



BOOKSHELF

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This **Project** report has been submitted in fulfillment of the requirements for the Degree of Bachelor of Science in Software Engineering.

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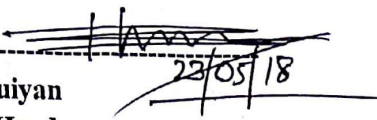
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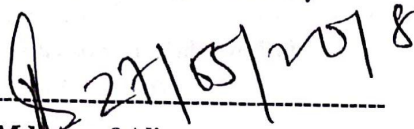
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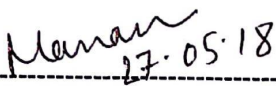
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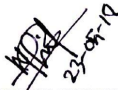
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DECLARATION

We hereby declare that we have taken this project under the supervision of **Iftekhharul Alam Efat, Lecturer, Department of Software Engineering, Daffodil International University**. We also declare that neither this project nor any part of this has been submitted elsewhere for award of any degree.

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ABSTRACT

“BookShelf” is a virtual library and a classified marketplace where the user of this system can easily store their book information easily. In this system, they can create sell post as well as exchange post. Also, the user can easily track the books which they lent to the borrowers. The motivation behind designing this system is currently there is a lack of such system where a user can maintain a book library as well as buy/sell books and track books altogether. We built a web application with an information database. The technologies we used to build this system are PHP, HTML, CSS, Sass, MySQL.

TABLE OF CONTENTS

APPROVAL	I
DECLARATION	II
ACKNOWLEDGMENT	III
ABSTRACT	IV
TABLE OF CONTENTS	V
LIST OF TABLES	VIII
LIST OF FIGURES	IX
CHAPTER 1: INTRODUCTION	1
1.1 Background of the Project.....	1
1.2 Problem with Current System:.....	1
1.3 The purpose of this project:.....	1
1.4 The scope of the Project:.....	1
1.5 Beneficiary & Benefits:.....	2
1.6 Conclusion.....	2
CHAPTER 2: PROJECT PLANNING	3
2.1 Project Scenarios:.....	3
2.2 Project Scenarios List:.....	3
2.3 Individual Scenarios List:.....	4
2.4 Proposed System Model:.....	5
2.4.1 List of Sell Post:.....	5
2.4.2 Single Sell Post:.....	5
2.4.3 Book Entry:.....	6
2.4.4 Write Review:.....	6
2.4.5 Borrower Note:.....	6
2.4.6 Books List:.....	6
2.4.7 Single Books:.....	7
2.4.8 Buy Books:.....	7
2.4.9 Exchange Books:.....	7
2.4.10 Search Books:.....	7
2.5 Stakeholders:.....	7
2.5.1 User:.....	7
2.5.2 Project Owner:.....	7
2.6 Project Timelines:.....	7
2.7. Risk Management:.....	9
2.7.1 Risk Identification:.....	9
2.7.2 Risk assessment and action plan:.....	10
2.8 SWOT Analysis:.....	11
CHAPTER 3: REQUIREMENT SPECIFICATION	12
3.1 Functional Requirements:.....	12
3.1.1 Register for Site Access:.....	12

3.1.2 Create, Edit, Delete book.....	13
3.1.3 Create, edit, delete sell/exchange post.....	14
3.1.4 Write reviews.....	14
3.2. Performance Requirements.....	15
3.2.1 Speed and Latency Requirements:.....	15
3.2.2 Precision and Accuracy Requirements:.....	15
3.2.3 Capacity Requirements:.....	15
3.3 Dependability Requirements.....	16
3.3.1 Reliability and Availability Requirements:.....	16
3.3.2 Robustness or Fault Tolerance Requirements:.....	16
3.3.3 Safety-Critical Requirements:.....	17
3.4. Maintainability and Supportability Requirements.....	17
3.4.1 Maintenance Requirements:.....	17
3.5 Supportability Requirements:.....	17
3.6 Adaptability Requirements:.....	18
3.7 Scalability or Extensibility Requirements:.....	18
3.8 Longevity Requirements:.....	18
3.9. Security Requirements:.....	18
3.9.1 Access Requirements:.....	18
3.9.2 Integrity Requirements:.....	19
3.9.3 Privacy Requirements:.....	19
3.10 Usability and Human Integration Requirements:.....	20
3.10.1 Ease of Use Requirements:.....	20
3.10.2 Understandability and Politeness Requirements:.....	20
3.10.3 Accessibility Requirements:.....	21
3.10.4 User Documentation Requirements:.....	21
3.11 Look and Feel Requirements:.....	21
3.11.1 Appearance Requirements:.....	21
3.12.2 Style Requirements:.....	22
3.12 Operational and Environmental Requirements:.....	23
3.12.1 Expected Physical Environment:.....	23
3.12.2 Productization Requirements:.....	23
CHAPTER 4: SYSTEM ANALYSIS.....	24
4.1 Use Cases:.....	24
4.1.1 System Environment (Level-O Use case):.....	24
4.2 Structural Functionalities:.....	25
4.2.1 Use case of Post creation procedure :	25
4.2.2 Search procedure :	25
4.2.3 Manage user :	26
4.2.4 Manage Book info :	26
4.2.5 Manage Posts :	27
4.3 Access Management Use Case:.....	27
4.3.1 Login as User Use Case:.....	28
4.3.2 Logout as User Use Case:.....	28

4.3.3 Create Account as User Use Case:.....	29
4.3.4 Delete User Account Use Case:.....	29
4.4 Activity Diagram:.....	29
4.4.1 User Perspective Diagram :	29
4.4.2 Admin Perspective:.....	30
4.4.3 Action Based Activities:.....	30
4.5 Sequence Diagram:.....	30
4.5.1 Model-1:.....	30
4.5.2 Model-2:.....	30
4.6 Data flow Diagram (DFD):.....	31
4.6.1 Context Diagram (level-0 DFD):.....	32
4.6.2 Level-1 DFD :	32
CHAPTER 5: DESIGN & DEVELOPMENT.....	38
5.1 Introduction.....	38
5.2 Technology & Tools.....	38
5.3 Reason Behind Choosing.....	38
5.4 On Perspective of This Project.....	38
5.5 Database Design.....	39
5.6 Conclusion.....	39
CHAPTER 6: TESTING.....	40
6.1 Introduction.....	40
6.2 Test List.....	40
6.3. Test Cases:.....	40
6.3.1 Module A: User Registration:.....	40
6.3.2 Module B: Add Books:.....	41
6.3.3 Module C: Show Books:.....	43
6.4 User Acceptance Tests:.....	44
6.4.1 Connectivity Test:.....	44
6.4.2 User Registration Test.....	44
6.4.3 Add Book Test.....	44
6.4.4 Visit Book Test.....	45
6.5 Performance Testing.....	45
6.6 Security Testing.....	45
6.7 Conclusion:.....	45
CHAPTER 7: CONCLUSION.....	46
REFERENCES.....	47
APPENDIX.....	48

LIST OF TABLES

Table 2.1: Project Scenario List.....	3
Table 2.2: Individual Scenario List.....	4
Table 2.3: Risk Identification.....	9
Table 2.4: Individual Scenario List.....	10
Table 3.1: Registration field.....	12
Table 3.2: Create Book.....	13
Table 3.3: Create Sell/Exchange.....	14
Table 3.4: Create Review.....	14
Table 3.5: Speed and Latency.....	15
Table 3.6: Capacity Requirements.....	15
Table 3.7: Reliability and Availability.....	16
Table 3.8: Robustness or Fault.....	16
Table 3.9: Maintenance Requirements.....	17
Table 3.10: Supportability Requirements.....	17
Table 3.11: Scalability & Extensibility Requirements.....	18
Table 3.12: Access Requirements.....	18
Table 3.13: Integrity Requirements.....	19
Table 3.14: Privacy Requirements.....	19
Table 3.15: Ease of Use Requirements.....	20
Table 3.16: Understandability Requirements.....	20
Table 3.17: User Documentation Requirements.....	21
Table 3.18: Appearance Requirements.....	21
Table 3.19: Style Requirements-01.....	22
Table 3.20: Style Requirements-02.....	22
Table 3.21: Style Requirements-03.....	22
Table 3.22: Expected Physical Environment.....	23
Table 4.1: Login as User Use Case.....	28
Table 4.2: Logout as User Use Case.....	28
Table 4.3: Create Account as User Use Case.....	29
Table 4.4: Delete User Use Case.....	29
Table 5.1: List of features need to be tested.....	40
Table 5.3: User login test case.....	41
Table 5.4: Store book test case.....	41
Table 5.5: Create Borrower test case.....	42
Table 5.6: Sell post test case.....	42
Table 5.7: Exchange post test case.....	42
Table 5.8: Search Book test case.....	43
Table 5.9: List of Sell/Exchange post test case.....	43
Table 5.10: Single Book test case.....	43
Table 5.11: Connectivity Test.....	44
Table 5.12: User Registration Test.....	44
Table 5.13: Add Book Test.....	44
Table 5.14: Visit Book Test.....	45

LIST OF FIGURES

Figure 2.1: Proposed System Model.....	6
Figure 2.2: Project Timeline.....	8
Figure 4.1 : System Environment.....	24
Figure 4.2 : BookShelf Activities.....	24
Figure 4.3 : Post Creation.....	25
Figure 4.4 : Search Procedure.....	25
Figure 4.5 : User Management.....	26
Figure 4.6 : Book Information Management.....	26
Figure 4.7 : Posts Management.....	27
Figure 4.8 : Access Management.....	27
Figure 4.10 : User Based Activities (Guest User).....	30
Figure 4.11 : User Based Activities (Registered User).....	31
Figure 4.12 : Admin Activities.....	32
Figure 4.13 : Post Creation Activities.....	33
Figure 4.14 : Book Information.....	34
Figure 4.15 : Deletion Process.....	34
Figure 4.16 : Context Diagram.....	35
Figure 4.17 : Level-1 DFD Storing Book Information.....	35
Figure 4.18 : Level-1 DFD Delete Book Information.....	36
Figure 4.19 : Level-1 DFD Sell/Exchange Post Creation.....	36
Figure 4.20 : Level-1 DFD Sell/Exchange Post Deletion.....	37
Figure 4.21 : Level-1 DFD Sell/Exchange Post Creation.....	37
Figure 5.1: Database Design.....	39

CHAPTER 1

INTRODUCTION

1.1 Background of the Project

Most of the people of our country maintain a habit of reading books. Students read books for the academic purpose, other people read books for a hobby. Some people want to collect books. If someone has a large number of books, it's very difficult to keep track. It's very common to lend books to other people. Sometimes book owner forgets to whom he/she lend a book and sometimes borrower also forgets to return the book. Most of the people usually want to sell old stuff to buy a new one. Same for the old books. Most of the cases old books sold in weight like any other paper stack. People can sell books to the bookshop, but it does not worth enough money and it's also time-consuming.

1.2 Problem with Current System:

There are some systems where people can sell books. These systems do not provide enough information about the book. People can only sell old books but can not exchange books. In some system, people can make a list of books like a virtual library. But the functionality of that system is not very clear and not enough.

1.3 The purpose of this project:

Bookshelf is a virtual library with classified advertisement website only for books. In this system user can store information and create sell or exchange post.

Goal:

1. People can enter information about their physical books that will make a virtual library for every people.
2. Sell their books for the right price.
3. Exchange books with others.
4. Book owner can make note to whom he/she lend books and necessary information about it.

1.4 The scope of the Project:

This system will create a classified marketplace for books only. Book reader can easily sell or buy books. The user can easily keep track of their books. Book publisher and writer can understand which type of books are popular.

1.5 Beneficiary & Benefits:

Beneficiary :

1. People who do read books and want to keep track of their books.
2. People who want to buy, sell or exchange books.

Benefits:

1. People can sell, buy or exchange books in this system.
2. Store information of the books.
3. Keep track of lent books and borrower.

1.6 Conclusion

This system will help people to organize their books. People can easily sell their books or exchange with new ones. They can also track their lent books. Overall it will be beneficial for whole book reading community.

CHAPTER 2

PROJECT PLANNING

2.1 Project Scenarios:

A scenario is a vision of a project in action! It is a tool that can help anticipate problems and decide how to work through them. It is an opportunity for others to 'see' what project might look like in practice. Each scenario should include the following elements:

1. Prerequisites
2. One or more person
3. Activities
4. Results

Scenarios help us to think about how actual people will really use this software we are developing.

2.2 Project Scenarios List:

These scenarios demonstrate in Table 2.1 some of the most common activities that user will do when sell or exchange our books or create personal library.

Table 2.1: Project Scenario List

1.	Project Scenario Name	BookShelf
2.	Objective /Vision	An application which allow users to create a bookshelf by listing their books. User will keep a simple note when someone borrow books from them. Also they can sell/exchange their books by making sell/exchange post. User can write review of their favorite books.
3.	User of the System	Project owner, User.
4.	Functional requirements	<ul style="list-style-type: none">● Web accessible information base● It helps people list all their books that they read or posses virtually.● It allow user to make a note when someone borrow books from them.● Allow user to create sell post● Allow user to create exchange post● Allow user write review of books.● Allow user to rate books
5.	Non-Functional Requirements	<ul style="list-style-type: none">● Support at least 250 concurrently connected users.● Robust database design to handle expected users of up to 1,00,000 customers.● Response time for website should be

		sub-second. • Easy backup and recovery of user supplied information.
6.	Optional features	A. Advance system error signal. B. Monitoring the system 24*7
7.	User Interface priorities	A. Better user experience for easily use. B. Browser testing and support for IE, safari, chrome and Firefox.
9.	Team Size	2 developers
10.	Technologies	A. Backend : PHP, Laravel B. Frontend: HTML, CSS, Sass, jquery, javascript C. Database: MySql

2.3 Individual Scenarios List:

The scenario demonstrates in some of the most common activities that we expect users need to do described in Table 2.2.

Table 2.2: Individual Scenario List

No :	Scenario	Person	Pre-requisites
1.	Listing a book	Rasel Hasan	<p>Rasel Hasan is a book lover, he loves to read and collect books. He already has a small library in his house. Recently he wants to store all his books in online, He found out “Bookshelf” so he decided to use our system.</p> <p>He registers in our system by providing his email and password.</p> <p>Now he can add his books with books author, category, language that helps him sort and find that books easily. He can also add book cover image.</p>
2.	Write Review	Rasel Hasan	<p>Rasel Hasan read many books also he loves to share some thoughts about the books. So he can write his books review after login the system so that other people can read and find useful.</p>
3.	Write a note about borrower	Rasel Hasan	<p>Rasel has a lot of books, a lot!! Sometimes people borrow books from him, it often happens that people forgot to return the books.</p> <p>After login to our system, Rasel now can keep a note about the borrower info. Also, he can</p>

			add the expected return date that helps him to remind.
4.	Exchange Books	Munir Hasan	Munir Hasan new member of our system, He is a student. Munir love to read books a lot, but the problem is buying new books is hard for him. After registering our system, Munir can now create exchange post, that helps him to exchange books with other people
5.	Sell Books	Rakib Hasan	Rakib Hasan has many old books, he want to sell most of them. Recently he found out that there is special website that only allow selling used books. He register in our website and create a sell post for his books
6.	Buy/ Exchange old books	Navid Karim	Navid Karim needs some books for his works. He just needs it for some days. After searching on google he found our website. He go to homepage and search his desired books. After that he call the book owner and deal with him over the phone no that given on the website.

