

किताब लेनदेन: A Portal for Sharing Books

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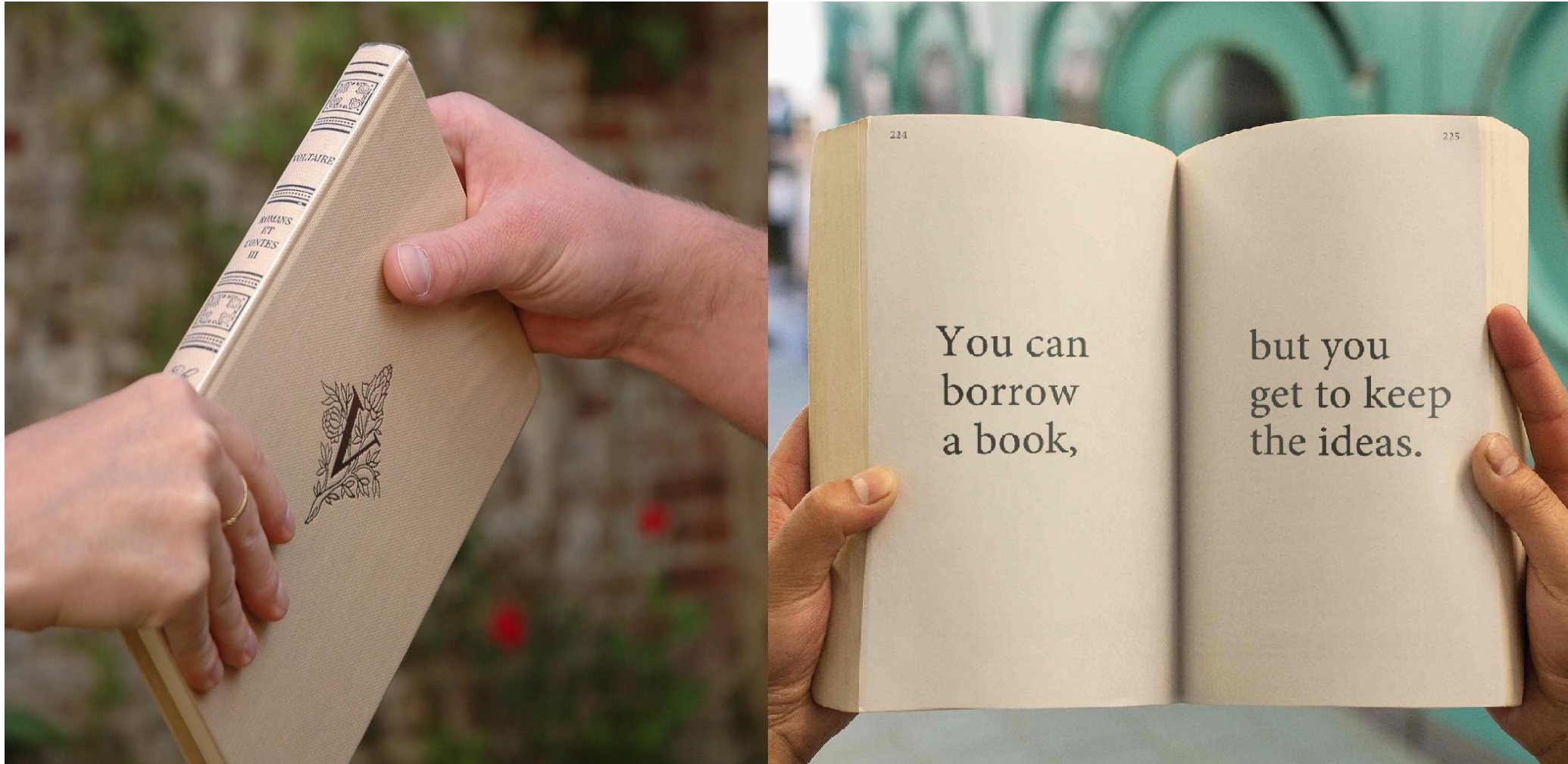
Thapathali Campus

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Presentation Outline

- Motivation
- Introduction
- Problem Statement & Objectives
- Scope of Project
- Project Applications
- Methodology
- Results
- Discussion of Results
- Future Enhancements
- Conclusion
- References

Motivation



Introduction

- Sharing of books solves the problem of unavailability of books and reduces expenses
- Allows sharing of physical books which overcomes the limitations of reading ebooks
- Web-based platform for sharing of books between users
- Contains registration and login systems for users
- Major features like uploading book images and writing book reviews

Problem Statement & Objectives

- Problem Statement
 - Existing web portals allow purchasing of books
 - No existing web portals that facilitate sharing of books among readers
- Project Objectives
 - To create a web based platform that facilitates lending and borrowing of books.
 - To integrate a review system in this platform

Scope of Project

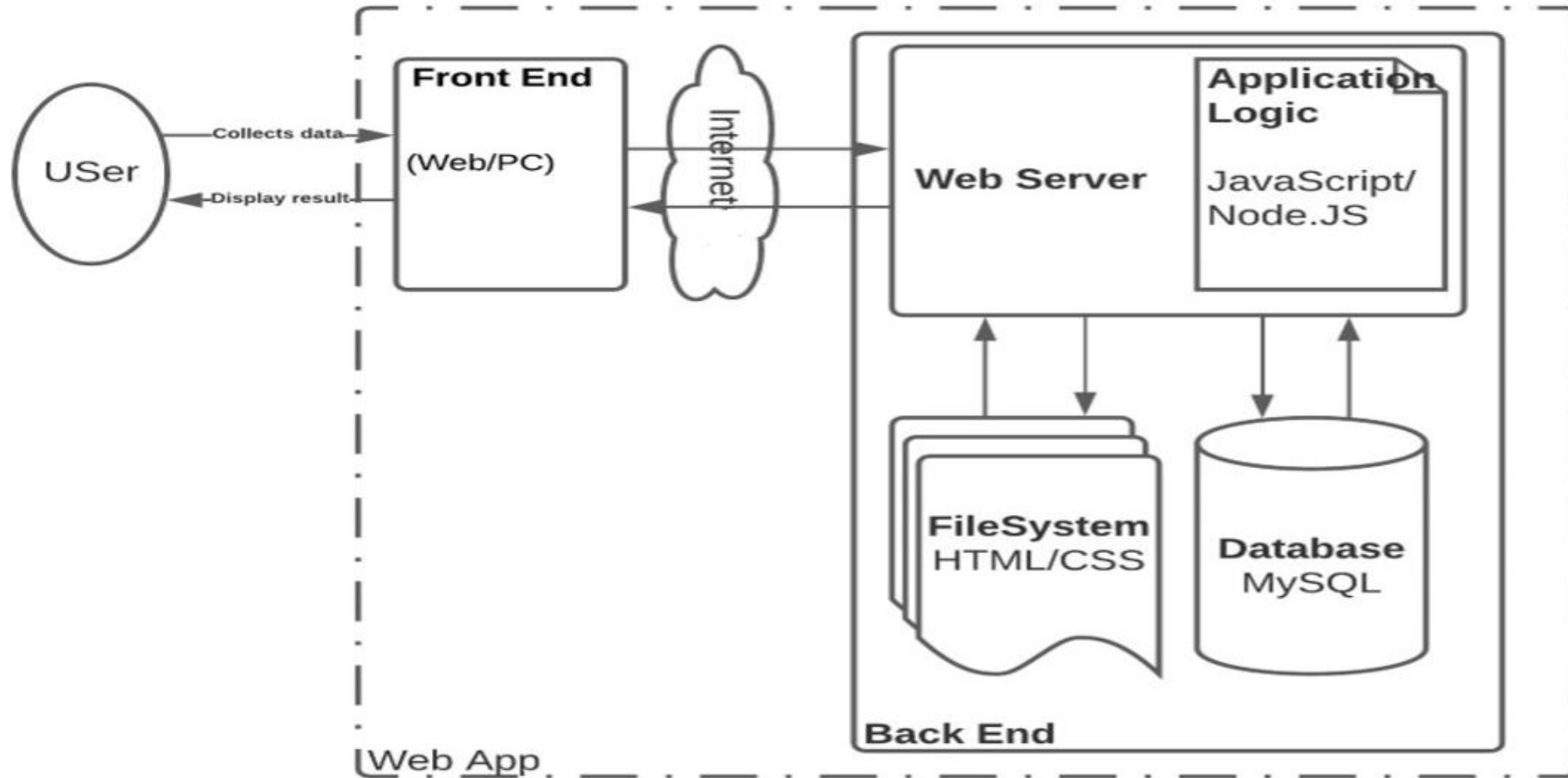
- Project Capabilities
 - Users can share books physically with other users
 - Users can share their reviews regarding the books they have read
 - System allows email verification of registered users
- Project Limitations
 - Lack of payment gateway for the compensation of misused books and charge for the usage of books
 - Limited geographical coverage due to absence of courier service
 - In-built chat system is missing for communication between lender and borrower

