

Liner Pro

(A web-based Highlighter)



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1. Introduction

Digital learning and research processes are unnecessarily cumbersome and challenging, leading to time-consuming and inefficient practices for you that do not support effective learning and retention. Liner Pro will assist us to overcome tough and puzzling learning. It will provide an efficient way to research and study by providing an easy way to highlight from the articles, videos, and images, things that are most relevant to our interests.

According to the survey:

“472 undergraduates were reviewed, 60% reported using marked passages as a guide for later restudy.” Due to Covid-19, the world had become reluctant to digital learning, Research has been digitalized and all the data is to be taken from articles, images, videos, etc. Tools to save this information are difficult to find. The distributed study, or spacing, is a desirable difficulty in that it typically results in greater long-term retention even though it can make learning feel more difficult during encoding. For this very reason, Liner Pro saves data and provides an efficient way of learning.

2. Project Vision

2.1 Problem Statement:

While we want to save some text, images, and videos from different articles it is cumbersome. When we search any article on google by any keyword, we get millions of different results every time, so we lost the article we read previously. If we find some important information in different articles and want to share it with other followers with one click is difficult. When we read the article, we want to find more articles on the same topic it is a difficult and time taking process. Creating articles from the research on the bases of our highlights is a very difficult task, for this first we copy these highlights and paste them into any text editor the write our article.

2.2 Business Opportunity

Liner Pro is a web-based highlighter-type discovery engine. And it provides an easy way to highlight from the articles, videos, and images, things that are most relevant to our interests. Liner Pro would service users all over the world, who are business professionals, professors, students, lawyers, doctors, and whoever loves to read online. It would also help in the education sector and business and generate high revenues. The information gathered via articles and reviews can be served as a great opportunity for trade.

2.3 Objectives:

Our objective is to:

- Discover the highlights of the web, filtered by millions of intelligent people around the world.
- In the flood of information, LINERPRO helps you find and learn reliable information faster.
- Spread information around the world and make it available to every being.

2.4 Scope

Liner Pro is a web-based highlighter-type discovery engine. Currently, students, researchers, and scientists are lacking in saving data of any type of information.

They read different articles of their choice and watch videos, and images, but they cannot save the important research for the project, or they cannot find a means to save their important research.

The video highlights will be saved based on the time highlighted by the user. Liner Pro offers an easy way to do this thing. To keep our work more reliable and perfect, users can highlight content from the websites that they choose at the time of signup. We include different features like sharing highlights to interact and engage others and Generate History for showing those articles which he/she watches or reads.

2.5 Constraints

- Internet connectivity is a major issue in the system.
- Ambiguity can be raised if proper preferences of highlights are not given by the user.
- The system shall require proper hardware to work properly.
- If excess data is highlighted the database can create issues.

2.6 Stakeholder and User Description

2.6.1 Market Demographics

Our target is researchers and students to provide a better platform for their interaction between them and the community, to make it easy for them to share their highlighted important things and communicate. The use of technologies is increasing day by day, everything is now shifting from manual systems to automated systems. It can be used for sharing and downloading important things which they studied and watched, and they think could use for others.

2.6.2 Stakeholder Summary

2.6.2.1 Stakeholder

Name	Description	Responsibilities
LinerPro Developers	It includes those who are involved in designing and implementing this project.	<ul style="list-style-type: none"> • Should design web applications for users and websites considering their needs • Proper testing should be applied
User	Users who perform functions on it.	<ul style="list-style-type: none"> • Should know about using web-based applications.
Supervisors of project	The supervisor will be stakeholders of this product as they are involved in the development process of this project with the development team.	<ul style="list-style-type: none"> • Directs the work of the development team • Ensures that the system is capable of being maintained. • Ensures that the product will fill a need among its potential customers • Monitors the project's progress • Ensures the project is carried out by the plan and all deliverables are completed.

2.6.3 User Environment

The application is accessible from any device connected to the Internet. Users must be familiar with the basic steps needed to install and operate web-based app. For an application to be usable, the proper interface design and clear instructions must educate users on how to use it. This application must run on all specified phones or other devices which have access to websites.

2.6.4 Stakeholder Profiles

The Stakeholder Profiles Attributes of the system are listed in this section.

2.6.4.1 Supervisor of Projects

2.6.4. 1 Supervisor

Representatives	Supervisor: Mr. Muhammad Usman Joyia Co-supervisor: Mr. Awais Azam
Description	They are involved in supervising activities of the development process
Type	They are technical stakeholders. They have expertise in domains that are being applied to this project i.e. android development and web development.
Responsibilities	<ul style="list-style-type: none">• Directs the work of the development team• Ensures that the system is capable of being maintained.• Ensures that the product will fill a need among its potential customers• Monitors the project's progress• Ensures the project is carried out by the plan and all deliverables are completed
Success Criteria	The completion of features that are being committed by the development team at the start of the project.
Involvement	<ul style="list-style-type: none">• Requirement reviewer• Senior managers• Reviews implementation
Comments/Issues	None

2.6.4.2 Development team of the project

2.6.4. 2 Development team

Representatives	Shaheer Tariq Abdul Raheem Abdul Moeed
Description	They are involved in designing apps.

Type	They are technical stakeholders.
Responsibilities	<ul style="list-style-type: none"> • Should design this app considering user's needs • Proper testing should be applied to make it as effective as possible • Proper data is required for better recommendations
Success Criteria	The completion of features that are being committed by the development team at the start of the project.
Involvement	<ul style="list-style-type: none"> • Designers • Developers • Testers
Deliverable	<ul style="list-style-type: none"> • Documentation • Data acquisition
Comments/Issues	None

3 System Requirement Specifications

In this section features and requirements of the system are described:

3.1 System Features

- Save different articles
- Article Sharing
- Collect and Manage
- Maintain History
- Web Highlighter

3.2 Functional Requirements

3.2.1 Signup/Login:

Whenever a user will use this application for the first time, he/she would sign up for creating an account and can save their record on the server side. If the user has already created his/her account on the application, he/she must enter the username and password.

3.2.2 Newsfeed:

Users can accept and reject follower if they want to follow another person for sharing and reading highlights. Everyone can give comments on a shared post.

3.2.3 Share Topic:

Sometimes users find some articles more reliable and important they want to share them with other people, this project will help users to share different articles with others.

3.2.4 Save Highlights:

The user will highlight the content of his preferences by using the proposed system. The text highlights will be saved from the web and the video link will be saved based on timing.

3.2.5 Translates Highlights:

Many researchers, students, and teachers found it difficult to understand the text of the posted highlights, through this extension user can translate their highlights. The highlighted text will be translated through APIs.

3.2.6 Excludes Websites:

In today's era, many people's priorities are privacy, but no tool provides privacy to users on their emails, etc. People can have privacy if they are using the proposed project.

3.2.7 History:

The history of the highlighted articles will appear on the history page.

3.2.8 Related Articles:

On the preference of previous articles, the proposed system will show new related articles. The user can find new highlights which can be helpful for his/her.

3.2.9 Categories Highlights:

Based on importance, the user can categorize his/her highlights with assorted colors of his choice. By doing this it will be easy for the user to know his/her interests.

3.2.10 Listen to Highlights:

The proposed system will allow users to listen to their highlights as many people prefer listening rather than reading texts.

3.2.11 Download Highlights:

It provides users to download his/her and other highlights.

3.2.12 Tab History:

The history of recent tabs will be displayed to the user for ease of work.

3.2.13 Bookmark:

Tabs can be bookmarked to save important data for the user.

3.3 Core Functional Requirements

3.3.1 Core functional requirements

Sr. No	Requirement	Actor	Use case
1	The user must be able to search highlights.	User	Search Highlight
2	User Can manage categories of highlights.	User	Manage Category
3	Users can add and remove the highlights.	User	Manage Highlight
4	Users can log in by using their accounts.	User	Login Requirements
5	New users can sign up for their accounts.	User	Register Requirements
6	Users can add and remove the post.	User	Manage post
7	The system can generate History, reports of highlight.	System	Generate History
8	Users can add and delete bookmarks.	User	Manage Bookmark
9	Users can translate highlights.	User	Translate highlight
10	Users can add, delete, and update comments.	User	Manage Comment
11	The system can guide users about post	System	Post Requirement

12	The system can maintain the articles' title records and make the history of them.	System	Generate History
13	Users can add and remove follower.	User	Manage Follower
14	Users can listen to a highlight	User	Listen to Highlight
15	Users can change privacy from public to private or private to public.	User	Change Privacy
16	Users can share highlights.	User	Share highlight
17	The system can recommend the articles on the bases of preferences.	System	Recommend Article
18	Users can download highlights.	User	Download highlights

3.4 Non-Functional Requirements

3.4.1 Performance:

High performance and system creation. The system response time of every request will be less than 5ms.

3.4.2 Security:

The data stored on the system shall be secure and safe. No access shall be given without a user's email and password.

3.4.3 Usability:

The system will be easy to use.

3.4.4 Availability:

The system will be available every time.

3.5 Other Requirements

3.5.1 Safety:

The database may get crashed at any certain time due to a virus or operating system failure. Therefore, it is required to take the database backup.

4 Use Cases

4.1 Use case Diagram



4.1.1 Usecase Diagram

4.2 High level Use case

4.2.1 Manage Followers:

4.2. 1 Use Case Manage Follower

Use case ID	UC-3
Use case	Manage Follower
Actor	User
Type	Primary
Description	After signup and login to the system user will manage the follower lists. Users will add or remove follower from the list

4.2.2 Login:

4.2. 2 Use Case Login Requirement

Use case ID	UC-1
Use case	Login
Actor	User
Type	Primary
Description	Users can log in to the system by using his/her user id and password.

4.2.3 Signup:

4.2. 3 Use Case Register Requirement

Use case ID	UC-2
Use case	Signup
Actor	User
Type	Primary
Description	Users can register to the system by providing his/her mail, phone number, first name, last name, qualifications, and other requirements.

4.2.4 Manage bookmark:

4.2. 4 Use Case Manage bookmark

Use case ID	UC-6
Use case	Manage Bookmark
Actor	User
Type	Primary
Description	Users can manage bookmarks in the system by adding or deleting bookmarks.

4.2.5 Manage Post:

4.2.5 Use Case Manage Post

Use case ID	UC-10
Use case	Manage Post
Actor	User
Type	Primary
Description	Users can manage posts in the system by post highlights, watching others' posts, editing the previous post, and deleting previous posts. Users can share posts too. User must have to change privacy either public or private.

4.2.6 Manage Highlights:

4.2.6 Use Case Manage Highlights

Use case ID	UC-4
Use case	Manage Highlights
Actor	User
Type	Primary
Description	Users can manage highlights in the system by highlighting some text, videos, and images. User can download highlight and Share their highlights.

4.2.7 Search highlight:

4.2.7 Use Case Search Highlights

Use case ID	UC-8
Use case	Search Highlight
Actor	User
Type	Primary
Description	Users can search highlights of their followers and public highlights too.

4.2.8 Manage category:

4.2.8 Use Case Manage Category

Use case ID	UC-9
Use case	Manage category
Actor	User
Type	Primary
Description	Users can manage categories on the bases of preferences. Users can categorize their highlights on the bases of color. Red color represents the most important and green color represent the least important.

4.2.9 Generate History:

4.2. 9 Use Case Generate Report

Use case ID	UC-12
Use case	Generate History
Actor	User, system
Type	Primary
Description	The system can generate History. It save the URL of Highlighted text.

4.2.10 Manage comments:

4.2. 10 Use Case Manage Comments

Use case ID	UC-5
Use case	Manage comments
Actor	User
Type	Primary
Description	Users can manage comments by adding, deleting, and updating comments.

4.2.11 Recommend articles:

4.2. 11 Use Case Recommend articles

Use case ID	UC-11
Use case	Recommend Article
Actor	User, System
Type	Primary
Description	The system can recommend articles on the bases of preference highlights.

5 Iteration Plan

We will be developing our software according to the iteration plan as shown in the table

5. 1 Iteration plan

Requirement Specification	August-September
Design and Analysis	October-November
Implementation	December-May
Testing	September-May
Release	June

6 Iteration 1

6.1 Expanded Use Cases

6.1.1 Login:

6.1. 1 Expanded Use Case Login

Use case ID	UC-1	
Use case Name	Login	
Primary Actors	User	
Stakeholders and interests	User	Wants fast login, no delay.
	System	Wants valid details which were present in the Database.
Pre-condition	Users should be already registered.	
Post-condition	The user should be redirected to the home page. This pop-up should display Liner Pro front page.	
Normal Flow	User	Enter user name and password
	System	<ul style="list-style-type: none">- Login with correct details and redirect to login page if incorrect data is entered.- Logged in message.- Invalid email message.- Invalid password message.
Alternative Flow	<ul style="list-style-type: none">- If invalid entry, System shows Invalid details.- Redirect to login page.	

6.1.2 Signup:

6.1. 2 Expanded Use Case Sign-up

Use case ID	UC-2
Use case Name	Signup
Primary Actors	User
Stakeholders and interests	User data should be entered correctly.
Pre-condition	For a new account, the email and phone number are not registered before.
Post-condition	After Signing up user will be provided with a pin code via mail or phone number and then after entering the pin system pop up on the home screen.

Normal Flow	User	<ul style="list-style-type: none"> - Click on the option of signup. - Enter name, password and email.
	System	<ul style="list-style-type: none"> - Signup Successful message. - If the user enter mail which was already registered, then system shows already registered message. - If the user entered invalid email then system shows invalid email message.
Alternative Flow	<ul style="list-style-type: none"> - Users enter invalid registration details then the message will pop up invalid details and redirect to the signup page. - Users enter valid registration details then the message will pop up signup successful and redirect to the login page. 	

6.1.3 Manage Follower:

6.1.3 Expanded Use Case Manage Follower

Use case ID	UC-3	
Use case Name	Manage follower	
Primary Actors	User	
Stakeholders and interests	User	Delete follower, add follower
	System	The system can manage the follower list correctly.
Precondition	The home page is a popup after login	
Postcondition	The follower list is updated after the user manages by adding or deleting a person from the list.	
Normal flow	User	<ul style="list-style-type: none"> - Click on the option of follower list. - User will add follower, remove follower.
	System	<ul style="list-style-type: none"> - After performing these operations by user, system will add follower, remove follower correctly.
Alternative flow	<ul style="list-style-type: none"> - If the user enters an invalid person's name, then the message will pop up with incorrect data and redirect to the follower list page. - After the operation is successful the successful message will be shown. 	

6.1.4 Manage highlights:

6.1. 4 Expanded Use Case Manage Highlights

Use case ID	UC-4	
Use case Name	Manage highlights	
Primary Actors	User	
Stakeholders and interests	User	Manage highlights in the system by highlighting some text, videos, and images.
	System	Manage highlights correctly by on time updating highlights.
Precondition	The home page is a popup after login	
Postcondition	Successfully update the highlight page after managing it by adding highlights from the page.	
Normal flow	User	<ul style="list-style-type: none"> - Click on the extension button of highlight. - User will add highlight.
	System	<ul style="list-style-type: none"> - System will add highlight correctly. - After performing these operations by the user system will successfully update the highlight page.
Alternative flow	<ul style="list-style-type: none"> - Highlights tab managed properly and on time. - After the operation is successful the successful message will be shown in the green tab. - Then popup highlight page. 	

6.1.5 Manage comments:

6.1. 5 Expanded Use Case Manage Comments

Use case ID	UC-5	
Use case Name	Manage comments	
Primary Actors	User	
Stakeholders and interests	User	Manage comments by adding comments.
	System	Manage comments correctly and on time.
Precondition	The homepage is a popup after the login page. Comment notification popups.	
Postcondition	Comments can be successfully added to follower's posts. Similarly, reply to comments done by the user.	
Normal flow	User	<ul style="list-style-type: none"> - Click on the option of comments. - User will add comment.

	System	<ul style="list-style-type: none"> - System will manage comments page properly and on time. - Comment Added message.
Alternative flow		<ul style="list-style-type: none"> - After the operation is successful the successful message will be shown. - Then pop up the page again.

6.1.6. Manage Bookmark

6.1.6 Expanded Use Case Manage Bookmark

Use case ID	UC-6	
Use case name	Manage Bookmark	
Primary Actors	User	
Stakeholders and interests	User	Manage bookmarks by adding and deleting bookmark page
	System	Manage bookmark correctly and on time.
Precondition	Bookmark tab is present in-home page.	
Postcondition	Bookmark can be successfully added in Bookmark as well as bookmark can be deleted too.	
Normal flow	User	<ul style="list-style-type: none"> - Click on bookmarks option. - User will add bookmark and remove bookmark.
	System	<ul style="list-style-type: none"> - System will add or remove bookmark. - Bookmark added message. - Bookmark removed message.
Alternative flow	<ul style="list-style-type: none"> - Bookmark tab managed properly and on time. - After the operation is successful the successful message will be shown. - Deleted message shown. - Then pop up to home page again. 	

6.1.7. Listen Highlight:

6.1. 7 Expanded Use Case Listen Highlight

Use case ID	UC-7	
Use case Name	Listen highlight	
Primary Actors	User	
Stakeholders and interests	User	Listen and translate highlights
	System	Translate highlights correctly and on time.
Precondition	After clicking on highlight tab, various option popup in which listen highlight is also present	
Postcondition	User can be successfully able to listen and translate highlight correctly	
Normal flow	User	<ul style="list-style-type: none"> - Click on the option of listen highlight. - User will listen highlight and translate highlights.
	System	<ul style="list-style-type: none"> - System will provide translation of highlight.
Alternative flow	<ul style="list-style-type: none"> - If the translation of text is not found then translation not found message popup on screen and redirect to highlight again. - If translation may take some time then after some time tab popup and shows try again and redirect to highlight. 	

6.1.8. Search Highlight:

6.1. 8 Expanded Use Case Search Highlight

Use case ID	UC-8	
Use case Name	Search highlight	
Primary Actors	User	
Stakeholders and interests	User	Search highlights of their followers and public too.
	System	Provide highlight of user's interest.
Precondition	After login, homepage provide option of search too.	
Postcondition	System provides search result successfully with accuracy.	
Normal flow	User	<ul style="list-style-type: none"> - Click on search option. - User can search highlights.
	System	<ul style="list-style-type: none"> - Provide accurate result of search.
Alternative flow	<ul style="list-style-type: none"> - If result of search is not found, then a message show to user "Result not found" and "search again". - Redirect to search page. 	

6.1.9. Manage categories:

6.1. 9 Expanded Use Case Manage Category

Use case ID	UC-9	
Use case Name	Manage categories	
Primary Actors	User	
Stakeholders and interests	User	Categorize their highlights on the bases of preferences.
	System	Manage categories correctly and on time.
Precondition	Categories tab is present in-home page.	
Postcondition	Highlights can be successfully added in categories on the bases of their preference.	
Normal flow	User	<ul style="list-style-type: none"> - Click on categories option. - User will change from one category to another category
	System	<ul style="list-style-type: none"> - After user operation, system will change category correctly.
Alternative flow	<ul style="list-style-type: none"> - Category tabs manage properly on the bases of preference - If user want to add Highlight which was already present in it system shows message “Already present”. 	

6.1.10. Manage Posts:

6.1. 10 Expanded Use Case Manage Post

Use case ID	UC-10	
Use case Name	Manage Post	
Primary Actors	User	
Stakeholders and interests	User	Post their highlight with followers and public. Manage post by adding, updating, and deleting posts.
	System	Post highlight with users and maintain record of it
Precondition	Post tab is present in-home page.	
Postcondition	Post can be successfully share with public and followers (user want to share). Post can be updated by user after share with others Post can be deleted.	

Normal flow	User	<ul style="list-style-type: none"> - Click on the option of post. - User will add posts.
	System	<ul style="list-style-type: none"> - System will post correctly. - System will manage post. - System will provide option of change privacy before user adding the post.
Alternative flow	<ul style="list-style-type: none"> - If user want to change privacy after sharing the post then the system shows “Privacy can’t change” message to user. 	

6.1.11. Recommend article:

6.1.11 Expanded Use Case Recommend Article

Use case ID	UC-11	
Use case Name	Recommend article	
Primary Actors	System	
Stakeholders and interests	User	Want to watch more articles from same data or from same information.
	System	Provide related articles by using dataset of previous article watched by user.
Precondition	After clicking on article screen shows recommended articles too.	
Postcondition	Provide related articles of user's interest.	
Normal flow	User	<ul style="list-style-type: none"> - Click on the option of recommended articles. - User will watch recommended articles.
	System	<ul style="list-style-type: none"> - System will provide articles related to user interest present in system.
Alternative flow	<ul style="list-style-type: none"> - If the system can't find article related to user then the related article tab shows related article not found on it. 	