2.4 Proposed System Model:

People can make a virtual library with our system that helps them keep track of their books, write a review. People who collect books, sometimes they have to lend other people so often they forget whom he lends, in our system they can make a simple note with the expected return date that will remind him. It's hard for every people to buy every book he wanted to read, with our system they can exchange their books with other people. Also, they can sell their books. In Figure 2.1 demonstrate the system.

2.4.1 List of Sell Post:

The user after opening our website they will find the list of sell post. Here user will find the information of which books will be sold

2.4.2 Single Sell Post:

After clicking the book user will find the information about seller like name, address, mobile no. They will also find a review of that books.

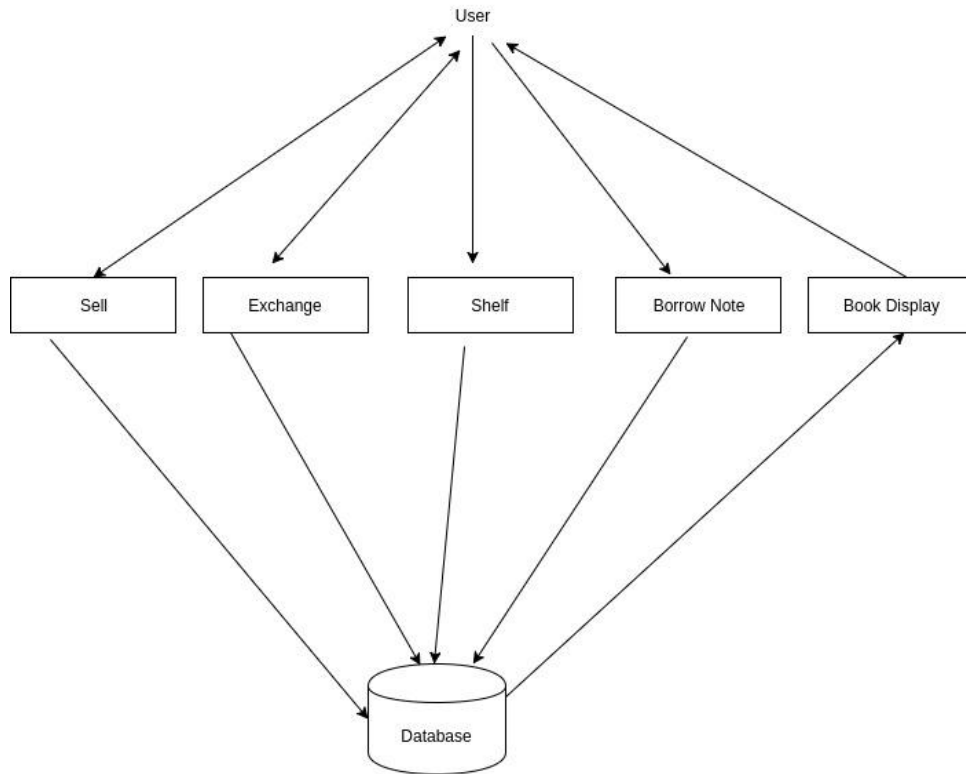


Figure 2.1: Proposed System Model

2.4.3 Book Entry:

The book-entry features allow a user to enter their books to store in their own virtual library. In this process, they can mark that book for sale or exchange.

2.4.4 Write Review:

After entry their book, they can rate that books or write a review, that will help other users.

2.4.5 Borrower Note:

After entry their books if someone borrow that books, they can create a note about who borrowed the books and when will he/she return.

2.4.6 Books List:

In the admin section, the user will have all the books he/she has stored. Also, the user will get information about books that someone borrowed or books that he sold or wanted to sell.

2.4.7 Single Books:

In this features the user will find all the information about books, like books review. Who borrowed this books or how many times this book has been borrowed.

2.4.8 Buy Books:

After going into details of sell post, the user will find the seller information from that they can communicate with the seller.

2.4.9 Exchange Books:

After going into details of exchange post, the user will find the information from that they can communicate with exchanger.

2.4.10 Search Books:

User can search books by name using search input field.

2.5 Stakeholders:

Stakeholders can be person or group or organization that is actively involved in a project.

2.5.1 User:

The main stakeholder of this project is user.

1. Who read books
2. Store books
3. Sell Books
4. Exchange Books
5. Buy Books

2.5.2 Project Owner:

Those who own this project are another stakeholder. They need to build and maintain this project.

2.6 Project Timelines:

A timeline is a chronological order of events. In most cases, it is a line with dates, events or actions. It shows what phases are already in the past, what is in the progress now and what is supposed to be finished in future. It means it helps to be on projects tracks. Project timeline given in Figure 2.2

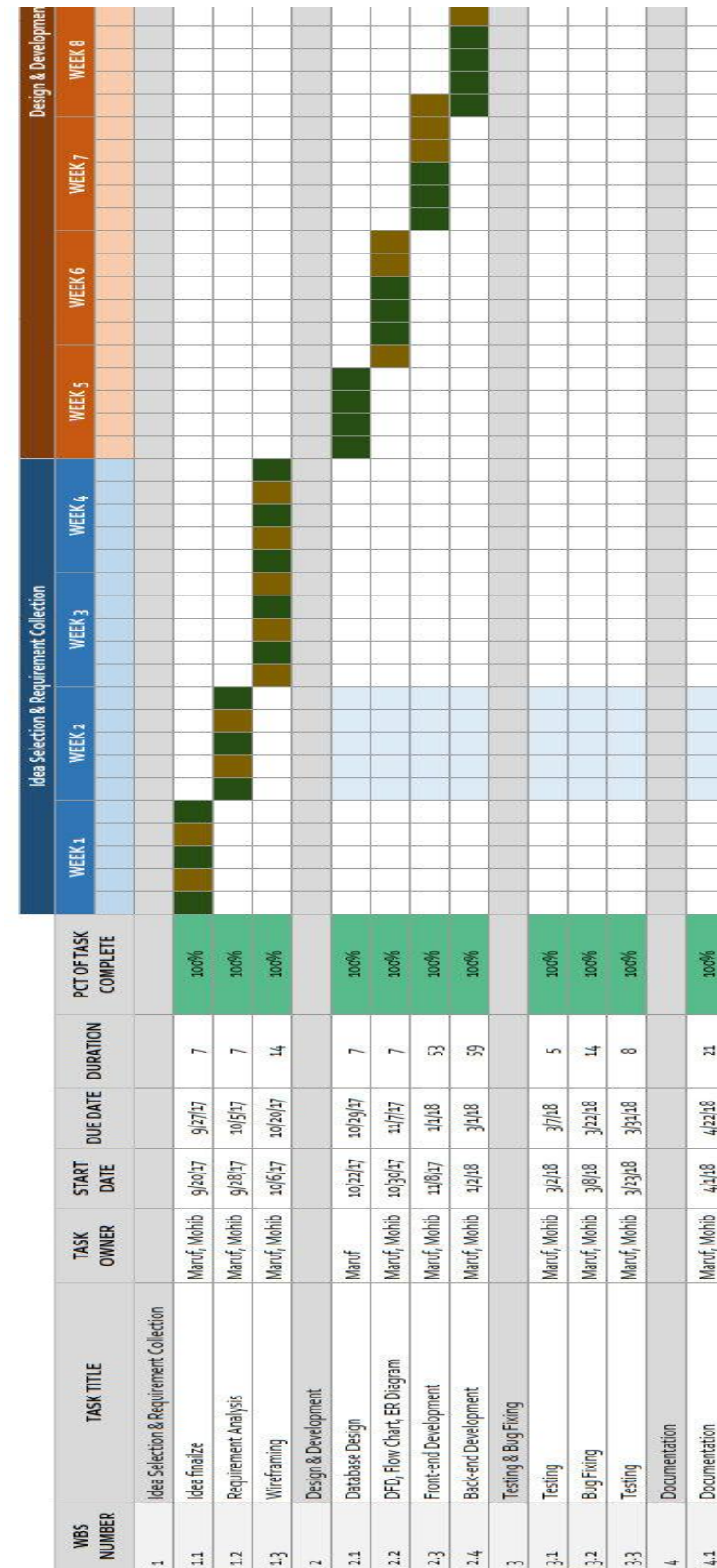


Figure 2.2: Project Timeline

2.7. Risk Management:

Risk management [1] is the process of identifying, assessing and controlling threats to an organization's capital and earnings. These threats, or risks, could stem from a wide variety of sources, including financial uncertainty, legal liabilities, strategic management errors, accidents and natural disasters.

2.7.1 Risk Identification:

Risk identification is the process of determining risks that could potentially prevent the program, enterprise, or investment from achieving its objectives. It includes documenting and communicating the concern. Risk identifications are given in the Table 2.3 below.

Table 2.3: Risk Identification

Risk Description	Causes	Impacts
If solution does not meet the needs	<ol style="list-style-type: none">1. Lack of understanding requirements2. Not followed the appropriate solution	<ol style="list-style-type: none">1. Direct impact on project structure.2. Delay development time.3. Development cost increase.
Software Failure	<ol style="list-style-type: none">1. Operating system failure2. Development tool failure	<ol style="list-style-type: none">1. Data loss.2. Delay development time.
Hardware failure	<ol style="list-style-type: none">1. Low performance2. Lifetime expire	<ol style="list-style-type: none">1. Data loss.2. Delay development time.
Backup failure	<ol style="list-style-type: none">1. Internet connection problem2. Forget to synchronize data	<ol style="list-style-type: none">1. Data loss.2. Delay development time.3. Cost increase.
Man made and accidental Effects	<ol style="list-style-type: none">1. Theft of devices2. Users scarcity of skills3. Fire	<ol style="list-style-type: none">1. Data loss.2. Delay development time.3. System loss.4. Hardware loss.
Natural Effects	Earthquake, flood, storm etc.	<ol style="list-style-type: none">1. Data loss.2. Delay development time.

		3. Hardware loss.
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2.7.2 Risk assessment and action plan:

Risk Assessment and action plan should be used to record the actions that need to be taken to reduce and manage the hazards identified by the completion of the relevant Risk Assessment Form. Risk Assessment and action plan of this project is given in Table 2.4.

Table 2.4: Individual Scenario List

Risk Description	Action Against Risk	When to take Action
If solution does not meet the needs	Re-confirm all the requirement and delivered through incremental process	Throughout the project
Software Failure	<ol style="list-style-type: none"> 1. Must use stable operating system and development tools 2. Use anti-virus if needed 3. Must use cloud backup 4. Control unauthorized access. 	Throughout the project
Hardware failure	<ol style="list-style-type: none"> 1. Use required hardware for better performance 2. Use IPS. 3. Must use cloud backup 	Throughout the project
Backup failure	<ol style="list-style-type: none"> 1. Use stable internet connection. 2. Must enable synchronization with cloud storage. 	Throughout the project
Man made and accidental Effects	<ol style="list-style-type: none"> 1. Use fire safety protocol. 2. Check electrical connection. 3. Must use cloud backup 	Throughout the project
Natural Effects	Must use cloud backup	Throughout the project

2.8 SWOT Analysis:

Most of the time we see that the use of electronic techniques for doing business add value either by the reducing transaction cost or by creating some type of network effect, or by a combination of both. In SWOT analysis (the acronym is short for Strengths, Weaknesses, Opportunities and Threats), here we try to find out the strengths and weaknesses of our project in respect of Software Development environment. Then we try to identify opportunities presented by that environment and the threats posed by that environment. As shown in the following figure which shows the questions that an analyst would ask in conducting a SWOT analysis. [2]

Strengths

- This project is totally new to our country
- No time constraints: The concept of 24X7 shows that anytime people can use this service.
- People can easily compare if multiple product found.
- Don't need any middleman, people can sell or exchange book without any extra charge
- People will find many review regarding books which helps them to buy.

Weaknesses

- Team members are not good enough all the technical areas of this project.
- There is no delivery system so people have to make their own.
- People are not interested in writing reviews.
- There is no physical and personal or direct face to face interaction between two user. Therefore the scope of convincing the customer does not exist.
- There is no business model write now, so running this website will be hard.

Opportunities

- New writer can easily post about their books.
- Writing reviews about new book will help to recognise.

Threats

- People can misuse of this system. They can create fake post.
- There is no delivery system, people can take advantage of this.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Functional Requirements:

A functional requirement defines a function of a system or its component. Functional requirements may be calculations, technical details, data manipulation and processing and other specific functionality that define what a system is supposed to accomplish.[3]

3.1.1 Register for Site Access:

Description & Priority:

In order to create sell/exchange post or write reviews user must have registered with our system

Stimulus/Response Sequence:

Stimulus: User clicks the “Registration” button on the right above corner.

Response: System will prompt user email, password to complete registration.

Stimulus: user request for resetting or forgetting password.

Response: System will give another email or phone number to reset password.

Stimulus: User will request to configure their account/registration.

Response: The system will allow to edit or update their account.

Functional Requirements are described in Table 3.1:

Table 3.1: Registration field

Register Form:	System will display a registration form.
Register Accept:	System will validate that the user has read and accepts the system terms of use.
Register Name:	System will validate that the mandatory fields full name
Register Email:	System will validate that email address is unique within the system.
Register Email Matched	System will display a message informing user that the email is already registered
Register Redirect:	After clicking the “Sign up” button the user will be redirected to the events list, where they can begin using the system.

Forgot Password:	The system will prompt for username and offer a “Reset Password” button.
Forgot Reset:	The system will offer no recovery option, but will instead reset the users password.
Forgot Email:	The system will email the new password to the address registered in the user’s account profile.
Login	The system will present an easy to find Login form in the upper right hand corner of the site
Login Redirect :	Once logged in, the user will see a logout link on the upper right hand corner of the site.
Logout Link:	When the user clicks log out, the system will automatically log the user out and redirect them to the login page

3.1.2 Create, Edit, Delete book

Description and Priority:

Priority = High.

A user who is registered in our system can create, edit, delete book.

Stimulus:User request to create book.

Response: The system will make a form in order to create book.

Stimulus: User will request to edit book from their own library.

Response: The system will display edit form.

Stimulus: User will request to delete book from their own library.

Response: The system delete the book from their library.

Functional Requirements are described in Table 3.2

Table 3.2: Create Book

Create New Book	The system will allow the user to create new book
Edit/Change the book	The system will allow edit/change the book
Delete Book	The system will allow to delete book from their own library

3.1.3 Create, edit, delete sell/exchange post

Description and Priority:

Priority=High.

A user who is registered in our system can create, edit, delete sell/exchange post.

Stimulus: User request to create sell/exchange post..

Response: The system will make a form in order to create sell/exchange post.

Stimulus: User will request to edit book from their own library.

Response: The system will display edit form.

Functional Requirements are described in Table 3.3

Table 3.3: Create Sell/Exchange

Create New sell/exchange post	The system will allow the user to create new sell/exchange post
Edit/Change the sell/exchange post	The system will allow edit/change the sell/exchange post
Delete sell/exchange post	The system will allow to delete sell/exchange post

3.1.4 Write reviews

Description and Priority:

Priority=Medium.

Stimulus: User request to write review of their added book

Response: The system will display a textarea form associate with that book.

Stimulus: User request to edit review of their reviewed book

Response: The system will display a edit form associate with that book.

Stimulus: User request to delete review of their added book

Response: The system will delete review of that book

Functional Requirements are described in Table 3.4.

Table 3.4: Create Review

Create New Review	The system will display a textarea form associate with that book
Edit/Change Review	The system will allow edit/change the reviewed book
Delete Review	The system will allow to delete book

3.2. Performance Requirements

In identifying and quantifying performance requirements, it is important to identify the reasoning behind a particular requirement. This is part of the general capacity planning process. Users might be basing their statements of requirements on assumptions about the logic of the program that do not match the programmer's assumptions.

3.2.1 Speed and Latency Requirements:

The system is required a fair amount of speed especially while browsing book, in Table 3.5 described in details.

Table 3.5: Speed and Latency

SLR-1	The Bookshelf system will be aggressive
Description	The book browsing for user will be speed. It It also depends on users /clients internet connection.
Originator	Bookshelf
Stakeholders	User Admin
Fit Criterion	The system will monitor to the user how they get more flexibility to browse our website.

3.2.2 Precision and Accuracy Requirements:

There are no specific precision and accuracy requirements.

3.2.3 Capacity Requirements:

The system is able to manage all the incoming information from user. Described in Table 3.6.

Table 3.6: Capacity Requirements

CR-1	The system will manage information in database.
Description	The information of user will be stored in database. The Bookshelf system will get the information about book from user.
Originator	User
Stakeholders	User Admin
Fit Criterion	The Admin is able to observer the data in database.

3.3 Dependability Requirements

Dependability is a measure of a system's availability, reliability, and its maintainability, and maintenance support performance, and, in some cases, other characteristics such as durability, safety and security.

3.3.1 Reliability and Availability Requirements:

In order to support user operations the system is available all the time. Detail described in Table 3.7.

Table 3.7: Reliability and Availability

Bookshelf	The system must be available
Description	The system must be available to the users 24 hour per day. Availability is defined here as the time that the system is available to its users without defects of Class 1(as defined by ISTQB).Defects of class 1 prevent the user from working with the system Planned downtimes can occur during times of system upgrade.
Originator	Bookshelf
Stakeholder	1. Admin 2. User
Fit Criterion	1. The system is available 24*7 with the following exception 2. The system may be unavailable without prior information for up to 3.65 days/year. 3. The system is unavailable with prior information for an unlimited time.

3.3.2 Robustness or Fault Tolerance Requirements:

Our Bookshelf system will not crash from minor errors. Detail described in Table 3.8.

Table 3.8: Robustness or Fault

RFT-1	The system handles over access and system errors
Description	Sometimes multiple user can over access to the Bookshelf system. The Bookshelf system will after 1.0 will allow multiple server to handle incoming data.
Originator	Admin
Stakeholders	1. Bookshelf system 2. Client
Fit Criterion	The system is able to cover the minor errors in system and will help to user to use our Bookshelf website smoothly.

3.3.3 Safety-Critical Requirements:

There are no specific safety-critical requirements.

3.4. Maintainability and Supportability Requirements

Maintainability and Supportability requirements are given below.

3.4.1 Maintenance Requirements:

Maintenance requirements described in Table 3.9.

Table 3.9: Maintenance Requirements

MR-1	The system helps to update data
Description	User can create sell or exchange post, store books. All data stored in database and it will be updated every time
Originator	User
Stakeholders	1. Bookshelf system 2. Admin
Fit Criterion	The Bookshelf system will be automatically updated. The Admin is able to monitor the database if the user gets any trouble in sent data in our Bookshelf system database.

3.5 Supportability Requirements:

In order to understand the system's behavior on a technical level required by the Admin. The reasons for reading them might be..

A system malfunction has occurred & the Admin has to find the exact point of time when this happened.

The system produces wrong information & the developer must be able to reproduce the data flow through the system.

A hacker tried breach the system's security mechanism & the Admin must understand what he did. Details described in Table 3.10.

Table 3.10: Supportability Requirements

SR-1	The system must generate trace files in order to support technical root cause analysis by Admin.
Description	The system must generate root info so that the system operation & the developers can understand the system's past behavior.
Originator	Bookshelf
Stakeholders	Admin
Fit Criterion	The system generate trace files The trace files can be read with system tools on (Windows Platform) The Admin/developer can change the log level per module without

	recompiling/deploying the application. The debug output as Text(UTF_8).
--	--

3.6 Adaptability Requirements:

There are no specific adaptability Requirements.

3.7 Scalability or Extensibility Requirements:

Bookshelf is online book library to the User. In order to be able to serve all users the system has to be able to perform at conditions that go beyond scenarios. In order to reduce operational cost Bookshelf is delivered as a web based application that is hosted.

Search Hosting: Thus local installation is avoided if possible. The server side a part of Bookshelf is executed inside the php server side and technically be shared amongst all clients. Details described in Table 3.11.

Table 3.11: Scalability & Extensibility Requirements

SER-1	The system must be able to serve multiple Users at the same time.
Description	The php server side of Bookshelf is implemented so that multiple clients can capable to get service. This requirement addresses the system must be able to serve multiple users of a client at the same time.
Originator	Users
Stakeholders	1. Bookshelf system(PHP server) 2. Client
Fit criterion	The system is able to process the multiple client's data.

3.8 Longevity Requirements:

There are no longevity requirements.

3.9. Security Requirements:

A functional security requirement is something that describes functional behavior that enforces security.

3.9.1 Access Requirements:

To get access to the system of its, the system provides authorization/authentication way. Bookshelf uses various modules (such as facebook platform, simulators). Details described in Table 3.12.

Table 3.12: Access Requirements

AR-1	The system provides security strategies.
------	--

Description	The system is designed in way that allows all Bookshelf modules to access a mechanism that provides security services (credentials management, login/password, validation).
Originator	User
Stakeholders	<ol style="list-style-type: none"> 1. Bookshelf system 2. Admin
Fit Criterion	The system helps to create convenience for the User, Admin. The system also improves security for access.

3.9.2 Integrity Requirements:

To protect credentials of user from being stolen, all passwords are stored in encrypted form. The Requirements significantly reduces the value of stolen user credentials, it's not easy to decrypt the password.

Details described in Table 3.13.

Table 3.13: Integrity Requirements

IR-1	The system store passwords in an encrypted form
Description	The system encrypts all passwords and persist only the encrypted form. Furthermore state-of-the art encryption algorithm performing one-way-hash-functions is used to encrypt the password.
Originator	User
Stakeholders	Admin
Fit Criterion	<ol style="list-style-type: none"> 1. No character or at most the letter type characters are displayed on the screen while inserting a password. 2. The password is stored as a one-way-hash of the password string. 3. Strong encryption is used to generate the one-way-hash.

3.9.3 Privacy Requirements:

The system provides a protection of the database in Bookshelf. However, the system will have to increment this level of protection because of the personal data mode available on the system & the larger share of people that will be having access to it through the Bookshelf registration.

The user's privacy will be granted by the limited access that the login process is going to give to the database. The system doesn't grant the user to access the database. Admin can check the database. The privacy of user will be protected. Details described in Table 3.14.

Table 3.14: Privacy Requirements

PR-1	The user data will be privacy protected
------	---

Description	The main requirement in the Bookshelf context is the generation of books data. The data should be kept. If an user post/send something which requires a reply from the Admin, the individual data of the user need to be kept for reference purpose.
Originator	User
Stakeholders	1. Admin 2. User
Fit Criterion	The system unambiguously distinguish between Users without breaking privacy.

3.10 Usability and Human Integration Requirements:

Usability and Human Integration requirements are given below.

3.10.1 Ease of Use Requirements:

The Bookshelf system has an easily understandable design in order for users to use it. It provides essential information when the user commits possible errors. Details described in Table 3.15.

Table 3.15: Ease of Use Requirements

EUR-1	The system must be usable for people with visual impairment.
Description	The system indicates the several possibilities that the user has to go on in using the system. The user is allowed to undo any of the operation computed or for irreversible operation will always be asked to double check their choice in way they misunderstood the option or clicked on a option by accident.
Originator	Client/ User
Stakeholders	1. Bookshelf system 2. User
Fit Criterion	The system has easy access to help maintenance manager/Admin whenever the user needs any kind of assistance. The system will also provides a user manual option where it will explain the functionality.

3.10.2 Understandability and Politeness Requirements:

This section describes more requirements of user to add more features in future. Details described in Table 3.16.

Table 3.16: UnderstanbilityRequirements

UPR-1	The features of user's information
Description	The Bookshelf system is more efficiently ease of use more added

	features. The Bookshelf system is understandability for user. The system will not use any term that is not specified in Bookshelf system.
Originator	User
Stakeholders	1. Bookshelf system 2. Users
Fit Criterion	The system can cope with preference of User.

3.10.3 Accessibility Requirements:

There are no specific accessibility requirements.

3.10.4 User Documentation Requirements:

User Documentation described in Table 3.17.

Table 3.17: User Documentation Requirements

UDR-1	The system developer documentation
Description	To develop our project Bookshelf we have specified requirement of user documentation the team 5-4 are involved with our project documentation to deliver the document. They are responsible to create and deliver to the university department.
Originator	Bookshelf
Stakeholders	1. Viewer 2. System Developer
Fit Criterion	The technical specification, user manual, service manual and installation manual are linked in our project for future user.

3.11 Look and Feel Requirements:

Look and Feel requirements are given below.

3.11.1 Appearance Requirements:

Appearance Requirements described in Table 3.18.

Table 3.18: Appearance Requirements

AR-1	The Bookshelf website must be customizable
Description	The web client that is seen from registered must be customizable to some extent.
Originator	Bookshelf
Stakeholders	1. Bookshelf 2. Client

Fit Criterion	System is customizable.
---------------	-------------------------

In order to integrate well into the website's appearance from a user experience point of view and to support familiarization with the Bookshelf platform the look and feel should reflect the clients.

3.12.2 Style Requirements:

We will provide a web based user interface. This requirement does not only define the necessity to use a css but although the requirements regarding the css content. Details described in Table 3.19, 3.20, 3.21.

Table 3.19: Style Requirements-01

SR-1	The look and feel must be controllable using style sheet.
Description	The styling of the elements of the web based user interface will be defined using a css.
Originator	Bookshelf
Stakeholders	Users
Fit Criterion	<ol style="list-style-type: none"> 1. There's a css file that defined all appearance attributes, the layout grows to the actual screen size. The style supports 2-column layout with a sidebar to the left. The style supports drop down menu. 2. The style supports internationalization

The look must be clear which field in a form require data and which can be left blank

Table 3.20: Style Requirements-02

SR-2	Label field will be bold
Description	The label will be bold so that it can be identified as being mandatory.
Originator	Developer
Stakeholders	<ol style="list-style-type: none"> 1. User 2. System Developer
Fit Criterion	Label is bold.

To get consistent look and feel a basic template will be used on all pages whenever possible.

Table 3.21: Style Requirements-03

SR-3	Layout of subpage
Description	<p>Look and feel will be all pages</p> <ol style="list-style-type: none"> 1. Every sub page must have a title. 2. Webform button are 3. Right aligned 4. Confirmation buttons are on the right side

	5. Cancellation buttons.
Originator	Developer
Stakeholders	1. System developer 2. User
Fit Criterion	1. Title will be displayed in every page 2. Mandatory instructions/confirmation messages are displayed on top of the page 3. The button are in the right order

3.12 Operational and Environmental Requirements:

Operational requirements are those statements that identify the essential capabilities, associated requirements, performance measures, and the process or series of actions to be taken in effecting the results that are desired in order to address mission area deficiencies, evolving applications or threats, emerging technologies, or system cost improvements

3.12.1 Expected Physical Environment:

Expected Physical Environment described in Table 3.22.

Table 3.22: Expected Physical Environment

EPR-1	Bookshelf service from any environment
Description	Since it is online web based, so any user can use from anywhere from any environment. Just need internet connection.
Originator	User's Environment
Stakeholders	1. Bookshelf 2. User/Client
Fit Criterion	The system is able to give service to any environment.

3.12.2 Productization Requirements:

There are no specific Productization requirements.

CHAPTER 4

SYSTEM ANALYSIS

4.1 Use Cases:

A use case diagram [4] is a graphic depiction of the interactions among the elements of a system. A use case is a methodology used in system analysis to identify, clarify, and organize system requirements. ... The relationships between and among the actors and the use cases.

4.1.1 System Environment (Level-O Use case):

The user access “Bookshelf” through online. The following section describe the actors and the activities in Figure 4.1 & 4.2.

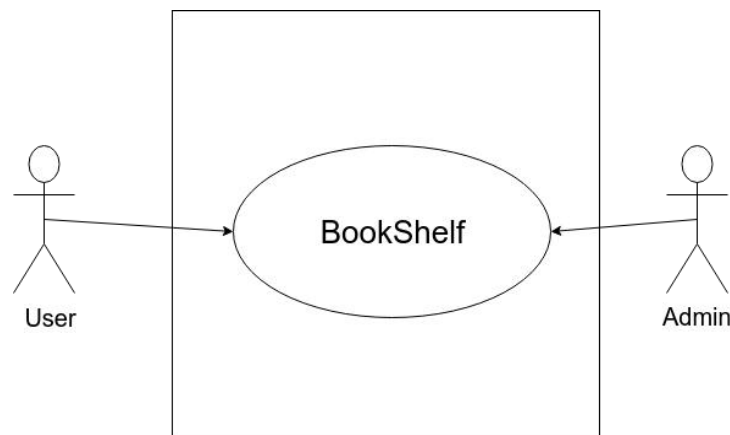


Figure 4.1 : System Environment

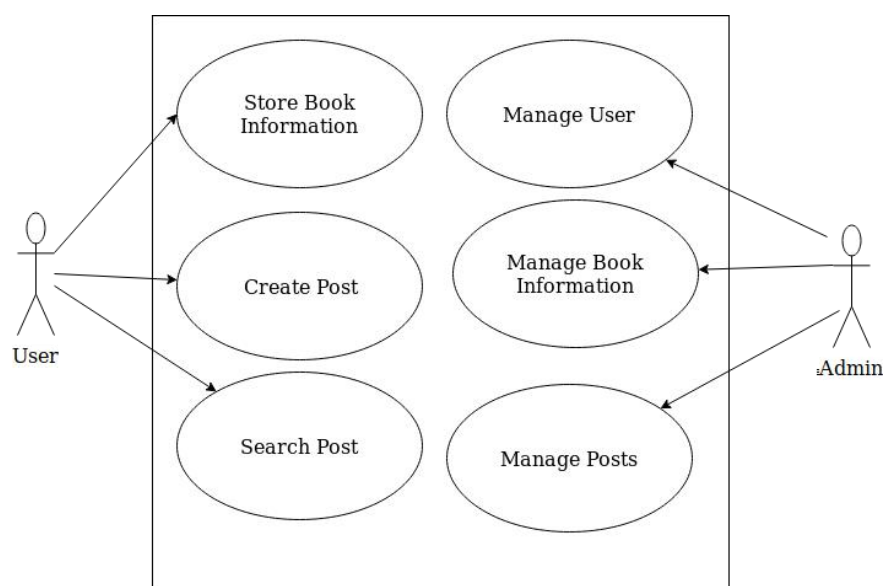


Figure 4.2 : BookShelf Activities

4.2 Structural Functionalities:

A function model or functional model in systems engineering and software engineering is a structured representation of the functions (activities, actions, processes, operations) within the modeled system or subject area.

4.2.1 Use case of Post creation procedure :

Use case for post creation is given in Figure 4.3.

