Department of Computer Science and Engineering

The Chinese University of Hong Kong

CSCI3100

UML Specification and UI Design Document

LITTLE TWITTER – GROUP F1

1155157657 CHAN SIU CHUNG

1155109984 CHOW CHUN MAN

1155175870 CHENG TSZ KIN

1155158936 HO CHUN WAI

1155172012 HUI ROCKY

2023-03-25

Table of Contents

1 UML DESIGN 3
1.1 Component : Account and Message 3
1.1.1 UMLs 3
1.1.2 Functionality 7
1.1.3 Procedures and Functions 7
1.2 Component : Tweet and Comment 9
1.2.1 UMLs 9
1.2.2 Functionality 13
1.2.3 Procedures and Functions 13
2 UI DESIGN 15
2.1 View- Authentication 15
2.1.1 Description of the view 15
2.1.2 Screen Images 15
2.2 View- Homepage (login) 16
2.2.1 Description of the view 16
2.2.2 Screen Images 16
2.3 View- adding tweet 17
2.3.1 Description of the view 17
2.3.2 Screen Images 17
2.4 View- Homepage (not login) 17
2.4.1 Description of the view 17
2.4.2 Screen Images 18
2.5 View-Profile Page 18
2.5.1 Description of the view 18
2.6 View-Tweet Page 20
2.6.1 Description of the view 20
2.6.2 Screen Image 20
2.7 View-User Management 21
2.7.1 Description of the view 21
2.7.2 Screen Image 21
2.8 Vied-Tweet Management 22
2.8.1 Description of the view 22

