COMP 1531 Software Engineering Fundamentals

Submitted by:

Group W17A Camel

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# User Research & Planning

## 1 USER 1 INTERVIEW

### 1.1 ELICITATION

| Interviewee: | Tong Shen (Year 4, electrical engineering) |
| --- | --- |
| Email: | tong.shen@student.unsw.edu.au |
| Interview conducted by: | Caspar Chan |
| Interview Medium: | Email |

**What meeting software do you currently use, and who do you communicate to?**

I use Teams for most of the university lectures and projects. However, I also use discord to have casual meetings with my friends

**What do you like and hate about discord and teams?**

Discord:

Pros: It has very high customisations on characterising the user groups, channels and server bots. It also has a screen share function which makes it a useful meeting tool.

Cons: Discord can only hold video meetings by direct messages and manual invitations. Therefore, it is hard to use as a project meeting platform. Also, it has no recording function which the meetings cannot be saved for review. There is also a participant cap for a video meeting which is about 10.

Teams:

Pros: It allows for meetings to be recorded and a large number of participants. Also, you can easily find a person in the same university on teams by typing their zid in the search bar. Participants can browse the document while you are presenting it at the same time. Participants can also request control from the presenter which allows more interaction. There is also a funny feature to have thumbs up popping out.

Cons: It is laggy when browsing the files in the channels. It also has a low level of customisation which makes it less fun and entertaining for casual meetings.

**Do you think video calling is essential for a meeting platform? (Like do you prefer audio + screen share more than video meeting?)**

Video calling is definitely necessary as it helps people to feel more involved as everyone can see each other's face. However, some people do really hate showing their faces on the camera, so I think both options should be available.

**How often would you like to be notified of updates or new activities in a channel?**

When there is a announcement, voting poll or new messages. I want to have these notifications as soon as possible even when I am sleeping as sometimes there can be important updates.

## 1.2 USER STORIES

As a fourth year Electrical engineering student in UNSW who attend online classes and meet with friends daily, I would like to have a communication platform that has a high level of interactivity between participants and presenters without being too laggy.

I would also like the platform to be customisable, so that I can create different user classes and channel classes (such as admin only/ general)

I would also like to receive notifications as soon as possible to prevent missing important information.

**User acceptance Criteria:**

High interactivity:

1. Allows screen share
2. Allows the participant to browse the presenting documents while not affecting the presenters
3. Allows temporary control over the presenters
4. Allows participant to easily express their mood or response via simple emojis

High customisability:

1. Can have customisable user classes (owner / moderator / senior member / member)
2. Have different channel classes (admin only, tutor +admin only, all member)

Notification receiving:

1. Can send notifications anytime when there is an update in any channel
2. Can toggle and see which channel has an update and preview part of the updates without actually opening up the app

## 1.3 USE CASES

### 1.3.1 Case: Assign role to a member

| Case | Assign role to a member |
|---|---|
| **Case Detail** | Assign a new role X with specific rights to member Y in channel A |
| **Scope** | Channel module |
| **Precondition** | The user who assign member Y the role X has to be in a role that has the right to assign role (owner / moderator) |
| **Success Scenario** | |
| 1. User Z assign the member Y to a new user class role X<br>2. Member Y now has roles of: Member and role X<br>3. Member Y can now gain access to role X only channels and has the corresponding rights to modify the channel details | |
| **Failure Scenario** | |
| 1. User Z who is a member trying to assign member Y a new user class role X<br>2. Fail message returned as user Z do not have the rights to do so | |

### 1.3.2 Case: Share a Document

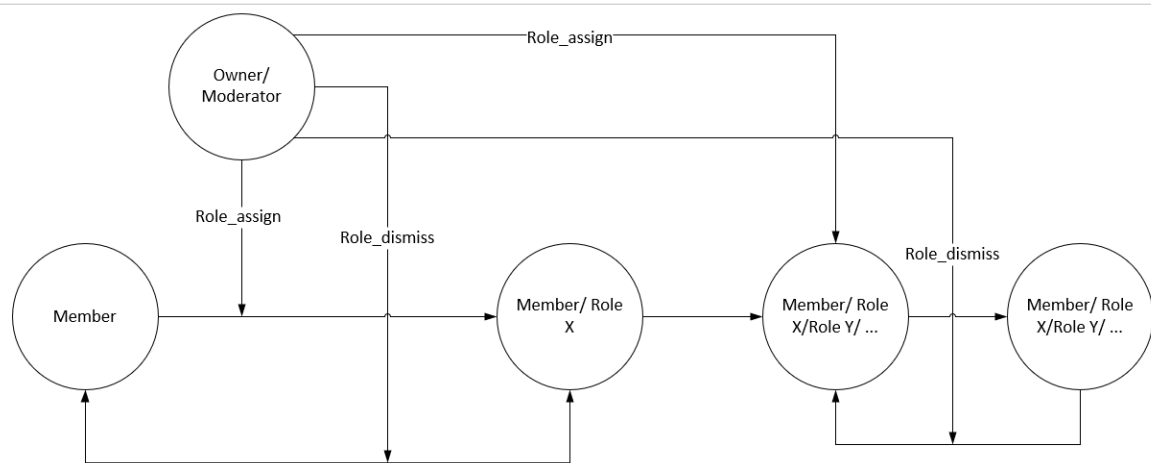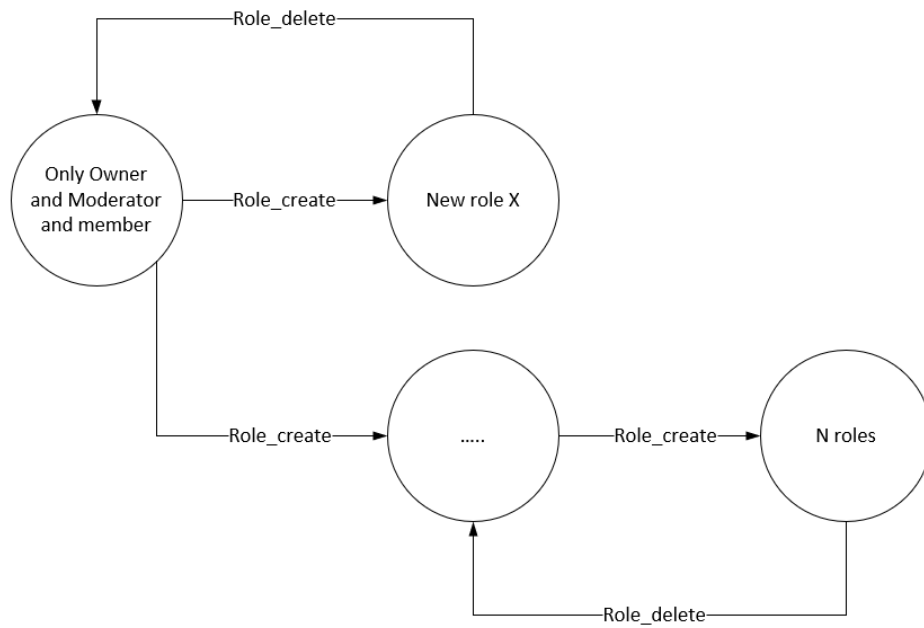| Case | Share document |
|---|---|
| **Case Detail** | Share document while allowing both presenters and participants to browse it without disturbing each other |
| **Scope** | Presentation module |
| **Precondition** | The one who share the document has to be the presenter |
| **Success Scenario** | |
| 4. Presenter A shared a document on a meeting | |
| 5. The document has a copied version on the participant end | |
| 6. The participants can browse the copied version while the presenter A is presenting | |
| **Failure Scenario** | |
| 3. Participant B who is not the presenter trys to share document | |
| 4. Fail message returned as A is presenting | |

## 1.4 VALIDATION

**Comment from Tong Shen:** The feature of toggling notifications to preview updates save me time to actually open the app as it is often so slow. The feature of assigning roles only by the owners and moderators prevents confusion in the server as people may add a lot of weird roles without any necessity, making the server messy. However, for the share document feature, there should be a function on the participant end like in Teams that the participants can sync to the page that the presenter is currently on. Overall great work.

## 1.5 INTERFACE DESIGN

| Function Name | Http Method | Parameters | Return Type | Exceptions | Description |
|---|---|---|---|---|---|
| role/role_create | POST | (token (str), role_name (str), permission_ids ([int]) | {role_id (int)} | **InputError** when:<br>- Role_name is empty or more than 100 characters<br>- Any of the permission_id does not refer to an existing permission<br>**AccessError** when:<br>- Authorised user is not a server owner or a server moderator | The owner or moderator creates a new role with given role name<br>Each permission id represents a corresponding permission such as renaming the channel or remove and add someone into the channel<br>After the role is created, a role id will be saved in the database |
| role/role_assign | POST | (token (str), role_id (int)) | {} | **InputError** when:<br>- Role_id does not exist<br>**AccessError** when:<br>- Authorised user is not a server owner or a server moderator | Assign the user with the given role |
| role/role_delete | POST | (token (str), role_id (str)) | {} | **InputError** when:<br>- Role_id does not exist<br>**AccessError** when:<br>- Authorised user is not a server owner or a server moderator | Delete the role with the role_id<br>If any user is assigned with the role, dismiss the users with the role |
| role/role_dismiss | POST | (token (str), u_id (int), role_id (str)) | {} | **InputError** when:<br>- Role_id does not exist<br>- U_id does not exist<br>**AccessError** when:<br>- Authorised user is not a server owner or a server moderator | Dismiss the user from the role given by the role_id |

## 1.6 CONCEPTUAL DESIGN DIAGRAM

# 2 USER 2 INTERVIEW

## 2.1 ELICITATION

| | |
|---|---|
| **Interviewee:** | Joseph Arackal |
| **Email:** | joseph.arackal@student.unsw.edu.au |
| **Interview conducted by:** | Shagun Panwar |
| **Interview Medium:** | Video Call – MS Teams |

**What communication tools do you currently use for collaborative communication at work or university?**

I use Microsoft Teams for both work and university learning. This includes, individual and group work and lectures, course content and collaborative projects.

**Have you used any other similar tools in the past? If so, what are they?**

Yes, I have used Slack, google meet and chat and Webex. I also used Discord for informal events such as community catchups or other social events.

**What is a drawback of these tools which you think could be improved?**

With Teams, I find that it's great for collaboration but the whiteboard sharing feature can be improved for live call collaboration. Also for calls with a large group of people or for documents with several people working on it at the same time, it can often slow down the platform which is inconvenient as changes are sometimes not saved. Also channels could be distinguished better and allow me as a student to customise the way it looks so that I don't get confused with my other courses. Sometimes if a person is online it may show their status as away, I think it would be helpful to always shows a person online when the application is open no their device rather than running in the background so that I know when someone is available to be invited to a call.

**With the example of MS Teams, what are you most frequently used feature?**

Most used feature at the moment is document collaboration for groupwork on assignments and also teams video calls. Other than this I would say I occasionally use the channel announcement and pin tools a lot to tag important deadlines that are posted by group members or lecturers.

**How do you feel that the functionality of a Platform like Teams can be improved in comparison to its competitor tools that you may have used in the past or currently use?**

Allow members to have more control over the notifications they receive. Sometimes I drop a course and I am not unenrolled from the teams chat and still get notifications. I want to be able to either block or disable all communications from that channel and hide or archive it easily. Something like Slack has this easily available for channels. I also use the same teams account for multiple things so it would be great to tag channels for stuff like course work, society work and professional work and group them and search them. I know something like Slack and Discord provide this functionality.

*NOTE: The following were follow on questions from the interviewees answers to previous questions*

**How do you distinguish between the different channels that you are a part of?**

Sometimes the lecturers upload a default image which helps to tell my channels apart but sometimes it set it so a default colour which often overlaps with other courses.

**What do you think about the functionality for channel members to customise their channels to suit their own needs?**

It would be great to customise my own channel images. I want to be able to set my own course images just for myself which displays when I open the channel and other people can set their own. I would also like for archive channels so that they don't display for me anymore to be easier.

**How important is an online status for you?**

I find this feature very helpful for groupwork especially for calls and would not use an application is this wasn't available. I would like for teams to be able to add more default status which have an associated colour to them to show when my team members are online. If all members of a channel are online in my team I also would like for that channel to show active without me having to check each member's availability individually.

**Would you want the status feature to be disabled by default if it was implemented in an application like Streams?**

No, my default I think it would be great to have it set to the status of the user but users that are online can set their status to different things, I would like to see something like online and busy similar to the default options in teams.

## 2.2   USER STORIES

As a student who uses Streams for university coursework, I want to be able to archive channels so that they do not appear active for me on my streams after I finish a course.

- Given that I am a member that wishes to archive a channel,
- When I select a channel
- Then I should be provided an option to set the channel to archived

As a student, who has archived a channel, I want to be able to set the channel as active again so that I can access all messages in the channel again.

- Given that I am a student that has archived a channel
- When I want to activate the channel again
- Then I should be able to search for all archived channels and select which ones I want to activate again

As a student who has archived a channel, I want to have all notifications for this channel turned off until it is active again so that I am not notified of any activity.

- Given that I am a member that has archived a channel
- When the channel is archived
- Then I should not be notified of any activity in the channel until I set the channel to active again

As a channel owner, I want to be able to archive a channel for all members so that member so of the channel can no longer engage with the channel

- Given that I am a channel owner
- When I archive a channel by selecting the archive options
- Then all members of the channel should have the channel archived so that they can no longer engage with it
- When a channel owner archives a channel
- Then members no longer get the option to activate channels again

As a student enrolled in multiple courses, I want to be able to upload custom images as channel images, so that I can distinguish between channels easily.

- Given that I am channel member
- When I call channel upload photo function
- Then I should be able to upload a photo for the channel that only I can see
- When there is an existing channel image
- Then I should be able to replace this with my custom option that only I can see

- Given that I am a channel owner
- When I create a channel without any channel image
- Then a default channel image will be assigned

As a student using streams for groupwork calls, I want to be able to see availability status of members in my channels, so that I can start calls with online members.

- Given that I am a member of streams
- When I am logged into streams
- Then I should have an active status that all streams members can see

- Given that I am a member of a channel
- When I am viewing all members of the channel
- Then I should be able to see the availability status of members in the channel so that I can start a call with active members only

As a user of streams, I want to ensure that only members that are online can be added to an active standup call, so that offline members are not disturbed.

- Given that I am a member of streams,
- When there is a standup call and members need to be added
- Then only online/active members can be added

## 2.3 USE CASES

### 2.3.1 Case: Active User status

| Case | Show active status for users logged in |
|---|---|
| **Case Detail** | Assign active status to all members of teams, if a members is not logged in then the status is offline. If they are online then this will be set to active and if they are in a standup then this status is busy. |
| **Scope** | Users and Standup Modules |
| **Precondition** | The users is an authorised member of streams and they are registered. |
| **Success Scenario** | |

| Case 1 |
|---|
| 1. User logs into Streams |
| 2. User's status is now changed to 'online' |
| 3. When a user navigates to a channel that they are part of, to view all members, they will see the status of all members as either online, offline or busy |
| 4. When a user joins a standup their status should change to busy |
| 5. When a user leaves a standup their status should be online |
| 6. When a user logs out of Streams their status should change to offline |

| **Failure Scenario** |
|---|
| 1. User is not an authorised member of Streams |
| 2. The User is trying to view the active status for channels that they are not a member of |

### 2.3.2 Case: Upload channel image

| Case | Upload channel image |
|---|---|
| **Case Detail** | Allow channel members to upload channel images that only they can see. When a new channel is created then the channel owner can assign a channel image which can be overwritten by members for their own custom images. If there is no image uploaded a default is assigned. |
| **Scope** | Channels Module |
| **Precondition** | The user is a registered member of teams, is logged in and is a member or channel owner of the channel they wish to upload images in. |
| **Success Scenario** | |

| **Case 1** |
|---|
| 1. User logs into Streams |
| 2. User selects a channel to upload an image |
| 3. User calls channel upload image to set a custom image for the channel that only they can see |
| 4. A channel image is now assigned and only the user that uploaded it can see it while all other members see the preset default image |
| |
| **Case 2** |
| 1. User logs into Streams |
| 2. User creates a new channel and is a channel owner |
| 3. User sets a channel image which all channel members can see |
| 4. Channel members can overwrite this channel image so that they have a custom image |

| Failure Scenario |
| --- |
| 1. User is not an authorised channel member when changing the custom channel image<br>2. User is not an authorised channel owner when setting the default channel image that all members see when joining the channel<br>3. User should not be able to change another channel member's chosen channel image |

## 2.4 VALIDATION

**Feedback:** Overall the user stories capture the aims of what I would like improved for functionality in a tool like Streams. The only modification I would make is that only active members can be included in stand up calls so that offline members are notified and therefore disturbed that I one are where I found Teams in unable to cater for. Otherwise overall good requirements.

**Actions**: A new criteria and user story was added to reflect this feedback from the interviewee

## 2.5 INTERFACE DESIGN

| Function Name | Http Method | Parameters | Return Type | Exceptions | Description |
|---|---|---|---|---|---|
| Channels/upload_photo | POST | (token, name, channel_id,u_id) | {channel_id, profile_img,url} | **InputError** when:<br>- The img url is https<br>- The image is not a jpeg image<br>- Image is larger than 100 x 100 | When a user joins a channel, they have the option to upload a custom channel image for each channel. Only the user that upload the image for the channel is unable to see this, no other users including the channel owners are not able to see this image. |
| Users/status | POST | (token) | {status} | **AccessError when:**<br>- A user who is not part of a channel wants to see the active status of all members in a channel<br>**Input error when:**<br>- User tries to add an offline member to a standup | When a registered user logs into streams, then their status must show up as online. If a user is part of a channel or dm, they should be able to see that active status of all members in the channel or dm. When users are in a standup their active status must display as busy. When a user logs off, their status must be set to offline until they log back in again. The active status needs to be return as part of users/all when called. |
| Channels/channels_create_upload_photo | POST | (token, name, is_public, img_url) | {channel_id, profile_img,url} | **InputError** when:<br>- The img url is https<br>- The image is not a jpeg image<br>- Image is larger than 100 x 100 | When a user creates a channel, they can upload a custom channel image that all users will see when they join a channel. If no image is uploaded, a default is set. Both the image uploaded by the channel owner and the default can be overwritten on a user level with a custom image using the channels/upload_photo function. |

# 3   1   USER 3 INTERVIEW

## 3.1   1.1   ELICITATION

| | |
|---|---|
| **Interviewee:** | Phoebe Volpes (Second Year, Communications) |
| **Email:** | Phoebevolpes6@gmail.com |
| **Interview conducted by:** | Marcus Thomas |
| **Interview Medium:** | Messenger |

**What current teamwork-communication services do you use?**

Microsoft teams

**What is your main purpose for using these services?**

I mainly use it for uni, particularly in groups tasks and assessments.

**What problems do you experience whilst using these services?**

Uploading large files and downloading them has been the biggest issue.

**What features do you find are hard to work with/difficult to understand?**

I'm just horrible at operating Microsoft teams so all of it especially when it comes to channels and groups and like what is seen and what's hidden. I'm hopeless with teams.

**What features do you believe the services do well and how do they make communication easier?**

A great feature is how documents and anything you need to upload is stored and it is quite easy to get hold and communicate with group members.

**If you could change anything about the current services, you use what would you do?**

To be honest, I have no idea because I don't use it on a everyday basis and only use it for some uni subject not all and when it comes to group tasks the files and documents are stored there but we mainly do our communication through other devices like Facebook.

**Are there any further suggestions you would like to make?**

I don't think I have anything else to say

**Can you possibly expand on your answers to questions 3 and 4?**

Sure. Well for me I must make a lot of videos and create a lot of content and when it comes to uploading files takes what feels like 10 years and same with downloading files even documents. Well in teams for me when lecturers create the teams' channels, they are all hidden, and you must click on the boxes to access them which I didn't realise for a long time. I just thought that I didn't receive anything but that's just purely on the fact of I'm horrible at using teams unless it's a group conversation. I kind of really don't like using teams unless it's communicating to a group or just to store certain files for assessments. However, the one thing I don't like that I've had to deal with is

submission through Microsoft teams for assessments it's painful, a nightmare, takes forever and overall, a very stressful situation, so that is one thing I don't like about having teams. The possibility of a subject or a lecturer deciding to submit through teams.

**Why is submitting files a stressful situation?**

I just get stressed because it takes time and if there is a time limit or something needs to be uploaded by a specific time and it's taking forever it becomes stressful. Also like I said I'm hopeless with teams so it's just stressful for me to use anyway.

## 3.2   1.2  USER STORY

As a second year Communications student in UTS who attends in person classes, online classes and interacts with peers on a regular basis, I would like to have a communication platform that has a efficient connectivity between users allowing for ease of transfer of files and documents between students, with the ability to restrict access to certain groups. Furthermore, I would like a higher level of organisation which allows the communication of events to myself and others, such as deadline notifications and warnings.

**User acceptance Criteria:**

File transfer:

1. Allows the transition of files and documents between users
2. Allows participants to access the same files/documents live, communicating edits live to other users
3. Have backups of most recent files temporarily stored
4. Allows files to be stored in specific channels
5. Can restrict the access of files to specific members and channels

High Organisation:

1. Have personal calendar and group calendar
2. Allows the marking of specific dates and times on the calendar

Notification receiving:

1. Can enable deadline notifications to alert the user at a specific time interval
2. Allows channels to give channel wide alerts on upcoming events.
1. User Z imports a file into channel Y
2. File X is now available for viewing and downloading by members of channel Y
3. Members download file X

Failure scenario:

1. User Z who is a member of the channel trying to import a file
2. Error message returns to user as they are trying to import files without channel owner permission

## 3.3    USE CASES

### 3.3.1    1.6.1    Case: Mark calendar

| Case | Mark calendar |
|------|---------------|
| **Case Detail** | Access a channel calendar and mark a date and time |
| **Scope** | Channel module |
| **Precondition** | The user who accesses the channel calendar must be a member of the channel |
| **Success Scenario** | |
| 1. User A accesses the channel calendar<br>2. The user marks a specific date and time on the calendar<br>3. Members of the channel can view that specific calendar event | |
| **Failure Scenario** | |
| 1. User B who is not a member of a channel attempts to access a channel calendar<br>2. Error message returned as user has input a channel, they are not a part of. | |

### 3.3.2    1.6.2    Case: Transfer a file to a channel

| Case | Transfer file to a channel |
|------|----------------------------|
| **Case Detail** | Import a specific local file X into channel Y |
| **Scope** | Channel module |
| **Precondition** | The user who imports local files X must be a member of the channel with channel owner permissions |
| **Success Scenario** | |
| 1. User Z imports a file into channel Y<br>2. File X is now available for viewing and downloading by members of channel Y<br>3. Members download file X | |
| **Failure Scenario** | |
| 1. User Z who is a member of the channel trying to import a file<br>2. Error message returns to user as they are trying to import files without channel owner permission | |

## 3.4    VALIDATION

### 3.4.1
**Comment from Phoebe Volpes:**

I like that you can share files with others, it is always useful when doing group work to be able to share what I have done with the other people in my group. I mainly work with small groups of other students so I am not sure if restricting the ability to add files to only people with permission is specifically helpful to myself, I guess it would be helpful for tutorials and lectures. Having a calendar is a great idea, I always like to stay organised and being able to do that in the same place I organise meetings with my groups is great, and letting my group see the events I mark in the calendar is helpful. The notification system is good for me as I always struggle with deadlines, especially with slow internet and having to submit documents, if these alerts could come in another way maybe like an email or text message that would be even better.

## 3.5    INTERFACE DESIGN

| Function Name | Http Method | Parameters | Return Type | Exceptions | Description |
|---|---|---|---|---|---|
| channel/ files_ava ilable | GET | (token (str), channel_id (int)) | [{file_id (int), file_typ e(int)}] | **InputError** when:<br><br>- Incorrect Channel_id<br><br>**AccessError** when:<br><br>- Authorised user is not a member of the channel<br>- Authorised user does not have channel owner permissions | A channel owner opens a list of files that have been submitted to the channel from channel owners, each with a corresponding id to the specific file and a file_type which represents the type of file stored. These files can be viewed and downloaded. |
| channel/ files_imp ort | POST | (token (str), channel_id(i nt), file_type(int )) | {file_id (int)} | **InputError** when:<br><br>- Incorrect Channel_id<br>- File size is over the size limit<br>- Incorrect file_type<br><br>**AccessError** when:<br><br>- Authorised user is not a member of the channel<br>- Authorised user does not have channel owner permissions | A channel owner imports a local existing file into the channel which creates an associated file id and assigns the file type, which is provided, this is stored in the list of files in the channel. |

| channel/ files_delete | DELETE | (token (str), channel_id(int), file_id(int)) | {} | **InputError** when:<br><br>- Incorrect Channel_id<br>- Incorrect file_id<br>- There are no files to delete<br><br>**AccessError** when:<br><br>- Authorised user is not a member of the channel<br>- Authorised user does not have channel owner permissions | A channel owner deletes a channel existing file which removes its existence from the channel and therefore prevents it to be called in the file function no longer allowing viewing or downloading of the file. |
|---|---|---|---|---|---|
| channel/ file_retrive | GET | (token (str), channel_id(int), file_id(int)) | {file_type(int)} | **InputError** when:<br><br>- Incorrect Channel_id<br>- Incorrect file_id<br>- There are no files to retrieve<br><br>**AccessError** when:<br><br>- Authorised user is not a member of the channel | A channel member retrieves a selected file from a specific channel |

## 3.6    CONCEPTUAL DESIGN DIAGRAM