
Saturday, April 17, 2021 9:14 PM

Planning Report

[Background knowledge]

- **UNSW Dreams** is the communication tool that allows users to share, communication, and collaborate to (attempt to) make dreams a reality. **Dreams** is an in-house digital collaboration and communication tool for groups and teams to support the high intensity learning environment. Under such premises, our team CACTUS built the backend python server for **Dreams**.
- Following the SDLC steps of requirements analysis, conceptual modelling, and design, our team CACTUS endeavors to understand user problems, develop requirements, and doing some early designs. The purpose of this report is to understand the requirements and needs of our users to design the next set of features in our product.

Requirements

[Elicitation]

In this stage, we find 3 people to interview as target users who currently use a tool like **Dreams**, or intend to. A series of questions are asked to understand what *problems* they might have with teamwork-driven communication tools that are currently unsolved by **Dreams**. *We provide our interviewees with a brief introduction to the functionalities of **Dreams** before starting the interviews.

Target User 1

Name: Youran Wu

Email: 2693124920@qq.com

1. **Can you briefly introduce yourself and tell us in what circumstances do you use telecommunication tools like *Dreams*?**

Hello, I'm a second-year student of Melbourne University. Before I went to university, I barely use teamwork-driven communication tools since we have all classes in-person. However, covid-19 has changed all of it and forced me to attend lectures, tutorials through Zoom. So basically, I use telecommunication tools like Dreams for learning purpose: attending my uni lessons and perform group tasks at uni.

2. **Which teamwork-driven communication tools do you use regularly?**

Zoom, definitely ! ! I use Zoom whenever I have a lecture or tutorial, that means I must use it during every school day. Sometimes, I use Tencent Meeting for chatting with my friends in China.

3. **Why would you prefer these telecommunication tools, what do you consider as their biggest strengths?**

Zoom is prevalent overseas; many universities and companies use the software for online meeting. Thus, there are little barriers for me to communicate with other people through Zoom – almost all of them have used Zoom previously so there's no prior learning needed.

I would say the biggest strength of Zoom is the Screensharing feature. Every user can act as a presenter and share their screen with other attendances of the meeting. The function makes collaboration remotely more convenient. For instance, while doing the uni group assignment, I used Zoom to communicate

with other teammates and shared my screen to show them the assignment plan. Zoom is pretty useful for teamwork!

4. While using these communication tools, have you encountered any issues?

Zoom can be laggy sometimes with too many participants all joining through one link. I waited five minutes to get into a tutorial Zoom room one time.

One issue I would point out is the flaw in Chat of Zoom. The messages in main room could not be seen if we enter the breakout rooms unfortunately. So, when I wish to go back and check one crucial link or materials sent by the tutor in main room, I couldn't access it.

Meanwhile, I love memes, and want to send one with every text message. I want to send memes to my friends in Teams chat, but I couldn't, that's a pity:(

5. If so, have these communication tools updated their functionalities to fix those problems?

Nope, I think there's currently no efforts made to fix that.... The problem still exists.

6. Are there any extra functionalities you wish the communication tools could develop in the future? Please provide your suggestions.

Currently, we can share screen through these tools but are unable to work on the same file together. I know that some software like Google Drive and Microsoft OneNote allow users to cooperatively work on the same document simultaneously. I wonder if it is possible for telecommunication tools like Zoom to realize such functionality as well 😊

Also, I want more memes to be added so we can send those cuteee emoji and funny memes in chat hahaha

Target User 2

Name: Hebe Ren

Email: u7139076@anu.edu.au

1. Can you briefly introduce yourself and tell us in what circumstances do you use telecommunication tools like *Dreams*?

My name is Hebe. I'm currently a first-year student studying Bachelor of international relations at ANU. I normally use Messenger to contact with peers. I'm in the Student Asociacion this semester. Telecommunication tools like Messenger are the only ways for me to communicate with friends and peers back in Australia because I'm currently stuck overseas.