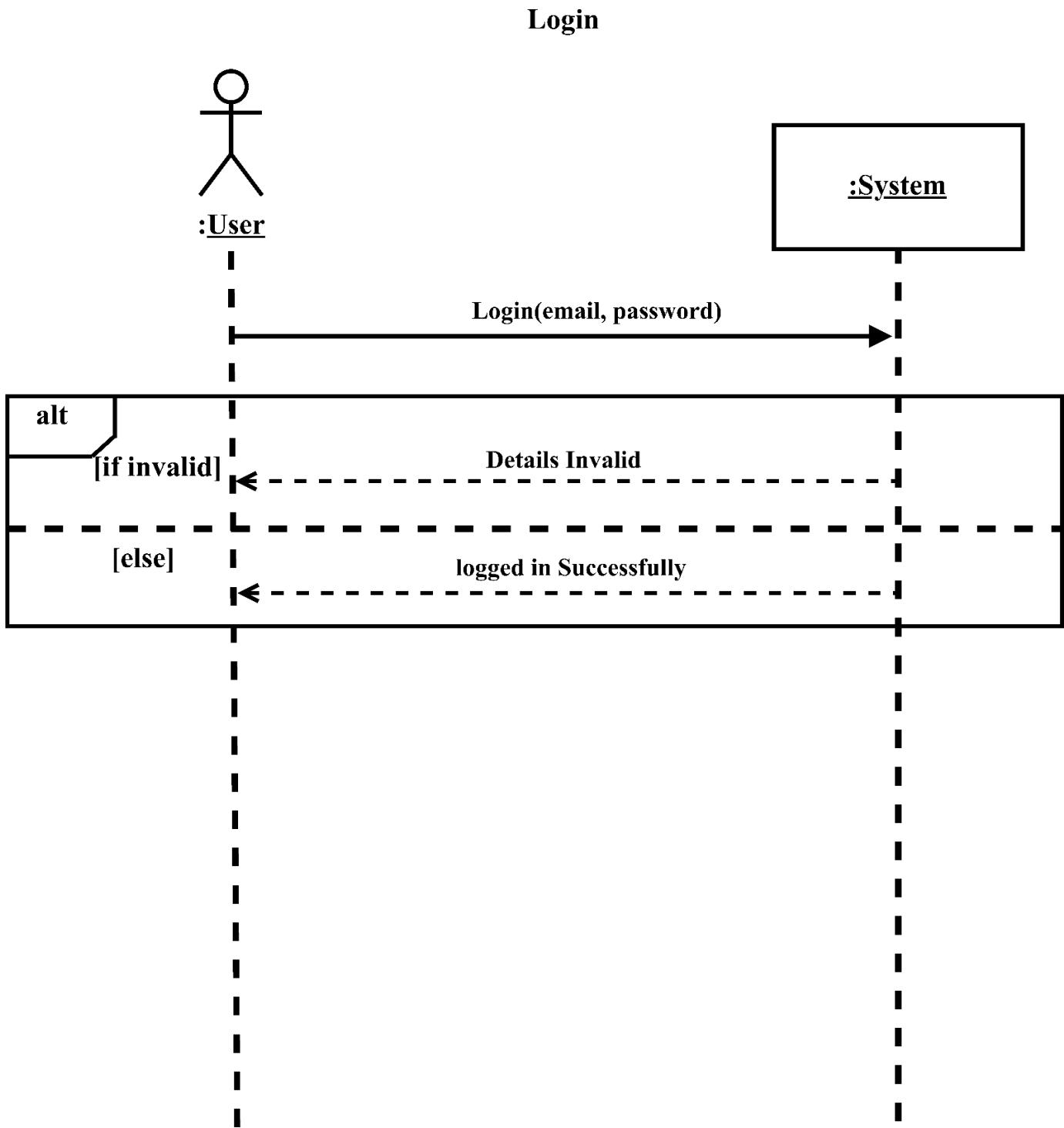
6.1.12. Generate History:

6.1. 12 Expanded Use Case Generate Report

Use case ID	UC-12	
Use case Name	Generate History	
Primary Actors	User, System	
Stakeholders and interests	User	Use this report to track his/her previous information.
	System	Manage report.
Precondition	Report tab is present in home page.	
Postcondition	Report successfully created.	
Normal flow	User	<ul style="list-style-type: none">- User will Download report provided by the system
	System	<ul style="list-style-type: none">- System will maintain report.- If user want to download reported of highlights, system will provide accurate report.
Alternative flow	<ul style="list-style-type: none">- System can save URL of the highlighted article and, system provide article to user after clicking on URL.- If user want to download report of highlights, system will deliver txt file to user.	

