

INFO2222 Project 2 Usability

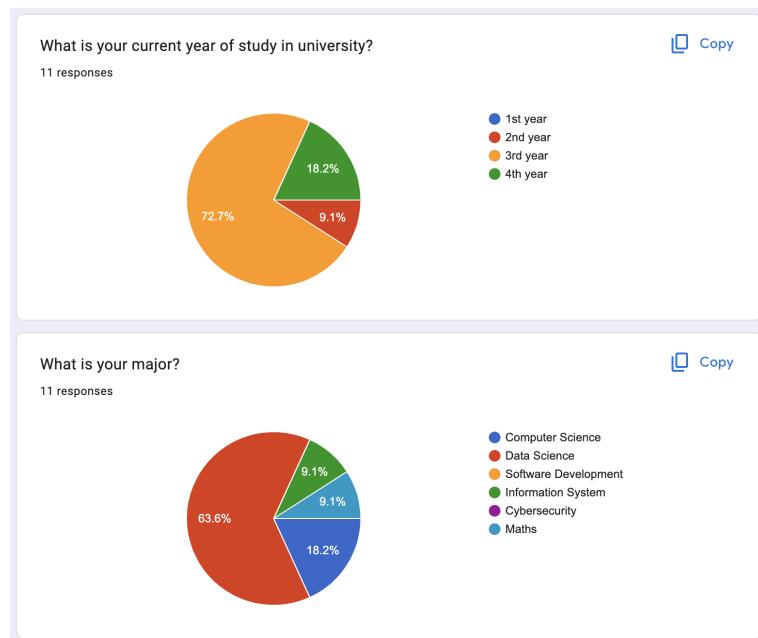
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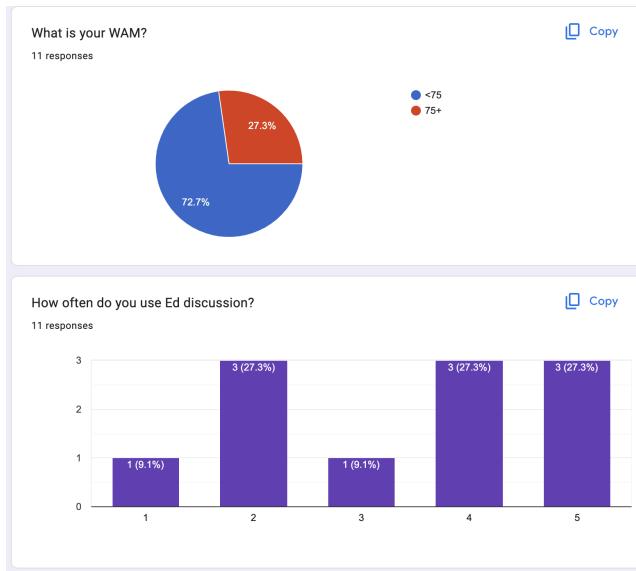
Step1: User Investigation

1.1 Surveys

For the user investigation process, we created a survey with several questions and sent them to the computing students in the university in order to narrow down the target user. We received feedback from 11 respondents.



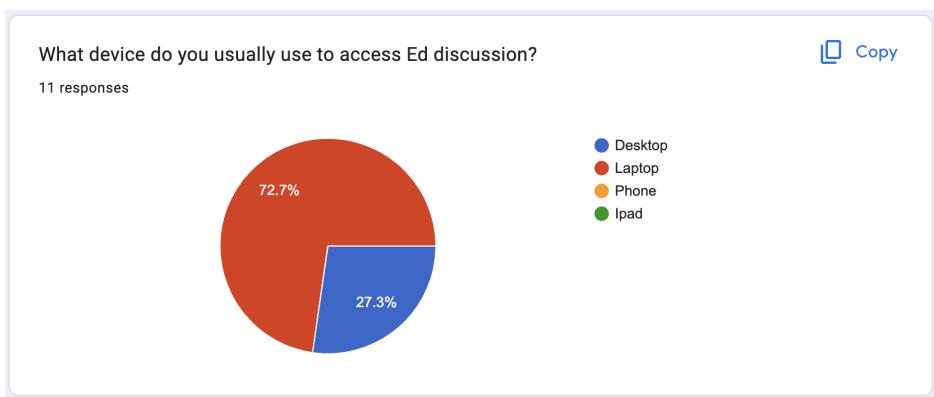
In the result for the questions above, we can see that most of the students are studying for their third year in the university. And most of them are majoring in data science.



In the next 2 questions, we first investigated students' average score for their study in the university so that we can simply know their skills and abilities. Then we investigated how often they use Ed discussion. The aim of the question is to see whether a platform of support system is useful for students or not.



In the first question above, we investigated which information students want to know in order to help with their study. The answers for this question will be useful for us to categorize different labels later on in our project. The next question investigated students' interest in additional features. It is helpful for us to add more functionalities and usability for our website.



The last question helps us understand what technology students mostly use to access the support system website.

1.2 Research materials used to collect data

The reason why we use surveys to collect the data about the group is that surveys could be used to gather quantitative data efficiently on a wide range of topics related to computing students, such as their demographics, academic backgrounds, interests, and career aspirations. The survey could be administered online and distributed to all computing students in the university. For example, according to Ansari & Khan(2020), they aimed to explore the use of social media among university students in Pakistan. The authors conducted a survey of 500 undergraduate and graduate students from two universities in Pakistan to gather data on their social media use. The survey included questions on the frequency of social media use, the types of platforms used, and the reasons for using social media.

We can also use interviews to collect the data because interviews could be conducted with a smaller sample of computing students to gather qualitative data on their experiences, motivations, and challenges. The interviews could be conducted in-person or online, and could be semi-structured to allow for flexibility in exploring the topics of interest. Based on the research by Cho et al.(2021), they tried to explore how university students perceive their learning and develop expertise in their chosen fields. The authors conducted interviews with 22 undergraduate and graduate students from different disciplines to gather data on their experiences and perceptions of learning. They found that students who perceived learning as a process of "deep understanding" and who actively sought out opportunities to develop expertise tended to be more successful in their studies.

