1531 Beans Development Planning

[Requirements] Elicitation:

Prospective users interviewed:

- **[User1]**
  - Dan Field
  - dan.field643@gmail.com
- **[User2]**
  - Jonathan Cheg
  - greenmaths30@gmail.com

Questions and respective answers:

- *What current team-based communication software do you use, or intend on using?*
  - **[User1]:** Microsoft teams
  - **[User2]:** Microsoft teams
- *What features or situation made you choose this particular tool over other available options?*
  - **[User1]:** Teams has great meeting features, with easy screen sharing and video sharing as well as keeping the meeting log recorded permanently in the chat for future reference.
  - **[User2]:** Teams has a good file uploading and storage feature for each channel - storing all the files that have been sent to a channel in a separate tab that makes it alot easier to keep track of files and documents being exchange in a team.
- *Are there any difficulties or lack of functionality you find are common or unsolved amongst available communication options? If so, what are they?*
  - **[User1]:** Teams only supports one screen being shared at a time, which is something that Discord is able to do. Sharing multiple screens would be helpful if I am trying to troubleshoot something with a teammate.
  - **[User2]:** Most of these communication tools (or the one's I've tried) seem not to offer a polling feature, which would be useful for quick team checkups on how people are feeling about the workload and their tasks.

- *Is there any feature you wish this tool had, or would make you willing to swap to another platform?*
  - **[User1]:** I would like to be able to create polls to gauge interest among my team about a particular topic.
  - **[User2]:** Beyond adding the polling feature I mentioned earlier, I feel like Teams is a good representative of a really well rounded team-based communication tool.

[Requirements] Analysis & Specification - Use Cases:

User stories according to interviews:

- As a **user**, I want to be able to **have meetings with my teammates and share screens**, in order to **more easily troubleshoot problems**.
  - Acceptance Criteria:
    - Channels have an additional button in the top bar.
    - A meeting is started when the button is pressed.
    - When a meeting is started, a notification is sent to all channel members.
    - A standup is started when the meeting is created, and ended when the meeting is ended to store messages.
    - When a meeting is started and joined, a user can share their screens with other members in the call.
    - The user that created the meeting or the owner of the channel can end the meeting at any time.
- As a **user**, I want to be able to **create polls in a given channel**, in order to **gauge interest among my team for a topic**.
  - Acceptance Criteria:
    - Channels have an additional button in the text bar.
    - A poll creation menu is opened when the button is pressed.
    - The menu contains two fields with respective grey placeholder text *'poll name'*, and *'poll option 1'*.
    - The menu contains a plus sign to add additional polls, with incrementing placeholder text *'poll option 2…n'*.
    - A poll is created in the channel with the given names and options when the user presses a confirm button in the poll menu.
    - Other members of the channel can vote on the poll once per user, though they can change their vote.
- As a **user**, I want to be able to **upload and access files sent by my team**, in order to **keep track of documents and prevent lost work**.
  - Acceptance Criteria:
    - Channels have an additional button in the text bar.
    - When the button is pressed, a menu prompting the user to upload a file appears.
    - When the user uploads a valid file and confirms it, the file is sent to the channel as a message.

- ■ The file is also stored in a separate file tab in the channel displaying all sent files.
- ■ Other members of the channel can view the file.

Use case for poll feature:

- ● **Background:**
  - ○ **Use Case:** User creates a poll in a channel.
  - ○ **Goal in Context:** User creates a poll which other users within a given channel can vote on once.
  - ○ **Scope:** A single channel within UNSW Beans.
  - ○ **Preconditions:** A channel exists, and there are members of that channel.
  - ○ **Success End Condition:** A user creates a poll in a channel, and other members of that channel can place one vote each.
  - ○ **Failed End Condition:** A poll is unable to be created.
  - ○ **Primary Actor:** User
  - ○ **Trigger:** User attempts to create a poll.
- ● **Use Case List:**
  - ○ Step 1: User attempts to create a poll in a channel.
  - ○ Step 2: System verifies with database if user is part of that channel.
  - ○ Step 3: System prompts user to enter a poll name and poll options.
  - ○ Step 4: User enters poll name and poll options.
  - ○ Step 5: System verifies if poll name and each poll option has a valid name.
  - ○ Step 6: System creates poll.
  - ○ Step 7: System records poll creation in database.
  - ○ Step 8: Another user attempts to vote on poll.
  - ○ Step 9: System verifies with database if user is part of that channel, and if they have voted already.
  - ○ Step 10: System records vote in database.

Use case for channel file storage feature:

- ● **Background:**
  - ○ **Use Case:** User sends a file in a channel

- - **Goal in Context:** User sends a file in a channel which is stored in a separate messages tab viewable by channel members.
  - **Scope:** A single channel within UNSW Beans.
  - **Preconditions:** A channel exists, and there are members of that channel.
  - **Success End Condition:** A user send a file in a channel, and other members of that channel can view it.
  - **Failed End Condition:** A file is unable to be uploaded to the channel.
  - **Primary Actor:** User
  - **Trigger:** User attempts to send a file.
- **Use Case List:**
  - Step 1: User attempts to send file to a given channel.
  - Step 2: System verifies with database if user is part of that channel.
  - Step 3: System prompts user to upload file.
  - Step 4: User uploads file to system file upload menu.
  - Step 5: System verifies the file meets the given file size and type criteria.
  - Step 6: System uploads file as a message to the channel, and in a separate storage section for files for that channel.

[Requirements] Validation:

Comment on use cases from interviewees:
- **[User1]:** The poll use case contains everything I would expect and require out of the poll function I was looking for, and should successfully let my team communicate their interest in an efficient way.
- **[User2]:** I think the use case examples for file uploading and storage fit what other communication mediums are capable of, and the polling feature works just how I would want a simple polling tool for a team-based communication tool to work.

[Design] Interface Design:

Variable Name	Type
Named exactly **pollOptions**	Array of objects, where each object contains types { fieldName, numVotes }

Named exactly **voteOption**	String
Has suffix **id**	Integer
Named exactly **endTime**	Integer
Named exactly **FILE**	File

Assume a 403 Error for all HTTP endpoints if given an invalid token.

Name and Description	HTTP Method	Data Types	Exceptions
/poll/create/v1 Creates a new poll with the given name and options.	POST	**Body Parameters:** (name, pollOptions) **Return type if no error:** { pollId }	**400 Error when:** ● Length of *name* is less than 1 or more than 20 characters ● Length of any string in the given array *pollOptions* is less than 1 or more than 20 characters ● Identical fieldNames within pollOptions
/poll/vote/v1 Votes on an existing poll in a given channel, removing the authorised user from the list of available votes.	POST	**Body Parameters:** (channelId, pollId, voteOption) **Return type if no error:** {}	**400 Error when:** ● channelId does not refer to a valid channel. ● pollId does not refer to a valid poll. **403 Error when:** ● channelId is valid and the authorised user is not a member of the channel. ● Authorised user has already voted on this poll.
/poll/changeVote/v1	PUT	**Body Parameters:** (channelId, pollId, voteOption) **Return type if no error:** {}	**400 Error when:** ● channelId does not refer to a valid channel. ● pollId does not refer to a valid poll. **403 Error when:**

			● channelId is valid and the authorised user is not a member of the channel. ● Authorised user has not already voted on this poll.
/meeting/start/v1	**POST**	**Body Parameters:** **(** channelId **)** **Return type if no error:** **{** meetingId **}**	**400 Error when:** ● channelId does not refer to a valid channel. **403 Error when:** ● channelId is valid and the authorised user is not a member of the channel. ● Authorised user has already voted on this poll.
/meeting/end/v1	**PUT**	**Body Parameters:** **(** channelId, meetingId **)** **Return type if no error:** **{** endTime **}**	**400 Error when:** ● channelId does not refer to a valid channel. ● meetingId does not refer to a valid meeting **403 Error when:** ● channelId is valid and the authorised user is not a member of the channel. ● meetingId is valid and the authorised user is not the owner of the meeting.
/meeting/shareScreen/v1	**POST**	**Body Parameters:** **(** channelId, meetingId **)** **Return type if no error:** **{}**	**400 Error when:** ● channelId does not refer to a valid channel. ● meetingId does not refer to a valid meeting **403 Error when:** ● channelId is valid and the authorised user is not a member of the channel. ● Authorised user does not have screen sharing permissions on.
/message/sendFile/v1	**POST**	**Body Parameters:** **(** channelId, FILE **)**	**400 Error when:** ● channelId does not refer to a valid channel.

| | | **Return type if no error:**
{ messageId } | ● FILE is not a valid file type.
● FILE is larger than 5 MB.

403 Error when:

● channelId is valid and the authorised user is not a member of the channel. |

[Design] Conceptual Modelling - State Diagrams:

● Located on the next page - sorry for the bad quality its kind of big. I've attached a copy in the planning folder where this is located.

```
                                                                                    ┌──User creates poll──┐
                                              ┌──────────User uploads a file──────────┐
                                              │        ┌──────User starts a meeting──────┐
                                              │        │                                 │
    ┌────────────┐                            │        │   ┌────────────┐   Invalid User   ┌────────────┐
    │   Idle,     │────User creates channel────┼────────┼──▶│ Check for valid │──────────────▶│ Error: Invalid │
    │ waiting for user │                        │        │   │    user     │                   │    User     │
    └────────────┘                                           └────────────┘
          ▲                ┌────────────┐         ┌────────────┐
          │   Details are valid │ Check entered │◀─User fills channel info─│  Channel  │
          │                │   channel   │                     │  creation   │
          │                │  details    │                     │   menu      │
                           └────────────┘                     └────────────┘
                                 │                                   ▲
                                                        ┌────────────┐   Invalid channel   ┌────────────┐
    ┌────────────┐              │                       │ Check for valid │──────────────▶│ Error: Invalid │
    │ Error: Invalid │◀─Details are invalid             │   channel    │                   │   channel    │
    │ channel details │                                 └────────────┘                     └────────────┘
    └────────────┘
```

File successfully sent