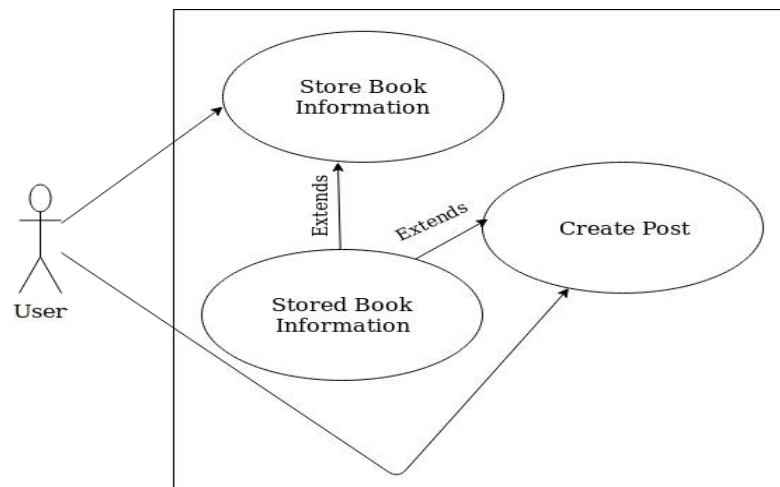


Figure 4.3 : Post Creation

4.2.2 Search procedure :

Use case for search procedure is given in Figure 4.4.

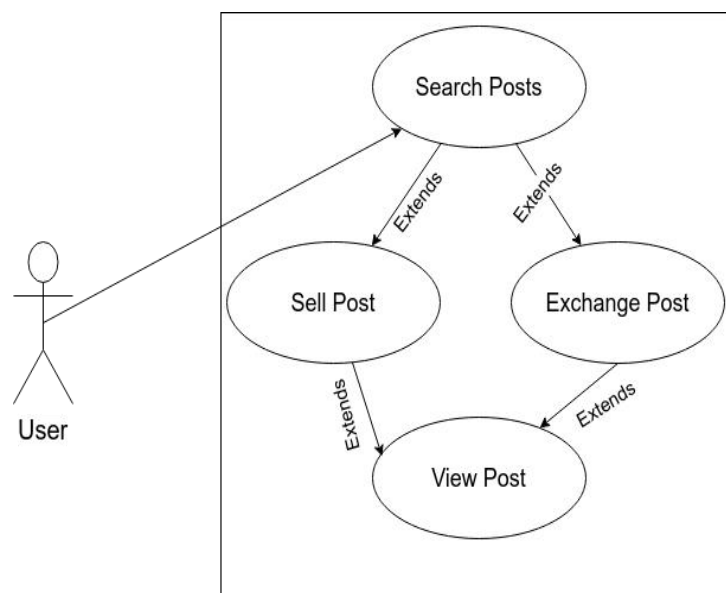


Figure 4.4 : Search Procedure

4.2.3 Manage user :

Use case for user management is given in Figure 4.5.

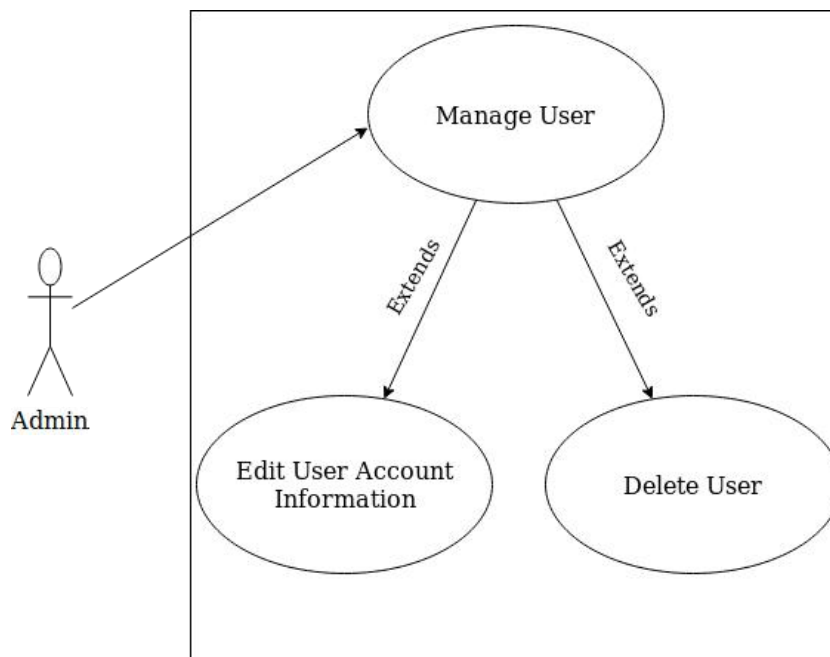


Figure 4.5 : User Management

4.2.4 Manage Book info :

Use case for book management is given in Figure 4.6.

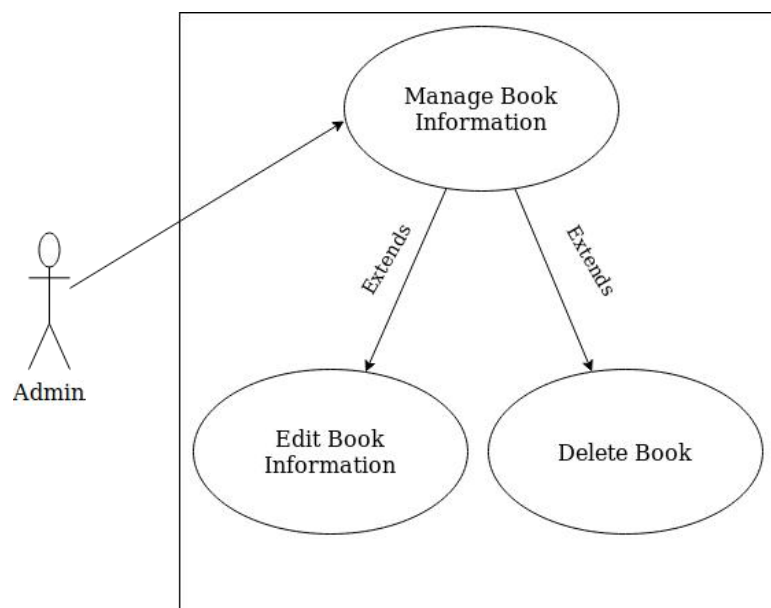


Figure 4.6 : Book Information Management

4.2.5 Manage Posts :

Use case for posts management is given in Figure 4.7

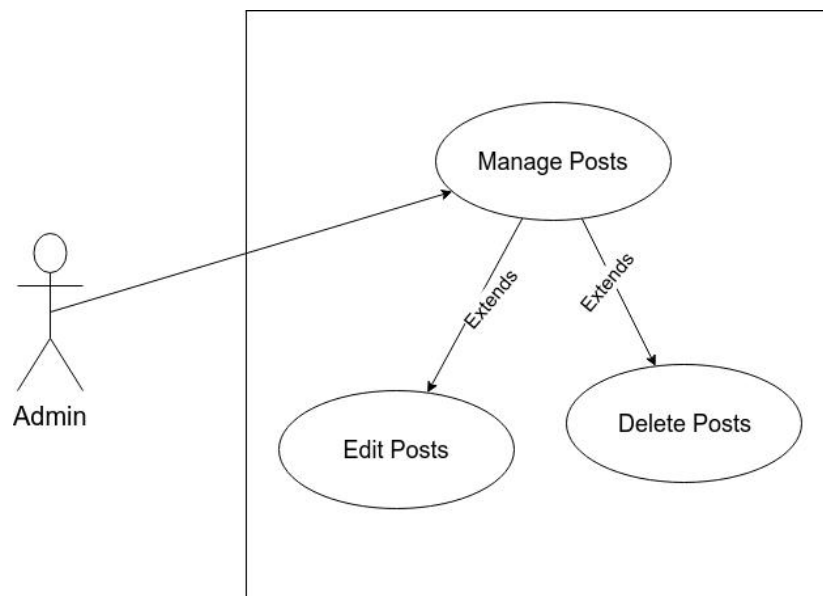


Figure 4.7 : Posts Management

4.3 Access Management Use Case:

Use case for access management is given in Figure 4.8

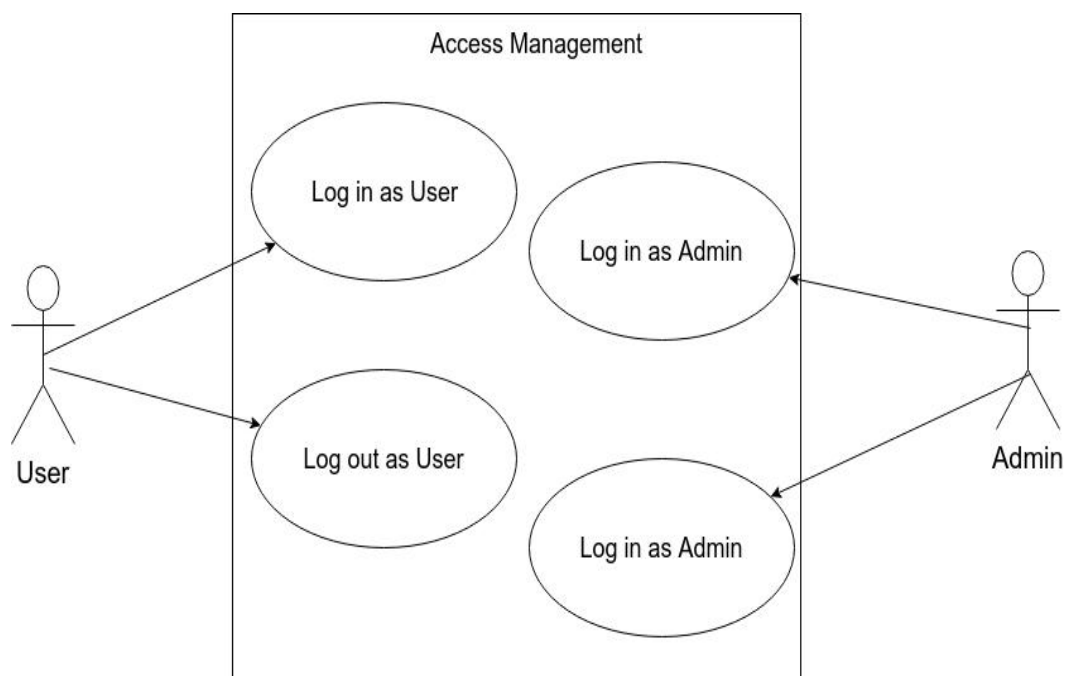


Figure 4.8 : Access Management

4.3.1 Login as User Use Case:

The User (Admin or User) wants to access the BookShelf system. In order to prevent fraud all users of the BookShelf platform & the user must be authenticated and authorized. Details described in Table 4.1.

Table 4.1: Login as User Use Case

Use Case	Login
Actor	User or Admin
Trigger	The User wants to access the BookShelf
Pre Condition	<ul style="list-style-type: none">• User account is active available.• User has access to the login page.
Scenarios	<ol style="list-style-type: none">1. The user opens the login page.2. The user enters the Username.3. The User enters the Password.4. The User clicks the login button.5. The system validates username & password & creates a new (http) session.
Alternative Path	Automatic forwarding the login page: <ul style="list-style-type: none">• Accessing protected BookShelf functions will automatically forward the user to the login page in case that they are not logged yet

4.3.2 Logout as User Use Case:

The internal user wants to close the BookShelf session & logout. Details described in Table 4.2.

Table 4.2: Logout as User Use Case

Use Case	Log out
Actor	User or Admin
Trigger	The user wants to end the session.
Pre Condition	The User is logged into the BookShelf site.
Scenarios	<ol style="list-style-type: none">1. The user clicks the “Logout” button.2. The system closes the http session & forwards the user to the home page.
Alternative Path	User can although be logged out by a session timeout.

4.3.3 Create Account as User Use Case:

Details described in Table 4.3.

Table 4.3: Create Account as User Use Case

Use Case	Create Account
Trigger	The User wants to create account.
Actor	User
Pre Condition	The User accessed the Website homepage.
Scenarios	1. The user clicks the “Create Account” link. 2. The user opens the registration form. 3. The User enters data (name, email phone number). 4. The admin enters data (credentials) etc.
Alternative path	A registered user cannot create the account. The user is responsible to give detail information to the System. There is no alternative path to create account.

4.3.4 Delete User Account Use Case:

Sometimes it’s required that a user account is not active for that reason the admin deletes the account. Details described in Table 4.4.

Table 4.4: Delete User Use Case

Use Case	Delete User Account
Trigger	User account will be deleted.
Actor	Admin
Pre Condition	The User Account identified by the registered is available.
Scenarios	1. The Admin opened the account management page. 2. The Admin selects the account & clicks the “delete account” button. 3. The Admin marks the account as being deleted system BookShelf.
Alternative Path	Only Super Admin is allowed to delete account.

4.4 Activity Diagram:

Activity diagram is basically a flowchart to represent the flow from one activity to another activity. The activity can be described as an operation of the system.

4.4.1 User Perspective Diagram :

User perspective activity diagrams are given in Figure 4.10 & 4.11.

Guest user

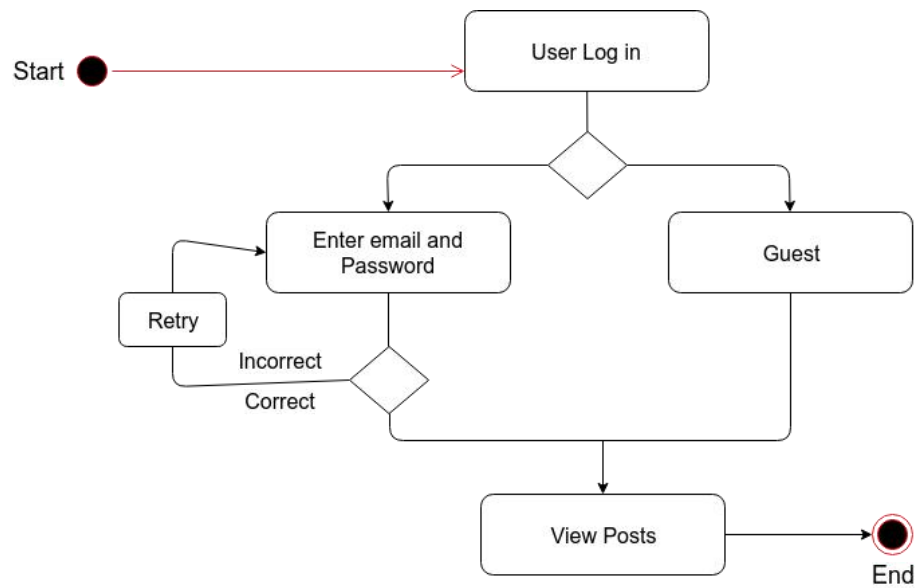


Figure 4.10 : User Based Activities (Guest User)

4.4.2 Admin Perspective:

Admin perspective activity diagram is given in Figure 4.12

4.4.3 Action Based Activities:

Action based activity diagram is given in Figure 4.13

4.5 Sequence Diagram:

Activity diagram is basically a flowchart to represent the flow from one activity to another activity. The activity can be described as an operation of the system.

4.5.1 Model-1:

Book Information is given in Figure 4.14.

4.5.2 Model-2:

Deletion Process given in Figure 4.15.