1.3 Persona:

Occupation: University student

Grade: 3rd year for undergraduate

Major: Data science

WAM score: Credit

Goals and Challenges(Activity):

- Want to share materials and receive messages with others in support system website
- Struggles to study alone and feels overwhelmed with her workload

Behavior environment(Context): Working on a topic with teammates in the website

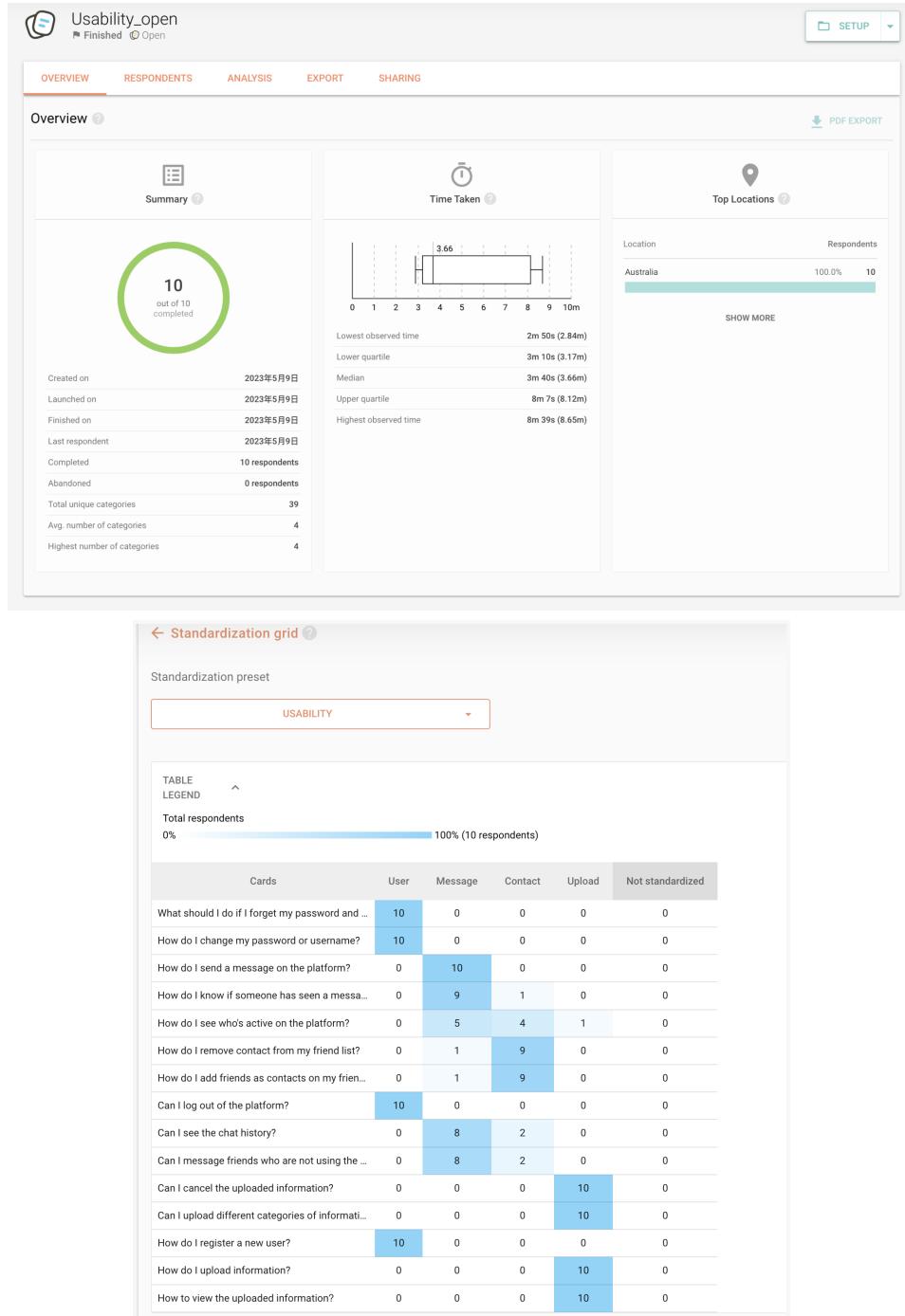
- Physical context: has access to a laptop and reliable internet connection at home
- Social context: communicate with other teammates
- Organizational context: The topic comes from a course in the university
- Cultural context: The topic is interesting for my own

