

Cost Table

Function	Optimistic A	Most M	Pessimistic B	Expected Le	Deviation Ld	\$/Line Line/Months
UI	400	550	700	550	25	20
Database Manager	150	250	400	258.3333	16.66667	20
Profile Manager	200	300	400	300	16.66667	20
Login Manager	50	100	125	95.83333	8.333333	20
Contact Manager	100	150	300	166.6667	8.333333	20
Chat Manager	200	300	400	300	16.66667	20
Total	1100	1650	2325	1670.833	91.66667	\$33,416.67

Schedule Table

	week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Task																
send messages	Requirements			o		x										
	Design				o		x									
	Code									o			x			
	Test											o				x
view chat history	Requirements			o		x										
	Design				o		x									
	Code						o							x		
	Test													o		x
Post status	Requirements			o				x								
	Design					o			x							
	Code									o				x		



	Design					o		x						
	Code						o				x			
	Test									o				x

## Software Requirements

### **1. Product Overview and Summary**

To have a small company become the next big thing like Facebook or WeChat, it is certainly a dream every programmer, marketing team, or your friend that puts all his money into that company's stock and become rich could wish for. Even in the earlier days of AIM, Skype and Facebook, these ideas were grand successes, but now with the evolution of technology and everyone using the internet, they were the steppingstones for something much bigger. Kids, teens, and adults are fascinated by social media and instant messaging because it is so easy yet exciting to use because of the various features these software programs can let you do. If you were to check the market for these kinds of software applications, you'll find companies like WhatsApp and WeChat, who have 3 million plus users daily, are making billions of dollars in revenue a year off their app. Due to the popularity and demand for this kind of product, our group decided to make our own social/web chat program that we believe users will want to use and become the next big thing.

Our product is a place where people become friends or find their friends so they can communicate with one another and a social gathering where you can see what your friends' statuses, which can lead to conversation amongst each other, see what their thinking about or opinions on certain issues or drop a funny joke to make your friends laugh. Our web application aims to be for everyone and not just a selective group; we want everyone to meet new people, have social interaction with one another that could be somewhat difficult with our busy lives, and bring a user something fresh and new compared to the other social/chat applications like WeChat or WhatsApp. To give the user this new experience, we came up with the main functions that will make it happen. We have everything from being able to add a user, lookup an existing user, delete a user from your contact list, send messages to your friends, view chat history,

accept/deny friend requests, block certain users, customize/set your profile, post statuses and view your friend statuses.

## 2. Information Description

### 2.1 UI

The image shows a wireframe of a user interface for account management, divided into two main sections: registration and login.