Project Applications

- Reading Clubs
 - Clubs can attract people by displaying books they have
 - Inter-club book transfers are possible
- Book Lovers
 - Reading enthusiasts can obtain novels, magazines and other printed documents
- Academic Readers
 - Can search for course reference books
 - Explore for books that are no longer printed
 - Students can obtain books that are unavailable in library

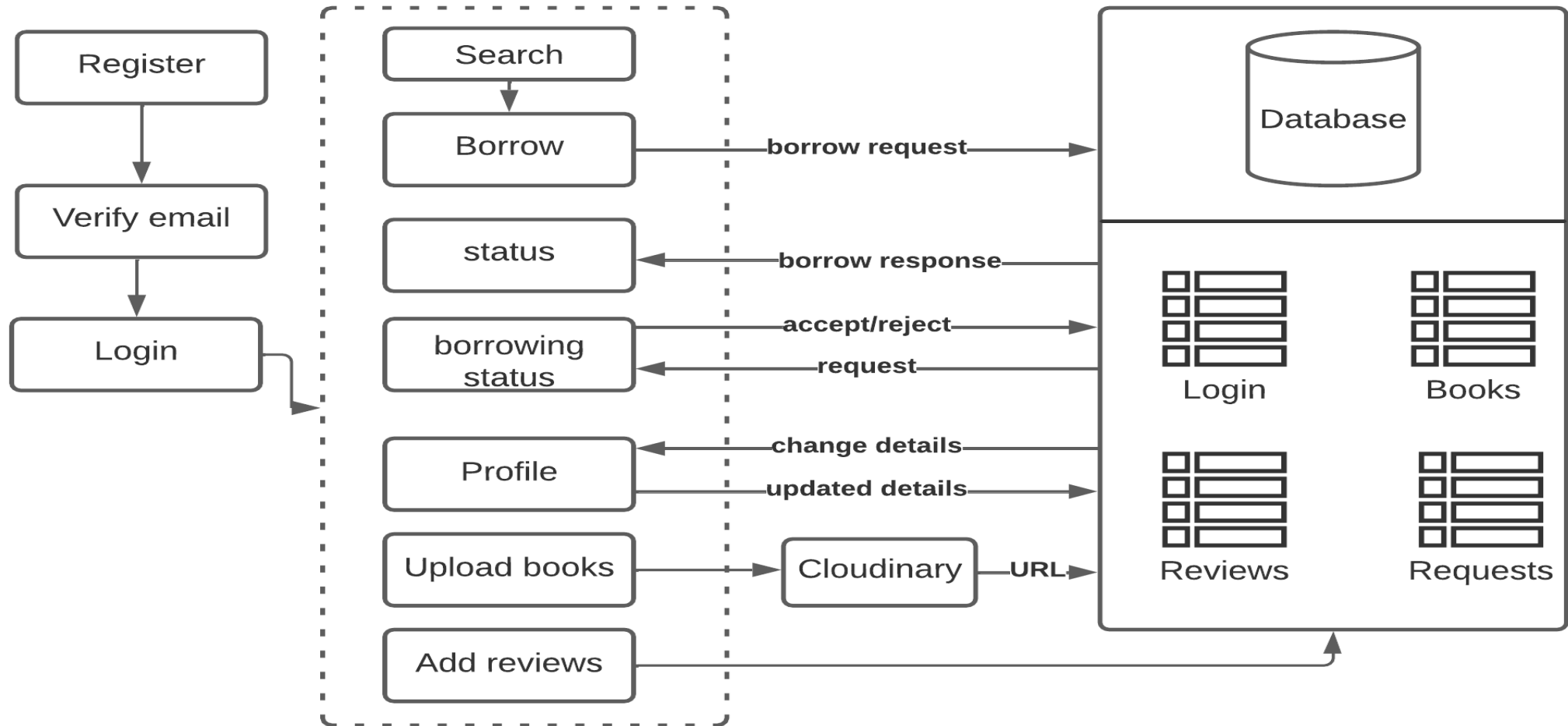
Methodology – [1]

(System Block Diagram)

