

Requirements

Elicitation

Target Users:

Demographic: Young people, particularly university students

Target User 1: Warren Lu

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Target User 2: Winney Trieu

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Questions and Responses

1. **Think back to your experiences with Discord and Microsoft Teams or any other teamwork based communication software. In one to two sentences, describe what you expect out of these platforms.**

Answer 1:

With Discord, I generally use it to talk with my friends, with the personalised features on the application making it more fun and organised to differentiate between all the conversations we have. It is also pretty useful in joining hobby groups to connect with others who have a similar interest with me.

With Microsoft Teams, I use it to work with others on projects that have a variety of aspects to it. So to have multiple project rooms, sub-groups and threads, I am able to have a better understanding of the progress and details of each aspect of the project.

Answer 2:

I use Discord to just catch up with all my friends, with the different grouping functionality, like servers and friends, make it easier to talk with a variety of communities with its multiple sub-groups. I also use it to talk with others in a variety of Youtuber and Twitch streaming communities

I have not used Microsoft Teams, but I regularly use Slack to communicate with my colleagues and my managers to manage communication, resources and scheduling. This is made easier with its multiple threading system, and having different channels in the same company channel dividing all of us into different teams.

2. **Who do you generally use these platforms with? Do you use it often with them? How many people do you interact with at one time on this softwares?**

Answer 1:

I generally use Discord with other hobbyists and to talk with friends. I use it quite often everyday, talking with around 5-20 others per time. In terms of Teams, I use it twice a week during the terms I have a course that requires it. I generally only use it to talk with team members and course staff, so I would talk to around 3-7 people per use.

Answer 2:

I use Discord to catch up with friends around 3 times a week. I would talk to the same few groups of people generally, so I would usually talk to around 2-8 people everytime I use it. For Slack, I only use it to talk to those in my team of one colleague and two managers once or twice a week.

3. **Do you like how they organise the different channels, servers, threads and group chats? Is there another grouping system you would like, or any other changes to improve your experience?**

Answer 1:

I am happy with the grouping system that Discord and Teams have with its different servers and channels. I do wish there was a way to star your most used, or your most favourite channels to your profile in order to more easily access my different networks.

Answer 2:

Discord and Slack have quite a similar grouping style, and my experience with both of them is quite good so far. As I don't use both these programs as much as my peers, I am confused sometimes in how to navigate and exit out of the different servers and channels that I am in, or accidentally create another group chat with the same members of some other channel.

4. **Do you find it easy to navigate and access the necessary tools to utilise the aforementioned communication tools?**

Answer 1:

I remember when I first used Discord and Teams, the lack of a tutorial or guidance by the software made it quite confusing for me to get the hang of what I needed to press or start in order to chat and join the different group chats, servers and channels that I am in. It was only after that my friends guided me through the different aspects of these softwares, and through a lot of Googling and YouTube tutorials, was how I understood in navigating Discord and Microsoft Teams.

Answer 2:

I am still confused on using the different aspects of Discord and Slack. However, after using it for a few months, I am aware of how to use the most important aspects of the platforms, as I tend to just talk with the same few people and groups.

5. **How is your experience with privacy on these platforms?**

Answer 1:

My experience with privacy on these platforms has mostly been pretty good. I do find it a little intrusive that some people can see if I am calling on a public server, but otherwise, I am fine with the privacy on both Discord and Teams.

Answer 2:

Privacy is not an issue I have any concerns with on either Discord and Slack. Even when I have previously logged onto the same account across multiple devices, I am able to maintain my privacy.

6. **How is your experience with sending messages, images, videos, links and other types of files on these platforms? Do you find it easy to do so? How is the load time? Is the compression quality up to your standard?**

Answer 1:

Sending messages, images, videos, links and other files are really easy to do since you can just drag and drop files and links are clickable which sends you to the link address. Loading times are very quick but that depends on your internet speed but most of the time everything is quick.

Answer 2:

Fine, just that the loading time for big file previews are pretty bad and take a while so it's much better to just download and view it there. Though the file size limit is pretty annoying. Sharing files is pretty easy since you can just drag and drop it into the chat.

7. **Do you find these platforms to be efficient in conveying your messages and/or ideas? For example, customisable emotes, reaction icons etc. What aspects do you find that are excellent in conveying so? Are there limitations that you experience with them? Would you like another type of methodology to further convey your communication?**

Answer 1:

The emotes and reactions are a lot better in Discord than in Microsoft Teams because you can add your own emotes and use them whereas Teams only has the default emojis you can use so it kind of loses customizability. I haven't really seen any other way of communicating to others on platforms like this so I don't really know of any other method to communicate with people so I think that Discord and Microsoft Teams have covered most of it already.

Answer 2:

Being able to upload your own emotes is really good because you get to be able to express certain messages more clearly and concisely than words are able to. However there is not always an emote for what you may wish to convey that is hard to explain in words.

8. What is your opinion on the platform's aesthetics?

Answer 1:

I am happy with Discord's simplistic themes with the options to toggle between dark and light, clean and compressed. It fits with the modern aesthetics. I do wish there was a way to customise it with different types of other colours. Microsoft Teams also has a clean aesthetic, but I do not find it as clean as Discord.

Answer 2:

I have not played around with any customisable features on either Discord and Slack, so my experience with the default dark theme has been quite satisfactory. The general aesthetics on both platforms serve their purpose of an easy user experience.

9. On what devices do you use these platforms?

Answer 1:

I use Discord and Teams on both my phone and on my computer quite frequently so I can contact multiple groups simultaneously.

Answer 2:

I usually use Discord and Slack on my computer, but I will on occasion use both these applications on my phone when I am traveling.

Proposed Solutions

Issue	Solution
Loading large file previews can take a while	Have the ability to customise how compressed the files will appear when they are sent into the channel
Being able to log in to multiple devices with the same login	Using different tokens for different login sessions

When a particular topic needs to be discussed, it can be difficult to find again if discussed in the main channel	By having a “create thread” function within the message, a mini-channel will appear dedicated for that topic
No way to bookmark your favourite group chats/ threads or most used channels.	Have a system where if you right click onto the channel/ group chat/ thread, it will appear on the top of the list on the left hand side of the interface
When a user is part of multiple channels and dms, the user must be able to easily access them	Have all the channels/dms the user is part of on a sidebar on the left side of the screen
Lack of customizability in emotes to convey ideas and emotions	Allows upload of image to be used as emotes
The screen can be too bright at times.	A dark mode feature will allow the background to appear a darker colour rather than white
Passwords can be forgotten which means the user cannot log in to their account	Having an option to request a password reset allows a user to change their password by first confirming that they are the owner of the account through the account's registered email

Analysis and Specification

User stories and acceptance criteria

As a university student working on group projects with my team, I want to be able to create project rooms so that different members of my group can split off and work on multiple tasks at the same time.

- Scenario: Group has multiple tasks to work on with different group members working together
- Given: An entire team is in a channel

- When: A member of the team creates a selection of items to be done in that channel
- And: Each user selects from a list of items they are working on
- Then: The system splits each user into their designated breakout sub-groups within the channel itself to work on the item

As a regular slack user with the need to communicate and schedule different items, I want to be able to create message threads within channels so that I can isolate specific discussion to one spot.

- Scenario: Want to discuss a message in more depth
- Given: The user is in a channel with a message
- When: The user clicks “create thread” button next to message
- Then: The system will create a mini-channel like discussion thread inside the original message

As a user in multiple channels, I want to be able to add specific channels to a favourites list so that when I log into Streams, I can quickly navigate to those channels without searching through the rest of the channel list.

- Scenario: Want certain channels to appear at top of channel list
- Given: The user is in a channel
- When: The user selects the star icon next to a channel
- Then: The system will add the channel to the user’s favourites list and display it at the top of the channel list

As a user with limited time to learn the functionality of different platforms, I want the exit channel and navigation buttons to be very obvious so that I can easily find my way around the platform.

- Scenario: Want to leave a channel
- Given: The user is a member of a channel
- When: The user selects the leave button
- Then: The user will be removed from the channel without any extra buttons or warnings

As a user I want to be able to easily navigate through the platform so that it is easy to use channels.

- Scenario: Want to easily be able to view all channels
- Given: The user is in multiple channels
- When: The user navigates to the home screen of the program
- Then: The system will display all the channels in the sidebar in order of creation time

As a user I want to be able to sign on with a unique password and change this securely if I forget it so that no one but me can access my account.

