



INFO90007 Social Computing

Geochat

Youtube: <https://www.youtube.com/watch?v=wBkntf8JZKY&app=desktop>

AdobeXD: <https://drive.google.com/file/d/1i-gzrCp2d0kcFKCMbI7dBIqS2EqtfR5r/view?usp=sharing>

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1. Introduction

Nowadays, people are constantly surrounded by enormous amount of information. However, due to the broad range and non-refined feature of information, sometimes it is hard to figure out the information that are most useful for them. Therefore, Geochat aims to category different kinds of information by enabling some self-organized group communications, and users can choose to join some groups based on their interests and locations. Within the groups, they can have a more real-time and interactive chatting and get the most useful information for them.

Geochat combines GPS locating with a social chatting platform. Once users have logged in, they can view different groups or meetups that within a radius of five miles, and each group also has its own distance range that only people within the range could join the group. They can then choose some groups or meetups based on their own interests and their locations. In the group, they can share some real-time information such as sale information or traffic congestion in this particular area. Besides, they can also create some meetups within the groups or out of the groups, which encourages them to make new friends. And once they leave the group range, they will automatically leave the group, which aims to keep the information in the group accurate and real-time.

In brief, Geochat is not only an application that helps people to get the real-time information, but also a platform for them to make new friends.

2. Prototype and evaluation

2.1 Low fidelity

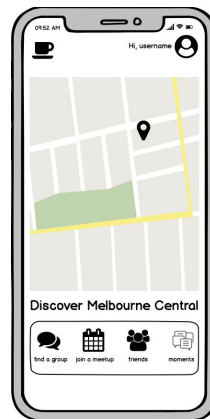


Figure 1 Home Page

On the home page of the application, there is a map showing user's current location. And there are four buttons in the bottom of the page: find a group, join an event, friends and forum, which are the main function of the system.

1) Find a group

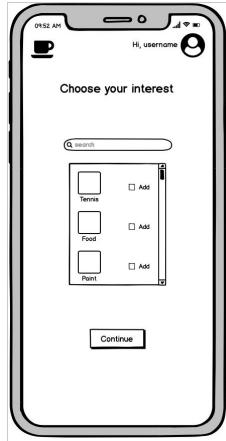


Figure 2 Choose interests when sign up

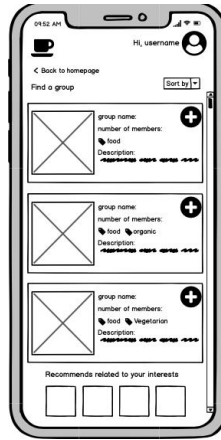


Figure 3 Group Lists

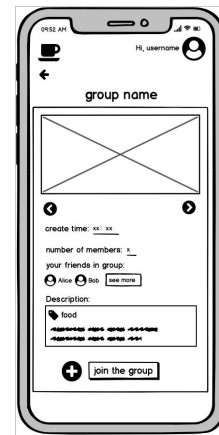


Figure 4 Group Details

After users sign up, they are allowed to choose some topics they interested, such as organic food, traffic, etc,. When they click “find a group” button on the home page, the system will automatically recommend some groups for them based on their interests and locations.

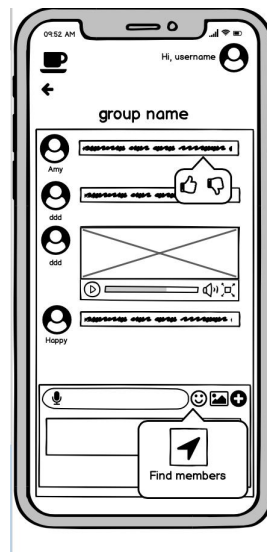


Figure 5 Group Chatting

In the group, they can send messages including videos and pictures. Other group members can also give likes to others’ messages. And users who get more likes will also get more credits that shown on their profile page, which is along with a reputation system. Besides, they can also create a meetup in the group and invite others to join in. They can also set the meetup public or private, which means whether the meetup allows users who are not in this group to join in.



Figure 6 Check Members Locations

In the group, they can check other members' locations on the map if they set them public. Then they can also say hi to others, which is a new way to make new friends.

2) Find a meetup

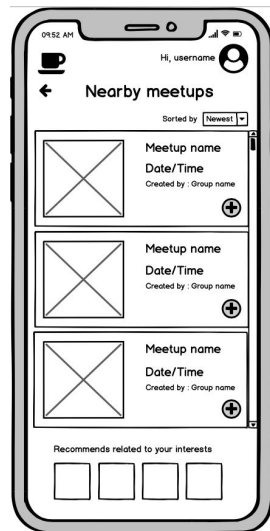


Figure 7 Meetups Lists



Figure 8 Meetup Details

Users can search for some meetups based on their interests and locations. When they click “find a meetup” button, the system will automatically show some meetups, and users can also sort them by time or location. When they find some meetups that they might be interested in, they can view meetup introduction, time and location and direction. They can then complete an online form to join in or share the meetup to others.

3) Chat with friends

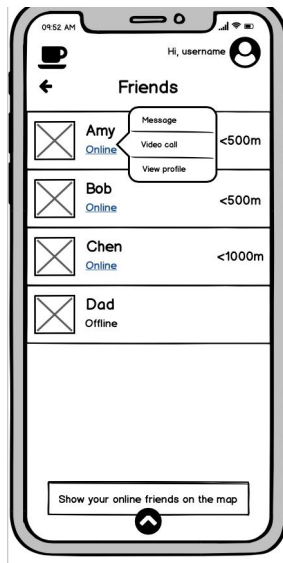


Figure 9 Friends Lists

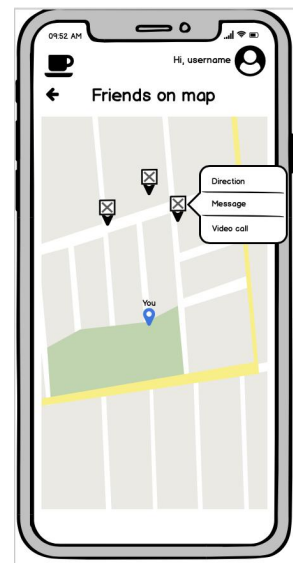


Figure 10 Friends on map

When the click “friends” button on the home page, they can view friend list, also showing the distances between them. They can view their online status and send messages. On the bottom of the page, there is a button that allows user to view their friends’ locations.

4) Moments

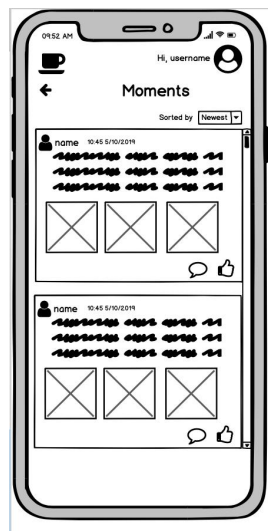


Figure 11 Moments page

When they click “moments” button on the home page, they can view others not only their friends’ posts about some events or other interesting things. They can also give likes or comments on others.

5) Profile page

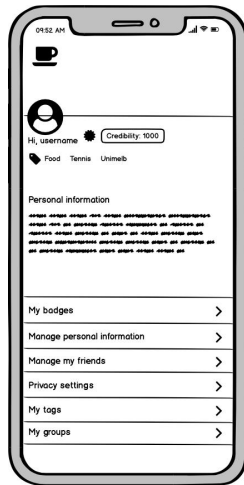


Figure 12 My profile

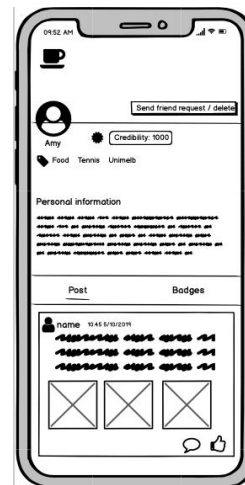


Figure 13 Other users' profile

For the user's profile page, they can manage their personal information and tags. They can also view the credibility which is along with the reputation system.

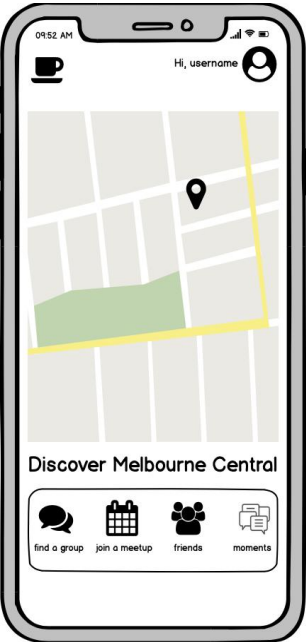
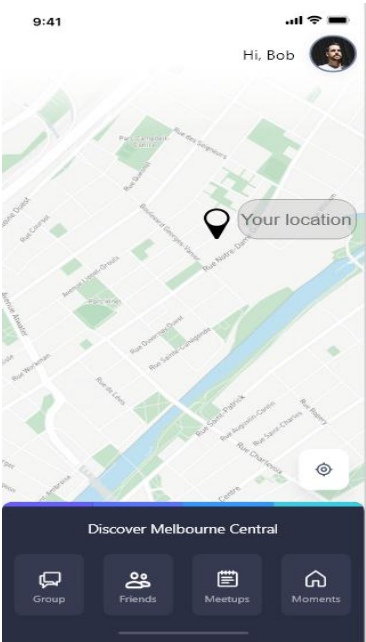
On the page of others' profile, in addition to the basic information such as tags or personal information, they can view others' post and budes they get.