Technology: Prefers to communicate via laptop

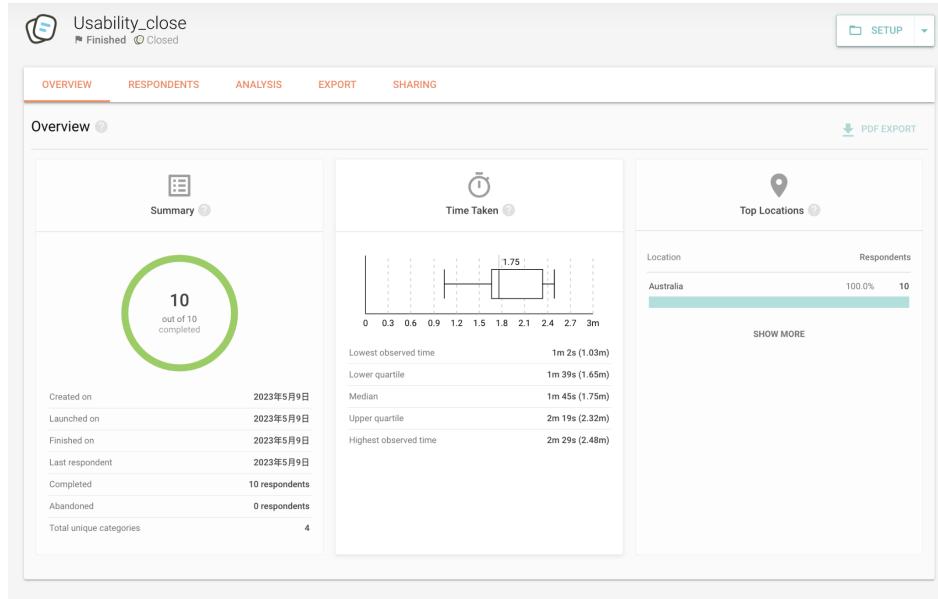
Step2: Navigation design

Card sorting is a user-centered design method that includes asking users to organize and sort cards that represent the different pages or sections of a website or application. The cards typically have labels or titles that describe the content of the corresponding pages. Users are asked to group the cards in a way that makes sense to them and then label each group with a category name. We used two surveys for open card sorting and close card sorting respectively, so that we can design our site map based on the results from the surveys.

For open card sorting, we first formulated several questions in the survey, and the purpose of these questions was to ask different people to give their ideal classification. And for each class, the respondents are required to give a title. The aim is to design the site map according to user satisfaction. As we can see in the screenshot below, we have received feedback from 10 respondents and most of them used a similar method to sort the questions.



Compared to open card sorting with close card sorting, open card sorting does not have labels while close card sorting has labels in it. So for the second survey of close card sorting, we formulated the same questions as the one in the open card sorting, and the class names are given in the survey. The class names were generated by the result from the survey of open card sorting. The aim of close card sorting is to measure the accuracy of the questions classified in the open card sorting. As we can see in the screenshots below, we got the feedback from 10 respondents, the result shows that we have a high accuracy for each class which is a good sign to make the site map.



◀ Results matrix

TABLE **LEGEND**

Total respondents 100% (10 respondents)

	Cards	User	Contact	Message	Post
What should I do if I forget my password and ...	10	0	0	0	0
How do I change my password or username?	10	0	0	0	0
Can I log out of the platform?	10	0	0	0	0
How do I register a new user?	10	0	0	0	0
How do I add friends as contacts on my frien...	0	10	0	0	0
How do I remove contact from my friend list?	0	10	0	0	0
Can I message friends who are not using the ...	0	3	7	0	0
How do I send a message on the platform?	0	0	10	0	0
How do I know if someone has seen a messag...	0	1	9	0	0
How do I see who's active on the platform?	2	7	1	0	0
Can I see the chat history?	0	0	10	0	0
Can I cancel the uploaded information?	0	0	0	10	0
Can I upload different categories of informati...	0	0	2	8	0
How do I upload information?	0	0	0	10	0
How to view the uploaded information?	0	0	0	10	0

Message		6	10
Card name		↓ Freq.	Avg. pos.
How do I send a message on the platform?		10	2.1
Can I see the chat history?		10	2.9
How do I know if someone has seen a message on the platform?		9	2.6
Can I message friends who are not using the platform?		7	3.1
Can I upload different categories of information?		2	1.0
How do I see who's active on the platform?		1	3.0

User		5	10
Card name		↓ Freq.	Avg. pos.
What should I do if I forget my password and username?		10	2.3
How do I change my password or username?		10	2.9
Can I log out of the platform?		10	2.4
How do I register a new user?		10	2.5
How do I see who's active on the platform?		2	4.5

Contact		5	10
Card name		↓ Freq.	Avg. pos.
How do I add friends as contacts on my friend list?		10	1.9
How do I remove contact from my friend list?		10	2.0
How do I see who's active on the platform?		7	2.7
Can I message friends who are not using the platform?		3	2.7
How do I know if someone has seen a message on the platform?		1	1.0

According to the result from open card sorting and close card sorting, we created our site map, which are:

User

- login
- sign up
- log out
- rename/change pw

Friend

- Friend list
- add friend
- remove friend

Messenger

- send message
- receive message

Resources

- search
- post

Step3: Prototype

3.1 A prioritized list of additional features:

1. Search functionality: A search bar that allows users to quickly find specific materials by keyword or topic
2. Chat platform: Features that allow users to share materials, such as texting or sharing ideas
3. Rename and change password: Features that users can change their username and password
4. Add and remove friends: Features that users can add or remove friends from friend lists

