

Flockr

Planning

By Friday 15 Mango Team 4

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1. Introduction

This report has been written with the purpose of documenting the process in which we plan for new features to be added to Flockr. The ideas behind these features have been developed through requirements elicitation with target users, the creation of use cases for analysis and specification, and requirements validation. Following the requirements stage, where the user problem has been established, we then underwent the design stage, where we considered the ways in which relevant solutions could be developed. This process involved interface design and conceptual modelling through state diagrams.

2. Requirements

The *Requirements* section of this report outlines the elicitation process, consolidation of information from elicitation to generate use cases and the validation process following the development of these use cases.

2.1. Elicitation

As a part of our requirements elicitation, a series of questions were developed to ask target users to understand what problems they may have with teamwork-driven communication tools that are currently unsolved by Flockr. In creating these questions, we considered what particular features target users may like in communication apps and programs, how these features compare to Flockr, what features they like or do not like about Flockr and how Flockr could be improved through new features or changes to existing ones. The interview questions for elicitation are as follows:

- What features do you think are missing from Flockr right now when compared to similar communication apps/programs?
- Are there any changes you would like to make to any existing features?
- Do you think Flockr is suitable as a teamwork-driven communication tool for things like group projects or organising events? Why?
- What do you like about Flockr?
- What features do you wish more communication platforms like Flockr could implement?
- What is the most important aspect to you in a teamwork-driven communication tool?

We made the decision to find two target users who are frequent users of different social media platforms or communication applications. We did this with the intention of gathering a wider variety of information from our questions based on the user's experience with different communication tools, personal preferences and their opinion on the current state of Flockr. To maintain a formal record of our chosen users' responses, we have communicated with them through email and we have recorded their email addresses for future reference.

2.1.a. User 1 Responses

Name: David

Email: kawika12@y7mail.com

- **What features do you think are missing from Flockr right now when compared to similar communication apps/programs?**

I'm a frequent Facebook Messenger user so overall I can feel that a lot of small features are missing such as sending emojis/stickers and being able to make polls, which is completely understandable since this app is still in early development. One thing that I do miss and I think is essential in a communication app would be the ability to send and receive images and files as I feel information is more often stored in those forms rather than messages.

- **Are there any changes you would like to make to any existing features?**

With the current features that Flockr provides, I feel like all of them work well and provide the function they are designed to.

- **Do you think flockr is suitable as a teamwork-driven communication tool for things like group projects or organising events? Why?**

While Flockr could be used as a teamwork-driven communication, I do not think it is suitable as it does not have enough features to completely support the needs that a group project or organising an event will need. In particular, as I stated before, there is no feature to send and receive images and files which I feel are essential to a teamwork-driven communication tool.

- **What do you like about Flockr?**

The "stand-up" feature is something I could definitely see being useful for group projects - I find that a group chat in Messenger is often cluttered with too many messages and unnecessary info to clearly communicate each group member's ideas, so having a summary of everyone's thoughts is quite handy.

- **What features do you wish more communication platforms like Flockr could implement?**

An interesting feature could be the ability to file share easily, or to be able to collaborate using external applications such as the Microsoft Office suite. I think it would really cool and above the typical expectations of communication platforms today.

- **What is the most important aspect to you in a teamwork-driven communication tool?**

Being able to visually communicate your ideas is essential to ensuring all your ideas are explained clearly and thoroughly to your team members. To that end, again sending images is quite important, but also video calls are crucial to effective team communication.

2.1.b. User 2 Responses

Name: Jason

Email: jason.dong196@gmail.com

- **What features do you think are missing from Flockr right now when compared to similar communication apps/programs?**

I mainly use Discord to talk to friends over voice call because I value verbal communication over messaging. Flockr seems to heavily focus on messaging, so it does lack voice calling capabilities, which are available on a majority of other communication apps. Another thing which Flockr doesn't have is the ability to share your screen. I really like this kind of feature because I can watch videos with friends or work collaboratively with them.

- **Are there any changes you would like to make to any existing features?**

One feature that I would like to change is how ownership works in Flockr. Currently in Flockr, there are only two types of global permissions and two types of channel permissions. I think adding different types of permissions/roles will allow for better organisation of group projects.

- **Do you think Flockr is suitable as a teamwork-driven communication tool for things like group projects or organising events? Why?**

I think that Flockr could work as a teamwork-driven communication platform on a basic level, however its current features and capabilities do limit the extent to which a group of people could organise something like a project or event, depending on how big it is.

- **What things do you like about Flockr?**

I like the simple and clean design, it definitely makes things easy for new users. I also think that the idea of "stand ups" are pretty unique as it's something that I haven't seen in other messaging apps.

- **What features do you wish more communication platforms like Flockr could implement?**

hold I think a really cool idea that these platforms could implement would be a way for groups to online events. I have seen many people, including myself, use communication applications for events such as movie nights or seminars. If it were possible, it would mean that Flockr would be the only application I use for a variety of functions in communicating with others.

- **What is the most important aspect to you in a teamwork-driven communication tool?**

As I've mentioned before, I think being able to communicate with others over voice call is really important in communicating when working in a team. Messaging does have its limitations as it is harder to clearly express your ideas and others may misinterpret what you are trying to say. Talking over call gives everyone a chance to contribute to discussion with ease.

2.2. Analysis and Specifications: Use Cases

After collecting responses in requirements elicitation, we have consolidated them into user stories and then created a use case for each to depict a solution.

2.2.a. User Stories

2.2.a.i. User Story 1

User story:

As a user, I want the ability to share files and images so that I can more effectively receive and give information.

User acceptance criteria:

- A button next to send message box which allows for attaching a file or image which can be sent
- Images can be viewed in the chat and can be downloaded and files are links which download them
- Can only send one image/file at a time
- Can be reacted/pinned, should be treated similarly to messages

2.2.a.ii. User Story 2

User story:

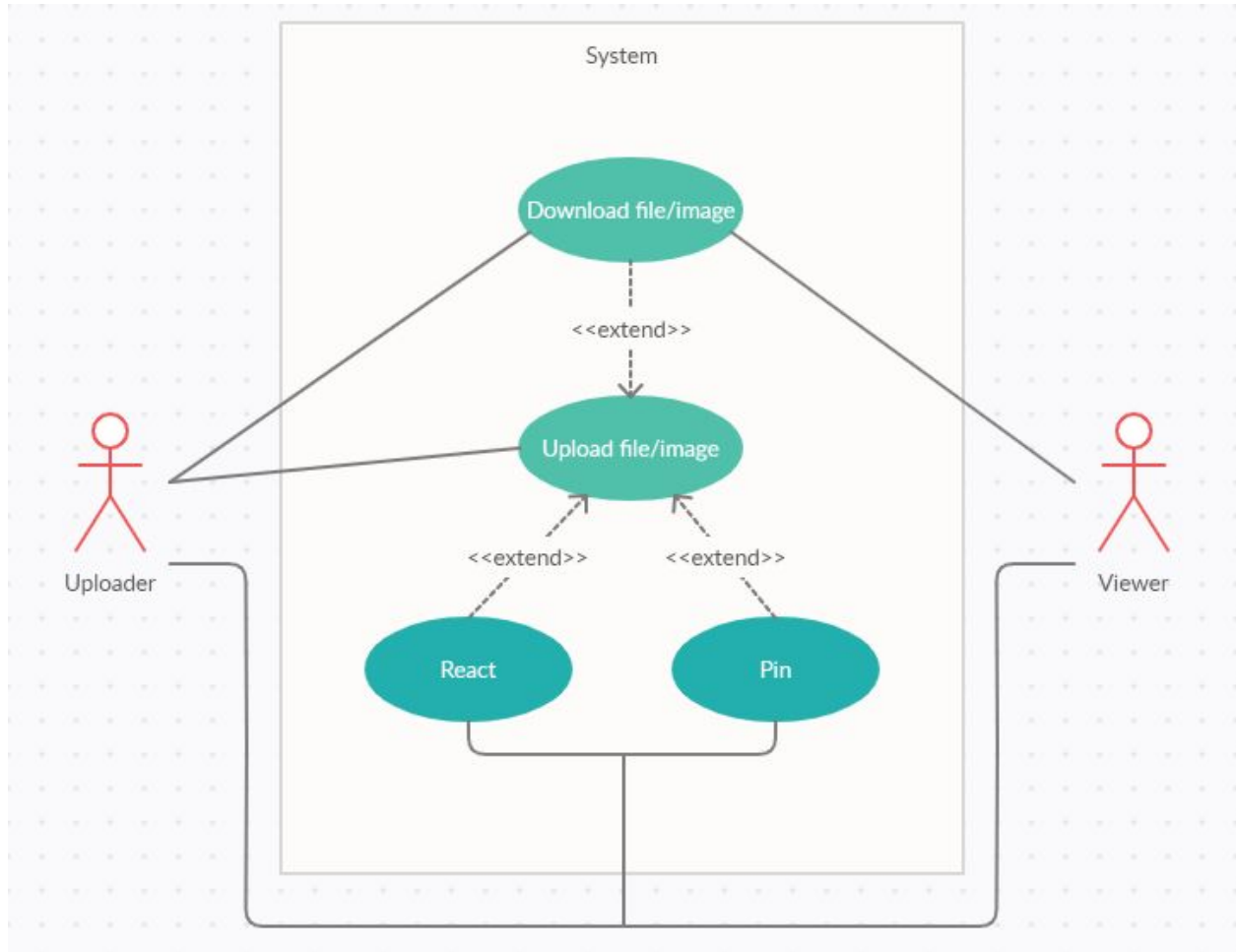
As a user, I want to have voice chat and share screen so that I have more options to communicate and hold online events.

User acceptance criteria:

- Two buttons next to send messages, one to start a voice call and the other to share screen
- Each channel can only have one active voice call/screen share at a given time
- If there is an active voice call or screen share, their respective buttons will make the user join/leave the voice call/screen share. If the person who's sharing the screen leaves, the screen share is closed. The voice call ends when there is no one in it.
- Can see who is in voice call and who is sharing and viewing in screenshare

2.2.b. Use Cases

2.2.b.i. Use Case 1



Primary Actor: Uploader of file/image.

Goal in context: A user wishes to send a file/image to a channel.

Scope: Flockr users.

Level: Primary goal.

Precondition: The user has been registered and has a valid, active token and is in the channel.

Success end condition: The user's file is uploaded to the channel for all members to view.

Failed end condition: The user's file is not uploaded and is not able to be viewed in the channel.

Primary actor: User who wishes to upload a file/image.

Trigger: Pressing a button that uploads a file/image.

Main Success Scenario:

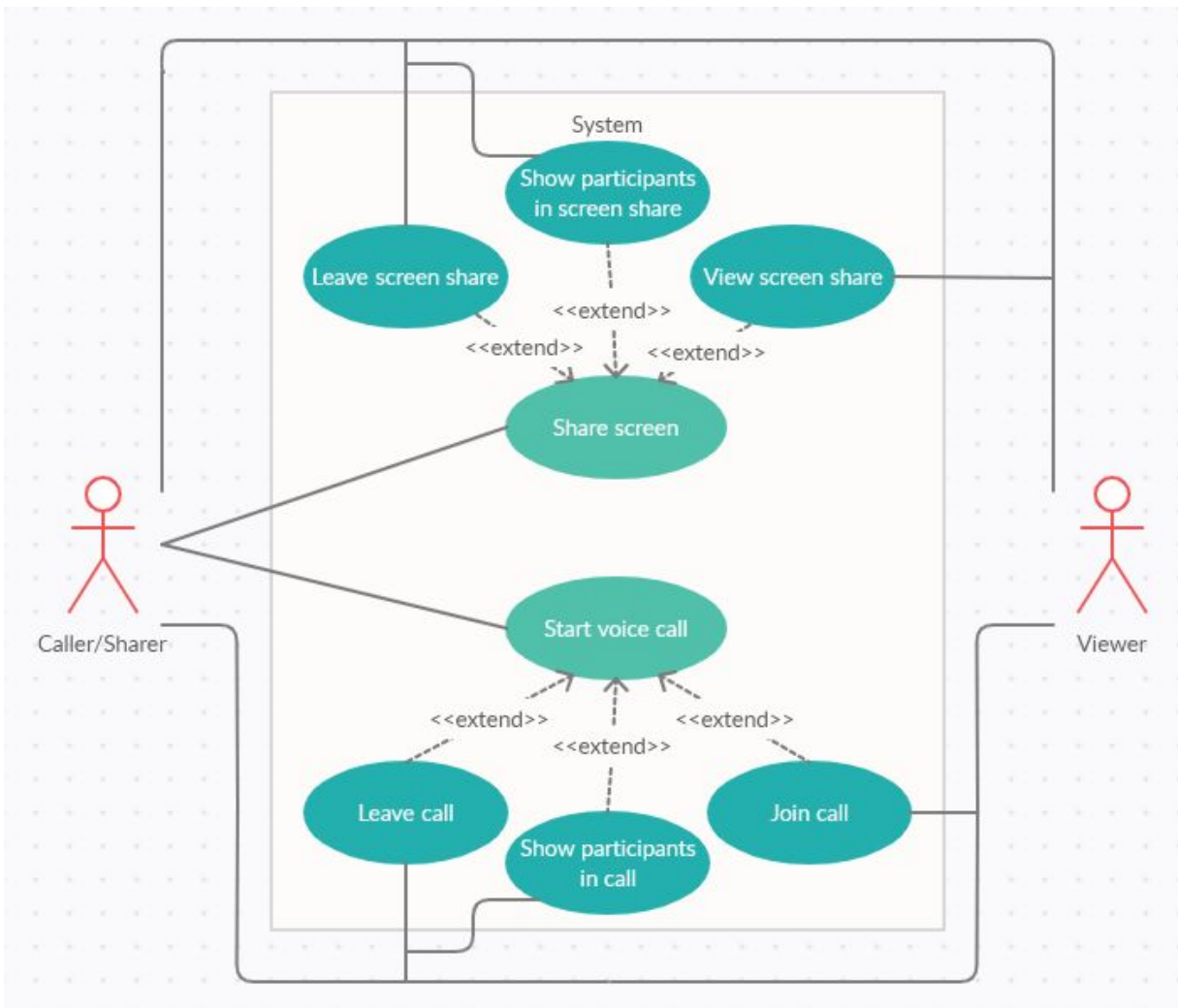
1. User clicks on a button displayed to upload a file or image.
2. The system obtains the handle string of the user and then displays the users file explorer.

3. User selects a file/image to upload.
4. The system uploads this file or image to the backend, then displays an interface to send the uploaded item a cross
5. The user clicks send and the file or image is sent as a new message similar to message_send to the given channel.
6. Viewers are able to view this file or image in their channel messages.

Extension:

- a. Viewer wishes to download a file or image that has been already uploaded.
 - i. The viewer is able to click upon the file or image which will bring up a new interface to download a copy of the uploaded file or image to their machine.
- b. Viewer wishes to react to a file or image.
 - i. Similar to a regular message, there will be the option to react to a file or image.
- c. Viewer wishes to pin a file/image
 - i. Similar to a regular message, there will be the option to pin a file or image.

2.2.b.i. Use Case 2



Primary Actor: Uploader of file/image.

Goal in context: Users wish to have a method of voice calls or screenshare for further productivity and convenience.

Scope: Flockr users

Level: Primary task

Precondition: The user has been registered and has a valid, active token and is in the channel.

Success end condition: User engages in a voice call or screen share.

Failed end condition: User does not participate in a call or screen share.

Primary actor: User that wishes to call or screen share.

Trigger: User presses button to initiate a call or screen share.

Main Success Scenario:

1. The caller/sharer presses a button to initiate a group call or screen share.
2. A new instance of an active call or share screen is opened to the system.
3. The user will have their audio/screen broadcasted across the system.
4. Other members may view this broadcast if they are in the same call.

