

# Step 1

## **PACT Analysis**

We designed and distributed in school an online survey and received 23 responses in the following week and interviewed one of our users face to face. We also searched for similar projects for the ideation of content to be included in our website.

## **People**

Primarily undergraduate students aged 18-24 in the School of Computer Science.

A smaller portion of staff and alumni of various backgrounds.

## **Activities**

Primary: Seek help about a course, anonymous posting, tagging information of interest.

Secondary: downloading course content, view the number of users online, making friends

## **Context**

Time context: Observed usage in any time period in any day. (24/7)

Social context: discussion with other students, reading staff announcements.

Physical context: Anywhere with internet access, sometimes in classrooms.

## **Technology**

Devices:

- Smartphones (Primarily preferred)


- Laptops/PC (Also accessible)

Software and platforms:

- Ed (previously made forum)

- Wechat, Discord, Meta messenger (social media)

Based on this, we designed a persona document to describe our normal users:

Persona title: Sikai, an ambitious CS student in USYD	
Photo	Name: Sikai Han
	
Current role	Full-time international student in USYD who is majoring Computer Science in an Bachelor of Advanced Computing degree.
Demographics	<p>Age 20</p> <p>Finished high school in China.</p> <p>Already a user of Ed, Wechat and Discord</p> <p>Interested in making friends in the same unit of studies.</p> <p>Keen on the protection of anonymity / privacy.</p>
Goal and Tasks	<p>Achieving good grades by getting 24/7 (automated or by staff) help/support about the course or studies</p> <p>Parse code chunks (instead of plain text) in chat/forum.</p> <p>Receiving notification from staff</p>
Environment:	<p>Tech-savvy.</p> <p>Access to Mobile Phones, Laptops/PCs, everywhere and every day.</p> <p>Not on campus every day, sometimes remote learning.</p>
Quote:	Also interested in websites with good visual design. Doesn't like long maintenance hours.