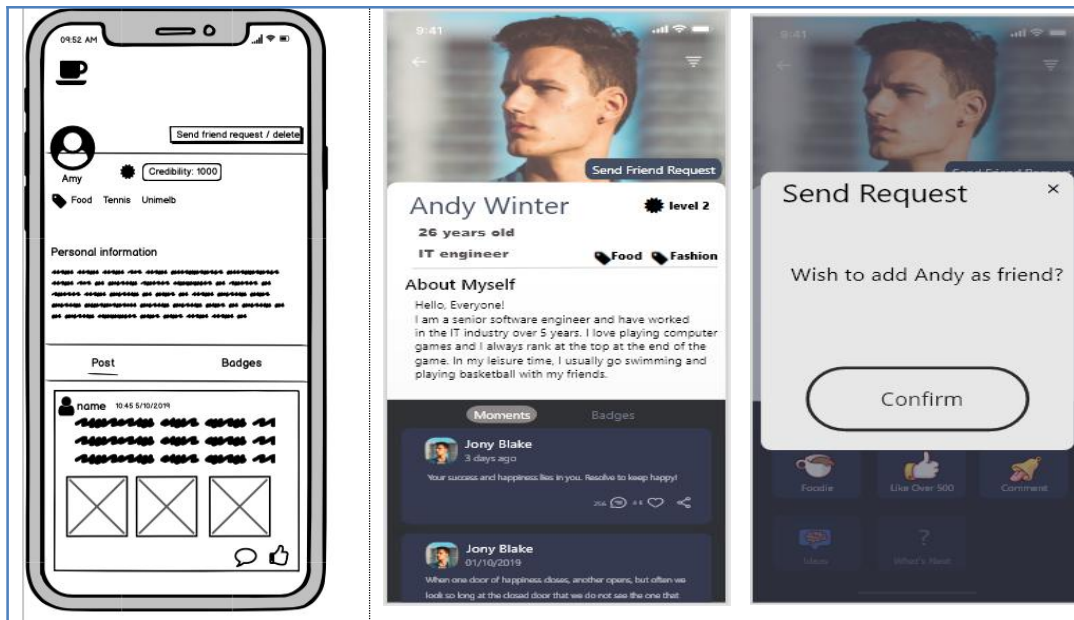
2.2 First Version

2.2.1 Updated features

The basic functions described in the initial prototype are further improved in the first version of the prototype implemented using AdobeXD and the transitions between pages and interactive features are also added into this version.

1) The changes for the main interface and user profile

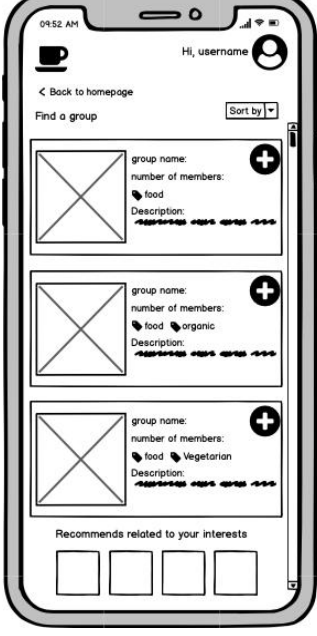
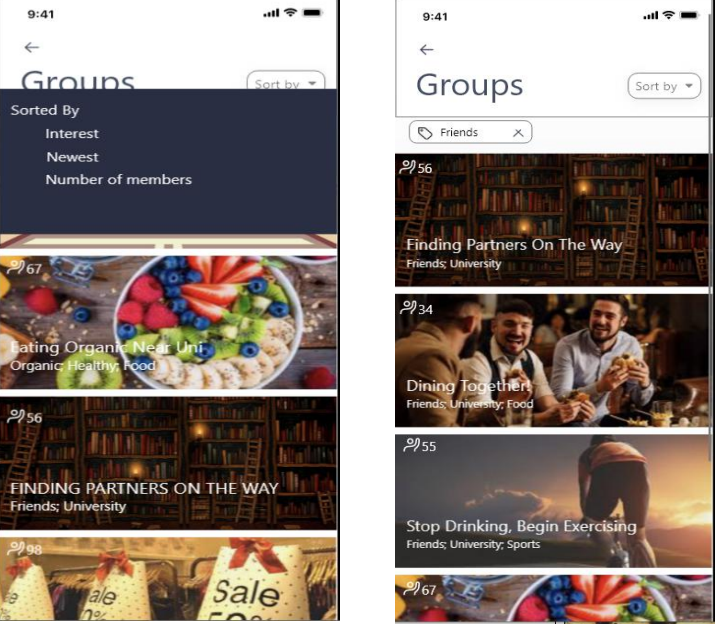
Previous Version	Updated feature	Comment
 The previous version of the app interface is shown on a smartphone screen. At the top, the status bar displays '09:52 AM' and signal icons. Below the status bar, there's a header with a coffee cup icon, the text 'Hi, username', and a profile icon. The main area features a map with a yellow line and a location pin. At the bottom, there's a dark blue bar with the text 'Discover Melbourne Central' and four icons: a speech bubble, a calendar, a group of people, and a document. Below these icons are the labels 'find a group', 'join a meetup', 'friends', and 'moments'.	 The updated feature of the app interface is shown on a smartphone screen. At the top, the status bar displays '9:41' and signal icons. Below the status bar, there's a header with the text 'Hi, Bob' and a profile icon. The main area features a map with a location pin and the text 'Your location'. At the bottom, there's a dark blue bar with the text 'Discover Melbourne Central' and four icons: a speech bubble, a group of people, a calendar, and a document. Below these icons are the labels 'Group', 'Friends', 'Meetups', and 'Moments'.	<p>After successfully logging in, the users might make the selections of different functions through the bar at the bottom and four features are linked with the major functions respectively illustrated in the previous prototype. Additionally, the users can view his/her current location in the map by pressing the positioning button.</p>

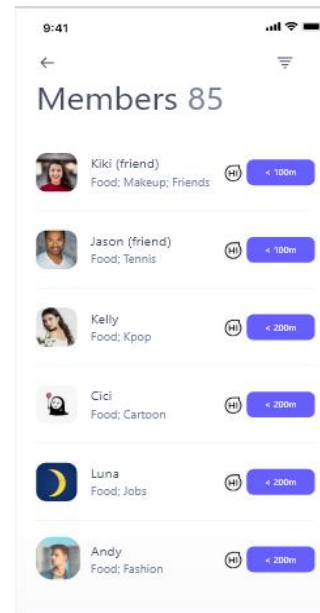
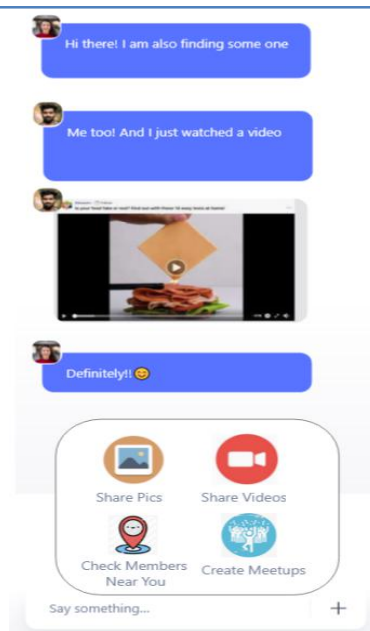


Regarding to the interface of user profile, each user is associated with the level from 1 to 5 which is evaluated by the combination of the involvement of group discussion, the quality of the posts and the behavior which conforms to the policy of the system in order to realize the reputation system instead of displaying the score of credibility.

Users who only reach the second level or above in this system might have the ability to create meetups (discuss in the following parts). The request for adding a stranger as friend is further implemented, which requires users to confirm his/her action.

2) The changes for the group related functions

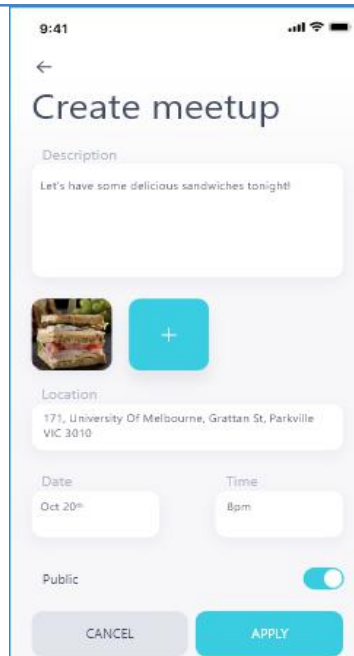
Previous Version	Updated feature	Comment
 <p>The previous version UI mockup shows a 'Find a group' screen. It features a search bar, a 'Sort by' dropdown, and three placeholder cards for group listings. Each card displays fields for 'group name', 'number of members', 'interests' (with icons for food, organic, and vegetarian), and a 'Description'. Below the cards is a section titled 'Recommends related to your interests' with four empty square slots.</p>	 <p>The updated feature section contains two UI mockups. The left mockup shows a 'Groups' screen with a 'Sort by' dropdown menu open, displaying options: 'Interest', 'Newest', and 'Number of members'. Below the menu are three group cards with images and text: 'Eating Organic Near Uni' (Organic, Healthy, Food), 'FINDING PARTNERS ON THE WAY' (Friends, University), and a 'Sale' card. The right mockup shows the 'Groups' screen with the 'Sort by' dropdown set to 'Friends'. It displays three group cards: 'Finding Partners On The Way' (Friends, University), 'Dining Together' (Friends, University, Food), and 'Stop Drinking, Begin Exercising' (Friends, University, Sports).</p>	<p>In terms of the finding group feature, different kinds of groups of interests are displayed according to various sorted ways customized by users.</p> <p>After the sorted result is shown, users might decide to join some groups and browse the related details including the tags connected with each group and his/her friends who have already become the group members.</p>



Besides the chatting and sharing features explained in the previous part, the function of “Checking Members Near You” is updated that users could check the distances from him of both his/her friends and strangers in the same group rather than directly checking the locations of strangers on the map. This aims to keep the users’ privacy.