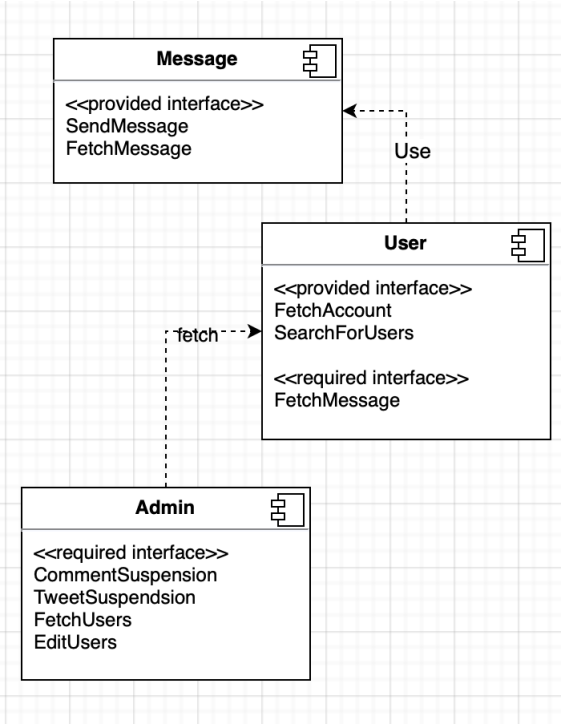
2.8.2 Screen Image..... 22

1 UML DESIGN

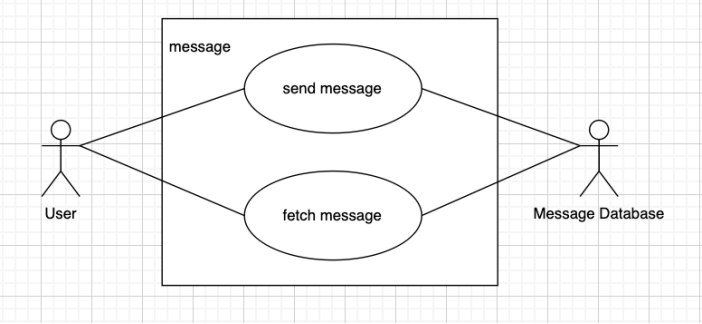
1.1 Component : Account and Message

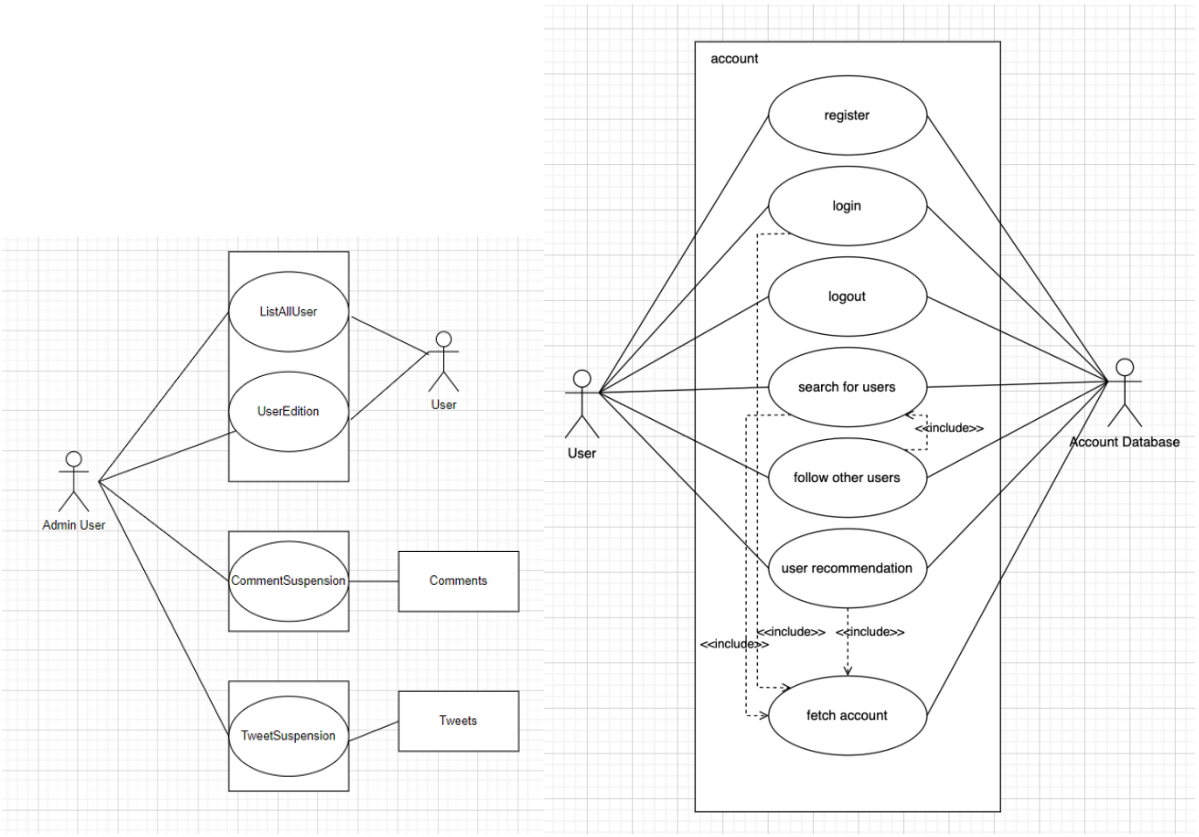
1.1.1 UMLs

1.1.1.1 Structural Diagram – Component Diagram

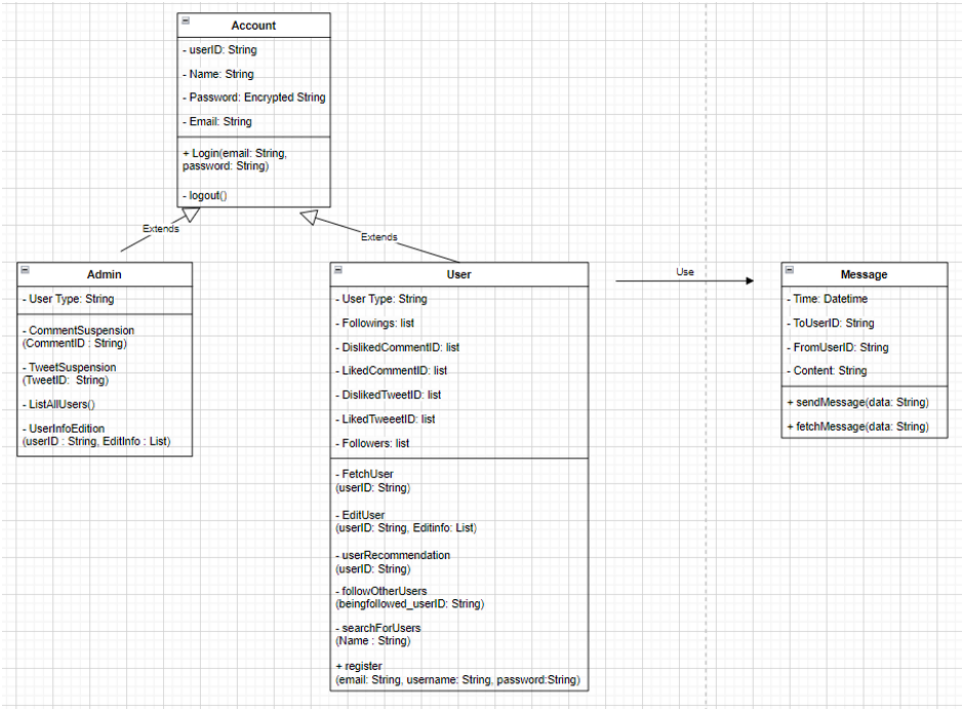


1.1.1.2 Use-case Diagram

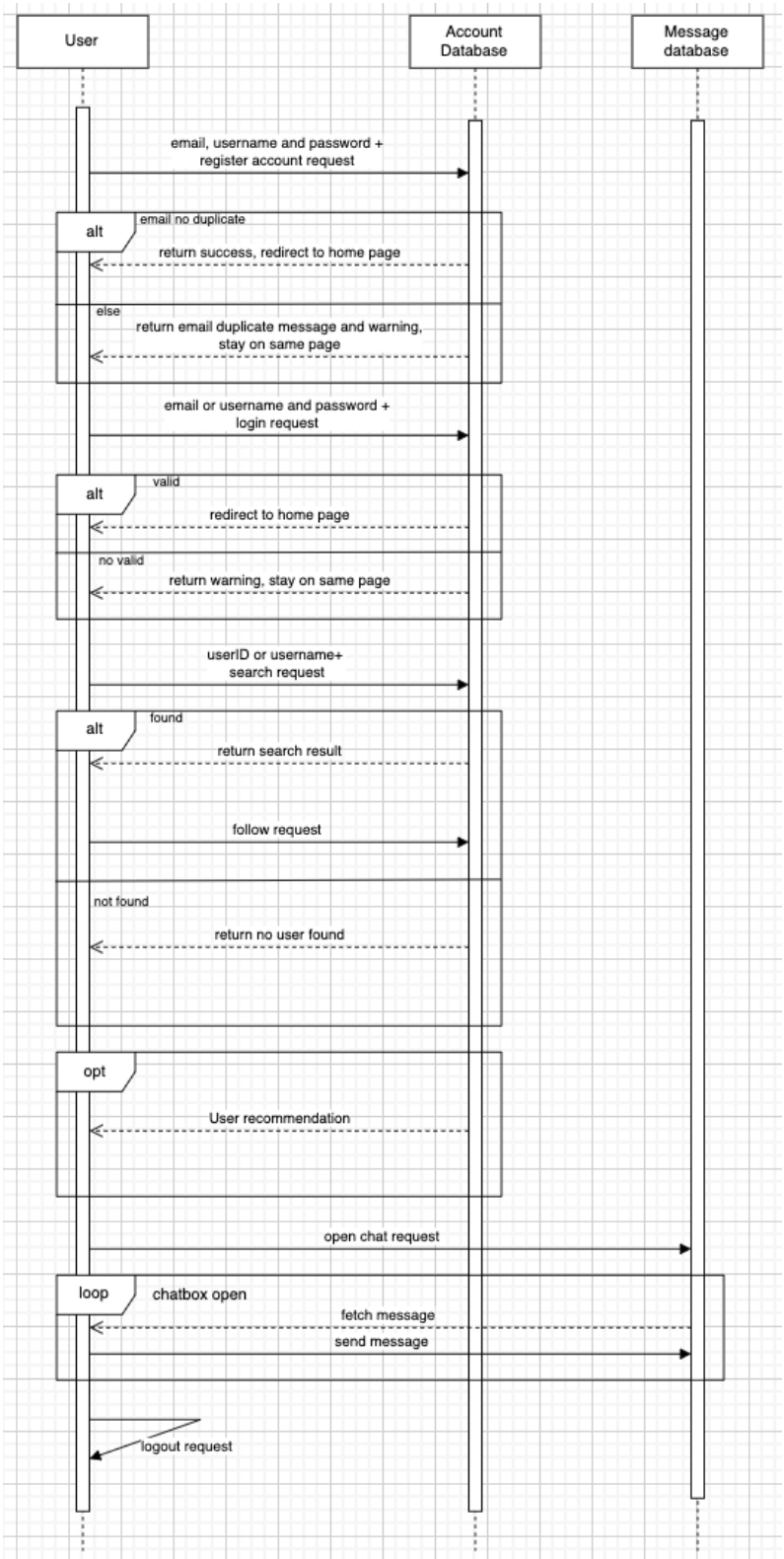


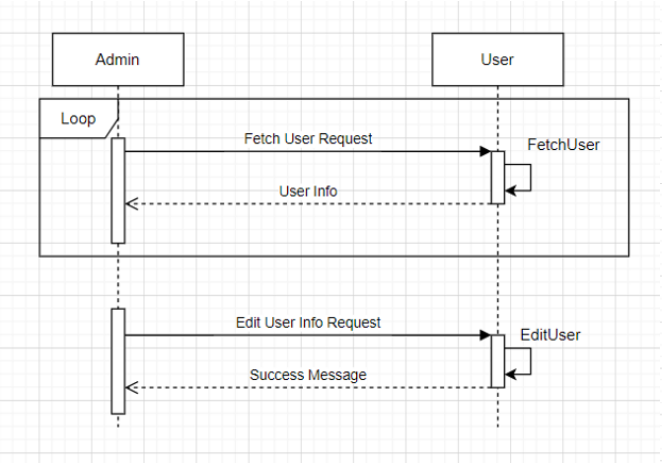


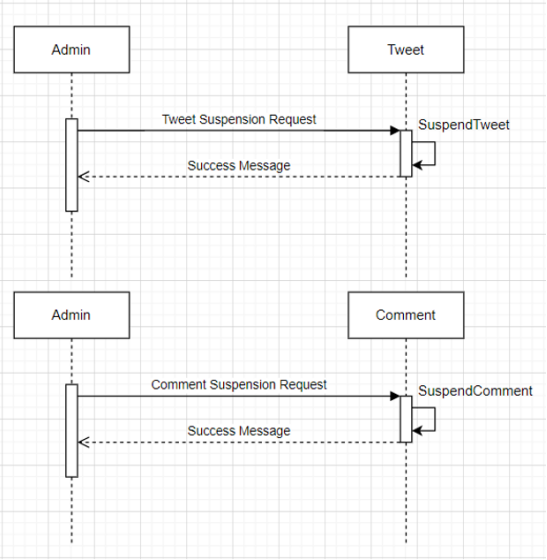
1.1.1.3 Class Diagram



1.1.1.4 Sequence Diagram




Admin
User
Loop
Fetch User Request
FetchUser
User Info
Edit User Info Request
EditUser
Success Message