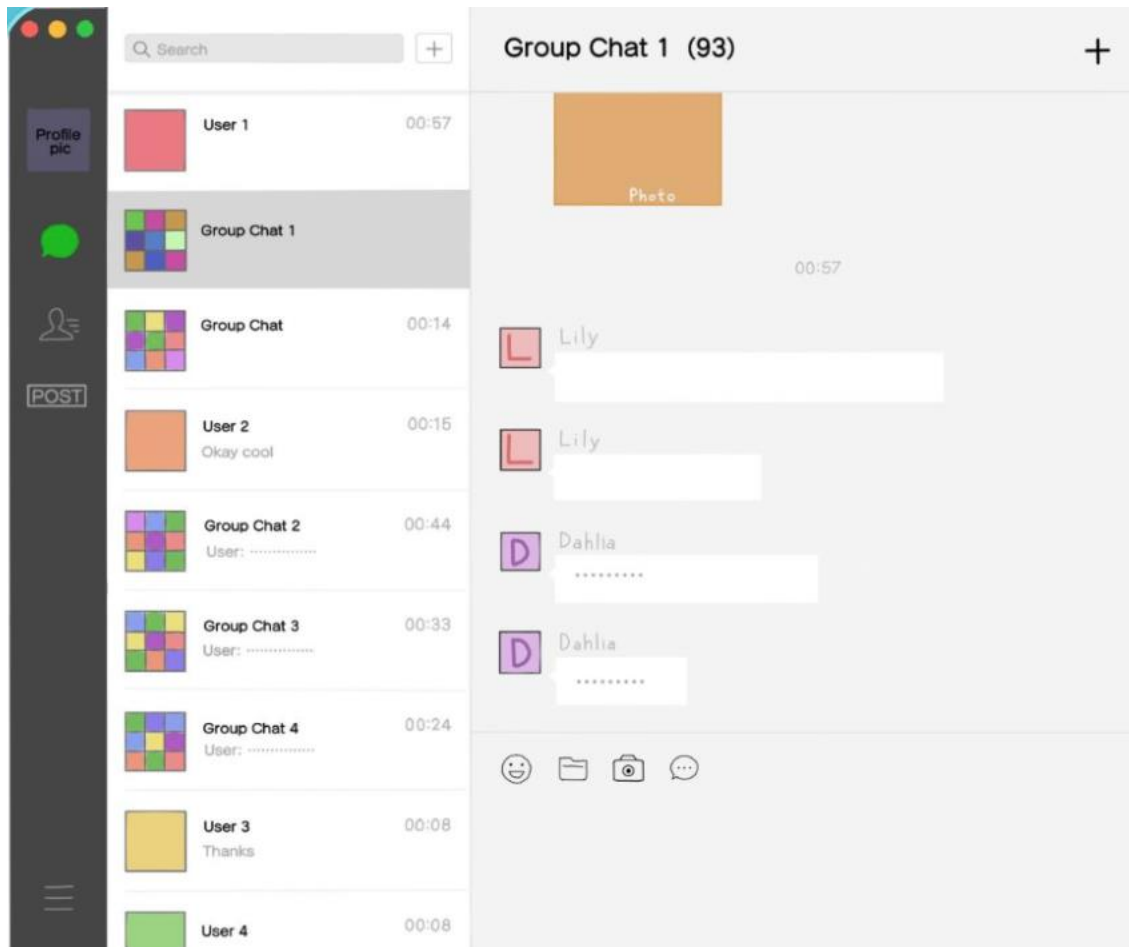
**Registration Section (Left Panel):**

- Header:** "Get started" in bold, followed by "by creating your personal account" in a light blue box.
- Form Fields:** Three input fields labeled "Name", "Email", and "Password".
- Agreement:** A checkbox labeled "I agree to Term & Conditions of service use and accept Privacy Policy".
- Action:** A blue "Sign up" button.