Also, they could view the tags of other members to know whether they have other common interests and if they press the “Hi” icon, they can see the profile, moments and badges of the strangers.

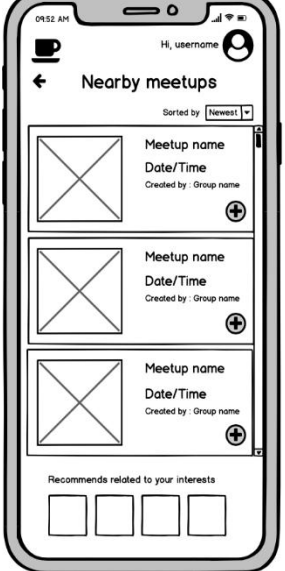
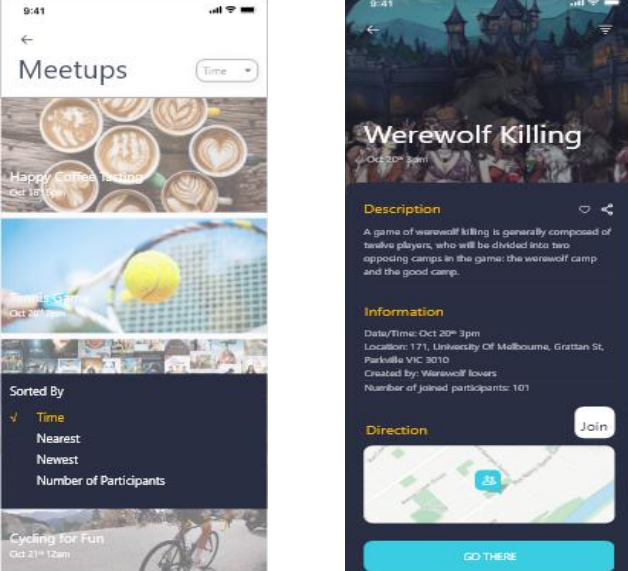
New features 1

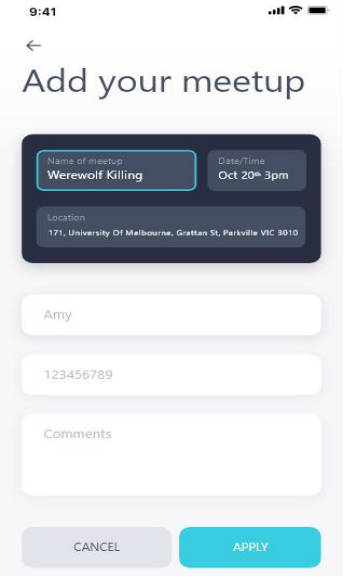
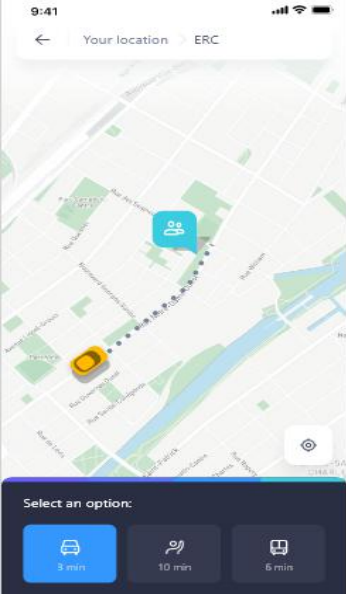


The screenshot shows a mobile app interface for creating a meetup. At the top, the status bar displays the time 9:41, signal strength, and battery level. Below the status bar is a back arrow and the title 'Create meetup'. The form includes a 'Description' field with the placeholder text 'Let's have some delicious sandwiches tonight!'. Below the description is a section for a profile picture, showing a current image of a sandwich and a blue square button with a white plus sign for adding a new image. The 'Location' field contains the text '171, University Of Melbourne, Grattan St, Parkville VIC 3010'. There are two input fields for 'Date' (showing 'Oct 20th') and 'Time' (showing '8pm'). A 'Public' toggle switch is currently turned on. At the bottom are two buttons: 'CANCEL' and 'APPLY'.


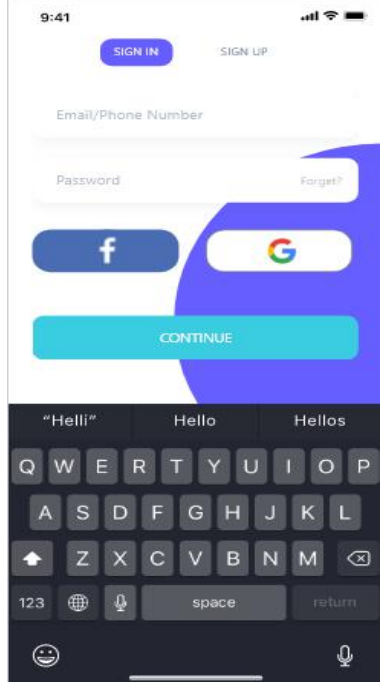
The function of “Create Meetup” is only available within each group and after users complete the key information for the meetup, they may choose whether setting the meetup as public (might be joined by users outside that group) or remaining private through touching the switching button.

3) The changes on meetup related functions

Previous Version	Updated feature	Comment
		<p>This application provides all users with the functions of searching and browsing the related information of the public meetup. After making the decisions of participating a certain meetup, users could press the “join” button to add a meetup.</p>

New features 1		<p>The details including the real name and phone number require users to input manually and the meetup information such as time and location is automatically imported which users are not permitted to modify it.</p>
New features 2		<p>Furthermore, the “direction” feature is further improved that it offers users various ways to reach the destination such as by car, by train or on foot and the optimal path for that selected transportation is displayed on the map.</p>

4) The transitions for registration functions

Previous Version	Updated feature	Comment
		<p>The users could flexibly select the signup function if they firstly download this application or choose the sign-in function in the same interface if they have already become the active users.</p> <p>After providing the related registered information and then pressing the “continue” button, it will direct to the interface for “choice of interest” which allows users to add the tags among all the options such as sports, movie, etc.,</p>

2.2.2 Evaluation

1) Method

The study selected Think aloud and Interview method as the observation and querying technique respectively. Apart from quantitative method, qualitative method was also used to collect and analyze data. As described by Sharp et al. (1994), it can be used to perform in-depth analysis of data collected from small samples of the study.

- Think aloud

In think aloud method, we presented 5 tasks covered most of the features in the app. The description of the tasks is shown in table 1.

Table 1: Descriptions of the tasks in Think aloud method

Task	Description
1	Join the “Dining together” group and create a meetup
2	Send a friend request to a group member
3	View your friend’s location (Marie)
4	Join a meetup
5	Return to the home page

There are 4 quantitative measurements in think aloud method:

- i. Time. How long it takes our participants to complete each task?
- ii. Accuracy. It is going to measure the successful rate of each task.
- iii. Numbers of error. During the task, the participants might click somewhere which has less contribution for the completion of the task. We will record their wrong steps for in-depth analysis.
- iv. Difficulty level. For each task, we asked participants to give a rate for the task from 1 to 5, from easy to difficult.

We encouraged our participants to talk about their feelings during the test.

- Interview

We also asked our participants to attend an interview after finishing all the tasks. The interview contains 5 questions related to their experience while using the system, but also add some additional questions according to their responses. The questions are included in appendix A.

2) Participants

Since the app is to help develop the social network based on the users’ location, our mainly users could be the younger people who want to make more friends in their community and some new students who hope to know more information around their location. The sample contained 8 students (P1 to P8) from University of Melbourne who were randomly chosen in the university campus.