Admin
Tweet
Tweet Suspension Request
SuspendTweet
Success Message
Admin
Comment
Comment Suspension Request
SuspendComment
Success Message

1.1.2 Functionality

This module provides the function that are related to the Account management and message management. There are two subclass for accounts, user and admin user. For user, user can register an account, login and logout existing account, search for other users, follow other users. Moreover, this module also includes functions like user recommendation according to specific account. It will also check whether the account has conversations with other accounts and fetch message from database. User can also send message to another user through private chat box.

Admin Component would be implemented as a separate module inherit from “Account” Component. Apart from the attributes from its parent (userID, Name, Password and Email), Admin Component would also consist of an attribute called “User Type” to distinguish the identity of Admin from general user. The “SuspendComment” and “SuspendTweet” methods would be implemented for support admins’ authorities to ban some inappropriate tweets and comments. The “ListAllUsers” methods allow admin to fetch all users from the database. Moreover, admin could edit the user’s information via the method called “UserInfoEdition”.

1.1.3 Procedures and Functions

Procedures and Functions

Account Class

Function	**Description**
login	User can login by username/email and password. If valid, redirect to home page. If not, pop an invalid message on the login page
logout	Destroy client session, redirect to login page

User Class

Function	**Description**
register	This function aims to provide an interface for new user to create an account using their email, username and password. Once complete, redirect to login page
searchForUsers	User can search for other users by userID or name to perform certain task. If there is exist a user matching the searching result, then return the result to the searcher. Otherwise, return ‘no user found’ to user

followOtherUsers	User could follow other users by searching the userID or username
userRecommendation	The exists some common friend of your friends or famous celebrities that the system would like to suggest to user for user to follow.
fetchUser	This function would fetch all the information of the targeted user which would be used for supporting the admin function “ListAllUsers”
editUser	This function would amend the information of target user which would be used for supporting the admin function “UserInfoEdition”

Admin Class

Function	**Description**
CommentSuspension	Admin could suspend certain comments via this function. This function would call “SuspendComment” provided from Comment Components to update the suspension status of that comment. The suspended comment would not be fetched in any case
TweetSuspension	Admin could suspend certain tweets via this function. This function would call “SuspendTweet” provided from Tweet Components to update the suspension status of that tweet. The suspended tweet would not be fetched in any case
ListAllUsers	Admin could fetch the information of all existing users in the system via this function. This function would call “FetchUser” method provide from User Component iteratively to gain access to every user’s information
UserinfoEdition	Admin could edit a particular user’s information via this function. Admin would pass in the targeted UserID and the information to be adjusted to the function. Then “EditUser” method under User

	Component would be called to updated the relevant information

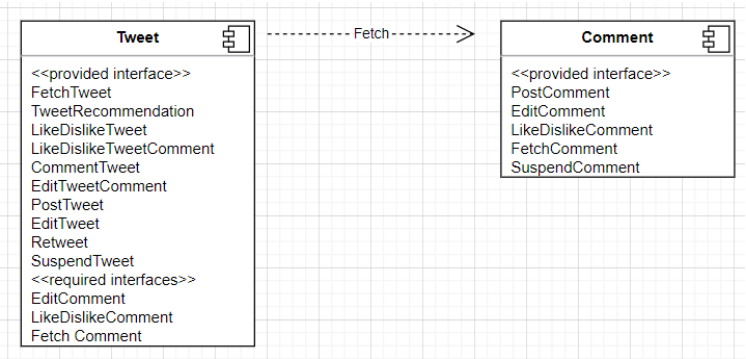
Message Class

Function	**Description**
Send message	Users can send message by private chat box
Fetch message	User can view message between another user and them