- Scenario: Forgot password
- Given: The user goes to the forgot password page
- When: The user enters the email corresponding to their account
- Then: An email is sent directly to them with a unique, high security, password reset code
- Given: The user is the genuine owner of the account

- When: The user enters their unique reset code into the forgot password system
- Then: The program will allow the user to reset their password

As a user, I want to be able to share files and images with drag and drop so that I can communicate with others effectively and send files quickly.

- Scenario: Sharing a file in a channel
- Given: The user is a member of channel
- And: The user has a file to upload
- When: The user drags the file into the channel's text input bar
- Then: The file will be uploaded to the channel

As a user who would like to convey their emotions easily, I would like to upload and use my own personal reacts to have a more concise and personalised form of communication.

- Scenario: User wants to express an emotion concisely
- Given: The user has a design
- When: The user uploads the design
- And: Adds it to their react options
- Then: The user can use the react on other people's messages

As someone who enjoys visual aesthetics, I want to be able to change the colour theme and use custom emotes to have a visually more pleasing experience.

- Scenario: Customising visual experience
- Given: The user is on the program
- When: The user toggles the dark mode settings selector
- Then: The interface will toggle between light and dark modes

As someone who frequents social platforms, I want to be able to use my account on multiple devices so I can communicate at any convenience.

- Scenario: User needs to communicate with multiple groups simultaneously
- Given: The user is already logged in on their computer
- When: That the user must login to their phone
- Then: Both logins on both devices should remain active
- And: Both devices should be able to independently execute tasks

Use Cases

Use Case 1

Step 1. System asks for user's email and password on the computer

Step 2. User enters their details onto the computer

Step 3. System verifies the details and generates a unique session token

Step 4. User creates a public channel

- Step 5. User invites other users to the channel
- Step 6. User makes one of the users channel owner
- Step 7. The user decides to also login to the system via their phone
- Step 8. System on user's phone asks for their email and password
- Step 9. User enters their details onto their phone
- Step 10. System verifies the details and generates a unique session token
- Step 11. User sends a message in the public channel on her phone
- Step 12. Other users also send a message into the channel
- Step 13. User logs out of their phone
- Step 14. User's session token on their phone becomes invalid
- Step 15. User is able to see all the previous activity on the channel on their computer
- Step 16. User logs out of the session on their computer
- Step 17. Session token is now invalid

Use Case 2

- Step 1. User uploads a react design to Streams
- Step 2. System adds it as a valid react
- Step 3. User reacts to a particular message with uploaded design
- Step 4. The design icon is shown underneath the message
- Step 5. User pins a particular message
- Step 6. Pinned message is shown in the pinned tab
- Step 7. User toggles with the theme on the system's interface
- Step 8. Interface colour goes from light to dark

Use Case 3

- Step 1. User creates a private channel
- Step 2. User invites 2 other users into the private channel
- Step 3. User makes one of them owner
- Step 4. User is invited to 10 other channels
- Step 5. User creates a dm with 2 other users
- Step 6. User is invited to 5 other dms
- Step 7. User becomes active in 3 channels and 1 dm group by frequently sending messages, reacting and pinning messages in the channels/ dm
- Step 8. User stars those three channels and one dm next to their names on the left hand side of the interface
- Step 9. Those three channels and dm appear on the top of the list

Validation

We reached out to the same people as before and showed them our use cases. We asked them whether these accurately encompassed their problem and were adequate in solving them.

Target User 1

Looking at all three use cases, they show a holistic navigation through as much of the functionalities that Streams can provide. From signing into the same account on multiple devices, to being part of multiple channels (both public and private) and DM's, and interacting with these groups by sending, reacting and pinning messages, to customising different visual aspects of the platform. There are a few things missed like load times for larger files and the removal of users and owners of channels and DM's.

Target User 2

The use cases have covered generally most of what I need, however, it does not address the preview issues I have for when files sent are too large. But listening back to what you said on what the Streams platform is to be used for, this would not be applicable to what is being developed for the project. I do appreciate how there is a lot of focus on the user experience when using the platform, such as being able to bookmark selected groups, catering for multiple logins and allowing users to have personalised reactions when interacting with other users.

