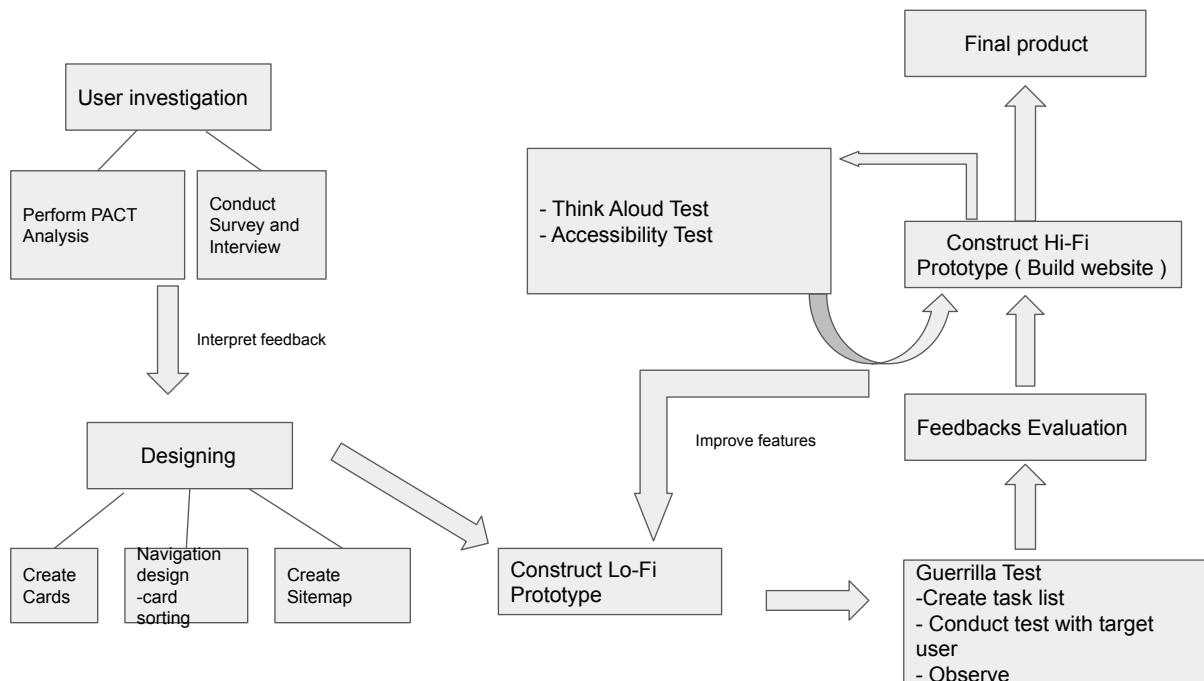


# INFO2222 Assignment Usability Report

Shoudi Huang, Daniel Zhang

## Summary:

“DS Chat” is a teaching support system which was created based on a e2e encryption messaging website. Its target users are the students of University of Sydney. The development include 4 main phases. The first phases we perform user investigation on our target user group to found out their interest and requirement for “DS Chat”. Then we start the navigation design for the system and result on a sitemap. After that, we design the LoFi-Prototype of the system and perform evaluation and improvement. At the end, we developed the HiFi-Prototype and perform evaluation and improvement. All design and evaluation on prototype had two iteration.



## 1. User Investigation

### 1.1 Outline of User Investigation Process

Student has been chosen as the target user group of the “DS Chat”, since they might be the largest potential user group of the product and can be closely and easily investigate.

Our user investigation process start from PACT analysis [Appendix 11]. We first scope out the variety of people, activities, context and technologies which related to our support system though brainstorming. We first identify a list of questions which correspond to each of those aspects, such as “Who are the people involved in the activity?”. And we are trying to found out the answer to those question while performing user investigation. Those questions guide us on what direction should we start user investigation of our support system.

After that, we conduct interview with some students who are our classmates. And find out that the mostly desire requirement for the current teaching support system that they are using is to have a private one on one online chat room which allow private and convenient communication between friends.

Then we start investigating our target user group by conducting survey. We sent two forms of survey with an update to the later one. That help us to define the target users' basic information and interest or requirement for the support system. We found out that seeking academic support is one of the main motivation of using the support system during study for student in the first form of survey. Therefore, we create an updated version of the survey and found out that student are more comfortable with the “ed” discussion board form of communication for providing or seeking academic support with each other. In addition, the most useful functionality for the discussion board is allow comment under each post which is usually where they found the answer to their question.

Besides, we browse some websites which have the same target user group of our support system. Then we brainstorm and investigate the target users' interest and requirement based on the design of those website or system.

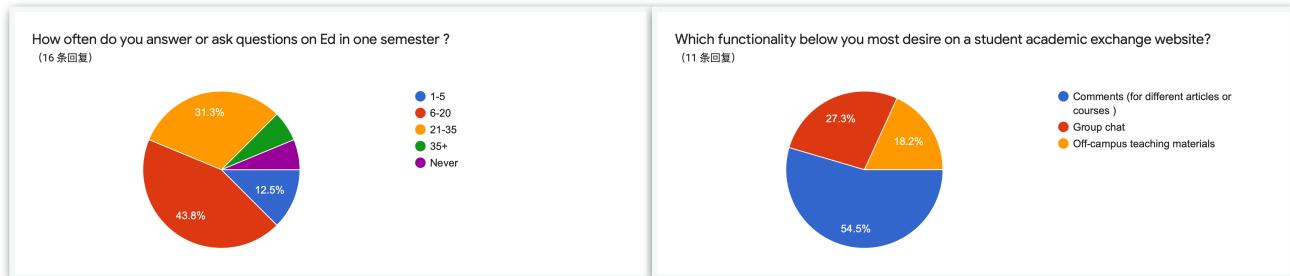


Figure 1

Figure 2

## 1.2 Research Materials Used

The interviews for user investigation are mainly perform through “Zoom” and phone call in “WeChat”. And the surveys are conducted through “Google Forms”. In addition, we browse some websites or systems which have the same target user group of our support system, such as “ed” discussion board and “Canvas”.

## 1.3 Target Persona

With the combination of all information of the target user group we found during the user investigation, we finally narrow down the target user and created a target persona. [Appendix 1]

## 1.4 Collection of Documents

Important documents which relevant to target users interest are presented in [Appendix 2].

# 2. Navigation Design

## 2.1 Outline of Card Sorting

Though Card Sorting, we decided on website structure, correct words for navigation, and group website contents. In order to perform card sorting, we first identify a set of cards where each one represents the website's functionality, which meets some of the target users' requirements. Then we perform an open card sorting within the group [Figure 3]. We organize the cards into groups and name the groups through cooperation. After that, we adapt the group sizes.

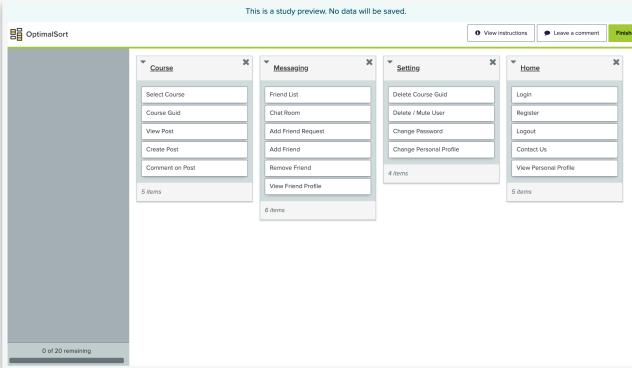


Figure 3

	Home	Course	Messaging	Setting	About	unsorted
Login	80%				20%	
Register	60%				40%	
Create Post	40%	40%	20%			
View Post	40%	40%	20%			
Course Guid			100%			
Select Course			100%			
Delete Course Guid			80%		20%	
Comment on Post	20%	40%	40%			
Add Friend		20%	80%			
Add Friend Request			80%		20%	
Chat Room			20%	80%		
Friend List				80%		20%
View Friend Profile				80%		20%
Remove Friend				60%	40%	
View Personal Profile				40%	40%	20%
Change Password	20%				80%	
Change Personal Profile	20%				80%	
Delete / Mute User				40%	60%	
Logout	40%			60%		
Contact Us					20%	80%

Figure 4

Then we perform close card sorting with some target user of our support system [Figure 4]. The predefined groups for the close card sorting are the groups we defined in the previous open card sorting, except “About”. Since we are uncertain about including it into our design. All card sorting are conducted through “optimalworkshop” [1].

At the end, we compare and discuss the result of the open card sorting and the results of the close card sorting performed by some target users of the website. Then we modified our navigation design based on the comparison and discussion. For example, considering 80% of target user has putted the “Contact Us” feature into the “About” group, we decide to follow that.

## 2.2 Information Architecture

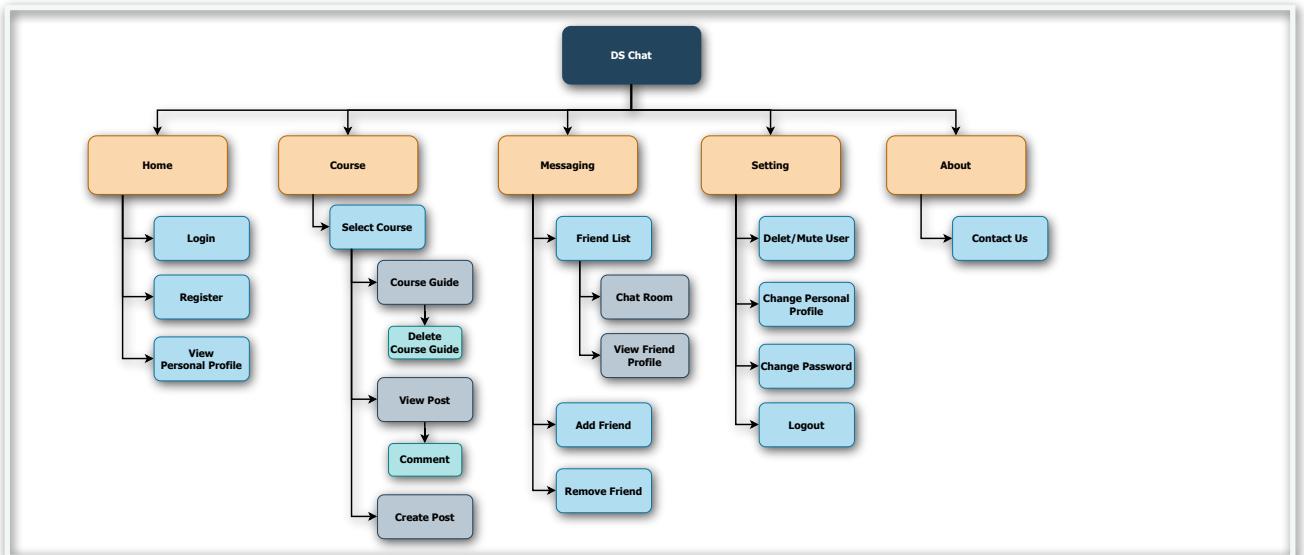


Figure 5

### **3. Design-Evaluate (Lo-Fi Prototype)**

#### **3.1 Prioritized List of Additional Features**

Based on the level of relevance to the target users interest, the level of importance toward the operation of the support system and dependencies between each functionality, we priorities the features that we plan to implement for “DS Chat”.

1. Login and Logout	6. Create Post	11. Remove Friend	16. View Friend Profile
2. Register	7. Comment	12. Delete / Mute User	17. Change Password
3. Select Course	8. Friend list	13. Delete Course Guide	18. Change Password
4. Course Guide	9. Chat Room	14. Change Personal Profile	19. Contact Us
5. View Post	10. Add Friend	15. View Personal Profile	

Table 1

#### **3.2 Outline of “Best” Design Determination**

Based on the information architecture from previous phase, we created a few sketches of “DS Chat”. In order to determine which design is the most suitable one for our support system, we first check for design principles and accessibility consideration. For example, we was plan to put the feature “Change Personal Profile” and “Change Password” at the same page, but we had separate that into different pages due to visibility consideration. That might be too much information provide to the user at once, since changing personal profile already require a lot of edition.

In addition, we perform guerrilla test on each other to test the sketches’ usability. For example, during the guerrilla test, we found out that if we use drop down menu on side bar navigation, the width of the side bar might be too large which might affect the display of the page content [Appendix 3]. And top navigation on the other hand will not encounter this situation. Therefore, we decide to go for top navigation for our final design.

#### **3.3 Lo-Fi Prototype**

Lo-Fi Prototype of the “DS Chat” has been designed and evaluated in two iteration that produced two version of Lo-Fi Prototype [Appendix 4, 5]. Version 2.0 was improved based on the evaluation on version 1.0 and we had decided that Lo-Fi Prototype2.0 as our final Lo-Fi Prototype.

#### **3.4 Outline of Conducted Guerrilla Test**

Firstly, we created a Lo-Fi Prototype1.0 based on the information architecture and sketches of “DS Chat”. Then we evaluate the prototype by conducting guerrilla test though “Zoom”. For conducting guerrilla test, we first define what perspective of our support system that we want to test on. The main purples of testing our prototype is to identify any constrains and difficulty when the target user using our system. And we are mainly interested on the potential constrains in the the usability of our core functionalities [Table 1]. Therefore, we created a shot-list of task which covers the potential operation on our core functionalities. Those tasks test on the functionalities’ visibility, affordance, feedback, constrains, consistence and so on. After that, we conduct the test with some target user which is outside the development team as the participant and one member of the development team as the facilitator of the test. The participant will be given the list of tasks and the Lo-Fi Prototype and he need to finished all the task by using the prototype without consulting the facilitator. However, if the participant stuck in a task for too long, the facilitator can advice him on what should be the next step. During the process, the facilitator should observe any difficulty or constrains of the system that the participant has encounter and note down those observations. After the participant finish all the tasks, the facilitator will share their observations to the participant and ask their comment on those observations and any suggestions for our support system. The Lo-Fi Prototype development has been though two iterations, therefore, we had conducted two guerrilla tests during the development.

The first guerrilla test was performed on the Lo-Fi Prototype1.0 [Appendix 4], all tasks are completed quickly and smoothly and the total time taken is 2 mins 23 seconds. But we still discover some constraints of the prototype. For example, when the user selected the course, the page is disorder in users view, as all the contents include guideline, post, comment and create post are joining together [Figure 6]. That increase the difficulty of finding each specific information.

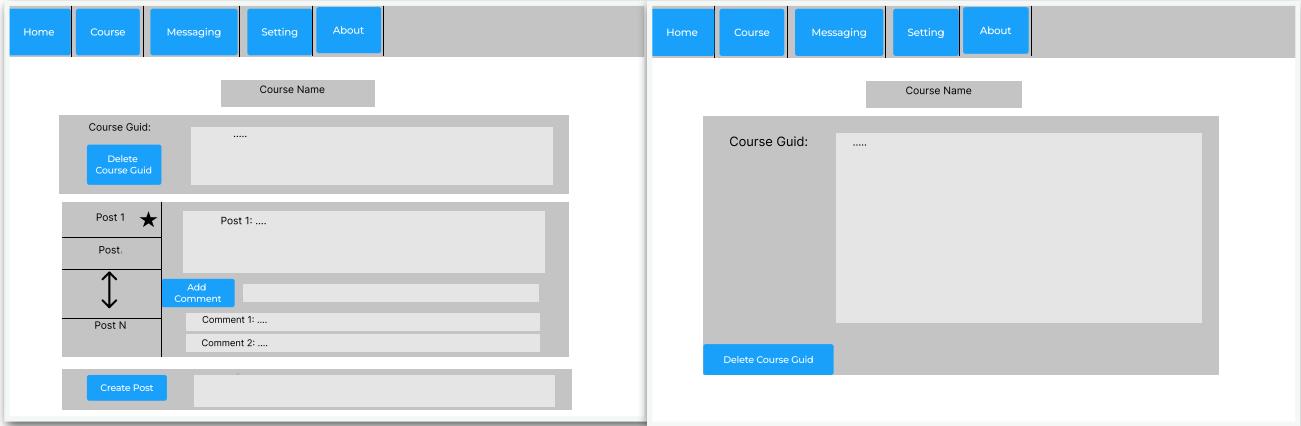


Figure 6

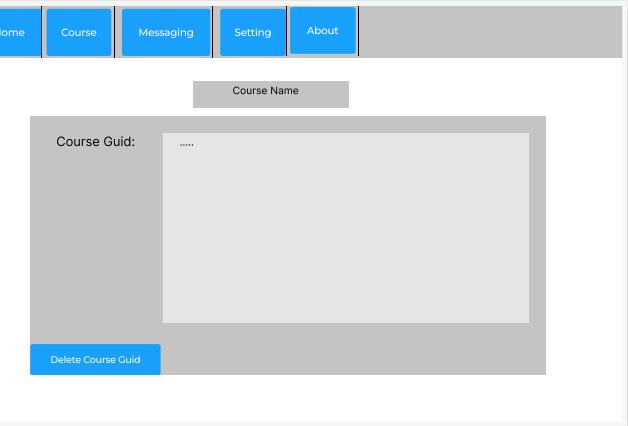


Figure 7

Therefore, during the Lo-Fi Prototype2.0 design phases, we separate the features of course guideline, post, comment and create post due to the difficulty and constrain that we discover during guerrilla test 1. We assign the course guide and create post into different pages [Figure 7, 8]. And we assign the view post and comment into one page, due to the high correlation between posts and comments [Figure 9].

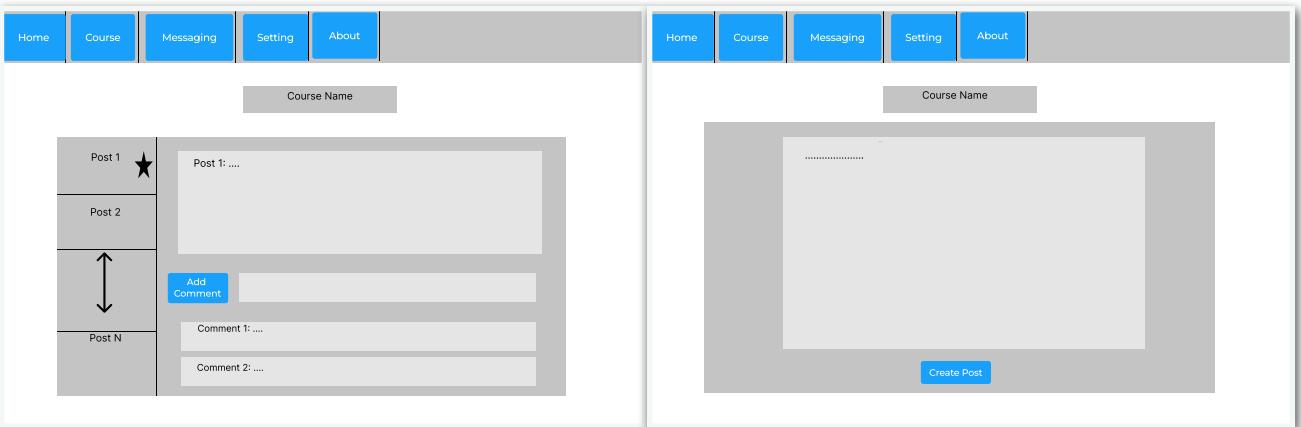


Figure 8

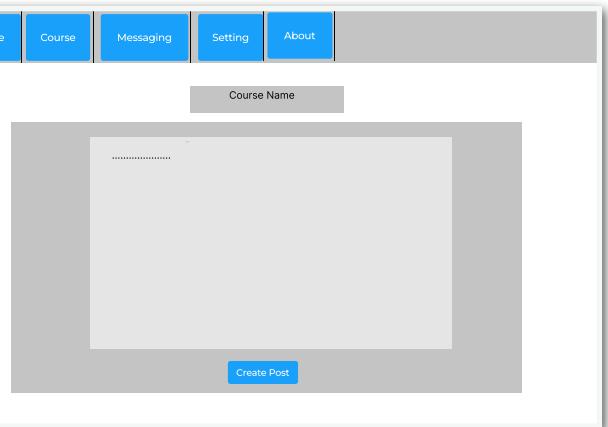


Figure 9

In addition, during the guerrilla test 1, the participant has encounter difficulties due to the uncleanness of the task description, such as the post and comment instruction disordering in “View course 1 post and comment” task and it is unclear about which post should the participant looking for. Therefore, we improve the task description in guerrilla test 2.

At the end, we conduct the second guerrilla test [Appendix 7] on our LoFi-Prototype2.0 [Appendix 5]. The total time taking is 2 minutes and 57 seconds. The longer duration are mainly due to the more complex task description, but it avoid the difficulty from the uncleanness of the task description. And focus more on the usability testing on our support system. From the observation of the guerrilla test 2, all features and information are easily and correctly identified by the user and all features operations are in users expectation. Therefore, based on the observation and participants comment, we conclude that all operations on Lo-Fi Prototype2.0 is quick and smooth enough and meeting all the requirements which related to the design principles. And we had decide to end the design of Lo-Fi level and start on the development of Hi-Fi Prototype.

## 4. Design-Evaluate (Hi-Fi Prototype)

### 4.1 Incremental development plan

The development of Hi-Fi Prototype included two iterations. For the first iteration, we first create the Hi-Fi Prototype1.0 [Appendix 8] of our support system based on the Lo-Fi Prototype2.0. All Our Hi-Fi Prototypes are developed though building the actual website. After we the implementation of Hi-Fi Prototype1.0, we conduct a think aloud test and an accessibility test via WCAG for the prototype evaluation. Based on the constrains of the version 1.0 prototype that we discovered via the think aloud test and the accessibility test, we improved our Hi-Fi Prototype1.0 and generate a Hi-Fi Prototype2.0 [Appendix 9]. And the 2.0 version has became our final Hi-Fi Prototype.

### 4.2 Outline of Evaluations

For the think aloud test that we conducted [Appendix 10], we first define a list of tasks where each with detail description which test on the usability of the core features of our support system. Then we conduct the test with some target user of our support system who is outside of the development team as the participant and a member of the development team as the facilitator. The participant will need to finish all the tasks by herself and think aloud. The facilitator will try to observe any constrains of our system and note down the observation and participant's think aloud. After the participant finish all the tasks, the facilitator will share their observation and ask participant's comments on the observations and the system.

Based on the observation and participant's comments, we found out that some pages of the support system might require a back button. For example, when the user viewed the posts of the course and they want to go back to the main page of the current course and perform other operation on that course, they have to navigate from select course, even they don't want to change course [Figure 10]. With a back button implemented, the usability will be further improved [Figure 11].

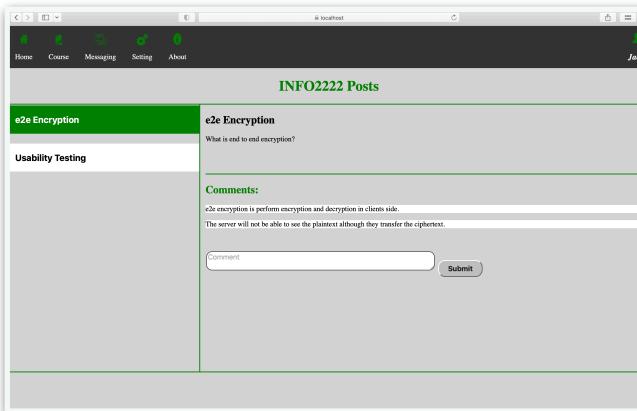


Figure 10

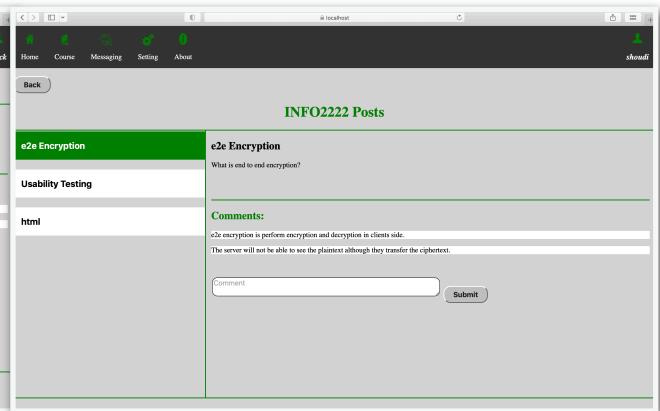


Figure 11

Furthermore, we also implemented the back button on the course guide, create post, chat room and view friend's profile pages.

Besides, we conducted an accessibility test on our Hi-Fi Prototype1.0 based on the Web Content Accessibility Guidelines. It test the support system on varies perspectives of accessibility which included perceivable, operable, understandable and robust. And we found out that the buttons in the courses main page which direct the user to course guid, view post and create post are a bit too wordy and the information that the buttons try to convey to user is not clear and concise enough [Figure 12]. That was discovered when we considering the perceivable aspect during the accessibility test that we conducted. For further improvement of accessibility, we include icons for those three buttons which helps on transferring information to the user [Figure 13].

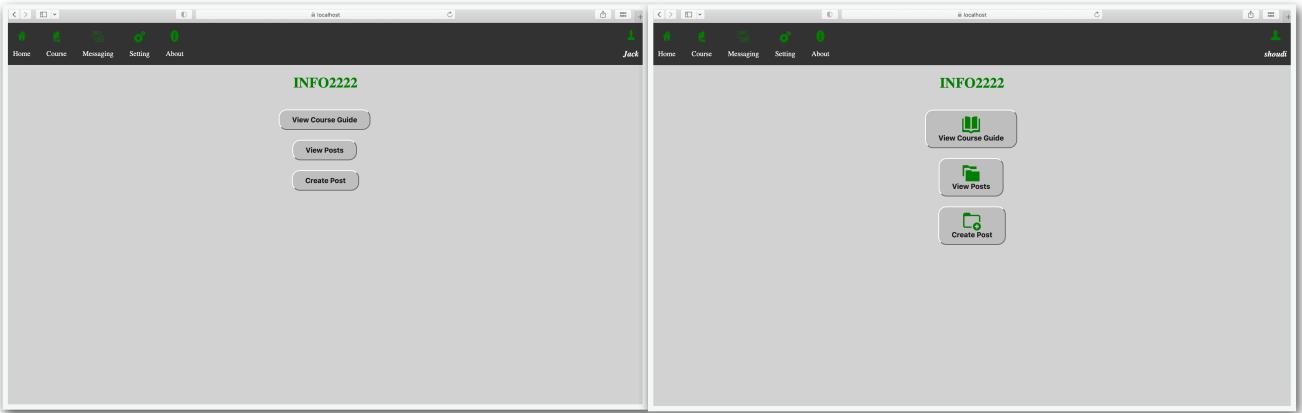


Figure 12

Figure 13

### 4.3 Demonstrations of Functionalities

The implementation of the functionalities are following the prioritized list of addition features [Table 1]. Due to the time constrain, we have only implemented partial of the addition features for our support system. That includes the modification of the original login, register, logout, messaging( view and send). In addition to that, we implemented select course, view course guide, view and comment on post, create post, friend list, add friends and contact us. All functionalities are demonstrated though video recording “functionality\_demo.mov”.

### 5. Contribution

Daniel are more focusing on user investigation, conducting usability test and note down of observations. In addition, he also contributed on navigation design, LoFi and HiFi development. Overall, he has contributed on the navigation design for about 40%, LoFi and HiFi development for about 30 %. And for all evaluations conducted, he has contributed for about 80%. For user investigation, he has contributed for about 90%.

Shoudi are more focusing on the LoFi and HiFi development and navigation design. He contributed on the navigation design for about 60% and LoFi and HiFi development for about 70%, and 20% for all evaluations conducted and 10% for user investigation.

## Appendix:

### 1. Persona



**Julia John**

Age: 22

Current Role: Student major in computer science

#### Demographic

- Third year of university
- Favorite course is COMP3308
- Comfortable on using ed discussion for seeking academic support
- Interest in academic exchange websites

#### Goal & Task

- She need a one on one private communication channel in the teaching support system, so that she can perform academic communication between herself and her friend privately
- She want a knowledge repository with different courses where she can view others post and comment on that and create her own post which provide and receive academic support easily and quickly.
- She want to have a place where she can share her personal profile and view her friends' personal profile

#### Environment

- Laptop or Desktop
- Wired networks
- WIFI

#### Quote:

- "Learning too soon our limitations, we never learn our powers." —*Mignon McLaughlin*

### 2. Documents Relevant To Target User Interest

Total interviewees: 20

#### Question1:

Have you ever use an academic communication website?

Option: YES or NO

If NO:

Question 2: do you have interest on academic communication website?

Option: YES or NO

If YES:

Question 3: Frequency answering or asking question on the website

Option: 1-5; 5-20; 21-35; 35+ .

Question 4: What feature you are most desire for your current teaching support system.

Interview Results:

Question 1:

15 Yes, 5 No

Question 2:

3 YES

2 NO

Question 3:

3 (Never); 8 (1-5); 3 (21-35); 2 (35+)

Question 4:

12 (Private Chat Room), 2 (game redirect), 6 (no clue)

Survey 1:

Total participants: 16

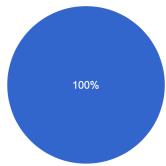
Link: <https://forms.gle/C8JhWTvVi9JDRKK37>

#### Question summary:

1. Which user type you belong with?
- 2 .How old are you?
- 3 .What year of university you currently study in?
- 4 .Which major are you study in ?
5. How often you answering or asking question on Ed in one semester ?
6. Which course is your favorite?
7. Which functionality below you most desire on a student academic exchange website?
8. Is there any other useful functionalities you can think about?

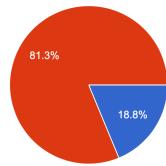
#### Survey1 answer:

Which user type you belong with?  
(16 条回复)



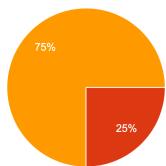
How old are you?  
(16 条回复)

Student  
Alumni  
SCS/administrative staff  
Else



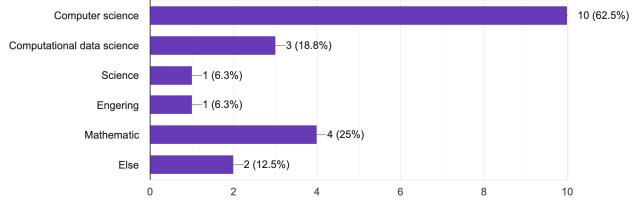
18-20  
21-23  
24-26  
Else

What year of university you currently study in?  
(16 条回复)

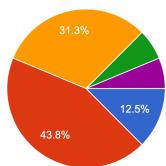


First year  
Second year  
Third year  
Fourth year  
Else

Which major are you study in ?  
(16 条回复)

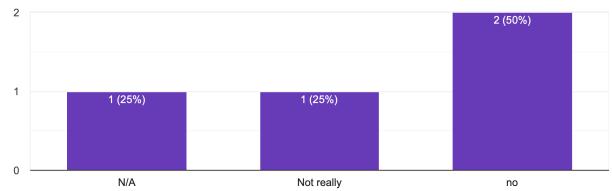


How often you answering or asking question on Ed in one semester ?  
(16 条回复)



1-5  
6-20  
21-35  
35+  
Never

Is there any other useful functionalities you can think about?  
(4 条回复)



#### Survey 2:

Total participants: 11

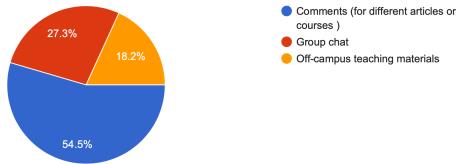
<https://forms.gle/R7YVVfECdtWFGksG8>

#### Survey Question summary:

Which functionality below you most desire on a student academic exchange website?

## Result:

Which functionality below you most desire on a student academic exchange website  
(11 條回復)



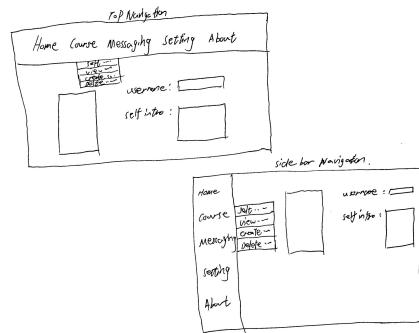
## ed Discussion Board:

The screenshot shows a discussion board interface with a sidebar on the left containing course and category lists. The main area displays a thread titled "Regarding edge case covering/error handling". The thread has two answers. The first answer is from Qiang Tang (STAFF) and the second is from Gabriel Timothy. Both users discuss edge cases related to encryption and security.

## Canvas:

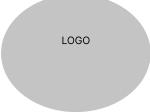
The screenshot shows the Canvas LMS interface with a sidebar on the left containing various course management links like Dashboard, Courses, Groups, Calendar, Inbox, History, Studio, and OER. The main area shows course content modules for "2022 Semester 1".

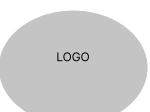
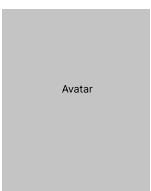
## 3. Sample Sketches of “DS Chat”

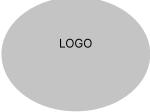


## 4. LoFi-Prototype1.0

Link: [https://www.figma.com/file/LedXxfJUnbSOjMI7WPGn8V/INFO2222\\_LoFi-Prototype1.0?node\\_id=0%3A1](https://www.figma.com/file/LedXxfJUnbSOjMI7WPGn8V/INFO2222_LoFi-Prototype1.0?node_id=0%3A1)

<a href="#">Home</a>	<a href="#">About</a>		
 Username: <input type="text"/> Password: <input type="password"/>			
<a href="#">Login</a> <a href="#">Register</a>			

<a href="#">Home</a>	<a href="#">About</a>		
 Develop Team Intro: ....  Email: XXXXXXXX@uni.sydney.edu.au			
		 Username: <input type="text"/> Self Intro: <input type="text"/>  Email: <input type="text"/> Location: <input type="text"/> Degree of Study: <input type="text"/>	

<a href="#">Home</a>	<a href="#">Course</a>	<a href="#">Messaging</a>	<a href="#">Setting</a>	<a href="#">About</a>		
 Develop Team Intro: ....  Email: XXXXXXXX@uni.sydney.edu.au				Course 1 Course 2 Course 3  Course N		

<a href="#">Home</a>	<a href="#">Course</a>	<a href="#">Messaging</a>	<a href="#">Setting</a>	<a href="#">About</a>		
Course Name  Course Guid: Delete Course Guid  Post 1 ★ Post ↑ ↓ Post N  Create Post					Friend List Add Friends Remove Friends	

Home Course Messaging Setting About

### Friend List

Friend Name 1	<a href="#">Contact</a>	<a href="#">View Profile</a>
Friend Name 2	<a href="#">Contact</a>	<a href="#">View Profile</a>
Friend Name 3	...	...
Friend Name N	...	...

Chat Room

Friend Name:  
.....

User Name: Hello Guy

Friend Name:  
.....

Friend Name:  
.....

User Name: .....

[Send](#)

Home Course Messaging Setting About

### Chat Room

Friend Name:  
.....

User Name: Hello Guy

Friend Name:  
.....

Friend Name:  
.....

User Name: .....

[Send](#)

(Friend Name)'s Profile

Avatar

Self intro:

Email:

Location:

Degree of Study:

Home Course Messaging Setting About

### Add Friend With Username

Friend Username:

[Add Friend](#)

Friend List

Friend Name 1	<a href="#">Remove Friend</a>
Friend Name 2	<a href="#">Remove Friend</a>
Friend Name 3	...
Friend Name N	...

Home Course Messaging Setting About

- [Change Personal Profile](#)
- [Change Password](#)
- [Delete User](#)
- [Logout](#)

Update Personal Profile

Username:

Self Intro:

Avatar

Email:

Location:

Degree of Study:

[Update](#)

Home	Course	Messaging	Setting	About	
------	--------	-----------	---------	-------	--

Home	Course	Messaging	Setting	About	
------	--------	-----------	---------	-------	--

New Password:

Confirm New Password:

Change Password

**User List**

Username 1	<button>Delete User</button>
Username 2	<button>Delete User</button>
Username 3	...
Username N	...

## 5. LoFi-Prototype2.0

Link: [https://www.figma.com/file/lo3KvHklCgLsqeor4xuw9T/INFO2222\\_LoFi-Prototype2.0](https://www.figma.com/file/lo3KvHklCgLsqeor4xuw9T/INFO2222_LoFi-Prototype2.0)

Home	About	
------	-------	--

Home	About	
------	-------	--

LOGO

Username:

Password:

Login Register

LOGO

Username:

Password:

Confirm Password:

Register

Home	About	
------	-------	--

Home	Course	Messaging	Setting	About	
------	--------	-----------	---------	-------	--

LOGO

Develop Team Intro: .....

Email: XXXXXXXX@uni.sydney.edu.au

Avatar

Username:

Self Intro:

Email:

Location:

Degree of Study:

Home Course Messaging Setting About

Develop Team Intro: .....

Email: XXXXXXXX@uni.sydney.edu.au

Course 1  
Course 2  
Course 3  
Course N

Home Course Messaging Setting About

Course Name

[View Course Guide](#)  
[View Posts](#)  
[Create Post](#)

Course Name

Course Guid: ....

[Delete Course Guid](#)

Home Course Messaging Setting About

Course Name

Post 1 ★  
Post 2  
Post N

Post 1: ....

Add Comment  
Comment 1: ....  
Comment 2: ....

Course Name

.....

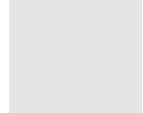
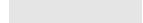
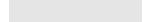
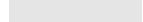
[Create Post](#)

Home Course Messaging Setting About

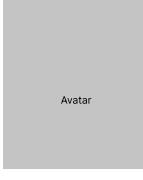
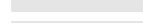
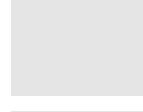
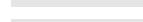
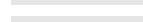
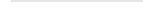
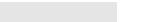
[Friend List](#)  
[Add Friends](#)  
[Remove Friends](#)

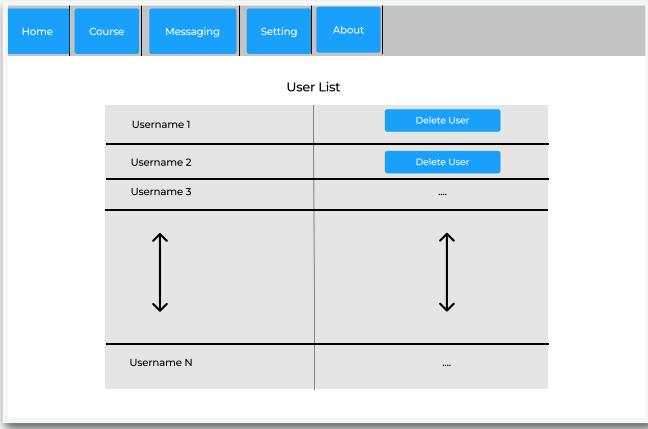
Friend Name 1	Contact	View Profile
Friend Name 2	Contact	View Profile
Friend Name 3	...	...
Friend Name N	...	...

Home	Course	Messaging	Setting	About	
Chat Room					
Friend Name: .....					
User Name: Hello Guy					
Friend Name: .....					
Friend Name: .....					
.....					
<input type="button" value="Send"/>					

Home	Course	Messaging	Setting	About	
(Friend Name)'s Profile					
 Avatar		Self Intro:  Email:  Location:  Degree of Study: 			
					Add Friend With Username
					Friend Username:  <input type="button" value="Add Friend"/>

Home	Course	Messaging	Setting	About	
Friend List					
Friend Name 1 Friend Name 2 Friend Name 3 .....   Friend Name N ....		   			