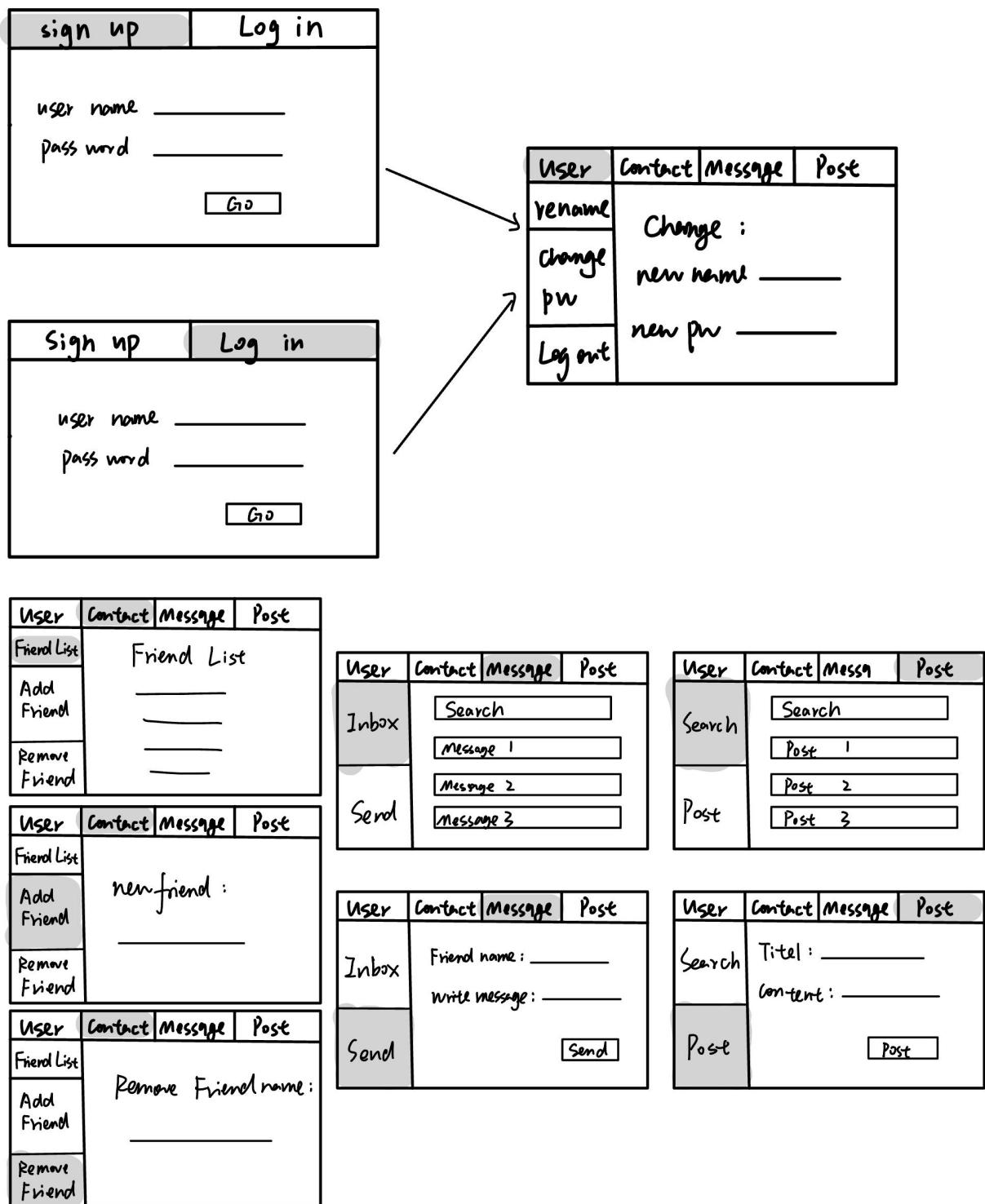
3.2 Steps taken to determine the ‘best’ design to be prototyped:

1. Analyze the questions, think carefully about the requirements for the website and how to implement the design.
2. Investigate the users or target group, we need to find out what are the main users which will be benefited by the website.
3. Narrow down to a single persona, it helps to make design decisions based on the needs and goals of the target user, also Provide a reference point for evaluating and testing design decisions.
4. Website IA design, design the site map so that it can be easily seen by the users.
5. Lo-Fi prototype, quickly and cheaply test and iterate design ideas before committing significant time and resources to the development of a high-fidelity (hi-fi) prototype or final product.
6. Using tools to build hi-Fi prototypes, create a realistic and functional representation of the final product that accurately reflects the design and functionality of the product.

3.3 Prototype

Lo-Fi:

User:



Admin:

Sign up Log in	
user name _____ pass word _____ <input type="button" value="Go"/>	

→

Admin	Post	User
rename	Change : new name _____	
change pw	new pw _____	
Logout		

Admin	Post	User
All Post	_____	
Delete Post	_____	

Admin	Post	User
All Post	Delete Post ID : _____	
Delete Post	<input type="button" value="Delete"/>	

Admin	Post	User
All User	Delete User ID : _____	
Delete User	<input type="button" value="Delete"/>	

Hi-Fi (simulation):

User:

New Name

Write your new name:

Full Name

Submit

New Password

Please enter a new password with high security density:

Full Name

Submit

Friend List

Here are the friends you can contact:

- Friend 1
- Friend 2
- Friend 3
- Friend 4
- Friend 5

New Friend

Write your new friend name:

Full Name

Submit

Remove Friend

Select the friend name you want to remove:

Friend 1

Submit

Select your friend you want to contact

Friend 1

Write the message:

Placeholder

Send

Inbox

Search

From: Friend 1 "Hello"

From: Friend 2 "what's up?"

Search the received message:

Search

Post

Search

Title: Placeholder

Content: Placeholder

Post

This screenshot shows a search interface for posts. At the top, there are four navigation icons: User, Content, Message, and Post. Below them is a search bar with placeholder text "Search the useful resource:" and a search button. A sidebar on the left has "Post" and "Search" buttons. The main area displays two search results in orange boxes:

- No.1 From: User 1 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce convallis pellentesque metus id lacinia. Nunc dapibus pulvinar auctor. Duis nec sem at orci commodo viverra id in ipsum.
- No.2 From: User 2 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce convallis pellentesque metus id lacinia. Nunc dapibus pulvinar auctor. Duis nec sem at orci commodo viverra id in ipsum.

Admin:

The Admin interface includes a header with "Admin" and four buttons: "Change Post" (highlighted in blue), "Change User", and "Log Out".

Screenshot 1: Shows a "Welcome!" message and a "This is a website for the students to share their academic experiences and to help them in their academic studies." note. It features a placeholder image icon.

Screenshot 2: Displays a search bar with placeholder text "Search the useful resource:" and a search button. It lists two posts in orange boxes:

- No.1 From: User 1 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce convallis pellentesque metus id lacinia. Nunc dapibus pulvinar auctor. Duis nec sem at orci commodo viverra id in ipsum.
- No.2 From: User 2 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce convallis pellentesque metus id lacinia. Nunc dapibus pulvinar auctor. Duis nec sem at orci commodo viverra id in ipsum.

Screenshot 3: Shows a "Delete Post" button in the sidebar. A modal dialog asks "Select the Post ID you want to delete" with a dropdown menu showing "No.1" and a "Delete" button.