Design

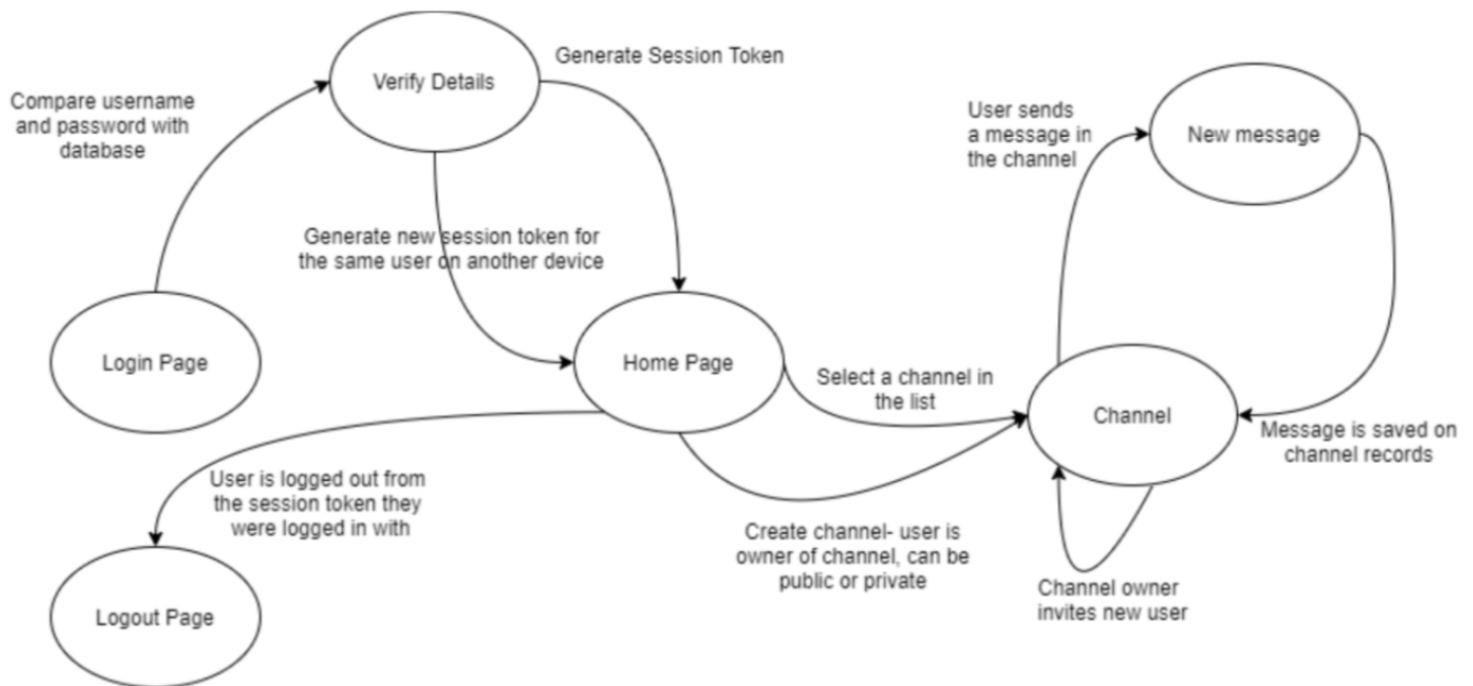
Interface Design

HTTP Endpoint	Capability
message/react/v1	Reacts to a message to convey understanding/ emotion in a concise manner
message/unreact/v1	If a user has reacted to a message they can choose to unreact to the message by clicking the same react.
message/pin/v1	Adds certain messages to a pinned tab where users can easily access those messages so