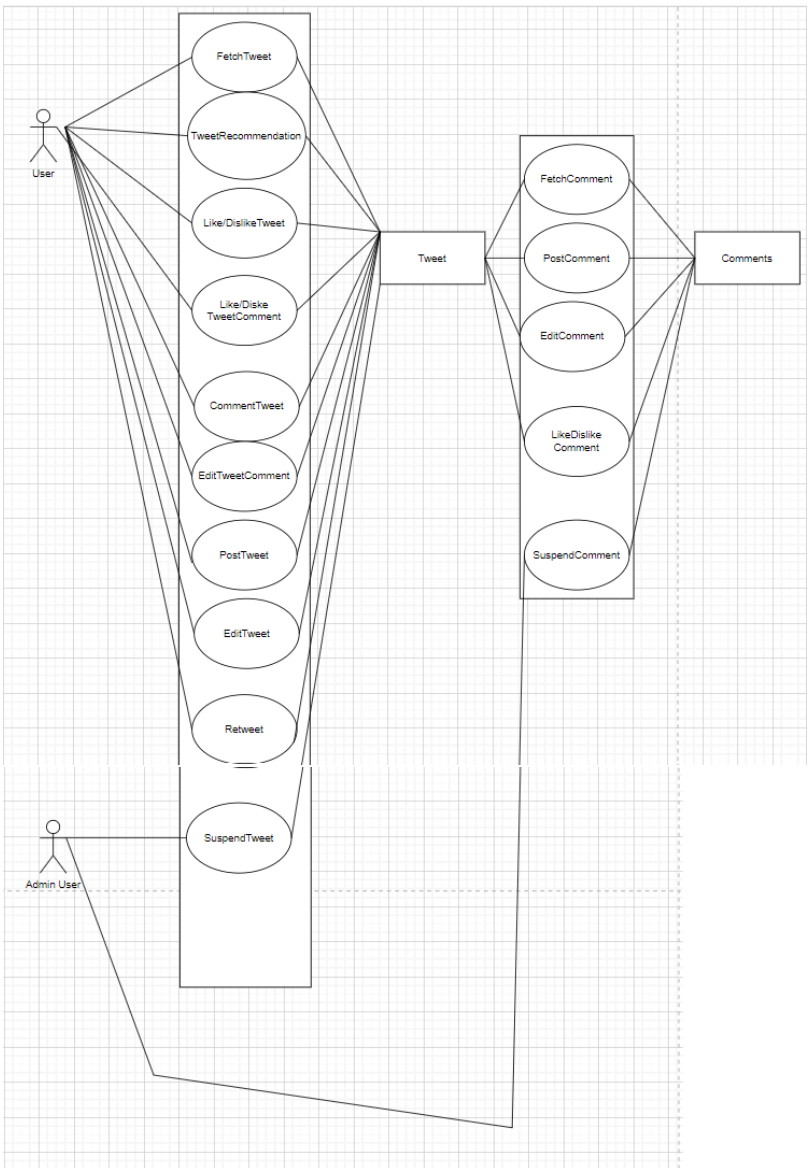
1.2 Component : Tweet and Comment

1.2.1 UMLs

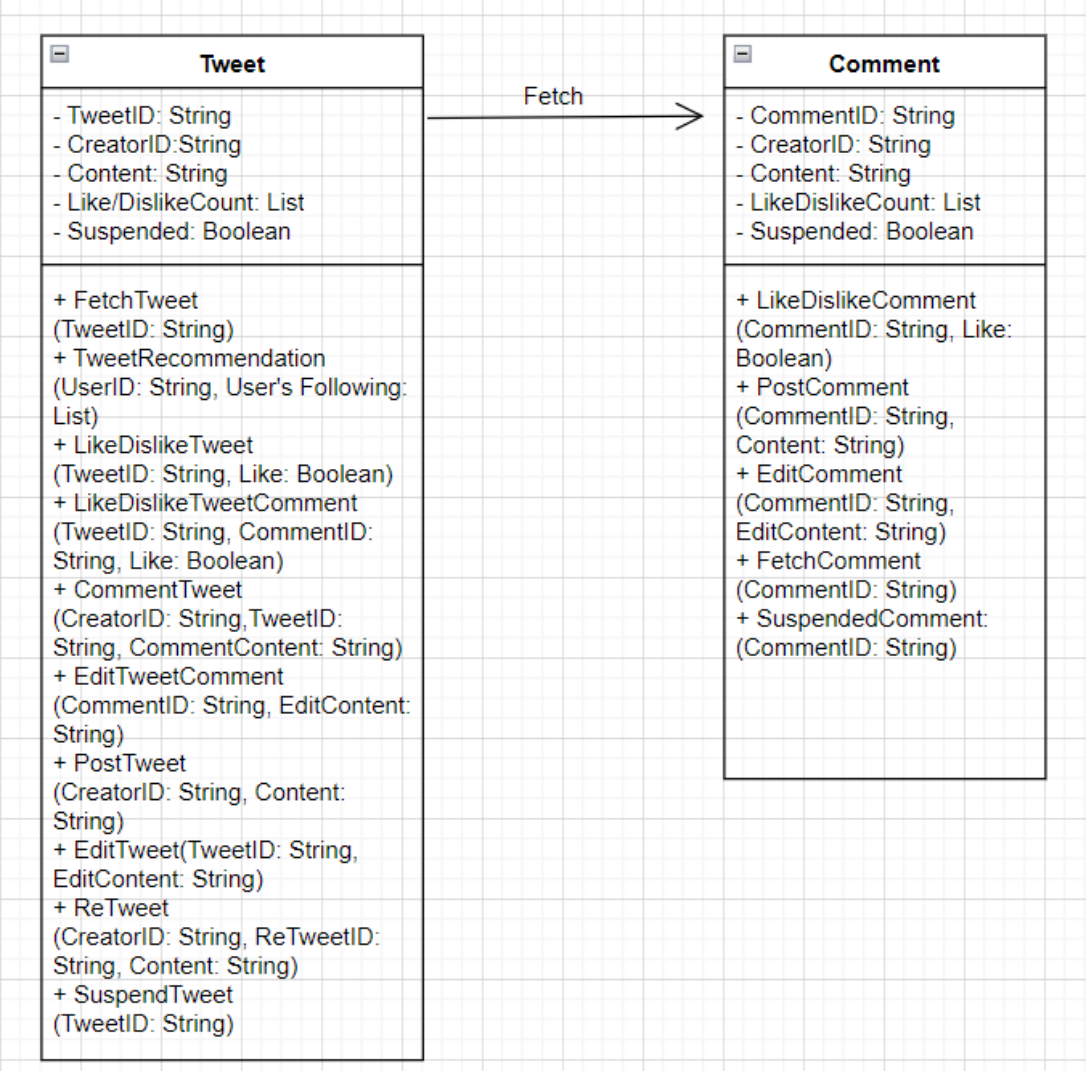
1.2.1.1 Structural Diagram – Component Diagram