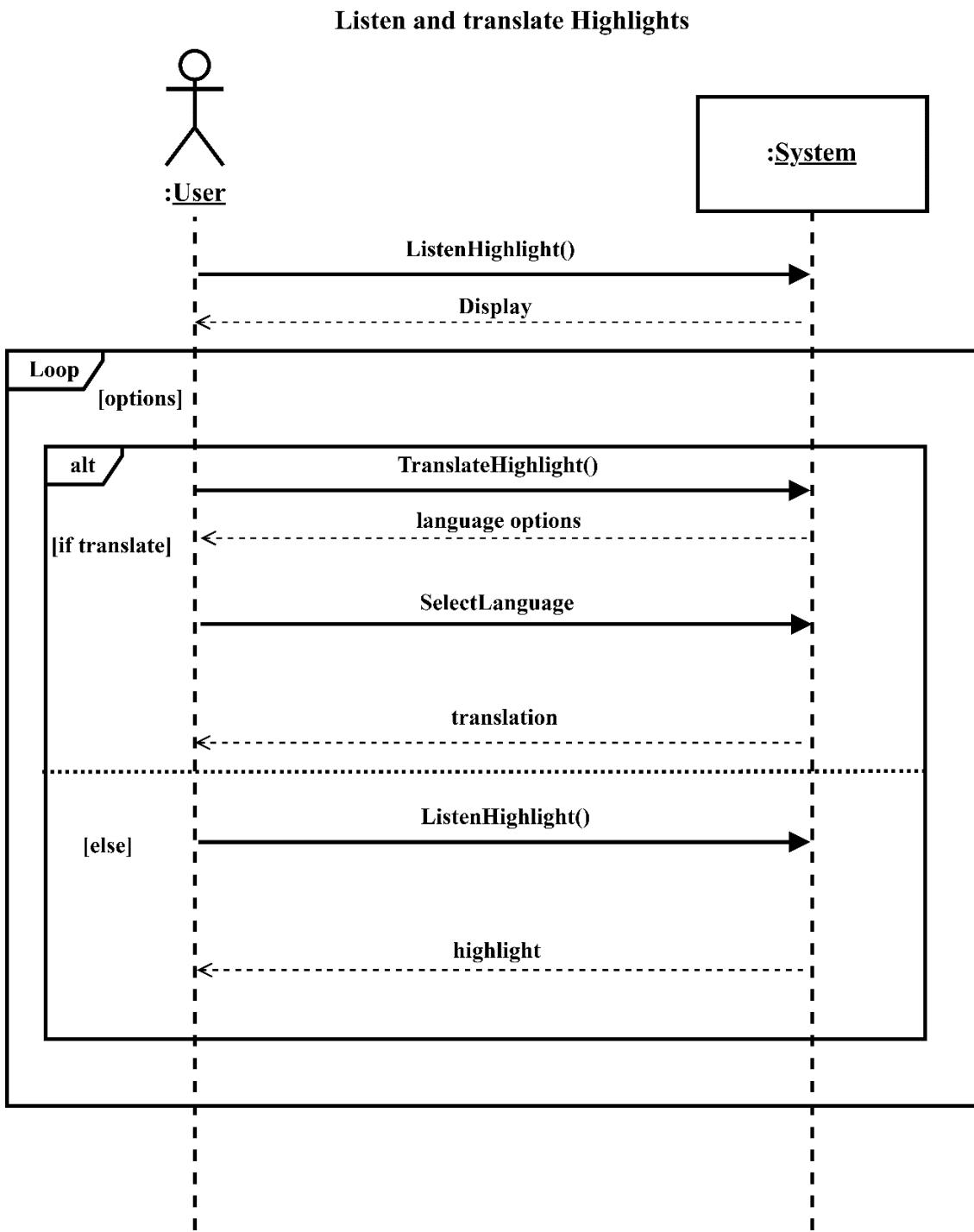
6.2. System Sequence Diagram

6.2.1. Login



6.2. 1 SSD Login

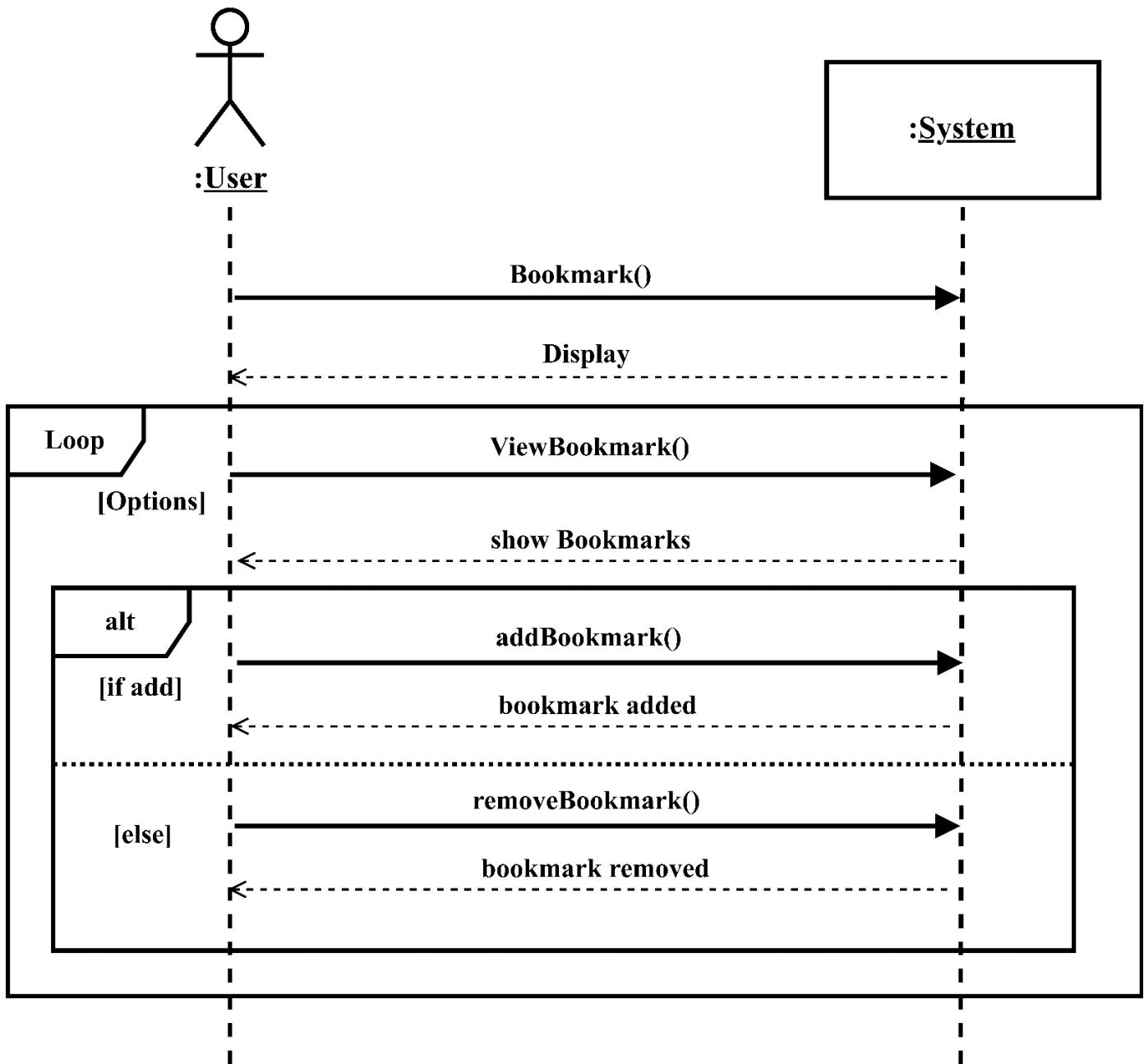
6.2.2. Listen Highlights



6.2. 2 SSD Listen Highlight

6.2.3. Manage Bookmarks

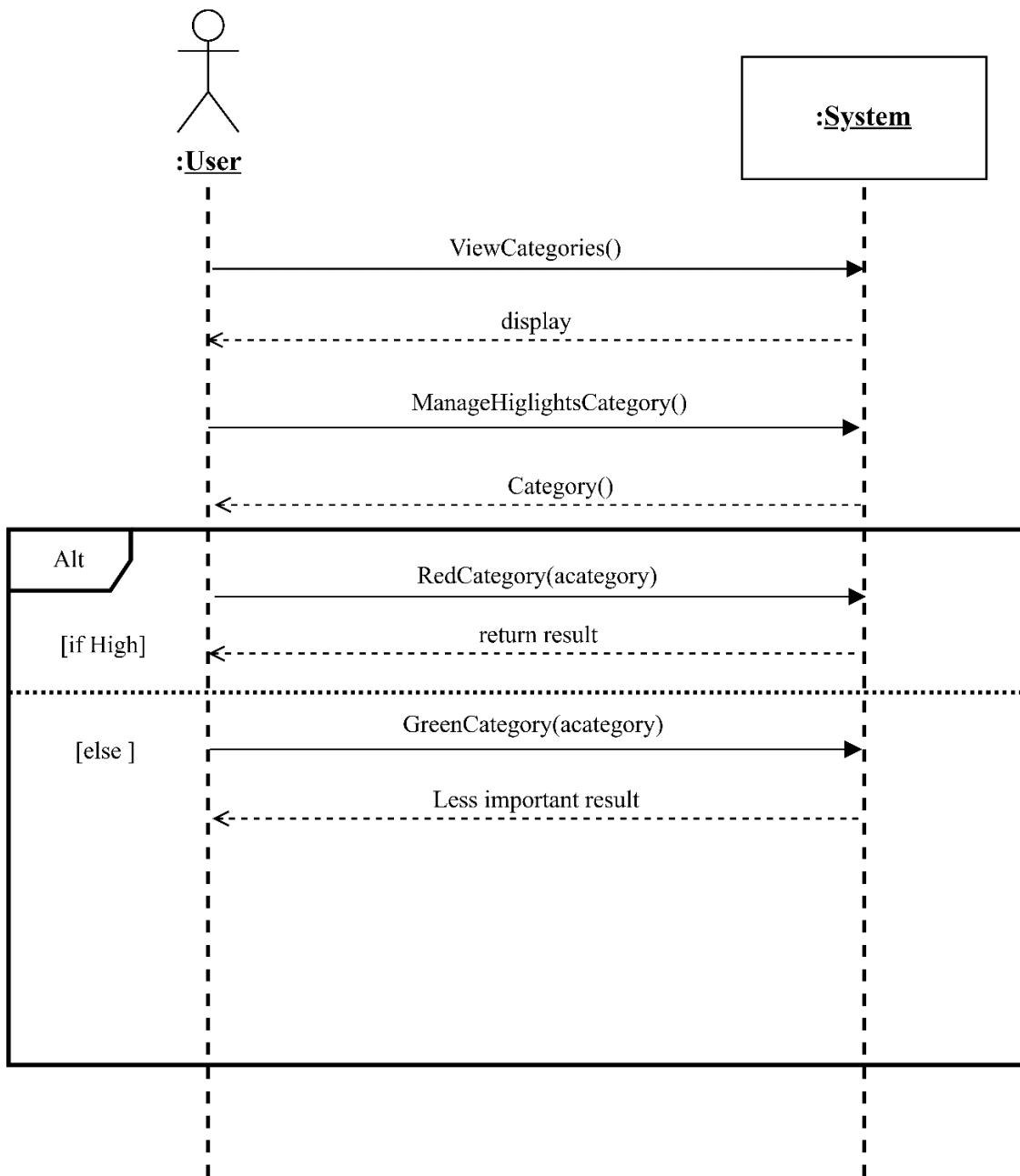
Manage Bookmark



6.2. 3 SSD Manage Bookmark

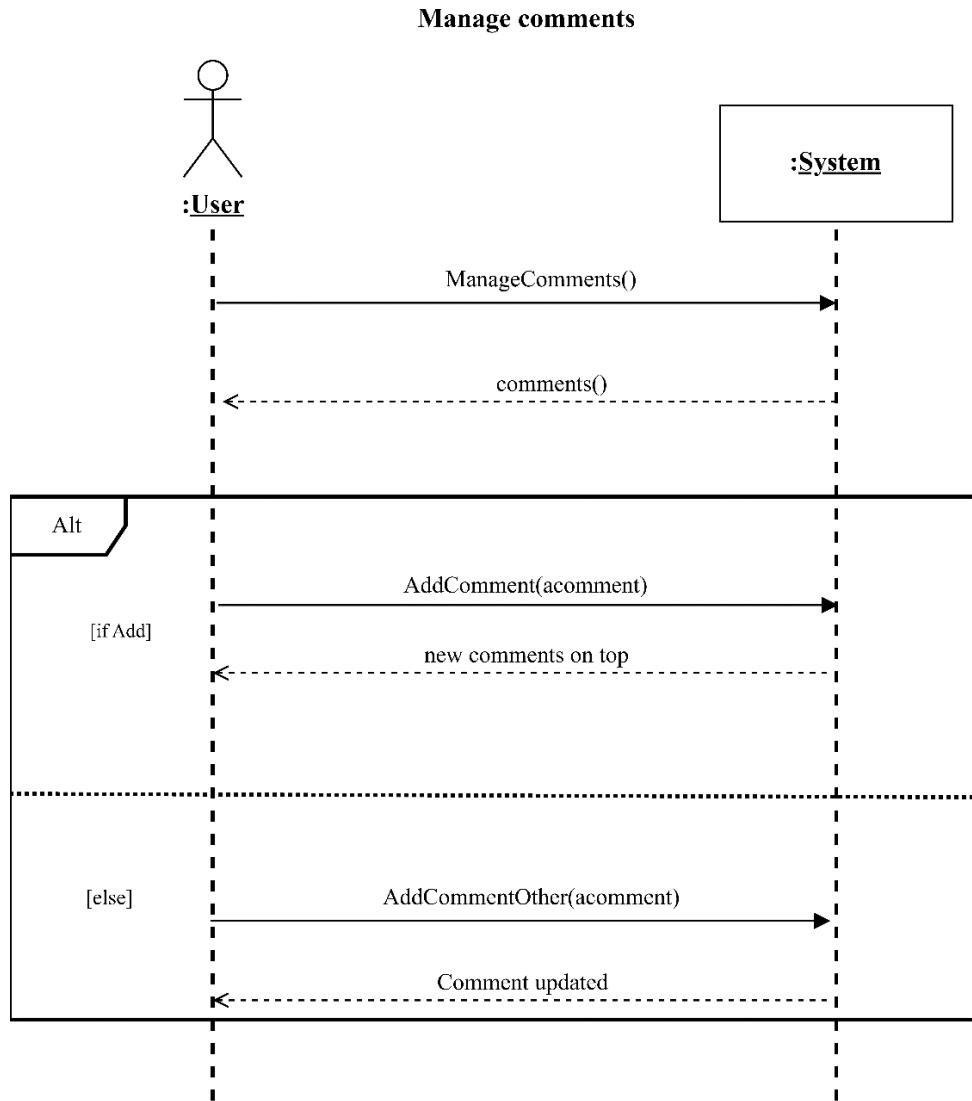
6.2.4. Manage Categories

Manage category



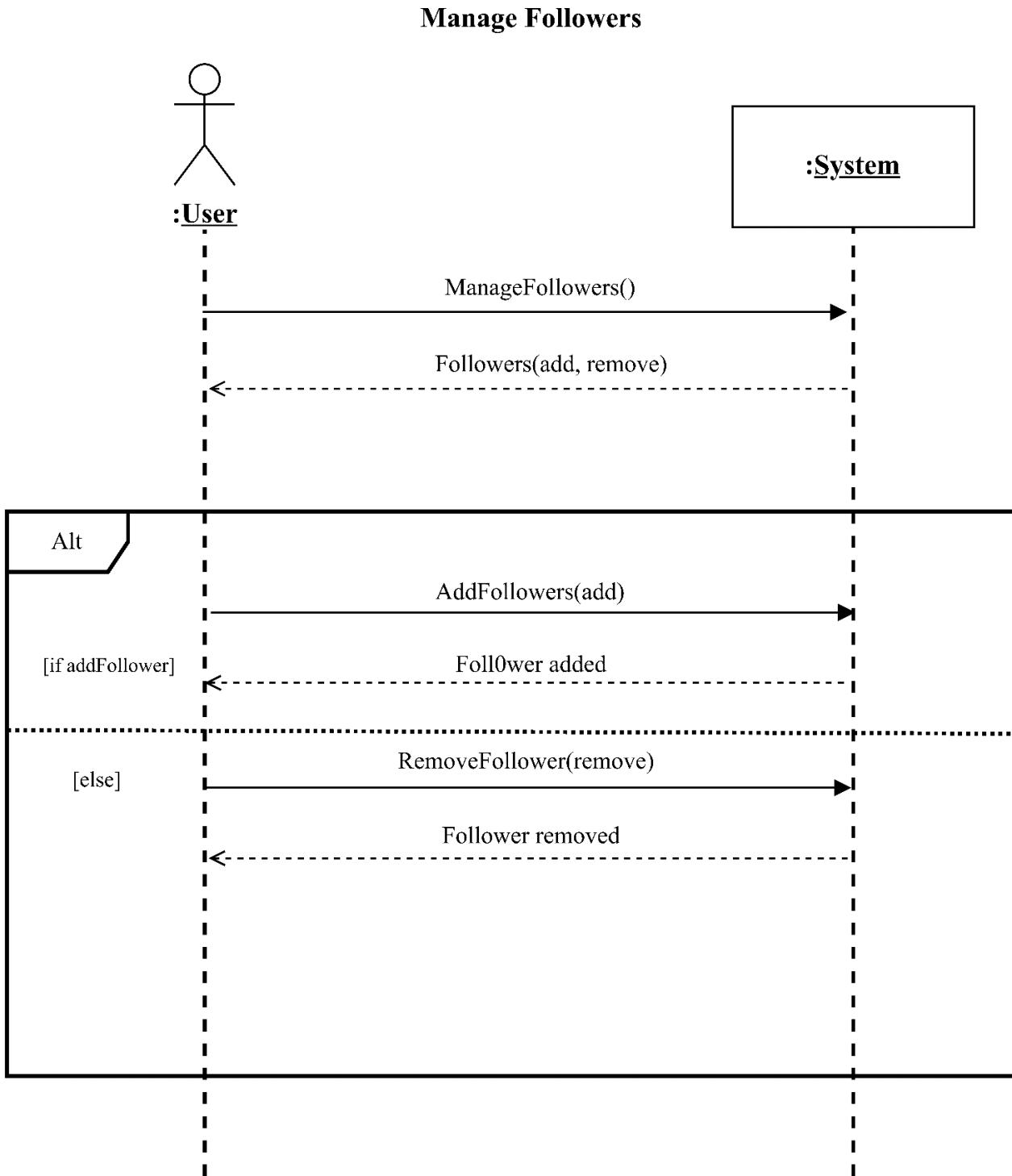
6.2.4 SSD Manage Categories

6.2.5. Manage Comments



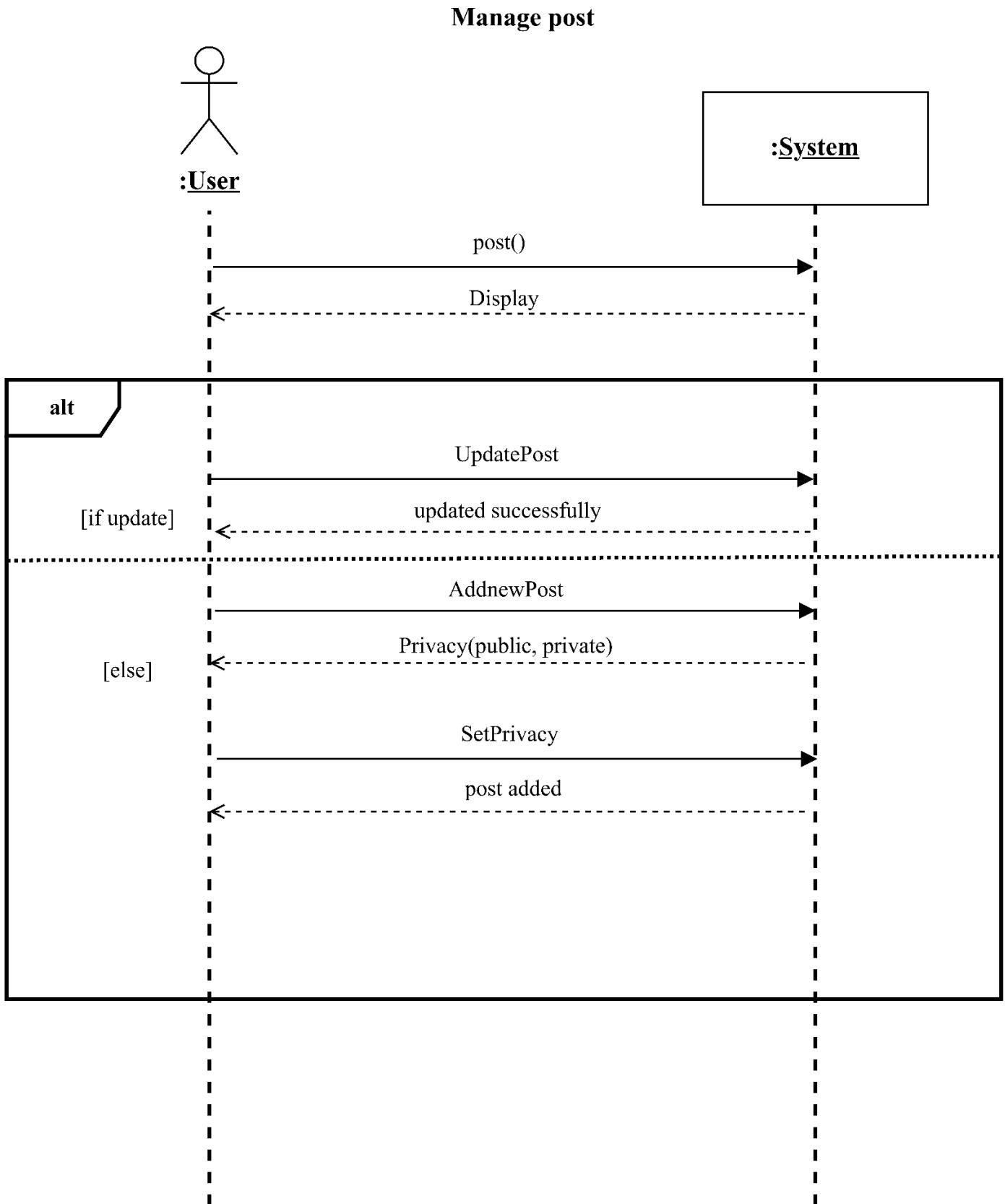
6.2.5 SSD Manage Comment

6.2.6. Manage Follower

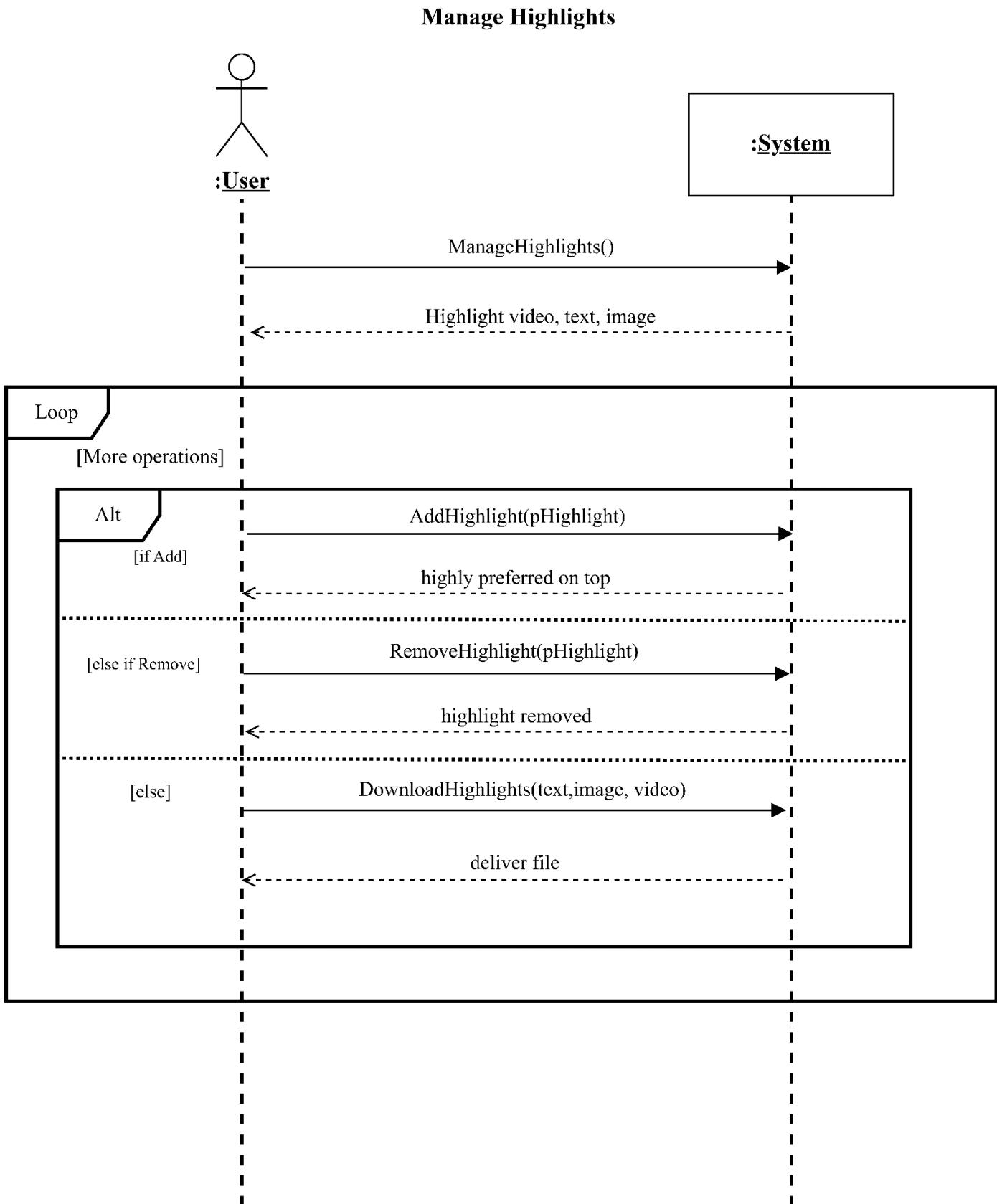


6.2.6 SSD Manage Follower

6.2.7. Manage Post

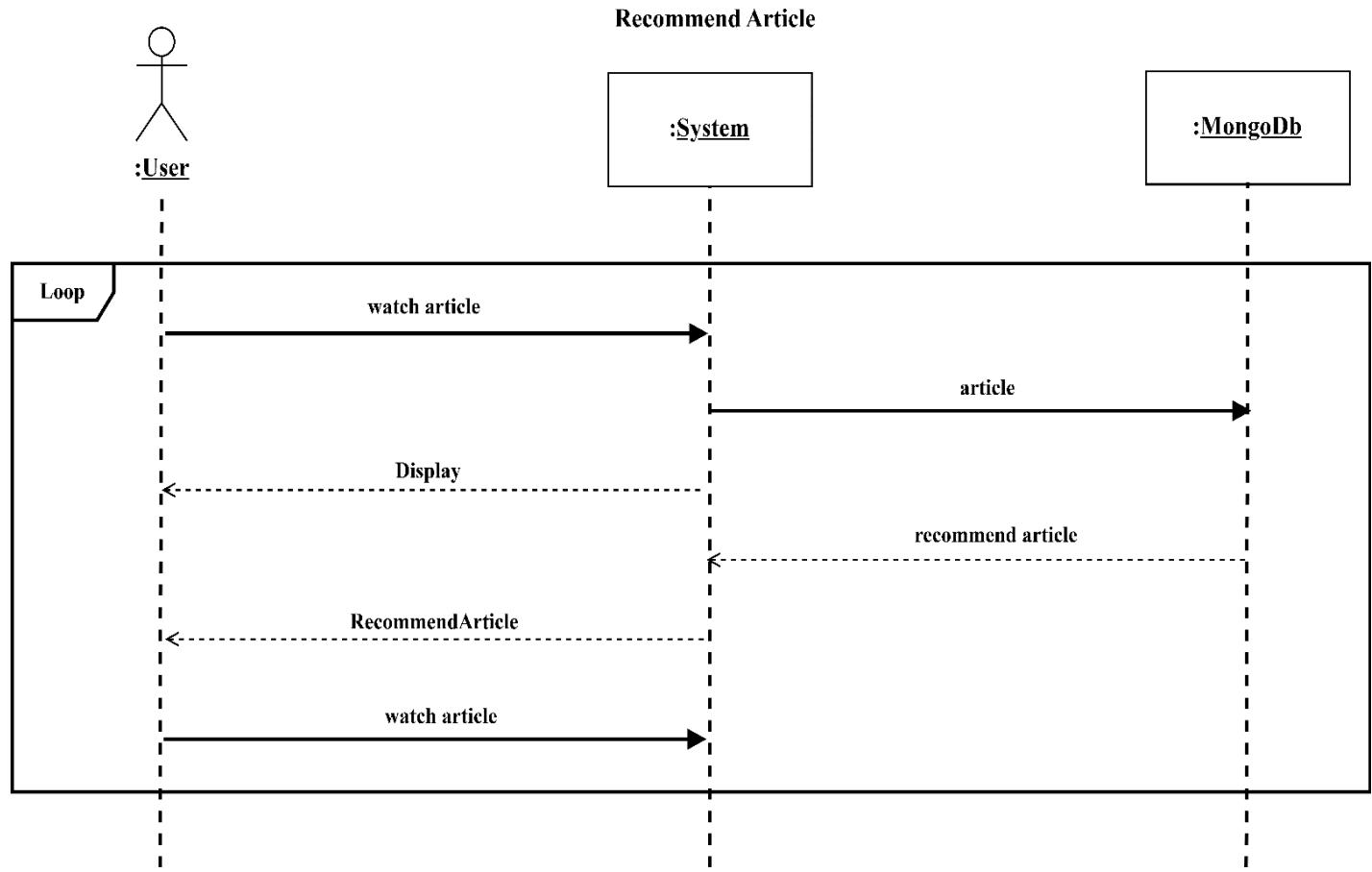


6.2.8. Manage Highlights



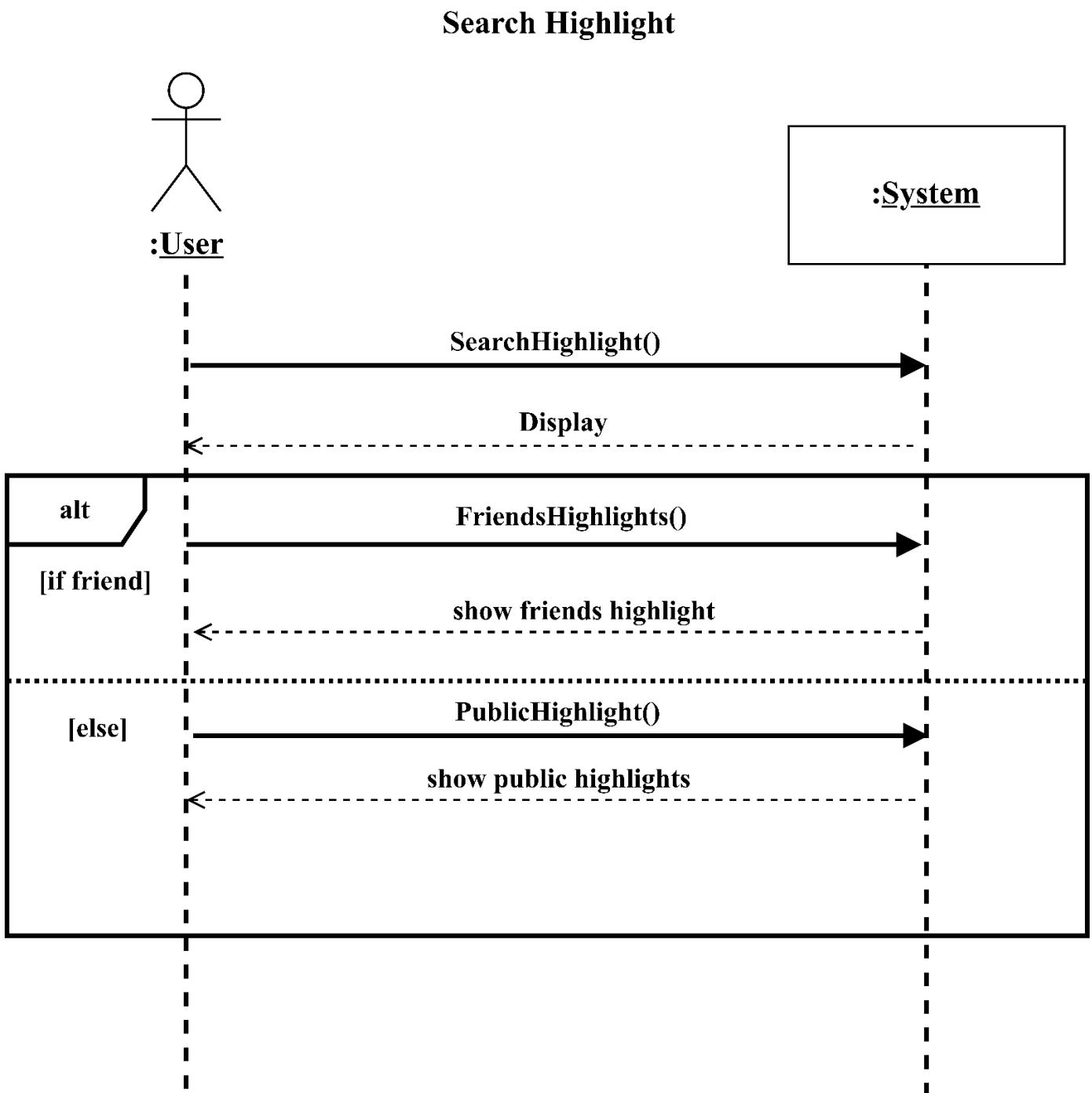
6.2.8 SSD Manage Highlights

6.2.9. Recommend Articles



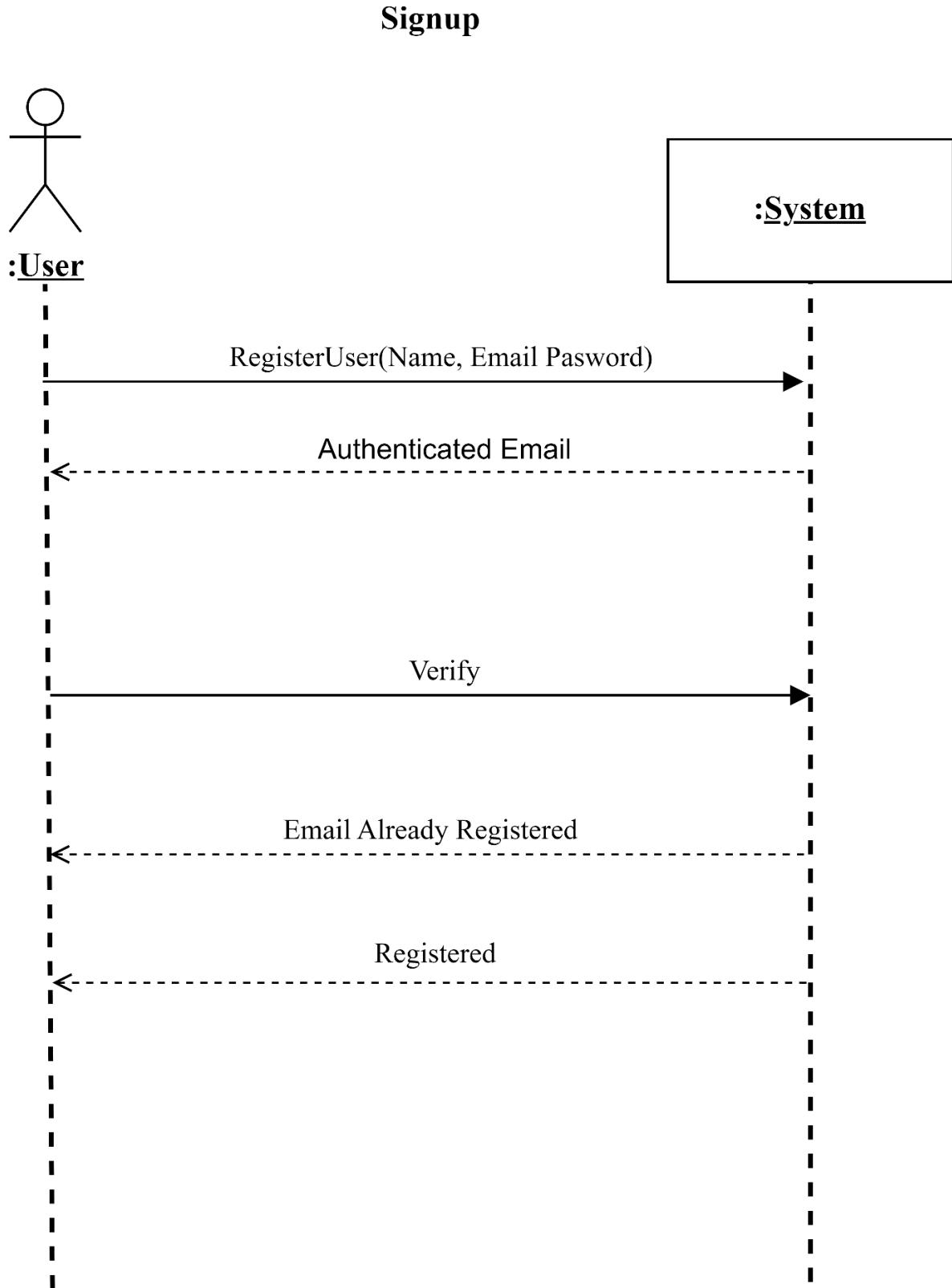
6.2.9 SSD Recommend Articles

6.2.10. Search Highlights



6.2. 10 SSD Search Highlights

6.2.11. Signup



6.2. 11 SSD Signup

6.3. Operational Contracts

6.3.1. Login

6.3. 1 OC Login

Contract ID	1
Operation	Login(Uid, password)
Responsibilities	User enter name and password and it authenticates the user.
Cross reference	Login
Exception	- User name and password is wrong. - User does not exist.
Pre-condition	User is registered.
Post-condition	User is logged in.