# Step 2

All included participants 2 of 2 Participants

StandardizeUnstandardize

Search

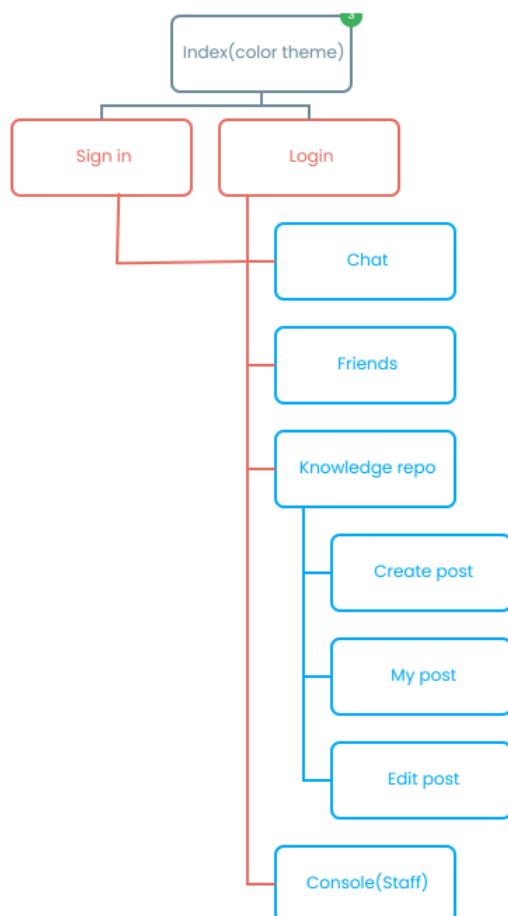
<input type="checkbox"/>	Category	Contains	Cards	Freq	Avg pos	Created by	Agreement
<input type="checkbox"/>	Chat	8 different cards	<div><div>Fast</div><div>Sound effect</div><div>Recalling existing messages</div><div>User channel</div><div>Notifications</div><div>Message History</div><div>Add chat members</div><div>Group chat</div></div> <div><div>Show fewer cards</div></div>	1	8.0	1 participants	100%
<input type="checkbox"/>	Forum	2 different cards	<div><div>Leaving comments</div><div>Editing existing comments/messages</div></div> <div><div>Show fewer cards</div></div>	1	2.0	1 participants	—
<input type="checkbox"/>	Friends	5 different cards	<div><div>Confusion</div><div>User categorization</div><div>Customized profile</div><div>Blocking accounts</div><div>Sign-out</div></div> <div><div>Show fewer cards</div></div>	1	5.0	1 participants	100%
<input type="checkbox"/>	Group discussion	6 different cards	<div><div>Sound effect</div><div>Notifications</div><div>Recalling existing messages</div><div>Group chat</div><div>Add chat members</div><div>Background music</div></div> <div><div>Show fewer cards</div></div>	1	6.0	1 participants	—
<input type="checkbox"/>	Info / About	2 different cards	<div><div>Version history guide</div><div>User activity statistics</div></div> <div><div>Show fewer cards</div></div>	1	2.0	1 participants	—
<input type="checkbox"/>	Login	10 different cards	<div><div>Recovering forgotten username/password</div><div>Logging in</div><div>Sign-up</div><div>Satisfying</div><div>Different color theme</div><div>Light/Dark mode</div><div>Background music</div><div>Fast</div><div>Mobile device compatibility</div><div>Simplistic UI design</div></div> <div><div>Show fewer cards</div></div>	2	5.5	2 participants	65%
<input type="checkbox"/>	Main page	4 different cards	<div><div>Light/Dark mode</div><div>Tutorial on how to use</div><div>Mobile device compatibility</div><div>Simplistic UI design</div></div> <div><div>Show fewer cards</div></div>	1	4.0	1 participants	—
<input type="checkbox"/>	Management	8 different cards	<div><div>Frustrating</div><div>Staff regulation of the contents</div><div>Version history guide</div><div>User roles</div><div>User categorization</div><div>Misbehavior/reporting</div><div>User activity statistics</div><div>Pinning articles to the top</div></div> <div><div>Show fewer cards</div></div>	2	4.0	2 participants	63%
<input type="checkbox"/>	Post	6 different cards	<div><div>Easy to use</div><div>Offline contents</div><div>Tutorial on how to use</div><div>Editing existing comments/messages</div><div>Leaving comments</div><div>Pinning articles to the top</div></div> <div><div>Show fewer cards</div></div>	1	6.0	1 participants	100%
<input type="checkbox"/>	Report page	3 different cards	<div><div>Confusion</div><div>Misbehavior/reporting</div><div>Blocking accounts</div></div> <div><div>Show fewer cards</div></div>	1	3.0	1 participants	—
<input type="checkbox"/>	Resource	3 different cards	<div><div>Satisfying</div><div>Message History</div><div>Offline contents</div></div> <div><div>Show fewer cards</div></div>	1	3.0	1 participants	—
<input type="checkbox"/>	User page	6 different cards	<div><div>Easy to use</div><div>Different color theme</div><div>Sign-out</div><div>User roles</div><div>User channel</div><div>Customized profile</div></div> <div><div>Show fewer cards</div></div>	1	6.0	1 participants	—

We conducted two card sorting sessions (one was opened and the other was closed) with two different anonymous persons,

The result is the screenshot above (blue head bars signify the category provided by closed session, the opened session also created some of these sessions coincidentally)

We then created a sitemap and a wireframe for our website, based on the card sorting result.

Our sitemap mostly followed the result of the closed one. One reason is that the opened one returned too many categories, it is not only harder for different groups of users to learn these many categories, but also generates a heavier overhead for the development.