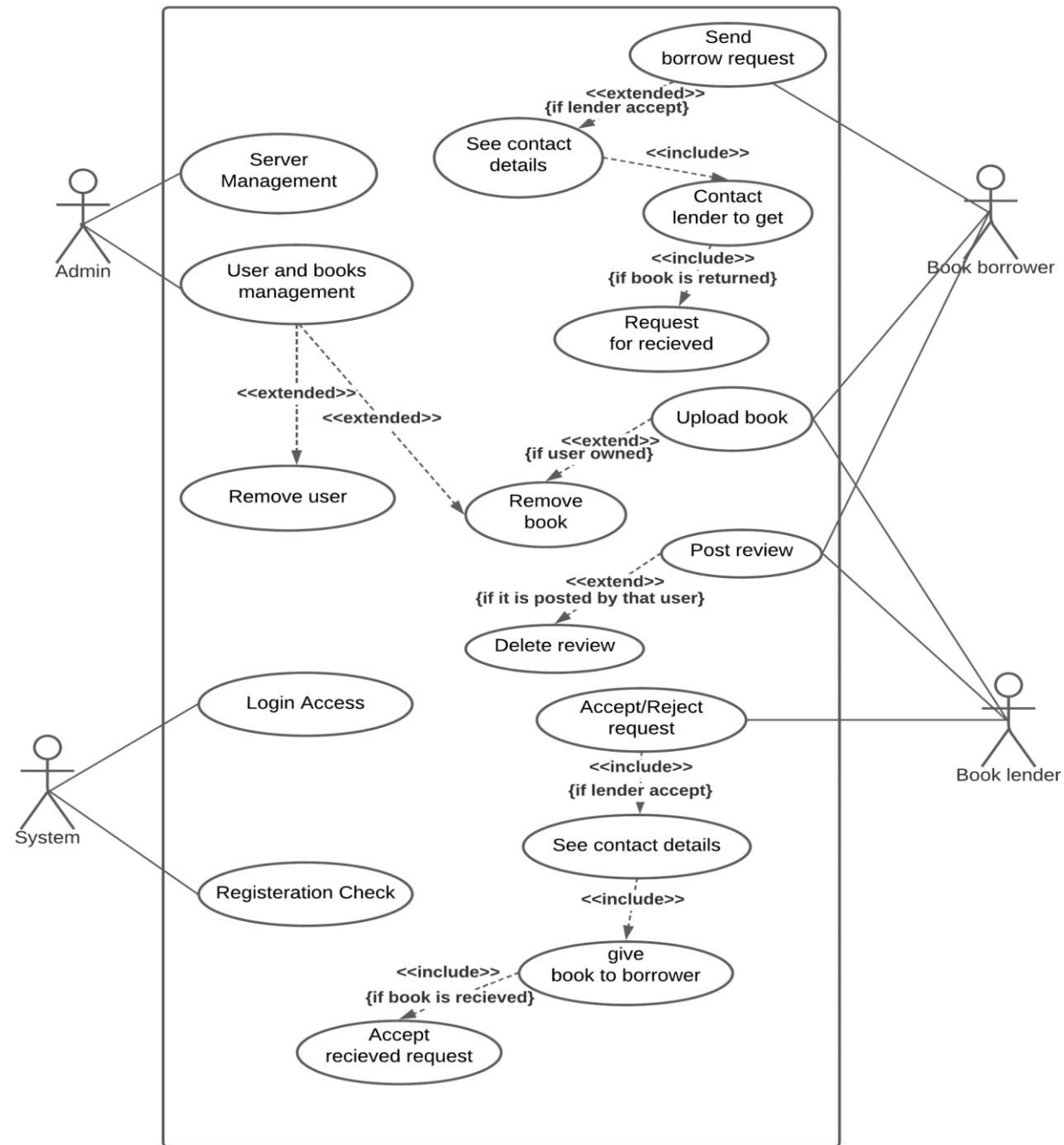


Methodology – [2]

(Operational Block Diagram)

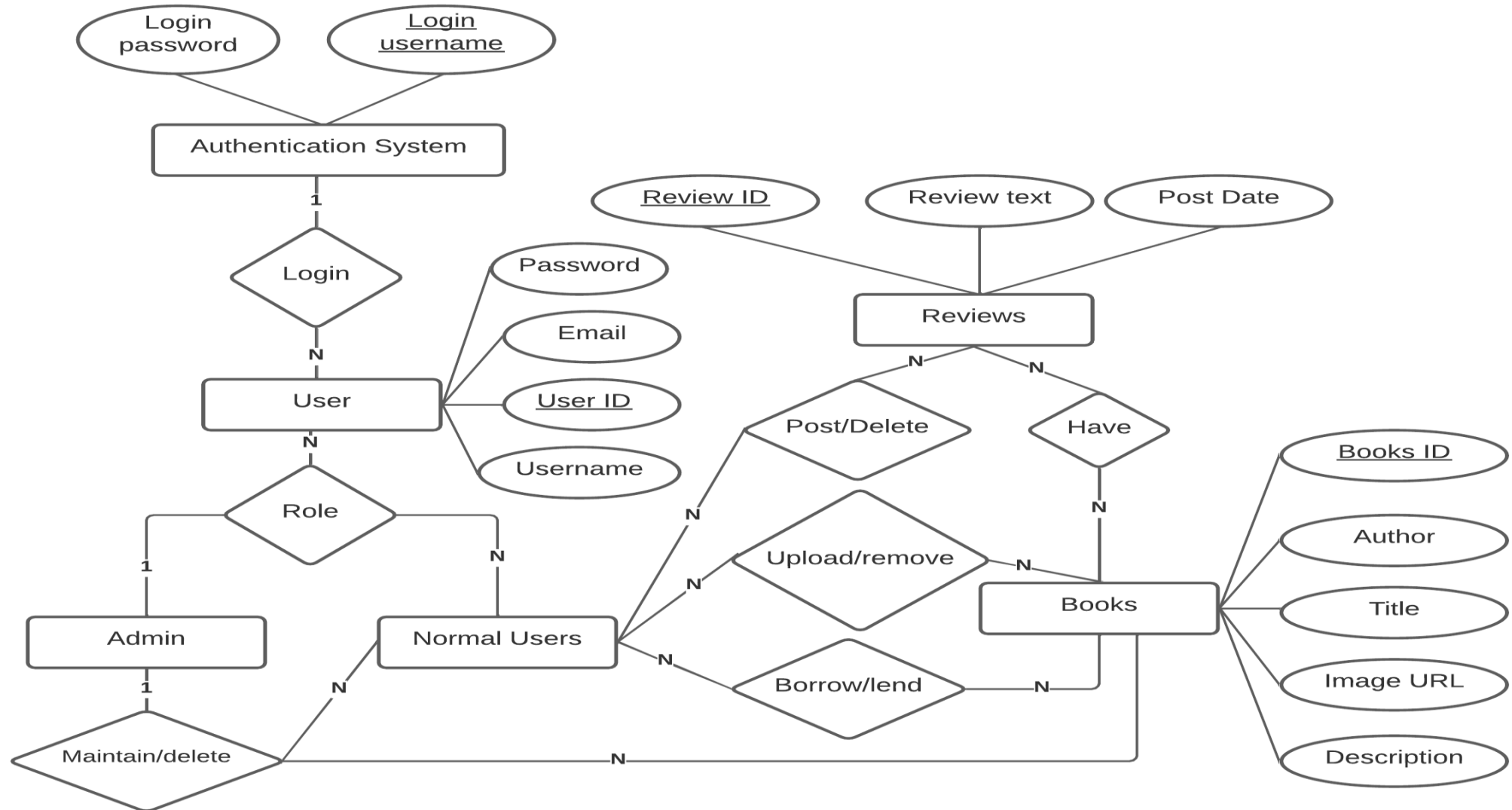


Methodology – [3] (Use Case Diagram)