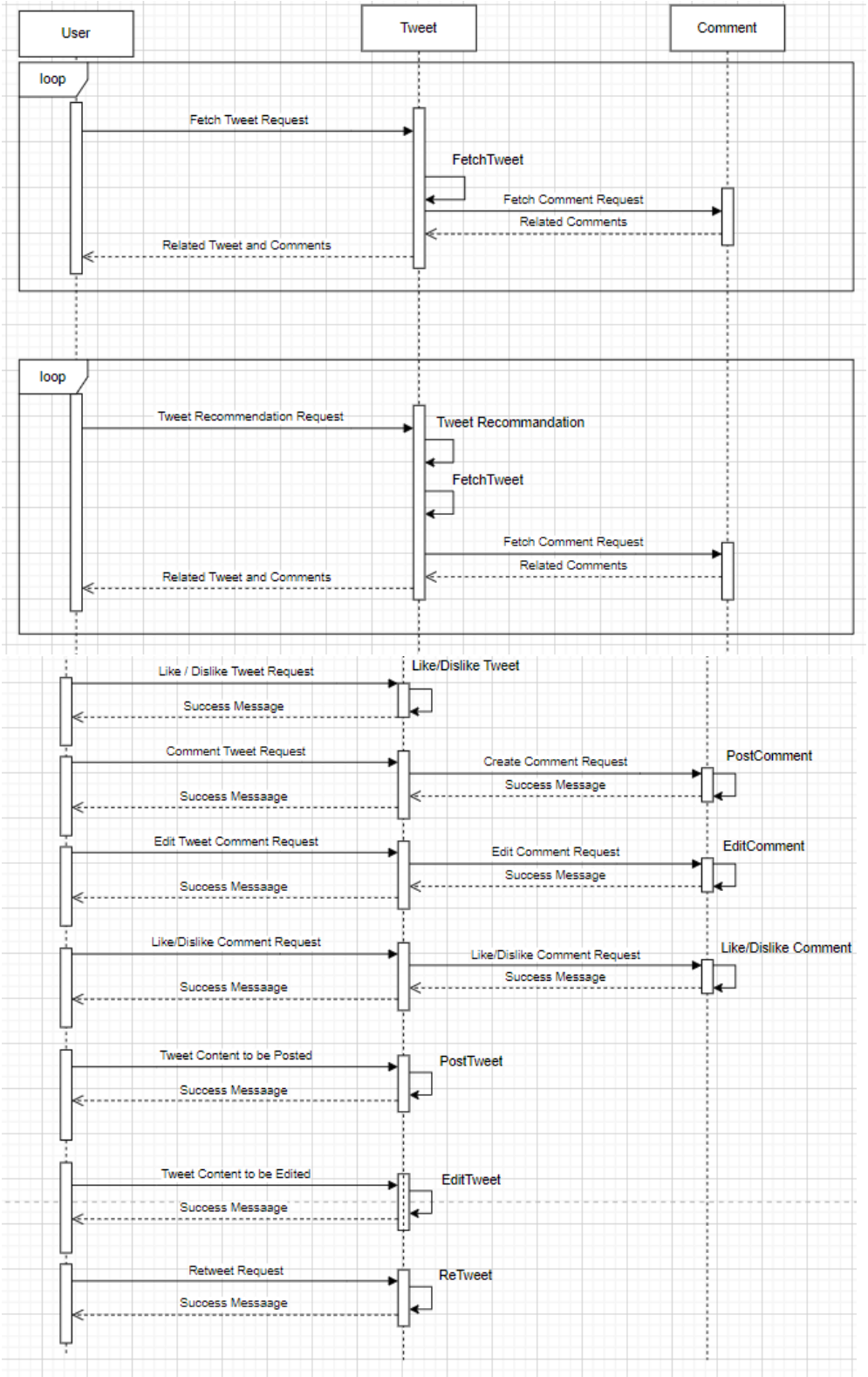
1.2.1.2 Use-case Diagram



1.2.1.3 Class Diagram


Tweet
- TweetID: String
- CreatorID:String
- Content: String
- Like/DislikeCount: List
- Suspended: Boolean
+ FetchTweet
(TweetID: String)
+ TweetRecommendation
(UserID: String, User's Following: List)
+ LikeDislikeTweet
(TweetID: String, Like: Boolean)
+ LikeDislikeTweetComment
(TweetID: String, CommentID: String, Like: Boolean)
+ CommentTweet
(CreatorID: String,TweetID: String, CommentContent: String)
+ EditTweetComment
(CommentID: String, EditContent: String)
+ PostTweet
(CreatorID: String, Content: String)
+ EditTweet(TweetID: String, EditContent: String)
+ ReTweet
(CreatorID: String, ReTweetID: String, Content: String)
+ SuspendTweet
(TweetID: String)
Fetch
Comment
- CommentID: String
- CreatorID: String
- Content: String
- LikeDislikeCount: List
- Suspended: Boolean
+ LikeDislikeComment
(CommentID: String, Like: Boolean)
+ PostComment
(CommentID: String, Content: String)
+ EditComment
(CommentID: String, EditContent: String)
+ FetchComment
(CommentID: String)
+ SuspendedComment:
(CommentID: String)

1.2.1.4 Sequence Diagram



1.2.2 Functionality

This component represent the tweet related component of our software. It can be further broken down into two finer components : Tweet and Comment. Tweet Component consists of Creator ID, Tweet ID, Related Content, its Like/Dislike Count and it's suspended status as its attributes. It would also provide interface for tweet-related actions from general users and provide interface to suspend tweet for supporting admin authority.

Comment Component consists of Comment ID Creator ID, Tweet ID, Related Content, its Like/Dislike Count and its suspended status as attribute. Comment Component would also provide interface for users to conduct comment-related actions and provide interface to suspend comment for supporting admin authority.

Tweet object would fetch the related comment via interface provided by Comment Component when FetchTweet is called.

1.2.3 Procedures and Functions

Tweet Components

Function	**Description**
FetchTweet	After user login, the user's tweets and his/her following users' tweets and associated comments would be fetched from the database and display to the user's page.
TweetRecommendation	After user login, the system recommending some tweets based on the users' favour. After the system finds out the suggested tweet. The system would fetch the tweet and its comments from the database and display to the user's page
LikeDislikeTweet	The user can express their feelings toward the tweet by ticking Like or Dislike which would update the Like/Dislike Count associated with the particular tweet.
LikeDislikeTweetComment	The user can express their feelings toward the comments under a particular tweet by ticking Like or Dislike which would update the Like/Dislike Count associated with the particular comment.
CommentTweet	The user can express their ideas/opinions by creating the tweet comment. This function would use the interface "PostComment" provided from Comments Component. Comments would be then created and associated with the particular tweet and user

EditTweetComment	The user can edit their own comments toward the tweet. This function would use the interface “EditComment” provided from Comments Component. The comments would then be updated accordingly
PostTweet	The user can enter their own content to create the Tweet. Tweet would then be created and associated with the user
EditTweet	The user can edit their own tweet created via this function. The Tweet Content would then be updated
Retweet	The user can react to a particular tweet by retweeting the tweet with some comments. It is a special case of PostTweet. Therefore, it would be implement similarly
SuspendTweet	Admin could suspend the Tweet via its method “TweetSuspension” which would call the interface “SuspendTweet” under Tweet Component. Then the suspension status of the tweet would be updated. The corresponding tweet would become ineffective and would be not fetched in any case.

Comments Components

Function	Description
FetchComment	Once a tweet is fetched, the system would also fetch its related comments. Then both tweet and comments would be outputted to user’s page
PostComment	Once the user makes comment on a tweet, the “CommentTweet” method of Tweet Component would call “PostComment” method of Comment Component and create the associated Comment with recorded Tweet ID and creator user ID
EditComment	Once the user make the edit comment request to Tweet Component via “EditTweetComment”. The “EditComment” would then be called and update the comment content accordingly
LikeDislikeComment	Once the user make Like/Dislike Comment request to Tweet Component via “LikeDislikeTweetComment”. The “LikeDislikeComment” would then be called and

	update the corresponding Comments Like/Dislike Count
SuspendComment	Admin could suspend the Tweet Comment via its method “CommentSuspension” which would call the interface “SuspendComment” under Comment Component. Then the suspension status of the tweet comment would be updated. The corresponding comment would become ineffective and would be not fetched in any case.

2 UI DESIGN

2.1 View- Authentication

2.1.1 Description of the view

In this website, user need to login in order to use more features. User can register an account in the register page (see figure 2). if they don’t have an account. If user have an account, they can login in the login page (see figure 1). The design of the login page and register page are very similar as it can improve the ease of use. Both the pages require user to input their username and password. However, there are some additional information needed in register page. User need to input their email address and re-enter their password to ensure they don’t mistype the wrong password. After the user enter the password, the password will not be shown on the screen but just shown in some dot. User can then press the button with an eye symbol to show the password while they are pressing the button. The password will be hidden after user’s “mouseup” action. There is a hyperlink go to login and register page in register page and login page respectively.

2.1.2 Screen Images

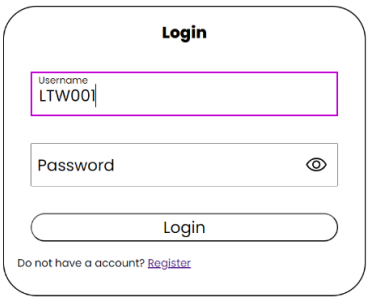


Figure 1 Login Page

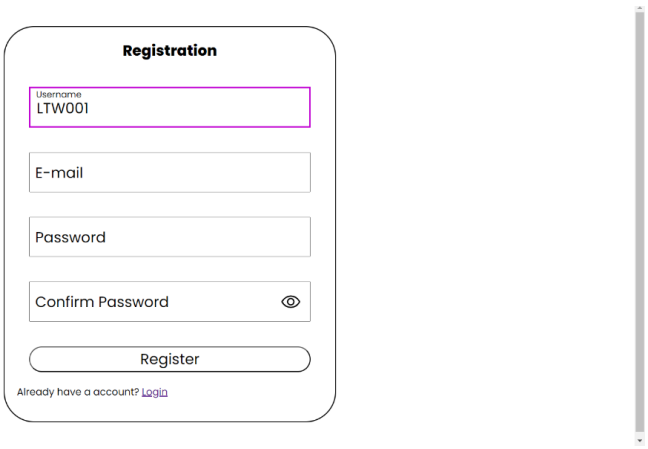


Figure 2 Login Page

2.2 View- Homepage (login)

2.2.1 Description of the view

After the user login, there are some pages with similar design. They have the same menu on the left with the gray background on the page it is. Also, the username and their icon is shown on the right-top. However, there are differences in the middle part of the pages. At the beginning, user will be in the homepage (see figure 3). There are some tweets shown on the page in the middle under the search bar. After the user use the search bar the search, the user will automatically go to the explore page (see figure 4). In the explore page, the page is mostly the same with homepage except that there is a tab under the search bar for user to choose the ordering criteria for the search result. User can change the criteria by click the tab without going to another page. For the bookmark page (see figure 5), user can click the menu on the left to go into. There will be only the tweets bookmarked by the user shown in the middle part.