**Login Section (Right Panel):**

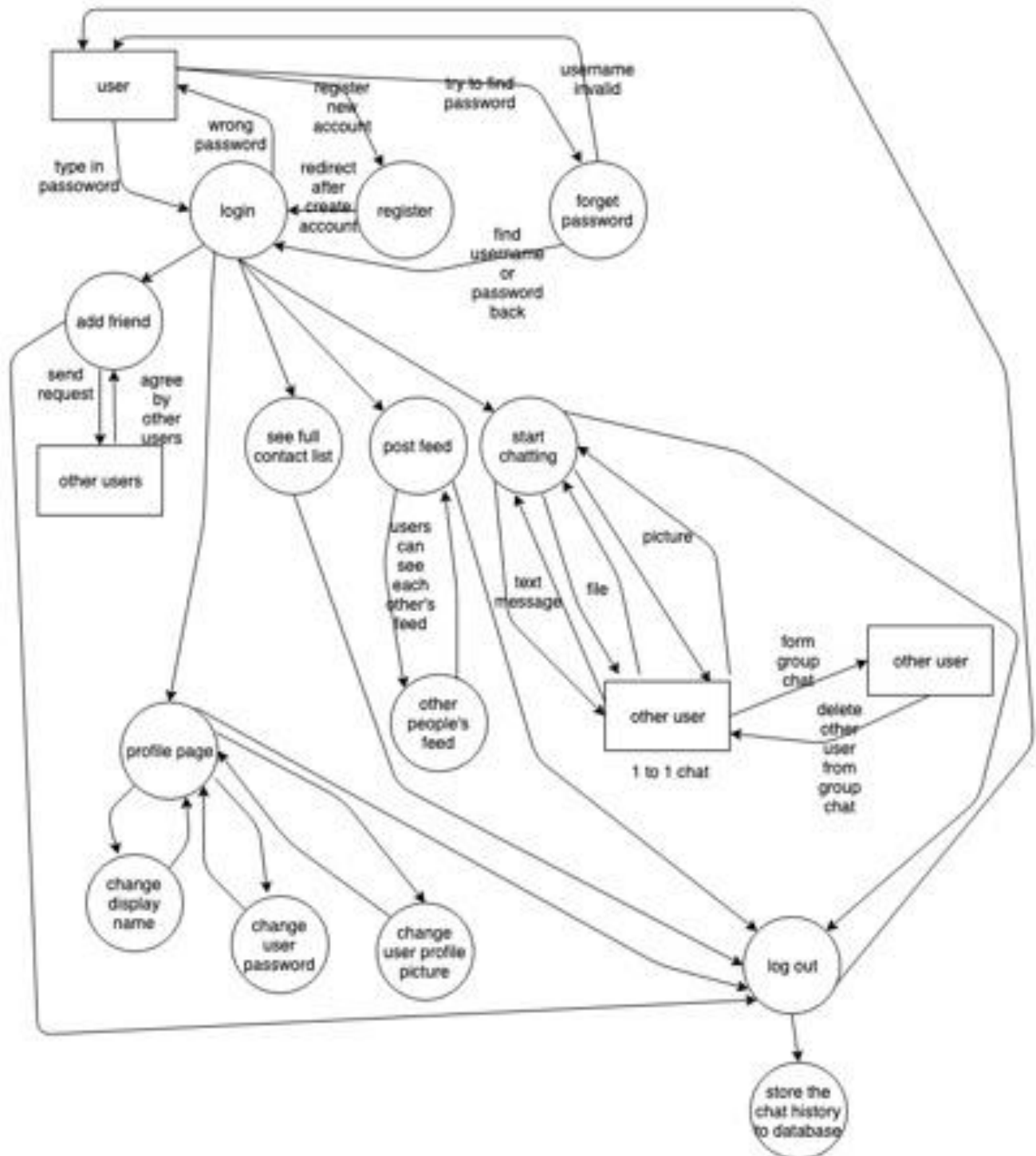
- Header:** "Already a member?" in a white box, followed by "Great to see you back!" in a light blue box.
- Form Fields:** Two input fields labeled "Email" and "Password".
- Action:** A blue "Sign in" button.

The left side is for user to register, the user can type in the username, email and password, by clicking to agree the agreement and the sign-up button the user can register their own account. If the user already has the account, they can go to the right side, directly type in their email address and password, and click the sign in button, the application will redirect the user to the main page.



The main chatting page, the left side bar the message button will let the user to see all of their current chatting, the contact button will allow the user to see their full contact list, and the post button allow users to post feed. The left bottom button will allow the user to go to profile and setting. The middle part is for the user to see their current chatting, they can click each bar to chat with different people, or group. The right part is the chatting window, this is where the user can send text message, file and pictures. By clicking the right upper corner add button, users are able to create the group chat.

## 2.2 High Level Data Flow Diagram



For the above DFD wish list components: Group chat features, sending files, and forgot password.

### **2.3 Data Structure Representation & 2.4 Data Elements**

In the Database:

STRUCTURE : ELEMENTS

User: user\_id, f\_name, l\_name, email, contactor\_user, profile pic, admin

Post: user\_id, post\_feed, data\_post

Message: user\_id \*2, message\_detail


WISHLIST: Group: user\_id \*members\_in\_chat, groupmessage\_detail, members\_in\_chat

### **3. Function Description & Limitations & IC cards**

#### **1. Create Account:**

Users will be able to create their own personal account/profile. They will choose a username upon creation which is unchangeable. For our wishlist we want to connect their account to an email.