6.3.2. Listen Highlights

6.3. 2 OC Listen Highlight

Contract ID	2
Operation	ListenHighlight(Highlight: String)
Responsibilities	Generate listening platform for user
Cross reference	SSD: Listen Highlights
Exception	- internet connectivity issue. - listening platform doesn't found.
Pre-condition	User is on homepage of proposed system.
Post-condition	Listen result

6.3.3. Translate Highlights

6.3. 3 OC Translate Highlight

Contract ID	3
Operation	Translate(lang: string, highlight: string)
Responsibilities	Generate translation of user highlight
Cross reference	SSD: Translate Highlights
Exception	- internet connectivity issue. - translation platform doesn't found.
Pre-condition	User is on highlight page of proposed system.
Post-condition	Translated result.

6.3.4. Recommend Article

6.3. 4 OC recommend article

Contract ID	4
Operation	RecommendArticles(URL: string, id: int)
Responsibilities	Recommend articles about related topic.
Cross reference	SSD: Recommended article
Exception	- Internet connectivity issue. - Related articles doesn't found.
Pre-condition	User is on recommended article page of proposed system.
Post-condition	Related articles.

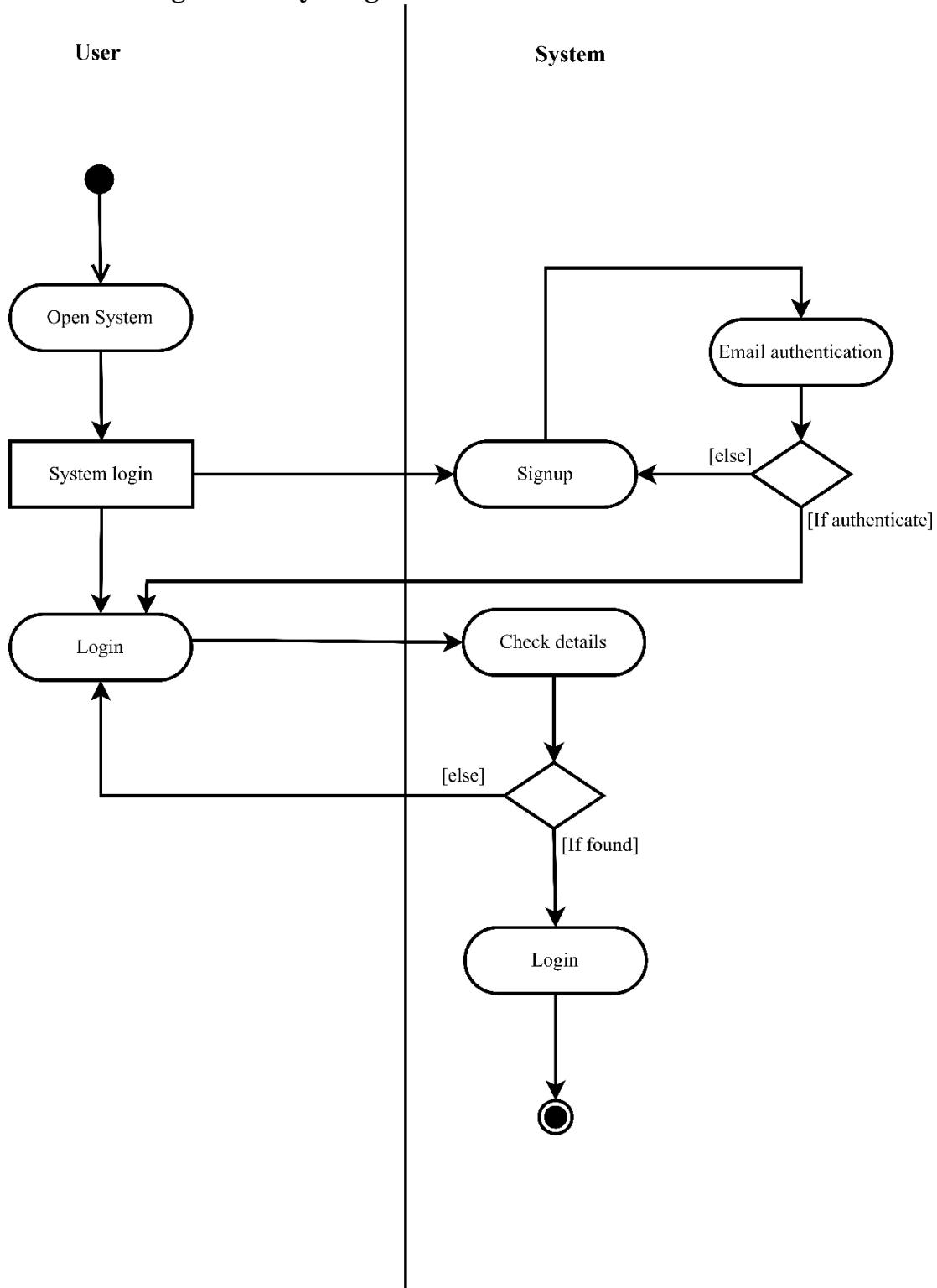
6.3.5. Logout

6.3. 5 OC Logout

Contract ID	13
Operation	Logout(Uid)
Responsibilities	Logout from system.
Cross reference	Logout
Exception	Internet connectivity issue.
Pre-condition	User is logged in.
Post-condition	User is logged out.

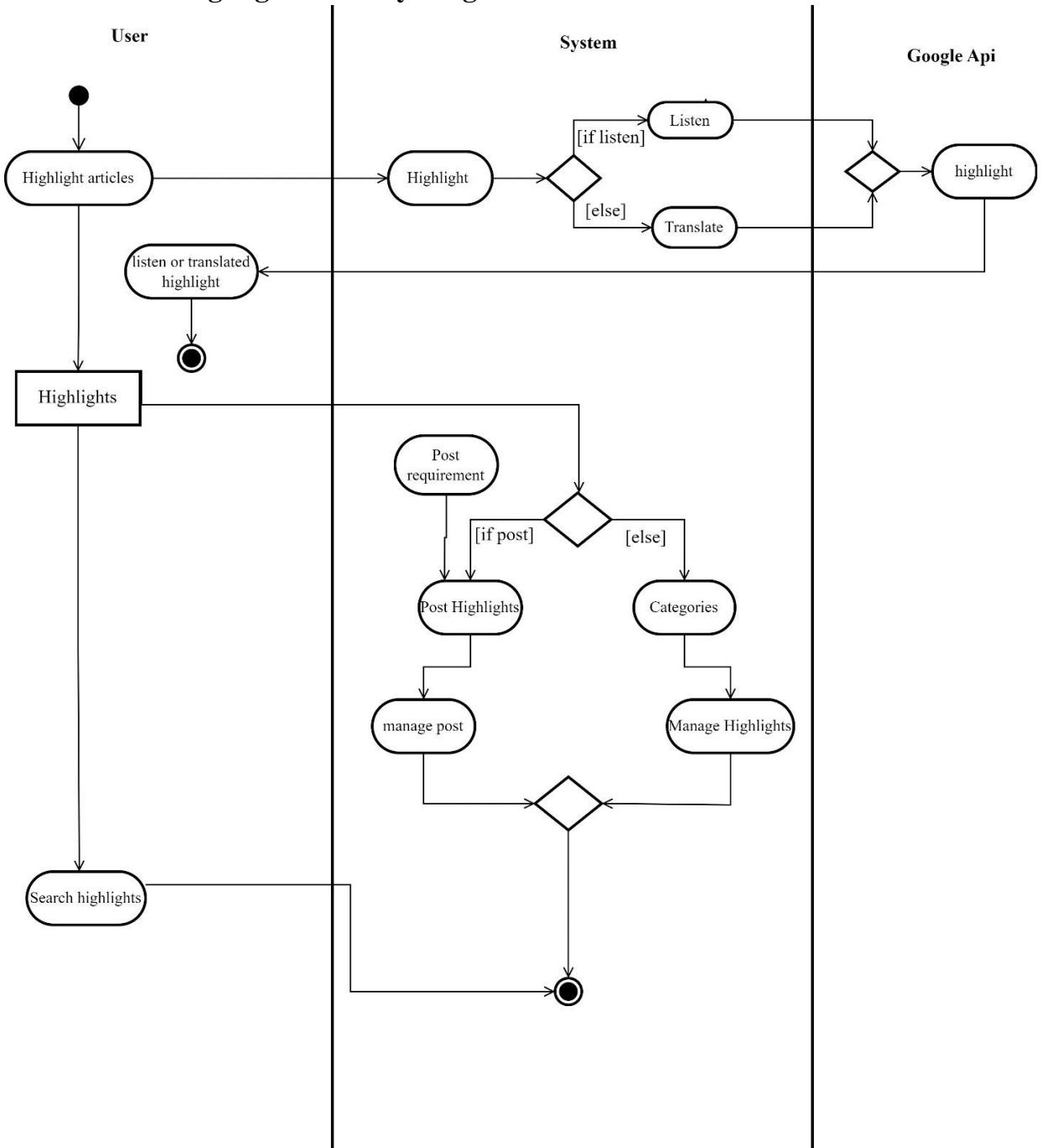
6.4. Activity Diagram

6.4.1. Login Activity Diagram



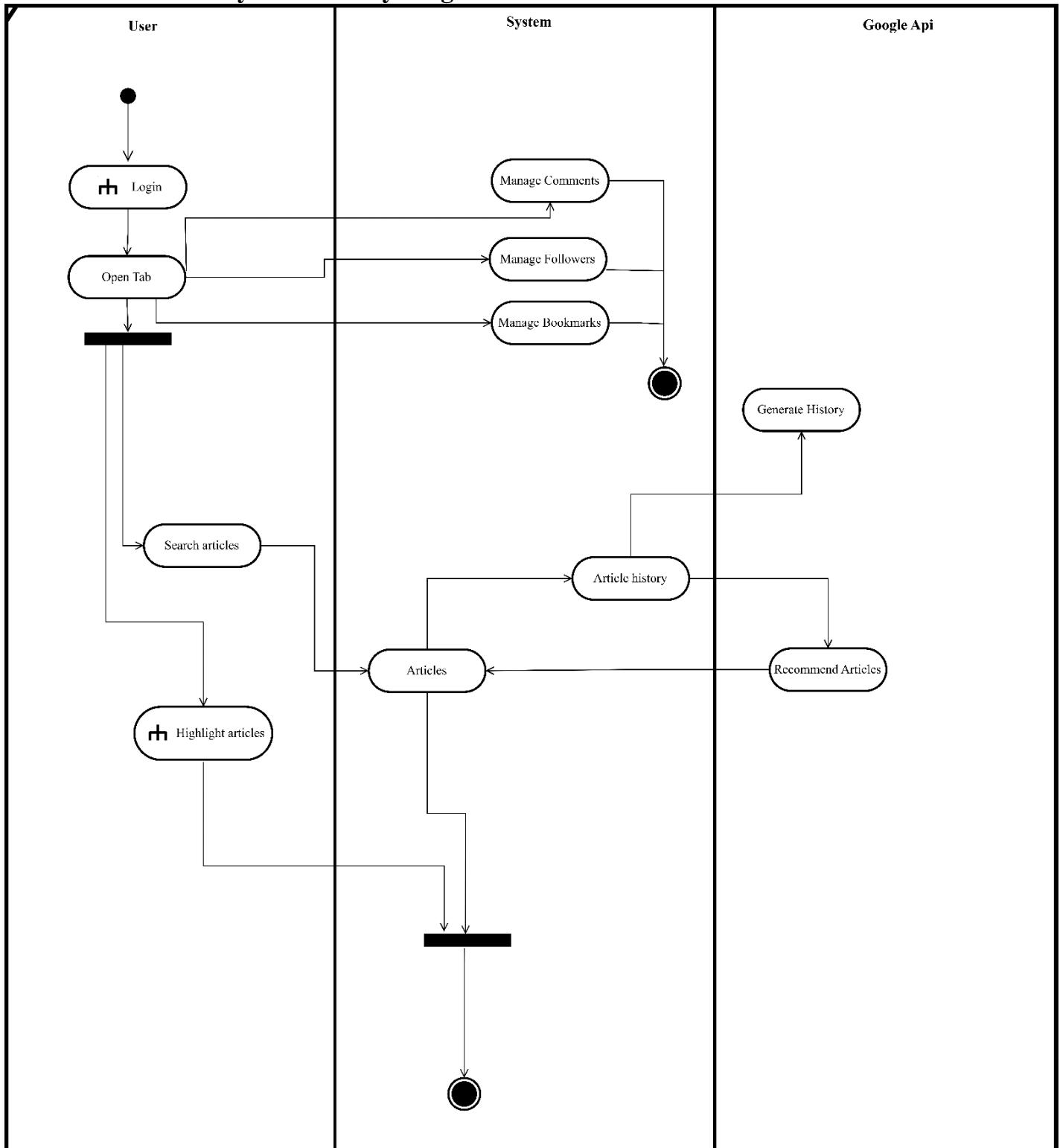
6.4. 1 Login Activity Diagram

6.4.2. Highlights Activity Diagram



6.4.2 Highlights Activity Diagram

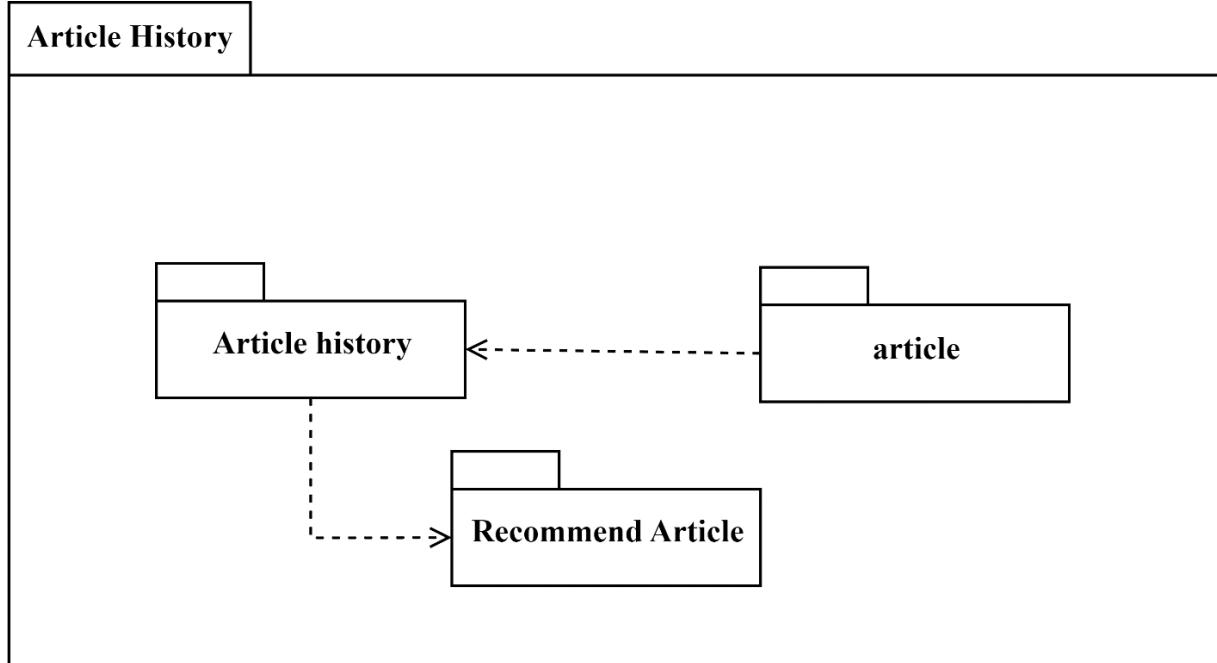
6.4.3. System Activity Diagram



6.4. 3 System Activity Diagram

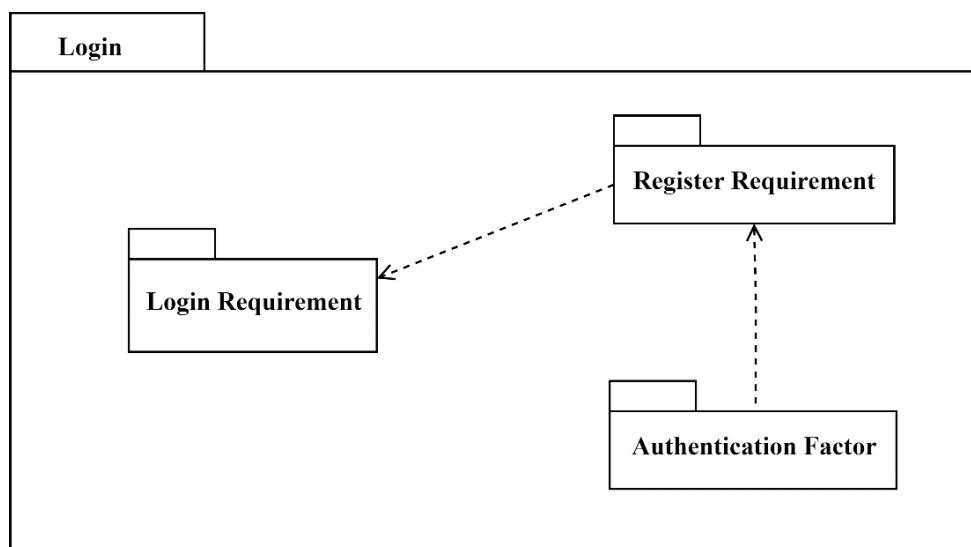
6.5. Package Diagram

6.5.1. Generate History



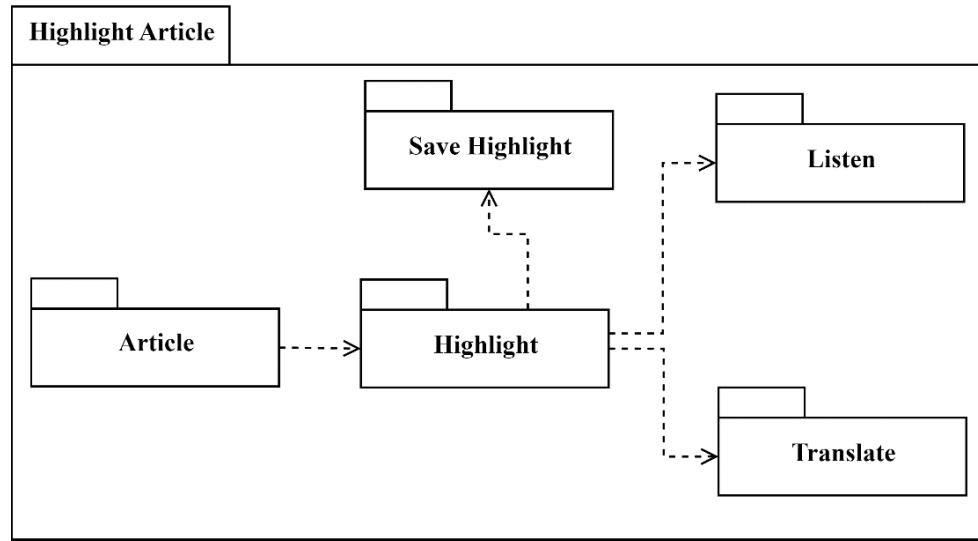
6.5. 1 Article History Package Diagram

6.5.2. Login



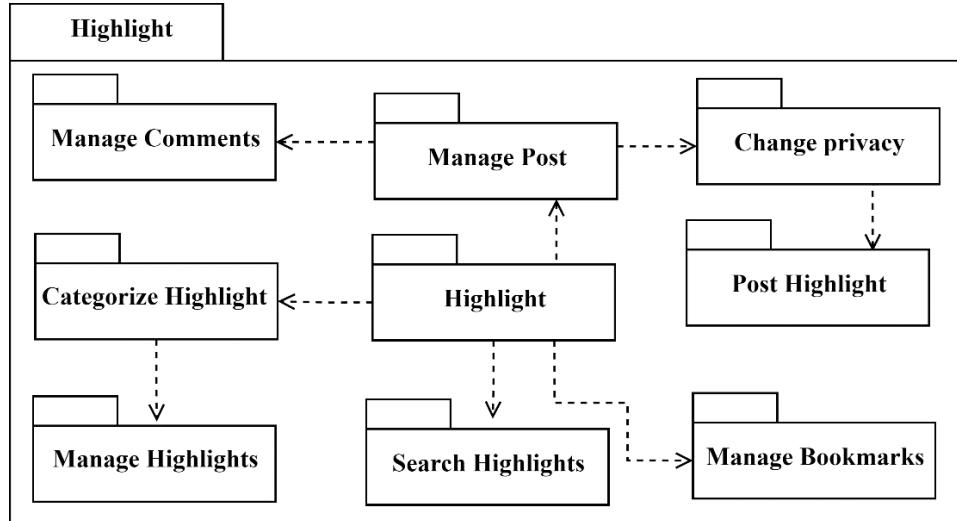
6.5. 2 Login Package Diagram

6.5.3. Highlight Article



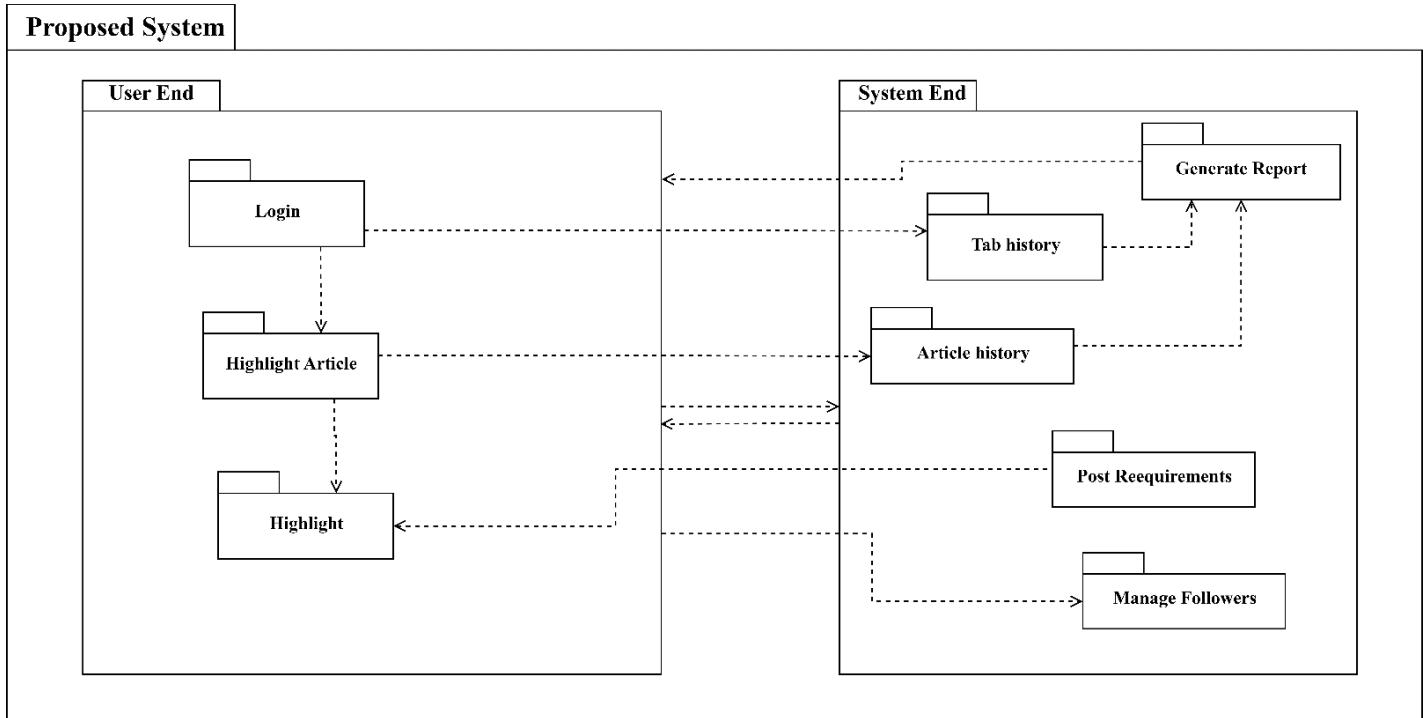
6.5. 3 Highlight Article Package Diagram