3) Result and Analysis

- Quantitative analysis

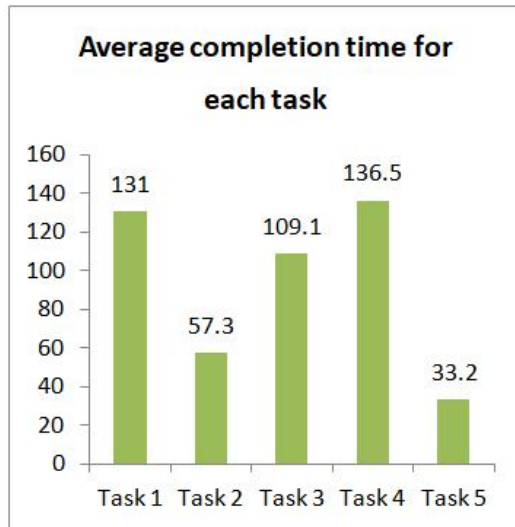


Figure 14 Average time for each task

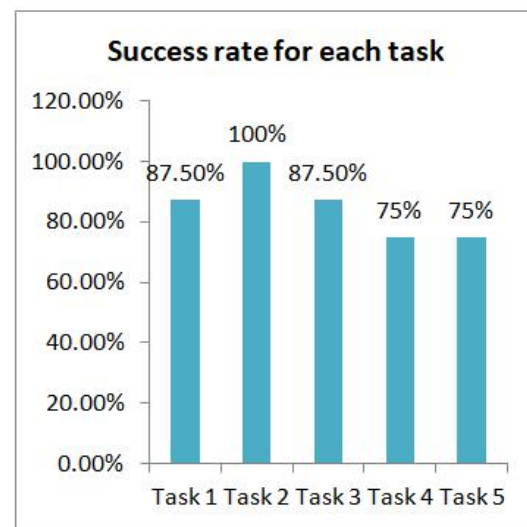


Figure 15 Average success rate for each task

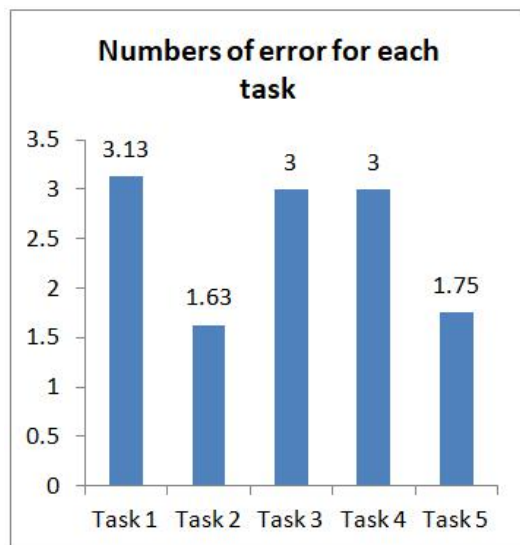


Figure 16 Average errors for each task

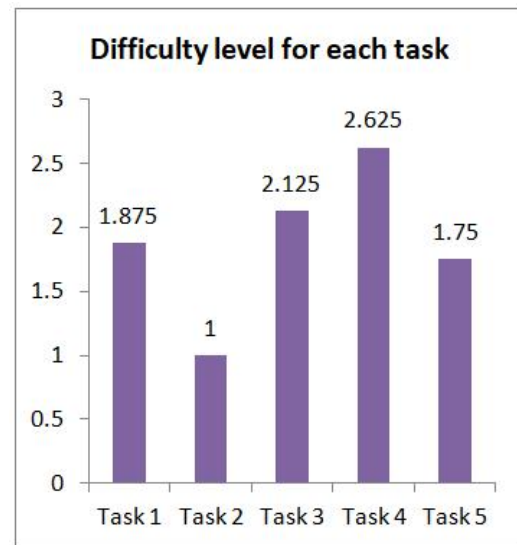


Figure 17 Average difficulty for each task

From Figure 2-1, we can see that task 5 and task 2 has relatively lower completion time than other tasks, which indicates that users could quickly finish the task. However, since the workload for each task is different, it is not possible to determine whether the functional design of the app is appropriate simply from the length of the completion time. In Figure 2-2, task 4 and 5 has relatively lower success rate. For each of the two tasks, 2 out of 8 people fail to complete the tasks, which might point out some issues in functional design of joining a meetup and returning to the home page.

Compared the result above with Figure 2-3 and 2-4, we found that task 4 was the trickiest one among all tasks with highest completion time, difficulty level and relatively higher numbers of error and failure rate. While Task 5 had the lowest success rate with the minimal completion time.

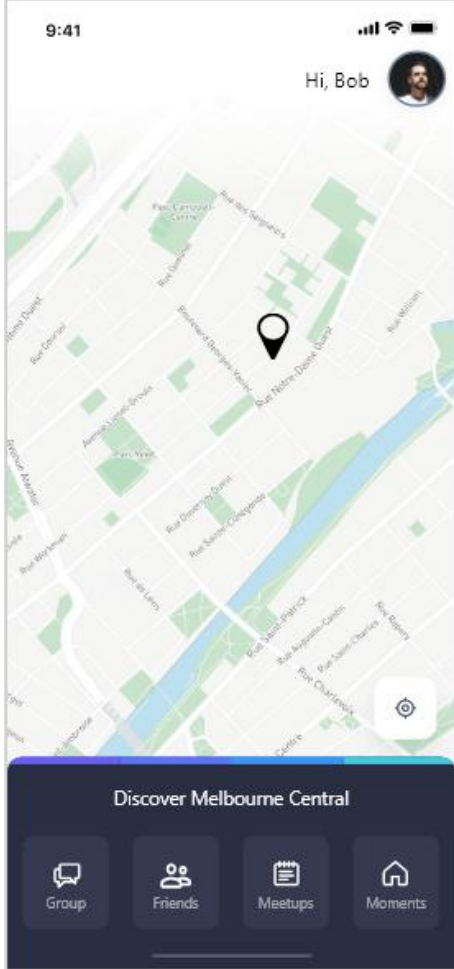
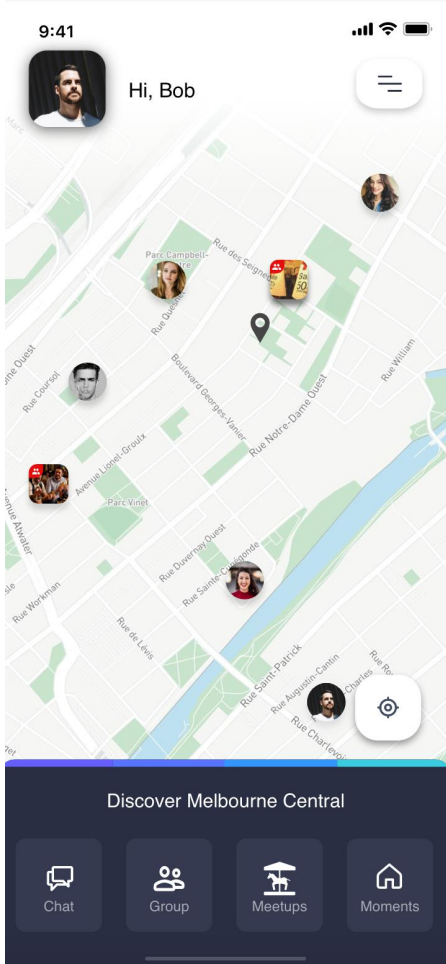
- Qualitative analysis

From users' responses, we summarized the top 3 issues for our current design and came up the solutions for them:

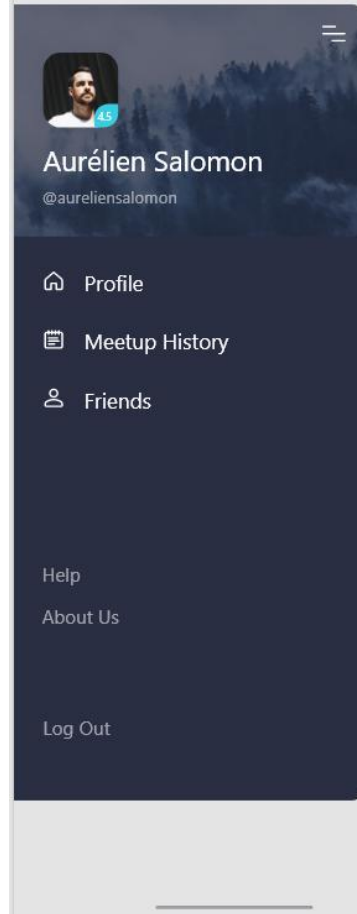
Issues	Solution
Buttons: Less connection between buttons and pages; The location icon is difficult to find in friend list; The return button is not clear according to the 2 nd Heuristic evaluation rule – Match the system with the real world.	Icon modification: In next version of our app, we will unify the style of our buttons. We will link all buttons to the page to ensure that the user can click on all the buttons effectively. We will add the location button into the “plus” button to help users find specific features. Based on user’s suggestion, we will change the return button to house shape to rationalize the selection of the buttons.
Conceptual blur in group and meetup: Some users mentioned that they didn’t understand the difference between the group and meetup due to the mixture of their functions.	Functional distinction: We will combine the group function together with the meetup into one button. The button won’t be seen at the home page. The users could see it inside the “chat” button.
Time-consuming: Some users thought that there were so many steps to find the location of their friends. And there is not directly path for users to see their chatting record with group members and their friends. They hope there will be reduction for the steps.	Simplified steps: In next version our app, will add a meetup list on the right corner of the app to help users check the meetup which they wish to attend. To improve the Flexibility and efficiency of use, we will display the location of their friends and the group to save their time for finding them on home page.

2.3 Second Version

2.3.1 Updated Features

Change	Before	After	Comments
Mainpage			<ol style="list-style-type: none"> 1. When users go to the home page and they can directly see the user's group and friends on the map. 2. The head of the homepage is changed to the upper left corner and enlarged, which suits the user's habit and convenient for the user to click and view. It was in the upper right corner. 3. The navigation bar at the bottom of the home page contained four buttons, respectively is “Chat, Group, Meetups, Moments”. They changed to “Group, Friends, Meetups and Moments”. In order to give prominence to the Group and Meetups core functions and their interrelated, put them together in the middle. 4. The Friends modules merge into the Chat page.

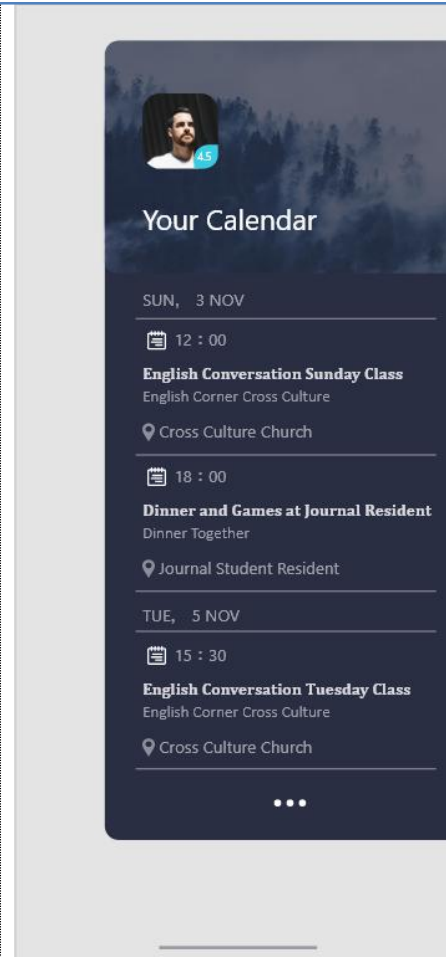
New feature-
Add left sidebar
at homepage



The user profile sidebar is hidden in the upper left corner of the home page, which contains the user profile, meetup history, friends view and log out.