2. Which teamwork-driven communication tools do you use regularly?

I normally use Google Doc since it is convenient to share the document link to others and invite them to edit the document simultaneously. Sometimes we use Zoom calls because face-to-face communications could be more productive. You know, it's quite different to work with someone that you don't even know he/she looks like compared to working with those you at least can see through camera.

3. Why would you prefer these telecommunication tools, what do you consider as their biggest strengths?

For me, it think Zoom is kinda compulsory since everyone is using it. I think apps like FaceTime -- or other meeting apps -- also function similarly. Among all of them, I would prioritize Google Doc (interviewer: Me too! And I also love OneNote~)

It makes groupwork much productive because multiple person can work together and keep updated, commenting on other's work etc. It is also more accessible for users – no need to download the software, just open the link on web browser!

4. While using these communication tools, have you encountered any issues?

The problem with Google Doc – although it's my favorite, I still want to point out – is that there are prerequisites for using it. It requires you to have a Google Account. So if you don't have one, you will need to register, create a Gmail, then access Google Doc. I borrowed my friend's google account every time I want to use Google Drive.

Another issue is with Messenger. Every time you withdraw a message, other people in the group chat will see "[user name] has withdrawn a message". That's super embarrassing. Also, you can track how many people have seen the message you sent, it's kinda awkward if you have so many views but sooo little replies. One time, I texted something in my Political Science group chat, it has around 260 views but no replies at all lol!

5. If so, have these communication tools updated their functionalities to fix those problems?

I don't think Google Doc have updated the areas I mentioned, but I also use WeChat occasionally. It didn't support withdraw messages before. Now it has developed the function of withdrawing the message and edit based on the withdrawal message. Hmmmm, you still have to withdraw within that one minute time constraint, yet it's still a big progress I think 🍊 Everyone make silly typing mistakes sometimes, and we all need the withdraw button to save our days hahaha! (Especially for student committee members like me who send hundreds of messages to convey and promote new IR society events to peers.)

6. Are there any extra functionalities you wish the communication tools could develop in the future? Please provide your suggestions.

I really wish in the future there would be synchronous transmission of data between multiple devices. Like when you use Messenger on your laptop, it could automatically transit messages to my phone. However at the moment, I can't see the previous chat history and files if I login on a different device. I hope that the automatic transmission of chat history will be realized in the near future.

On the other hand, I recommend WeChat to improve its notifications. I get multiple, unnecessarily repeated notifications when I login into both laptop and mobile phone, that's quite annoying. Hope this can be fixed soon.

Target User 3

Name: Pimpisa Udompolvanich

Email: jinnythecool@gmail.com

1. Can you briefly introduce yourself and tell us in what circumstances do you use telecommunication tools like *Dreams*?

My name is Pimpisa, I'm a concept artist working in the game industry at YGGDRAZIL Group. I use telecommunication tools like **Dreams** when I need to communicate with my fellow team members, sending work files, and update weekly progress on the project that we're working on.

2. Which teamwork-driven communication tools do you use regularly?

I use discord, rocket chat, and google meet as the main communication tools at my workplace.

3. Why would you prefer these telecommunication tools, what do you consider as their biggest strengths?

Discord is for easier group and individual communication on multiple projects. Rocket chat is for sending confidential materials, because it have its own private server. Google meet is for meetings and screen sharing.

4. While using these communication tools, have you encountered any issues?

Using discord can be confusing at times. For example, chat and voice channel have very similar overlay, which can be confusing. It is very difficult for me to navigate and use the functionalities on discord as a new user.

5. If so, have these communication tools updated their functionalities to fix those problems?

So far I don't think there's any update on what I have mentioned and there's no built-in tutorial for new users either.

6. Are there any extra functionalities you wish the communication tools could develop in the future? Please provide your suggestions.

First, I want a selection of profile picture to choose from that is already included in the app. Second, I wish to have a user-friendly interface or built-in tutorial, so new user can use the application immediately without any additional research on how to use the application. Finally, I want to be able to send file through the message functionality. If the file is too big the application should automatically compress it as a zip file and be able to send it without any problem.