Home	Course	Messaging	Setting	About	
Update Personal Profile					
 Avatar		Username:  Self Intro:  Email:  Location:  Degree of Study: 			
					New Password:  Confirm New Password:  <input type="button" value="Change Password"/>
<input type="button" value="Update"/>					



## 6. Guerrilla Test 1

Task
1. Register and Logout
2. Change Personal Profile
3. Find "Course 2" Course guide and delete course guide
4. View "Course 1" Post and Comment
5. Create Post in "Course 1"
6. Chat with friend 1
7. View friend 2 Profile
8. Add friend to friend list
9. Remove friend from friend list
10. Delete User account
11. Change Password
12. Before login and after login search contact method of the website development team

Total time taken for complete the task:  
2 mins 23 seconds

### Record and Difficulties:

The total time taken for this individual to complete the task is 2 minutes 23 seconds. Overall, the tasks were completed quickly and smoothly. The main problems during the tasks are "back" button in different sections. Every time users want to go back to the origin pages need to click the button in the menu above rather than click "back," decreasing the efficiency of website use. The second difficulty is "change password" when the user changes the password. The system automatically leads the user to the homepage, and even the user has already login. It is inconvenient that users need to log in again without any reminding. Most task guides are continuing, but for task 4, the "Post and Comments" disorder command leads to users' hesitation. Similarly, for task 9 and 10, the user should log out first and then find the task, but the task guide was not given, increasing the thinking time. For the "Course" button, when user enter the course, the page is quite disorder,

as all the contents include guideline, post, etc are joining together. Adding another page with separate “Course guide” “Post” and “Create post” should be better.

## 7. Guerrilla Test 2

Task
1. Register and Logout
2. Change Personal Profile
3. Find “Course 2” Course guide and delete course guide, then view “Course 1” Course guide.
4. View “Course 1” Post and Comment, then create Post on “Course 2”
5. Create Post in “Course 1” and Create Post in “Course 2”
6. Chat with friend 1 and Chat with friend 2.
7. View friend 2 Profile then remove friend 2 from the friend list
8. Add friend to friend list and chat with friend 1
9. Remove friend 1 from friend list
10. Delete User account
11. Change Password
12. Before login and after login search contact method of the website development team

Total time taken for complete the task:

2 minutes 57 seconds

### Record and Difficulties:

The total time taken for this individual to complete the task is 2 minutes and 57 seconds. It is swift since the tasks are comparable larger than prototype 1. Overall, all the features are displayed without any disconnection. The task processing is smooth and pretty efficient. Buttons on each page are listed logically so that users can easily find corresponding ones. When user enter in a random “Course” section, all functionalities are display in sequence, user are able to “View Course Guide”, “View Post” and “Create a post” in different pages. Furthermore, there is a title above these functionality that kindly remind user which course they are currently in, in order to avoid the inconvenience of go back previous page to check. For “Messaging” section, after user add a friend in friend list, the system will automatically jump to the friend list page and list our all the friends, it is efficient that user can check that new friend is successfully added. The mockup of website is also concise and easy to understand, the menu page design clean. From the usability testing result, most of functionalities are in the section where user expected, which match our hypothesis. In this case, we decided to use the prototype as our final version in this case.

## 8. HiFi-Prototype1.0

A screenshot of a web browser window showing the 'DS Chat' login page. The title bar says 'localhost'. The header has 'Home' and 'About' links. The main content features a large green outline of a head with a speech bubble. Below it is a login form titled 'Login with Username and Password' with fields for 'Username' and 'Password', and 'Login' and 'Register' buttons.

**DS Chat**

Login with Username and Password

Username

Password

Login Register

A screenshot of a web browser window showing the 'DS Chat' register page. The title bar says 'localhost'. The header has 'Home' and 'About' links. The main content features a large green outline of a head with a speech bubble. Below it is a registration form titled 'Register with Username and Password' with fields for 'Username', 'Password', and 'Confirm Password', and a 'Register' button.

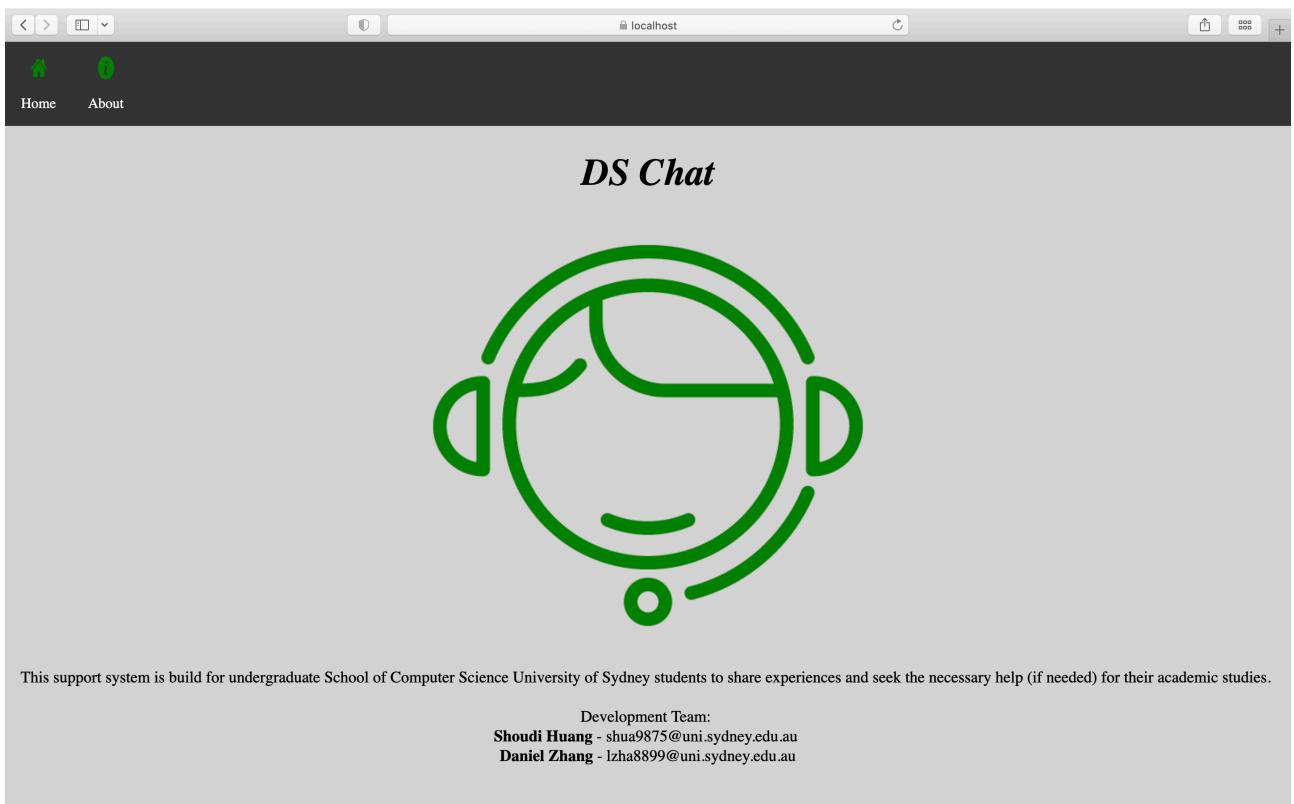
Register with Username and Password

Username:

Password:

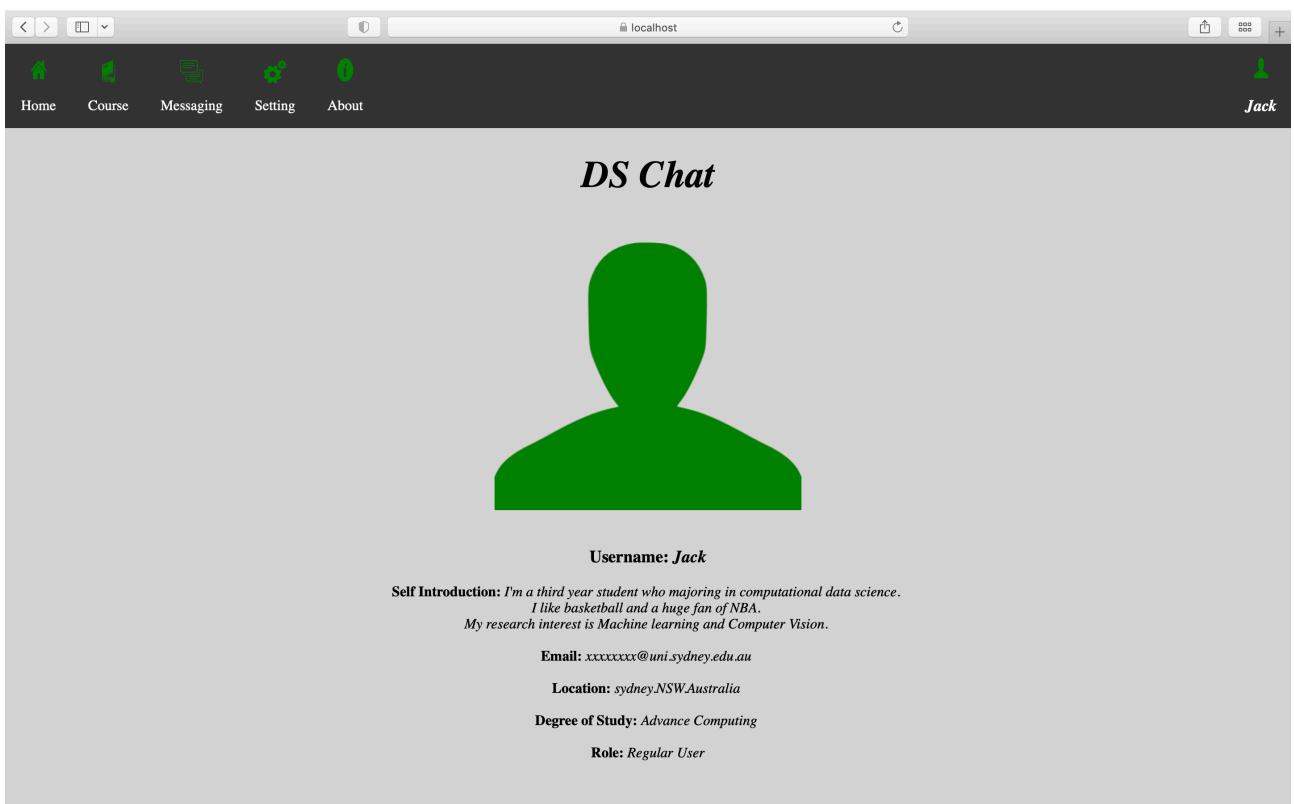
Confirm Password:

Register



This support system is build for undergraduate School of Computer Science University of Sydney students to share experiences and seek the necessary help (if needed) for their academic studies.

Development Team:  
**Shoudi Huang** - shua9875@uni.sydney.edu.au  
**Daniel Zhang** - lzh8899@uni.sydney.edu.au



**DS Chat**



**Username:** Jack

**Self Introduction:** I'm a third year student who majoring in computational data science.  
I like basketball and a huge fan of NBA.  
My research interest is Machine learning and Computer Vision.

**Email:** xxxxxxxx@uni.sydney.edu.au

**Location:** sydney NSW Australia

**Degree of Study:** Advance Computing

**Role:** Regular User

The screenshot shows a web-based application interface titled "DS Chat". At the top, there is a dark navigation bar with icons for Home, Course, Messaging, Setting, and About. On the far right of the bar, the name "Jack" is displayed next to a small green user icon. Below the navigation bar, there is a sidebar containing two items: "INFO2222" and "COMP3308". The main content area features a large, solid green placeholder image for a user profile picture. Below this image, the text "Username: Jack" is centered. Underneath the username, there is a section titled "Self Introduction" containing three lines of text: "I'm a third year student who majoring in computational data science.", "I like basketball and a huge fan of NBA.", and "My research interest is Machine learning and Computer Vision.". Below the self-introduction, several contact details are listed: "Email: xxxxxxxx@uni.sydney.edu.au", "Location: sydney.NSW.Australia", "Degree of Study: Advance Computing", and "Role: Regular User".

The screenshot shows a web-based application interface for the course "INFO2222". The layout is similar to the previous screenshot, with a dark navigation bar at the top and the name "Jack" on the right. The main content area is centered around the course "INFO2222". It features a large green placeholder image. Below the image, there are three buttons in a vertical stack: "View Course Guide", "View Posts", and "Create Post".

This screenshot shows a web application interface for a course guide. At the top, there is a dark header bar with icons for Home, Course, Messaging, Setting, and About. On the right side of the header, there is a user profile icon labeled "Jack". The main content area has a light gray background. In the center, there is a green header "INFO2222 Course Guide". Below this, there is a text box containing the following text:

This course provides computer professionals with an integrated treatment of two key topics: human-computer interaction (HCI) and safety. The basic techniques and ideas of HCI will be studied, with a particular focus on safety related examples and case studies. This course aims to train students to understand the profound challenges in establishing a computer system that meets the human-computer interaction and safety needs of people. It will provide the basic skills needed to assess the effectiveness of a system to meet people's needs for its use in the environment, understand common errors in the system, and find ways to avoid them.