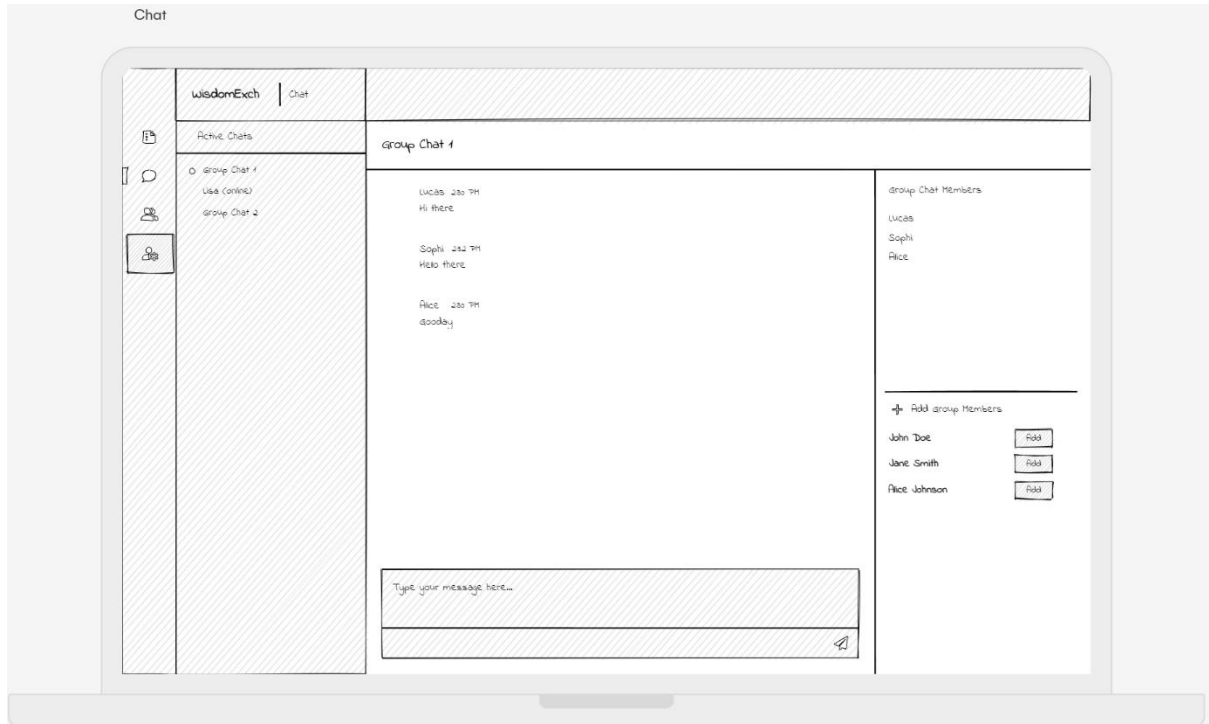
*Generated with [app.writemaps.com](https://app.writemaps.com)*

## Step 3

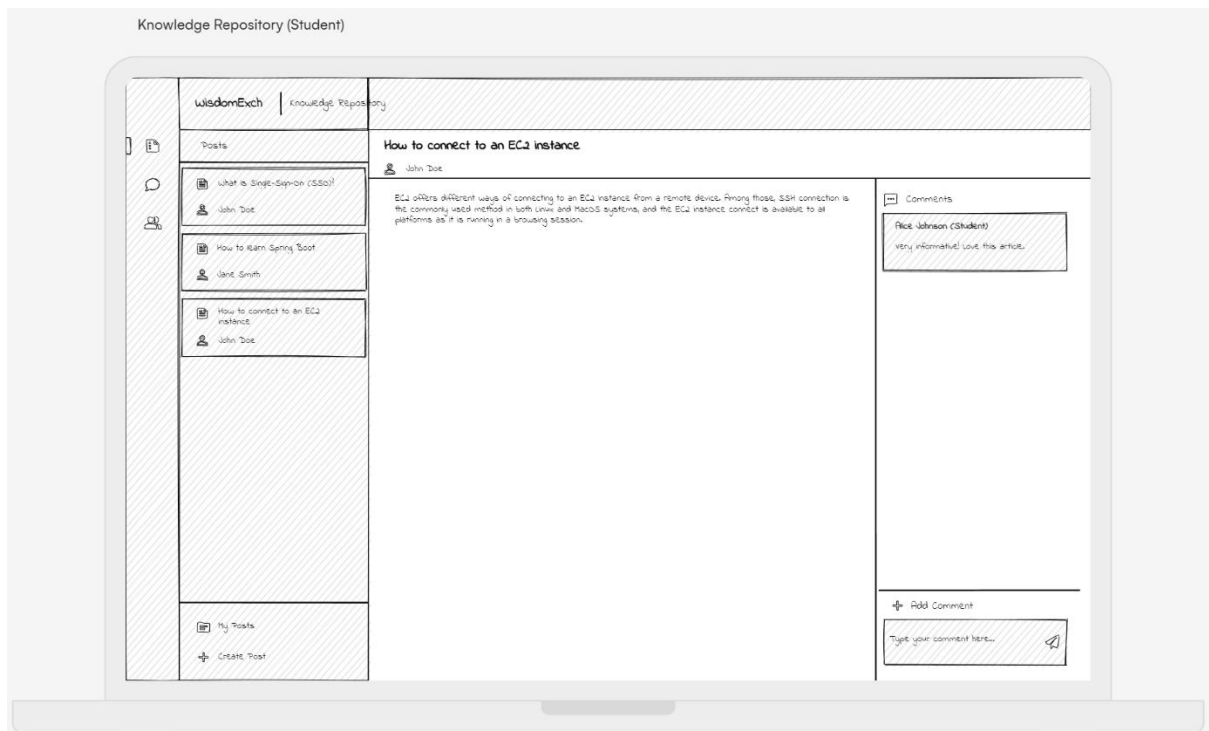
Wireframes based on our site map.