[Analysis & Specification - Use Cases]

Based on the responses from the elicitation, these requirements of target users are expressed as **User Stories** in this section. For each user story, User Acceptance Criteria are added to give a clear definition of when a story has been completed. Our group CACTUS adopt a written-recipe style to express the use cases.

User Story 1: Youran

User acceptance criteria

As a crazy meme lover, **I want** to be able to send memes through message functionality. **So that** I can express my feeling with funny memes effectively and create a vibrant atmosphere in chat.

Use case:

Use case: Send a meme.

Goal in context: User wants to send a meme through message functionality, the meme would either be a GIF or a jpg image.

Scope: Dreams application

Level: Primary task

Preconditions: User is registered in Dream and is a member of the channel or dm they want to send memes to. The memes user wishes to send have to be application-supported image type (GIF and jpg).

Success End Condition: User successfully sent a meme that can be view by the other users in the channel or dm they sent to.

Failed End Condition: The meme that the user want to send is corrupted or does not recognized by the application when they chose the image to send.

Primary Actor: User

Trigger: User use the message functionality to send a meme

Main Success Scenario:

Step 1. User is registered and login the Dreams application.

Step 2. User joins a channel or dm.

Step 3. User use the message functionality and attach an image (GIF or jpg) to it by choosing a local image or providing a valid image url.

Step 4. Message function checks if the image format is valid.

Step 5. The message with meme is sent to the channel or dm and can be view by other members.

User Story 2: Hebe

User acceptance criteria

As a student society marketing subcommittee, **I want** to be able to withdraw messages when I type something wrong or post to the wrong chat. **So that** I could fix typing errors and careless mistakes in sending promotion messages.

Use case:

Use case: Withdraw a message.

Goal in context: User wants to withdraw a message sent in channels or DMs, within an appropriate time restriction, like 10 minutes.

Scope: Dreams application

Level: Primary task

Preconditions: User is registered in Dream and is a member of the channel or dm they want to send messages to. User has sent a message in the channel or dm. The sent time is less than 10 minutes ago.

Success End Condition: User successfully withdrawn the message. That particular message can no longer be viewed by the other users in the channel or dm they sent to. The message content is now replaced by "Opps, the message has been withdrew"

Failed End Condition: 1. The message couldn't be withdrew during the 10 minutes after the message is sent. Other person can still see the message content. 2. Other members in the channel or dm can withdraw other user's message.

Primary Actor: User

Trigger: User use the message-withdraw functionality to withdraw message

Main Success Scenario:

Step 1. User is registered and login the Dreams application.

Step 2. User joins a channel or dm.

Step 3. User use the message functionality and send a message into a channel or dm.

Step 4. Message withdraw function checks if the user is the sender of the message and check if the send time is less than 10 minutes ago.

Step 5. The message sent by the user previously is withdrew, other members in the channel or dm cannot view the message now.

User story 3: Pimpisa

User acceptance criteria

As a concept artist **I want** to be able to send files through message functionality and if the file is too large, the application would automatically compress it for us, **So that** it will be convenient and efficient for us when sending work files.

Use case:

Use case: Send a file.

Goal in context: User wants to send a file through message functionality and the application should automatically compress it if the file is too large.

Scope: Dreams application

Level: Primary task

Preconditions: User is registered in Dream and is a member of the channel or dm they want to send to.

Success End Condition: User successfully sent a file that can be view by the other users in the channel or dm they sent to.

Failed End Condition: The file that the user want to send is corrupted or does not recognized by the application when they chose the file.

Primary Actor: User

Trigger: User use the message functionality to send a file

Main Success Scenario:

Step 1. User is registered and login the Dream application.

Step 2. User joins a channel or dm.

Step 3. User use the message functionality and attach a file to it.

Step 4. Message function checks if the file attach is valid.

Step 5. The message is sent to the channel or dm and can be view by other members.

[Validation]

With our completed use case work, we reach out to the 3 people interviewed originally and inquire as to the extent to which these use cases would adequately describe the problem they're trying to solve. Here's their comments on the use cases:

Target User 1: Youran

Q: Does this user story accurately describe the problem that you wanted to solve?

A: Yes, sure! I think this is an adequate reflection of my problem at the moment. With the send meme function I could send interesting memes in chat. I would give this user story 9 out of ten – it would be better if we can also store frequently-used memes in chat.

Response: Your suggestions are well recieved, thank you!

Target User 2: Hebe

Q: Does this user story accurately describe the problem that you wanted to solve?

A: I would say yes to a certain extent. With such functionality I can withdraw messages with a longer time restraint. I would say 10 minutes seem to be a reasonable time for us to spot our mistakes and fix the message. A longer time like – I would say an hour – would be better maybe.

Response: Your suggestions are well received, we will consider that.

Target User 3: Pimpisa

Q: Does this user story accurately describe the problem that you wanted to solve?

A: Yes, with the application being able to send the file I want with no size restriction, this would really make it convenient for me while doing my work. There's currently no apps that can compress files automatically for users at the moment, so it's definitely a functionality that could attract many potential users.

Response: We also value the idea of compressing while sending larger files, your opinions are appreciated, thanks!

Design

[Interface Design]

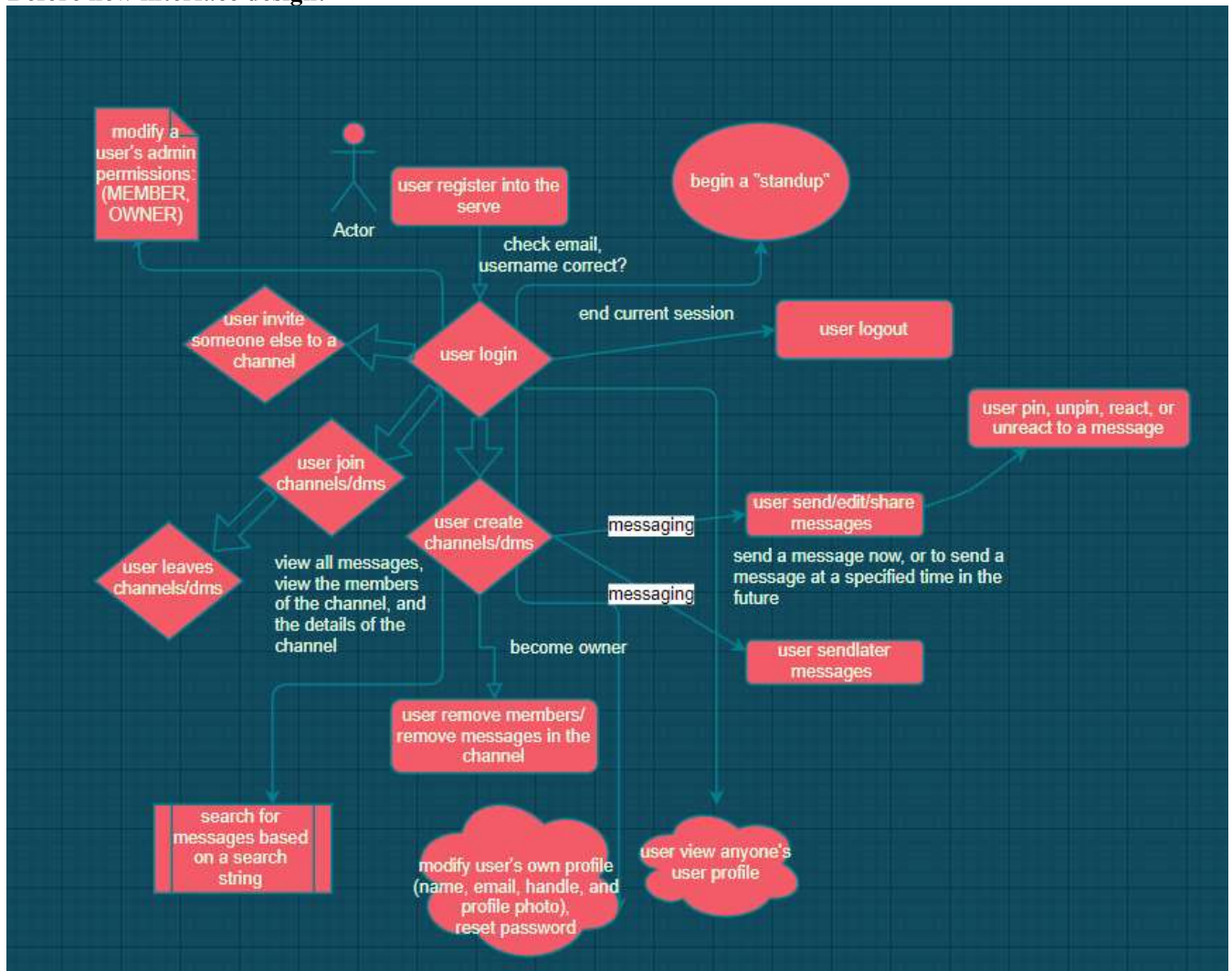
Name	Description	HTTP Method	Data Types	Exceptions
/message/sendimage	Send an image from authorised_user to the channel/dm specified by channel_id/dm_id. Given a URL of that image on the internet, the image will be cropped according to the given crop bounds x_start, y_start, x_end, y_end. Note: Each image(meme) should have its own unique ID. I.E. No sent images should share an ID with	POST	Parameters: (token, meme_url, x_start, y_start, x_end, y_end, channel_id) Return Type: {meme_id}	InputError when any of: <ul style="list-style-type: none"> img_url returns an HTTP status other than 200. any of x_start, y_start, x_end, y_end are not within the dimensions of the image at the URL. Image that the user want to send is not a GIF or JPG The image size is too large (greater than 5GB).