6.5.4. Highlight



6.5. 4 Highlight Package Diagram

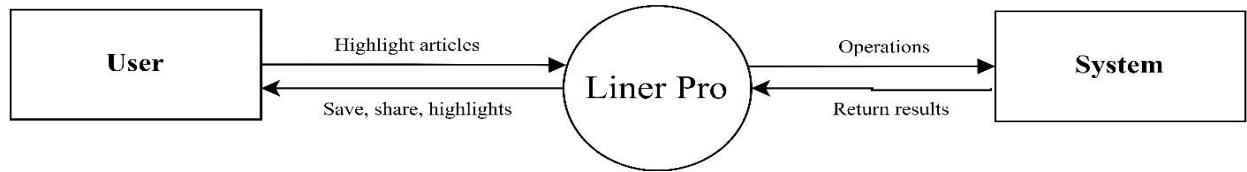
6.5.5. Proposed System



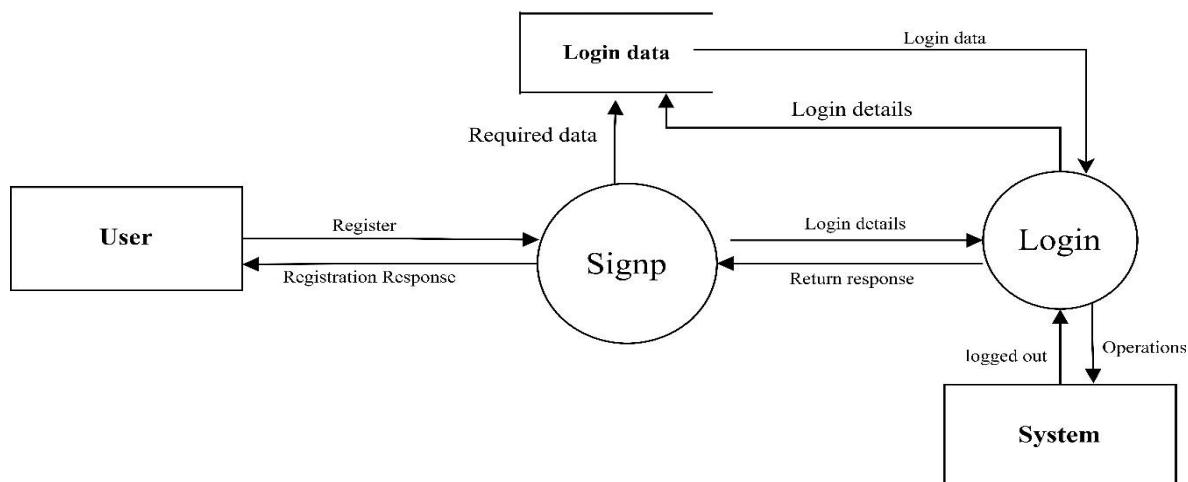
6.5.5 Proposed System Package Diagram

6.6. Data Flow Diagram

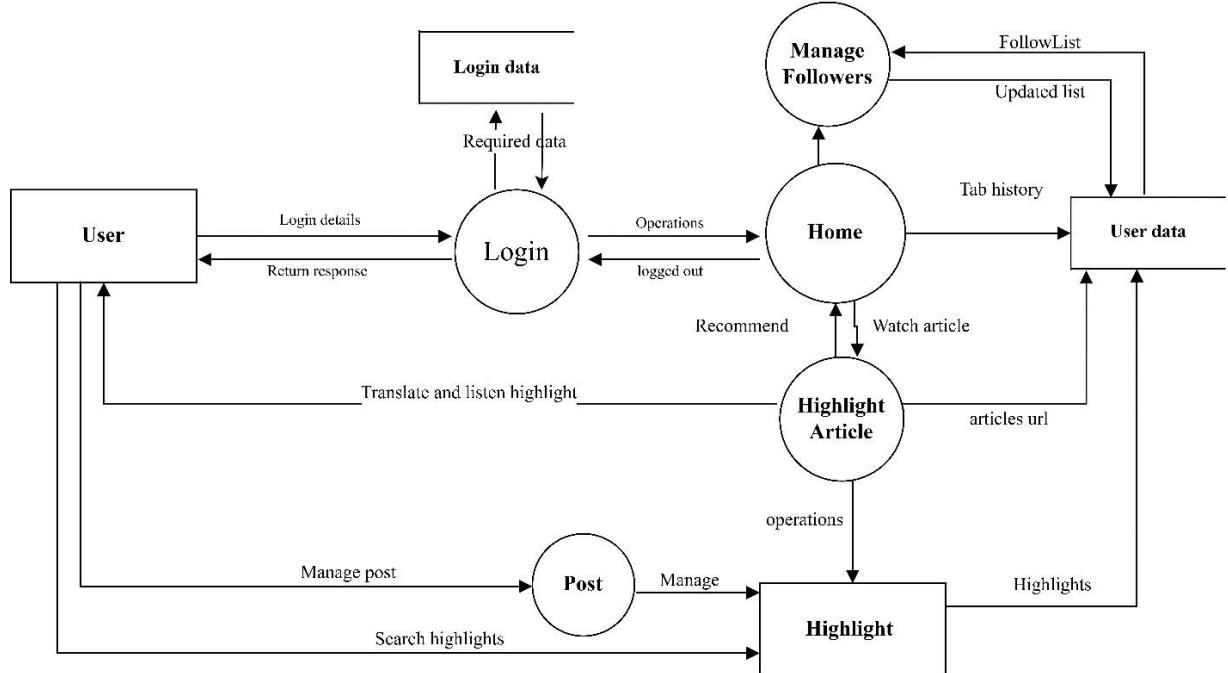
Level 0



Level 1

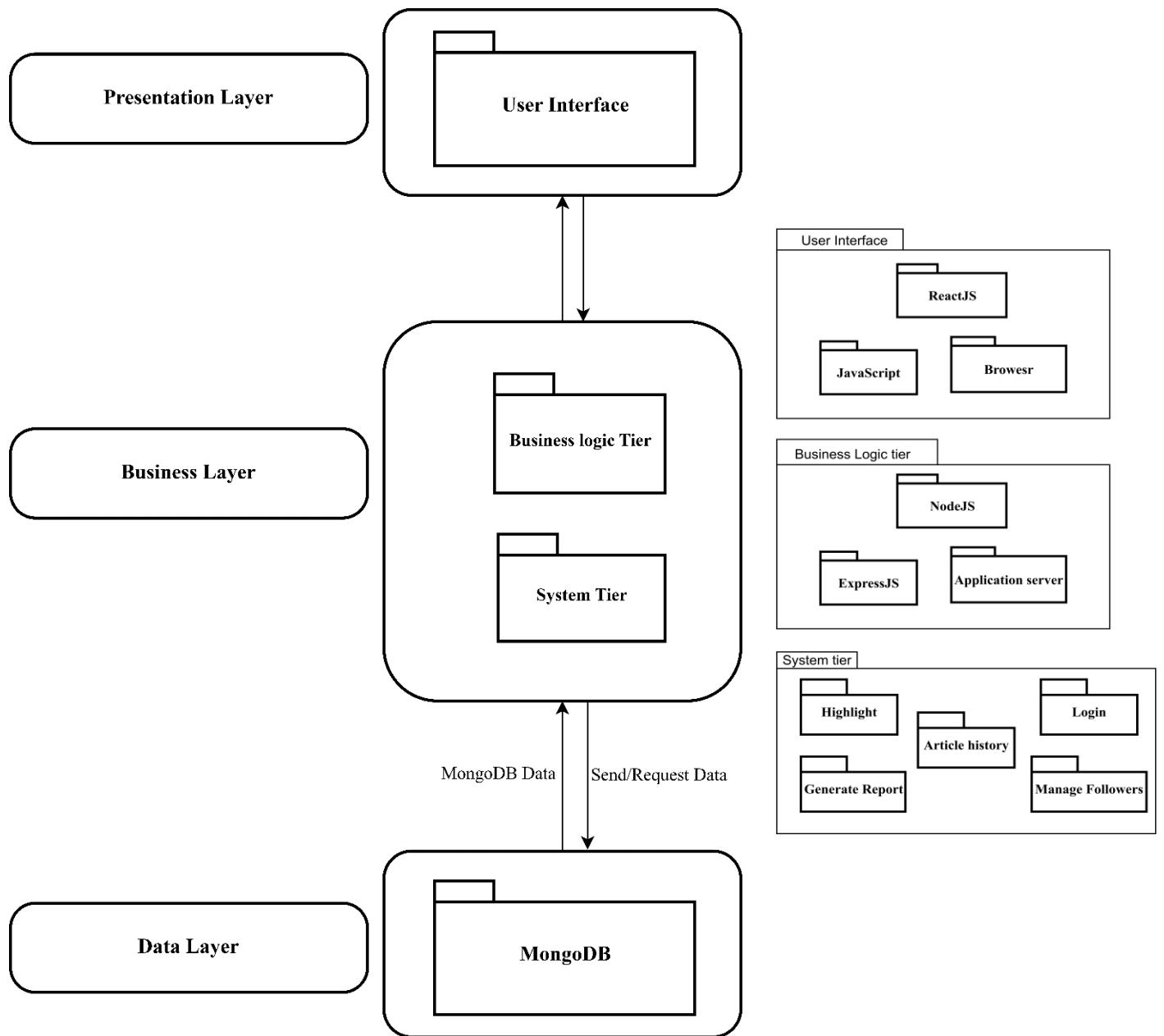


Level 2



6.6. 1 Data Flow Diagram

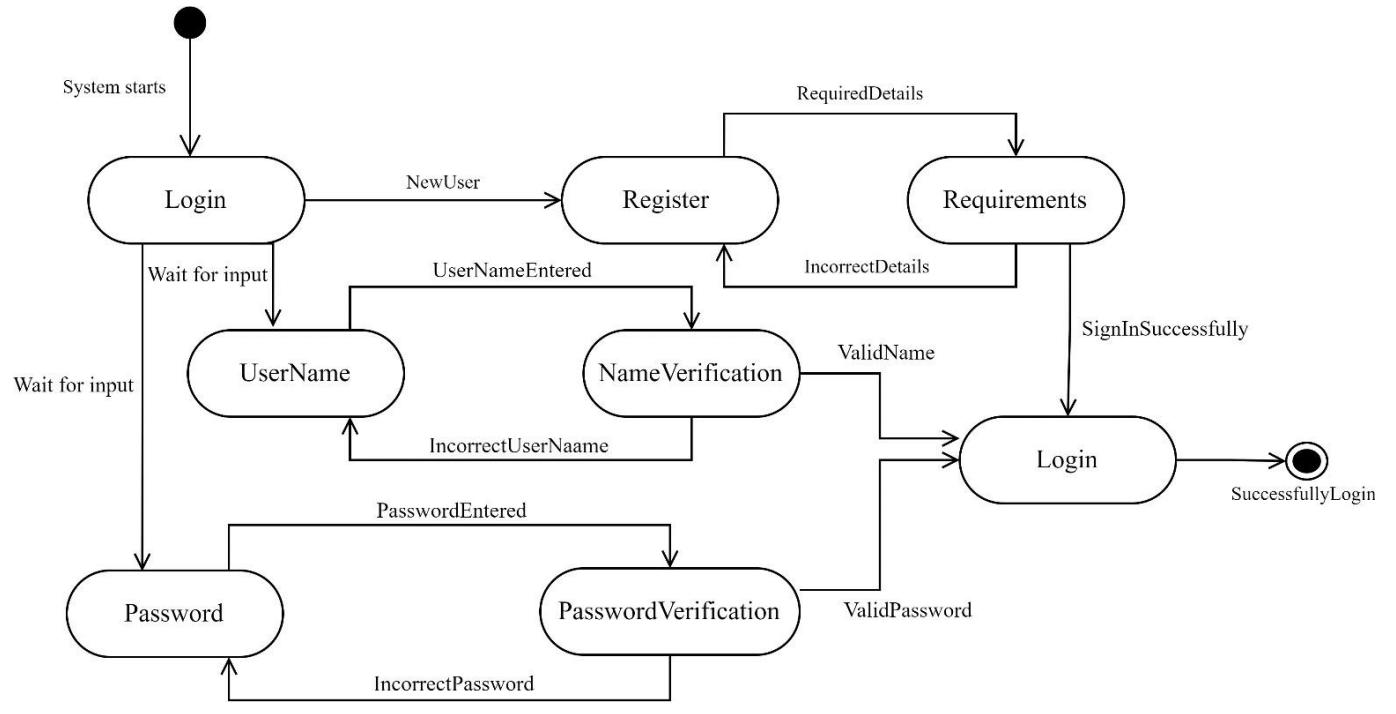
6.7. Layer Architecture



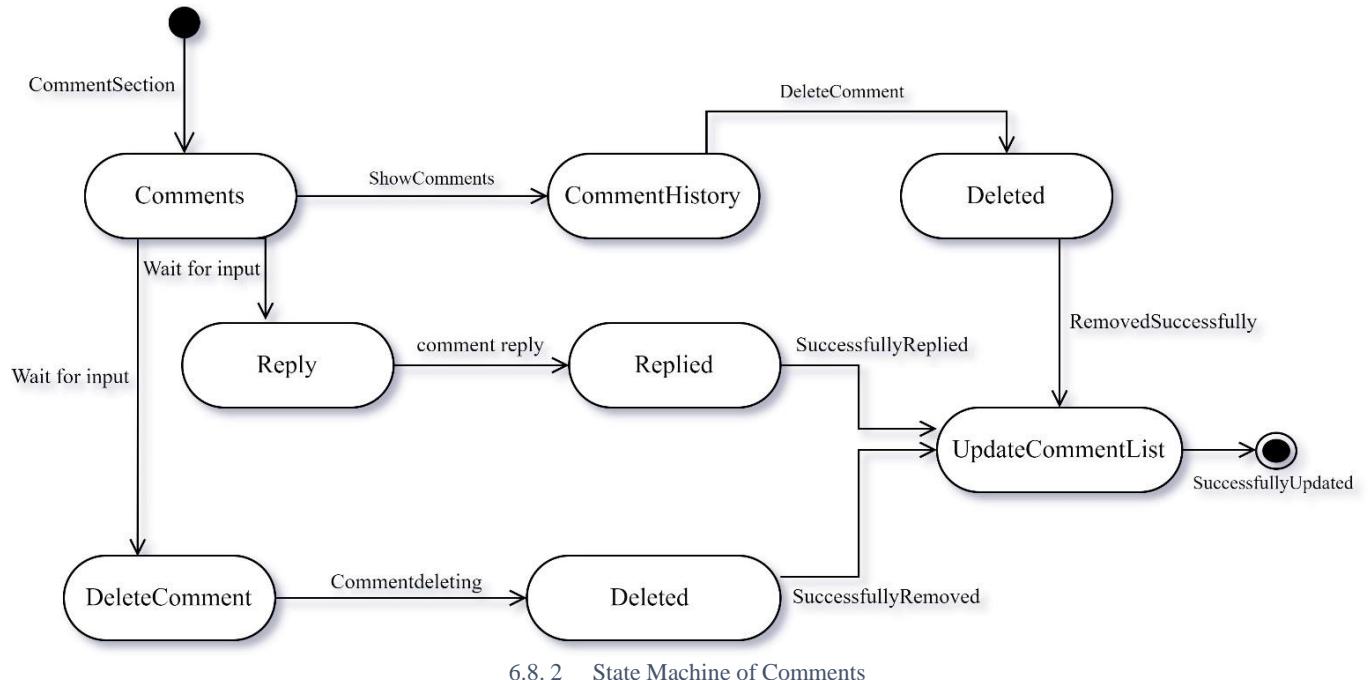
6.7. 1 Layer Architecture Diagram

6.8. State Machine Diagram

6.8.1. Login and Register

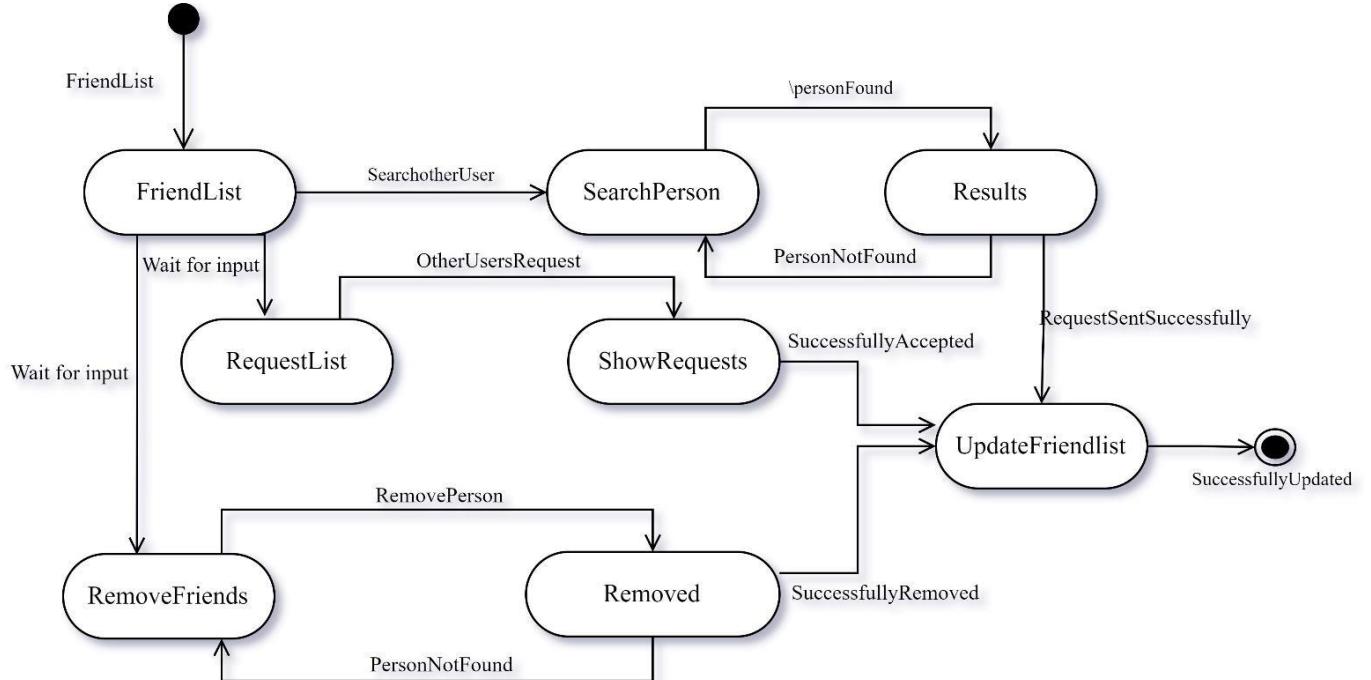


6.8.2. Comments



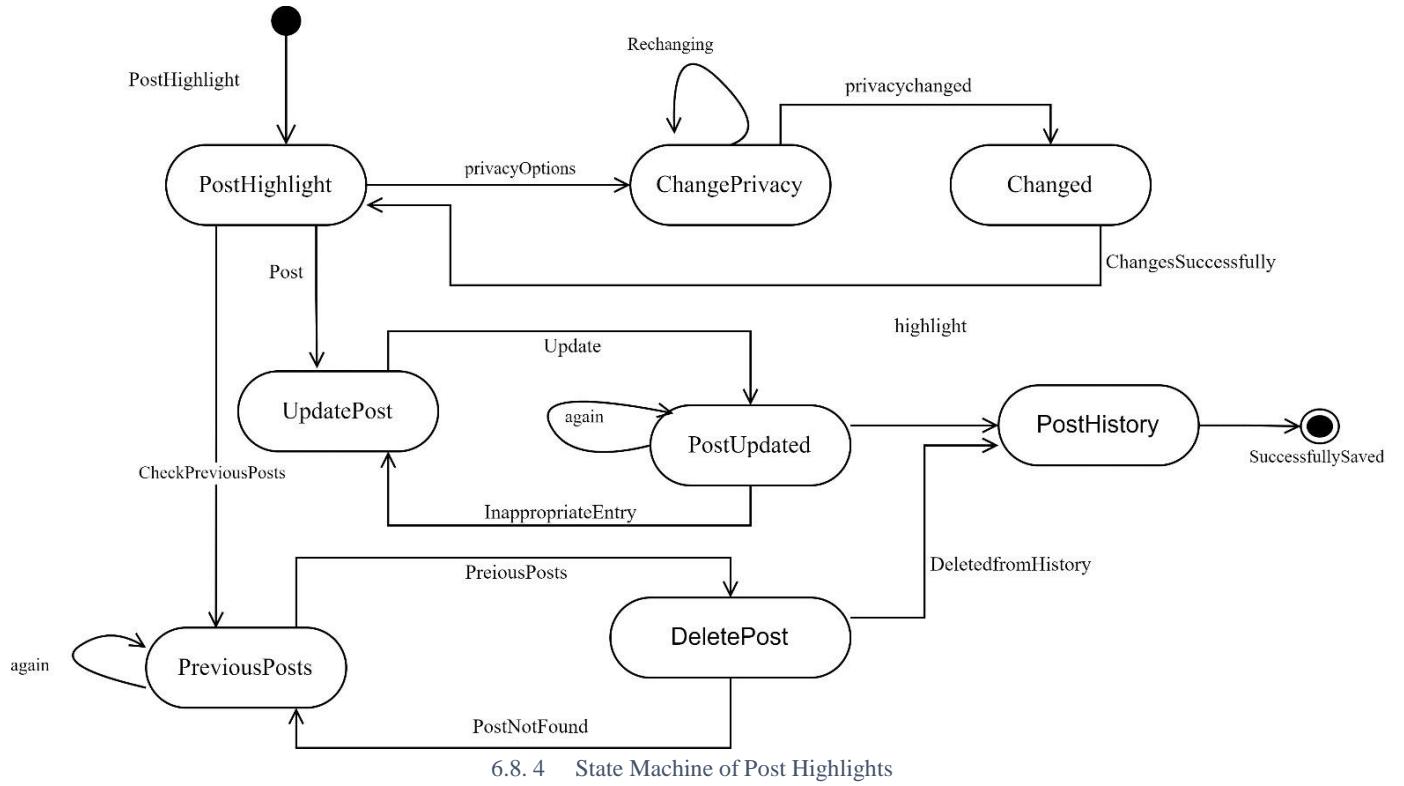
6.8.2 State Machine of Comments

6.8.3. Follower list

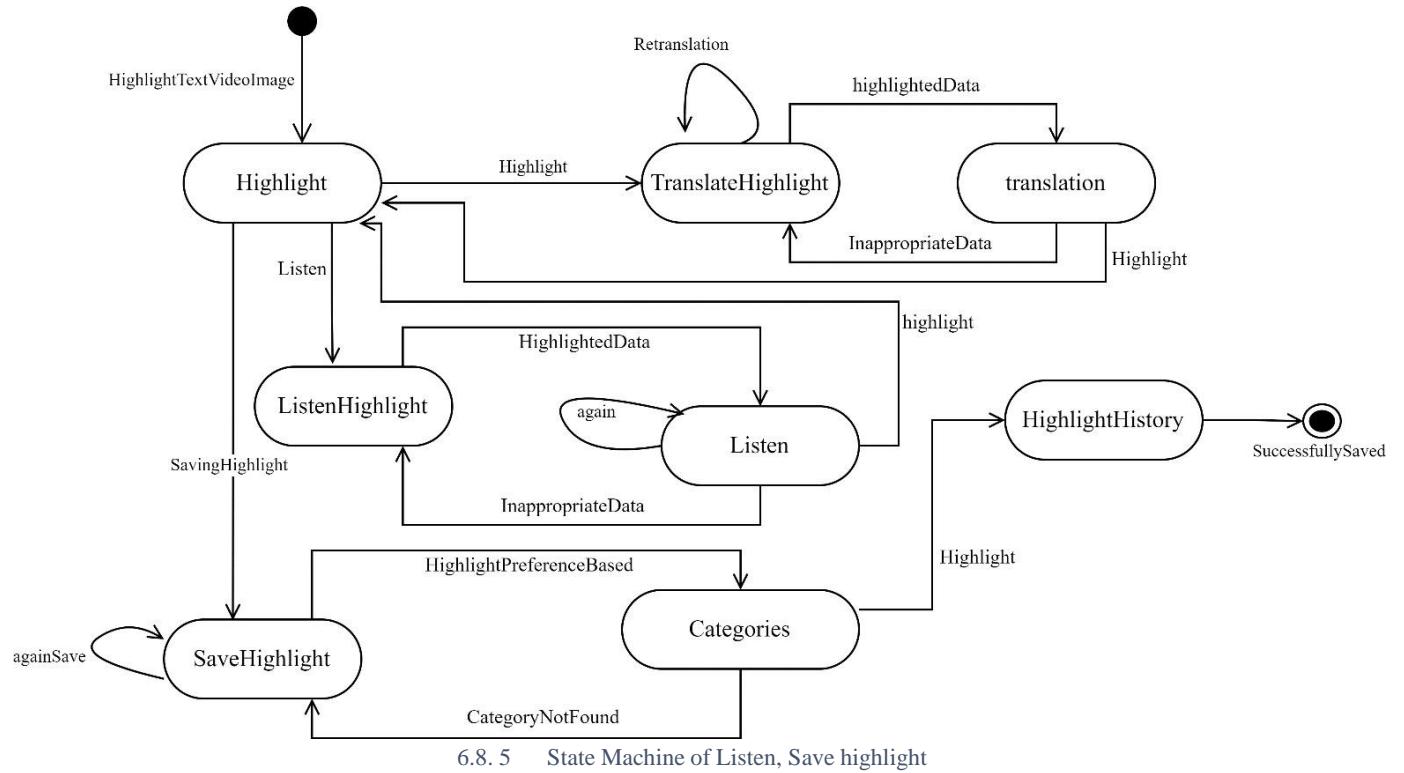


6.8.3 State Machine of Follower list

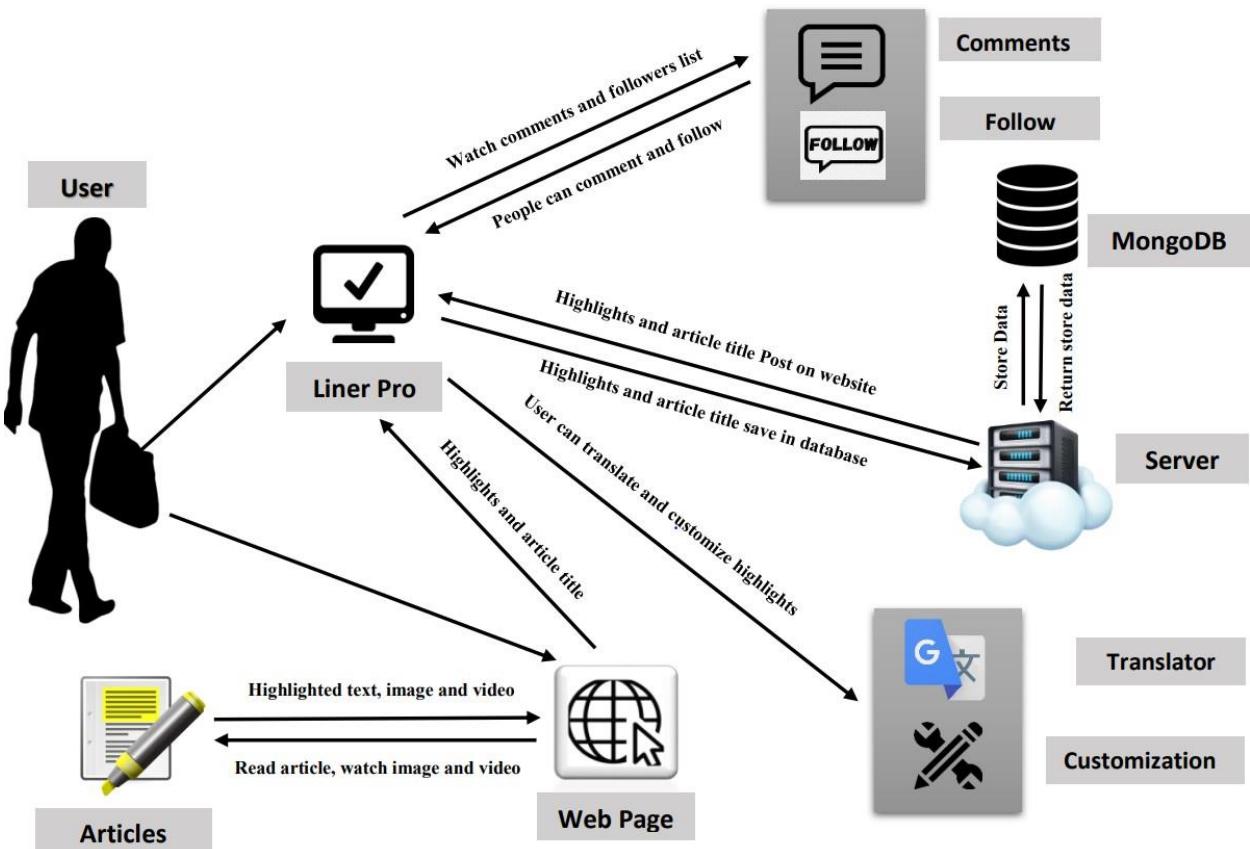
6.8.4. Post Highlight



6.8.5. Listen, Save, and Translate



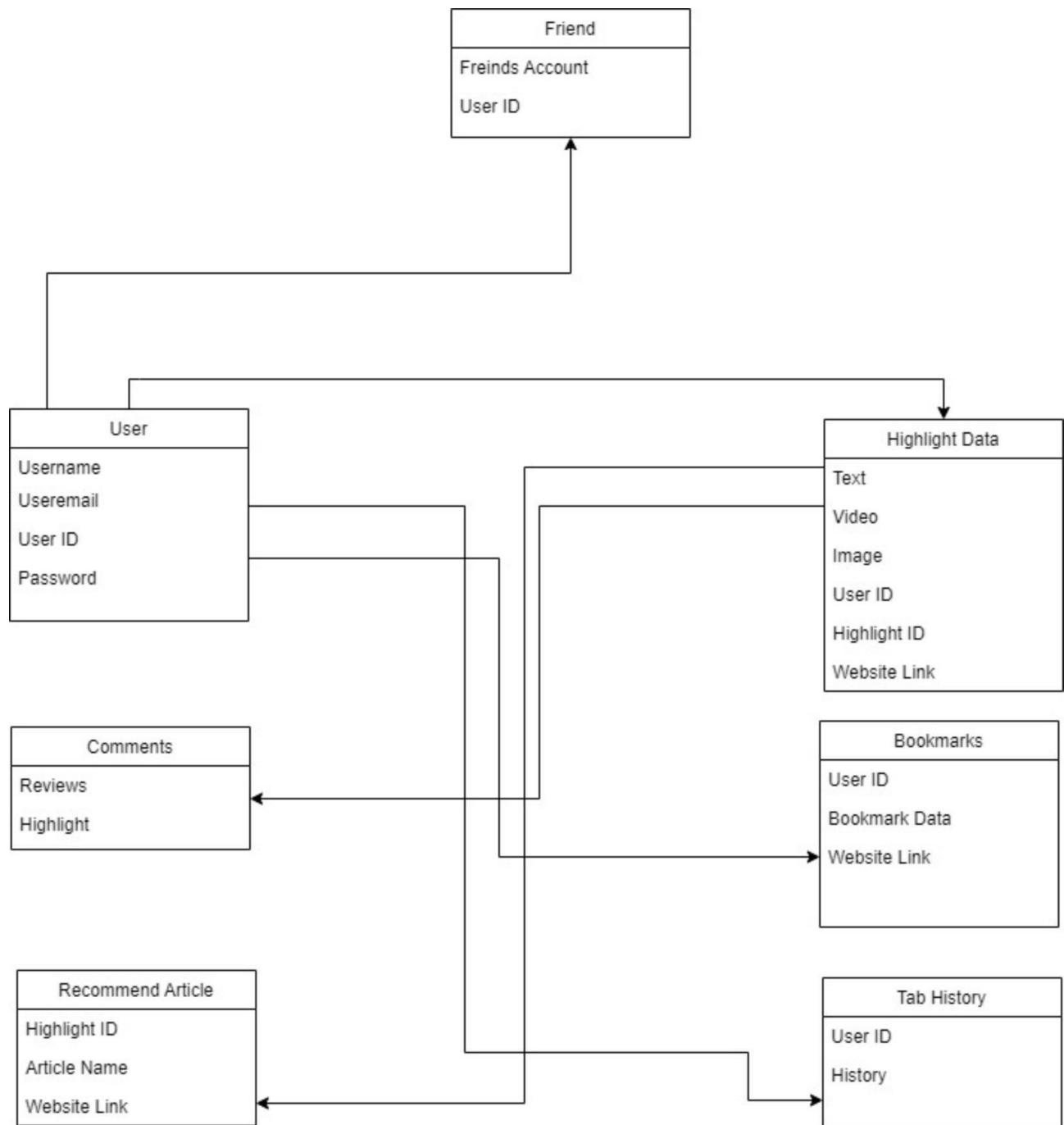
6.9. Architecture Diagram



6.9.1 Architecture Diagram

6.10. Database Schema

comments	datas	friends	links
Storage size: 20.48 kB Documents: 7 Avg. document size: 195.00 B Indexes: 1 Total index size: 36.86 kB	Storage size: 24.58 kB Documents: 16 Avg. document size: 791.00 B Indexes: 1 Total index size: 36.86 kB	Storage size: 20.48 kB Documents: 3 Avg. document size: 175.00 B Indexes: 1 Total index size: 36.86 kB	Storage size: 20.48 kB Documents: 11 Avg. document size: 112.00 B Indexes: 1 Total index size: 36.86 kB
tokens	users	watings	
Storage size: 20.48 kB Documents: 1 Avg. document size: 253.00 B Indexes: 3 Total index size: 110.59 kB	Storage size: 20.48 kB Documents: 12 Avg. document size: 209.00 B Indexes: 1 Total index size: 36.86 kB	Storage size: 20.48 kB Documents: 8 Avg. document size: 182.00 B Indexes: 1 Total index size: 36.86 kB	
6.10.1. 1 Physical Schema			



6.10.1.2 Logical Schema

7. Test Cases

7.1. Manual Test Cases

7.1.1. Generate History

7.1.1 Test Case Generate Report

Test cases for UC-12: Generate History						
Module Name:		Generate report				
ID	Status	Test detail	Test Data	Expected Result	Actual Result	Status Pass/Fail
1.1	Executed	Show Report	Report Details	<ul style="list-style-type: none">History Report would be generated..Report can be downloaded with no information left.	Show history	P
1.2	Executed	Download report by user	Downloaded	<ul style="list-style-type: none">Report was downloaded after clicking on Download option.Message will be shown to user.	Report downloaded	P
1.3	Executed	URL of articles	Article URL	<ul style="list-style-type: none">System will show URL and user if want to open it then click on it.	URL open after clicking on it.	F
1.4	Executed	System can generate monthly report	Monthly Report	<ul style="list-style-type: none">System can generate monthly report,User can download at any time	Monthly report	F

7.1.2. Search Highlight:

7.1.2 Test Case Search Highlight

Test cases for UC # 8 Search Highlight						
Module Name:		Search Highlight				
ID	Status	Test detail	Test Data	Expected Result	Actual Result	Status Pass/Fail
2.1	Executed	Write title of highlight and click Search	Show search tab	<ul style="list-style-type: none">Details of highlights displayed to user on the bases of Search title name.Message shown “Invalid Name”	Highlight result	P
2.2	Executed	Write invalid title And click search	Result not Found	<ul style="list-style-type: none">User should enter valid title name and categories.Message shown to user “Result not found”	Search not found	P
2.3	Executed	Write name with uppercase and lowercase letters and click search	Upper case and lower case letters	<ul style="list-style-type: none">Search result shown to user not on bases of letters either in upper or lower result should be valid highlight shown.	Highlight result	F