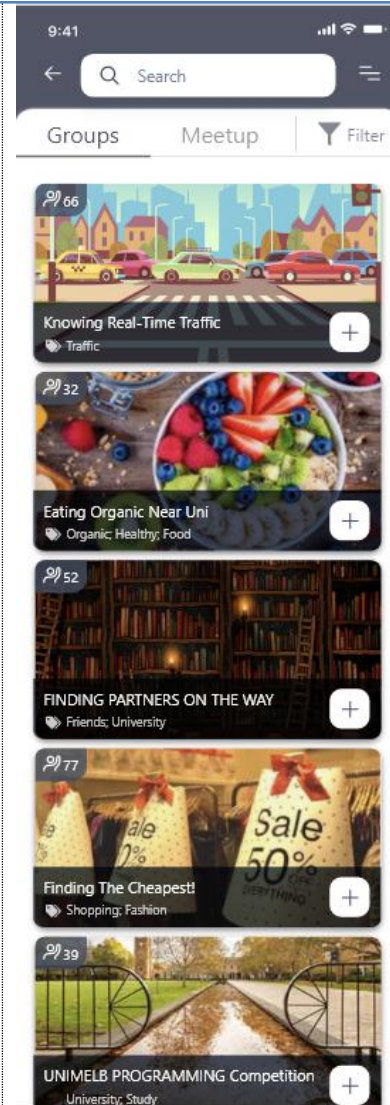
The three horizontal lines in the upper right represent easy entry to meetup list. Meetup history is where users can view meetup information they've already participated in.

New feature-
Add right
sidebar at
homeage

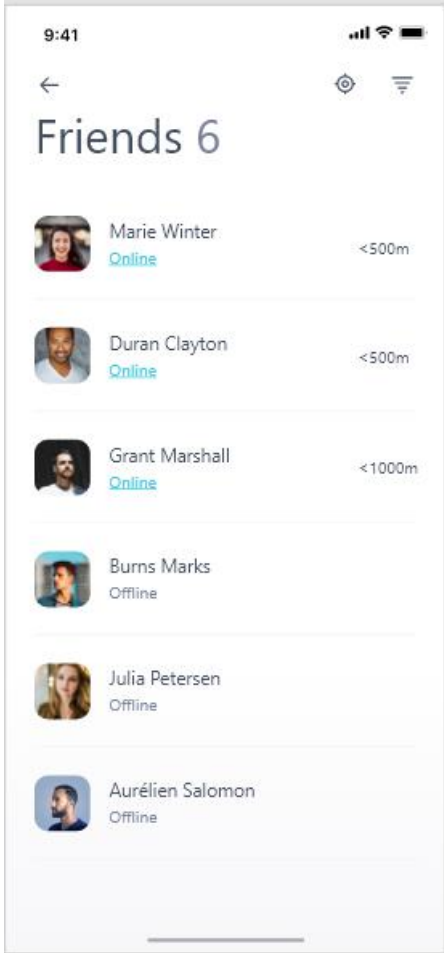
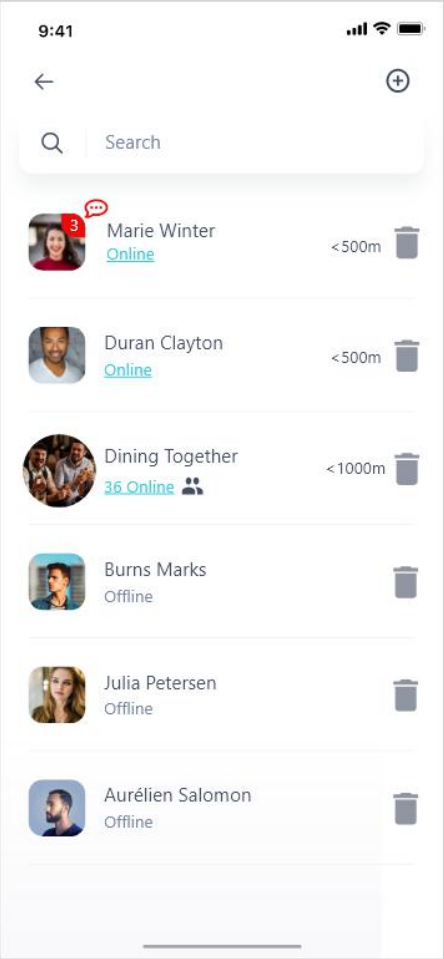




Enter through the button in the upper right corner of the home page, there users can view the calendar showing . what meetup activities the users has booked before and their related information. Those activities are sorted by time sequence.

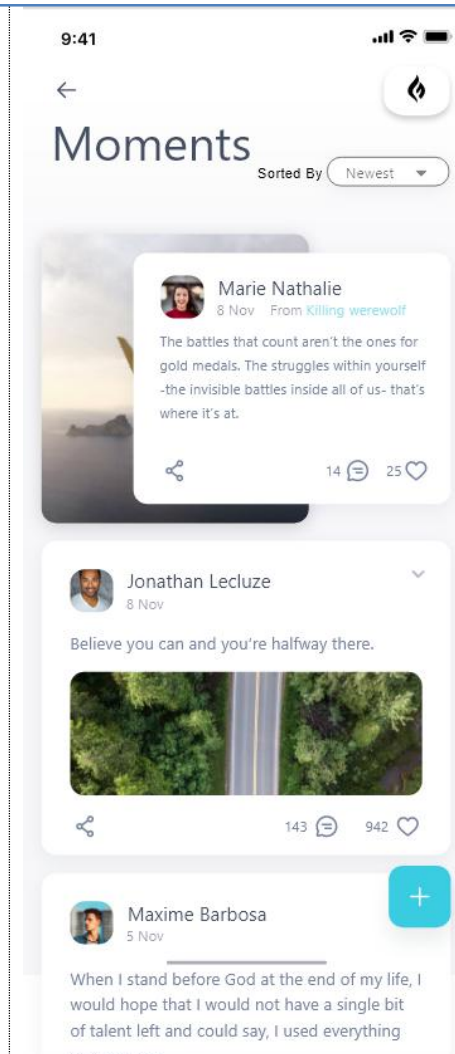
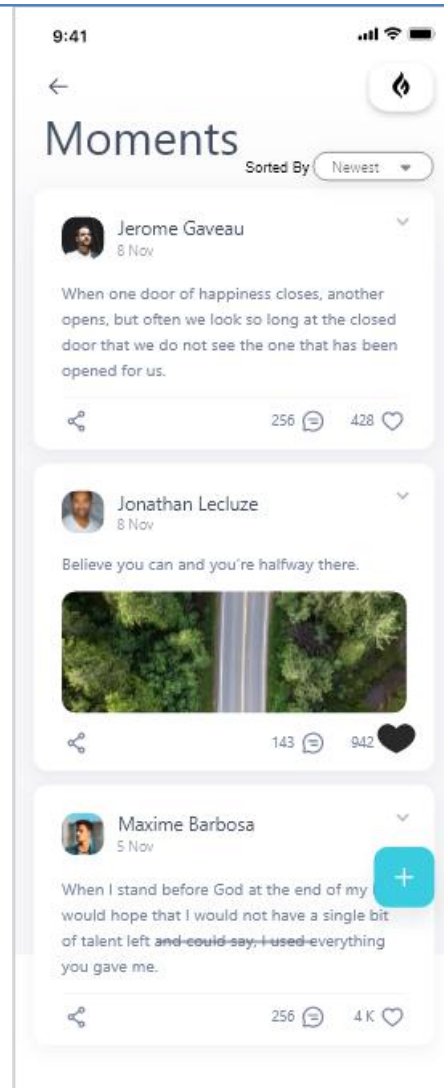
Meetup and
Group interface
integration



1. To highlight the meetup and group function connection, users can switch to another interface to view the each others' information list.
2. Equip text contents by adding dark backgrounds with low transparency to facilitate the user to see the text clearly.
3. Optimize the add button to encourage users to join group and meetup.
4. Change the layout style to make it more consistent with the home page style and reduce the sense of separation between pages.

<p>Change from friends page to chat page</p>			<ol style="list-style-type: none"> 1. Adding a search bar to facilitate users to search for chatting history. 2. The friend icon is highlighted in red to indicate that the friend's message has not yet been read. 3. Added trash bin icon to delete chat records.
<p>Return home page icon replacement</p>			<p>In order to reduce user confusion, we replaced all the icons that accomplish one-click return to the home page with house icon. Make sure that the user could understand the function of these buttons to return to the home page in a short time.</p>

Typesetting
details changes in
moments



There will be two kinds of moments: users' daily post about interesting things or sharing experience and feelings after joining in a meetup. There will be shown in different in this page, as first one is the meetup experience sharing, the second one is normal daily sharing.

2.3.2 Evaluation

1) Method

For version 2, we still use think aloud and interview methods to evaluate the usability of our system. The interview questions are the same as we used for the evaluation in version 1. We change the tasks in think aloud to 3 different tasks based on our developments in the prototype design. The new tasks are list in table 3-1:

Table 3-1: Descriptions of the tasks in Think aloud method

Task	Description
1	Find the meetup list
2	Go to the chatting room to chat with someone
3	Join a meetup

We invite 5 participants (P9 to P13) from University of Melbourne to take part in the evaluation process. The features of our participants are the same as we chose in Evaluation 1. The participants are a new group of people.