This screenshot shows a web application interface for course posts. At the top, there is a dark header bar with icons for Home, Course, Messaging, Setting, and About. On the right side of the header, there is a user profile icon labeled "Jack". The main content area has a light gray background. In the center, there is a green header "INFO2222 Posts". To the left, there is a sidebar with a green header "e2e Encryption" and a section titled "Usability Testing". The main content area contains the following text:

**e2e Encryption**

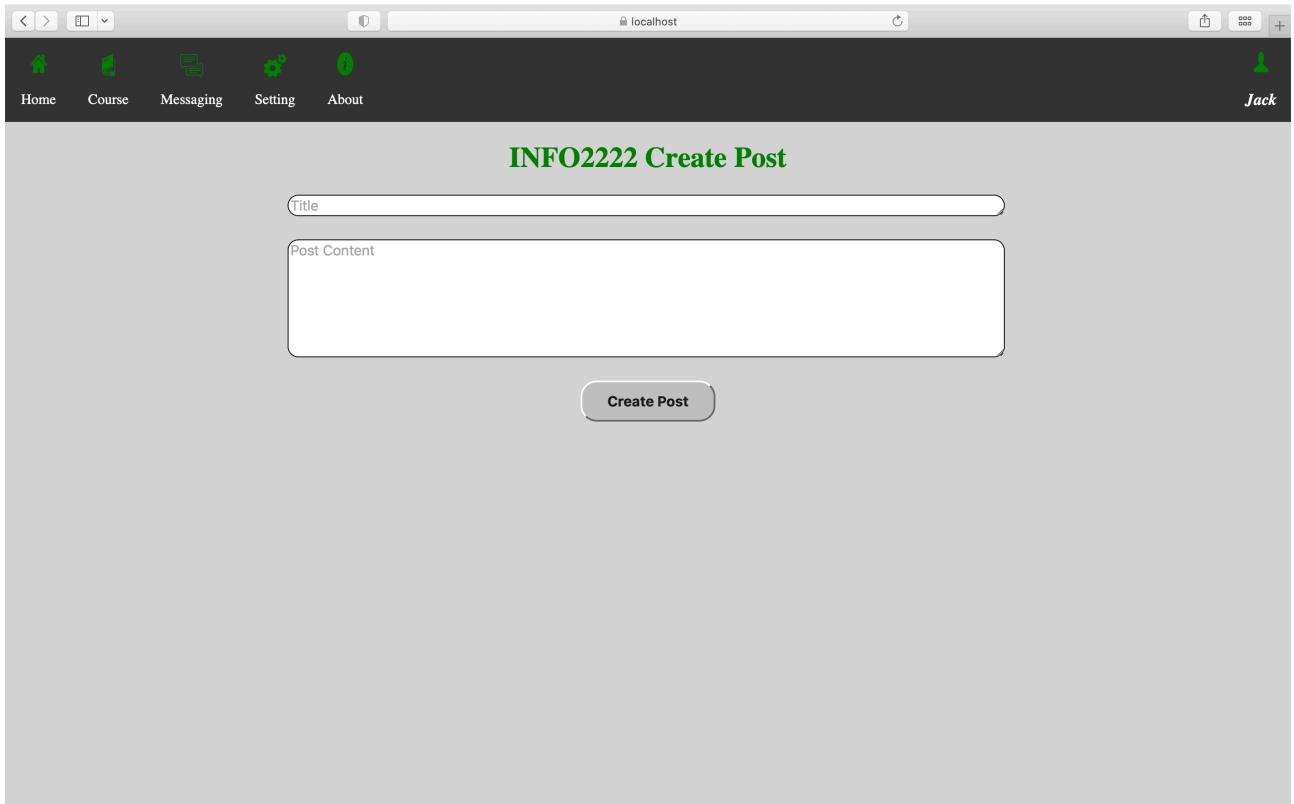
What is end to end encryption?

---

**Comments:**

e2e encryption is perform encryption and decryption in clients side.  
The server will not be able to see the plaintext although they transfer the ciphertext.

Comment



A screenshot of a web application titled "DS Chat". The interface includes a top navigation bar with icons for Home, Course, Messaging, Setting, and About, and a user profile icon for "Jack". On the left, there is a sidebar with options: "Friends List", "Add Friends", and "Remove Friends". The main content area features a large, dark green placeholder image for a profile picture. Below the image, the text "Username: Jack" is displayed. Underneath the username, there is a "Self Introduction" section containing the following text:  
*I'm a third year student who majoring in computational data science.  
I like basketball and a huge fan of NBA.  
My research interest is Machine learning and Computer Vision.*  
Below the introduction, several contact details are listed:  
**Email:** xxxxxxxx@uni.sydney.edu.au  
**Location:** sydney.NSW.Australia  
**Degree of Study:** Advance Computing  
**Role:** Regular User

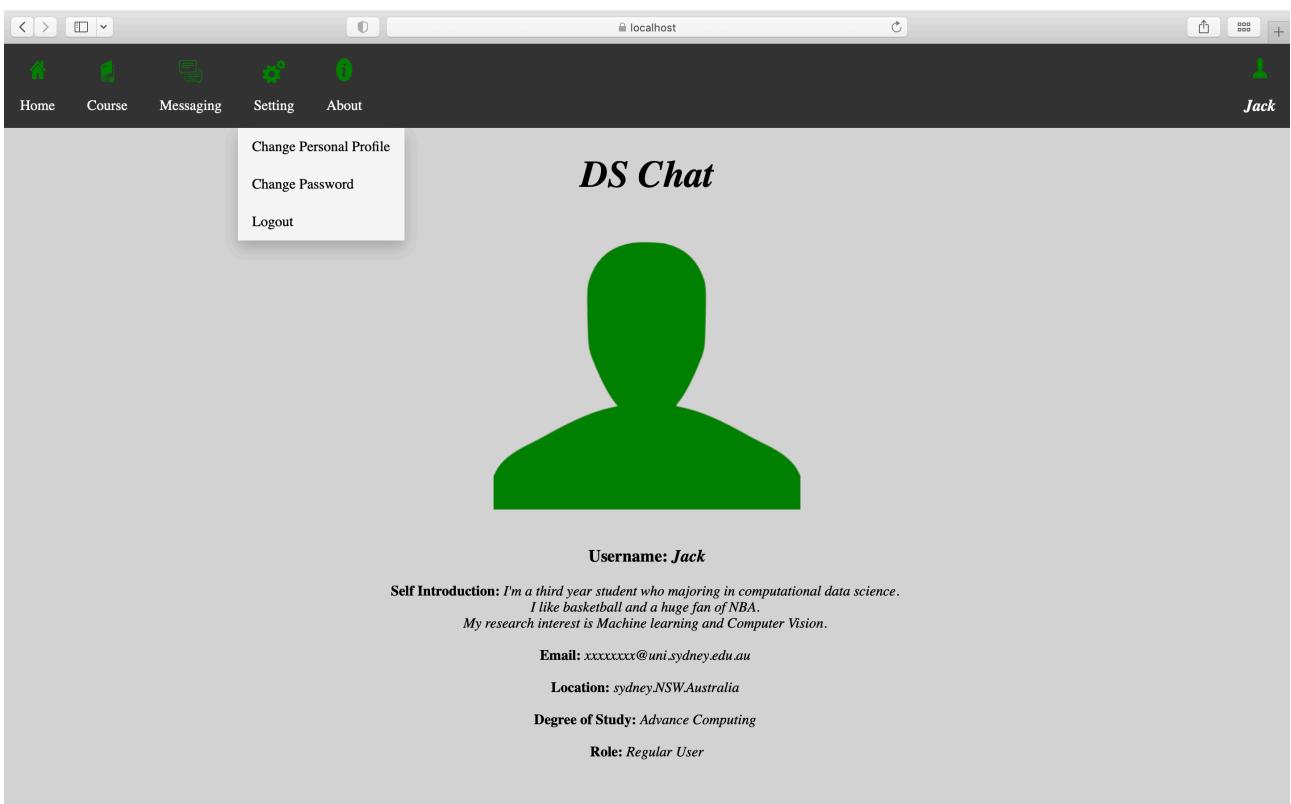
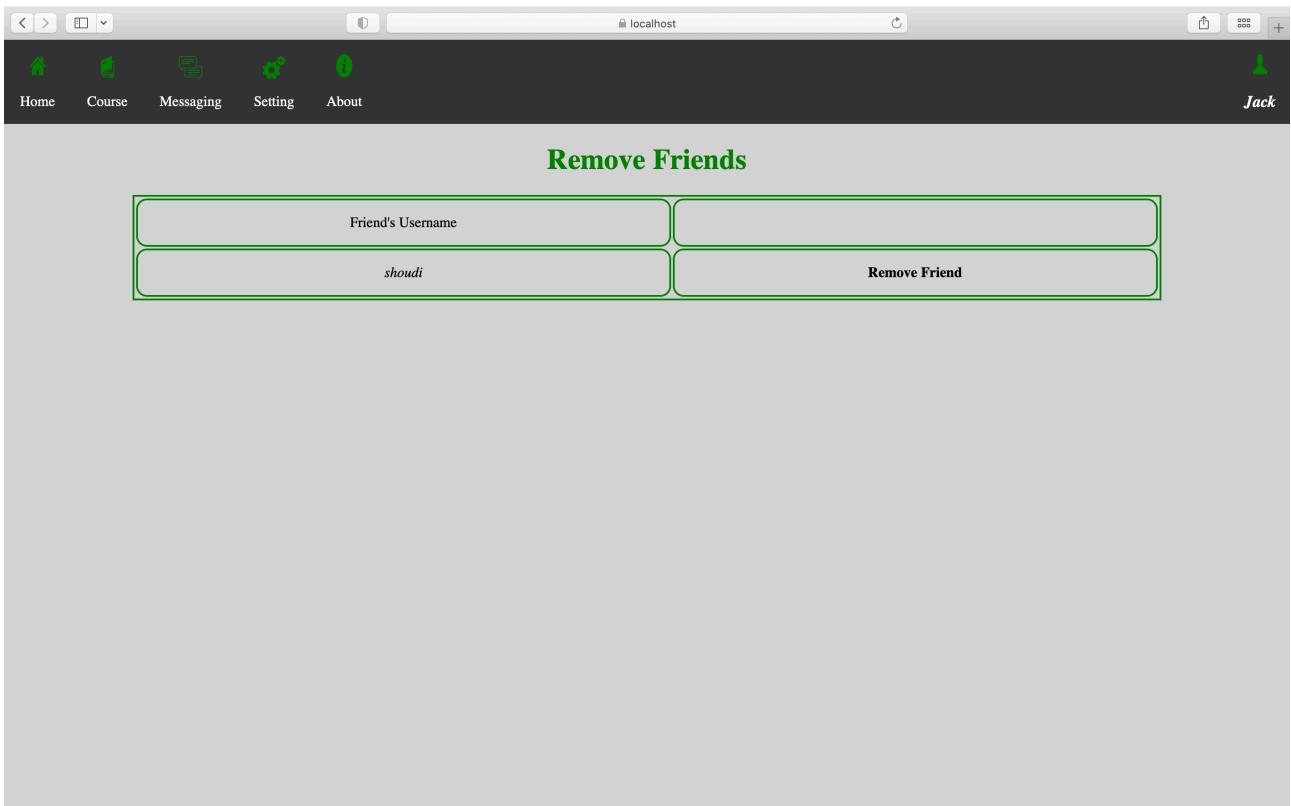
A screenshot of a web application interface titled "Friends List". The top navigation bar includes links for Home, Course, Messaging, Setting, and About, along with a user profile icon for "Jack". The main content area features a large green icon of three stylized human figures. Below the icon, the title "Friends List" is displayed. A form is present for adding a friend, with fields for "Friend's Username" containing "shoudi", a "Contact" button, and a "View Profile" button.