This feature will not allow duplication of account usernames. Upon creation a user will only be able to set their username, password, and their profile name. Anything else will be managed by the profile manager.

IC Card	IC Name: <u>Create Account</u>
Description: <u>Creates a new user</u>	
Interaction Pattern:	
	
<input type="radio"/> Quiet State	<input checked="" type="radio"/> By Myself no Interaction
<input type="radio"/> By Myself with Interaction	<input type="radio"/> By Others no Interaction
<input type="radio"/> By Others with Interaction	<input type="radio"/> Mixed
My Task: <u>Input a unique username and a password</u>	
Time Critical Condition: <u>2 seconds</u>	
Name of Other IC: <u>None</u>	
Message to Other IC: <u>None</u>	
Other IC's Task: <u>None</u>	
Card 1 <u>      </u> of 1 <u>      </u> (If necessary please use several IC cards to describe an IC)	

#### **2. Add User:**

Users will be able to add users by username and add them to their contact list, if a user is already a part of the contact list, this function will tell the user that the attempted add failed because their contact list already contains who they are trying to add. Upon success, a user will be added to the contact list.



This is not a search feature, so it is either the exact username or failure to add the user. A user may not add multiple users in one line either, each user must be added separately.

## IC Card

IC Name: Add\_User

Description: Adds a user to your contact list

Interaction Pattern:



My Task: Submit a request to add another user

Time Critical Condition: 2seconds

Name of Other IC: Accept/Deny\_user

Message to Other IC: Request to contact


Other IC's Task: Respond to the request

Card 1 of 1 (If necessary please use several IC cards to describe an IC)

### 3. Lookup User:

This will allow users to look up usernames for closest matches from the database. This feature will have to match the usernames by searching the database for the input, users will be organized in a first match basis. The lookup feature will only work from the start of the username. For example, if there exists a user "ABCDEFGH" and a user "BCDEFGH", and a user looks up "BCDEF", the only result will be the second user "BCDEFGH".


This function does not allow to add, delete, or block users; to do those actions, a user must use those specific features. This feature will not sort users! It will not provide CLOSEST match, but FIRST match that contains and starts with the searched username; for example if in the database we have user ADS22 and user ADS in that order and a user searches "ADS", "ADS22" will be the first result, also if a user were to search "DS", neither user will appear.

<b>IC Card</b>  Description: Search the database for a user Interaction Pattern: <div style="text-align: center; margin: 10px 0;">  </div> By Myself no Interacton My Task: type in a username Time Critical Condition: 2seconds Name of Other IC: None Message to Other IC: None Other IC's Task: None Card 1 of 1 (If necessary please use several IC cards to describe an IC)	IC Name: Lookup_User
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#### 4. Delete User:

This will allow users to delete users from their contact list. If the user does not exist or is not a part of the contact list, this function will fail; warning the user that they are trying to delete an invalid contact from their list.


This feature will not search for the user to delete, it is either an exact input or failure. Also, this will only delete from the contact list of the user executing the delete function, the other user will lose the link to the one whom deleted him, but it will display the one that deleted the user as "Invalid recipient".

<b>IC Card</b>  Description: Remove a user from your contact list Interaction Pattern: <div style="text-align: center; margin: 10px 0;">  </div> By Myself no Interacton My Task: Select a user to delete Time Critical Condition: 2seconds Name of Other IC: none Message to Other IC: none Other IC's Task: none Card 1 of 1 (If necessary please use several IC cards to describe an IC)	IC Name: Delete_User
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#### 5. Accept/Deny User:


The user will have the decision to either accept or deny the “other user”, who is trying to add them as a friend. If the user accepts the request, both user can interact with one another being able to chat, see each other’s profile, call/video chat, etc. Unless if the user denies the request, the “other user” who was trying to add the user will not be able to communicate the user nor be able to see the user’s profile.