## Chat



## Knowledge Repository (Student)



wisdomExch | Knowledge Repository

Posts

What is Single-Sign-On (SSO)?

John Doe

How to start Spring Boot

Jane Smith

How to connect to an EC2 instance

John Doe

My Posts

Create Post

How to connect to an EC2 instance

John Doe

EC2 offers different ways of connecting to an EC2 instance from a remote device. Among those, SSH connection is the commonly used method in both Unix and MacOS systems, and the EC2 instance connect is available to all platforms as it is running in a browsing session.

Comments

Alex Johnson (Student)

Very informative! Love this article.

+ Add Comment

Type your comment here...

Edit Post

wisdomExch | Edit Post

Title

How to connect to an EC2 instance

Body

EC2 offers different ways of connecting to an EC2 instance from a remote device. Among those, SSH connection is the commonly used method in both Unix and MacOS systems, and the EC2 instance connect is available to all platforms as it is running in a browsing session.

Save

Report

## Create Post

wisdomExch | CREATE POST

Title

How to connect to an EC2 instance

Body

EC2 offers different ways of connecting to an EC2 instance from a remote device. Among those, SSH connection is the commonly used method in both Linux and MacOS systems, and the EC2 instance connect is available to all platforms as it is running in a browser session.

Back

Post

## My Posts

wisdomExch | My Posts

Post Management

what is Single-Sign-on (SSO)?