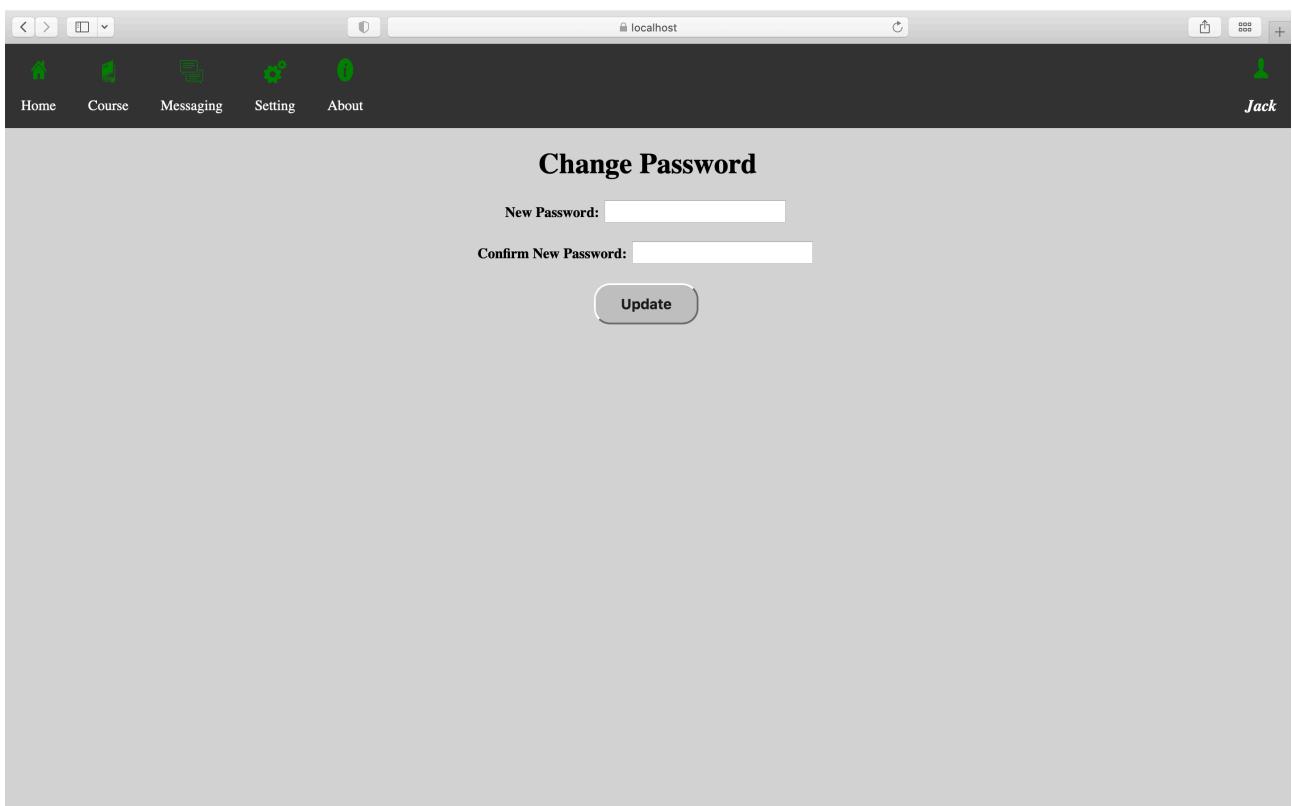
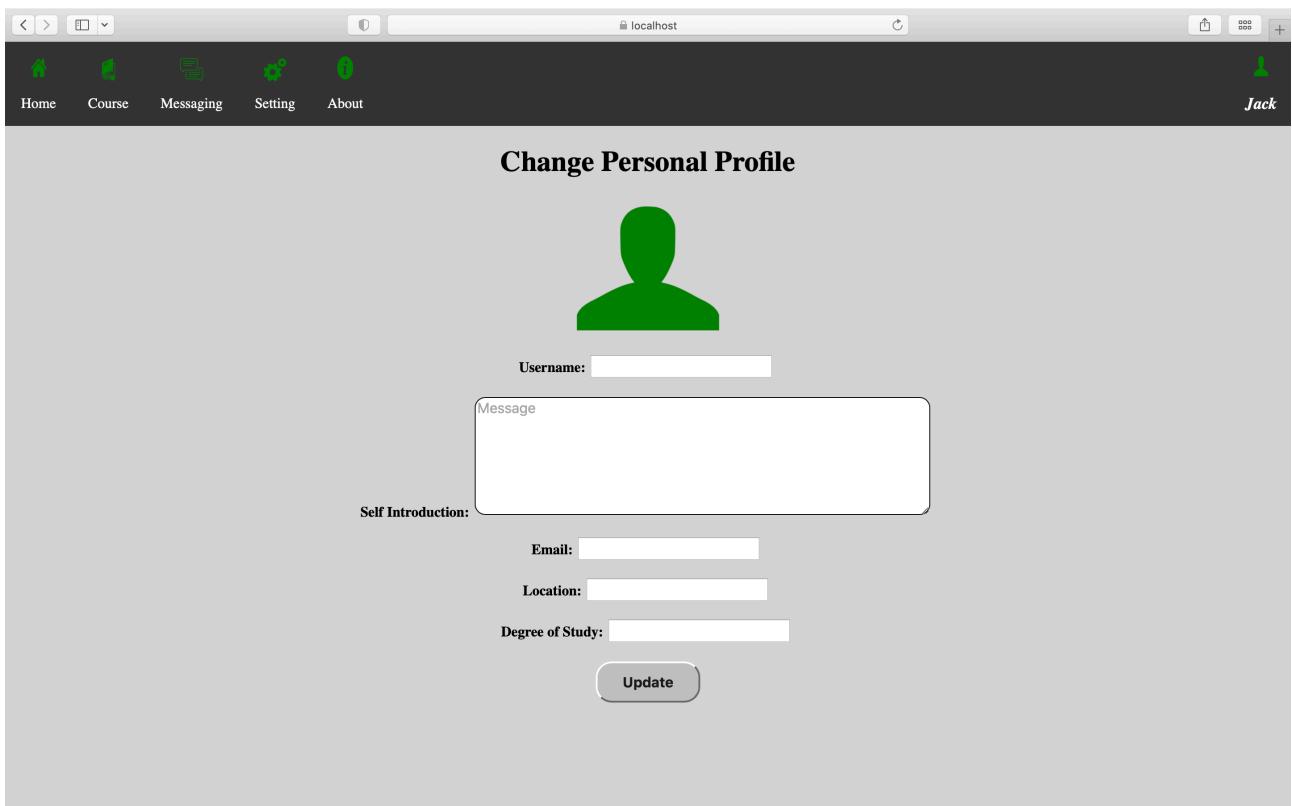
A screenshot of a web application interface titled "Chat Room". The top navigation bar includes links for Home, Course, Messaging, Setting, and About, along with a user profile icon for "Jack". The main content area shows a message from "shoudi" at 2022-05-13 14:04:52 stating "seems you are admin user". Below it is a message from "Jack" at 2022-05-13 14:05:05 asking "What is your right?". At the bottom, there is a message input field labeled "Message" and two buttons: "Save" and "Send".

The image consists of two vertically stacked screenshots of a web-based application interface, likely a social networking or educational platform.

**Top Screenshot:** This screenshot shows a "Friend's Profile" page. At the top, there is a navigation bar with icons for Home, Course, Messaging, Setting, and About. On the right side of the bar, there is a user profile icon labeled "Jack". The main content area has a title "Friend's Profile" and a large, dark green placeholder image for a profile picture. The URL in the browser is "localhost".

**Bottom Screenshot:** This screenshot shows an "Add Friends" page. It features a similar navigation bar at the top with the same five menu items and a "Jack" user profile on the right. The main content area has a title "Add Friends" and contains a form with a text input field labeled "Friend's Username:" and a button labeled "Add". The URL in the browser is also "localhost".





This support system is build for undergraduate School of Computer Science University of Sydney students to share experiences and seek the necessary help (if needed) for their academic studies.

Development Team:  
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Daniel Zhang - lzha8899@uni.sydney.edu.au

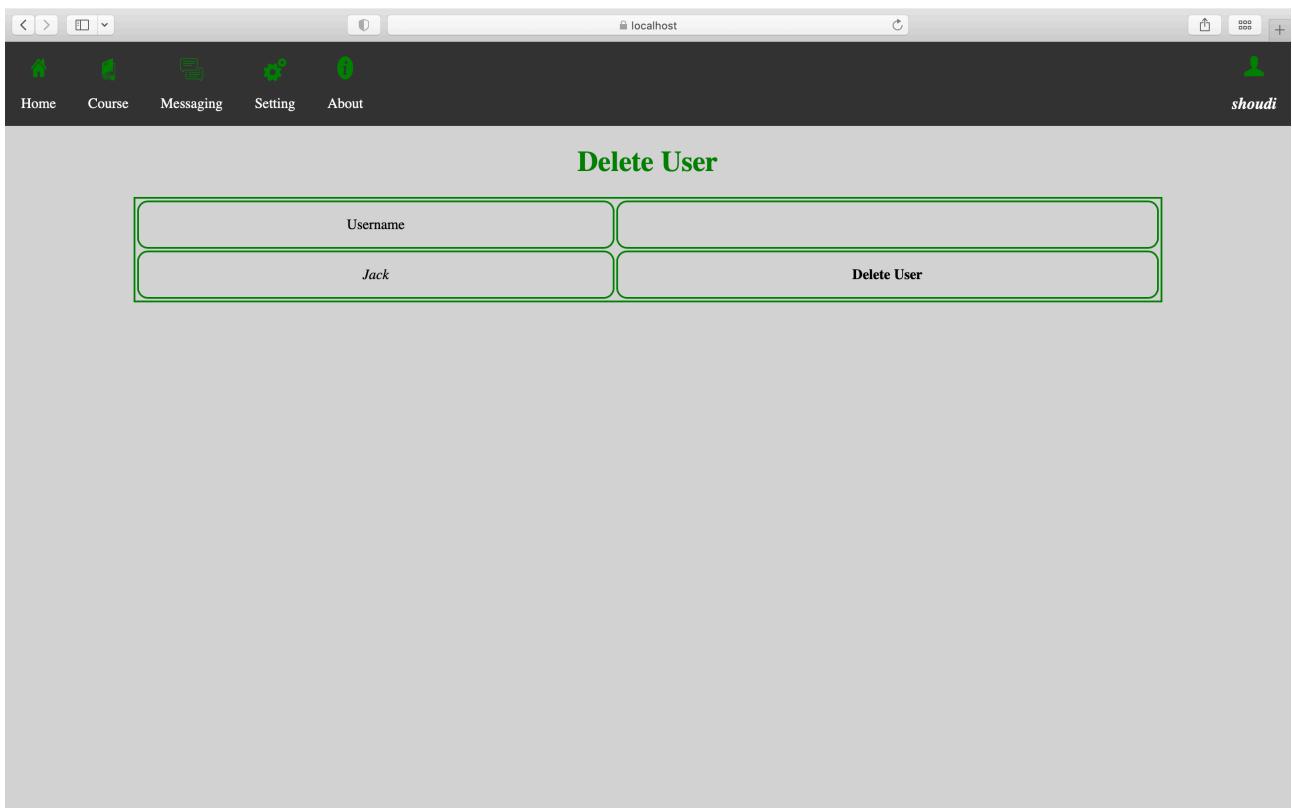
Change Personal Profile  
Change Password  
Delete User  
Logout