Screenshot 4: Shows a "Delete User" button in the sidebar. It lists three users with red circular icons:

- User 1
- User 2
- User 3

Screenshot 5: Shows a "Delete User" button in the sidebar. A modal dialog asks "Select the User Name you want to delete" with a dropdown menu showing "No.1" and a "Delete" button.

3.4 Guerrilla test

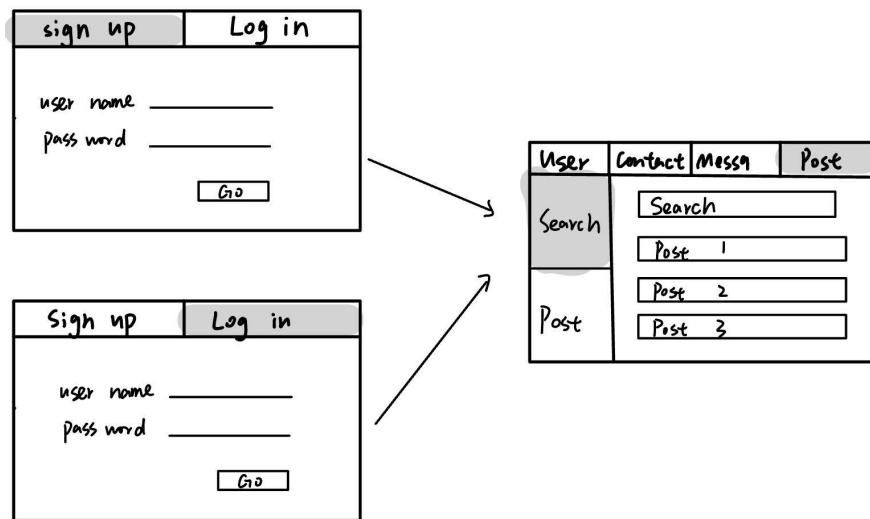
The aim of Guerrilla test is to collect user feedback that can help identify our usability issues, discover pain points, and uncover user preferences and expectations. Also, by rapidly testing our website with sufficient number of users, the insights gained can be used to iterate and refine our website's design, leading to a more user-centered and effective solution.

Firstly, we determined the target group which will be tested, which are junior students in university, majoring in data science. We formed a few questions about the usability of our website and asked them to point out the shortcomings which can be improved. The location which they filled in the questionnaires was at the school library. Now we are listing the feedback of different persons about our website usability, and how to improve.

Person 1:

The shortcoming that the first person pointed out is the usability of page switching. Now after a user sign up or log in for our website, the page remains unchanged and still at the user page.

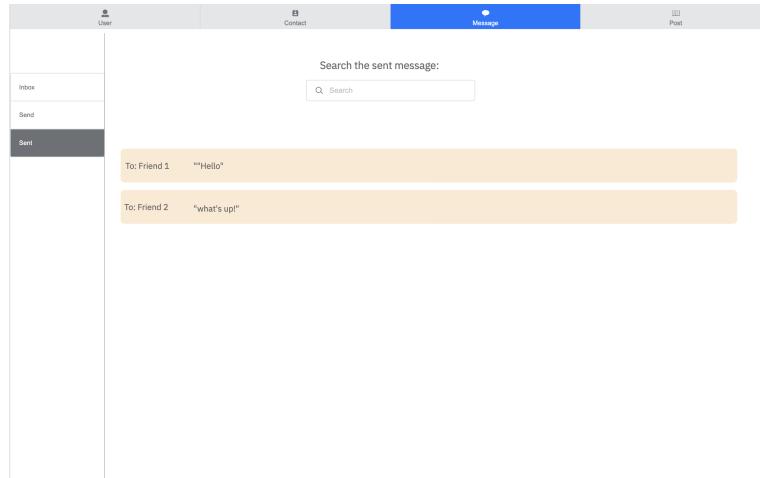
To improve this, we redesigned it and changed the page switching after signing up and logging in. After the improvement, users will see the post interface after they finish log in or sign up.



Person 2:

The shortcoming that the second person pointed out is the usability of the message interface. We can only send messages to the ones in the friend list. But we cannot see what we have sent later on. If we want to check if something we sent is correct or not, we are not able to do it.

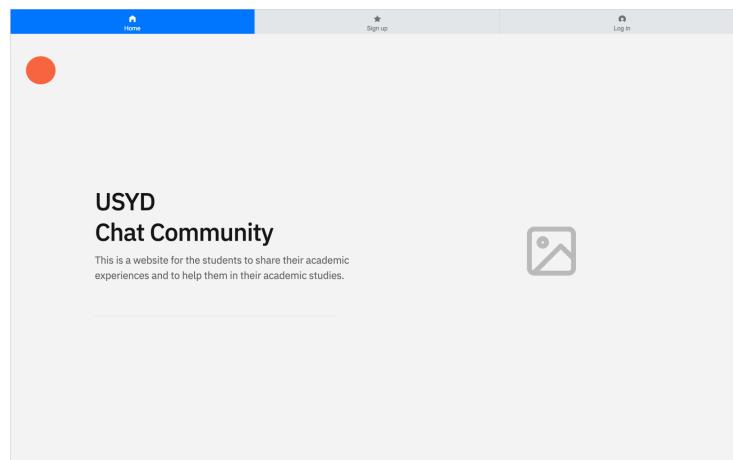
To improve this, we added one feature that we are able to see the history messages that the user himself/herself sent in the past, and also, users can search the keywords about the content that they sent before, it gives more usability to users while communicating with others.



Person 3:

The shortcoming that the third person pointed out is that there is no home page for the website. The home page creates the initial impression and sets the tone for the rest of the site, which can immediately capture visitors' attention and encourage them to explore further. So it would be better to have a home page.