	another image, even if that other image is in a different channel.			AccessError: when: the authorized user has not joined the channel they are trying to post to
/message/withdraw	Given a message_id for a message, this message will be replaced by "Opps, the message has been withdrawn".	DELETE	Parameters: (token,message_id) Return Type: {}	InputError when any of: <ul style="list-style-type: none"> Message_id is not a valid message A function is being called later than 10 minutes after message was sent AccessError when: <ul style="list-style-type: none"> the user is not the person who sent that message
message/attachfile	User can attach file and sent to a channel or dm specified by dm_id/channel_id. When sent file to a dm the channel_id will be -1, and when sent to a channel the dm_id will be -1. If the file is too large the function will automatically compress the file.	POST	Parameters: (token, channel_id, dm_id, file) Return Type: {message_id, file_id}	InputError: The file sent is corrupted or does not recognized by the application. AccessError: The authorized user is not a member of the channel or dm they sent to.
channel/filerepository	User can retrieve all the files that is in the channel specified by channel_id. The files that return will be sorted by the timestamp.	POST	Parameters: (token, channel_id) Return Type: {files}	InputError: <ul style="list-style-type: none"> Channel_id invalid AccessError: The authorized user is not a member of the channel or dm they sent to.
channel/imagerepository	User can retrieve all the images that is in the channel specified by channel_id. The images that return will be sorted by the timestamp.	POST	Parameters: (token, channel_id) Return Type: {memes}	InputError: <ul style="list-style-type: none"> Channel_id invalid AccessError: The authorized user is not a member of the channel or dm they sent to.
file/details	As a member of the channel, the users can access the details of the file in the file repository of the channel, which will show the file_name, creator_name, time_created and size. User can download the file via 'download' button.	GET	Parameters: (token, file_id) Return Type: {file_name, creator_name, time_created, size}	InputError: <ul style="list-style-type: none"> File_id invalid AccessError: The authorized user is not a member of the channel or dm they sent to.
image/details	As a member of the channel, the users can access the details of the meme in the image repository of the channel, which will show the meme_name, creator_name, time_created and size. User can download the meme via 'download' button.	GET	Parameters: (token, meme_id) Return Type: {meme_name, creator_name, time_created, size}	InputError: <ul style="list-style-type: none"> Meme_id invalid AccessError: The authorized user is not a member of the channel or dm they sent to.

[Conceptual Modelling (State)]

We draw two state diagrams **to show** how the state of the application would change based on user actions. The aim of this diagram is how to a developer understand the different states the user or application.

Before new interface design:



After new interface design:

