WED13B_DORITO Planning Report

[Requirements] Elicitation

Our Dreams platform is not perfect yet, so we reached out to a few target users to identify problems that they currently face when using communication tools in a group setting.

Link to survey: https://forms.gle/LtcEa1Ucf6LLjGf67

Surveyor 1

Name	Anthony Maros
Email	ajmaros2@gmail.com
Profile	Commerce/Law student, would like to go into litigation side of law and have strong interests in investment banking within finance major, photography and playing any sport
What 3 features do you value the most in sites like Teams or equivalent software?	Free, Ability to save files and have them handy on the platform, Video meetings (no limit)
What do you find is the most inconvenient process in such communication platforms?	Waiting for others to respond and connectivity issues.
What is your biggest issue with working in a team?	Not being able to rely on others to get their work done to the standard that I believe is considered to be well done.
Does your favourite communication platform address these issues? Why or why not?	Messenger allows alerts to be sent 24 hours after a message is sent so it is great at reminding people to reply back and the connectivity is usually pretty consistent.

Surveyor 2

Name	Weir Meng
Email	weirmeng0618@gmail.com
Profile	Bachelor of medical science at UNSW, hoping to be a doctor one day. Interested in sports, particularly rugby, American football and basketball.
What 3 features do you value the most in sites like Teams or equivalent software?	1. Ability to share screen. 2. Ability to have a video chat 3. Ability to upload and share files (Class Notebook)
What do you find is the most inconvenient process in such communication platforms?	When live lecturers do not know how to use the platform (boomers)
What is your biggest issue with working in a team?	When other team members do not actively participate/ communicate with the rest of the team.
Does your favourite communication platform address these issues? Why or why not?	No. This is part of the team member's personality or habit; having a communication platform can help the rest of us find out and communicate across each of our problems, but it is up to the member themselves whether they want to participate in it.

Surveyor 3

Name	Jaron Cohnhedges
Email	jaron.cohnhedges@student.uts.edu.au
Profile	Business degree, big sports fan
What 3 features do you value the most in sites like Teams or equivalent software?	Live video calls, sharing and editing the same Microsoft folder and document, channels - splitting into groups

What do you find is the most inconvenient process in such communication platforms?	In teams - there are no breakout rooms so communicating with your team members can be difficult
What is your biggest issue with working in a team?	Ensuring other team members will meet certain deadlines
Does your favourite communication platform address these issues? Why or why not?	No

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[Requirements] Analysis & Specification - Use Cases

From these survey responses, we have gathered user requirements and expressed them as user stories.

User Story 1

"As a university student working on a lot of group projects, I want to share files with my team, so that we can work on the same tasks while situated in separate locations."

Scenario	I want to share my Powerpoint slides to my team members for them to complete.
Criteria	Given I am in a valid channel/dm, when I click on the "Attach File" button, and I provide a file address, given that the file address is valid, the system should send the file to the specified channel/dm. When another member of the channel/dm opens the specified channel/dm, that member will be able to see and open the sent file from their device.

User Story 2

"As a student working with others, I want my team members to be notified of unread notifications, so that they are reminded to respond in a timely manner."

Scenario	I have tagged a team member in a message requesting feedback

but 2 days have passed and that team member has still not responded yet.

Criteria Given that the other member has received the initial notification, when that notification has not been opened within 24 hours, then the system will send an email to the member reminding them of any unread notifications. Given the provided email is valid, when that member opens their email, they will see a list of unopened notifications and be prompted to respond to each one.

User Story 3

"As a student working from home, I want to talk to and see my team members in real-time, so that we are able to build a better working relationship."

Scenario I have just been assigned to my new team and I want to meet them virtually while quarantined at home.

Criteria Given that I am in a valid channel/dm, when I select the "Start a Call" button, and given that the channel/dm does not already have an ongoing call, then the system will create an ongoing call in the channel/dm. When another member in the same channel/dm selects "Join Call", then that member will now be able to talk and see other participants' webcams in real time.

We have decided to create use cases for user story 1 and 2.

Use Cases

Use Case	Share files
Goal in Context	Users need to share files over the platform so that they don't have to physically transfer them via other hardware devices such as USB.
Scope	Dreams platform
Level	Primary task
Preconditions	The file address and channel/dm id are valid.
Success End Condition	All members in the channel/dm that the file was sent to are able to open the file.
Failed End Condition	All members in the channel/dm are unable to see the sent file.
Primary Actor	Dreams user to send the file

Trigger	Dreams user clicks attach file

Use Case	Notifications reminder via email
Goal in Context	Users need to be reminded of their unopened notifications outside of the platform so that they become responsive team members.
Scope	Dreams platform
Level	Primary task
Preconditions	The sent notification is valid and has not been opened within 24 hours
Success End Condition	Unopened notifications are sent via an email to specified members
Failed End Condition	Users will not be notified of any unopened notifications outside of the platform
Primary Actor	System
Trigger	When a notification has not been opened within 24 hours

[Requirements] Validation

After completing our use case work, we then reached out to our survey participants again and sought validation on the extent to which we understood their problems and requirements. Their responses are as follows:

Q: To what extent do our use cases describe the problem(s) you were trying to solve?

Anthony: Pretty much exactly what I was thinking. If you could send reminders to team members of unread notifications outside of the platform, it'll be more of an incentive for them to respond as sometimes when people don't have the app open, they won't receive notifications so it's good that notifications are being sent additionally.

Weir: Yes, this addresses my problem to a significant extent. Being able to share files onto the desired channel would allow others to access it without needing to worry about whether they are in the same location or not, and will also allow

others to access the files in their own time. This provides convenience and allows my team to be able to work cooperatively without needing to consider travel times or meeting place etc. This is a really good feature that should be in your platform.

Jaron: This addresses my issues to a great extent as it solves the problem of being able to work on the same files while in separate locations. However, this solution could be improved if the file is able to be shared to other groups and also able to display real time changes made by each member. As a result this allows for more team collaboration, making online group work more efficient.

Q: Were there any aspects that we might have missed out on in identifying your specific requirements?

Anthony: No, you've covered everything that I had in mind about the problems of working together in a team. I could perhaps suggest the ability for users to forcibly send an email notification if they don't abuse it?

Weir: Maybe whenever someone shares a file everyone else in the channel will get a notification about it so that team members are always updated.

Jaron: The only thing would probably be the ability to edit files and show live changes as I have already mentioned in response to the previous question. Other than that, this has described my needs to a great extent.

[Design] Interface Design

Now that we have validated our problems, we can ideate our solution and capabilities.

Data Types

Variable name	Type
named exactly **is_opened**	boolean
named exactly **file_address**	string
named exactly **files**	List of dictionaries, where each dictionary contains types { file_id, u_id, time_created, is_pinned }
named exactly **unopened_notifications**	List of notifications that have is_opened = False.

named exactly **notifications**	List of dictionaries, where each dictionary contains types { channel_id, dm_id, notification_message, is_opened } where channel_id is the id of the channel that the event happened in, and is -1 if it is being sent to a DM. dm_id is the DM that the event happened in, and is -1 if it is being sent to a channel. Is_opened is whether the notification has been opened or not by the user.

Interface

Name & Description	HTTP Method	Data Types	Exceptions
channel/sendfile Send a file from authorised_user to the channel specified by channel_id.	POST	**Parameters:** (token, channel_id, file_address) **Return Type:** { file_id }	**InputError** when any of: ● file_address is invalid **AccessError** when any of: ● the authorised user is not in the channel they are trying to post to
dm/sendfile Send a file from authorised_user to the dm specified by dm_id..	POST	**Parameters:** (token, dm_id, file_address) **Return Type:** { file_id }	**InputError** when any of: ● file_address is invalid **AccessError** when any of: ● the authorised user is not in the channel they are trying to post to
file/remove Remove an existing file. This can only be done by an owner of Dreams	DELETE	**Parameters:** (token, file_id) **Return Type:** {}	**InputError** when any of: ● file_id does not exist **AccessError** when any of: ● the authorised user is not an owner of Dreams
file/open For a valid user, opens the given file	GET	**Parameters:** (token, file_id) **Return Type:** {}	**InputError** when any of: ● file_id is invalid **AccessError** when any of: ● the authorised user is not in the channel/DM that the file was sent to

file/share og_file_id is the original file. channel_id the channel that the file is being shared to, and is -1 if it is being sent to a DM. dm_id is the DM that the message is being shared to, and is -1 if it is being sent to a channel.	POST	**Parameters:** (token, og_file_id, channel_id, dm_id) **Return Type:** { shared_file_id }	**InputError** when any of: ● og_file_id is invalid **AccessError** when any of: ● the authorised user is not in the channel or DM they are trying to share the file to
file/getall Return all files that have been sent to a channel or DM.	GET	**Parameters:** (token) **Return Type:** { files }	N/A
notifications/markopen Mark a notification as opened with the boolean state True.	PUT	**Parameters:** (token, notification_id) **Return Type:** {}	**InputError** when any of: ● notification_id is invalid **AccessError** when any of: ● notification_id does not belong to the authorised user
notifications/markunopened Mark a notification as unopened with the boolean state False.	PUT	**Parameters:** (token, notification_id) **Return Type:** {}	**InputError** when any of: ● notification_id is invalid **AccessError** when any of: ● notification_id does not belong to the authorised user
notifications/getunopened Return all notifications that have not been opened for given user.	GET	**Parameters:** (token) **Return Type:** { unopend_notifications }	N/A
notifications/sendreminder Send the specified user a reminder listing all their unopened files via the email associated with their profile.	POST	**Parameters:** (token, u_id, [unopened_notifications]) **Return Type:** {}	**InputError** when any of: ● u_id does not refer to valid user ● unopened_notifications contains an invalid notification_id **AccessError** when any of: ● unopenened_notifications

			contains a notification_id that does not belong to u_id

Errors
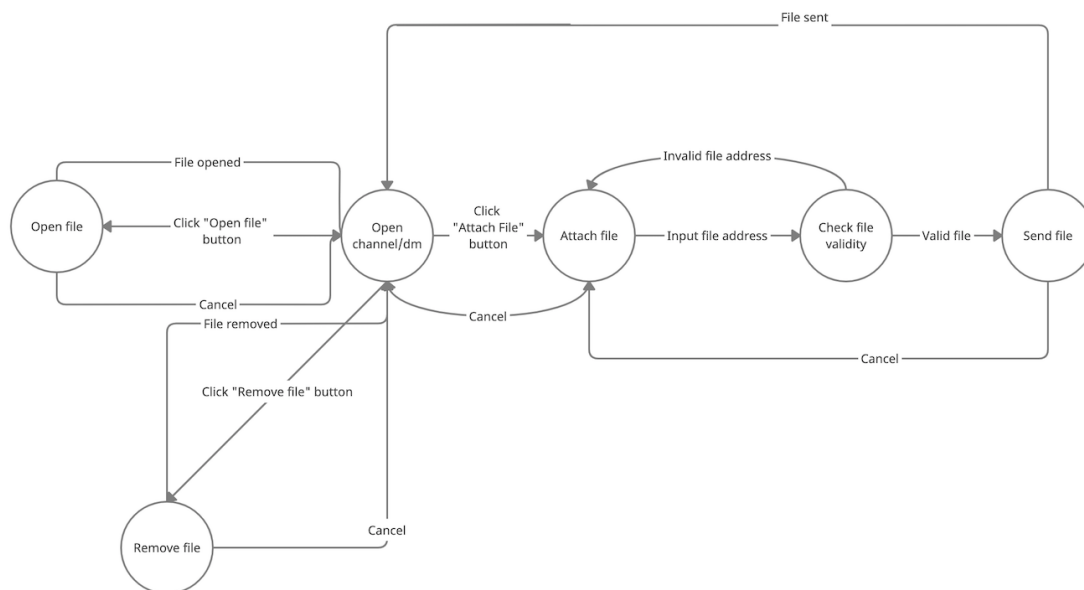
For all functions listed in the table, an AccessError is thrown when the token passed in is not a valid id.

[Design] Conceptual Modelling (State)

To get a better understanding of how to solve our problem, we have created the following state diagrams to show changes based on user actions.

State of Dreams with sharing files features

State of Dreams with email notifications reminder feature

Open
notification

Cancel

Mark
notification
opened

Set
notifcation
is_open = True

Add unopened notification to list

Return list of unopened notifications

Send email of notification reminders

Add unopened
notification to
email message

Get list of
unopened
notifications

Input u_id

Notifications
list

Click
"Send Reminder"

Send
reminder

Input list of
unopened
notifications

Compose
email
message

Cancel

Cancel

Cancel

Cancel

Cancel

Mark
notification
unopened

Set notification
is_open = False

Open
notification