7.1.3. Login:

7.1.3 (a) Test Case Login (Email Checking) (b) Test Case Login (Password Checking)

Test cases for UC # 1: Login						
Module Name:		Email Checking				
ID	Status	Test detail	Test Data	Expected Result	Actual Result	Status Pass/Fail
3.1	Executed	Enter valid email id and click login button	Email id	<ul style="list-style-type: none"> - User should be logged in successfully. - User should be redirected on home page. - This pop up should display LinerPro info and status. - Also show categories, Manage and search tab. 	Logged in	P
3.2	Executed	Enter invalid email id and click login button	Invalid email	<ul style="list-style-type: none"> - User should not be logged in. - A message “Invalid Email” should be displayed. 	Invalid Details	P
3.3	Executed	Click the login button without entering email.	Empty field	<ul style="list-style-type: none"> - User should not be logged in. - A message “Invalid! Enter Email” should be displayed. 	Required	p
3.4	Executed	Enter special characters in the pin code field.	#\$@% !&^*(){}{}	<ul style="list-style-type: none"> - No Special character should. 	Invalid Email Address	p

Test cases for UC # 1: Login						
Module Name:		Password Checking				
ID	Status	Test detail	Test Data	Expected Result	Actual Result	Status Pass/Fail
3.5	Executed	Enter valid password and click login button	Password	<ul style="list-style-type: none"> - User should be logged successfully. - User should be redirected on home page. - This pop up should display LinerPro info and status. - Also show categories, Manage and search tab. 	Logged in	P
3.6	Executed	Enter invalid password and click login button	Invalid password	<ul style="list-style-type: none"> - User should not be logged in. - A message “Invalid password!”, “Try Again”, and “Forgot password” should be displayed. 	Invalid	p
3.7	Executed	Click the login button without entering password.	Empty field	<ul style="list-style-type: none"> - User should not be logged in. - A message “Invalid! Enter Again ” and “Forgot Password” should be displayed. 	Required	P

7.1.4. Signup:

7.1.4 Test Case Signup

Test cases for UC # 2: Signup						
Module Name:		Signup				
ID	Status	Test detail	Test Data	Expected Result	Actual Result	Status Pass/Fail
4.1	Executed	Selecting signup with valid data	Signup successful	<ul style="list-style-type: none"> User should enter valid signup details User should create account by providing email and password. System should provide a unique authentication mail to user. 	Signing page	P
4.2	Executed	Selecting signup With incorrect user email.	Signup unsuccessfully	<ul style="list-style-type: none"> user should enter valid email and not registered again. Message shown "Incorrect Email! Try again" 	Invalid Email	F
4.3	Executed	Selecting signup with registered Email	Signup unsuccessfully	<ul style="list-style-type: none"> User should enter new Email id. User should not register with already registered email id. Message shown "User already Exists" 	Already Registered	P

7.1.5. Manage Follower:

7.1.5 (a) Test Case Add follower (b) Test Case reject follower

Test cases for UC # 3: Manage Follower						
Module Name:		Add follower				
ID	Status	Test detail	Test Data	Expected Result	Actual Result	Status Pass/Fail
5.1	Executed	Selecting Follower button	Follower Tab	<ul style="list-style-type: none"> User should click follower Button System should provide a follower tab. 	Follower Tab	P
5.2	Executed	Selecting add button	Follower added	<ul style="list-style-type: none"> user should click on add button. System should add and update follower list correctly. 	Added	P
5.3	Executed	Selecting remove button	Follower removed	<ul style="list-style-type: none"> User should click on remove button. System should remove and update follower list correctly. 	removed	F