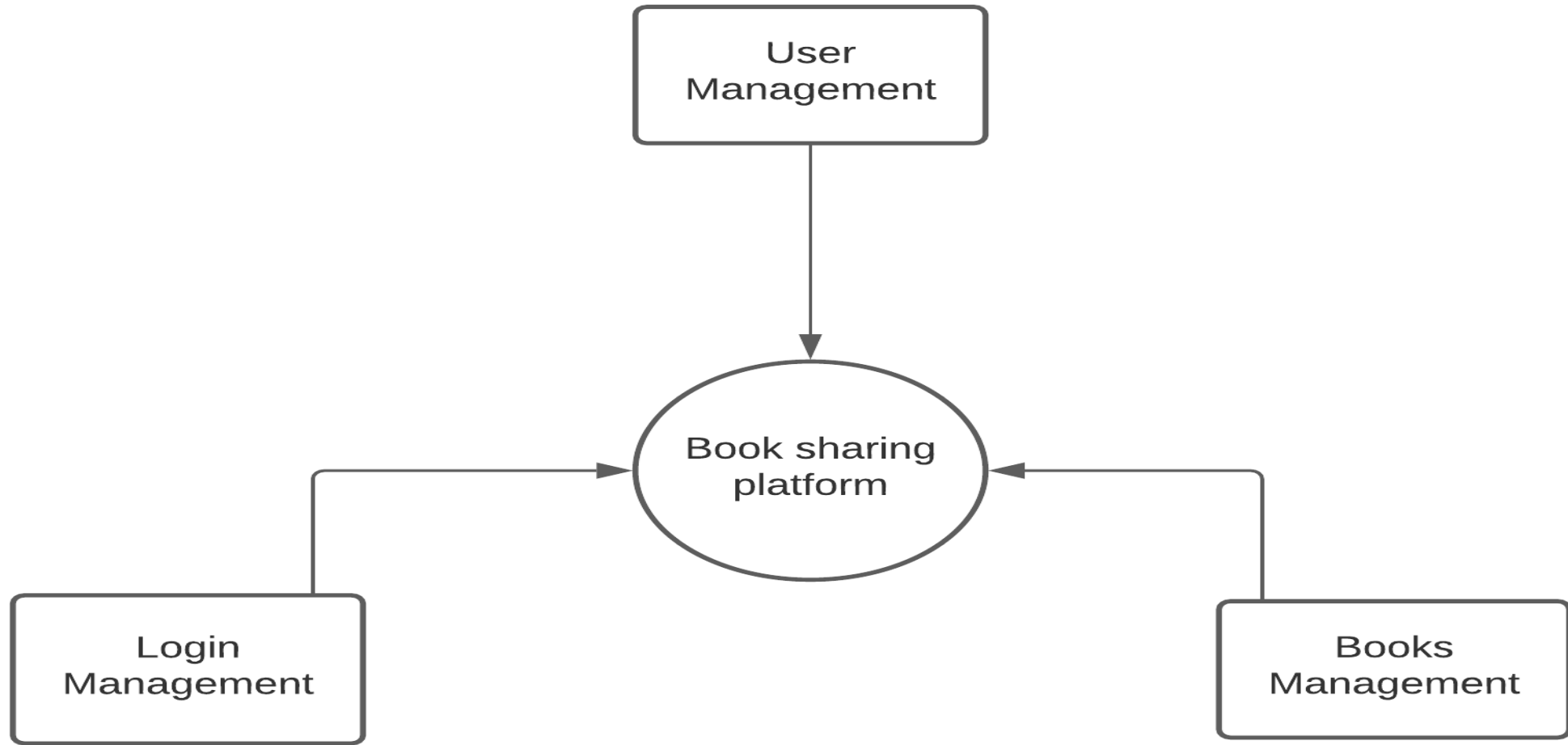
Methodology – [4]

(Entity Relationship Diagram)



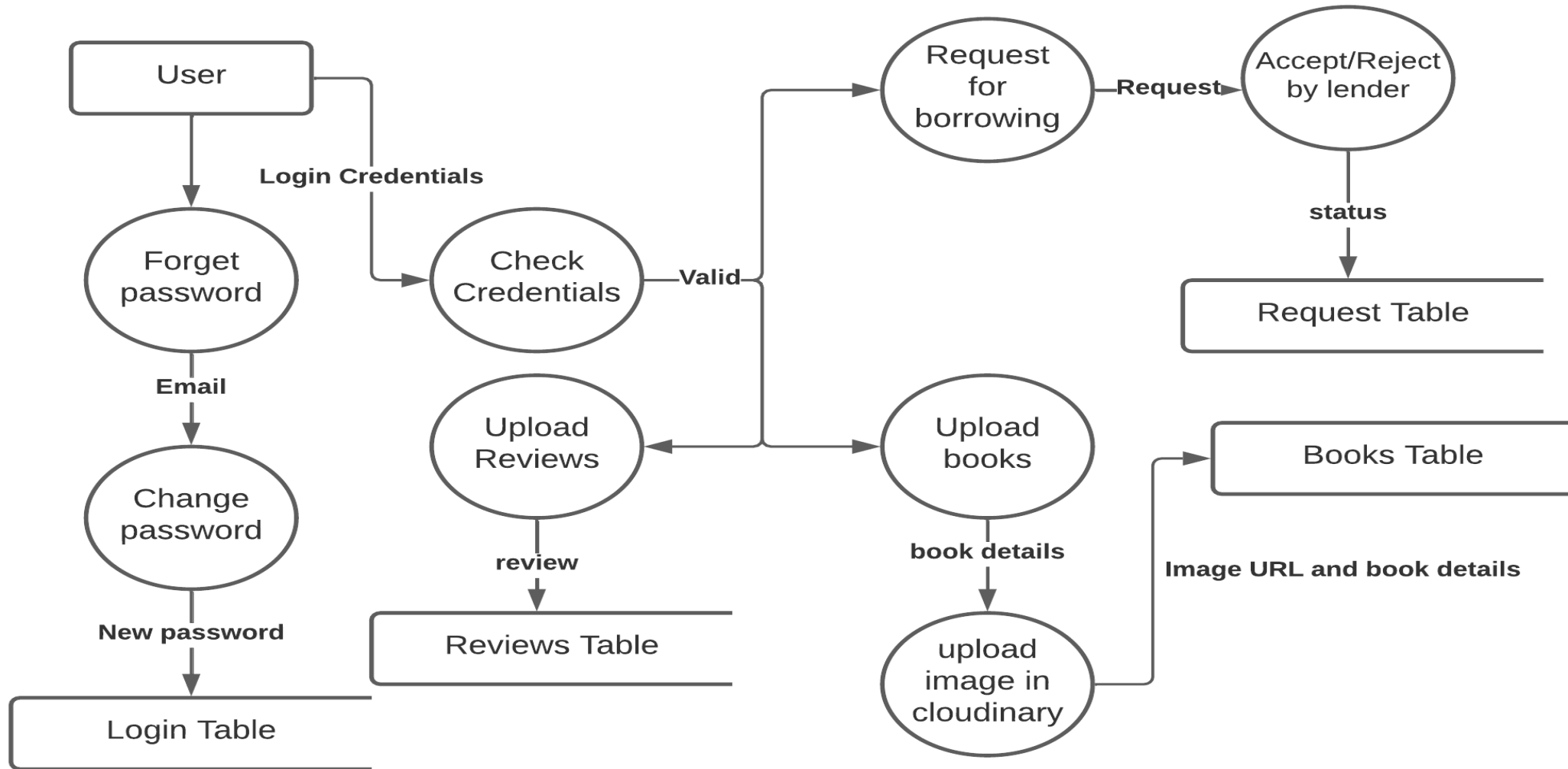
Methodology – [5]

(Data Flow Diagram : Level -0)

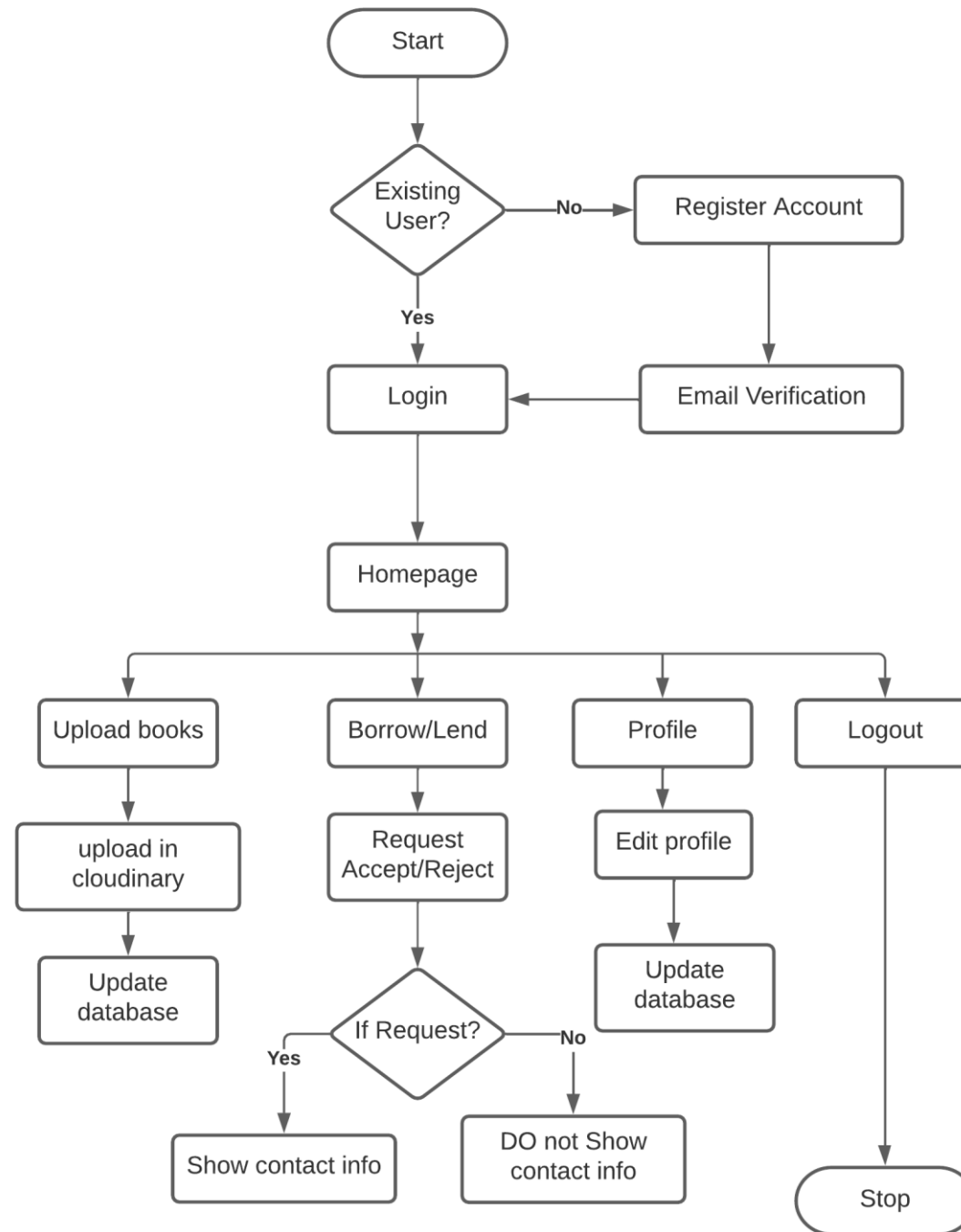


Methodology – [6]

(Data Flow Diagram : Level -1)



Methodology – [7] (System Flowchart)



METHODOLOGY-[8]

(Instrumentation)

S. No.	General Software	Specific Software	Purpose
1	Markup language, Styling	HTML,CSS	Used to structure and design web pages
2	Template Engine	Embedded JS	Used as templating engine
3	Programming Language	Java Script	Used to make web pages interactive
4	Framework	Express	Used for server-side logic
5	Library	bcrypt	Used for hashing password
6	Module	Nodemailer	Used for email verification
7	Dependency	JSON Web Token	Used for login authentication
8	DBMS	MySQL	Used for information storage

Results –[1] (Homepage)

[Services](#)[About](#)[Contact](#)

#1 Platform for Sharing Books

Get your favourite Books and
Help other to get their taste

Share Books With [کتابا لئندئ](#) →

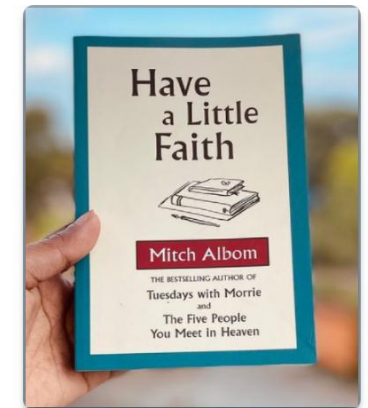
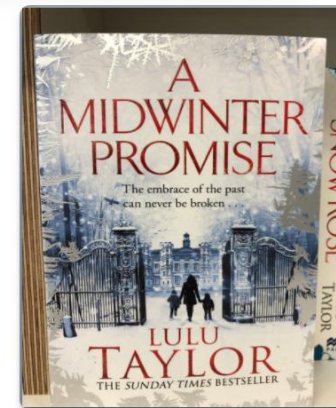
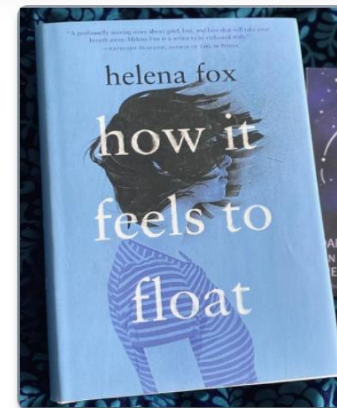
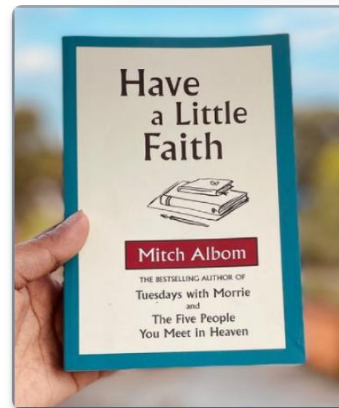
Login

[forget password](#)

[Register](#)

Numbers of Books Listed
#14

Numbers of sharing request
#8



Results –[2] (Registering of New User)

The screenshot shows a web application for sharing books. At the top, there is a navigation bar with a logo (a book icon with 'BOOK' text) and links for 'Services', 'About', and 'Contact'. The main header area contains the text 'First of its kind' and 'Get your favourite Books and Help other to get their taste', followed by a red button labeled 'Share Books With किताब लेनदेन →'. A modal window titled 'Register' is open in the center, featuring four input fields: 'Enter gmail', 'Enter Username', 'Enter password', and 'Confirm password', with a blue 'Register' button at the bottom. To the right, a login section includes fields for 'Enter Username' and 'Enter password', a blue 'Login' button, and links for 'forget password' and 'Register'. The bottom of the page displays a row of book covers, including 'Have a Little Faith' by Mitch Albom, 'how it feels to float' by helena fox, 'A MIDWINTER PROMISE' by LULU TAYLOR, and another copy of 'Have a Little Faith'.

BOOK

Services About Contact

First of its kind

Get your favourite Books and
Help other to get their taste

Share Books With किताब लेनदेन →

Register

Enter gmail

Enter Username

Enter password

Confirm password

Register

Enter Username

Enter password

Login

forget password Register

Number
#14

request

Have a Little Faith
Mitch Albom
THE BESTSELLING AUTHOR OF
Tuesdays with Morrie
and
The Five People
You Meet in Heaven

helena fox
how it
feels to
float

A
MIDWINTER
PROMISE
The embrace of the past
can never be broken
LULU
TAYLOR
THE SUNDAY TIMES BESTSELLER

Have a Little Faith
Mitch Albom
THE BESTSELLING AUTHOR OF
Tuesdays with Morrie
and
The Five People
You Meet in Heaven

Results –[3] (Landing Page After Login)



किताब लेनदेन
Book Sharing Platform

Search...

Profile

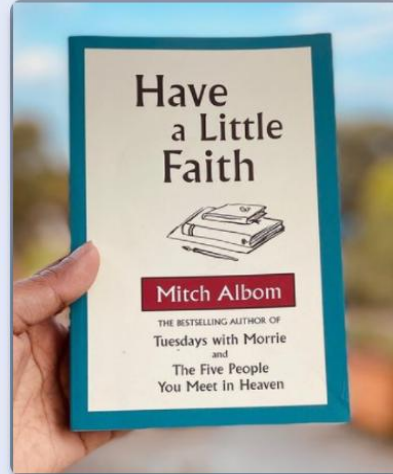
Borrow Request

Status

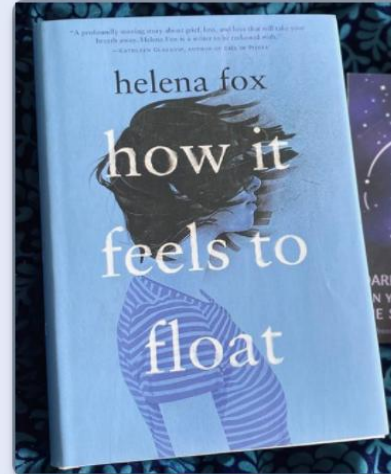
Upload

MyBook

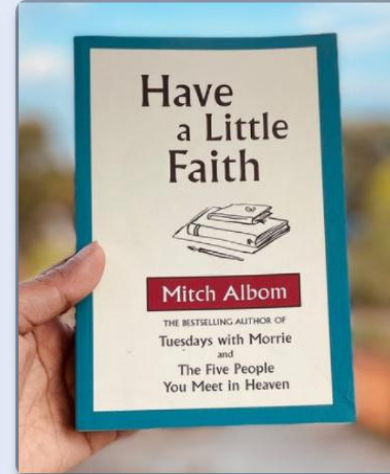
History



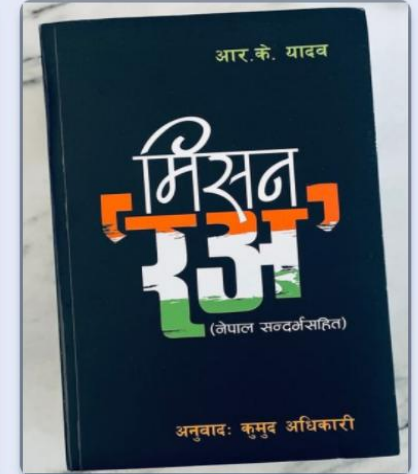
Title : Have a little faith
Author : Mitch Albom



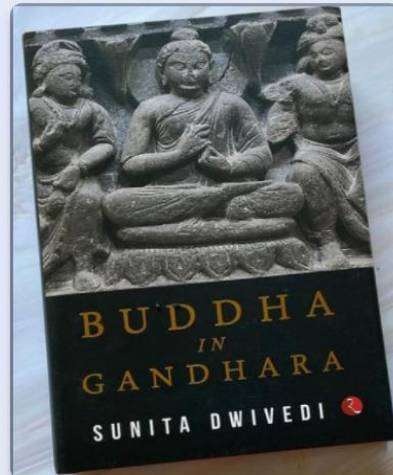
Title : how it feels to float
Author : helena fox



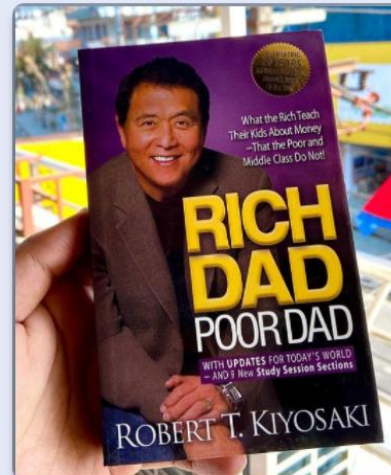
Title : Have a little Faith
Author : Mitch Albom



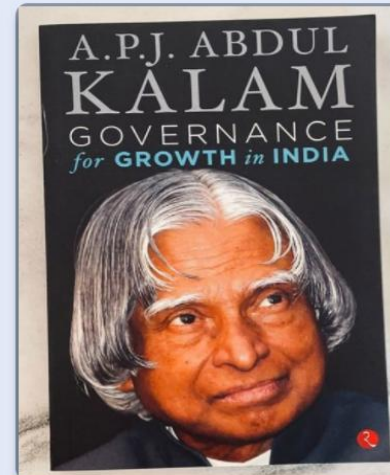
Title : Mission Raw
Author : Kumud adhikari



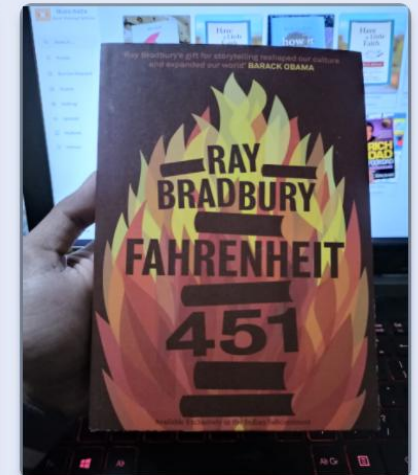
Title : Buddha in Gandhara
Author : Sunita Dwivedi



Title : Rich dad Poor dad
Author : Robert Kiyosaki

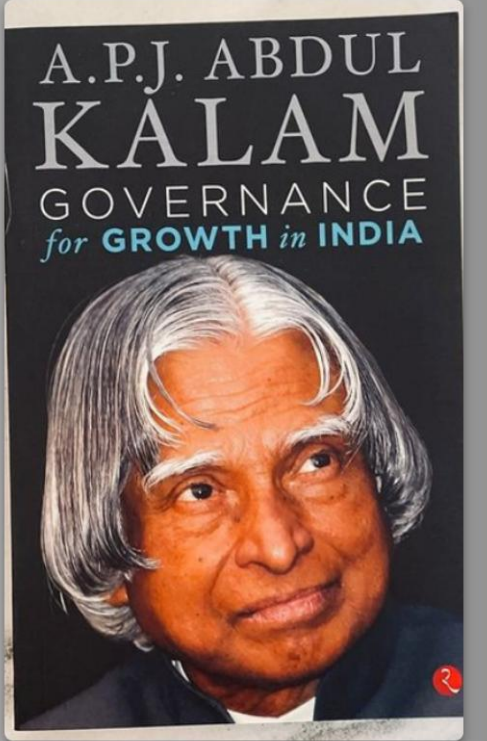


Title : Governance for Growth
Author : A.P.J ABDUL



Title : Farenheit 451
Author : Ray Bradbury

Results –[4] (Book Details Viewing Page)



A.P.J. ABDUL
KALAM
GOVERNANCE
for GROWTH in INDIA

Title :**Governance for Growth**

Author :**A.P.J ABDUL**

Lender :**deepak**

Description by lender :
Indian elections for the 16th Lok Sabha saw many heated debates on various topics concerning governance. In such critical times, the 11th President of India, Dr A.P.J. Abdul Kalam urges the Indians to cast their vote for the right candidate. Through Governance For Growth In India, he expresses his vision for India and the contribution which each Indian citizen must make for the same.

Borrow

write a review...

Add this review

Results –[5] (Borrow Request Flow)

Lender : deepak Status: pending	Borrowing Book : Buddha in Gandhara
--	--

Borrowing Request Pending

Borrowing Request : peterparker Status: pending	Borrowing Book : Buddha in Gandhara
<input type="button" value="Accept"/> <input type="button" value="Reject"/>	

Notification Shown to Lender

Borrowing Request : peterparker Status: accepted	Borrowing Book : Buddha in Gandhara
Contact:	deepakbhattarai880@gmail.com

Accepted Request

Lender : deepak Status: accepted	Borrowing Book : Buddha in Gandhara
Contact: deepakbhattarai877@gmail.com	<input type="button" value="Return"/>

Accepted Request Shown to Borrower

Borrowing Request : peterparker Status: accepted	Borrowing Book : Buddha in Gandhara
Contact:	deepakbhattarai880@gmail.com
Requested for received <input type="button" value="Received"/>	

Received Request Send to Lender

Results –[6] (History of Books Transactions)

Borrowing history

Book	Lender	Status	Process	Borrowed Date	Returned Date	Recieved Date
Karnali Blues	deepak	accepted	refund	2/27/2022	2/27/2022	
Governance for Growth	deepak	accepted	completed	2/26/2022	2/26/2022	2/26/2022
A midwinter Promise	Kamrade	accepted	completed	2/26/2022	2/26/2022	2/26/2022

Lending history

Book	Borrower	Status	Process	Borrowed Date	Returned Date	Recieved Date
how it feels to float	hari	pending	onprocess			
Have a little faith	hari	pending	onprocess			

Results –[7] (Book Details Uploading Page)

Title

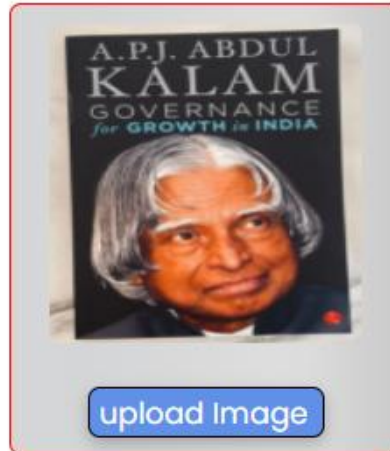
Governance for Growth

Author

A.P.J ABDUL

Published Date

mm/dd/yyyy




Description:

Indian elections for the 16th Lok Sabha saw many heated debates on various topics concerning governance. In such critical times, the 11th President of India, Dr. A.P.J. Abdul urges the Indians to cast their vote for the right candidate. Through Governance For Growth In India, he expresses his vision for India and the contribution which each Indian citizen must make for the same.



Submit

Results –[8] (Profile Page After Login)




peterparker

INFORMATION

Email
deepakbhattarai880@gmail.com

Username
peterparker

[Edit](#)



peterparker

INFORMATION

Email : deepakbhattarai880@gmail.com

Username : peterparker [Edit](#)

Password : click edit to change [Edit](#)

Results-[9] (User Information Table)

user_id	username	email	password	emailToken	isVerified	role	passresetToken	isReset
23	basanta	vhandaribasanta@gmail.com	\$2a\$08\$QjpTyyTb4HECgccH2...	null	TRUE	ADMIN	null	FALSE
27	hari	bbasanta238@gmail.com	\$2a\$08\$59/fZelu41IZqbA/Zx1B...	null	TRUE	USER	null	FALSE
28	peterparker	deepakbhattarai880@gmail.com	\$2a\$08\$RcgENjX8ooDGJYWAZ...	null	TRUE	USER	null	FALSE

- Random string is stored in emailToken which is set to null after email verification
- Similarly, in passresetToken a random string is stored which is set to null after resetting password
- Password is stored in database in encrypted form.
- bcrypt is used for hashing the password and used blowfish algorithm.

Results-[10] (Book Details Table)

books_id	user_id	book_title	book_author	image_url	file_name	description	status
30	27	Mansoon	Subin Bhattarai	https://res.cloudi...	kitablenden/vlgmr...	In this book, B...	not_available
31	27	Rule of the robots	Martin Ford	https://res.cloudi...	kitablenden/aoqzm...	The New York ...	available
32	28	Have a little faith	Mitch Albom	https://res.cloudi...	kitablenden/nfxnm...	In Have a Little...	available

- Uploaded images of book covers are stored in clouinary cloud storage which is a special cloud service for media files
- All uploaded images of book covers are stored in kitablenden folder
- The URL of the uploaded image is stored in image_url column.