This feature can only work when the user receives a request from another user.

<b>IC Card</b>	IC Name: Accept&Deny User
Description: gives user the decision whether to accept/deny another user	
Interaction Pattern:	
	
By Myself with Interaction	
My Task: Accept/Deny User	
Time Critical Condition: 2 seconds	
Name of Other IC: User (who is trying to become your friend)	
Message to Other IC: Can interact with other user if he/she accepts request	
Other IC's Task: Cannot interact with other user if he/she denies request	
Card 1 of 1 (If necessary please use several IC cards to describe an IC)	

6. Block User: When a user is blocked by another user, they will no longer be able to have any communication with this user, see their profile page or search for them in the database.

To block a user, the username must be known, it cannot search for users.

<b>IC Card</b>	IC Name: Block User
Description: can block user and prevent them from seeing you	
Interaction Pattern:	
	
By Myself with Interaction	
My Task: Block User	
Time Critical Condition: 2 seconds	
Name of Other IC: Blocked User	
Message to Other IC: cannot contact you, see your profile or search you	
Other IC's Task: none	
Card 1 of 1 (If necessary please use several IC cards to describe an IC)	

7. Set profile: When the user registers for an account, they will be directed to their personal profile page and be able to customize it to their liking. After setting their profile, they will be able to go back and be able to change things like their profile name, profile picture, profile password, etc.

This will not allow a user to change their sign in username! That is created when they create their profile.

### IC Card

IC Name: Set Profile

Description: customize how your profile page will look

Interaction Pattern:



By Myself no Interaction

My Task: ability to set and late change how your profile page looks like

Time Critical Condition: 4 seconds

Name of Other IC: none

Message to Other IC: none

Other IC's Task: none

Card 1 of 1 (If necessary please use several IC cards to describe an IC)

### 8. Post Status:

Send post, your friend can see them. It may fail when the system getting update or the servers being hack. If the function fails, maybe two things will happen, unable to post the status or can't view posted status. If the user trying to put unsafe code or junk, it will simply display it as a string and not run it.

### IC Card

IC Name: Post Status

Description: Post a status to your profile

Interaction Pattern:



☐ Quiet  
State



☒ By Myself  
no Interaction



☐ By Myself  
with Interaction



☐ By Others  
no Interaction



☐ By Others  
with Interaction



☐ Mixed

My Task: Create a status and post it

Time Critical Condition: 2 seconds

Name of Other IC: none


Message to Other IC: none

Other IC's Task: None

Card 1 of 1 (If necessary please use several IC cards to describe an IC)

## 9. View Status


Able to see friend status. It may fail when the system or database getting update. If the function fails, user cannot see other people's post.

<b>IC Card</b>	IC Name: <u>View Post</u>
Description: <u>View a users post</u>	
Interaction Pattern:	
	
<input type="radio"/> Quiet State <input type="radio"/> By Myself no Interaction <input checked="" type="radio"/> By Myself with Interaction <input type="radio"/> By Others no Interaction <input type="radio"/> By Others with Interaction <input type="radio"/> Mixed	
My Task: <u>Look up a post from a users profile</u>	
Time Critical Condition: <u>2 seconds</u>	
Name of Other IC: <u>Post status</u>	
Message to Other IC: <u>none</u>	
Other IC's Task: <u>The other user must have a status posted</u>	
Card <u>1</u> of <u>1</u> (If necessary please use several IC cards to describe an IC)	

## 10. Send Messages

users can send out text message to other user, or group chat. They have no word length limitation. They can send text, numbers, or symbols.

When the user tries to send a blank message, the application should alert the user not to send empty message; when the user tries to send out more than 1000 words, the application should alert the user that they exceed the limitation of the word; If the user tries to send javascript, when output it will be treated as pure text and not run.