**DS Chat**

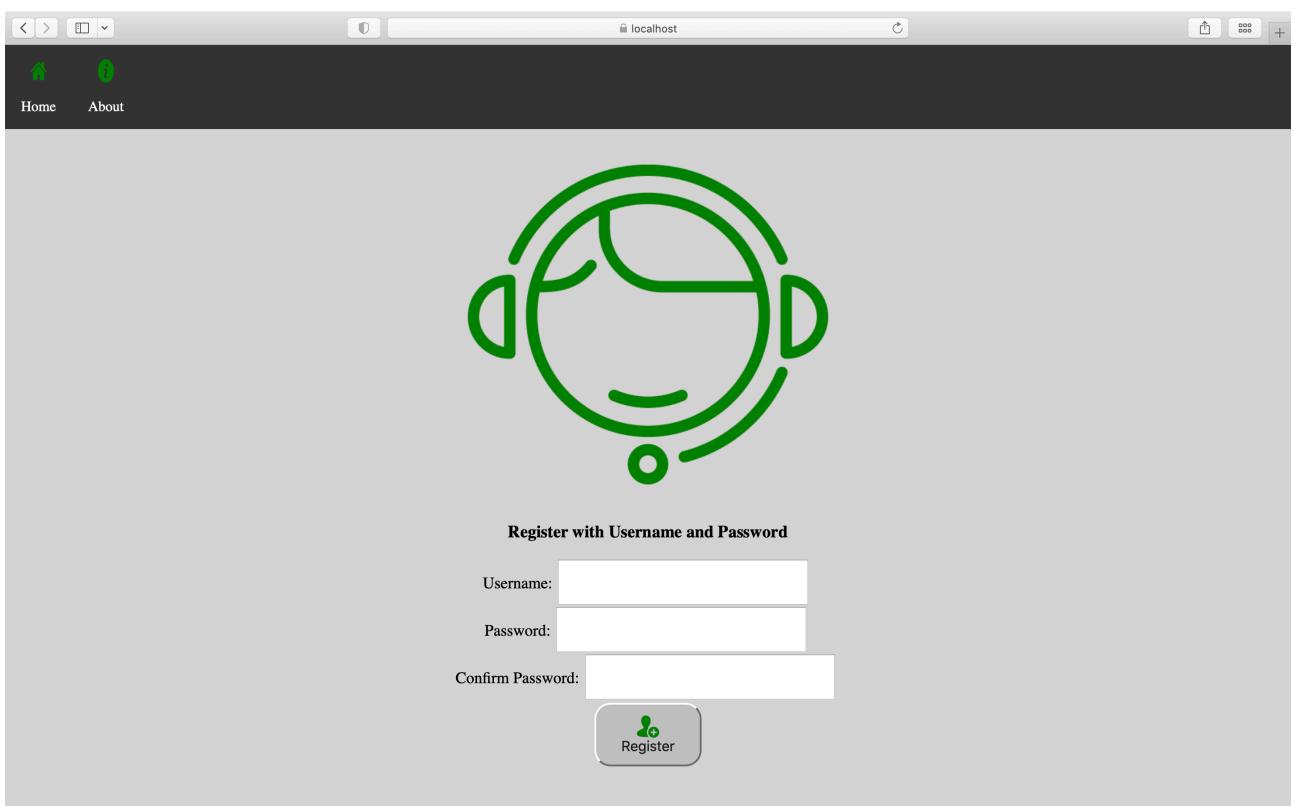
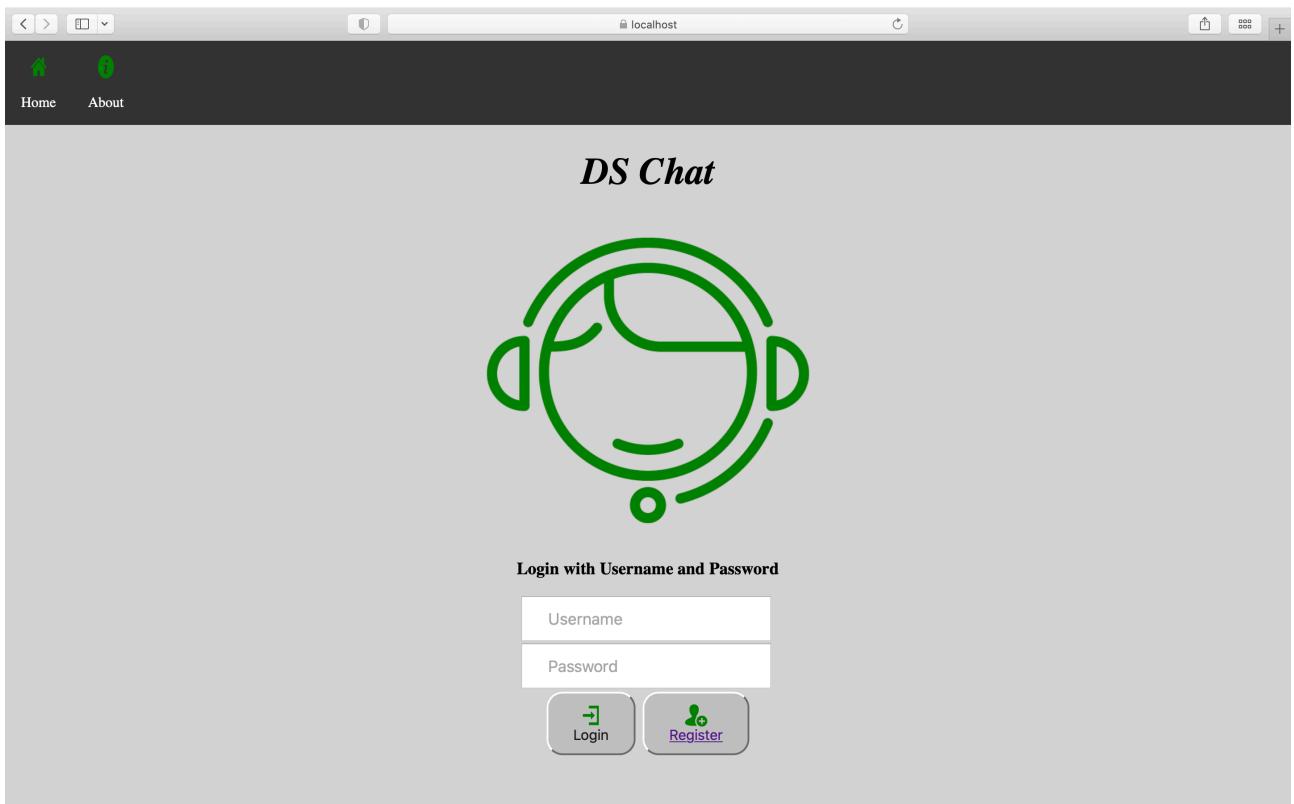
**Username:** shoudi

**Self Introduction:** I'm a third year student who majoring in computational data science.  
I like basketball and a huge fan of NBA.  
My research interest is Machine learning and Computer Vision.

**Email:** xxxxxxxx@uni.sydney.edu.au  
**Location:** sydney.NSW.Australia  
**Degree of Study:** Advance Computing  
**Role:** Admin User



## 9. HiFi-Prototype2.0



This screenshot shows the homepage of the DS Chat application. At the top, there is a dark header bar with two small green icons on the left and a search bar in the center. Below the header, the word "Home" is visible. The main content area features the title "DS Chat" in a bold, italicized font. Below the title is a large, stylized green icon of a head profile facing right, with a speech bubble at the bottom. A small green circular icon is located at the bottom right of the page.

This support system is build for undergraduate School of Computer Science University of Sydney students to share experiences and seek the necessary help (if needed) for their academic studies.

Development Team:  
Shoudi Huang - shua9875@uni.sydney.edu.au  
Daniel Zhang - lzha8899@uni.sydney.edu.au

This screenshot shows the user profile page for a user named "Jack". The top navigation bar includes icons for Home, Course, Messaging, Setting, and About, along with a user icon and the name "Jack". The main content area displays the title "DS Chat" and a large, solid green placeholder image for a user profile picture. Below the image, the text "Username: Jack" is displayed. Underneath this, there is a "Self Introduction" section containing three lines of text: "I'm a third year student who majoring in computational data science.", "I like basketball and a huge fan of NBA.", and "My research interest is Machine learning and Computer Vision.". Further down, there are five descriptive labels with corresponding placeholder text: "Email: xxxxxxxx@uni.sydney.edu.au", "Location: sydney.NSW.Australia", "Degree of Study: Advance Computing", and "Role: Regular User".

The screenshot shows a web-based application interface titled "DS Chat". At the top, there is a dark header bar with icons for Home, Course, Messaging, Setting, and About. On the right side of the header, the username "Jack" is displayed next to a green user icon. Below the header, there is a sidebar containing course names: "INFO2222" and "COMP3308". The main content area features a large green placeholder image for a profile picture. Below this, the text "Username: Jack" is displayed. Underneath, there is a "Self Introduction" section with the following text:

**Self Introduction:** I'm a third year student who majoring in computational data science.  
I like basketball and a huge fan of NBA.  
My research interest is Machine learning and Computer Vision.

Below the introduction, several contact details are listed:

Email: xxxxxxxx@uni.sydney.edu.au  
Location: sydney.NSW.Australia  
Degree of Study: Advance Computing  
Role: Regular User

The screenshot shows the same application interface, but now the sidebar displays "INFO2222" as the selected course. The main content area contains three rounded rectangular buttons, each with an icon and text:

- A button with a book icon labeled "View Course Guide".
- A button with a folder icon labeled "View Posts".
- A button with a folder and plus sign icon labeled "Create Post".

This screenshot shows a web application interface for a course guide. At the top, there is a navigation bar with icons for Home, Course, Messaging, Setting, and About. On the right side of the bar, there is a user profile icon labeled "shoudi". Below the navigation bar, there is a "Back" button. The main content area has a title "INFO2222 Course Guide". Underneath the title, there is a text box containing the following description:

This course provides computer professionals with an integrated treatment of two key topics: human-computer interaction (HCI) and safety. The basic techniques and ideas of HCI will be studied, with a particular focus on safety related examples and case studies. This course aims to train students to understand the profound challenges in establishing a computer system that meets the human-computer interaction and safety needs of people. It will provide the basic skills needed to assess the effectiveness of a system to meet people's needs for its use in the environment, understand common errors in the system, and find ways to avoid them.

Below the text box, there is a "Delete Course Guide" button.

This screenshot shows a web application interface for course posts. At the top, there is a navigation bar with icons for Home, Course, Messaging, Setting, and About. On the right side of the bar, there is a user profile icon labeled "shoudi". Below the navigation bar, there is a "Back" button. The main content area has a title "INFO2222 Posts".

The interface includes a sidebar on the left with categories: "e2e Encryption", "Usability Testing", and "html". The "e2e Encryption" section is currently active, showing the following content:

**e2e Encryption**

What is end to end encryption?

---

**Comments:**

e2e encryption is perform encryption and decryption in clients side.  
The server will not be able to see the plaintext although they transfer the ciphertext.

Comment  Submit

A screenshot of a web application window titled "INFO2222 Create Post". The window has a dark header bar with icons for Home, Course, Messaging, Setting, and About. On the right side of the header, the user "shoudi" is logged in. Below the header, there is a "Back" button and a title input field labeled "Title". A large text area labeled "Post Content" is empty. At the bottom right is a "Create Post" button.

A screenshot of a web application window titled "DS Chat". The header bar is identical to the previous one, showing "shoudi" as the user. A sidebar on the left contains links for "Friends List", "Add Friends", and "Remove Friends". The main area features a large, dark green placeholder image for a profile picture. Below the image, the username "Jack" is displayed. Underneath the username, there is a "Self Introduction" section containing the following text:  
*I'm a third year student who majoring in computational data science.  
I like basketball and a huge fan of NBA.  
My research interest is Machine learning and Computer Vision.*  
Below the introduction, there are several contact details:  
**Email:** xxxxxxxx@uni.sydney.edu.au  
**Location:** sydney.NSW.Australia  
**Degree of Study:** Advance Computing  
**Role:** Regular User

A screenshot of a web application interface titled "Friends List". The top navigation bar includes links for Home, Course, Messaging, Setting, and About. On the right side of the bar, there is a user profile icon labeled "Jack". The main content area features a large green icon of three stylized human figures. Below the icon, the title "Friends List" is displayed in bold green font. Underneath the title is a horizontal form with three input fields. The first field is labeled "Friend's Username" and contains the text "shoudi". The second field is labeled "Contact" and contains the text "Contact". The third field is labeled "View Profile".

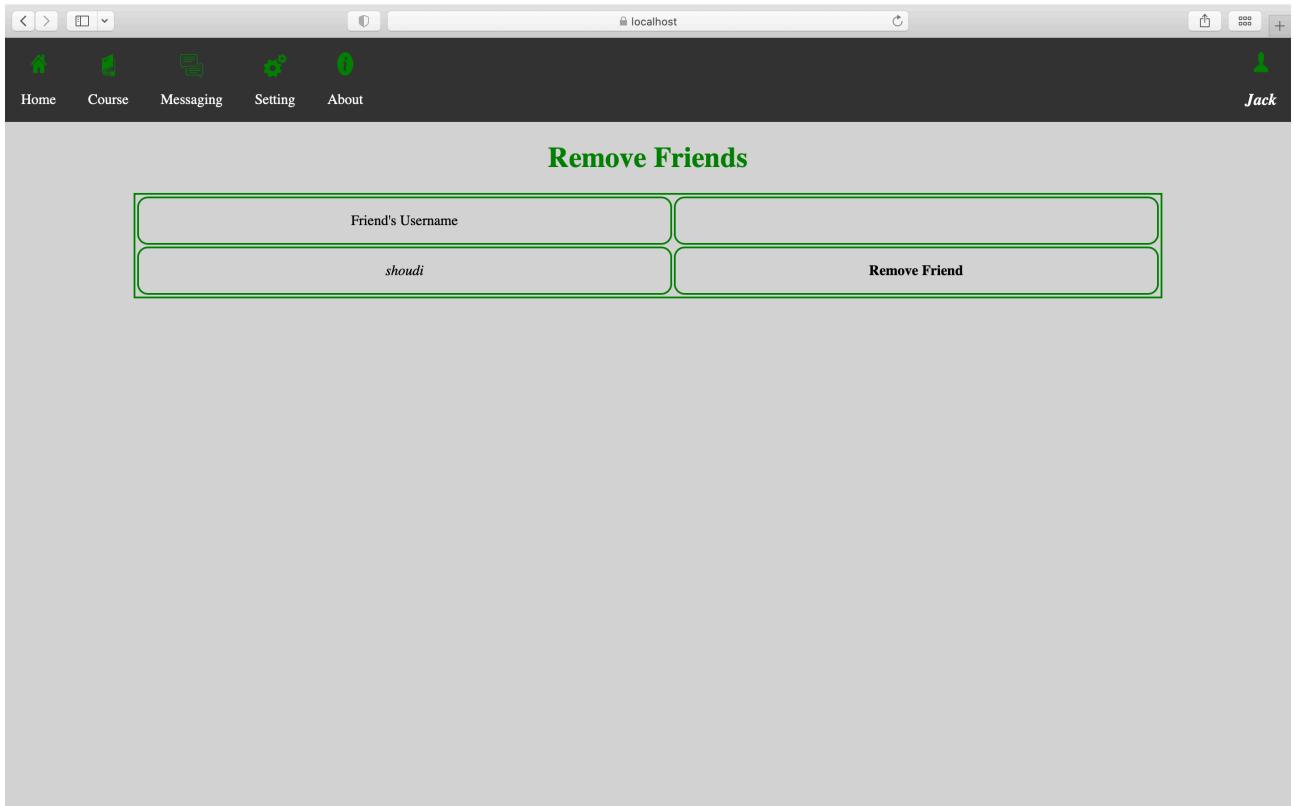
A screenshot of a web application interface titled "Chat Room". The top navigation bar includes links for Home, Course, Messaging, Setting, and About. On the right side of the bar, there is a user profile icon labeled "shoudi". A "Back" button is located in the top-left corner of the main content area. The title "Chat Room" is centered above a green user icon. Below the icon, the name "Jack" is displayed. The chat history is shown in a list of messages:

- 2022-05-13 14:04:52 Jack: seems you are admin user
- 2022-05-13 14:05:05 Jack: What is your right?
- 2022-05-13 14:06:31 shoudi: DELETE YOU !!!!!!!
- 2022-05-14 13:02:26 shoudi: Just a joke ))))

At the bottom of the screen, there is a message input field labeled "Message" and two circular buttons labeled "Save" and "Send".