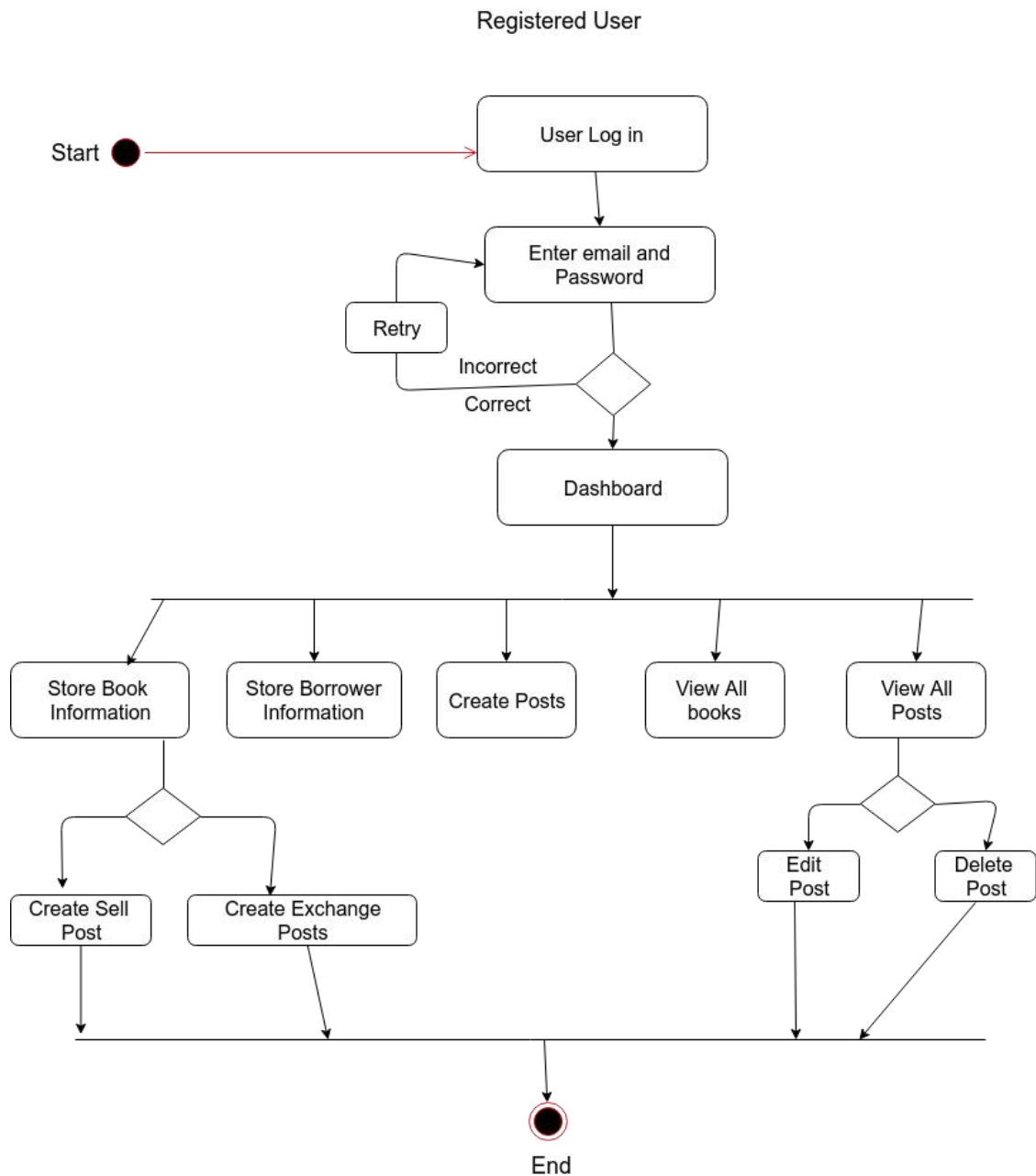


Figure 4.11 : User Based Activities (Registered User)

4.6 Data flow Diagram (DFD):

A data flow diagram (DFD) is the flow of information for any system. By using defined symbols like arrows, rectangles, circles and short text labels, It shows data inputs, outputs, storage points and the routes between each destination

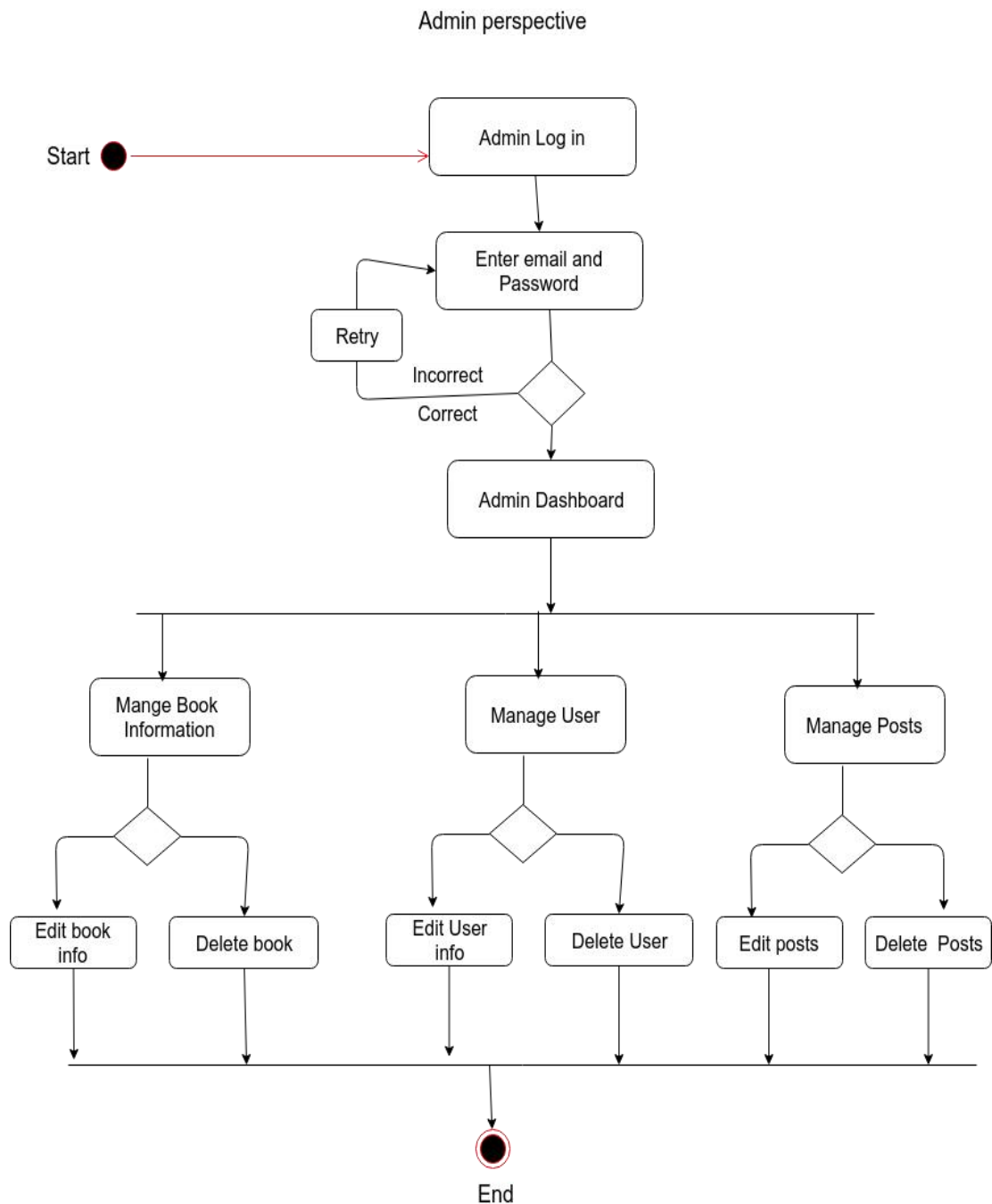


Figure 4.12 : Admin Activities

4.6.1 Context Diagram (level-0 DFD):

Context Diagram given in Figure 4.16

4.6.2 Level-1 DFD :

Level 1 Data Flow Diagrams are given Figure 4.17, 4.18, 4.19, 4.20 & 4.21.