2) Result and Analysis

• Quantitative analysis

From the think aloud result in the appendix, we can find that all participants successfully complete every task and the difficulty level and error value are relatively lower than the values in the first evaluation, which indicates that the developments we made for version 2 improve the fluency and correctness of the usage of our app interface. Uses feel most of the tasks are easy to finish.

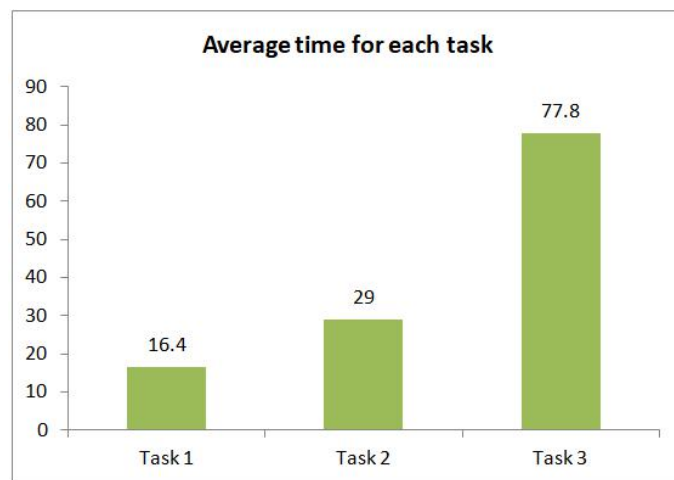


Figure 18 Average time for each task in evaluation 2

From Figure 18, we can see the average time for task 1 is the lowest among 3 tasks, which indicates that users could directly find the button to see the meetup list in a short time. Task 3 is the one that need more time. However, comparing to the same task (task 4) in the first evaluation (the average time is 136.5s), the average time for joining the meetup reduces nearly half the time. The improvement including enhancing the connection between pages and rearranging group and meetup locations, truly increases the efficiency of this function.

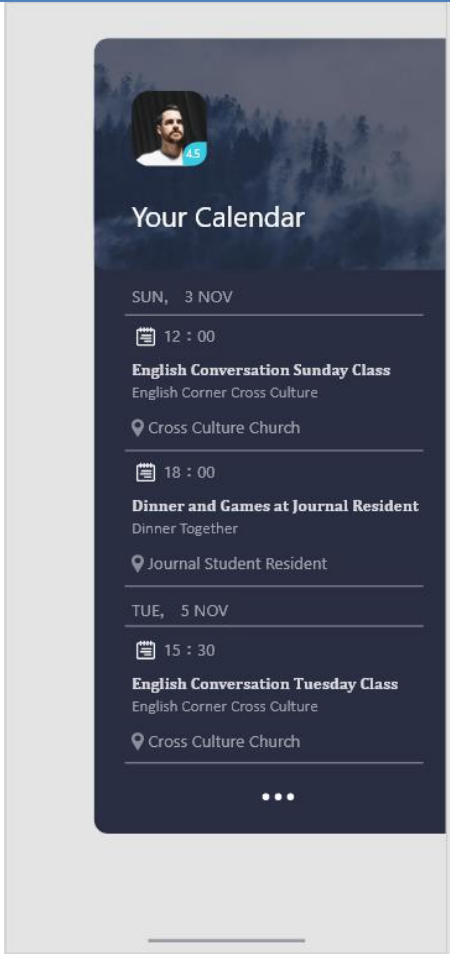
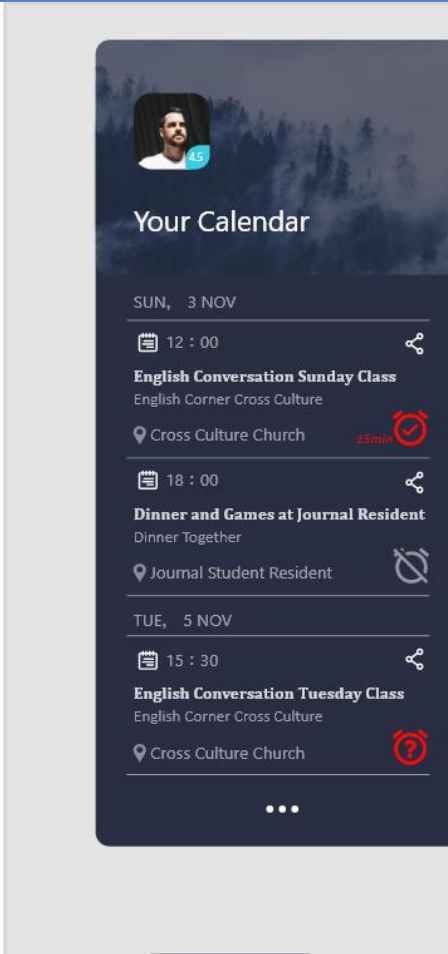
- Qualitative analysis

From users' comments and answers, we summarized the 3 issues for our current design and came up the solutions for them:

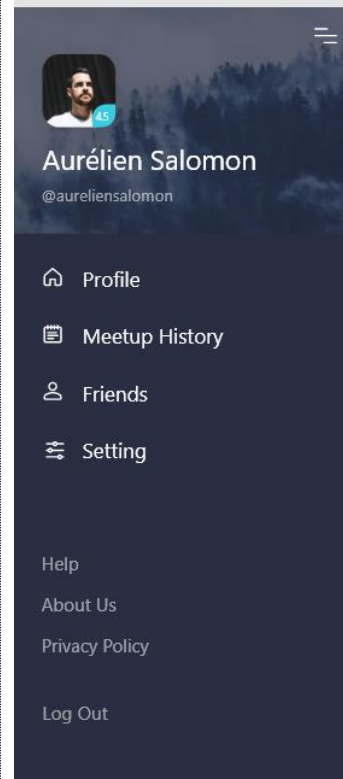
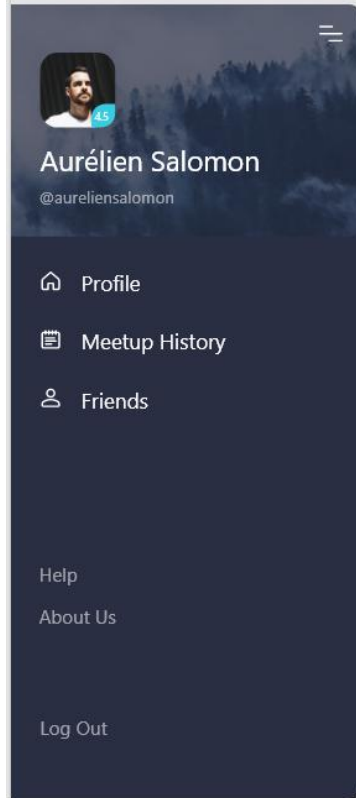
Issues	Solution
Privacy setting: Some users point out that they may not want other users to see their locations and they think the app should allow users to set their preferences themselves.	Add privacy setting in the user profile: For next version, we will add a new column on the user profile to allow users to manage their privacy.
Extra steps in finding meetups; Some users mentioned that the steps to join the meetup are quite much (which doesn't satisfy the "Flexibility and efficiency of use" heuristic). And some of them suggest us to add a search bar.	Search bar for meetup searching: Based on the suggestions, we will add a search bar to allow the users to search the meetup by typing in the name.
Other function improvement: Some users think it could be convenient for them to see the reminder of their meetups so that they won't miss them. Some users prefer to share their meetups in the moments.	Reminder for meetup: In the next version, we will add a reminder for users at each meetup list. They could also adjust the time of the reminder. Share meetups: We will add a share button next to the meetup list to allow them to share their meetups to their moments. The moment could contain 2 types of posts including daily sharing and meetup summary.

2.4 Final Version

2.4.1 Updated Features

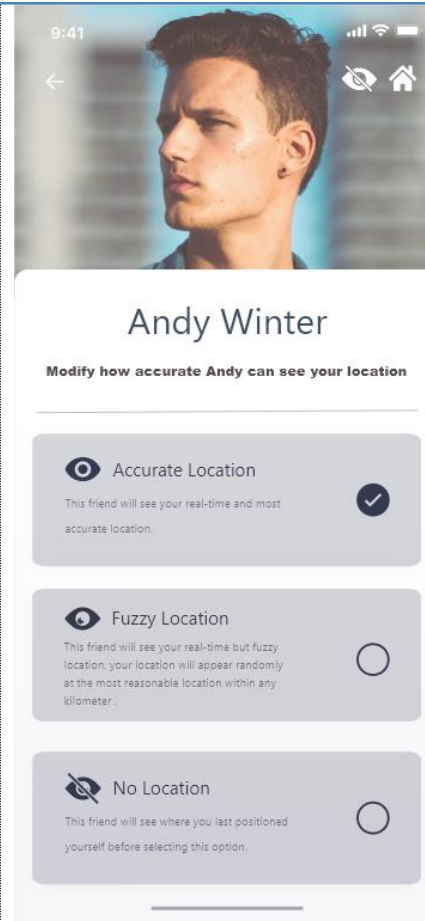
Change	Before	After	Comments
Add reminder for upcoming meetups			<ol style="list-style-type: none"> 1. On the sidebar showing meetups list, in addition to view the meetup, users can also share and set reminder. 2. Here users can click share button and post feelings and experience about the meetup to the moments page. 3. The user can click the alarm button to adjust the pre-activity reminder time. There are four types: remind before 15minutes, before 1 hour, no reminder or haven't set the reminder. The button of no reminder is grey and other status of this button is red.