2.2.2 Screen Images

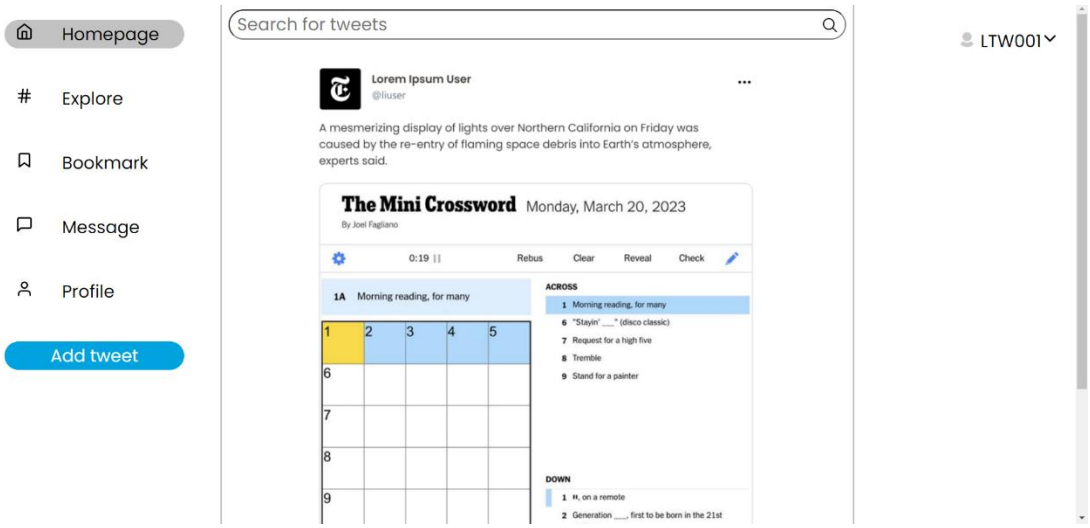


Figure 3 Homepage

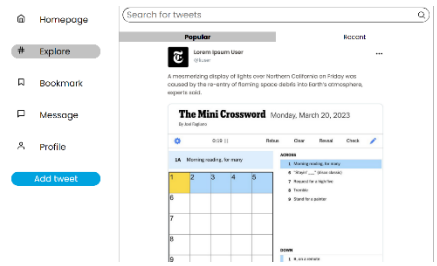


Figure 4 Explore page

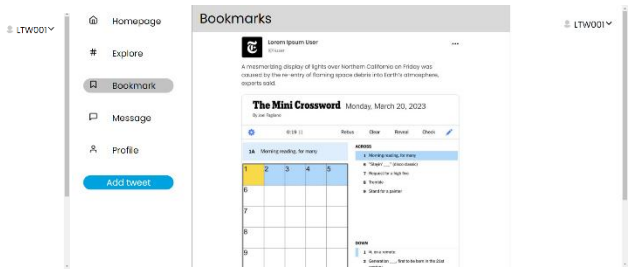


Figure 5 Bookmark page

2.3 View- adding tweet

2.3.1 Description of the view

To add tweet, user can click the “Add tweet” button in menu. User can click this button not only in homepage, but also explore page, bookmark page. In this case we, use homepage as an example only. After the user click the “Add tweet” button, there will be a popup box (see figure 6) shown in the middle of the page over the original content. The original content will become gray in color for the background. In the popup box, there are user icon, a text area for user to input text, a button with a image icon for user to upload a media, the “Add tweet” button to post the tweet and the close button “X”. Users are required to input some text in the text area in order to post a tweet but not the media. User can close the popup box by clicking the close button or anywhere outside the popup box.

2.3.2 Screen Images

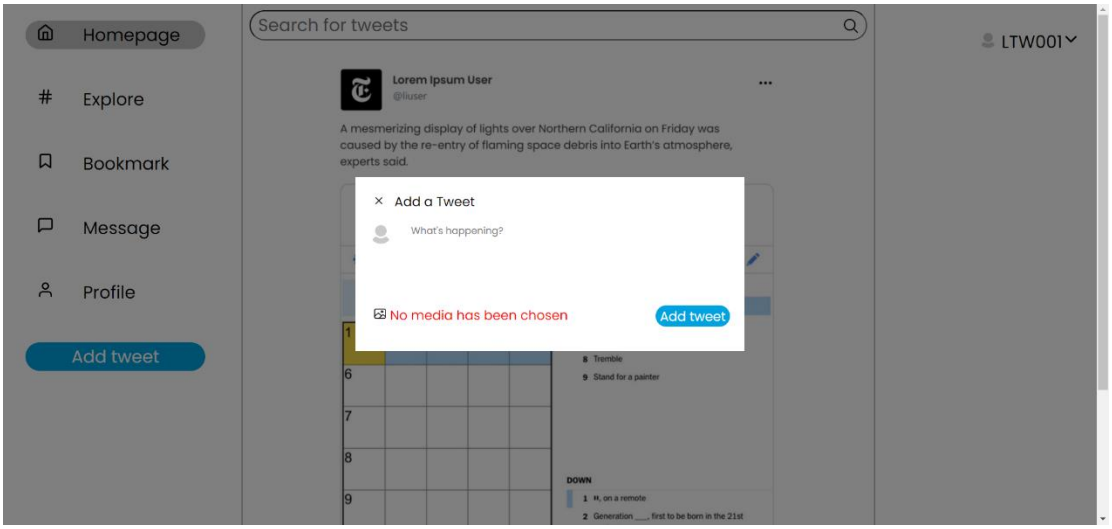


Figure 6 Add tweet popup box

2.4 View- Homepage (not login)

2.4.1 Description of the view

For the user that do not login, the feature will be limited. The page (see figure 7) is very similar to the homepage. However, there are only “Homepage” and “Explore” button remain in the menu. Also there

will be the “Login” and “Register” button replacing the user icon and username on the right-top as they don’t have those information.

2.4.2 Screen Images

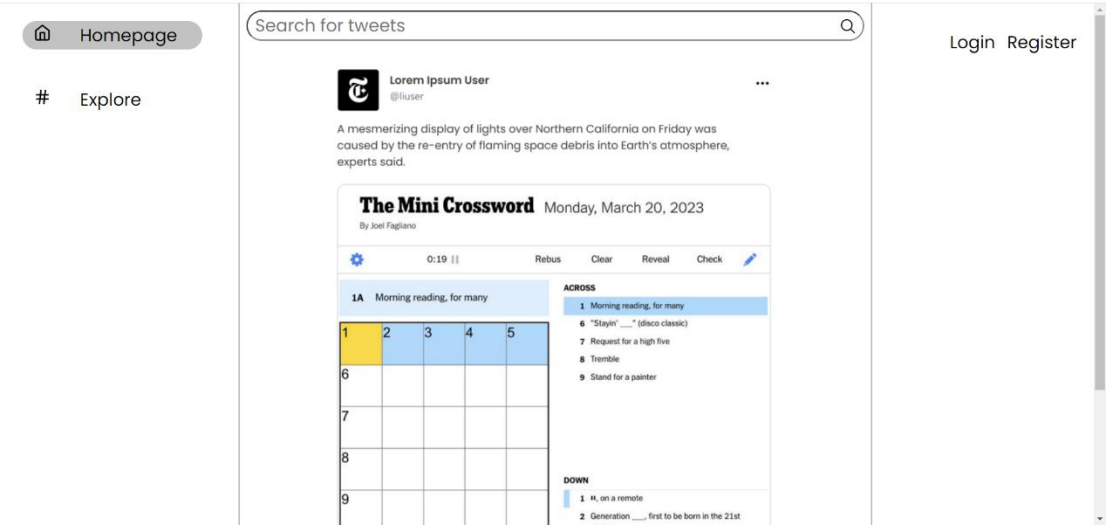


Figure 7 Homepage (not login)

2.5 View-Profile Page

2.5.1 Description of the view

The user profile page design is simple. On top the name of that user will be shown and a left arrow is present for them to go back. Below the top bar is the user banner and avatar. Next to the bold username is two buttons: “Follow” and “Edit”.