To improve this, we added one page which is our home page for the website. There are some contents listed on the home page about the introduction of our website and the main things which the website contains. It would create a better experience for users.



Step 4: Hi-Fi Prototype

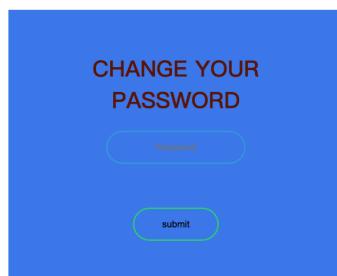
4.1 Incremental development plan

Iteration update 1: Add the “rename” and “change password” function for users.

We considered that users may want to change their password or their username fluently or they may dislike the old name they used before. So we added two new functions for changing their name and password to get better usability for the website.

After we add the “change password” function, users can type in their new password and click submit. Then in our database, the password will be updated to the new one.

After we add the “rename” function, users can type in their new username and click submit. Then in our database, the username will be changed to the new one.

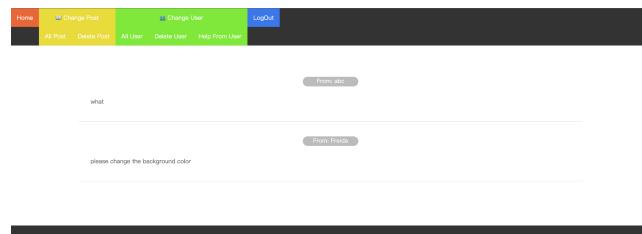


Iteration update 2: Add the “help” function to get the feedback from the users

We consider that there are still some improvements that we can make. The “help” function can help the administrators gather the feedback from the users directly and is very convenient.

Before add “help” function:

After add “help” function:

A screenshot of a 'HELP' form. The page has a blue header with the word 'HELP'. Below it, there is a text input field with placeholder text: 'Please write down the questions you need help with regarding the website:'. Underneath the input field is a text area containing the message 'change the background color'. Below the text area, there is a small box with the text 'From Alice' and a timestamp '2023-09-15 10:00:00'. At the bottom of the form is a 'submit' button.

We can see that after we add the “help” function, users can type their problems or improvements for the website and click submit. Then for the administrators side, they will receive the feedback from the user directly. The administrators can also know who exactly sent the feedback.

4.2 Outline of evaluations conducted

User Evaluation 1:

- Prepare

According to our website feature, we design the list of tasks below:

User role:

1. sign up
2. sign in
3. add friends
4. see friend list
5. send message
6. see already sent
7. change password

sign up/sign in: This is our website's basic function.

add friends: add the friends already signed up for the website
see friend list: confirm that friend is added
send message: send message to a certain friend or friends
see already sent: check the content which the user himself/herself sent before
change password: change the password if needed

- Execution

Step 1: The user sign up for our website with the name and password
Step 2: Sign in the website with the name and password
Step 3: Type the friends' name which the user want to add
Step 4: Check that users' friends are in the friend list
Step 5: Send a message to a certain friend which is in the friend list
Step 6: see the message to check there is nothing wrong with the content
Step 7: Change the password in the user section on the website

- Feedback

Positive: The website's navigation is intuitive and easy to use, allowing users to quickly send messages they need. The website's add friends functionality works well, providing accurate results for user queries.

Improvement: The color contrast between the text and background in certain sections should be increased to improve readability, particularly for users with visual impairments.

User Evaluation 2:

- Prepare

According to our website feature, we design the list of tasks below:

Administrator role:

1. sign in as administrator
2. switch to post information
3. find the post violate the regulation
4. delete the post with post ID
5. delete the user who post the info
6. log out

- Execution

Step 1: The administrator sign in for our website with the name and password
Step 2: Change the page to see all the posts in the website
Step 3: Go through each post to see whether there exists a post violate the regulation
Step 4: Delete the post by its post ID, which is unique

Step 5: See who send the post and delete the user

Step 6: Log out the website

- Feedback

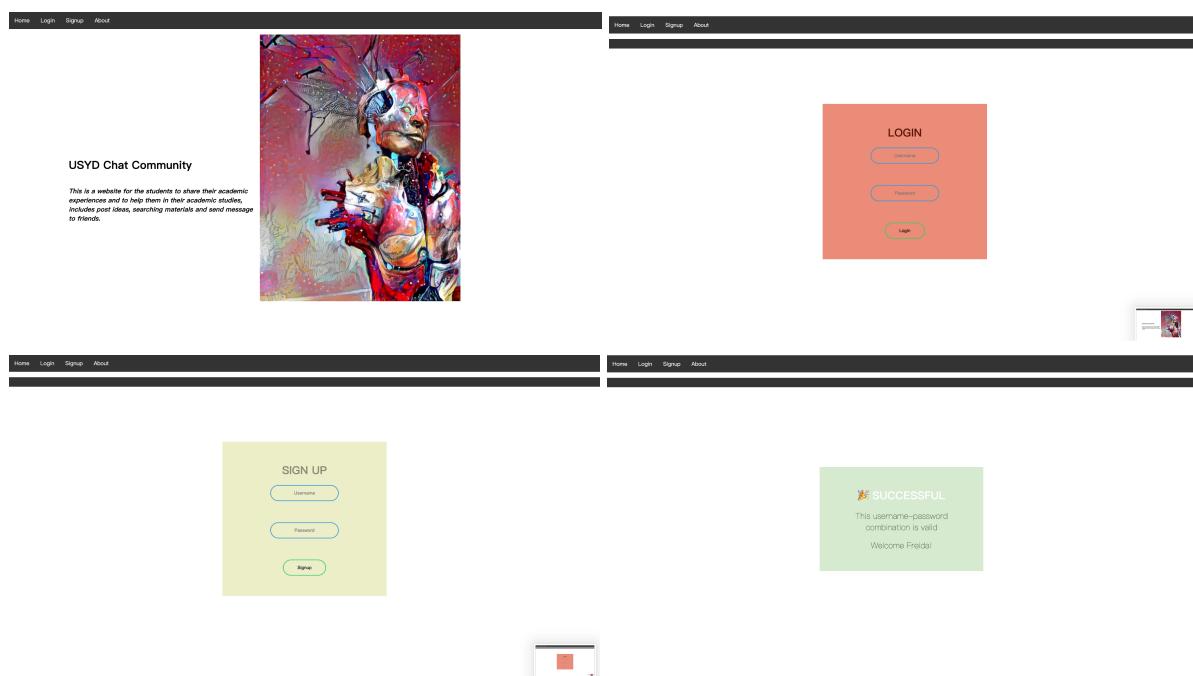
Positive: The content in the post page is informative and well-structured, providing relevant details about the postID and username. The website loads quickly, resulting in a seamless user experience.