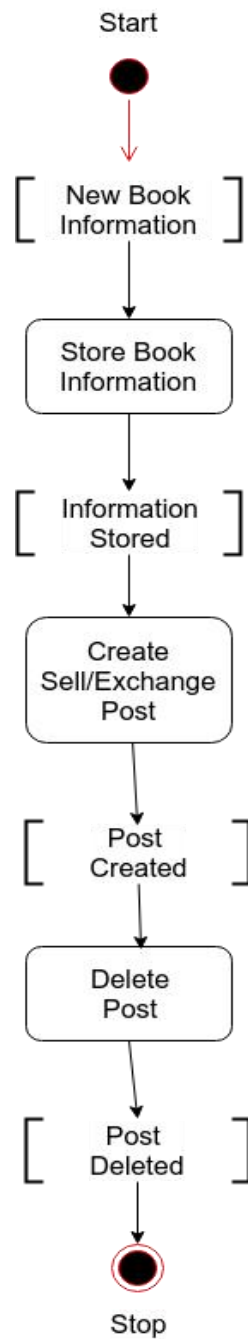


Figure 4.13 : Post Creation Activities

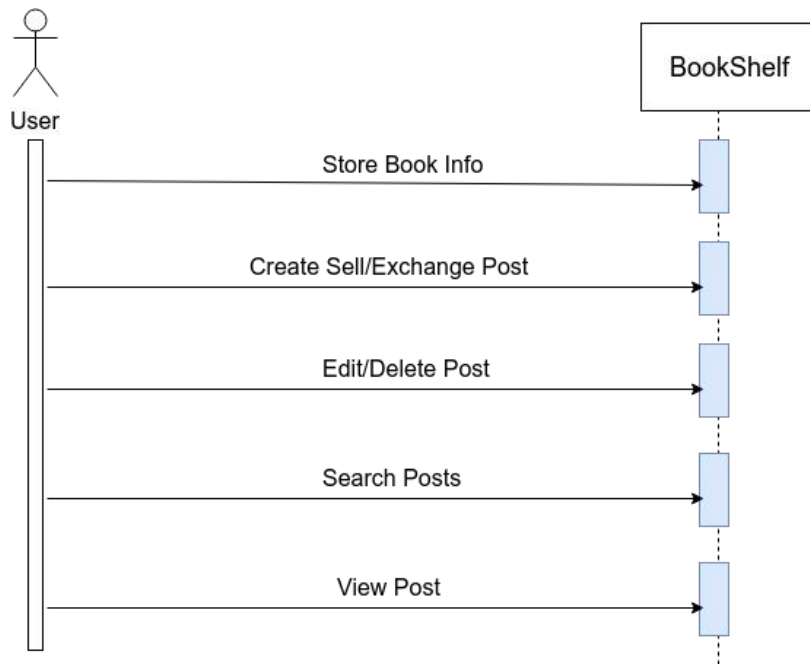


Figure 4.14 : Book Information

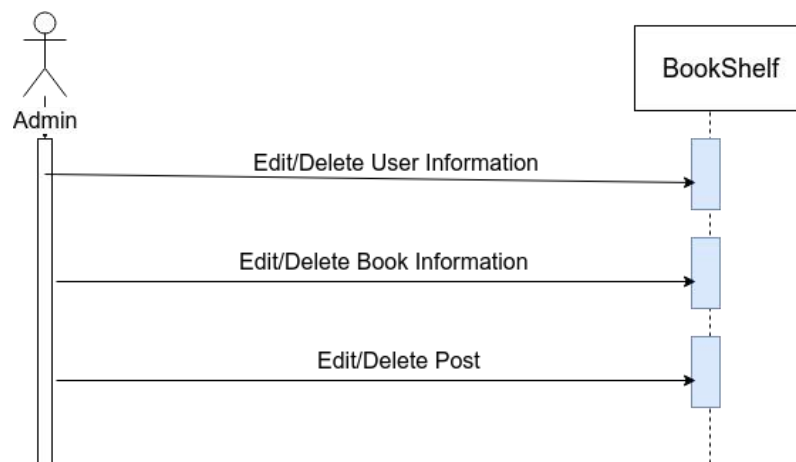


Figure 4.15 : Deletion Process

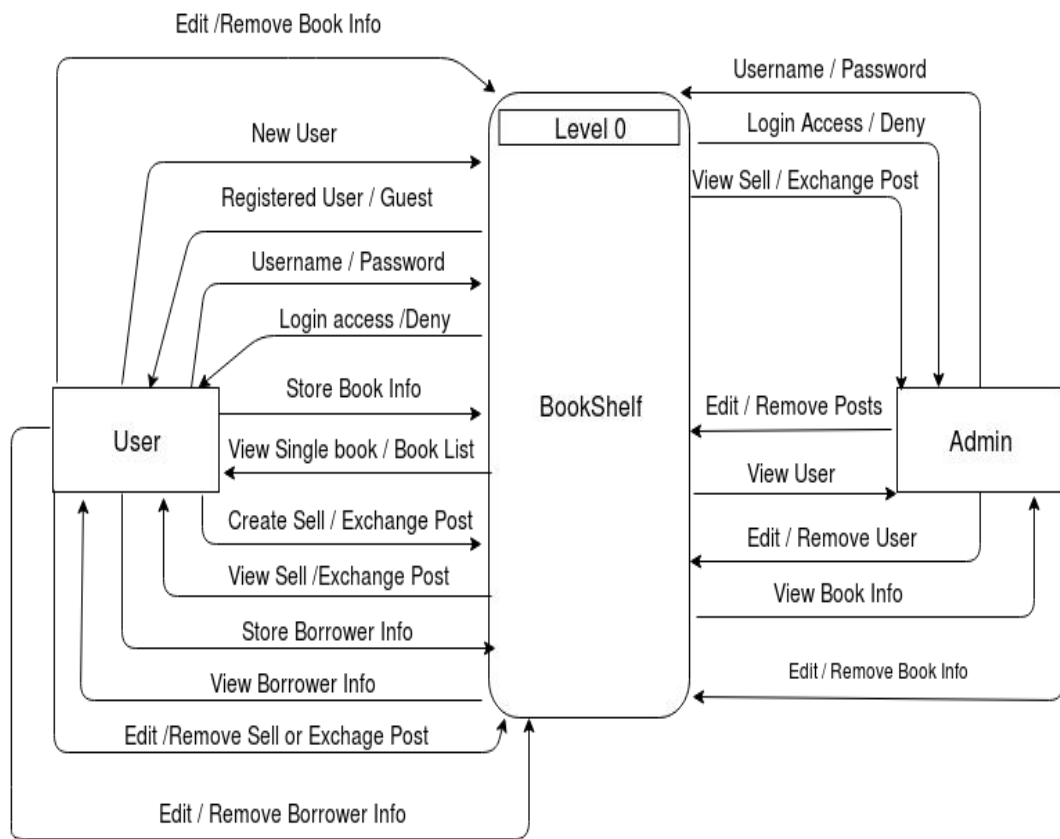


Figure 4.16 : Context Diagram

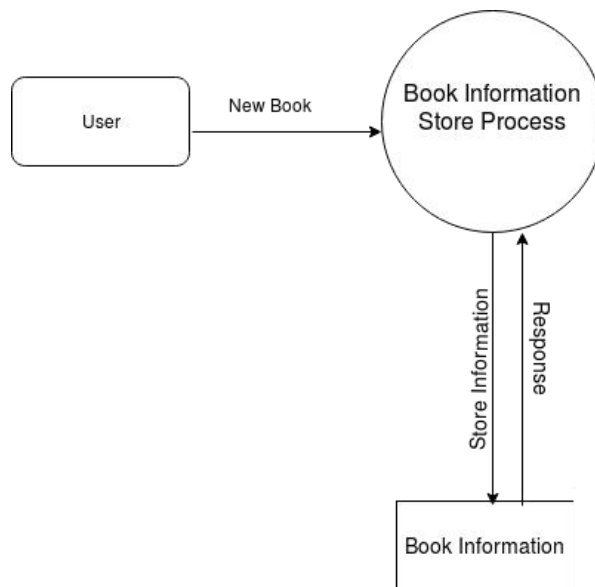


Figure 4.17 : Level-1 DFD Storing Book Information

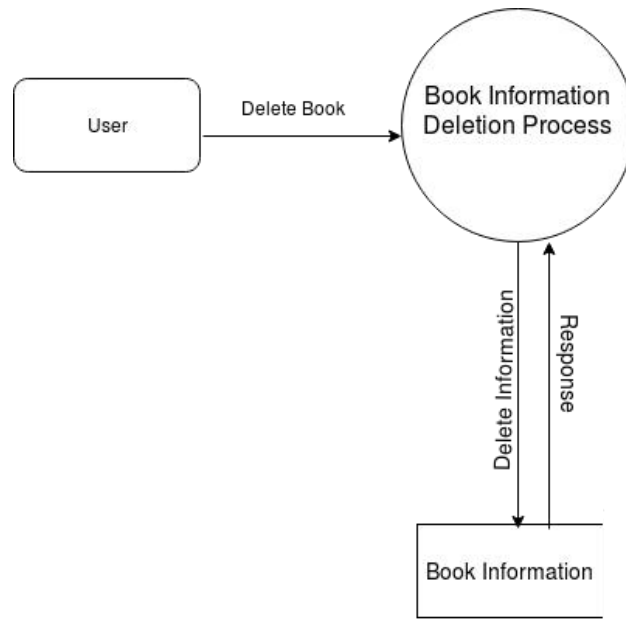


Figure 4.18 : Level-1 DFD Delete Book Information

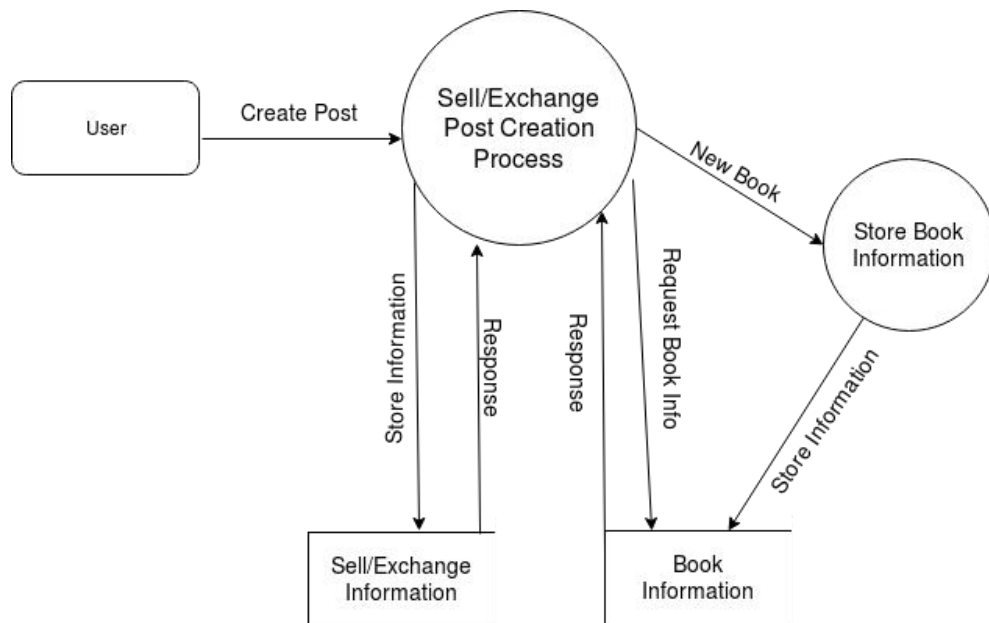


Figure 4.19 : Level-1 DFD Sell/Exchange Post Creation

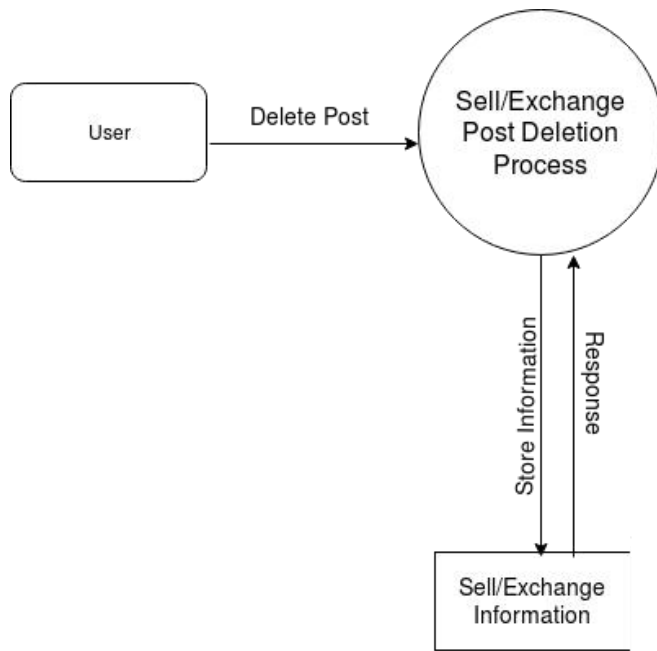


Figure 4.20 : Level-1 DFD Sell/Exchange Post Deletion

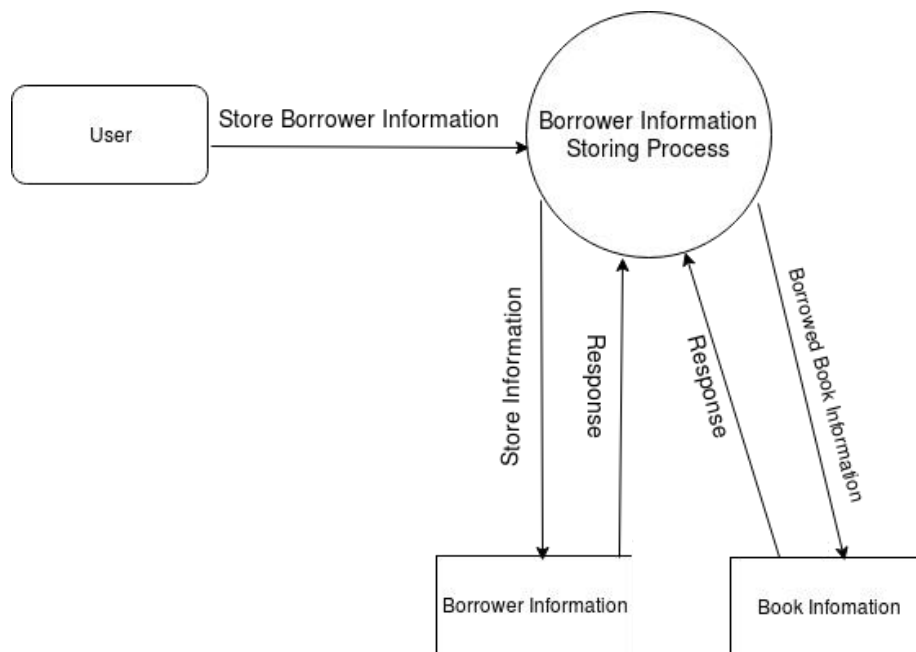


Figure 4.21 : Level-1 DFD Sell/Exchange Post Creation

CHAPTER 5

DESIGN & DEVELOPMENT

5.1 Introduction

Our system is a web application, we have used current technology for our development.

5.2 Technology & Tools

Presentation Layer	HTML5, CSS3, Bootstrap, JavaScript, jQuery
Application Layer	PHP, LARAVEL
Data Layer	MySQL
Tools	VSCode, Valentine Studio
Version Control	Git, Bitbucket

5.3 Reason Behind Choosing

- HTML5 - It's a markup language used to build structure of web page.
- Bootstrap with CSS3 - Bootstrap is library to build on CSS3 a styling language used for beautiful & responsive style web page.
- JavaScript with jQuery - jQuery is a library build on JavaScript language which generally used to make presentation layer interactive.
- Laravel build on PHP - Laravel is MVC framework build on PHP language used for server side scripting by connecting presentation and data layer..
- MariaDB with SQL - MariaDB is forked of MySQL which is free and open source database build on SQL to manage relational database used manipulate data and make connection to application layer.
- VSCode - VSCode is modern text editor powerful like IDE used for coding.
- Valentine Studio - Valentine Studio is GUI client for database.
- Github with Bitbucket - Bitbucket is cloud hosting based on Git version control system.

5.4 On Perspective of This Project

- Presentation Layer - This system will be web based system so build structure and make nice interface HTML5, CSS3, Bootstrap, JavaScript, jQuery is one of the best option.

- Application Layer - To implement business logic for this system and make connection between presentation and data layer by following MVC pattern PHP, Laravel is one of the best choice.
- Data Layer - To make relational database for this system and manage query MariaDB used.
- Tools and Backup: For coding purpose VSCode editor will use and for backup with version controlling Bitbucket service will be used.

5.5 Database Design

The complete database schema [5] design for proposed system is given in Figure 5.1.

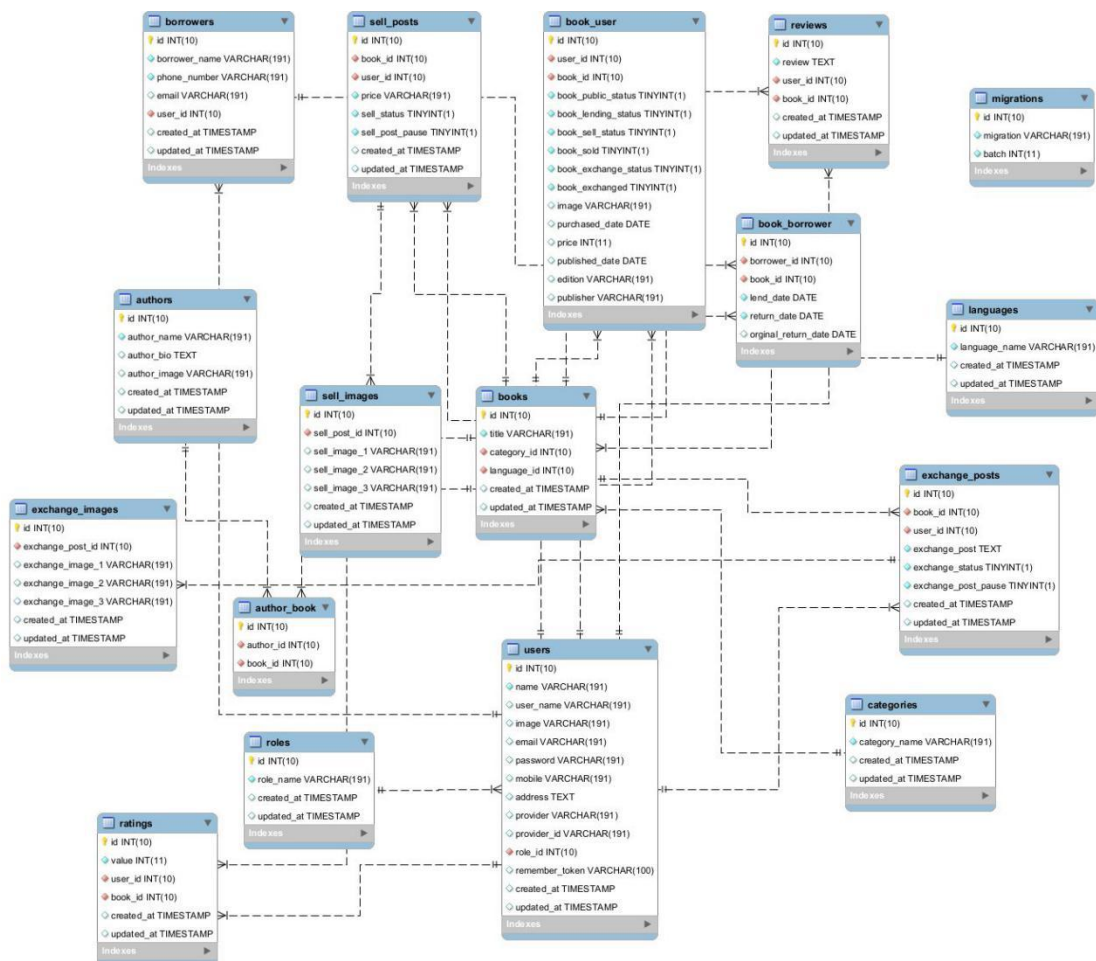


Figure 5.1: Database Design

5.6 Conclusion

Choosing the right technology for a software is very important, here we have tried to choose what fit with us and also best for the project.

CHAPTER 6

TESTING

6.1 Introduction

Testing is the essential part of software design, we will test the system functioning properly.

6.2 Test List

Every feature of the system will be tested, in Table 5.1 provides a details description of features.

Table 5.1: List of features need to be tested

Features	Priority	Description
Registration	High	Get all services from Bookshelf, it is required to be registered.
Sell/Exchange Post	High	Create, Edit sell/Exchange post
Search Books	High	Search all the books that posted for selling or exchange
Borrower	High	Create/Edit Borrower
Book	High	Create, view & edit book information

6.3. Test Cases:

A test case [6] is a set of conditions or variables under which a tester will determine whether a system under test satisfies requirements or works correctly. [7]

6.3.1 Module A: User Registration:

Test Case #: 1.1 Test Case Name: Registration System:BookShelf Subsystem: N/A Designed by: Matin Design Date:12/2/18

Short Description: The user create his shelf or sell/exchange books.

Pre-condition: The user needs to visit the website. Test Case described in Table 5.2.

Table 5.2: User registration test case

No	Username	Password	Email	Expected Response	Pass/Fail
1.	Jahir	p12345	Jahir_01@yahoo.com	Username is available .Insert “ _ ” and number with Name.	Fail
2.	Jahir_01	12345	Jahir_01@yahoo.com	Password must have uppercase, lowercase, characters, number.	Fail
3.	Jahir_01	p\$12Dh4	Jahir@yahoo.com	Email is available. Please insert unique email id.	Fail
4.	Jahir_01	p\$12Dh4	Jahir_01@yahoo.com	Successfully registered and redirected homepage	Pass

Test Case #: 1.2
 Test Case Name: Login
 System:BookShelf
 Subsystem: N/A
 Designed by: Matin
 Design Date:12/2/18

Short Description: The user wants to login to the system.

Pre-condition: The user needs to visit the website. Test Case described in Table 5.3.

Table 5.3: User login test case

Step	Email	Password	Expected Response	Pass/Fail
1.	Jahir@yahoo.com	p12345	Email and password don't match	Fail
2.	Jahir@yahoo.com	p12345	No account found with this email id	Fail
3.	Jahir_01@gmail.com	p\$12Dh4	Successfully logged in and redirected homepage	Pass

6.3.2 Module B: Add Books:

Test Case #:2.1 System: Bookshelf Designed by: Rasel	Store Books Sub-system: N/A Design Date:22/2/18
--	---

Short Description: The user is registered and he wants store books.

Pre-Condition: The user needs to be registered. Test Case described in Table 5.4.