If the user logged in is not the same as the user shown, then the “Edit” button will not be present. If the user logged in is the user shown, then the “Follow” button will not be present. The user interface above displays both scenarios simultaneously to save pages.

Below is the biography and statistics of that user. Finally, there are two tabs: “Tweets” and “Replies”. “Tweets” lists the tweets (and retweets) that are made by him, and “Replies” lists the comments written by him.

If the user clicks on “Edit”, the following modal will be shown as figure 8.

In figure 9, The camera icon at the center of the banner and avatar suggests that the user can select a new picture (or a take a photo). Below shows two input bars. The first one is for changing username, while the second is for changing the biography. When the user is done, they will hit the “Save” button on the right-hand corner. Users can click on the cross button on the upper-left corner to discard the changes.

2.5.2 Screen Images

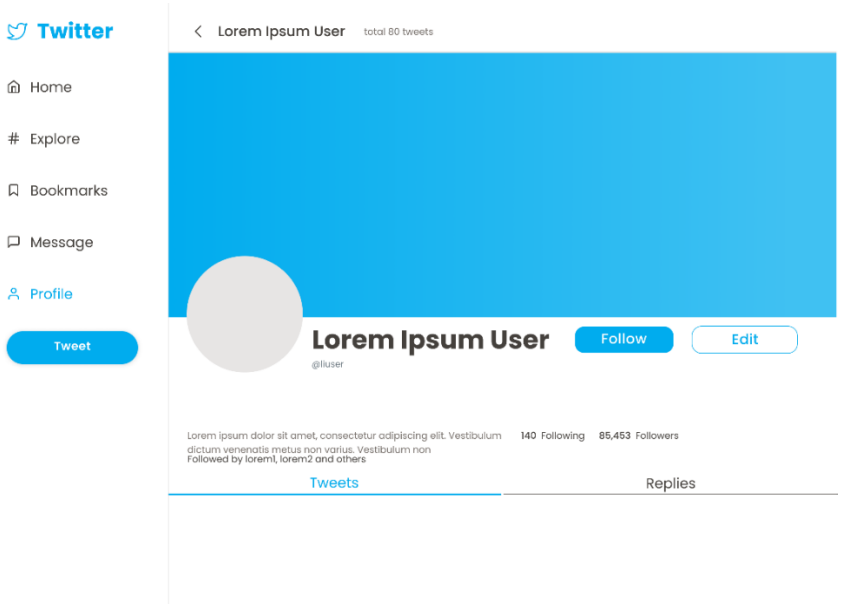


Figure 8 User Profile Page

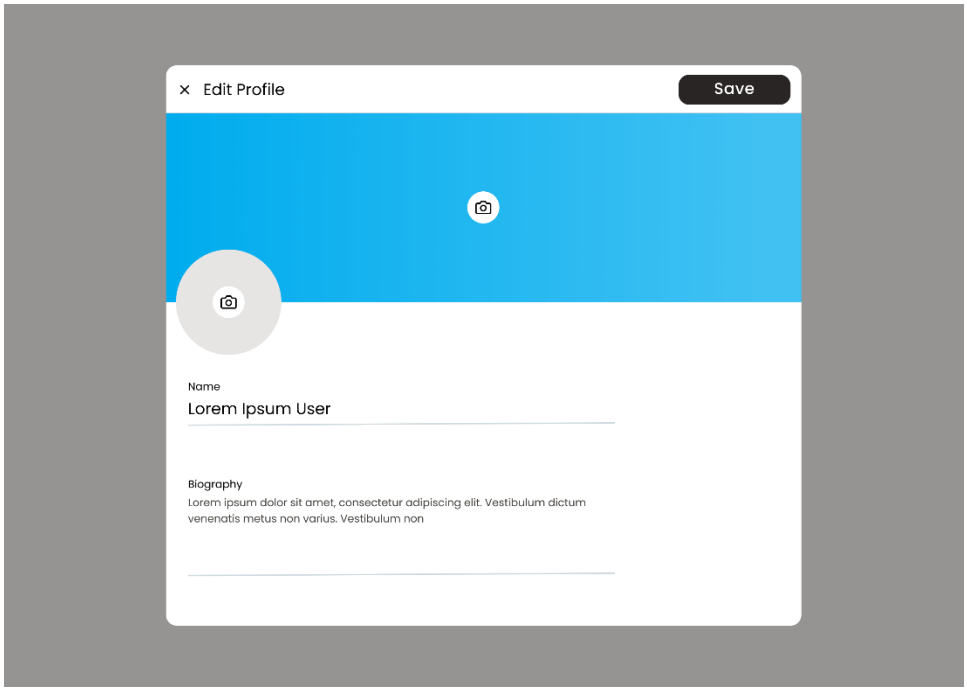


Figure 9 Edit Profile Modal

2.6 View-Tweet Page.

2.6.1 Description of the view

When users clicked the tweet they want to read, they will redirect to a tweet page. In tweet page, you can view the author's icon and username, content and attachment of the tweet. You can click the action list to unfollow the author or add the tweet to your bookmark.

In the bottom of the tweet, you can proceed to react on the tweet including like, comment, retweet and share. you can see the comments of the tweet. You also can make reaction on a comment.

The relevant authors' and stakeholders' information will be shown on the right side "relevant people" box.