Improvement: Incorporate clear and descriptive labels for navigation elements, especially in the main menu, to enhance usability and reduce ambiguity.

4.3 Demonstration:

User:

Before Login:



After Login:

Home page:

The home page features a top navigation bar with links for Home, Discussion, Contact, Message, and User. Below the navigation is a large, vibrant abstract painting of a figure. To the left of the painting, a welcome message reads "Welcome! Freida". Below the painting is a descriptive text: "This is a website for the students to share their academic experiences and to help them in their academic studies, includes post ideas, searching materials and send message to friends."

Disscusion:

Post:

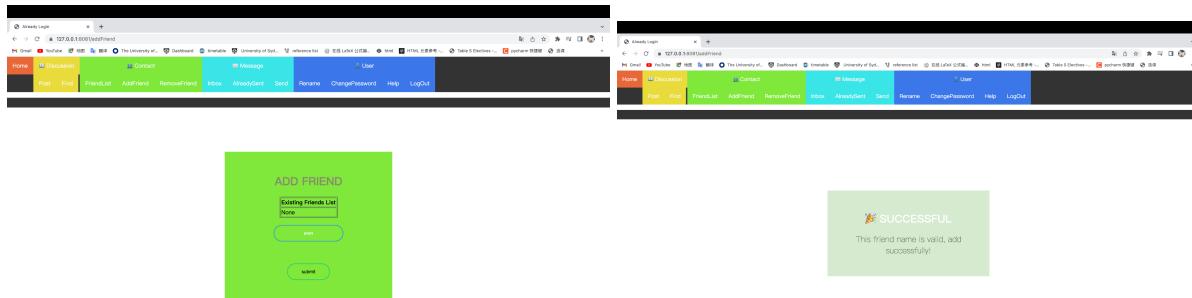
The post creation interface shows a green form with fields for title, content, and file attachments. The confirmation message "Post discussion sent successfully!" is displayed in a green box.

Find all post:

The post list interface shows a single post by "Freida" with the title "DATA" and content "good". A small note at the top right says "No.1 From: Freida".

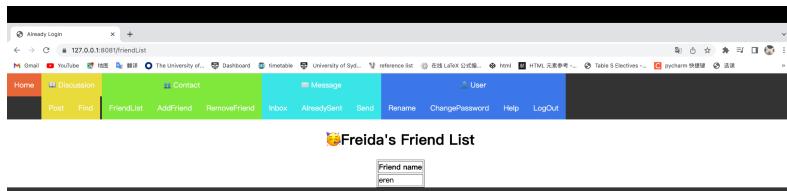
Contact:

Add Friend:



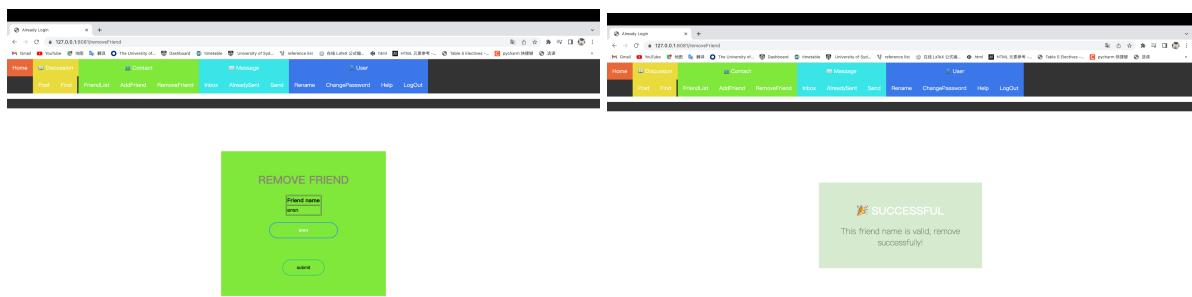
The screenshots illustrate the 'ADD FRIEND' feature. The first screenshot shows the initial state of the 'ADD FRIEND' page with a green header and a form containing a single input field 'Existing Friends List' with the value 'None'. Below the input are two buttons: 'cancel' and 'add'. The second screenshot shows a green success message box with a checkmark icon and the text 'This friend name is valid, add successfully!'

Friend list:

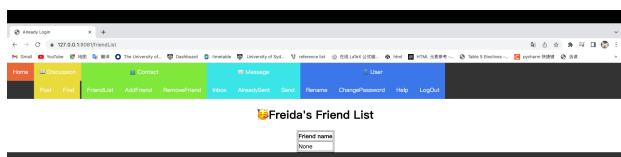


The screenshot shows 'Freida's Friend List' with a green header. The main content area contains a form with a single input field 'Friend name' containing the value 'eren'. A small emoji of a smiling face with hearts is displayed above the form.

Remove Friend:



The screenshots illustrate the 'REMOVE FRIEND' feature. The first screenshot shows the 'REMOVE FRIEND' page with a green header and a form containing a single input field 'Friend name' with the value 'eren'. Below the input are two buttons: 'cancel' and 'remove'. The second screenshot shows a green success message box with a checkmark icon and the text 'This friend name is valid, remove successfully!'