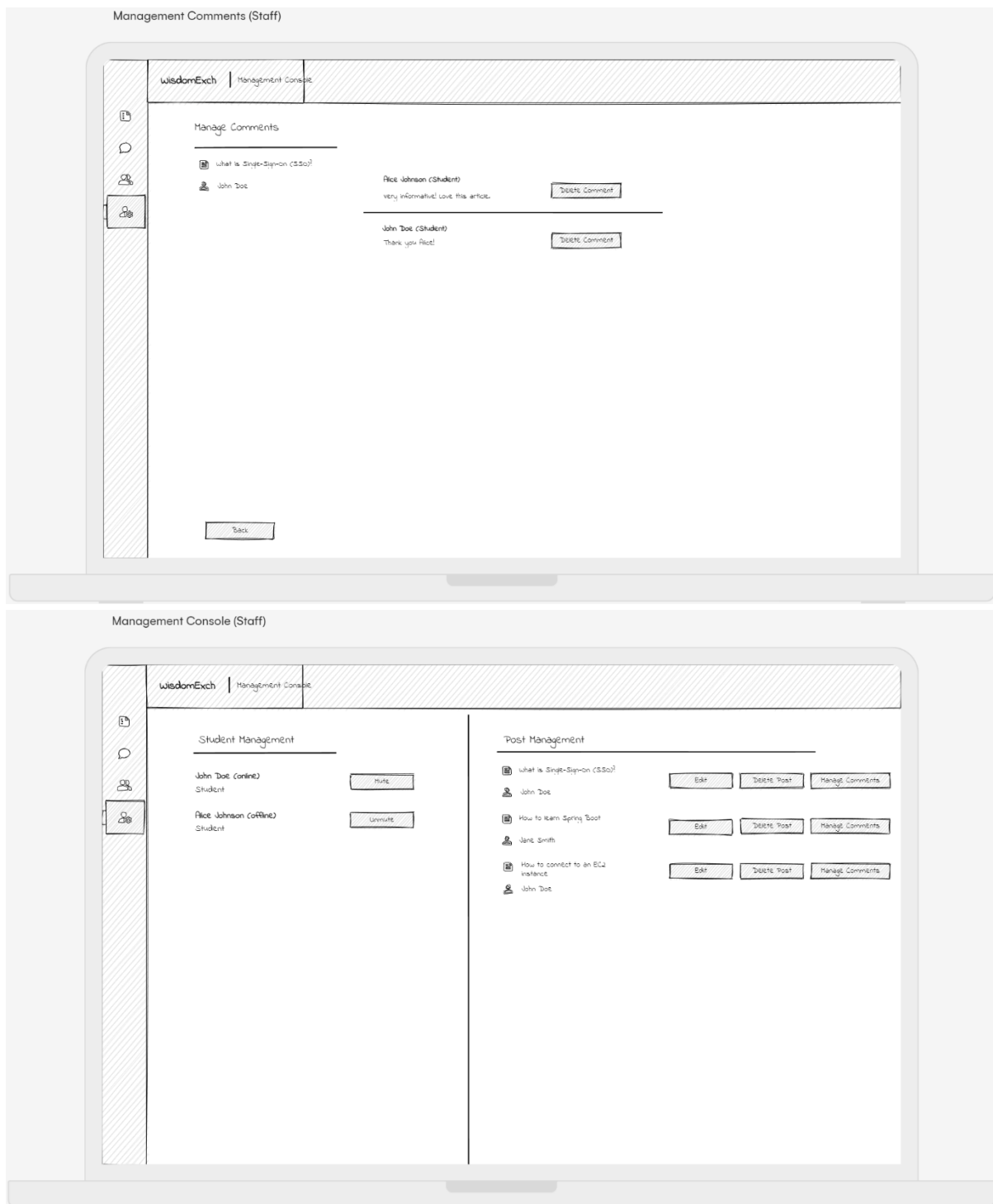
EditDelete

How to connect to an EC2 instance

EditDelete

Back





**Wish list** (from high to low priority): Sign-up, log-in, Group chat, User categorization, color theme, Knowledge repository to create and share posts, Edit posts, My posts, Comment on posts, Staff panel (muting students/deleting posts/comments) , Recover forgotten username/password, Pinning articles to the top, Sign-out, Blocking accounts.

**Best design:** There are many features but as for now, we chose to implement edit posts, not only because it was of importance in card sorting sessions, it also provides users

with error measures: if they later found an error in the post, they could edit the post easily. We also chose to implement “comment on posts”, as in our survey, the primary goal of our users is to “Seek help from the study”, so implementing this could fit in the need of our users and give them satisfaction while using.

### Mini-report of guerrilla testing on the wireframe

We approached 4 anonymous participants, ranging from students to staff, to test all features of our prototype. Each participant is given a description of the purpose of our website (but not how to actually use it), and certain tasks to perform. Each session lasted around 9 minutes.

Material: A website for designers called **Uizard**, participants’ own laptops.

Participant	1	2	3	4 (staff)
Signup / login	Great	Good	Good	Good
Chat / Friend	Prevent mis-deleting	Improve UI	Good	Good
Knowledge repo	Good	Add a search bar	Add a search bar	Good
Management console	-	-	-	More in “Editing comment” page

### Findings:

Color theme & Visual design: Color theme could not be changed due to a setting in Uizard, however this was not a big problem in our actual code and our simplistic UI design was highly rated, except one participant noted us that Chat page is too simplistic to use.

Search bar: 2 participants expected there could be a search bar, but there was no.

Mis-click handling: One participant recommended there could be an “are you sure” warning before actually removing a friend.

Refine-categorization: One staff participant noted that “editing comments” page is too “empty” and should be more contents, e.g., “mute” button on the right of “deleting comment” button.

**Conclusion:** Though the sample size is not large, the guerrilla testing sessions are still worthwhile as they provided some key points on how to refine our prototype to an actual product and some objectives in continuous development.

## Step 4

### Features completed in Iteration 1

Sign-up, login, Online status, removing friends, message history

Tasks	Description	Feedback	Time
Sign up	Participant, in little time, clicks sign up button, enters credentials, and is redirected to the log in page.	"The sign-up process was straightforward, but it would be nice to be redirected to the home page after signing up."	1 min
Login	Participant logs in using their credentials from the sign-up process.	"It's easy, but after I successfully logged in, the UI seems unattractive"	1 min
Adding a friend	Participant signs up another account and sends a friend request to that account. Then accepts the request using that account.	"If there is a typo, the page tells you there is no user yet. This error handling looks good."	3 min
Check online	Participant logs in using another browser and checks the online status of the friend.	"It's great to see who is online in one second."	2 min
Remove a friend	Participant removes a friend from their list.	"It worked well, but it would be good to have an 'Are you sure?' prompt."	1 min
Message history	Participant disconnects and joins again to see message history.	"Viewing message history is useful, but it would be nice to have timestamps for each message."	1 min

The accuracy is checked by the participant. We also thanked the participants for every feedback he provided. Redirection and UI will be improved in the next iteration.