Test cases for UC # 3: Manage Follower						
Module Name:		Reject Follower				
ID	Status	Test detail	Test Data	Expected Result	Actual Result	Status Pass/Fail
5.6	Executed	Search person	Search	<ul style="list-style-type: none"> User should click on search button and search persons System should provide an accurate search result.. 	Search result	P
5.7	Executed	Search result not found	Search Not Found	<ul style="list-style-type: none"> user should search name. System does not found search result. 	Not found	P
5.8	Executed	Selecting remove button	Remove button	<ul style="list-style-type: none"> User should click on Remove button. System should show remove message correctly. 	Removed	F

7.1.6. Manage Highlight:

7.1.6 Test Case Manage Highlight

Test cases for UC # 4: Manage Highlights						
Module Name:		Add Highlight				
ID	Status	Test detail	Test Data	Expected Result	Actual Result	Status Pass/Fail
6.1	Executed	Selecting text from webpages	Bookmark Button	<ul style="list-style-type: none"> User should select text from page. After selecting text, user should click on Highlight text button. System should update database and add highlight correctly. System will show data sent successful message. 	Data Saved Successfully	P
6.2	Executed	Highlight shown on homepage	Highlighted text	<ul style="list-style-type: none"> After clicking on button on webpage highlight will be shift to user's homepage. User will perform operation on it. 	Highlighted text	P
6.3	Executed	Removing highlight from home page	Removing	<ul style="list-style-type: none"> After clicking on delete button on webpage highlight will be deleted to user's homepage. 	Deleted	F

7.1.7. Listen Highlight:

7.1.7 Test Case Listen Highlight

Test cases for UC # 7: Listen Highlight						
Module Name:		Listen Highlight				
ID	Status	Test detail	Test Data	Expected Result	Actual Result	Status Pass/Fail
7.1	Executed	Selecting Listen button	Listen Button	<ul style="list-style-type: none"> User should click on listen button of highlight which he/she want to listen System should provide a button on right upper corner of each highlight. 	Listen Alert	P
7.2	Executed	Select Language button	Language Button	<ul style="list-style-type: none"> user should click on language button. System should provide languages . 	Change language	P
7.3	Executed	Highlight can be listen with full of accuracy in any language	Accuracy of Listen function	<ul style="list-style-type: none"> System should provide accurate listening platform for user. 	Listen Highlight	P
7.4	Executed	Highlight can be paused and rewind and forward	Paused, Forward and rewind	<ul style="list-style-type: none"> After clicking on these button system will pause, rewind or forward the audio of highlight 	Paused highlight	F
7.5	Executed	User can translate highlight	Translate	<ul style="list-style-type: none"> User can translate highlight in any language. 	Translate	F

7.1.8. Manage Categories:

7.1. 8 Test Case Manage Categories

Test cases for UC # 9: Manage Categories

Module Name: Manage Category						
ID	Status	Test detail	Test Data	Expected Result	Actual Result	Status Pass/Fail
8.1	Executed	Select important or less important	Important less important buttons	<ul style="list-style-type: none">Highlights will categories, important highlights show by red button and less important shown by green.	Important show by red and less important show by green.	P
8.2	Executed	Show important Highlights	Button for red at importance	<ul style="list-style-type: none">Clicking on button for red shows important topic	Important topic	P
8.3	Executed	Show less important	Button for green at importance	<ul style="list-style-type: none">Clicking on button for green showing less important topics.	Less important topics	P
8.4	Executed	Highlight removing from category	Remove from category	<ul style="list-style-type: none">Highlight will be remove if user want to remove from category	Highlight remove	F

7.2. Automated Test Cases

```
Frontend > src > js index.test.js > describe('Login Functionality') callback > test('Valid login credentials should successfully log in the user') callback
  3  describe('Login Functionality', () => {
  4    beforeEach(() => {
  5      cy.visit('http://localhost:5000/api/users/login');
  6    });
  7
  8    afterEach(() => {
  9      // Any cleanup code you want to run after each test case
 10    });
 11
 12    test('Valid login credentials should successfully log in the user', () => {
 13      // Assuming you have valid test credentials
 14      const username = 'abdulraheemzxcv@gmail.com';
 15      const password = '11112222';
 16
 17      // Call the login function with the test credentials
 18      const result = login(username, password);
 19
 20
 21      // Additional assertions to verify the logged-in user's state or behavior
 22    });
 23
 24    test('Invalid login credentials should fail to log in the user', () => {
 25      // Assuming you have invalid test credentials
 26      const username = 'invaliduser';
 27      const password = 'invalidpassword';
 28
 29      // Call the login function with the invalid test credentials
 30      const result = login(username, password);
 31
 32
 33      // Additional assertions to verify the error message or behavior for invalid login attempts
 34    });
 35  });
 36
```

7.2. 1 Code of Automated Test case Login

```

at Parser.parseMaybeUnary (node_modules/@babel/parser/src/parser/expression.ts:657:23)
at Parser.parseMaybeUnaryOrPrivate (node_modules/@babel/parser/src/parser/expression.ts:395:14)
at Parser.parseExprOps (node_modules/@babel/parser/src/parser/expression.ts:407:23)
at Parser.parseMaybeConditional (node_modules/@babel/parser/src/parser/expression.ts:362:23)
at Parser.parseMaybeAssign (node_modules/@babel/parser/src/parser/expression.ts:382:21)
at Parser.parseExpressionBase (node_modules/@babel/parser/src/parser/expression.ts:225:23)
at callback (node_modules/@babel/parser/src/parser/expression.ts:216:39)
at Parser.allowInAnd (node_modules/@babel/parser/src/parser/expression.ts:3072:16)
at Parser.parseExpression (node_modules/@babel/parser/src/parser/expression.ts:216:17)
at Parser.parseReturnStatement (node_modules/@babel/parser/src/parser/statement.ts:1032:28)
at Parser.parseStatementContent (node_modules/@babel/parser/src/parser/statement.ts:478:21)
at Parser.parseStatementLike (node_modules/@babel/parser/src/parser/statement.ts:417:17)
at Parser.parseStatementListItem (node_modules/@babel/parser/src/parser/statement.ts:366:17)
at Parser.parseBlockOrModuleBlockBody (node_modules/@babel/parser/src/parser/statement.ts:1360:16)
at Parser.parseBlockBody (node_modules/@babel/parser/src/parser/statement.ts:1333:10)
at Parser.parseBlock (node_modules/@babel/parser/src/parser/statement.ts:1301:10)
at Parser.parseFunctionBody (node_modules/@babel/parser/src/parser/expression.ts:2552:24)
at Parser.parseFunctionBodyAndFinish (node_modules/@babel/parser/src/parser/expression.ts:2523:10)
at callback (node_modules/@babel/parser/src/parser/statement.ts:1600:12)
at Parser.withSmartMixTopicForbiddingContext (node_modules/@babel/parser/src/parser/expression.ts:3051:14)
at Parser.parseFunction (node_modules/@babel/parser/src/parser/statement.ts:1598:10)
at Parser.parseExportDefaultExpression (node_modules/@babel/parser/src/parser/statement.ts:2473:19)
at Parser.parseExport (node_modules/@babel/parser/src/parser/statement.ts:2375:25)
at Parser.parseStatementContent (node_modules/@babel/parser/src/parser/statement.ts:580:25)
at Parser.parseStatementLike (node_modules/@babel/parser/src/parser/statement.ts:417:17)
at Parser.parseModuleItem (node_modules/@babel/parser/src/parser/statement.ts:354:17)
at Parser.parseBlockOrModuleBlockBody (node_modules/@babel/parser/src/parser/statement.ts:1359:16)
at Parser.parseBlockBody (node_modules/@babel/parser/src/parser/statement.ts:1333:10)
at Parser.parseProgram (node_modules/@babel/parser/src/parser/statement.ts:226:10)
at Parser.parseTopLevel (node_modules/@babel/parser/src/parser/statement.ts:208:25)
at Parser.parse (node_modules/@babel/parser/src/parser/index.ts:45:10)

```

Test Suites: 1 failed, 1 total

Tests: 0 total

Snapshots: 0 total

Time: 1.578 s

Ran all test suites.

PS C:\Users\jawad\Desktop\LinerPro 2.0\linerpro> █

```

Run `npm audit` for details.
PS C:\Users\jawad\Desktop\LinerPro 2.0\linerpro>
PS C:\Users\jawad\Desktop\LinerPro 2.0\linerpro> npm test

> linerpro@1.0.0 test
> jest

FAIL  Frontend/src/index.test.js
● Test suite failed to run

  Jest encountered an unexpected token

  Jest failed to parse a file. This happens e.g. when your code or its dependencies use non-standard JavaScript syntax, or when Jest is not configured to support such syntax.

  Out of the box Jest supports Babel, which will be used to transform your files into valid JS based on your Babel configuration.

  By default "node_modules" folder is ignored by transformers.

  Here's what you can do:
    • If you are trying to use ECMAScript Modules, see https://jestjs.io/docs/ecmascript-modules for how to enable it.
    • If you are trying to use TypeScript, see https://jestjs.io/docs/getting-started#using-typescript
    • To have some of your "node_modules" files transformed, you can specify a custom "transformIgnorePatterns" in your config.
    • If you need a custom transformation specify a "transform" option in your config.
    • If you simply want to mock your non-JS modules (e.g. binary assets) you can stub them out with the "moduleNameMapper" config option.

  You'll find more details and examples of these config options in the docs:
  https://jestjs.io/docs/configuration
  For information about custom transformations, see:
  https://jestjs.io/docs/code-transformation

  Details:

```

```

at Object.<anonymous> (Frontend/src/index.test.js:8:20)

Test Suites: 1 failed, 1 total
Tests:       1 failed, 2 passed, 3 total
Snapshots:  0 total
Time:        1.008 s
Ran all test suites.
PS C:\Users\jawad\Desktop\LinerPro 2.0\linerpro> npm test

> linerpro@1.0.0 test
> jest

PASS Frontend/src/index.test.js
  ✓ toBe (3 ms)
  ✓ toEqual (1 ms)
  ✓ toEqual (1 ms)

Test Suites: 1 passed, 1 total
Tests:       3 passed, 3 total
Snapshots:  0 total
Time:        1.027 s
Ran all test suites.
PS C:\Users\jawad\Desktop\LinerPro 2.0\linerpro>

```

7.2.3 Automated Testcase for Signup

```

frontend > src > index.test.js > describe('Login Functionality') callback > test('USe Change Privacy Succesfuly') callback > result
1 const { PrivacyPage } = require('../src/components/Mypost'); // Import the login module or function
2
3 describe('Login Functionality', () => {
4   beforeEach(() => {
5     cy.visit('http://localhost:5000/api/users/Mypost');
6   });
7
8   afterEach(() => {
9 });
10
11 test('USe Change Privacy Succesfuly', () => {
12   const Privacy = 'Public';
13   const result = ChangePrivacy[Privacy];
14   expect(result).toBeTruthy();
15 });
16
17 test('Sorry You have faild to chang privacy', () => {
18
19   const Privacy = 'Public';
20   const result = changePrivacy(Privacy );
21   expect(result).toBeFalsy();
22 });
23 });
24

```

7.2.4 Code of Automated testcase Manage post

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
PASS  Frontend/src/index.test.js
  Login Functionality
    ✓ UUser Change Privacy Succesfuly (3 ms)
    ✓ Sorry You have faild to chang privacy (1 ms)

Test Suites: 1 passed, 1 total
Tests:      2 passed, 2 total
Snapshots:  0 total
Time:       0.888 s
Ran all test suites.
PS C:\Users\jawaad\Desktop\LinerPro 2.0\linerpro> npm test

> linerpro@1.0.0 test
> jest

PASS  Frontend/src/index.test.js
  Login Functionality
    ✓ UUser Change Privacy Succesfuly (2 ms)
    ✓ Sorry You have faild to chang privacy (1 ms)