<b>IC Card</b>	IC Name: <u>send message</u>
Description: <u>send messages between user and user or users</u>	
Interaction Pattern:	
	
By Myself with Interaction	
My Task: <u>build function to help user interact with each other (send message specifically)</u>	
Time Critical Condition: <u>2 seconds</u>	
Name of Other IC: <u>User (current users in the chat)</u>	
Message to Other IC: <u>can interact with other users, send message between each other</u>	
Other IC's Task: <u>cannot interact if they are not friend</u>	
Card <u>1</u> of <u>1</u> (If necessary please use several IC cards to describe an IC)	

### 11. View Chat History

every time the user log out, the users' chatting history will be stored in the database, we will store up to 7 days chat history for the user.

When the amount of data after zipping is still too big, the application will limit the amount of data. When the application uploaded the chat history successfully, the chat history will be re-open when the user uses the web application again.

#### IC Card

IC Name: chat history

Description: store the chat history up to 7 days

Interaction Pattern:



By Myself no Interacton

My Task: when the user log out, all the chat history will be zipped and stored to the database

Time Critical Condition: 2 seconds

Name of Other IC:

Message to Other IC:

Other IC's Task:

Card 1 of 1 (If necessary please use several IC cards to describe an IC)

## **User Manual:**

### **1. Product Overview**

Our product is a place where people become friends or find their friends so they can communicate with one another and a social gathering where you can see what your friends statuses which can lead to conversation amongst each other, see what their thinking about or opinions on certain issues or drop a funny joke to make your friends laugh. Our web application aims to be for everyone and not just a selective group; we want everyone to meet new people, have social interaction with one another that could be somewhat difficult with our busy lives, and bring a user something fresh and new compared to the other social/chat applications like WeChat or WhatsApp. To give the user this new experience, we came up with the main functions that will make it happen. We have everything from being able to add a user, lookup an existing user, delete a user from your contact list, send messages to your friends, view chat history, accept/deny friend requests, block certain users, customize/set your profile, post statuses and view your friend statuses.

### **2. Getting Started**

#### **1. Landing page**

The landing page has three basic functions that the user will use, which are login, register, and the forget password page, as well as the introduction of our chatting web application in the left side of the web page.

##### **a. Login**

There are empty text blocks for the user to type in their username, and password, once the user clicks the login button, the system will check it through the database, if they all match the user will be redirect to the main chatting page, and if the user types in the wrong username or password, the system will alert the user that they need to re-enter their username and password.

##### **b. Register**

The user can click the register button to register their own account, once they clicked the register button, the application will redirect the user to the register page, which allows the user to make their own username, password, and profile picture. For the password part, the user needs to type twice for confirmation purpose. And they need to follow certain rules to make their password. There should be a back button for the user to get back from the register page to the landing page.

##### **c. Forget password**

The user can click the forget password to get their password back, after they click the forget password button, the user will be redirect to the forget password page, and after they enter their username on the empty text block, the system will send out email to let the user change their password through that email.

## 2. Main chatting page

The main chatting page allows the user to see their contact list, their chat window, and the ability to go to profile page, as well as log out.

### a. Contact list

The contact list feature is in the left side of the whole main page, users can see their friend lists, and by clicking the add button on the top, users can add new contact through searching other users' username. By clicking each contact, the application will pop out the chatting window.

### b. The main chatting window

The main chatting window will have empty space in the bottom for the user to type in text. By clicking the send button, the user should be able to send the message to other user. Also, there are buttons for sending pictures, files, (voice message, video chat). The user can do group chat by clicking the add in the chatting window and add other user from the contact list.

### c. Other buttons

By clicking the log out button, the application will log the user out, and redirect the user back to the landing page; and by clicking the profile button, the user will be redirected to the profile page.

## 3. Profile page

The profile page allows the user to change their display name, and their password, and change the profile picture by clicking each button, and also the user can log out through the log out button. And the application will redirect the user back to the landing page.

## **3. Modes of Operation**

### Chatting web app

To chat in the system, the user must complete the following steps. First, need have an account and type in the username and password and login to the main chatting page. Next, click the friend/contact the profile to start a message. For each contact, it has own chatting pages. See the steps below for a more detailed description,

The user who don't have an account need to register an account by an unused username.