Results-[11] (Reviews and Requests Tables)

	review_id	user_id	books_id	review	postdate
▶	41	28	42	I have read this book A.P.J Ab...	2/26/2022
	43	31	42	great book about APJ Abdul Ka...	2/28/2022

- Reviews regarding book can be added by general users

request_id	borrower_	lender_id	books_id	status	finalstatus	borrowed_date	returned_date	received_date
88	27	23	29	accepted	completed	2/24/2022	2/25/2022	2/25/2022
89	23	27	30	accepted	onprocess	2/27/2022	NULL	NULL
90	27	28	32	pending	onprocess	NULL	NULL	NULL

- The date columns are populated if the following conditions hold:
 - borrowed_date : when lender accepts borrowing request
 - returned_date : when borrower returned the book
 - reviewed_date : when lender received the returned book
- Status represents whether the request is pending or accepted
- Finalstatus signifies the stage at which the request process has reached

Results-[12] (Admin Dashboard)

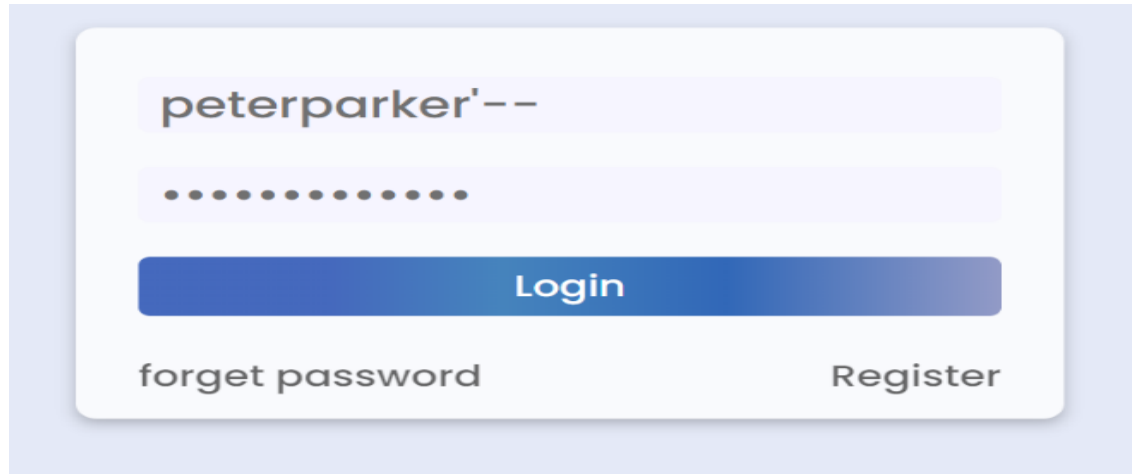
#ID	First Name	Email	Role	Action
27	hari	bbasanta238@gmail.com	USER	Delete
28	peterparker	deepakbhattarai880@gmail.com	USER	Delete
29	Kamrade	tha075bct010@tcioe.edu.np	USER	Delete
31	prashant	infixyz@gmail.com	USER	Delete

- The above table shows the information visible to admin of each user
- Admin cannot view and modify passwords, book details and reviews
- Admin has access to remove users that violate system rules

Book Name	Book Author	Lender Email	Action
Mansoon	Subin Bhattarai	bbasanta238@gmail.com	Delete
Have a little faith	Mitch Albom	deepakbhattarai880@gmail.com	Delete
how it feels to float	helena fox	deepakbhattarai880@gmail.com	Delete
A midwinter Promise	Lulu Taylor	tha075bct010@tcioe.edu.np	Delete

- Admin can also remove books of individual users from the system


Results-[13] (SQL Injection Testing)



The image shows a login form with a light blue background. It contains a username input field with the text "peterparker'--", a password input field with masked characters ".....", a blue "Login" button, and two links at the bottom: "forget password" and "Register".

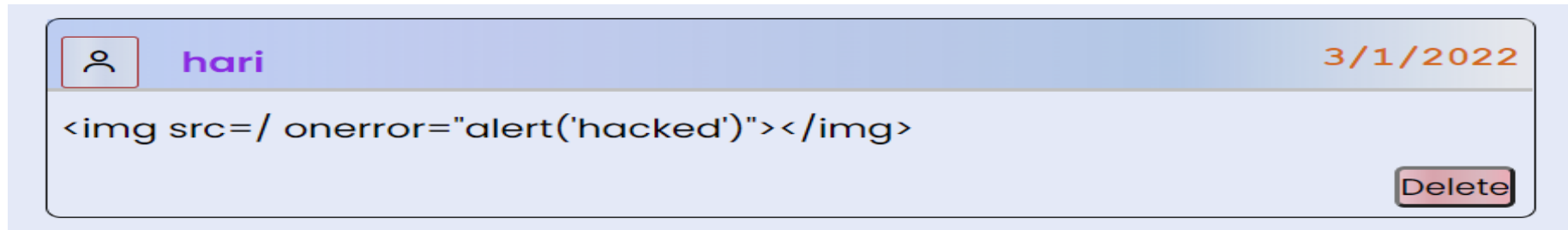
- Testing is done using peterparker'-- in username that comments the query after that value
- To prevent these attacks and respond according to it parameterized query has been used
- Only parameterized query technique has been used to bypass SQL injection because of its ease of use and popularity

Results-[14] (Cross Site Scripting Testing)



The screenshot shows a web form for adding a review. The text input field contains the malicious payload: ``. Below the input field is a button labeled "Add this review".

- XSS testing has been done while adding a new review using the above script



The screenshot shows a review card for a user named "hari" on "3/1/2022". The review content is the same malicious payload: ``. A "Delete" button is visible at the bottom right of the card. The payload is displayed as plain text, indicating that the system's templating engine has escaped the HTML tags.

- During rendering rather than executing the HTML tags and script, the system displays as normal input
- XSS is prevented using `<%=` operator in templating engine that escapes HTML tags and JS.

Results-[15] (Website Usage Logs)

```
03/01/2022    09:52:50    info Logged In User ID: 23
03/01/2022    09:52:53    info Logged Out UserID: 23
03/01/2022    09:53:00    error Logged In Incorrect
03/01/2022    09:54:49    info Logged Out UserID: 28
03/01/2022    09:54:57    info Logged In User ID: 28
03/01/2022    12:05:58    info Logged Out UserID: 28
```

- Logs are maintained for tracking the timestamps of user log in and log out
- Logs have not been implemented to track review changes and updates about book details
- Information provided by above log:
 - Date and time of creation of log in file
 - info :if login is successful
 - Error: if login is unsuccessful
 - User ID: user ID displayed if login is successful else incorrect is displayed

Discussion of Results-[1]

(Front End Development)

- The homepage and main pages of the web application are as expected
- Login form and register form are used to take input of user along with submit button
- There is navigation area in the main page with different buttons for profile, settings, notifications etc
- Books upload section has a form that accepts pictures from the user

Discussion of Results-[2]

(Back End Development)

- All the user interactions are responded by the backend codes
- Data taken from users are sent and stored in the database
- Sensitive data like passwords are hashed in the backend and stored
- Preventive methods have been applied to avoid attacks like SQL injection and XSS

Future Enhancements

- Provide separate domain system for institutional book sharing
- Integrating recommendation engine for suggesting books as per user preference
- Earning reward token for sharing of each books
- Integrate in app chat system for user communication

Conclusion

- A web platform where users can create account and upload the images books they have is created
- A review system is integrated to let users write the review of the books they have read
- Probable security issues like XSS and SQL injection are checked and eliminated
- Admin side control system is created to manage database and users

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