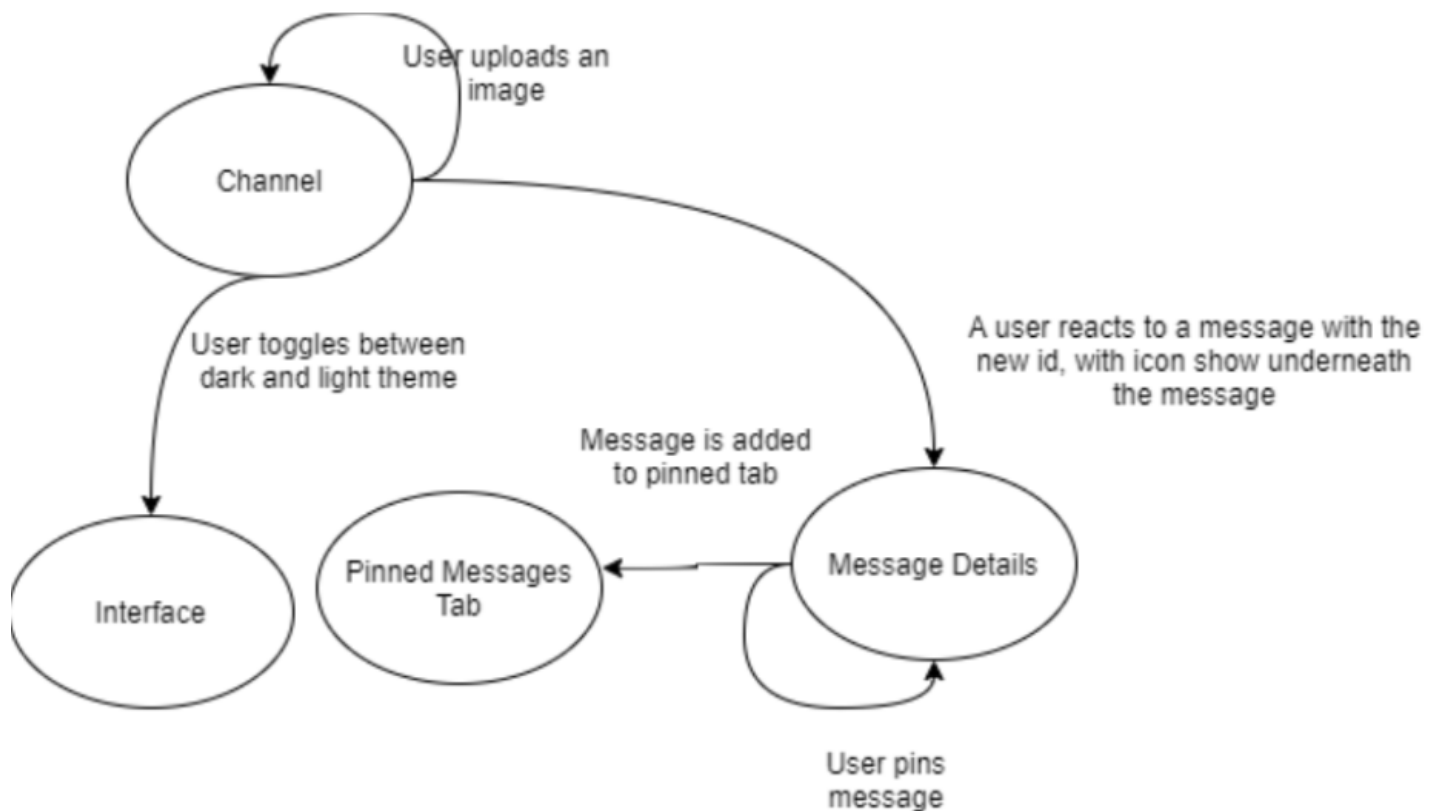
	the most important messages can be kept track of.
message/unpin/v1	If a message is pinned a user can unpin the message and it is removed from the pinned tab.
darkmode/toggle	If dark mode is toggled on, the user will always have dark mode set no matter what platform they log on. If it is toggled when it is already on, this will toggle it to light mode for all platforms.
threads/create	Creates a mini-channel like discussion thread inside the original message where messages can be sent and will not show the messages sent in the thread into the main channel
channel/favourite channel/favourite/listall	When favourite is enabled, the channel is moved to the top of the list. If multiple channels are favourites they are moved to the top and put in order of creation. If the channel is removed from favourites then the channel is moved back to the original place it would be.
auth/passwordreset/request/v1	If a user forgets their password they can request to get their password reset.
auth/passwordreset/reset/v1	If a password reset request is approved then the user will receive a reset code which can then be used to reset their password into a new one.
upload/file	A user can upload a file to a channel by dragging and dropping it into the channel or manually select a file to upload.
upload/emote	A user can upload an image which can then be used as an emote.

Conceptual Modelling (State)

State Model for Use Case 1



State Model for Use Case 2



State Model for Use Case 3