Table 5.4: Store book test case

Step	Action	Expected System Response	Pass/Fail
------	--------	--------------------------	-----------

1.	Click create books.	Create books for this user	
2.	Give detail of book information	System will store book information	

Test Case #:2.2 System: Bookshelf Designed by: Rasel	Create Borrower Sub-system: N/A Design Date:22/2/18
--	---

Short Description: The user is registered and he wants to add borrower.

Pre-Condition: The user needs to be registered. Test Case described in Table 5.5.

Table 5.5: Create Borrower test case

Step	Action	Expected System Response	Pass/Fail
1.	Click create books.	Create books for this user	
2.	Give detail of book information	System will store book information	
3.	Give borrower information	System is ready to add borrower.	

Test Case #:2.3 System: Bookshelf Designed by: Rasel	Create Sell Post Sub-system: N/A Design Date:22/2/18
--	--

Short Description: The user is registered and he wants to sell books.

Pre-Condition: The user needs to be registered. Test Case described in Table 5.6.

Table 5.6: Sell post test case

Step	Action	Expected System Response	Pass/Fail
1.	Click create books.	Create books for this user	
2.	Give detail of book information	System will store book information	
3.	Give Sell post information	System is ready to add sell post.	

Test Case #:2.4 System: Bookshelf Designed by: Rasel	Create Exchange Post Sub-system: N/A Design Date:22/2/18
--	--

Short Description: The user is registered and he wants to exchange books.

Pre-Condition: The user needs to be registered. Test Case described in Table 5.7.

Table 5.7: Exchange post test case

Step	Action	Expected System Response	Pass/Fail
1.	Click create books.	Create books for this user	

2.	Give detail of book information	System will store book information	
3.	Give Exchange post information	System is ready to add Exchange post.	

6.3.3 Module C: Show Books:

Test Case #:3.1 System: Bookshelf Designed by: Rasel	Search Books Sub-system: N/A Design Date:22/2/18
--	--

Short Description: The user wants to know search books.

Pre-Condition: 1. The system displays search box and upon request shows books.

Test Case described in Table 5.8.

Table 5.8: Search Book test case

Step	Action	Expected System Response	Pass/Fail
1.	Input name on the search box	Show list of books	

Test Case #:3.2 System: Bookshelf Designed by: Rasel	View List of Sell/Exchange Books Sub-system: N/A Design Date:22/2/18
--	--

Short Description: The user wants to see list of books.

Pre-Condition: The user needs to visit the website. Test Case described in Table 5.9.

Table 5.9: List of Sell/Exchange post test case

Step	Action	Expected System Response	Pass/Fail
1.	Open the homepage	There will be a list of sell/exchange books	

Test Case #:3.3 System: Bookshelf Designed by: Rasel	View single book Sub-system: N/A Design Date:22/2/18
--	--

Short Description: The user wants to see single book.

Pre-Condition: The system displays list of books. Test Case described in Table 5.10.

Table 5.10: Single Book test case

Step	Action	Expected System Response	Pass/Fail
1.	Click any of the books	A new page opened and show the corresponding information about the books	

6.4 User Acceptance Tests:

User acceptance testing is called beta testing or end-user testing. In this case, the software will be tested by the intended users. It can be in-house like user can be invited to the company or making a beta version available for downloading or demo. List of user acceptance tests are below.

6.4.1 Connectivity Test:

Connectivity testing is testing activity designed to validate the continuity of network communications. Test Case described in Table 5.11.

Table 5.11: Connectivity Test

Test Scenarios/Acceptance Criteria	Tested by	Date of test	Result(Pass/Fail)	Priority
Internet Connection	Samir	12/2/18	All user can browse website at the same time while all devices are connected with the internet.	Medium

6.4.2 User Registration Test

Test Case described in Table 5.12.

Table 5.12: User Registration Test

Test Scenarios/Acceptance Criteria	Tested by	Date of Test	Result(Pass/Fail)	Priority
User Registration Test	Topon	22/2/18	The user can easily be registered through the Bookshelf registration system	High

6.4.3 Add Book Test

Test Case described in Table 5.13.

Table 5.13: Add Book Test

Test Scenarios/Acceptance Criteria	Tested by	Date of Test	Result(Pass/Fail)	Priority
Create Book Test	Topon	22/2/18	The user can easily	High

			create books with option like sell/exchange/borrow	
--	--	--	--	--

6.4.4 Visit Book Test:

Test Case described in Table 5.14.

Table 5.14: Visit Book Test

Test Scenarios/Acceptance Criteria	Tested by	Date of Test	Result(Pass/Fail)	Priority
Visit Book Test	Topon	22/2/18	The user can visit the list of books information that will be sold/exchange or any single book information.	High

6.5 Performance Testing

We input lots of data and tested in so many ways to read and write data but system was stable and reliable.

6.6 Security Testing

By testing its working as its expected which are already fulfill the security testing so no need separately do it.

6.7 Conclusion:

Testing is mandatory to ensure that the systems can conform user requirements. All the necessary testing is accomplished to ensure this.

CHAPTER 7

CONCLUSION

In the upcoming days online service will be more popular in the upcoming days. Our system is developed to make the life easier for the book lovers, collect books and also exchange. People using this system can keep a track of all the books they have. The system is not fully completed yet. There are many more improvements need to be done like payment system etc. We will take opinion from user and try to add more features in the future.

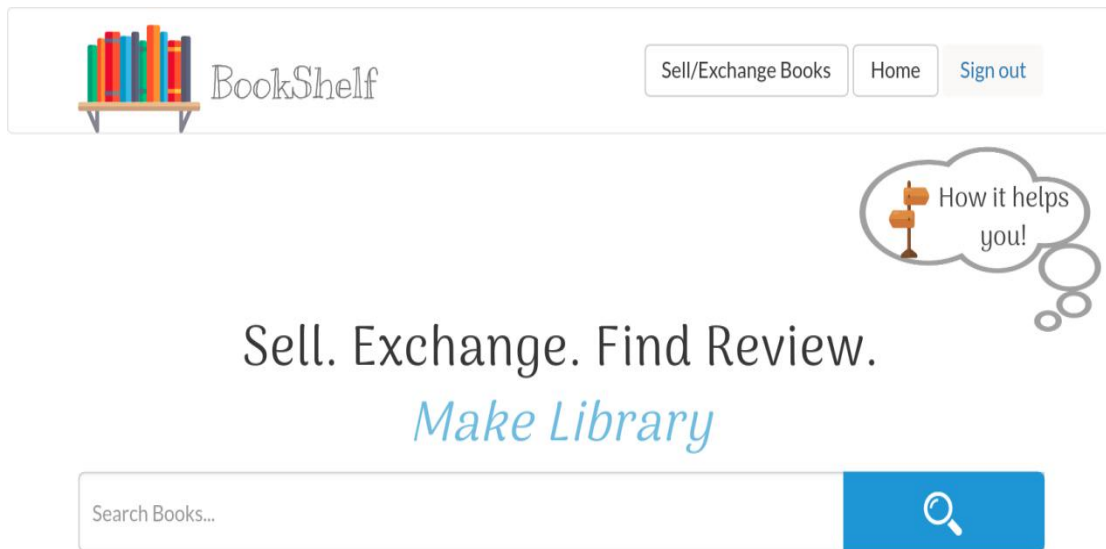
REFERENCES

- [1] Risk Management [Online]. Available:
https://www.tutorialspoint.com/software_testing_dictionary/risk_management.htm
[Accessed: March 1, 2018]
- [2] SWOT Analysis [Online]. Available:
https://www.mindtools.com/pages/article/newTMC_05.htm [Accessed: March 2, 2018]
- [3] Requirement Analysis [Online]. Available:
https://www.tutorialspoint.com/software_engineering/software_requirements.htm
[Accessed: March 2, 2018]
- [4] Use Case [Online]. Available:
<https://www.lucidchart.com/pages/uml-use-case-diagram> [Accessed: March 3, 2018]
- [5] Crow's Foot Entity Relationship Diagram [Online]. Available:
<https://www.codeproject.com/Articles/878359/Data-modelling-using-ERD-with-Crow-Foot-Notation> [Accessed: March 4, 2018]
- [6] How to write test case? [Online]. Available:
https://www.tutorialspoint.com/software_testing_dictionary/test_case.htm [Accessed: March 6, 2018]
- [7] Test Case Design Technique [Online]. Available:
https://www.tutorialspoint.com/software_testing_dictionary/test_case.htm [Accessed: March 6, 2018]

APPENDIX

1.Home Page

1.1 When user visit Bookshelf, they will first see this first part of the home page, where user can Search or Sign in/registration using the links on the upper corner.



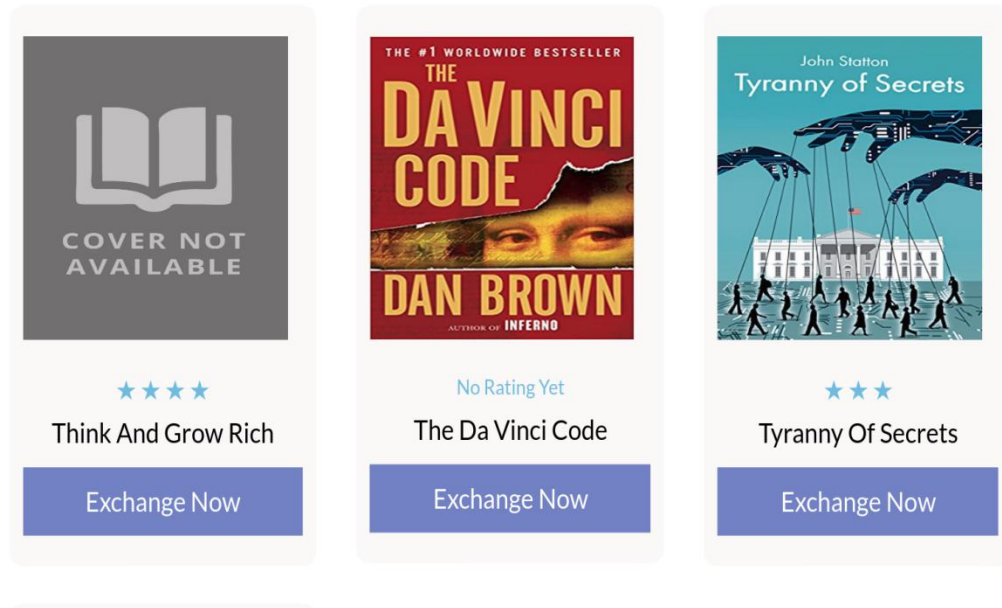
1.2 The second part of the page is showing “Sell Post”

New Sell Post

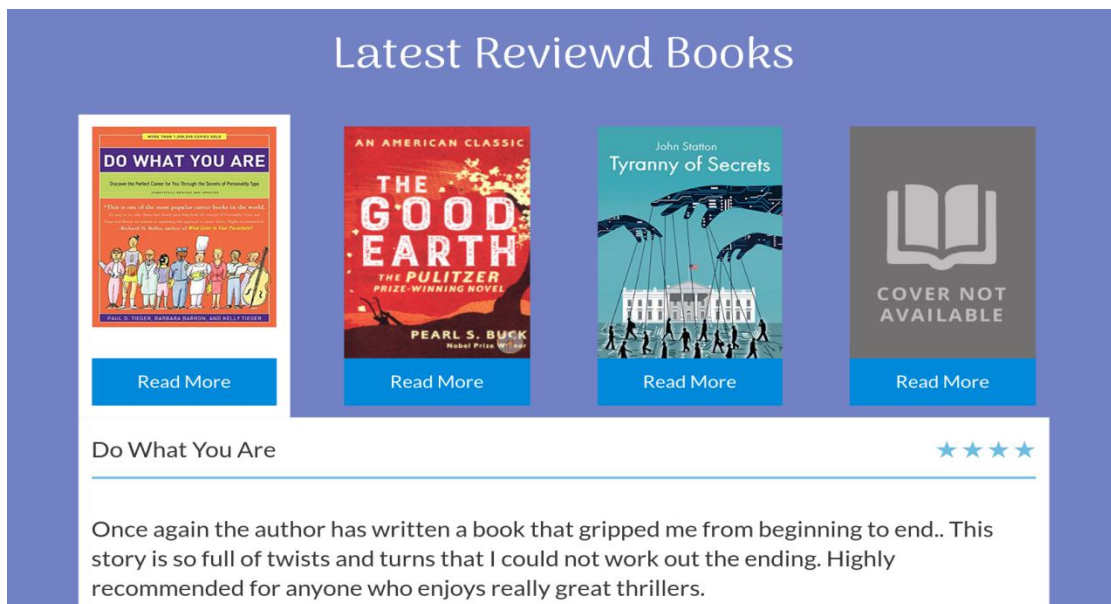


1.3 The third part of the page will show “Exchange Post”

New Exchange Post




1.4 The fourth part of the page will show “Most Reviews Books”, user can find other books review by clicking read more button.



2. Detail Pages

2.1 After Clicking on the “Buy Now” button of sell post user will see this page. Where he will find Seller info and reviews of the books.



AN AMERICAN CLASSIC
THE GOOD EARTH
THE PULITZER PRIZE-WINNING NOVEL
PEARL S. BUCK
Nobel Prize Winner 1938

₹2500

★★★★★

✍ Napoleon Hill

☰ Non-Fiction 🇬🇧 English

Mohammad Mohibbullah
Mirpur-01
01712981812

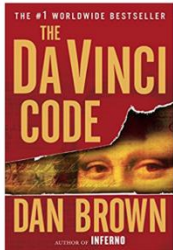
The Good Earth

Sell

Mohammad Mohibbullah

I believe I have now read all Joy Ellis's detective/murder mystery series and I can say I have loved them all. Please Ms. Ellis, I'd like some more...but only if it makes you happy to write them. Ta!

2.2 After Clicking on the “Exchange Now” button of exchange post user will see this page. Where he will find exchanger info and if the book has any review it will show the reviews.



THE #1 WORLDWIDE BESTSELLER
THE DA VINCI CODE
DAN BROWN
AUTHOR OF INFERNO

✍ Dan Brown

☰ Novel 🇬🇧 English

Mohammad Mohibbullah
Mirpur-01
01712981812
Any books of Humaun Ahmed

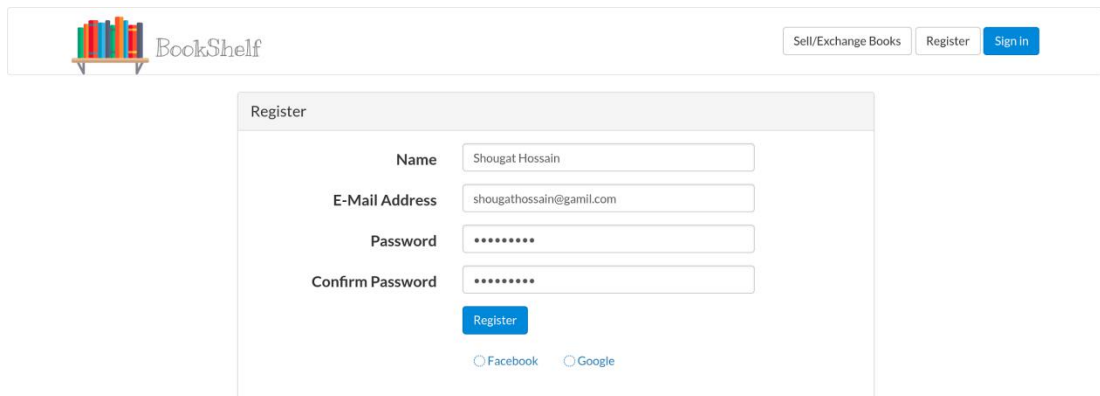
The Da Vinci Code

Exchange

No One Reviewd Yet!