### Prioritized feature in Iteration 2

Redirecting after sign-in, Color themes & animation, UI, group chat, knowledge repo

### Features completed in Iteration 2

Redirecting after sign-in, Color themes & animation, UI, group chat. (Knowledge repo was not finished as it was more complex than expected)

Redirecting after sign-in	Participant creates another account, and is redirected to the chat page without logging in.	"This is exactly what I expected."	1 min
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Changing color themes	Participant hovers on the selection then clicks to see the effect of changing color themes.	“The dynamic effect of changing color themes is smooth and amazing!”	1 min
UI	Participants examines the new UI while using the website.	“It looks simplistic yet good, though at present, when I click the button of the knowledge repo, nothing happens yet.”	2 min

The accuracy is checked by the participant. We also thanked the participants for every feedback he provided.

The button for knowledge repo will be actually implemented in the next iteration.

### **Prioritized feature in Iteration 3**

Knowledge repo: making articles, deleting articles, comment on articles, deleting comments, muted users.

### **Features completed in Iteration 3**

Knowledge repo: making articles, deleting articles, comment on articles, deleting comments, muted users.

Login(as staff)	Participant logs in using a provided staff account	“This is quite straightforward”	< 1 min
Reading an article	Participant reads an article provided beforehand.	“Simple, but how should we know when the article is published?”	1 min
Commenting on an article	Participant leaves a comment on the article.	“Commenting is also simple, the UI is user-friendly”	< 1min
Deleting that comment	Participant deletes that comment.	“There should be a confirmation prompt to prevent mis-clicking”	< 1 min
Making an article	Participant creates a new article.	“Articles here cannot be formatted like Latex but it could still be used as a notepad”	1 min
Deleting the article just made	Participant deletes the article they just created.	“Again, there should be some mis-clicking preventing prompt”	< 1 min
Muting one user.	Participant mutes a student account	“Muting is simple, but how to unmute the user?”	1 min
Test using the muted user	Participant confirms that the muted user cannot post articles or join a chat room	“How should the user to apply for unmuting?”	1 min

The accuracy is checked by the participant. We also thanked the participants for every feedback he provided.

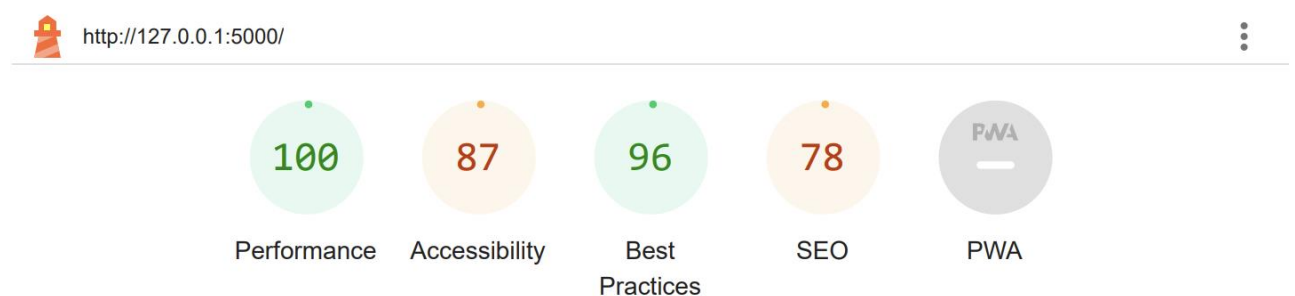
### **Future planned features for Iteration 4**

Unmuting request, timestamps for articles and comments, confirmation before deleting articles and comments. (For the sake of the due date this couldn't progress)

### Outline of evaluations conducted

In one week, we had 3 iterations, each with a think-aloud test. Though we were not able to implement all proposed features from the feedback due to limited time, the incremental developing process still provided valued feedback on how we could gradually improve our program during the long development period.

### Lighthouse report



Overall, our scores look good.

Accessibility: Some marks are deducted as our website supports one language only.

SEO: Some marks are deducted as our website has no preparation like "robot.txt" for search engines.

**User specific function:** Changing color themes with dynamic effects.

### Self-evaluation:

Some of our actions did not follow the recommended steps (e.g., coding started before the card sorting session), which caused some conflicts and overwriting in our work. This should be prevented in our future development projects by having a plan of detailed steps beforehand.

**Github repo link:** <https://github.com/BlindTerran/MessagingApplication-Python>