Test Suites: 1 passed, 1 total
Tests:      2 passed, 2 total
Snapshots:  0 total
Time:       0.984 s, estimated 1 s
Ran all test suites.
PS C:\Users\jawaad\Desktop\LinerPro 2.0\linerpro> []
```

7.2.5 Automated testcase for Manage post

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63 xi 1. Introduction Digital learning and research processes are unnecessarily cumbersome and challenging, leading to time-consuming and inefficient practices for you that do not support effective learning and retention. Liner Pro will assist us to overcome tough and puzzling learning. It will provide an efficient way to research and study by providing an easy way to highlight from the articles, videos, and images, things that are most relevant to our interests. According to the survey: "472 undergraduates were reviewed, 60% reported using marked passages as a guide for later restudy." Due to Covid-19, the world had become reluctant to digital learning, Research has been digitalized and all the data is to be taken from articles, images, videos, etc. Tools to save this information are difficult to find. The distributed study, or spacing, is a desirable difficulty in that it typically results in greater long-term retention even though it can make learning feel more difficult during encoding. For this very reason, Liner Pro saves data and provides an efficient way of learning. 2. Project Vision 2.1 Problem Statement: While we want to save some text, images, and videos from different articles it is cumbersome. When we search any article on google by any keyword, we get millions of different results every time, so we lost the article we read previously. If we find some important information in different articles and want to share it with other followers with one click is difficult. When we read the article, we want to find more articles on the same topic it is a difficult and time taking process. Creating articles from the research on the bases of our highlights is a very difficult task, for this first we copy these highlights and paste them into any text editor the write our article. 2.2 Business Opportunity Liner Pro is a web-based highlighter-type discovery engine. And it provides an easy way to highlight from the articles, videos, and images, things that are most relevant to our interests. Liner Pro would service users all over the world, [who are business professionals, professors, students, lawyers, doctors, and whoever loves to read online](#). It would also help in the education sector and business and generate high revenues. The information gathered via articles and reviews can be served as a great opportunity for trade. 2.3 Objectives: Our objective is to: ? Discover the highlights of the web, filtered by millions of intelligent people around the world. ? In the flood of information, LINERPRO helps you find and learn reliable information faster. ? Spread Information around the world and make it available to every being. 2.4 Scope Liner Pro is a web-based highlighter-type discovery engine. Currently, students, researchers, and scientists are lacking in saving data of any type of information. They read different articles of their choice and watch videos, and images, but they cannot save the important research for the project, or they cannot find a means to save their important research. The video highlights will be saved based on the time highlighted by the user. Liner Pro offers an easy way to do this thing. To keep our work more reliable and perfect, users can highlight content from the websites that they choose at the time of signup. We include different features like sharing highlights to interact and engaging others and Generate History for showing those articles which he/she watches or reads. 2.5 Constraints ? Internet connectivity is a major issue in the system. ? Ambiguity can be raised if proper preferences of highlights are not given by the user. ? The system shall require proper hardware to work properly. ? If excess data is highlighted the database can create issues. 2.6 Stakeholder and User Description 2.6.1 Market Demographics Our target is researchers and students to provide a better platform for their interaction between them and the community, to make it easy for them to share their highlighted important things and communicate. The use of technologies is increasing day by day, everything is now shifting from manual systems to automated systems. It can be used for sharing and downloading important things which they studied and watched, and they think could use for others. 2.6.2 Stakeholder Summary 2.6.2. 1 Stakeholder Name Description Responsibilities LinerPro Developers It includes those who are involved in designing and implementing this project. ?? Should design web applications for users and websites considering their needs Proper testing should be applied User Users who perform functions on it. ? Should know about using web-based applications Supervisors of project The supervisor will be stakeholders of this product as they are involved in [the development process of this project](#) with [the development team](#). ?? ?? Directs [the work of the development team](#) Ensures that the system is capable of being maintained. Ensures that the product will fill a need among its potential customers Monitors [the project's progress](#) Ensures [the project is](#) carried out by [the plan](#) and all deliverables are completed. 2.6.3 User Environment The application is accessible from any device connected to the Internet. Users must be familiar with the basic steps needed to install and operate web-based app. For an application to be usable, the proper interface design and clear instructions must educate users on how to use it. This application must run on all specified phones or other devices which have access to websites. 2.6.4 Stakeholder Profiles The Stakeholder Profiles Attributes of the system are listed in this section. 2.6.4.1 Supervisor of Projects 2.6.4. 1 Supervisor Representatives Supervisor: Mr. Muhammad Usman Joyia Co-supervisor: Mr. Awais Azam Description They are involved in supervising activities of the development process Type They are technical stakeholders. They have expertise in domains that are being applied to this project i.e. android development and web development. Responsibilities ? Directs the work of the development team ? Ensures that the system is capable of being maintained. ? Ensures that the product will fill a need among its potential customers ? Monitors [the project's progress](#) ? Ensures [the project is](#) carried out by [the plan](#) and all deliverables are completed Success Criteria The completion of features that are being committed by the development team at the start of the project. Involvement ? Requirement reviewer ? Senior managers ? Reviews Implementation Comments/Issues None 2.6.4.2 Development team of the project 2.6.4. 2 Development team Representatives Shaheer Tariq Abdul Raheem Abdul Moed Description They are involved in designing apps. Type They are technical stakeholders. Responsibilities ? Should design this app considering user's needs ? Proper testing should be applied to make it as effective as possible ? Proper data is required for better recommendations Success Criteria The completion of features that are being committed by the development team at the start of the project. Involvement ? ? ? Designers Developers Testers Deliverable ? Documentation Data acquisition Comments/Issues None 3. [System Requirement](#) Specifications [In this section features and requirements of the system are described:](#) 3.1 System Features ? Save different articles ? Article Sharing ? Collect and Manage ? Maintain History ? Web Highlighter 3.2 Functional Requirements 3.2.1 Signup/Login: Whenever a user will use this application for the first time, he/she would sign up for creating an account and can save their record on the server side. If the user has already created his/her account on the application, he/she must enter the username and password. 3.2.2 Newsfeed: Users can accept and reject follower if they want to follow another person for sharing and reading highlights. Everyone can give comments on a shared post. 3.2.3 Share Topic: Sometimes users find some articles more reliable and important they want to share them with other people, this project will help users to share different articles with others. 3.2.4 Save Highlights: The user will highlight the content of his preferences by using the proposed system. The text highlights will be saved from the web and the video link will be saved based on timing. 3.2.5 Translates Highlights: Many researchers, students, and teachers found it difficult to understand the text of the posted highlights, through this extension user can translate their highlights. The highlighted text will be translated through APIs. 3.2.6 Excludes Websites: In today's era, many people's priorities are privacy, but no tool provides privacy to users on their emails, etc. People can have privacy if they are using the proposed project. 3.2.7 History: The history of the highlighted articles will appear on the history page. 3.2.8 Related Articles: On the preference of previous articles, the proposed system will show new related articles. The user can find new highlights which can be helpful for his/her. 3.2.9 Categories Highlights: Based on importance, the user can categorize his/her highlights with assorted colors of his choice. By doing this it will be easy for the user to know his/her interests. 3.2.10 Listen to Highlights: The proposed system will allow users to listen to their highlights as many people prefer listening rather than reading texts.

3.2.11 Download Highlights: It provides users to download his/her and other highlights. 3.2.12 Tab History: The history of recent tabs will be displayed to the user for ease of work. 3.2.13 Bookmark: Tabs can be bookmarked to save important data for the user. 3.3 Core Functional Requirements 3.3.1 Core functional requirements Sr. No Requirement Actor Use case 1 The user must be able to search highlights. User Search Highlight 2 User Can manage categories of highlights. User Manage Category 3 Users can add and remove the highlights. User Manage Highlight 4 Users can log in by using their accounts. User Login Requirements 5 New users can sign up for their accounts. User Register Requirements 6 Users can add and remove the post. User Manage post 7 The system can generate History, reports of highlight. System Generate History 8 Users can add and delete bookmarks. User Manage Bookmark 9 Users can translate highlights. User Translate highlight 10 Users can add, delete, and update comments. User Manage Comment 11 The system can guide users about post System Post Requirement 12 The system can maintain the articles' title records and make the history of them. System Generate History 13 Users can add and remove follower. User Manage Follower 14 Users can listen to a highlight User Listen to Highlight 15 Users can change privacy from public to private or private to public. User Change Privacy 16 Users can share highlights. User Share highlight 17 The system can recommend the articles on the bases of preferences. System Recommend Article 18 Users can download highlights. User Download highlights 3.4 Non-Functional Requirements 3.4.1 Performance: High performance and system creation. The system response time of every request will be less than 5ms. 3.4.2 Security: The data stored on the system shall be secure and safe. No access shall be given without a user's email and password. 3.4.3 Usability: The system will be easy to use. 3.4.4 Availability: The system will be available every time. 3.5 Other Requirements 3.5.1 Safety: The database may get crashed at any certain time due to a virus or operating system failure. Therefore, it is required to take the database backup. 4 Use Cases 4.1 Use case Diagram 4.1. 1 Usecase Diagram 4.2 High level Use case 4.2.1 Manage Followers: 4.2. 1 Use Case Manage Follower [Use case ID UC-3](#) Use case Manage Follower Actor User Type Primary Description After signup and login to the system user will manage the follower lists. Users will add or remove follower from the list 4.2.2 Login: 4.2. 2 Use Case Login Requirement [Use case ID UC-1](#) Use case Login Actor User Type Primary Description Users can log in to the system by using his/her user id and password. 4.2.3 Signup: 4.2. 3 Use Case Register Requirement [Use case ID UC-2](#) Use case Signup Actor User Type Primary Description Users can register to the system by providing his/her mail, phone number, first name, last name, qualifications, and other requirements. 4.2.4 Manage bookmark: 4.2. 4 Use Case Manage bookmark [Use case ID UC-6](#) Use case Manage Bookmark Actor User Type Primary Description Users can manage bookmarks in the system by adding or deleting bookmarks. 4.2.5 Manage Post: 4.2. 5 Use Case Manage Post [Use case ID UC-10](#) Use case Manage Post Actor User Type Primary Description Users can manage posts in the system by post highlights, watching others' posts, editing the previous post, and deleting previous posts. Users can share posts too. User must have to change privacy either public or private. 4.2.6 Manage Highlights: 4.2. 6 Use Case Manage Highlights [Use case ID UC-4](#) Use case Manage Highlights Actor User Type Primary Description Users can manage highlights in the system by highlighting some text, videos, and images. User can download highlight and Share their highlights. 4.2.7 Search highlight: 4.2. 7 Use Case Search Highlights [Use case ID UC-8](#) Use case Search Highlight Actor User Type Primary Description Users can search highlights of their followers and public highlights too. 4.2.8 Manage category: 4.2. 8 Use Case Manage Category [Use case ID UC-9](#) Use case Manage category Actor User Type Primary Description Users can manage categories on the bases of preferences. Users can categorize their highlights on the bases of color. Red color represents the most important and green color represent the least important. 4.2.9 Generate History: 4.2. 9 Use Case Generate Report Use case ID UC-12 Use case Generate History Actor User, System Type Primary Description The system can generate History. It save the URL of Highlighted text. 4.2.10 Manage comments: 4.2. 10 Use Case Manage Comments [Use case ID UC-5](#) Use case Manage comments Actor User Type Primary Description Users can manage comments by adding, deleting, and updating comments. 4.2.11 Recommend articles: 4.2. 11 Use Case Recommend articles [Use case ID UC-11](#) Use case Recommend Article Actor User, System Type Primary Description The system can recommend articles on the bases of preference highlights. 5 Iteration Plan We will be developing our software according to the iteration plan as shown in the table 5. 1 Iteration plan Requirement Specification August-September Design and Analysis October-November Implementation December-May Testing September-May Release June 6 Iteration 1 6.1 Expanded Use Cases 6.1.1 Login: 6.1.1 Expanded Use Case Login [Use case ID UC-1](#) Use case Name Login Primary Actors User Stakeholders and interests User Wants fast login, no delay. System Wants valid details which were present in the Database. Pre-condition Users should be already registered. Post-condition The user should be redirected to the home page. This pop-up should display Liner Pro front page. Normal Flow User Enter user name and password System - Login with correct details and redirect to login page if incorrect data is entered. - Logged in message. - Invalid email message. - Invalid password message. Alternative Flow - If invalid entry, System shows Invalid details. - Redirect to login page. 6.1.2 Signup: 6.1.2 Expanded Use Case Sign-up [Use case ID UC-2](#) Use case Name Signup Primary Actor User Stakeholders and interests User data should be entered correctly. Pre-condition For a new account, the email and phone number are not registered before. Post-condition After Signing up user will be provided with a pin code via mail or phone number and then after entering the pin system pop up on the home screen. Normal Flow User - Click on the option of signup. Enter name, password and email. System - - - Signup Successful message. If the user enter mail which was already registered, then system shows already registered message. If the user entered invalid email then system shows invalid email message. Alternative Flow - - Users enter invalid registration details then the message will pop up invalid details and redirect to the signup page. Users enter valid registration details then the message will pop up signup successful and redirect to the login page. 6.1.3 Manage Follower: 6.1.3 Expanded Use Case Manage Follower [Use case ID UC-3](#) Use case Name Manage follower Primary Actor User Stakeholders and interests User Delete follower, add follower System The system can manage the follower list correctly. Precondition The home page is a popup after login Postcondition The follower list is updated after the user manages by adding or deleting a person from the list. Normal flow User - Click on the option of follower list. - User will add follower, remove follower. System - After performing these operations by user, system will add follower, remove follower correctly. Alternative flow - If the user enters an invalid person's name, then the message will pop up with incorrect data and redirect to the follower list page. - After the operation is successful the successful message will be shown. 6.1.4 Manage highlights: 6.1.4 Expanded Use Case Manage Highlights [Use case ID UC-4](#) Use case Name Manage highlights Primary Actors User Stakeholders and interests User Manage highlights in the system by highlighting some text, videos, and images. System Manage highlights correctly by on time updating highlights. Precondition The home page is a popup after login Postcondition Successfully update the highlight page after managing it by adding highlights from the page. Normal flow User - Click on the extension button of highlight. - User will add highlight. System - System will add highlight correctly. - After performing these operations by the user system will successfully update the highlight page. Alternative flow - Highlights tab managed properly and on time. - After the operation is successful the successful message will be shown in the green tab. - Then pop up highlight page. 6.1.5 Manage comments: 6.1.5 Expanded Use Case Manage Comments [Use case ID UC-5](#) Use case Name Manage comments Primary Actors User Stakeholders and interests User Manage comments by adding comments. System Manage comments correctly and on time. Precondition The homepage is a popup after the login page. Comment notification popups. Postcondition Comments can be successfully added to follower's posts. Similarly, reply to comments done by the user. Normal flow User - Click on the option of comments. - User will add comment. System - - System will manage comments page properly and on time. Comment Added message. Alternative flow - - After the operation is successful the successful message will be shown. Then pop up the page again. 6.1.6 Manage Bookmark: 6.1.6 Expanded Use Case Manage Bookmark [Use case ID UC-6](#) Use case Name Manage Bookmark Primary Actors User Stakeholders and interests User Manage bookmarks by adding and deleting bookmark page System Manage bookmark correctly and on time. Precondition Bookmark tab is present in-home page. Postcondition Bookmark can be successfully added in Bookmark as well as bookmark can be deleted too. Normal flow User - Click on bookmarks option. - User will add bookmark and remove bookmark. System - System will add or remove bookmark. - Bookmark added message. - Bookmark removed message. Alternative flow - - - Bookmark tab managed properly and on time. After the operation is successful the successful message will be shown. Deleted message shown. Then pop up to home

page again. 6.1.7. Listen Highlight: 6.1. 7 Expanded Use Case Listen Highlight [Use case ID UC-7 Use case Name](#) Listen highlight Primary [Actors User Stakeholders and interests](#) [User](#) Listen and translate highlights System Translate highlights correctly and on time. Precondition After clicking on highlight tab, various option popup in which listen highlight is also present Postcondition User can be successfully able to listen and translate highlight correctly Normal flow User - Click on the option of listen highlight. - User will listen highlight and translate highlights. System - System will provide translation of highlight. Alternative flow - If the translation of text is not found then translation not found message popup on screen and redirect to highlight again. - If translation may take some time then after some time tab popup and shows try again and redirect to highlight. 6.1.8. Search Highlight: 6.1. 8 Expanded Use Case Search Highlight [Use case ID UC-8 Use case Name](#) Search highlight Primary [Actors User Stakeholders and interests](#) [User](#) Search highlights of their followers and public too. System Provide highlight of user's interest. Precondition After login, homepage provide option of search too. Postcondition System provides search result successfully with accuracy. Normal flow User - Click on search option. - User can search highlights. System - Provide accurate result of search. Alternative flow - If result of search is not found, then a message show to user "Result not found" and "search again". - Redirect to search page. 6.1.9. Manage categories: 6.1. 9 Expanded [Use Case Manage](#) Category [Use case ID UC-9 Use case Name Manage](#) categories Primary [Actors User Stakeholders and interests](#) User Categorize their highlights on the bases of preferences. System Manage categories correctly and on time. Precondition Categories tab is present in-home page. Postcondition Highlights can be successfully added in categories on the bases of their preference. Normal flow User - Click on categories option. - User will change from one category to another category System - After user operation, system will change category correctly. Alternative flow - Category tabs manage properly on the bases of preference - If user want to add Highlight which was already present in it system shows message "Already present". 6.1.10. Manage Posts: 6.1. 10 Expanded [Use Case Manage Post](#) [Use case ID UC-10 Use case Name Manage](#) Post Primary [Actors User Stakeholders and interests](#) User Post their highlight with followers and public. Manage post by adding, updating, and deleting posts. System Post highlight with users and maintain record of it Precondition Post tab is present in-home page. Postcondition Post can be successfully share with public and followers (user want to share). Post can be updated by user after share with others Post can be deleted. Normal flow User - Click on the option of post. User will add posts. System - - - System will post correctly. System will manage post. System will provide option of change privacy before user adding the post. Alternative flow - If user want to change privacy after sharing the post then the system shows "Privacy can't change" message to user. 6.1.11. Recommend article: 6.1. 11 Expanded Use Case Recommend Article [Use case ID UC-11 Use case Name](#) Recommend article Primary [Actors System Stakeholders and interests](#) User Want to watch more articles from same data or from same information. System Provide related articles by using dataset of previous article watched by user. Precondition After clicking on article screen shows recommended articles too. Postcondition Provide related articles of user's interest. Normal flow User - Click on the option of recommended articles. - User will watch recommended articles. System - System will provide articles related to user interest present in system. Alternative - If the system can't find article related to user then the related flow article tab shows related article not found on it. 6.1.12. Generate History: 6.1. 12 Expanded [Use Case Generate Report](#) [Use case ID UC-12 Use case Name Generate History](#) Primary [Actors User System Stakeholders and interests](#) User Use this report to track his/her previous information. System Manage report. Precondition Report tab is present in home page. Postcondition Report successfully created. Normal flow User - User will Download report provided by the system System - System will maintain report. - If user want to download reported of highlights, system will provide accurate report. Alternative flow - System can save URL of the highlighted article and, system provide article to user after clicking on URL. - If user want to download report of highlights, system will deliver txt file to user. 6.2. System Sequence Diagram 6.2.1. Login 6.2. 1 SSD Login 6.2.2. Listen Highlights 6.2. 2 SSD Listen Highlight 6.2.3. Manage Bookmarks [6.2. 3 SSD Manage Bookmark](#) [6.2. 4 SSD Manage Categories](#) [6.2. 5 SSD Manage Comments](#) [6.2. 6 SSD Manage Comment](#) [6.2. 6 SSD Manage Follower](#) [6.2. 6 SSD Manage Follower](#) [6.2. 7 SSD Manage Post](#) [6.2. 7 SSD Manage](#) [6.2. 8 SSD Manage Highlights](#) [6.2. 8 SSD Manage Highlights](#) [6.2. 9 SSD Recommend Articles](#) [6.2. 10 SSD Search Highlights](#) [6.2. 11 SSD Signup](#) 6.3. Operational Contracts 6.3.1. Login 6.3. 1 OC Login Contract ID 1 Operation Login(Uid, password) Responsibilities User enter name and password and it authenticates the user. Cross reference Login Exception - User name and password is wrong. - User does not exist. [Pre-condition User is registered](#). [Post-condition User is logged in](#). 6.3.2. Listen Highlights 6.3. 2 OC Listen Highlight Contract ID 2 Operation ListenHighlight(Highlight: String) Responsibilities Generate listening platform for user Cross reference SSD: Listen Highlights Exception - Internet connectivity issue. - Listening platform doesn't found. Pre-condition User is on homepage of proposed system. Post-condition Listen result 6.3.3. Translate Highlights 6.3. 3 OC Translate Highlight Contract ID 3 Operation Translate(lang: string, highlight: string) Responsibilities Generate translation of user highlight Cross reference SSD: Translate Highlights Exception - Internet connectivity issue. - translation platform doesn't found. Pre-condition User is on highlight page of proposed system. Post-condition Translated result 6.3.4. Recommend Article 6.3. 4 OC recommend article Contract ID 4 Operation RecommendArticles(URL: string, id: Int) Responsibilities Recommend articles about related topic. Cross reference SSD: Recommended article Exception - Internet connectivity issue. - Related articles doesn't found. Pre-condition User is on recommended article page of proposed system. Post-condition Related articles. 6.3.5. Logout 6.3. 5 OC Logout Contract ID 13 Operation Logout(Uid) Responsibilities Logout from system. Cross reference Logout Exception Internet connectivity issue. [Pre-condition User is logged in](#). [Post-condition User is logged out](#). 6.4. Activity Diagram 6.4.1. Login Activity [Diagram 6.4. 1 Login Activity Diagram](#) 6.4.2. Highlights Activity [Diagram 6.4. 2 Highlights Activity Diagram](#) 6.4.3. System Activity Diagram 6.4. 3 System Activity [Diagram 6.5. Package Diagram](#) 6.5.1. Generate History [6.5. 1 Article History](#) [Package](#) Diagram 6.5.2. Login 6.5. 2 Login Package Diagram 6.5.3. Highlight Article 6.5. 3 Highlight Article [Package Diagram](#) 6.5.4. Highlight [6.5. 4 Highlight Package](#) Diagram 6.5.5. Proposed System 6.5. 5 Proposed System Package Diagram 6.6. Data Flow Diagram 6.6. 1 Data Flow Diagram 6.7. Layer Architecture 6.7. 1 Layer Architecture Diagram 6.8. State Machine Diagram 6.8.1. Login and Register 6.8. 1 State Machine of Login 6.8.2. Comments 6.8. 2 State Machine of Comments 6.8.3. Follower list 6.8. 3 State Machine of Follower list 6.8.4. Post Highlight 6.8. 4 State Machine of Post Highlights 6.8.5. Listen, Save, and Translate 6.8. 5 State Machine of Listen, Save highlight 6.9. Architecture Diagram 6.9.1 Architecture Diagram 6.10. Database Schema 6.10.1. 1 Physical Schema 6.10.1. 2 Logical Schema 7. Test Cases 7.1. Manual Test Cases 7.1.1. Generate History 7.1. 1 Test Case Generate Report Test cases for UC-12: Generate History Module Name: Generate report ID Status Test detail [Test Data](#) [Expected Result Actual Result Status Pass/Fail](#) 1.1 Executed Show Report Report Details ?? History Report would be generated.. Report can be downloaded with no information left. Show history P 1.2 Executed Download report by user Downloaded ?? Report was downloaded after clicking on Download option. Message will be shown to user. Report downloaded P 1.3 Executed URL of articles Article URL ? System will show URL and user if want to open it then click on it. URL open after clicking on it. F 1.4 Executed System can generate monthly report Monthly Report ?? System can generate monthly report, User can download at any time Monthly report F 7.1.2. Search Highlight: 7.1. 2 Test Case Search Highlight Test cases for UC # 8 Search Highlight Module Name: Search Highlight ID Status Test detail [Test Data](#) [Expected Result Actual Result Status Pass/Fail](#) 2.1 Executed Write title of highlight and click Search Show search tab ?? Details of highlights displayed to user on the bases of Search title name. Message shown "Invalid Name" Highlight result P 2.2 Executed Write invalid title And click search Result not Found ?? User should enter valid title name and categories. Message shown to user "Result not found" Search not found P 2.3 Executed Write name with uppercase and lowercase letters and click search Upper case and lower case letters ?? Search result shown to user not on bases of letters either in upper or lower result should be valid highlight shown. Highlight result F 7.1.3. Login: 7.1. 3 (a) Test Case Login (Email Checking) (b) Test Case Login (Password Checking) [Test cases for UC # 1: Login Module Name](#): Email Checking ID Status Test detail Test Data [Expected Result Actual Result Status Pass/Fail](#) 3.1 Executed Enter valid_email_id and click login button Email id - - - User should be logged in successfully. User should be redirected on home page. This pop up should display LinterPro Info and status. Also show categories, Manage and search tab. Logged in P 3.2 Executed Enter invalid_email_id and click login button Invalid email - - User should not be logged in. A message "Invalid Email" should be displayed. Invalid Details P 3.3 Executed Click the login

button without entering email. Empty field - User should not be logged in. A message "Invalid! Enter Email" should be displayed. Required p 3.4 Executed Enter special characters in the pin code field. #\$\$@%!&^"(){} - No Special character should. Invalid Email Address p [Test cases for UC # 1: Login Module Name](#): Password Checking ID Status Test detail [Test Data Expected Result Actual Result Status Pass/Fail](#) 3.5 Executed Enter valid password and click login button Password - - - User should be logged successfully. User should be redirected on home page. This pop up should display LinerPro info and status. Also show categories, Manage and search tab. Logged in P 3.6 Executed Enter invalid password and click login button Invalid password - - User should not be logged in. A message "Invalid password!", "Try Again", and "Forgot password" should be displayed. Invalid p 3.7 Executed Click the login button without entering password. Empty field - - User should not be logged in. A message "Invalid! Enter Again" and "Forgot Password" should be displayed. Required P 7.1.4. Signup: 7. [Test Case Signup](#) [Test cases for UC # 2: Signup Module Name](#): Signup [ID Status](#) Test detail [Test Data Expected Result Actual Result Status Pass/Fail](#) 4.1 Executed Selecting signup with valid data Signup successful ? ? User should enter valid signup details User should create account by providing email and password. System should provide a unique authentication mail to user. Signing page P 4.2 Executed Selecting signup With incorrect user email. Signup unsuccessfully ? ? user should enter valid email and not registered again. Message shown "Incorrect Email! Try again" Invalid Email F 4.3 Executed Selecting signup with registered Email Signup unsuccessfully ? ? User should enter new Email id. User should not register with already registered email id. Message shown "User already Exists" Already Registered P 7.1.5. Manage Follower: 7.1. 5 (a) Test Case Add follower (b) Test Case reject follower. [Test cases for UC # 3: Manage Follower Module Name](#): Add follower [ID Status](#) Test detail [Test Data Expected Result Actual Result Status Pass/Fail](#) 5.1 Executed Selecting Follower button Follower Tab ? ? User should click follower Button System should provide a follower tab. Follower Tab P 5.2 Executed Selecting add button Follower added ? ? user should click on add button. System should add and update follower list correctly. Added P 5.3 Executed Selecting remove button Follower removed ? ? User should click on remove button. System should remove and update follower list correctly. removed F [Test cases for UC # 3: Manage Follower Module Name](#): Reject Follower [ID Status](#) Test detail [Test Data Expected Result Actual Result Status Pass/Fail](#) 5.6 Executed Search person Search ? ? User should click on search button and search persons System should provide an accurate search result.. Search result P 5.7 Executed Search result not found Search Not Found ? ? user should search name. System does not found search result. Not found P 5.8 Executed Selecting remove button Remove button ? ? User should click on Remove button. System should show remove message correctly. Removed F 7.1.6. Manage Highlight: 7.1. 6 [Test Case Manage Highlight](#) [Test cases for UC # 4: Manage Highlights Module Name](#): Add Highlight [ID Status](#) Test detail [Test Data Expected Result Actual Result Status Pass/Fail](#) 6.1 Executed Selecting text from webpages Bookmark Button ? ? ? User should select text from page. After selecting text, user should click on Highlight text button. System should update database and add highlight correctly. System will show data sent successful message. Data Saved Successfully P 6.2 Executed Highlight shown on homepage. Highlighted text ? ? After clicking on button on webpage highlight will be shift to user's homepage. User will perform operation on it. Highlighted text P 6.3 Executed Removing highlight from home page Removing ? ? After clicking on delete button on webpage highlight will be deleted to user's homepage. Deleted F 7.1.7. Listen Highlight: 7.1. 7 [Test Case Listen Highlight](#) [Test cases for UC # 7: Listen Highlight Module Name](#): Listen Highlight ID Status Test detail [Test Data Expected Result Actual Result Status Pass/Fail](#) 7.1 Executed Selecting Listen button Listen Button ? ? User should click on listen button of highlight which he/she want to listen System should provide a button on right upper corner of each highlight. Listen Alert P 7.2 Executed Select Language button Language Button ? ? user should click on language button. System should provide languages . Change language P 7.3 Executed Highlight can be listen with full of accuracy in any language Accuracy of Listen function ? System should provide accurate listening platform for user. Listen Highlight P 7.4 Executed Highlight can be paused and rewind and forward Paused, Forward and rewind ? After clicking on these button system will pause, rewind or forward the audio of highlight Paused highlight F 7.5 Executed User can translate highlight Translate ? User can translate highlight in any language. Translate F 7.1.8. Manage Categories: 7.1. 8 [Test Case Manage Categories](#) [Test cases for UC # 9: Manage Categories Module Name](#): Manage Category [ID Status](#) Test detail [Test Data Expected Result Actual Result Status Pass/Fail](#) 8.1 Executed Select Important or less important. Important less important buttons ? Highlights will categories, Important highlights show by red button and less important shown by green button. Important show by red and less important show by green. P 8.2 Executed Show important Highlights Button for red at importance ? Clicking on button for red shows important topic Important topic P 8.3 Executed Show less important Button for green at importance ? Clicking on button for green showing less important topics. Less important topics P 8.4 Executed Highlight removing from category Remove from category ? Highlight will be remove if user want to remove from category Highlight remove F 7.2. Automated Test Cases 7.2. 1 Code of Automated Test case Login 7.2. 2 Automated testcase for Login 7.2. 3 Automated Testcase for Signup 7.2. 4 Code of Automated testcase Manage post 7.2. 5 Automated testcase for Manage post References 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64