3.Login/Registration

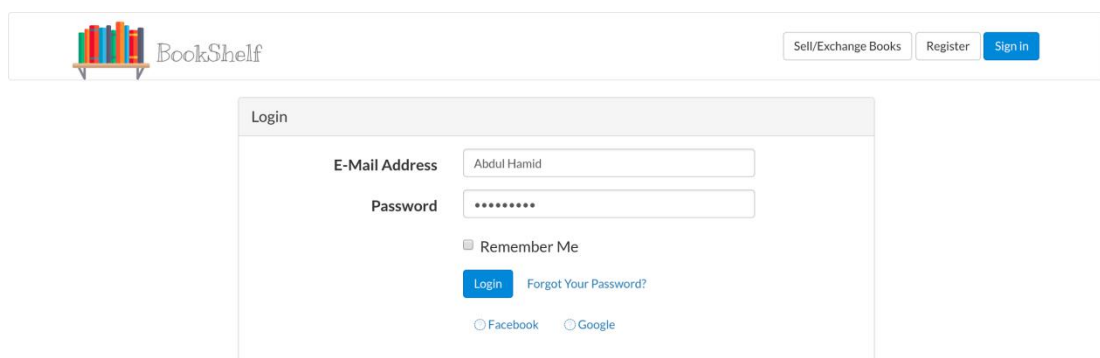
3.1 Before creating sell/exchange post, or make any library user needs to registration.



The screenshot shows the BookShelf website header with the logo and navigation links: "Sell/Exchange Books", "Register", and "Sign in". Below the header is a "Register" form with the following fields and options:

- Name:** Shougat Hossain
- E-Mail Address:** shougathossain@gamil.com
- Password:** [masked]
- Confirm Password:** [masked]
- Register** button
- Registration options: Facebook, Google

3.2 After registration, user needs to sign in:

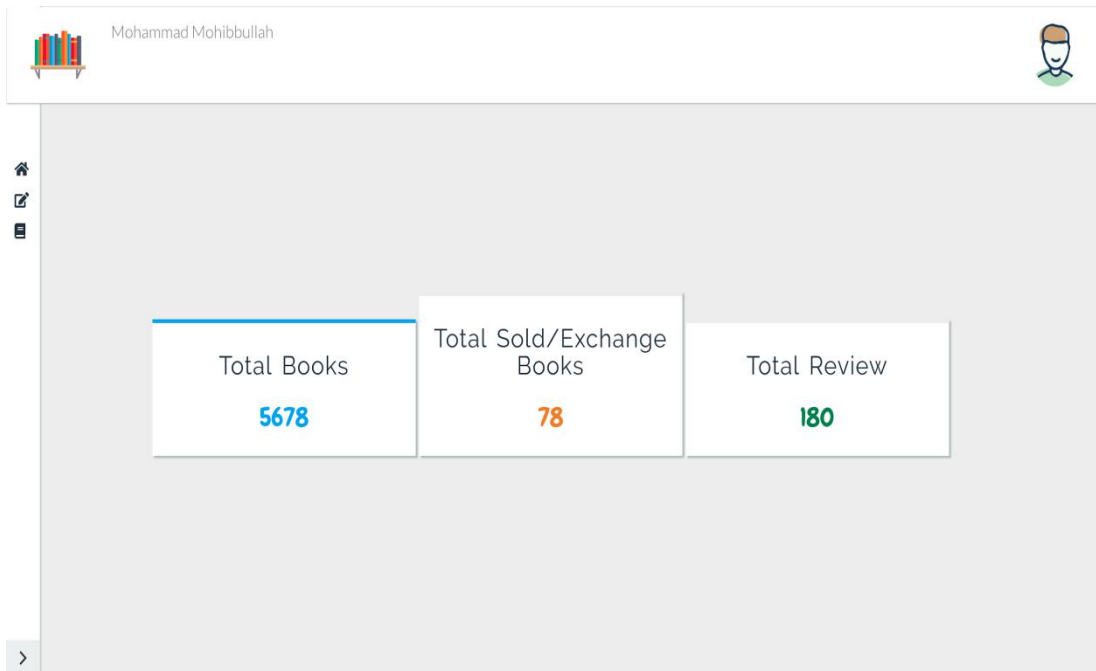


The screenshot shows the BookShelf website header with the logo and navigation links: "Sell/Exchange Books", "Register", and "Sign in". Below the header is a "Login" form with the following fields and options:

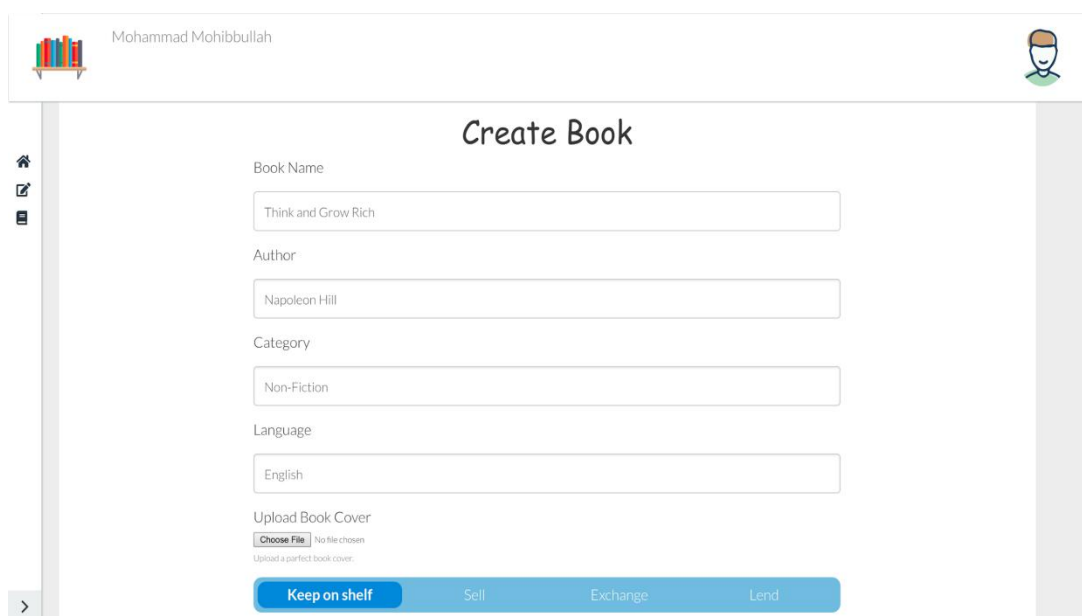
- E-Mail Address:** Abdul Hamid
- Password:** [masked]
- Remember Me
- Login** button
- [Forgot Your Password?](#)
- Registration options: Facebook, Google

4. Dashboard

4.1 After sign in user will find dashboard:



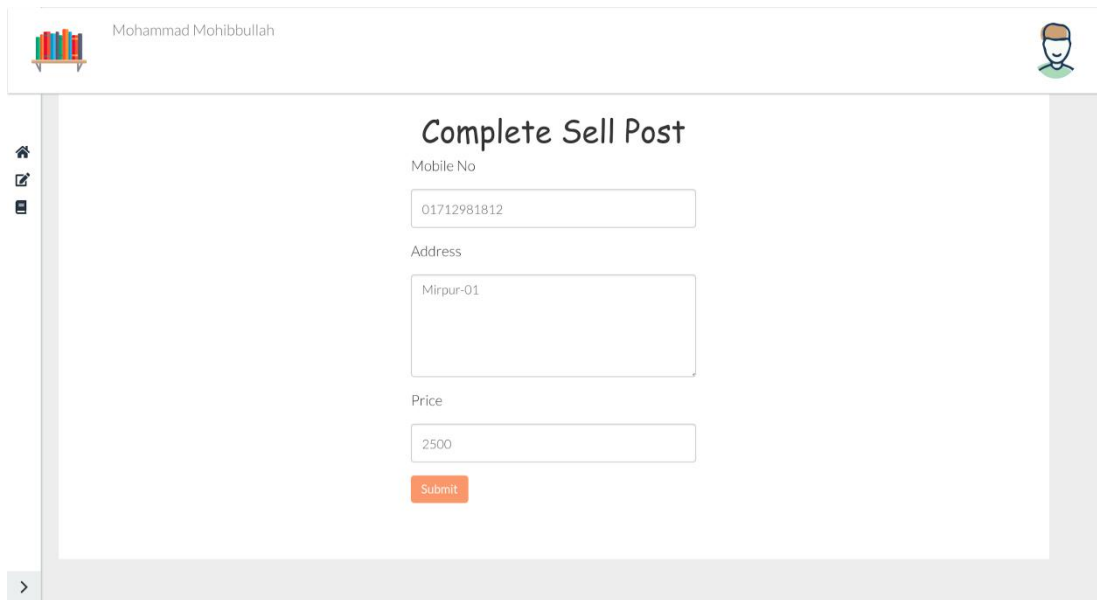
4.2 On the create book page, user needs to fill the Book Name, Author, Category, language and can upload book cover. Here user can find four option, by default “Keep on shelf” selected. If user submit this form. He will create a book on the shelf.



The 'Create Book' form contains the following fields and options:

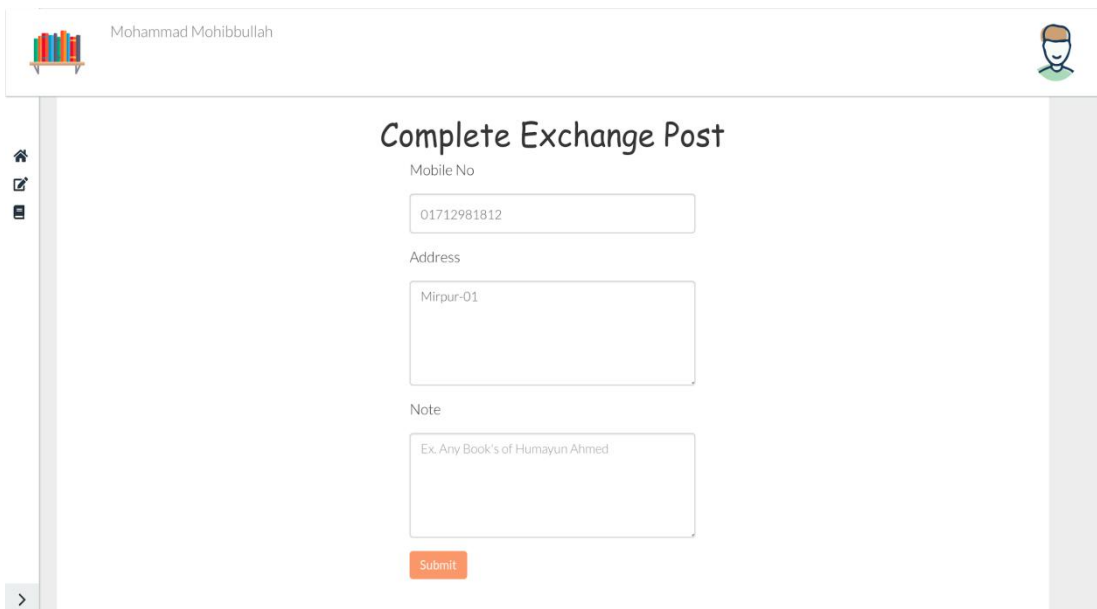
- Book Name:** Think and Grow Rich
- Author:** Napoleon Hill
- Category:** Non-Fiction
- Language:** English
- Upload Book Cover:** No file chosen. Upload a perfect book cover.
- Options:** Keep on shelf, Sell, Exchange, Lend

4.3 If user selected the “Sell option” He will find this page: Where he needs to fill the mobile no, address and price.



The screenshot shows a web interface for a user named 'Mohammad Mohibbullah'. The page title is 'Complete Sell Post'. It contains three input fields: 'Mobile No' with the value '01712981812', 'Address' with the value 'Mirpur-01', and 'Price' with the value '2500'. A red 'Submit' button is located below the 'Price' field. The interface includes a navigation menu on the left with icons for home, edit, and list, and a user profile icon in the top right corner.

4.4 If user selected the “Exchange option” He will find this page: Where he needs to fill the mobile no, address and note.



The screenshot shows a web interface for a user named 'Mohammad Mohibbullah'. The page title is 'Complete Exchange Post'. It contains three input fields: 'Mobile No' with the value '01712981812', 'Address' with the value 'Mirpur-01', and 'Note' with the value 'Ex. Any Book's of Humayun Ahmed'. A red 'Submit' button is located below the 'Note' field. The interface includes a navigation menu on the left with icons for home, edit, and list, and a user profile icon in the top right corner.

4.5 If user selected the “Borrow option” He will find this page: Where he needs to fill the name, mobile no, email, lend & expected return date.

Mohammad Mohibbullah

Complete Lend

Name

Mobile No

Email

Lend Date

Expected Return

4.6 In the Shelf page user will find all the books he stored.

Mohammad Mohibbullah

All Books

Title	Author	Category	Language	Status
Grow Rich & Poor & Poor	Napoleon Hill	Non-Fiction	English	Book is on the Shelf
Veronika Decides to Die (Water & Fire)	Paulo Coelho	Fiction	English	Book is on the Shelf
The Guilty Ones	Napoleon Hill	Novel	English	Book is on the Exchange
Las Vegas Girl	Chinua Achebe	Non-Fiction	English	Book is on the Shelf
Tyranny of Secrets	John Statton	Novel	English	Book is on the Exchange
The Da Vinci Code	Dan Brown	Novel	English	Book is on the Exchange
All the Light We Cannot See	Anthony Doerr	Novel	English	Book is on the Shelf
The Pathfinder	Nicholas Lore	Self Improvement	English	Book is on the Sell
Do What You Love	Henri Junttila	Self Improvement	English	Book is on the Sell
Do What You Are	Paul D. Tieger	Self Improvement	English	Book is on the Sell


4.7 After clicking any of the links user will go to the details page where he can add extra info & also he can change any option.


The screenshot shows a user profile for 'Mohammad Mohibbullah' at the top. The main content area is titled 'The Guilty Ones'. On the left is a book cover for 'Something Wickedly Weird' by Chris Mould, with a note 'the icy hand' and 'Napoleon Hill'. To the right of the cover are two panels. The first panel, 'Book Is on the Exchange', asks 'Would You like to change?' and has buttons for 'Put on the shelf', 'Sell', 'Lend', and a 'Submit' button. The second panel, 'Publisher', has a 'Publisher' input field and a 'Submit' button. Below the cover, there are tags for 'Novel' and 'English'.

4.8 In the same page of the second part user can rate & review of their books

The screenshot shows a user profile for 'Mohammad Mohibbullah' at the top. The main content area is for a book by 'Henri Junttila', categorized as 'Self Improvement' and 'English'. It features a five-star rating (★★★★★) and a 'Write Review' section with a text input field and a 'Submit' button.

4.9 In the last part he will find the information about who borrow books from him

Mohammad Mohibbullah 

 Napoleon Hill

Non-Fiction English

Your Review ★ ★ ★

Single Borrower Edit/Delete Option Home Page Review Section Image Handeling Remove Sell/Exchange/Lend Option Page

Borrower List

Name	Lend Date	Expected Return Date	Return Date
Maruf Hasan	2018-01-04	2018-01-12	2018-01-05
Maruf Hasan	2018-01-04	2018-01-11	2018-01-05

>