- 1.1 At the login and register screen pictured below, at get started click the textbox titled "Name" and type your username. And type your email under the email. Then click into the box titled "Password" and type your password. And if the user ready to agree the term by click box and click sign up. Finish create the personal account.



**Get started**  
by creating your personal account

Name

Email

Password

☐ I agree to Term & Conditions of service use and accept Privacy Policy

Sign up

**Already a member?**  
Great to see you back!

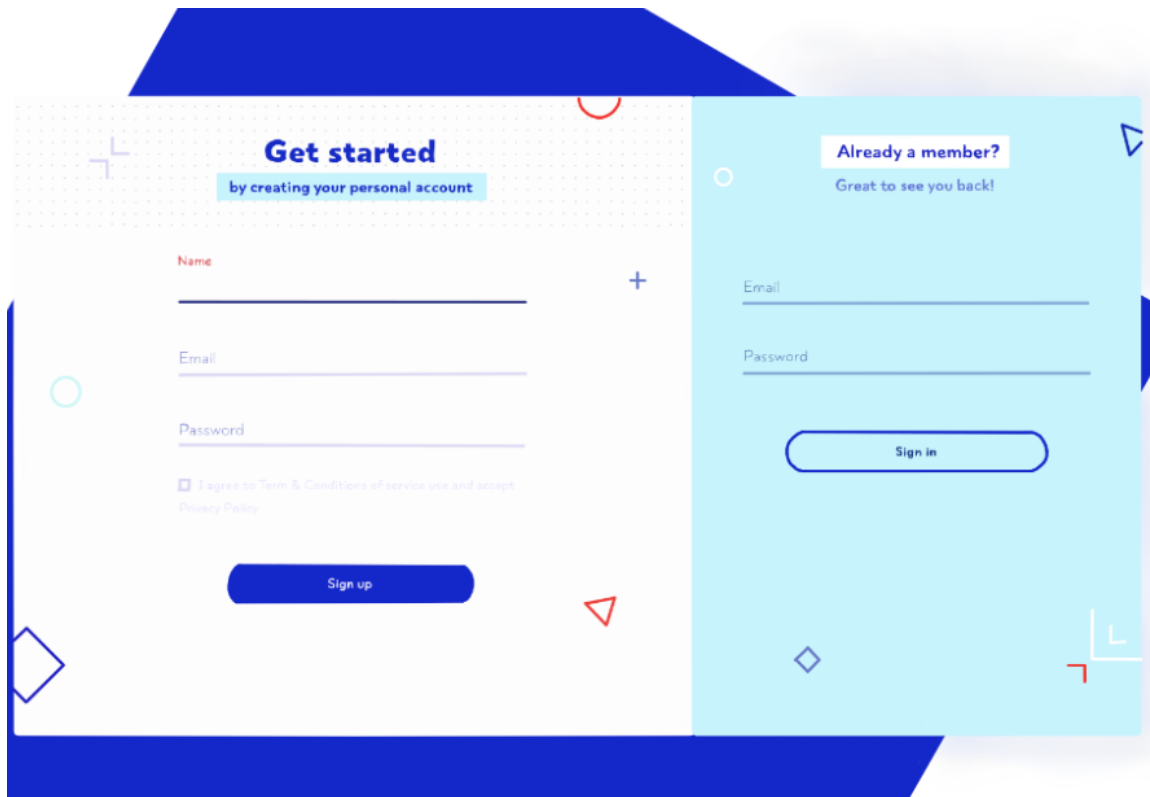
Email

Password

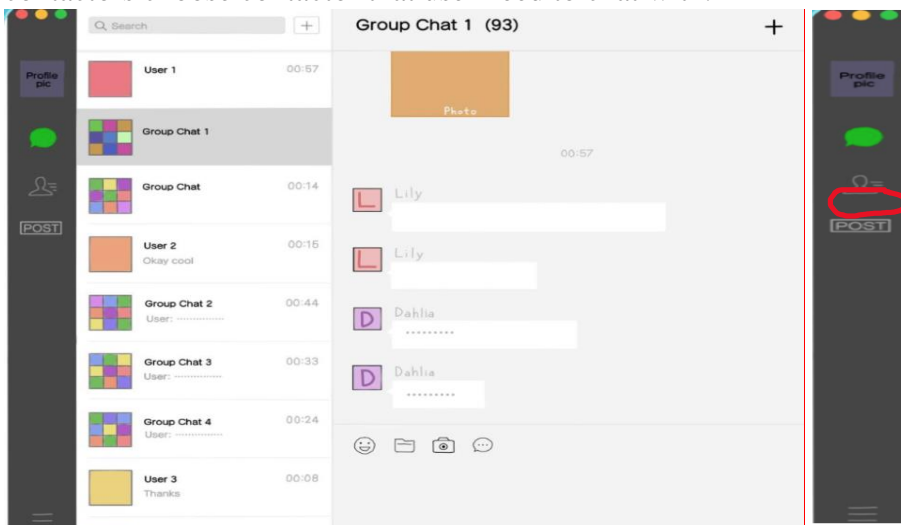
Sign in

The user who have an account in the system need to login into the system by right password and username.

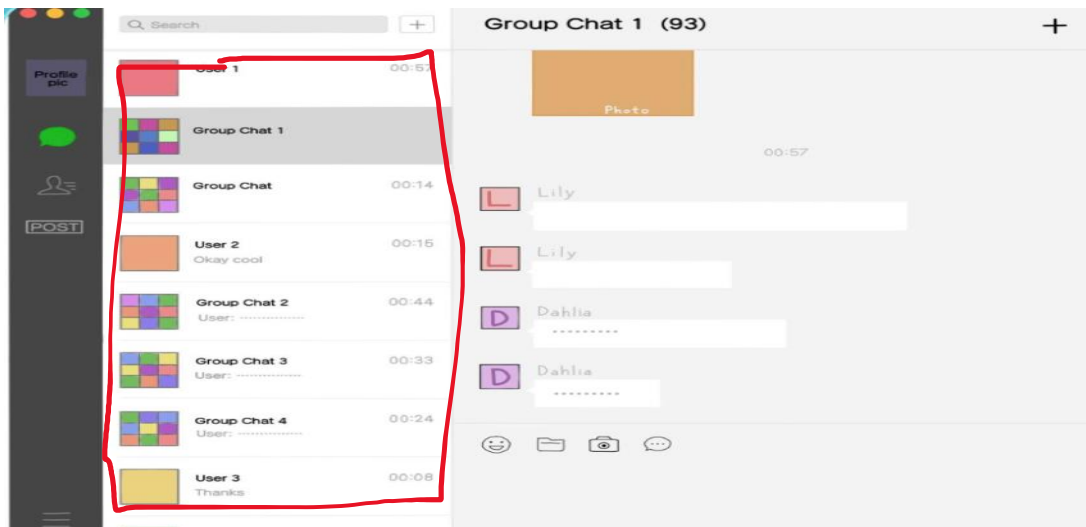
- 1.2 At the login screen pictured below, click into the textbox titled under the “Already a member” “Username” and type your username. Then click into the box titled “Password” and type your password. Complete the login process by clicking the button titled “Sign in.” And it bring you to the main chatting page.



2. At the main chatting page on the left side there contact button, click it and it will show users contactors choose contactor that user need to chat with.



3. After the choose the user that you want to contact, and the user you choose will pop up the first one on your recent connection list. And you can chat the current user that you choose. And you can click to other recent chatting group or people in middle slide bar and chat with them.



You want chat with the them click the text field at the right bottom place and hit enter or send button to send the message to your friend.

4. You can quit the login session by click the top left red button to logout of the chatting system. The quit button will return you to the login pages. If you login by different computer, the chatting history only last for 7 days.