2.6.2 Screen Image

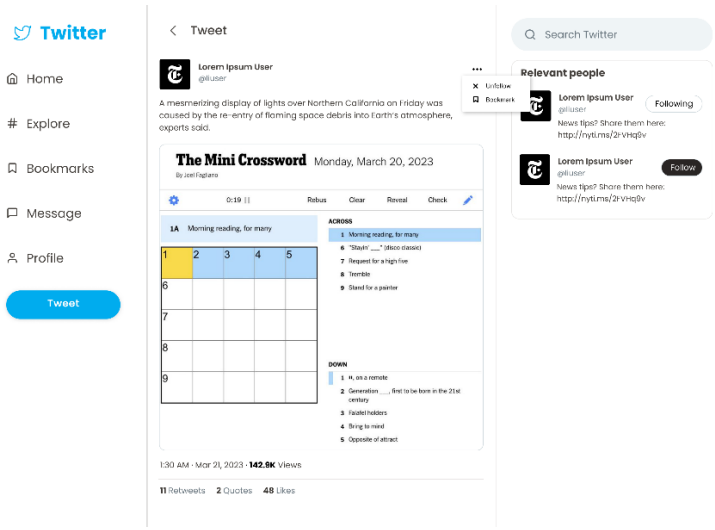


Figure 10 Tweet page

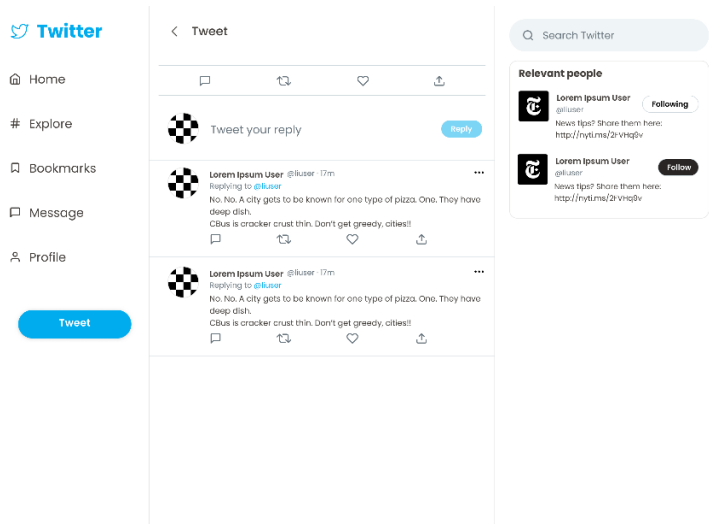


Figure 11 Tweet page (scroll down)

2.7 View-User Management

2.7.1 Description of the view

The user management page consists of a search bar and a (paginated) huge table of users. Each row has several fields, including user id, username and handle. On the right of each row there are some actions the administrator could do. The first button allows admin to modify their profile, the second one disables their account (while keeping the user in the database), and the third one completely eradicates the user from the database.

The search bar allows the administrator to filter by usernames.

2.7.2 Screen Image

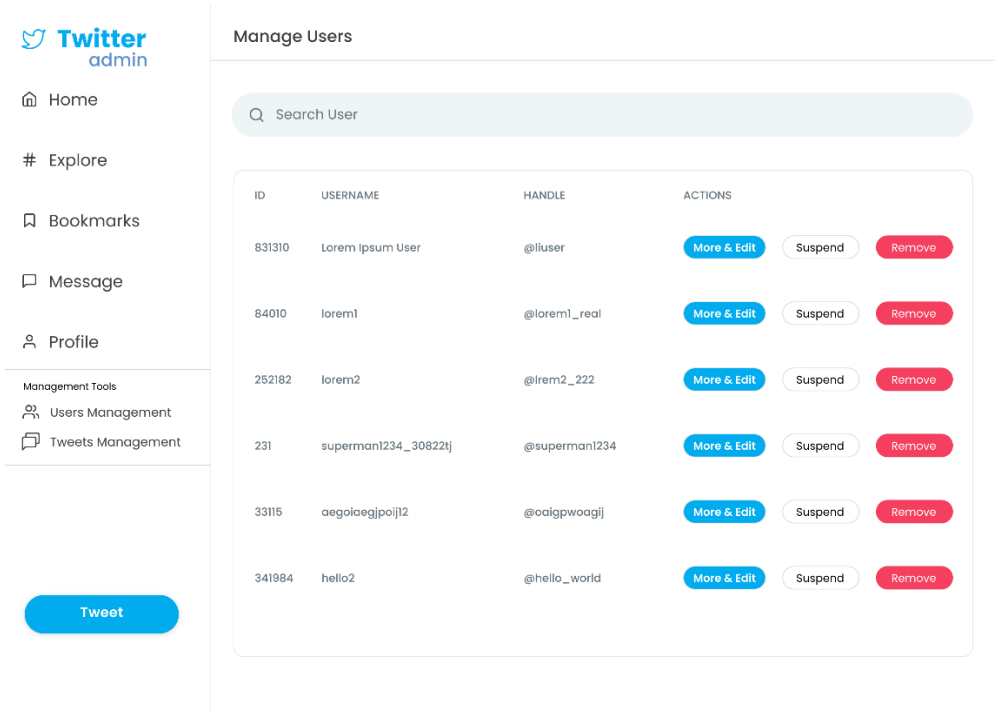
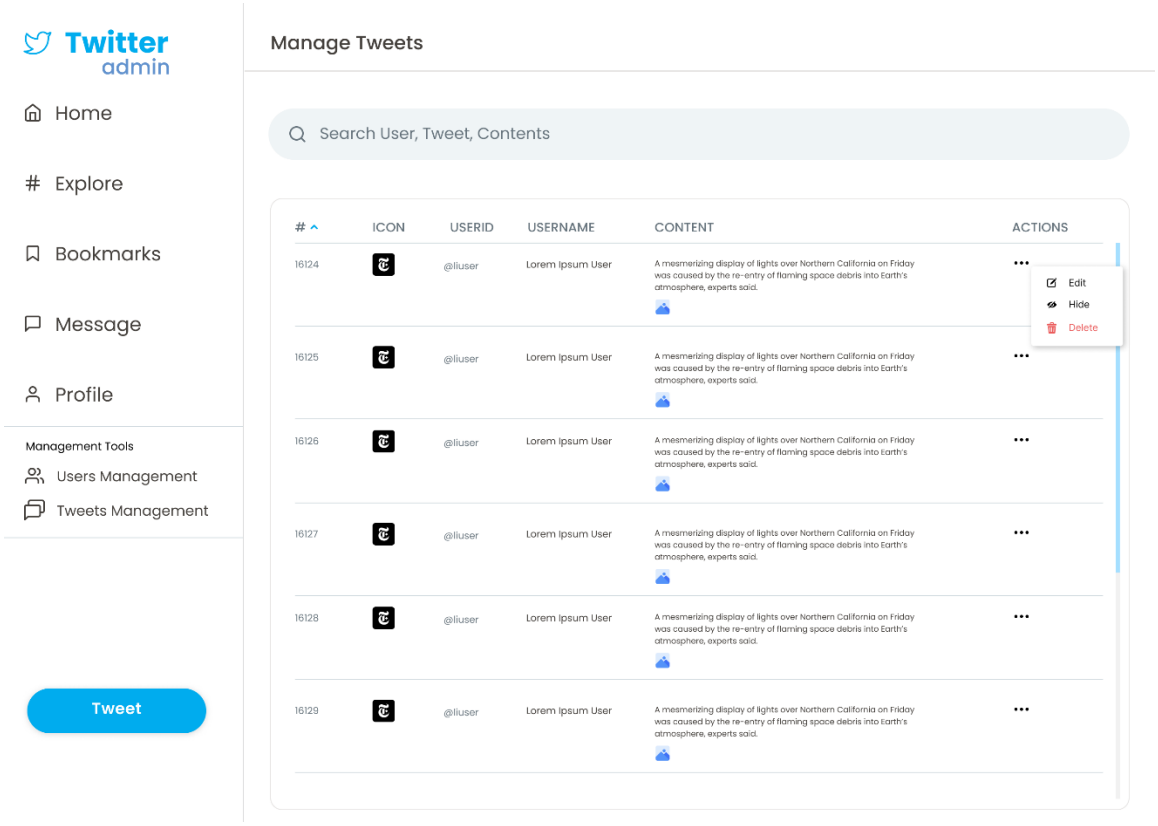


Figure 12 User Management Page

2.8 Vied-Tweet Management

2.8.1 Description of the view

The tweet management page consists of a search bar and a table of tweets. Each row has several fields, including tweet id, user id, username, content and actions. Admin can edit, hide or delete a tweet. If the tweet included some attachments, admin can click the correspond icon to view the attachment.

The search bar allows the administrator to search a tweet by keywords of user's information or tweet's information.

2.8.2 Screen Image