Extensions:

- a. A viewer wishes to join a call
 - i. When an instance of an active call or sharescreen is live, there will be a button to join call or share screen, the viewer may click this button to join the call
 - ii. Upon joining the call or screenshare, they will be able to listen and talk in a voice call using their own audio or view the broadcasted screenshare.
- b. A viewer in a call wishes to leave
 - i. If a user is inside an active call or screenshare, there will be a button on the live call to leave, the viewer may click this button to leave the call.
 - ii. If there are remaining users, the call or screenshare will continue, else it will cause the call/ screenshare to become inactive.
- c. A member of a call wishes to display the current participants
 - i. If there is a current active call or screen share, a user may click a button that will display the current participants in the call or screen share.

2.3. Validation

David

The problems I had with Flockr was the limited methods to share information. With the implementation of file and image sending, I feel that Flockr now has a much greater range in terms of sharing information. I also liked that you can pin and react to these files or images such that you can make important ones stand out. A key feature that I feel could still benefit this platform, is the implementation of polls, that allow members of a channel to more prominently view others opinions and decisions, which I feel would ease the work flow and benefit all users. With the current file sharing, I do believe it is adequate and substantial, a small nitpick I would bring up would be the inability to crop or edit files between the raw file and the uploaded file, some key features I'd like to see would be the ability to draw or write text upon an image before sending, allowing for easier annotations for example. I feel this subtle feature would make uploading certain files a lot more convenient, similar to what messenger has with it's photo editor.

Jason

The main issues for me were the lack of communication tools in a Flockr, which is supposed to be a communication-driven app. Now that voice calling and screen sharing has been implemented, Flockr can better accommodate team projects and has improved as a communication-driven app. On the other hand, I still feel that Flockr could benefit off a simple role designation system, allowing to more easily group and organise members within a channel, as currently there are only two non customisable roles. To me this would make Flockr a much more convenient and versatile tool. As for the current implementation, although I understand that the app is in early development, a feature I would like to see is a more prominent notification for when calls or screen shares are starting, similar to a real phone call. I feel this would make the user experience far more streamlined as members would be able to be notified of calls without actively being on the site.

3. Design

The *Design* section of this report outlines the process of finding a solution in terms of defining the capabilities that would be necessary for the new functions and showing the state of the application with those new features implemented.

3.1. HTTP Endpoints for New Features

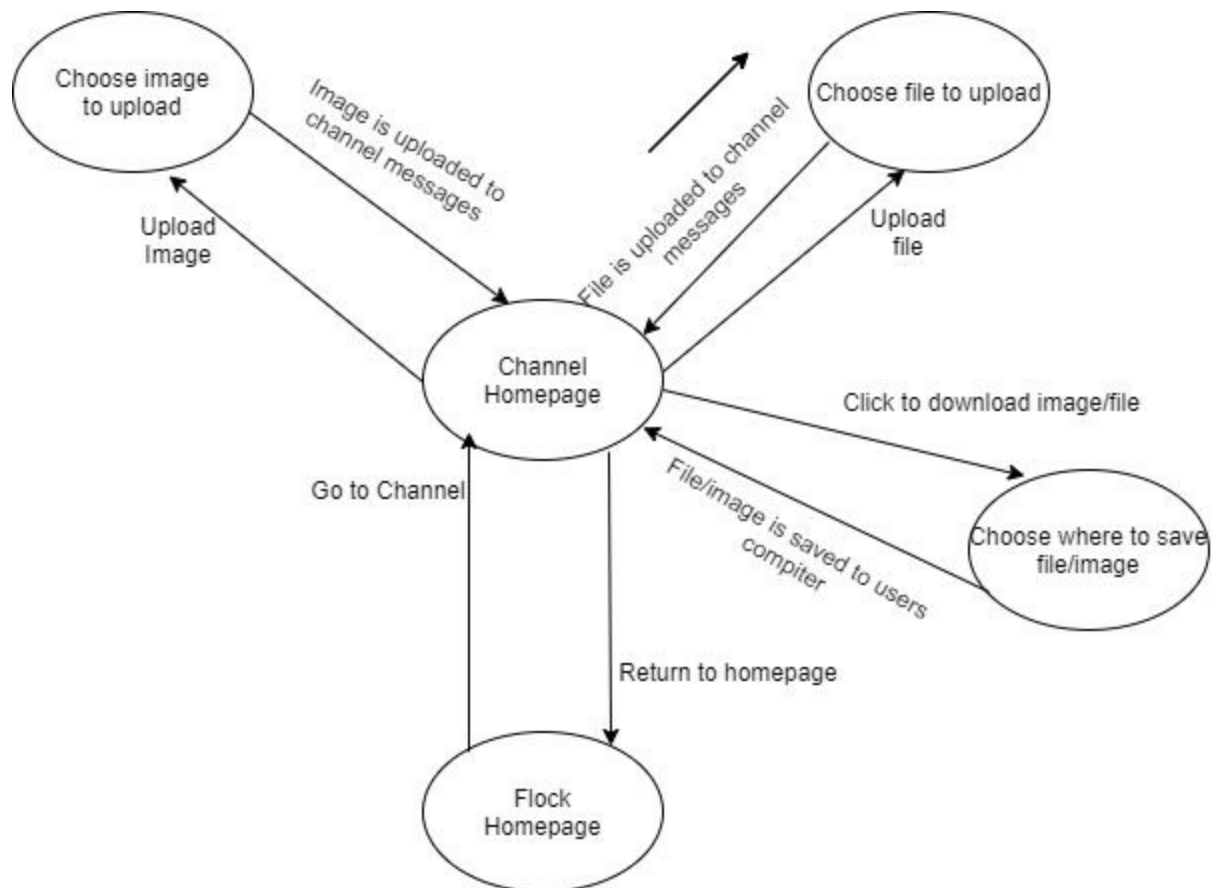
Function Name	HTTP Method	Parameters	Return Type	Exceptions	Description
message/sendfile	POST	(token, channel_id, file_url)	{message_id}	AccessError when: <ul style="list-style-type: none">• Token is not valid• User is not in the specified channel InputError when: <ul style="list-style-type: none">• Channel id is not valid• file_url returns an HTTP status other than 200	Send a file from authorised user to the channel specified by channel id.
message/sendphoto	POST	(token, channel_id, img_url)	{message_id}	AccessError when: <ul style="list-style-type: none">• Token is not valid• User is not in the specified channel InputError when: <ul style="list-style-type: none">• Channel id is not valid	Send an image from authorised user to the channel specified by channel id.

				<ul style="list-style-type: none"> img_url returns an HTTP status other than 200 	
channel/voicecall	POST	(token, channel_id)	{call_length}	<p>AccessError when:</p> <ul style="list-style-type: none"> Token is not valid User is not in the specified channel <p>InputError when:</p> <ul style="list-style-type: none"> Channel id is not valid 	<p>Authorised user starts a voice call within the channel specified by channel id, otherwise joins the call if a voice call is already active.</p> <p>If the user is in the voice call, the user leaves.</p> <p>Call_length returns None if the user is joining and returns the time spent in seconds the call if the user is leaving.</p> <p>Call ends when there are no more users in it.</p>
channel/screenshare	POST	(token, channel_id)	{share_length}	<p>AccessError when:</p> <ul style="list-style-type: none"> Token is not valid User is not in the specified channel <p>InputError when:</p> <ul style="list-style-type: none"> Channel id is not valid 	<p>Authorised user starts a screen share and broadcasts their screen within the channel specified by channel id, otherwise joins the screenshare if there is one already active.</p> <p>If the user is in the screen share, the user leaves.</p> <p>Share_length returns None if the user is joining and returns the time spent in seconds the screenshare if the user is leaving.</p>

					If the sharer leaves, the screen share closes and all users are removed.
channel/voicecall/list	GET	(token, channel_id)	{call_members}	AccessError when: <ul style="list-style-type: none"> Token is not valid User is not in the specified channel InputError when: <ul style="list-style-type: none"> Channel id is not valid There is no active voice call 	Returns a list of users participating in the voice call.
channel/screenshare/list	GET	(token, channel_id)	{sharer_members, viewer_memebers}	AccessError when: <ul style="list-style-type: none"> Token is not valid User is not in the specified channel InputError when: <ul style="list-style-type: none"> Channel id is not valid There is no active screen share 	Returns the screen sharer and a list of users viewing the screen share.

3.2. State Diagrams

3.2.a. State Diagram 1



3.2.b. State Diagram 2