Add functions to
left sidebar



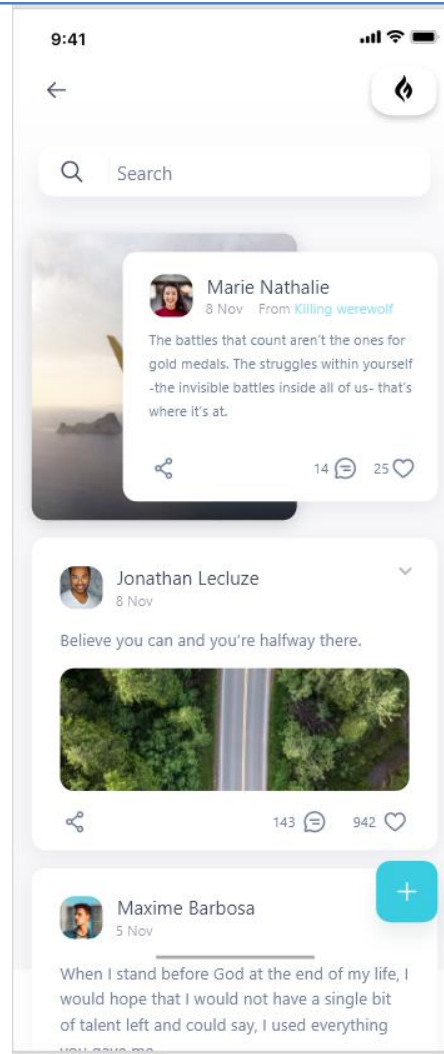
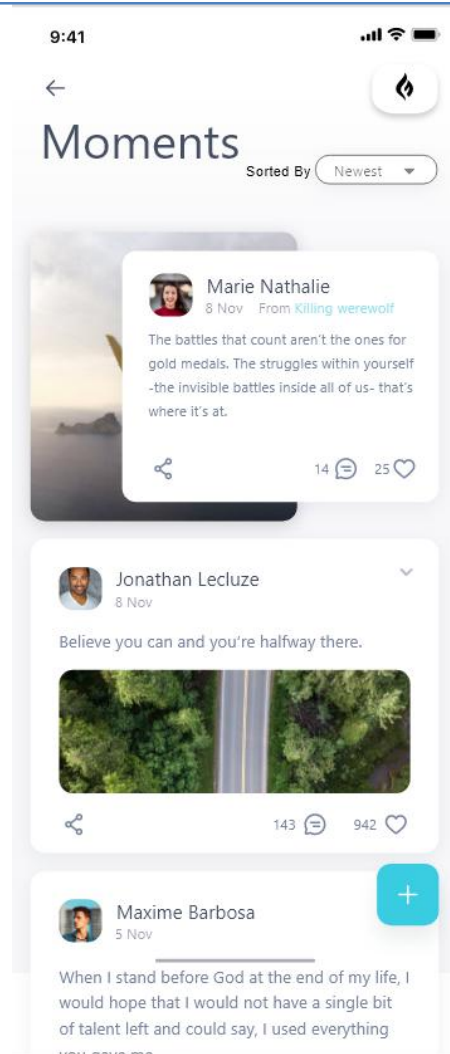
Through the user profile in the upper left corner of the home page, it adds two column called setting and privacy policy. In addition to conventional setting information, it can also set whether relevant privacy information such as one's own positioning can be visible to non-friends and privacy settings for different friends.

Privacy Settings
interface for
individual users

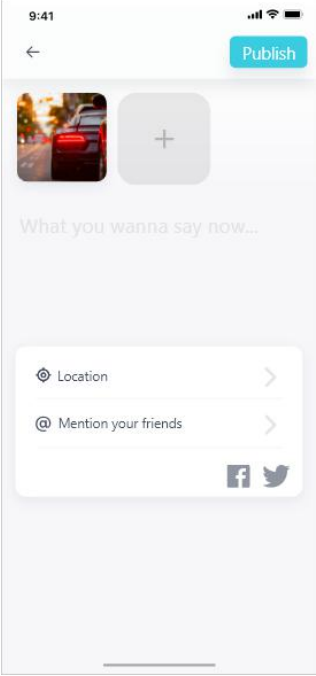

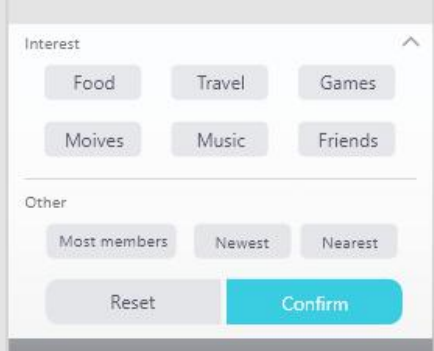


On this page, users can set specific location privacy for a certain friend: users can choose from accurate location, fuzzy location and no location to decide what extent the friend can see their location information.

Typesetting
details changes of
moments



Delete the large amount of space inside the moments model and filter sorting function, change to the search module interface which is simple and powerful.

Share meetup to moments			<p>Users can also post their own moments through the “+” button. Besides pictures and description, users can set locations and mention their friends. They can also share to other social platform.</p>
Optimize fliters			<p>The fliters have also been changed to make it more clear for users.</p>

3. Discussion

Comparing with similar system in the market, Zenly is also an application that manages to make location sharing with other social features. As for the similarity, two systems both combine maps and online messaging platform together. They both allow users to check others' location, and users can both set themselves "invisible" to protect privacy. While in Zenly, by comparing your own location with others, the application creates a smart social map showing the hot zones, which means that more people are in this area (Schroeder, 2019). Inspired by this feature, we add more social features in Geochat. In our application, people in a close area can create some groups sharing real-time information in this area. They can also search some meetups they might be interested in this area. Besides, Zenly focuses more on location sharing (Dillet, 2019), while Geochat pays more attention to small-scope groups based on locations and to let users get the most accurate and real-time information.

- Advantages

The location-based application is one of the major characteristics, which allows users to join the groups only available in the specified areas. The users might enjoy their leisure time with this application since sharing the experience or moments with other people in the same interest group makes them gain self-gratification and thus, they are more willing to exchange the opinion in the group. In addition, users are regulated and motivated by the badges and level of reputations respectively associated with them and this application offers the varieties of badges such as "like over 500 times" and "idea hub" in order to encourage users to behave well in this system or discuss actively in a group or communicate with their friends. Also, it supports the features for coordination which users could manage the friend lists and request for becoming friends efficiently. Furthermore, users could apply the filter option in both the functions of group and meet up based on their preference so that the involvement can be strengthened. After the meetup, the feedback might be given by the users directly and they express their feeling in a review which can be a reference or suggestion for others when deciding to participate in the meetup.

- Drawbacks

However, there are still some problems existing in the final prototype. Regarding to the perspective of the concept, it could be relatively necessary for this application to be promoted in the specified areas with large number of active users and flow of people. For example, normally most of the tourists might choose to visit CBD with several shopping malls and they are more likely to download this app to discover their interested topics and current trends or freshmen could meet with other students using this app within the university and its surroundings in order to become familiar with this area. Although this app works in the previous situations, sometimes it cannot take fully advantage of the social features in the areas with spare population. Considering the relationship between different functions, this app combines various features of social media into it, therefore this results in the functional overlapping and it might be a little confused to define the type of this app, which also leads to the important social feature being ignored. The insufficient design on the layout and interaction between some of the interfaces is another problem, because the color using and theme in some of the functions are not consistent.

- Future Improvement according to the shortages of this application
 - Enhancing the cooperation in the group and meetup related functions
 - Highlighting the most important social features in the main interface in order to emphasize the communication related functions
 - Adding features in the moment functions including tagging friends or meetup topic

- Designing a more sophisticated reputation system which the ranking for level up and down could be more detailed
- Combining the type of collaborative filtering into the recommender system which also allows users to view the recommendations based on their searching keywords

4. Contribution

All the team members are working together on the implementation and evaluation of the system. For the report, Siyuan Duan is responsible for the introduction, low-fidelity, comparison in discussion part. Ziyue Wang is responsible for two evaluation parts and appendix. Yubing Yang is responsible for first version updated features descriptions, and advantages, disadvantages and improvement in discussion. Haoyang Liu is responsible for version 2 and version 3 updated features descriptions.

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Preece, J., Rogers, Y., Sharp, H., Benyon, D., Holland, S., & Carey, T. (1994). Human-computer interaction. Addison-Wesley Longman Ltd..

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Appendixes-A Interview Questions

Q1. What do you think about the idea of the app?

Q2. Who do you think is the major user of this app?

Q3. Do you know similar apps? What are differences between them comparing with this app?

Q4. What top issues did you face most when using this app?

Q5. What do you think should be improved for the app? And is there any good design that you think this app has?

Appendixes-B Interview Results

1. Evaluation list

P1					
Think aloud					
	Time/s	Success	Number of error	Difficulty level	Comments
Task 1		F	6	5	"Group button is easy to find but some button cannot be clicked."
Task 2	63	S	2	1	"I can only send the request to one person"
Task 3	121	S	3	2	"It could be better if I can view their location at the home page"
Task 4	151	S	4	4	"The join button is quite strange."
Task 5	36	S	1	1	"Easy"
Interview					
Q1	"The idea is good and this app may help a lot of people to know about the local issues."				
Q2	"Maybe some students like me and someone who want to explore their local environment."				
Q3	"Zenly? But in Zenly you can't join the meetup. You can see the location of your friends. The user interface in Zenly is more simple and easy to help users know the function."				
Q4	"I cannot click some button in this app. And I think some icons are quite confused. "				
Q5	"The difference between meetup and group is not clear in this app. I think you should combine them together."				

P2					
Think aloud					
	Time	Success	Number of error	Difficulty level	Comments
Task 1	145	S	3	2	"I can't find the dining together group."
Task 2	80	S	1	1	"It's pretty easy."

Task 3	126	S	2	2	"It's strange that I need to click 'online' to see the selections."
Task 4		F	3	3	"Same issue as the group. I cannot find the one I can click."
Task 5		F	3	4	"The button doesn't looks like the return button."
Interview					
Q1	"The idea is great. It's quite helpful I think."				
Q2	"Maybe some people that want to make friends with local people."				
Q3	"Wechat. You can check your friends' location in this app. But Wechat has more content like games and subscribes"				
Q4	"Well, I can't click some button in the app interface. The meaning of some buttons is not clear such as the home page button. The position and design of the 'Join' button is not reasonable. It looks strange."				
Q5	"The friend in home page is not meaningful because almost all of the social app contains friend feature. Like Wechat, it shows all your chattings at the home page, which is very clear. You can manage your friends and group function in this way. It's more clear for the new users. The icon for returning the home page should be changed to the house shape."				

P3					
Think aloud					
	Time	Success	Number of error	Difficulty level	Comments
Task 1	161	S	4	2	"Not too much problem. I'm quite confused about the function of group and meetup."
Task 2	48	S	2	1	"Quite easy."
Task 3	60	S	4	1	"Easy."
Task 4	98	S	3	2	"The join button is quite strange."
Task 5	43	S	2	2	"Can't find the home page icon. I just randomly click the button."
Interview					
Q1	"It would be very useful."				
Q2	"Maybe some people like make friends and want to have deeper connection with their friends."				
Q3	"Google map and Wechat. Google map doesn't have friend management and Wechat cannot show the location of your friends."				
Q4	"Some buttons are not reasonable and I cannot find the button to return to the home page."				
Q5	"I think some privacy issues should be considered in this app because some people do not want others to see their locations. For the moment function, I think you can add activity punching function so that others will know what meetup you have participated."				

P4					
Think aloud					
	Time	Success	Number of error	Difficult y	Comments

				level	
Task 1	151	S	4	2	"I can't see the dining together group."
Task 2	99	S	3	1	"It's pretty easy."
Task 3	129	S	4	3	"It's quite strange for me that the location button isn't in the plus button."
Task 4	146	S	2	2	"The join button is not very clear."
Task 5	20	S	1	1	"Pretty easy."
Interview					
Q1	"Good app. It combines multiple social functions which is convenient for users."				
Q2	"The users for this app could be anyone with a smart phone. People need to build their social networks. Students and younger people could be the main users."				
Q3	"I know some app could help people search for the food. But for the app which combines lots of social functions, I have never heard of any. "				
Q4	"The position of the location button is not very reasonable. When I want to find my friend's location, I want to click the 'plus' button because usually I could find it in other apps like Wechat. In this app, the location button is at the front, which is not easy to find."				
Q5	"The app is good and I know where I can go to satisfy my needs. I think it could be better if you can rearrange the expand button and add more function into this button, which will be easy for users to find the main features in this app."				

P5					
Think aloud					
	Time	Success	Number of error	Difficulty level	Comments
Task 1	114	S	2	1	"I don't understand what is a meetup and the relationship between the group and meetup."
Task 2	38	S	1	1	"Pretty easy."
Task 3	148	S	3	3	"Too many steps to view my friend's location."
Task 4	149	S	3	2	"Not too difficult but requires many steps"
Task 5		F	3	1	"The icon to return to the home page is not very clear."
Interview					
Q1	"Not novel but practical."				
Q2	"Teenagers/the younger people/International students/visitors "				
Q3	"Wechat based on location. Like Wechat-shake it."				
Q4	"There are some problems in the social interactions and more functions needs to be implemented. I'm confused about the return icon."				
Q5	"It should add a historical list to display where am I. It should also recommend some nearby friend (or common friends) to me. It could be better to verify the identity."				

P6					
Think aloud					

	Time	Success	Number of error	Difficulty level	Comments
Task 1	131	S	2	1	"Not very difficult."
Task 2	60	S	1	1	"It's quite easy."
Task 3	97	S	2	1	"I think it takes too much time for me to find her location. It should be on the home page."
Task 4		F	3	4	"Some buttons don't link to the page."
Task 5	23	S	1	1	"I occasionally click the right icon but I think the return icon should be clearer for users."
Interview					
Q1	"It is a useful app."				
Q2	"Maybe some students and people age below 30 and like social activity."				
Q3	"Wechat and QQ. They can't tell users their friends' location. But this app is more difficult to use than Wechat and QQ."				
Q4	"The symbols on the map are not very clear. It's not easy for me to find my friend's location. I feel confused about the button to return to the home page."				
Q5	"I think it could be better to let the users to see their friends' location at the home page. And I suggest you to use the house like icon for returning to the home page."				

P7					
Think aloud					
	Time	Success	Number of error	Difficulty level	Comments
Task 1	98	S	2	1	"You can add a search bar to help the users find the group quickly."
Task 2	50	S	1	1	"Pretty easy."
Task 3	83	S	2	1	"I cannot see her name on the map."
Task 4	124	S	3	2	"It takes a lot of time. It could be faster with a search bar."
Task 5	30	S	2	2	"The icon is not very clear to me."
Interview					
Q1	"Good and practical app."				
Q2	"The main users could be the nearby people of all ages."				
Q3	"The meetup function likes FaceBook. The location function likes Zenly."				
Q4	"I cannot find the return button to the home page at first. And Im also confused with the meaning of plus button in the meetup function."				
Q5	"I think it could be better to add a search bar on the home page. The moment function should add sort function to help the users filter their interests and friends. There should be some name added to the friends' logo as I don't remember who they are without their names."				

P8					
Think aloud					

	Time	Success	Number of error	Difficulty level	Comments
Task 1	117	S	2	1	"The demo has some problem. Some of the button cannot be clicked."
Task 2	92	S	2	1	"It's not difficult."
Task 3		F	4	4	"I can't find the icon."
Task 4	151	S	3	2	"Still the problem with the connection of the button. Also I am quite confused about the position of group and meetup."
Task 5	47	S	1	2	"I can return to the home page if I just randomly click the buttons in this page."
Interview					
Q1	"The app could be useful for the people who want to know about their surroundings."				
Q2	"Mainly younger people and new students."				
Q3	"Zenly. But it doesn't have the meetup function as this app. It has more simple and beautiful interface."				
Q4	"The connection of the pages and buttons. And some icons don't make sense."				
Q5	"I would suggest you to modify the connection of the pages and change some icons to more understandable ones. If the users cannot find what they want, they may give up and change to another app."				

P9					
Think aloud					
	Time	Success	Number of error	Difficulty level	Comments
Task 1	13	S	0	1	"Directly just on the home page."
Task 2	19	S	0	1	"It's not difficult."
Task 3	69	S	0	1	"It is tired if I just look for one meetup only by scrolling down."
Interview					
Q1	"Good for new people in some area."				
Q2	"People who want to find nearby friends and join some meetups."				
Q3	"Zenly. But this app contains more functions like joining the meetup."				
Q4	"Many steps to join a meetup."				
Q5	"I think you could add a search bar on the meetup page so that people could find the result more quickly."				

P10					
Think aloud					
	Time	Success	Number of error	Difficulty level	Comments
Task 1	23	S	1	1	"It's pretty easy."
Task 2	29	S	0	1	"The icon is clear."
Task 3	86	S	1	2	"Well, it's fluent but need lots of steps."
Interview					
Q1	"Good."				
Q2	"Younger people who are enjoying make friends."				
Q3	"Wechat. May be you cannot see your friends location on Wechat. But will it cause				

	some privacy problems?”
Q4	“I find there are many step to join a meet up and I’m not sure if I can share my meetup to others.”
Q5	“I would suggest you to consider the privacy problem in this app because there are some people like me don’t want others to check my locaiton. And it could be better if you can add the share function to the meetup.”

P11					
Think aloud					
	Time	Success	Number of error	Difficult y level	Comments
Task 1	17	S	0	1	“Just there.”
Task 2	36	S	1	1	“Well the task is not difficult.”
Task 3	85	S	1	2	“There are many steps in the sort.”
Interview					
Q1	“It’s an interesting app. It could be helpful to explore nearby community.”				
Q2	“Mainly younger students.”				
Q3	“FaceBook? They are both social apps. But in facebook you cannot see the location.”				
Q4	“I feel that I have lot of choices in sort function in meetup page.”				
Q5	“I think you can add a reminder in the meetup list to tell which meetup I am going to attend next. And I think you could also simplify the sort function in the meetup page.”				

P12					
Think aloud					
	Time	Success	Number of error	Difficult y level	Comments
Task 1	10	S	0	1	“Pretty easy.”
Task 2	22	S	0	1	“How can I search my chat with friends in this page?”
Task 3	88	S	1	1	“It’s not difficult but I can’t finish it in a short time.”
Interview					
Q1	“For people who want to know more about their surroundings.”				
Q2	“Mainly younger people and new students.”				
Q3	“Zenly. Zenly is more simple and it has more beautiful design.”				
Q4	“Many time taken in the meetup. If I could not find one in a short time, I would give up.”				
Q5	“You can add a search bar in the meetup. I also suggest you to let the user set their preferences to share their location because I don’t want others especially for strangers to see my location.”				

P13					
Think aloud					
	Time	Success	Number of error	Difficult y	Comments

				level	
Task 1	19	S	1	1	“Easy.”
Task 2	39	S	1	1	“The button is easy to find.”
Task 3	61	S	0	1	“Not difficult.”
Interview					
Q1	“useful and interesting app.”				
Q2	“May be some new students.”				
Q3	“Zenly and wechat.”				
Q4	“I think it is fine.”				
Q5	“I think in the moment I could both share my feelings and the meetup I attend. Just like Wechat, people could share lot of things including the photo, songs and some interesting articles.”				