

***PLANNING FOR THE
NEXT PROBLEMS TO SOLVE***

[Requirements] Elicitation

Find 2-3 people to interview as target users. Target users are people who currently use a tool like Treats, or intend to. Record their name and email address.

Target Users:

- Hadi Mahmood; hadi.mahmood@hotmail.com - Employee at a corporate firm
- Tala Hussein; tala.hussein@student.uts.edu.au - Full-time university student
- Naheed Mahmood; naheed.mahmood@afc.nsw.edu.au - Full-time private school teacher

Develop a series of questions (at least 4) to ask these target users to understand what problems they might have with teamwork-driven communication tools that are currently unsolved by Treats. Give these questions to your target users and record their answers.

Questions:

1. In regards to accessibility, what barriers are present in teamwork-driven communication tools?
2. Do you have a greater concern for your privacy and security while using teamwork-driven communication tools? Why or why not?
3. How does a lack of transparency while using teamwork-driven communication tools impact the quality of your teamwork?
4. Do you feel like you can express yourself using teamwork-driven communication tools just like you would in-person with your team?

Answers:

Hadi (Employee at a corporate firm):

1. In regards to accessibility, what barriers are present in teamwork-driven communication tools?
 - *If we're ever behind schedule, the meetings we have on Zoom are rushed and some important details may not be vocalised by the presenter. When I'm in charge of writing down minute meetings, it's difficult for me to keep up with the speed of everything going on, especially when there are a couple people talking at once or when a file is being discussed and it's only on the board for a couple of seconds.*
2. Do you have a greater concern for your privacy and security while using teamwork-driven communication tools? Why or why not?
 - *I'm not sure if this answers the question but when we need to share important work files with our clients, we make sure to only share them over email because of the lack of security on platforms like Zoom. It kind of disrupts the team's flow because although we email our clients from our work emails, there's no way to get the remaining team members involved in communicating with the client (which is a very important part of our work).*
3. How does a lack of transparency while using teamwork-driven communication tools impact the quality of your teamwork?
 - *If you're working face-to-face, you know whether your team members are being productive and you'll likely know what they're working on. With working-from-home, it's so easy to slack off and leave the burden of your work on another team member. The system we have at work is organised so that if you're typing on a document, it'll show you as 'present'. You can type anything you want and you'll only show you as 'offline' when you stop.*
4. Do you feel like you can express yourself using teamwork-driven communication tools just like you would in-person with your team?
 - *I guess problems come up when a team member misinterprets a message I send them. Other than that, turning my camera on during meetings is usually enough of an outlet for me to express myself like I would if I was with my team in-person.*

Tala (Full-time university student):

1. In regards to accessibility, what barriers are present in teamwork-driven communication tools?
 - *I was once placed in the same team as a student with visual impairments. Until then, I hadn't realised that she experienced these communication platforms much differently than I did. She took a lot longer to read and respond to our messages, and also struggled to read the automated transcription during our video calls on Teams.*
2. Do you have a greater concern for your privacy and security while using teamwork-driven communication tools? Why or why not?
 - *My sibling has been able to use my account many times. If I'm already logged in, anyone with access to my laptop can do whatever they want through my account. Someone else could be doing all my work for me and no one would know as long as my camera's turned off! So, yes, I guess in that sense, I do have to worry about my privacy a little more.*
3. How does a lack of transparency while using teamwork-driven communication tools impact the quality of your teamwork?
 - *I guess it can be hard to keep track of what everyone's saying unless it's being written down word-for-word. Whenever I have worked in a team over a digital platform, the conversations we've had have always been so spaced out and disorderly, making it difficult to follow up on old files, links, or screenshots that have been sent.*
4. Do you feel like you can express yourself using teamwork-driven communication tools just like you would in-person with your team?
 - *Eh, no. I think a lot more hesitant to speak when I'm working with a team digitally. In-person, you don't really have to think before speaking, but if you want to say something on Teams or Zoom then you have to first think of what to say, wait for everyone to stop talking, unmute yourself, and then say it.*

Naheed (Full-time private school teacher):

1. In regards to accessibility, what barriers are present in teamwork-driven communication tools?
 - *Microsoft Teams is very difficult for me to work with. It took me a lot of time to understand where everything was and how everything worked. I'm not able to do things as fast as I normally do because I don't know where certain features are. I have trouble finding certain files or kinds of homework when a student asks where they are because there are so many places to go.*
2. Do you have a greater concern for your privacy and security while using teamwork-driven communication tools? Why or why not?
 - *I don't, no. Although, a couple of times when I delivered exams via Zoom video call (where each student's camera needed to be on), I noticed a lot of parents helping their children mid-exam (which is not permitted). It's the same as a parent sitting in my classroom - it's not okay! And there's nothing I can do about it either, since it's all happening from their homes.*
3. How does a lack of transparency while using teamwork-driven communication tools impact the quality of your teamwork?
 - *When I'm in class, I can walk around and provide help if any students need it. Online, students who need help are very unlikely to speak up, especially in a video call setting where only one person can speak at a time. In-person, communication amongst everyone is easier, students can even help each other, and I also think it's easier for them to stay focused on the task at hand.*
4. Do you feel like you can express yourself using teamwork-driven communication tools just like you would in-person with your team?
 - *I think there's an emotional barrier when I'm teaching online through these platforms. The students (and myself) act differently at home than we do at school, so that alone changes the dynamic amongst everyone. It was hard for me to express myself initially when I wasn't as confident using things like Microsoft Teams, but now that I have a bit of experience with it, my staff meetings in-person and online aren't very different.*

Once you have done this, think about how you would solve the target users' problem(s) and write down a brief description of a proposed solution.

Proposed Solution:

Note: I am focusing on two main issues and my solutions for these issues will be slightly modified to meet the current interface of UNSW Treats.

Media Storage:

Creating a separate place for shared media storage would enable the target users to experience easier access to the piece of media they require. This solution would assist Hadi in overcoming the barriers he is facing with meeting minutes during video calls. He stated that it was difficult for him to keep up with the unruly nature of his meetings (presenter is rushing through everything, teammates are speaking over each other, and files and presentations are not being adequately discussed), and thus struggled to maintain consistency in his note-taking.

By virtue of having a separate space wherein all media posted in the channel is kept together, Hadi would have a much easier time accessing files and presentations after the meeting without having to rush like he does during them. This would not only allow him to work at his own pace, but also in the process provide his teammates with quality meeting minutes.

A place for media storage would also benefit Tala, who struggles with keeping up-to-date with the disorderly manner of her teammate's conversations. If everything kind of media that has been posted in the channel is gathered in one place, Tala's group will not only have a greater sense of cohesion amongst one another, but they can also rest assured that each teammate has equal access to important files, links, screenshots, etc. Overall, organising important material can be a game-changer for productivity and more effective communication amongst teams.

Automatic Session Expiration:

In order to combat the undertone of discomfort around using teamwork-driven communication tools, automatic session expiration provides target users with a sense of stern encouragement to persist in their work as well as reassurance in terms of privacy and security. This kind of timeout will function regardless of session activity and will close and invalidate the session token once the maximum, defined time a session can be active is achieved. Upon the session closing, the user will have to (re)authenticate and thus establish a new session.

Hadi voiced concerns about his co-workers ignoring their group work and slacking off, leaving the brunt of the work to remaining teammates. Automatic session expiration will log all users out every couple of hours, thus changing their user status from 'online' to 'offline.' This introduces a sense of transparency that is present in face-to face teamwork where teammates have the ability to see others completing work.

Tala noted that her sibling has used her account to communicate with others under her name and identity. Automatic session expiration will force her sibling out until Tala types in her login details again. If her sibling is already using the communication tool via Tala's account, then automatic session expiration limits the amount of time she has to use it, emphasising security and reaffirming Tala's privacy.

Naheed stated that her students have gotten help from their parents during exams completed over digital platforms. Automatic session expiration will forcefully lock her students out of their accounts. If they are not present when this occurs and they are unable to enter their login details, they will remain logged out and their user status will appear as 'offline', letting Naheed know that her student isn't present. These session timeouts can build a stronger sense of productivity and persistence among students, making group discussions more engaging and constructive to all group members.

[Requirements] Analysis & Specification - Use Cases

Once you've elicited this information, it's time to consolidate it.

Take the responses from the elicitation step and express these requirements as user stories (at least 3). Document these user stories. For each user story, add user acceptance criteria as notes so that you have a clear definition of when a story has been completed.

Users Stories and Acceptance Criteria:

As an employee at a corporate firm, I want to have access to shared media so that I can work more efficiently.

- Acceptance Criteria:
 - The user will log in using a valid email and password.
 - The user will select a channel from the left bar.
 - The user enters the channel once selected.
 - The user will select the 'Media' tab to the right of 'Leave Channel'.
 - The user will be led to a new page with all the media shared on this channel.

As a full-time university student, I want to be the only one with access to my account so that I can maintain my privacy.

- Acceptance Criteria:
 - The user will log in using a valid email and password.
 - The user will be forcefully logged after a defined time.
 - The user will log in again, using a valid email and password.

As a full-time private school teacher, I want to know if my students are being productive so that I can provide them with assistance if need be.

- Acceptance Criteria:
 - The user will log in using a valid email and password.
 - The user will select a channel from the left bar.
 - The user enters the channel once selected.
 - The user can see the user status of every other channel member.
 - The user status can be a green tick for 'Online'
 - The user status can be a red cross for 'Offline'.

Once the user stories have been documented, generate at least ONE use case that attempts to describe a solution that satisfies some of or all the elicited requirements. You can generate a visual diagram or a more written-recipe style, as per lectures.

Use Case: Access shared media.

- **Goal in Context:** A user can access the shared media present within a channel either by joining the channel or accepting an invitation from another user.
- **Scope:** UNSW Treats
- **Preconditions:** The user has a valid, registered account and is already logged in.
- **Success End Condition:** The user can access the shared media of a channel.
- **Failed End Condition:** The user cannot access the shared media of a channel.
- **Primary Actor:** User
- **Trigger:** User either joins channel or is invited to join channel, and then selects option to view shared media of said channel.

Success Scenario 1

1. User chooses to join a public channel.
2. UNSW Treats displays channel.
3. UNSW Treats lists user as a channel member.
4. User selects the 'Media' tab of the channel.
5. UNSW Treats displays shared media of the channel.

Success Scenario 2

1. Another user invites User to join a public channel or a private channel.
2. UNSW Treats displays channel.
3. UNSW Treats lists user as a channel member.
4. User selects the 'Media' tab of the channel.
5. UNSW Treats displays shared media of the channel.

[Requirements] Validation

With your completed use case work, reach out to the 2-3 people you interviewed originally and inquire as to the extent to which these use cases would adequately describe the problem they're trying to solve. Ask them for a comment on this, and record their comments in the PDF.

Comments:

Hadi (Employee at a corporate firm):

- Yep, this would work. This would make it so much easier for me to write quality minutes without having to chase anyone up about the files or presentations they mentioned during the meeting. It's also really easy to access if I ever need to quickly find anything that was shared to the channel.

Tala (Full-time university student):

- Keeping the option to select 'Media' on the front page of the channel makes it really convenient for me to be able to keep up-to-date with what my teammates have been discussing. This would also be beneficial if I were to divert from the team if I needed to independently revise some information I didn't pick up the first time.

Naheed (Full-time private school teacher):

- I like how simple it is. Usually you would have to go through a couple of different screens and select a specific option to get things. This is easy enough for the kids to find the worksheets that I've posted themselves.

[Design] Interface Design

Now that we've established our problem (described as requirements), it's time to think about our solution in terms of what capabilities would be necessary. You will specify these capabilities as HTTP endpoints, similar to what is described in 6.2. There is no minimum or maximum of what is needed - it will depend on what problem you're solving.

Interface:

Name & Description	HTTP Method	Data Types	Exception
media/send/v1 Send a media item from the authorised user to the channel specified by channelId. Each item of media should have its own unique ID.	POST	Query Parameters: (channelId, media) Return type if no error: { mediaId }	400 Error when any of: <ul style="list-style-type: none">- channelId does not refer to a valid channel- imgUrl returns an HTTP status other than 200, or any other errors occur when attempting to retrieve the image- image uploaded is not a JPG 403 Error when any of: <ul style="list-style-type: none">- channelId is valid and the authorised user is not a member of the channel
channel/medias/v1 Return the channel's most recent 50 media items, ordered from most recent to least recent.	GET	Query Parameters: (channelId) Return type if no error: { medias }	400 Error when any of: <ul style="list-style-type: none">- channelId does not refer to a valid channel 403 Error when any of: <ul style="list-style-type: none">- channelId is valid and the authorised user is not a member of the channel

Variable Name	Data Type
start	integer
end	integer
channelId	integer
media	imgUrl
mediaId	integer
medias	array of objects, where each object contains types { channelId, mediaId, media }

[Design] Conceptual Modelling - State Diagrams

Now that you have a sense of the problem to solve, and what capabilities you will need to provide to solve it, add at least ONE state diagram to your PDF to show how the state of the application would change based on user actions. The aim of this diagram is to help a developer understand the different states of the application.

State Diagram:

