

## 3.1 Hardware Resource

Device	Description	Quantity	Price	Cost
Intel Core i3-3220 3.3 GHz	Processor	4	\$124	\$496
Intel DQ77KB	Mainboard	4	\$194	\$776
DDR3	4GB DDRAM Bus 1333MHz	4	\$40	\$160
WD Blue Series AAKX	HDD Sata3 500Gb	4	\$65	\$260
Cooler master 343	Case	4	\$35	\$140
Kentek 400W TFX	Power Supply	4	\$54	\$216
HP LV1911 18.5"	Monitor	4	\$92	\$368
A4 Tech KL-5-BK	Keyboard	4	\$23	\$92
Logitech B100	Mouse	4	\$9	\$36
<b>Total Cost:</b>				\$2544

Table 3.1: Hardware resource

## 3.2 Software Resource

Application	Description	Quantity	Price	Cost
Windows 7	Operating System	4	\$220	\$880
Microsoft Project Professional 2010	Project Management Application	1	\$1015	\$1015
Microsoft Office Professional 2010	Document Application	4	\$200	\$800
Adobe Dream Weaver CS6	Interface Design	3	\$1299	\$3897
Domain + Host*		1	\$10	\$10
Database Server**		1	\$300	\$300
<b>Total Cost:</b>				\$6902

Table 3.2: Software resource

(\*)(\*\*): The cost of domain/host and database server will be abstracted if the customer provides the available ones for us.

## 3.3 Human Resource

Name	Position	Salary (per month)
Nguyễn Đức Trí	Project Manager	\$600
Trần Ngọc Khánh Minh	Business Analyst	\$530
Trần Hữu Phương Tài	Software Designer	\$450
Diệp Sở Anh	Software Engineer	\$420
		\$2000/month

Table 3.3: Human Resource

**Total estimated cost:** \$11446 for the first month and \$2000 for each month later.

# Work Breakdown

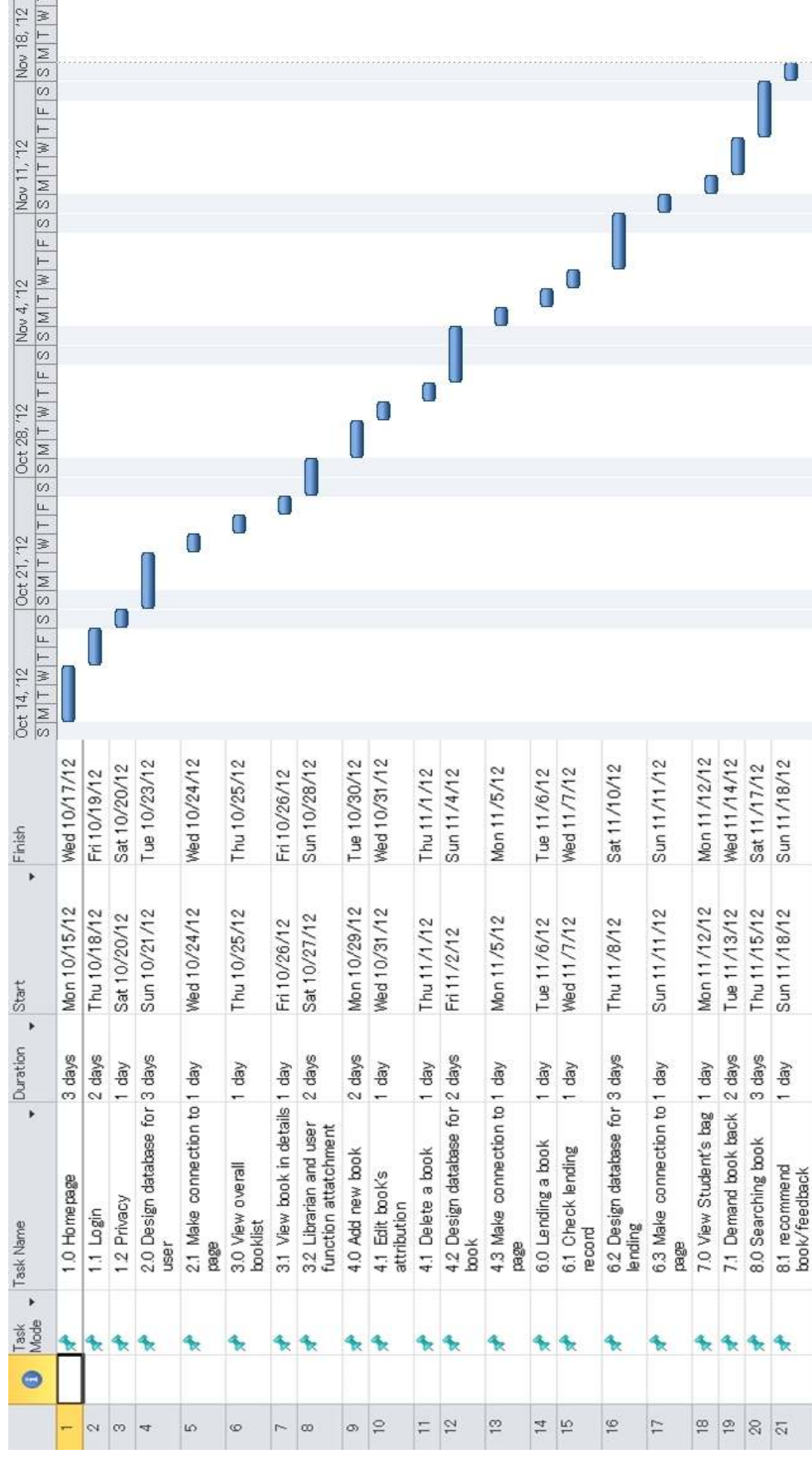
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There are 14 functions that the software provides for the Book Management in IU library:

1. **Login:** Students and librarians can use the usernames and passwords that OAA generate to log in and perform other activities involved in the software.
2. **View library policies:** The web page will show all the standard rules in the library for students to follow accurately.
3. **View book list:** The web page will show the list of books that the library has.
4. **View book details:** The page will show the attributes of the book such as name, author, quantity, ranking as well as a brief summary of the book.
5. **Search a book:** This action will help students and librarians find the book they need faster and easier.
6. **Add a new book:** This activity will occur when new materials arrive.
7. **Edit a book:** This helps librarians to edit the book detail when they had some mistake on typing the book's attributes.
8. **Remove a book:** Librarians can use this function to delete the information of the old materials which the library no longer use.
9. **Reserve a book:** Students can use this function to reserve a book online.
10. **Lend a book:** Librarians will use this function once students want to borrow a book from library.
11. **Check records:** The records helps librarians to know who have reserved a book, who keep the book and when the deadline of lending book is so that when the deadline comes but the books haven't been returned yet, the librarians can contact to the student to demand the books back.
12. **Check Student bag:** Student can access to see Reserve List and Lending List.
13. **Return a book:** Librarian can use this function when the student returns the book and the data of the book in lending record will be removed as well as the quantity of the book will change.
14. **Recommend and feedback:** This function is for students to recommend the book they need which the library hasn't have or to request the library to update the new version of the materials.

The detail of these functions will be explained more detail in Section 6.1 - Functional Requirement.

# Project Schedule



# Risk Analysis

This section analyzes risks which our team may have during the project. In this part, we talk about the probably risk and how to handle this. The risks will have 3 kinds such as project (members, time, etc.), product (bug, error, etc.), business (competitor with the same software, technology change, etc.).

The risks level is: Low (Green), Moderate (Yellow), High (Red)

- All low level risks will be solved in one day.
- All moderate level risks with level Moderate will take time from 2 to 3 days to be fixed.
- All high level risks with level High will take from 5 to 7 days to be fixed.

## Notes:

- With business risks, the project can be stop immediately.
- In the case that the risks cannot be solved in time, our company will work overtime to get the deadline.
- The low level risks can be repeated all the time project running

## 6.1 Project risks

Risks	Risk Description	Solution to avoid
<b>Weak cooperation between members</b>	Member have not work together before	Plan team with familiar members
<b>Less team meeting</b>	Team member's home far from each other – make the project go closely	Using Skype, Gmail to communicate, have 2 meeting/weeks at cafe shop
<b>Team member change</b>	Some problems with team members and need to replace by another one.	Take more time to familiar with new member. We also use pair-programming to make it as fast as possible
<b>Member Rejection</b>	Make the project delay or force to stop the project	New one member in our company take the empty as soon as possible. We also use pair-programming too sure about the continue
<b>Hardware unavailability</b>	Virus or physical affection(hardware crash, lost database).	Create backup per day to, use newest antivirus program

Table 6.1 - Project Risks

## 6.2 Product Risks

Risks	Risks Description	Solution to avoid
<b>Component Compatibility</b>	Components is not compatible to run	Using XP(Extreme Programming) to have compatible component
<b>Tasks – Requirement changing</b>	Customer will change the tasks	Using Scrum models – make customer change possibility
<b>Bugs when running</b>	Some bugs, wrong affection when using program	Tester always check to make sure the quality of product
<b>Delivery time</b>	Product may not finish in time	Development team work as hard as possible to finish before deadline
<b>Error when execute</b>	Program will not run	Tester always check to make sure the quality of product

Table 6.2 - Product Risks

## 6.3 Business Risks

Risks	Risks Description	Solution to avoid
<b>Customer out of budget</b>	Customer doesn't have ability to continue the project.	Our project use sprint cycles methods from each tasks, so customer can be pay at time they want to stop and still has the useful program with all tasks which are developed before the risk
<b>Technology change</b>	Customer require to run this program in different environment	Customer should pay more and decide to continue the current project or not
<b>Program Competitor</b>	The same program is marketed before project finish	Customer should have the plan to continued or discontinued, also the solution when project won't allow to keep going

Table 6.3 - Business Risks

# System Requirement

## 7.1 Functional Requirement

In this part, we will give you the detail of 14 stories which are mentioned in Section 3. This part will show you the initial condition of the functions, the instruction to use the functions, what can go wrong when doing the activities, other activities may be involved as well as the system state after the activities complete.

### 7.1.1 Login

<b>Initial conditions</b>	User want to login the system for authority to perform his/her actions
<b>Normal case</b>	In the homepage, users will enter their usernames and passwords in the login box. The usernames and passwords are generated by OAA
<b>What can go wrong?</b>	User enters wrong username or password
<b>Other activities</b>	No other actions can be performed in this story
<b>System state on completion</b>	Data is loaded, but the system remains unchanged

### 7.1.2 View library policies

<b>Initial conditions</b>	User wants to view Library policies for lending books and other activities.
<b>Normal case</b>	User visits the website, login is optional, after the homepage loaded, user chooses 'Policies' on the top bar of the web page to view all the rules
<b>What can go wrong?</b>	In this story, nothing can go wrong
<b>Other activities</b>	No other actions can be performed in this story
<b>System state on completion</b>	Data is loaded, but the system remains unchanged

### 7.1.3 View book list

<b>Initial conditions</b>	User wants to view the list of books that library has.
<b>Normal case</b>	User visits the website, login is optional, after the homepage loaded, user chooses 'View book list' to list out all the book.
<b>What can go wrong?</b>	In this story, nothing can go wrong
<b>Other activities</b>	If the list of book is currently updated by the Librarian, the new book might not be shown in the list yet until refresh.
<b>System state on completion</b>	Data is loaded, but the system remains unchanged

### 7.1.4 View book details

Initial conditions	User wants to see the information about a book
Normal case	User have visited page 'Book list', then clicked on the book title. The browser will automatically connect to the details of the book.
What can go wrong?	If the requiring book is removed by the Librarian concurrently, the system won't display the book any more.
Other activities	No other action can be performed in this story
System state on completion	Data is loaded, but the system remains unchanged

### 7.1.5 Search a book

Initial conditions	User wants to search a book in the system
Normal case	User goes to 'Search' page, then types the details of the book in the search box, then clicks search. The result returns to user.
What can go wrong?	The required book may not in the database yet therefore system will return "book not found" and browse to recommend page
Other activities	No other activities is involved
System state on completion	System remains unchanged

### 7.1.6 Add a new book

Initial conditions	New book arrival, Librarian wants to add a new book in the system. Assume that librarian has logged in her/his account.
Normal case	After homepage is loaded, user chooses "add a new book" to perform this action.
What can go wrong?	If the new book is already in the system, the system will ask Librarian to update the quantity of it by using 'Edit' function.
Other activities	Search for a book will be involved in this function.
System state on completion	Book database will be added in with a new item.

### 7.1.7 Edit a book

Initial conditions	Librarian wants to modify some attributes of the book
Normal case	After logging in as Librarian, user goes to 'Book List' page and clicks on "Edit" button beside the book title.
What can go wrong?	If book details are currently updated by the Librarian, the new data might not be shown in the list yet until refresh.
Other activities	Search may be involved
System state on completion	A piece of book attributes has been modified from system database

### 7.1.8 Remove a book

Initial conditions	Librarian wants to remove a book from system
Normal case	After logging in as Librarian, user clicks 'Remove' button from 'Book List' page. To perform this action, user chooses "Remove" button.
What can go wrong?	If the book is currently used by the other users, the book might not disappear till refresh.
Other activities	Search may be involved
System state on completion	A book data has been cleared from system database

### 7.1.9 Reserve a book

Initial conditions	Student must log in with their Student account to use this function.
Normal case	User goes to the Book Detail page and click on 'Add to Wish List'. In Wish List, student will choose 'Reserve' if he/she wants to borrow the book from the library
What can go wrong?	If the book is not available, the system warns "out of order"
Other activities	No other activity involved
System state on completion	Data is loaded, record database will be added in with a new item.

### 7.1.10 Lend a book

Initial conditions	Student goes to the Librarian court asking for borrowing a book. Librarian has logged in her/his Librarian account.
Normal case	There are two ways to perform this action: 1. Librarian goes to 'Reserve Record' page and searches for student ID, then she will click 'Lend' button to perform lending action 2. Librarian can let student borrow books at librarian court by click on 'Lend at librarian court' button in "Book Details' page if book is available.
What can go wrong?	If the reservation is expired and the book is not available at that time, the action cannot be performed
Other activities	Librarian will check the lending record and make warnings for overtime borrowers
System state on completion	Data is loaded, lending database will be added in with a new item.

### 7.1.11 Check record

Initial conditions	Librarian wants to check record. Assume that Librarian has logged in her Librarian account.
Normal case	Librarian searches for a record in 2 terms: student name, or the book name. If the records do exist, they should all displayed as the end of the process.
What can go wrong?	If the record doesn't exist, there will be a warning that "record does not exists".
Other activities	This action is a subtask in side "Lend book" and "Return book" process
System state on completion	Data is loaded.

### 7.1.12 Check student bag

Initial conditions	Student wants to check his own borrowing record. Assume that he has logged in his student account.
Normal case	After homepage is loaded, user chooses "Check my bag" to perform this action.
What can go wrong?	If there are no book he has borrowed or reserved, system will warn that "no book in bag".
Other activities	No other actions can be performed in this story
System state on completion	Data is loaded, but the system remains unchanged

### 7.1.13 Return a book

Initial conditions	User goes to the Librarian court asking for returning a book. Librarian has logged in her/his Librarian account.
Normal case	Librarian checks for the lending record, if he has borrow a book, she will delete the lending record by click on 'Return' button and take back the book
What can go wrong?	In this story, nothing can go wrong
Other activities	No other actions can be performed in this story
System state on completion	Data is loaded, lending database will have one item removed

### 7.1.14 Recommend and feedback

Initial conditions	Students want to send feedback and recommendation for books. Assume that they have logged in.
Normal case	After the homepage is loaded, user chooses 'Request a book' and can leave his feedback to Librarian or choose 'Request Update' in 'Book Detail' page
What can go wrong?	In case student forgot to login before they leaving feedback, system will ask them to login.
Other activities	Link to login page
System state on completion	The request will be stored into database. System remains unchanged

## 7.2 Nonfunctional Requirement

Property	Measure
<b>Environment</b>	The system is developed on J2EE Framework. Programming languages are Java and HTML. Database used: My SQL Server 5.5
<b>Speed</b>	0.1s for response time 0.5 to 1.5 seconds for processed transactions
<b>Reliability</b>	The system must not return any inaccurate result except when the input information is inaccurate.
<b>Robustness</b>	Time to restart after failure: 1 hour. A backup system will run on the server during the time failure of the main system is being fixed.
<b>Stability</b>	The system must be stable when the range of users increases. Minimum number of access that the system can handle stably is 4000.
<b>Ease of use</b>	Library staffs can use all the functions that system provides and initialize the data after being trained in 2 hours.
<b>Web-interface</b>	Interesting interface instead of boring tables and buttons
<b>Help and Support</b>	Engineering team must reply any questions from the administrators as soon as possible.