A screenshot of a web browser window titled "localhost". The page displays a user profile for "shoudi". At the top, there is a navigation bar with icons for Home, Course, Messaging, Setting, and About. On the right side of the header, there is a user icon and the name "shoudi". Below the header, a "Back" button is visible. The main content area has a title "Friend's Profile" and a large, dark green placeholder image for a profile picture. Below the image, the text "Username: Jack" is displayed. Underneath, there is a section for "Self Introduction" containing three lines of text: "I'm a second year student who majoring in computer science.", "I like piano and hoop music.", and "My research interest is software and website development.". At the bottom of the profile section, there are three lines of contact information: "Email: xxxxxxxx@uni.sydney.edu.au", "Location: sydneyNSWAustralia", and "Degree of Study: Advance Computing".

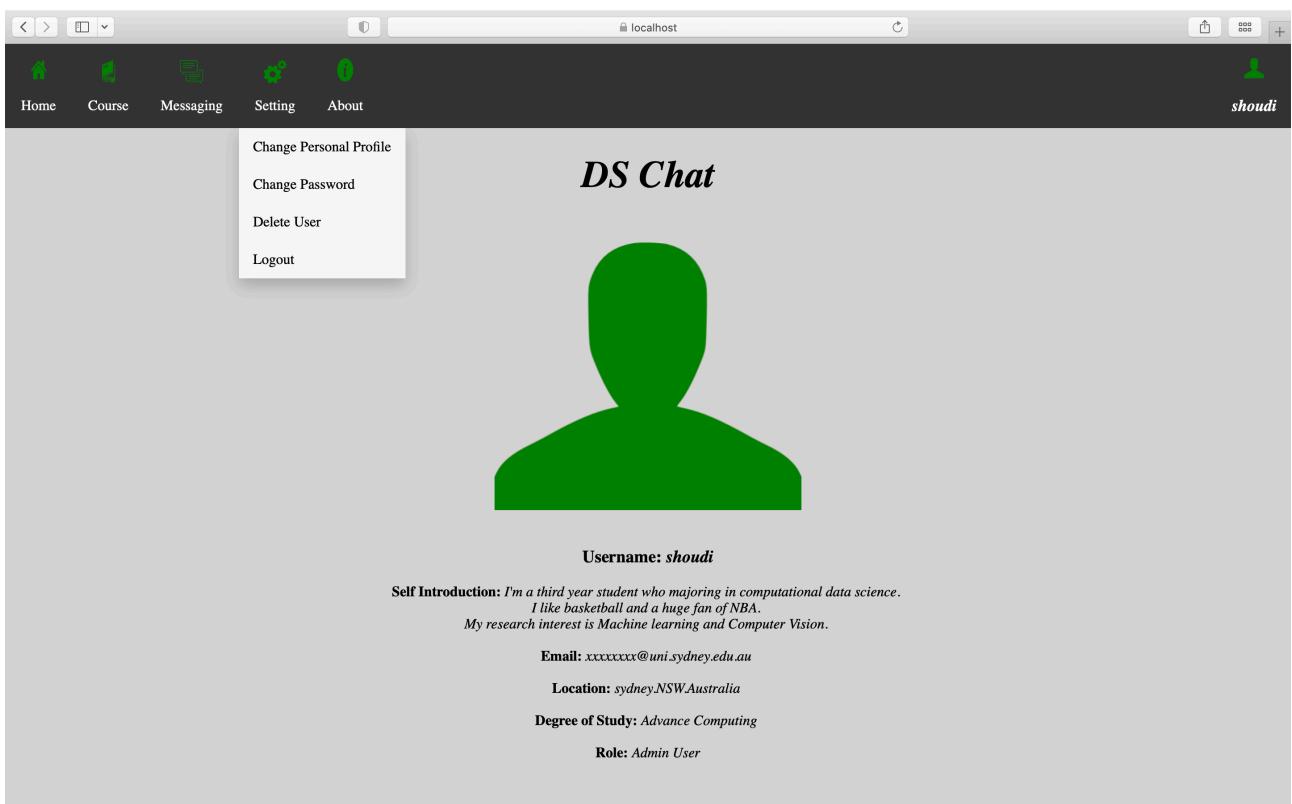
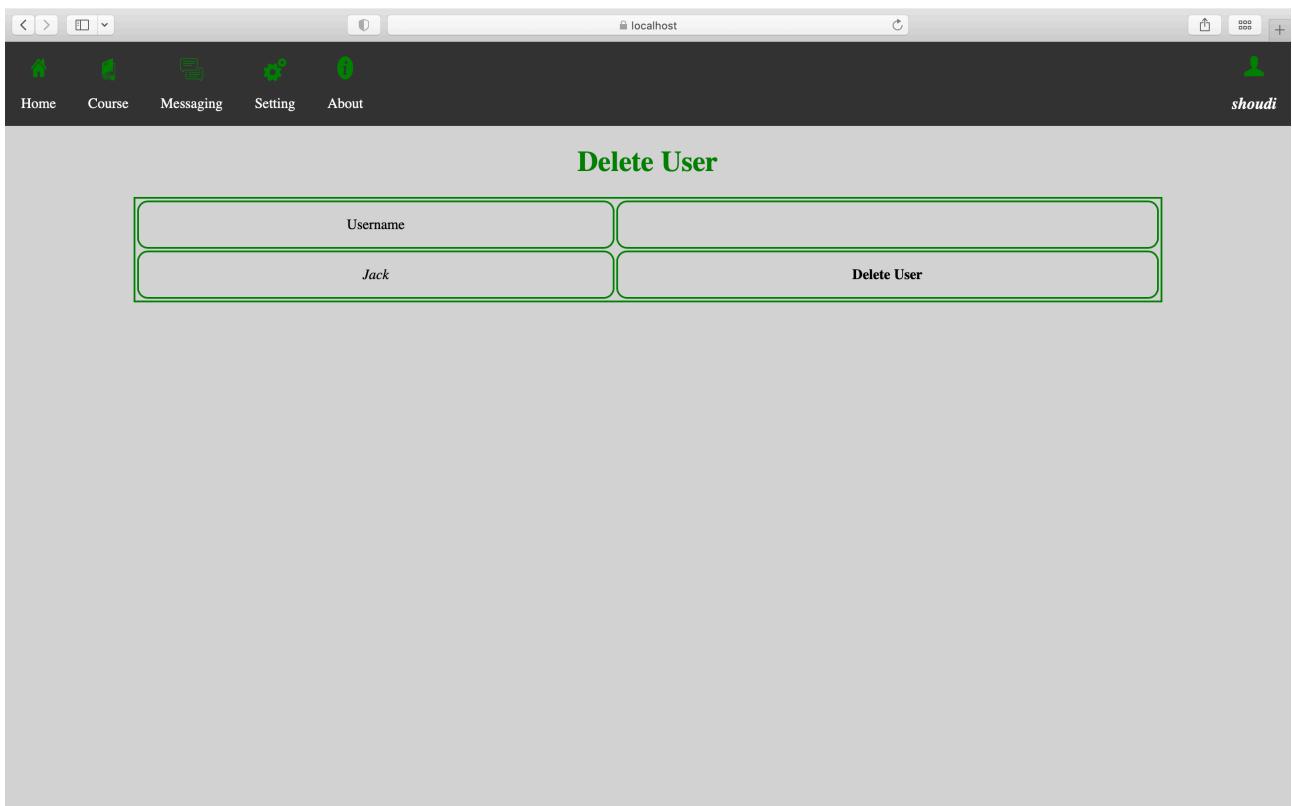
A screenshot of a web browser window titled "localhost". The page displays a user profile for "Jack". At the top, there is a navigation bar with icons for Home, Course, Messaging, Setting, and About. On the right side of the header, there is a user icon and the name "Jack". Below the header, the title "Add Friends" is displayed. A text input field labeled "Friend's Username:" is present, along with a "Add" button.



A screenshot of a web application window titled "localhost". The top navigation bar includes icons for Home, Course, Messaging, Setting, and About, along with a user profile icon for "Jack". A dropdown menu from the "Setting" icon shows options: "Change Personal Profile", "Change Password", and "Logout". The main content area features a large placeholder image for a profile picture, followed by the text "DS Chat". Below the image, the text "Username: Jack" is displayed, followed by a "Self Introduction" section. The introduction text reads: "I'm a third year student who majoring in computational data science. I like basketball and a huge fan of NBA. My research interest is Machine learning and Computer Vision." At the bottom, there is contact information: "Email: xxxxxxxx@uni.sydney.edu.au", "Location: sydney NSW Australia", "Degree of Study: Advance Computing", and "Role: Regular User".

A screenshot of a web browser window showing the "Change Personal Profile" page. The browser's address bar displays "localhost". The top navigation bar includes icons for Home, Course, Messaging, Setting, and About, along with a user profile icon for "Jack". The main content area features a large green placeholder image for a profile picture. Below it is a text input field labeled "Username: [redacted]". A large text area labeled "Message" is present, with the placeholder text "Message". Underneath, there is a section labeled "Self Introduction:" followed by three text input fields: "Email: [redacted]", "Location: [redacted]", and "Degree of Study: [redacted]". A central "Update" button is located below these fields.

A screenshot of a web browser window showing the "Change Password" page. The browser's address bar displays "localhost". The top navigation bar includes icons for Home, Course, Messaging, Setting, and About, along with a user profile icon for "Jack". The main content area contains two text input fields: "New Password: [redacted]" and "Confirm New Password: [redacted]". A central "Update" button is located between the password fields.



## 10. Think Aloud Test

List of tasks:

1. Register with username and password , then change your own personal profile.

When I first went to the website, the design was straightforward. I press the register button below, and the website jumps to a new page and asks me to type my username and password. It is a friendly reminder for me to re-enter the password again to confirm. Then I press register. Now I'm successfully login the website. Next, I change my website setting, enter the information, and press the update button.

2. View the Post "Usability Test" in the course INFO2222 and comment on that post with your answer.

I started pressing the "Course button," and three choices came out. I think the post is "create post," and I see the usability test button. I press it and click submit.

3. View the course guide for INFO2222, then create a post within this course.

I put the pointer on the course. Then two choices came out. I chose INFO2222 as the task mentioned above and clicked view course guide. After that, I go back to the course and create a post with the title and content, then click "create post." Now, I can see my post on the INFO2222 Posts page and listed in order

4. Add a friend "Jack," then chat with him by sending "Hello" and view his profile.

For adding a friend, I think it should be in the messaging, so I click messaging, and there is a button add friend. Then I type the user name "Jack" in the white box. The system automatically sends me to the friend list page, which is very convenient that I notice I successfully add the friend to the list. Then I click the contact button in Jack's line. I wrote the message "Hello," saved it, and sent it. The next part is looking at his profile. I'm trying to go back to the next page, but since there does not have a back button. So I redo the previous steps, go to the "messaging" and click friend list, find the jack there, and click his profile.

5. Add a friend "shoudi" and then remove him from your friend list.

I repeated the friend of add friend. Then I can see "shoudi" in my friend list. So the next step for me is to remove him. So I click "messaging," here is a button "remove friend" when I enter the "remove friend," I click "remove friend" in shoudi's list and remove him.

6. Try to change password, then try to find the contact method of the development team of the website.

Changing password, I think, is in setting, so I click "Setting" so I enter my new password and confirm it. The next task is finding the contact method of the development team. I haven't pressed the only button in the menu, "About." This looks like some information related to the website. So I pressed it, and as I expected, the contacting method was showing there.

7. Logout and Login as admin user with username "shoudi" and password 12345 and try to delete the user "Jack."

It is definitely in the "setting" about log out. As I expected, I successfully logout. Then I went back to the login page. I log in again with the new user name. Then as I did before, I tried to find the "remove friend" button in the friend list. After I click it, I see "Remove Friend" on the same line with Jack and press it to remove him from the list.

8. Try to delete the course guide of COMP3308

I click the button of the "course" and click "View Course Guide," then press "Delete Course Guide."

### Record and user feedback

From the user's feedback, overall, the system is smooth and convenient. Most of the buttons are in the place the user expected, which increases the efficiency of messaging and learning. The only difficulty is when the user wants to go back to the previous page, and the user has to press the button on the menu to go back. In this case, creating a "back" button may be more effective. Furthermore, we also can add some more icons to provide better visualization.

## **11. PACT Analysis**

People:

- \* Students
  - \* Students are website's largest potential users, as main purpose of the website is helping students develop their study skills and exchange academic contexts with each other to perform a better study environment.

Activity:

- \* Students use academic exchange website such as Ed almost every day during the term.
- \* Students normally use study website during the class and assessment, and also for daily questions.
- \* This activity can be done in both continue learning and single time learning.
- \* Using website can be done alone and also student can study with each other.
- \* The website is easy to use and all required functionalities are displayed in order.
- \* Students are allowed to make mistakes.
- \* The critical consequence of making mistake is study or login again.
- \* Very basic computing information is needed for using website.

Context

- \* Learning
- \* Communication
- \* Social
- \* Resource

Technology

- \* Student can exchange or learn different academic articles and posts in the website.
- \* Students can view this website anytime with laptop and internet.
- \* The content of website come from different course professors and student themselves.