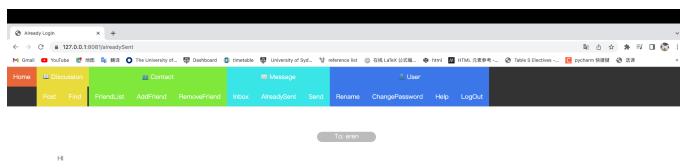


Message:

Send:

Two screenshots of a web application. The left screenshot shows a "SEND MESSAGE TO YOUR FRIEND" form with a recipient field containing "peter" and three buttons: "cancel", "ok", and "send". The right screenshot shows a green "SUCCESSFUL" message box with the text "Message sent successfully!".

Already Sent:



Inbox(Receiver Account):

The screenshot shows a web-based application interface. At the top, there is a navigation bar with links like 'Home', 'Discussion', 'Contact', 'Message', 'User', 'Post', 'Find', 'FriendList', 'AddFriend', 'RemoveFriend', 'Inbox', 'AlreadySent', 'Send', 'Rename', 'ChangePassword', 'Help', and 'Logout'. Below the navigation bar, a message from 'Freda' is displayed, starting with 'Hi' followed by a large black redacted area.

User:

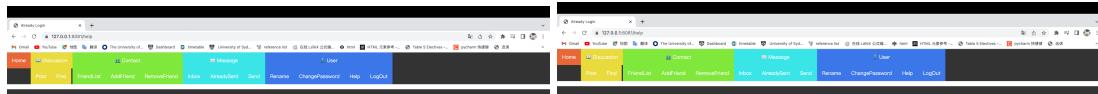
Rename:

The screenshot shows two consecutive steps of the 'Rename' process. On the left, a blue modal window titled 'RENAME' asks for a new username, with a text input field containing 'Eren' and a 'Submit' button. On the right, a green success message box displays the text 'SUCCESSFUL' and 'This username-password combination is valid', followed by 'Welcome Eren!'. Both screenshots show the same top navigation bar.

Change Password:

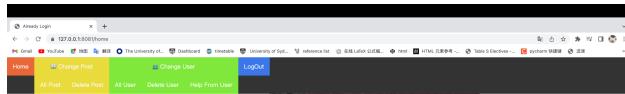
The screenshot shows two consecutive steps of the 'Change Password' process. On the left, a blue modal window titled 'CHANGE YOUR PASSWORD' has a 'Submit' button. On the right, a green success message box displays the text 'SUCCESSFUL' and 'This username-password combination is valid', followed by 'Welcome Eren!'. Both screenshots show the same top navigation bar.

Help:



Admin:

Home:

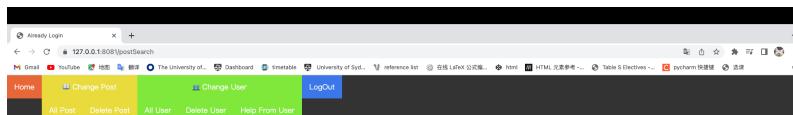


Welcome! admin

Now is the administrator interface, you can delete users or delete a course guide.

Change Post:

All Post:

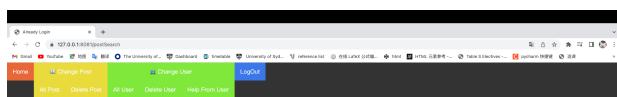


DATA

good

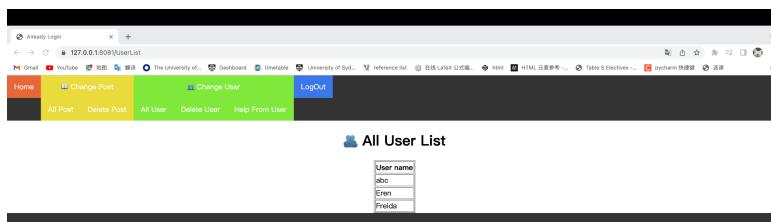


Delete Post:

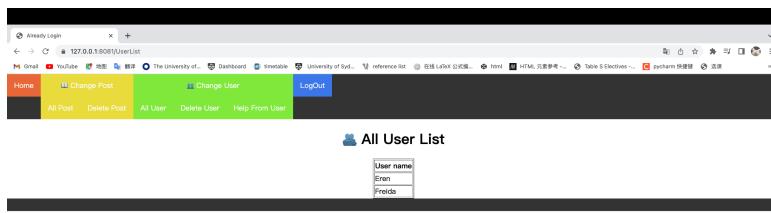
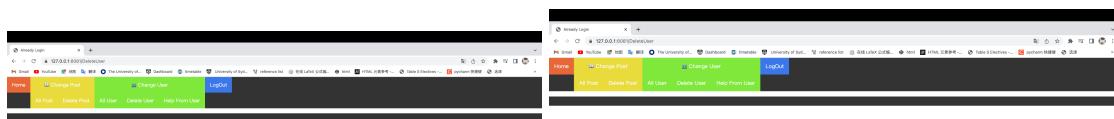


Change User:

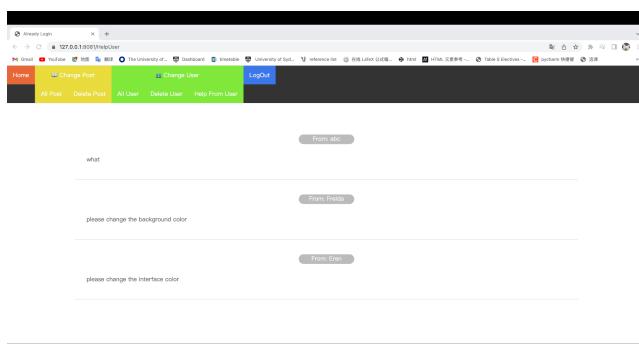
All user:



Delete User:



Help from user:



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