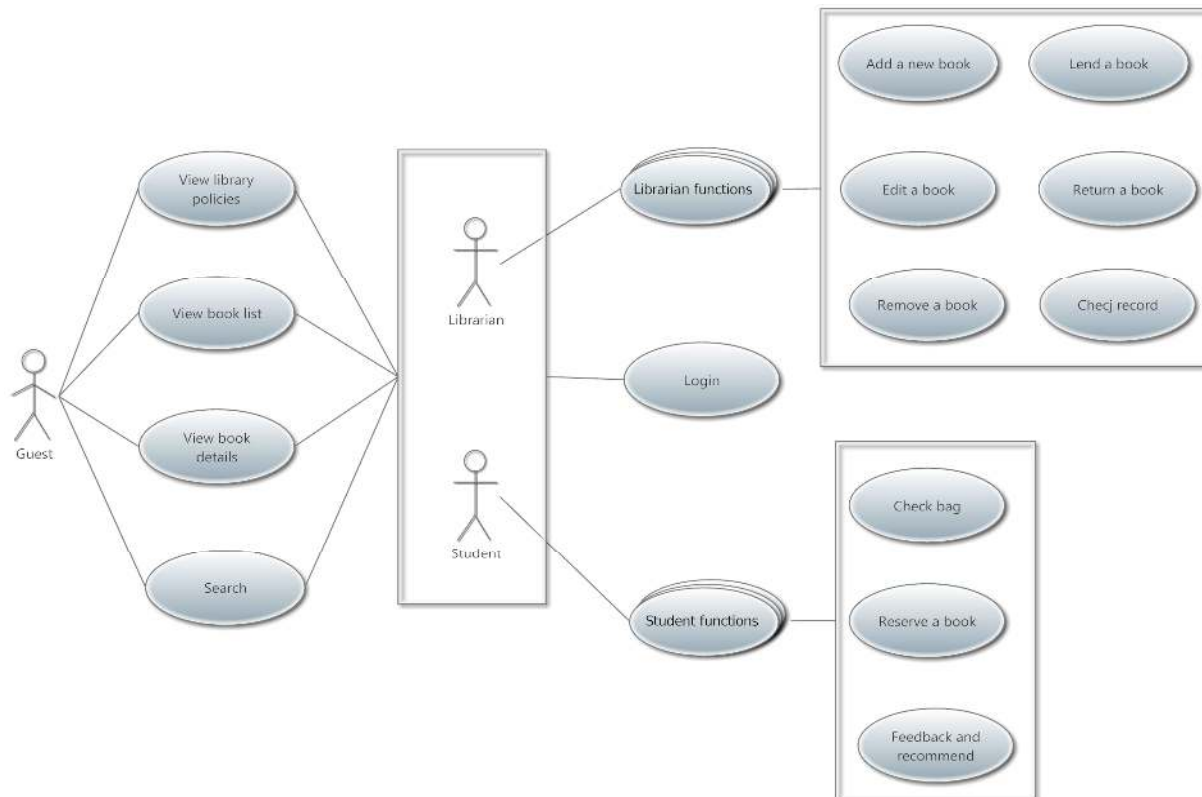
## 7.3 Domain Requirement

Library policies will be included so that the users can follow the rules of library accurately.

The primary language is English for the system is designed for International University. Besides, it will also have Vietnamese for other students studying in other universities which belong to Vietnam National University.

# System Architecture

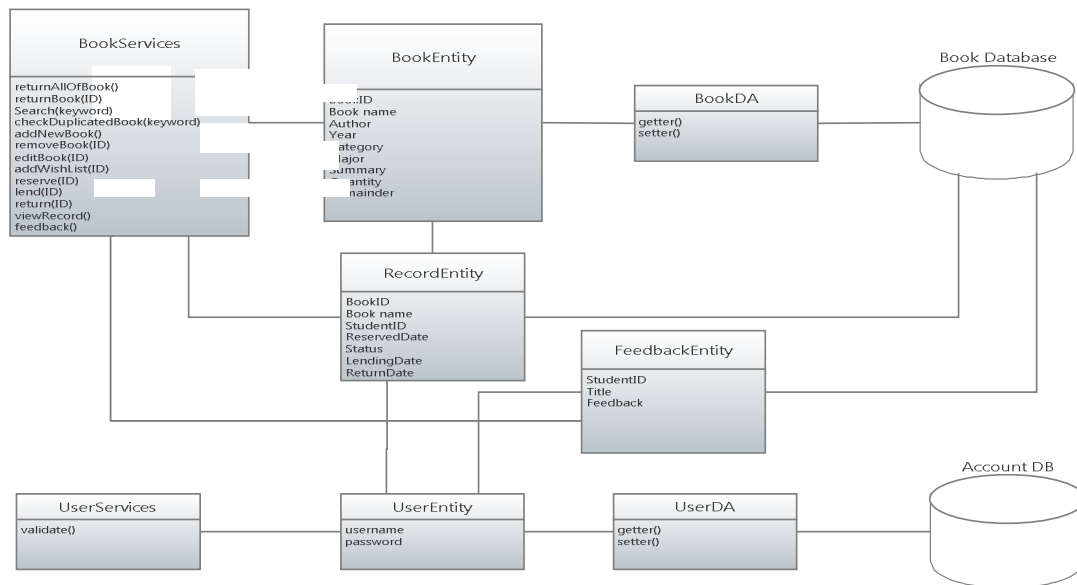
## 8.1 Use Cases



## 8.2 Architecture Diagram



### 8.3 Structural Model



### 8.4 Interaction Model

