ECE1778
Final Report

Word count: 1937

Programmers: Michael Wang, Xinyi Yuan
Specialist: Hsiang-Huei You

Introduction

A user researcher's job is to understand who the users are, what they need and want, and what issues they face. They do this by conducting various types of user research. The most common user research method is an interview which consists of defining the criteria of the user, finding users, scheduling times with users, conducting the interviews while recording and taking notes, and reviewing the recordings when organizing and analyzing the data.

During this interview process, the most frustrating part for the researchers is finding specific information from the recording. The length of an interview typically ranges from 15 minutes to an hour. The longer the interview is, the more effort required for researchers to go through the recording to find a quote from the participant. To address this, our software InterviewLog solves this issue by providing an annotation feature to help researchers mark sections that are meaningful to the interviewer.

Furthermore, user researchers often work in teams with designers, developers, or several user researchers. Meaningful collaboration in this context is often difficult. Team members might transfer their notes in ways that are easy to misplace, or annotate their interviews in different formats, exacerbating existing difficulties that already exist in team environments. InterviewLog solves this issue through its collaborative approach allowing users to add their teammates to work with them. People who are added to the team can view recordings and make comments in the same place. This will make sharing recordings more easily, facilitate team work, and enable user researchers to gain feedback from each other.
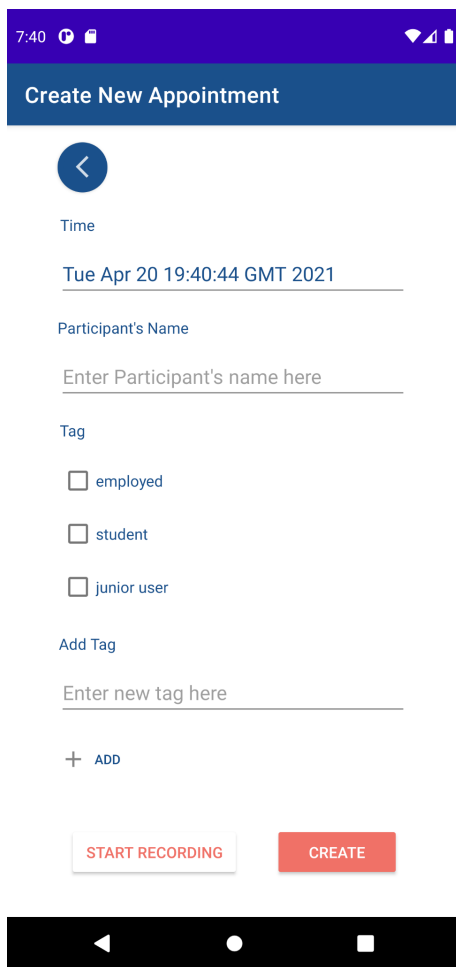
Statement of Functionality

InterviewLog's eight pages are outlined here.

Interview Scheduling (image 1)
- Schedule an interview by indicating:
    - the time
    - the name of the participant
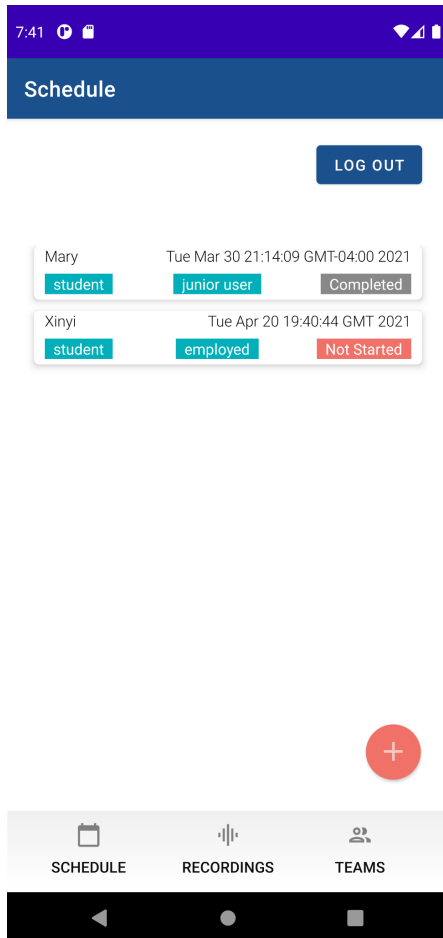   - tags that describe the participant.

(image 1)

Schedule Page (image 2)

- Events will appear on the schedule page.
- Each event will show a status:
    - "Completed", "Not Started".

(image 2)

Recording Page (Image 3)

- Start/Stop a recording
- add annotations to note meaningful sections of the interview

(image 3)

My Recordings (Image 4)
- Recordings will appear after the user 'stops' and 'saves' the interview

(image 4)
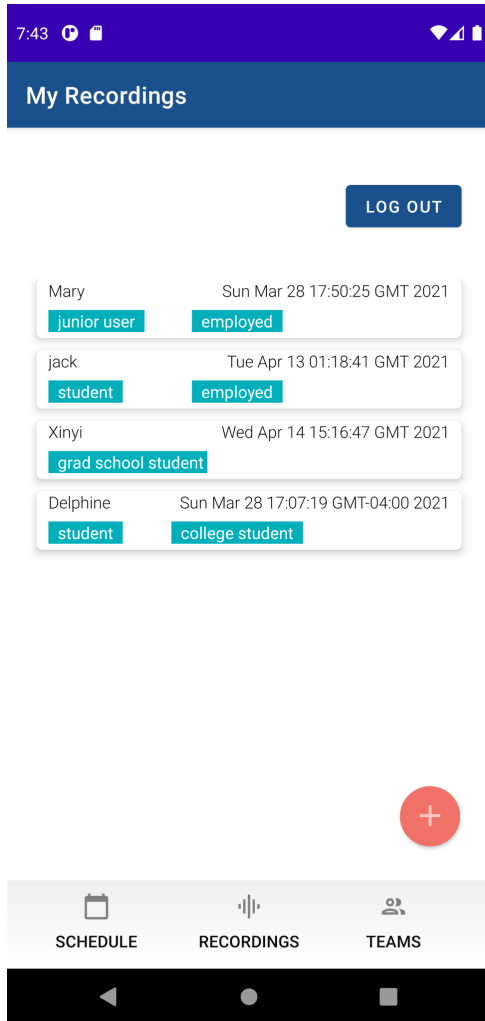
Recording Page (image 5)

- when you click on one of your own interviews it takes you to this page
- you can view the annotations added, and add more annotations.
- Clicking on one of the annotations will take you to the timestamp referenced

(image 5)
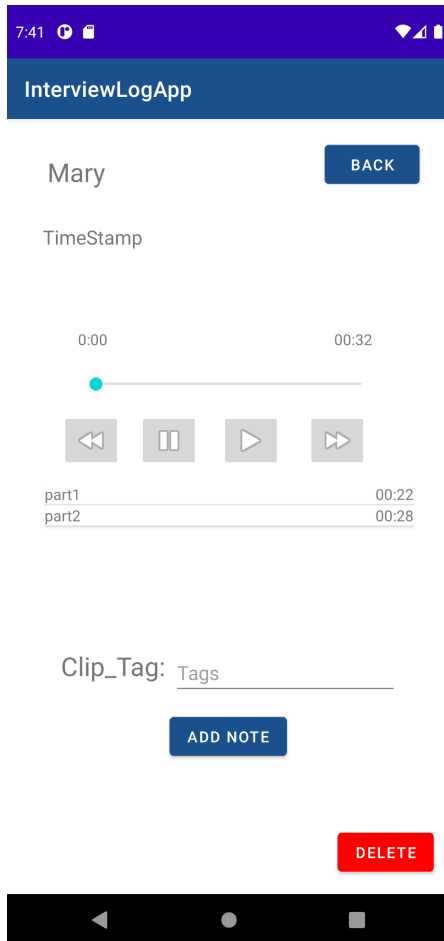
Team Management (Image 6)

- Add or remove collaborators

(Image 6)

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Member Information

BACK

Members

Michael   DELETE

Delphine   DELETE

Enter userID   ADD MEMBER
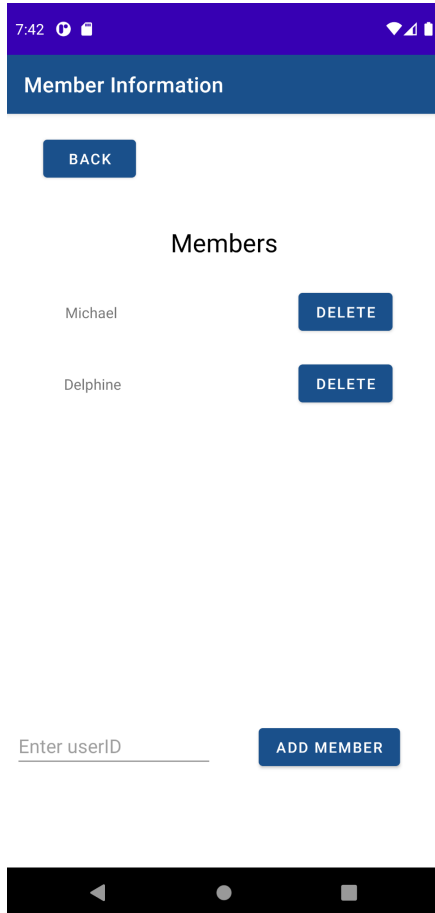
Team Recordings Page (Image 7)

- Collaborators can view your recordings on the team recording page.

(image 7)

7:47

Team Recordings

Team Name: Interview Study   LOG OUT

| Delphine | Sun Mar 28 17:07:19 GMT-04:00 2021 |
| student | college student | by: Delphine |

| Mary | Sun Mar 28 17:50:25 GMT 2021 |
| junior user | employed | by: Delphine |

| Xinyi | Wed Apr 14 15:16:47 GMT 2021 |
| grad school student | | by: Delphine |

| Mary | Tue Mar 30 21:15:01 GMT-04:00 2021 |
| student | junior user | by: Michael |

| jack | Tue Apr 13 01:18:41 GMT 2021 |
| student | employed | by: Delphine |

SCHEDULE   RECORDINGS   TEAMS

Playback; Collaborators view (Image 8)

- This page shows when a collaborator views another user's recording
    - They can comment via text or speech-to-text.
    - Comments will be tagged to the current playback time when they are saved
    - Clicking on a comment will take you to the timestamp it references

(image 8)

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Replay

BACK

0:00	00:31

◀◀ ⏸ ▶ ▶▶

1	00:11
2	00:24
3	00:27

Michael   00:00 talk slower

Comment   🎤 ▷

◀ ● ■
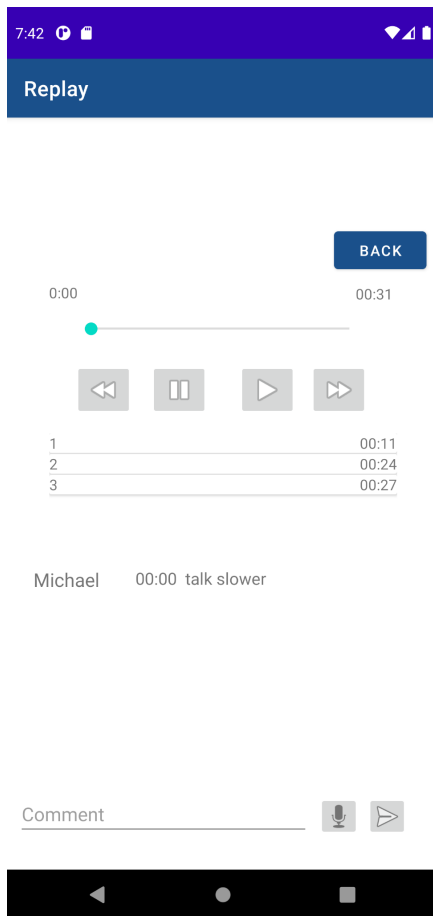
Each feature shown above works as we expected.

Engineering Block diagram
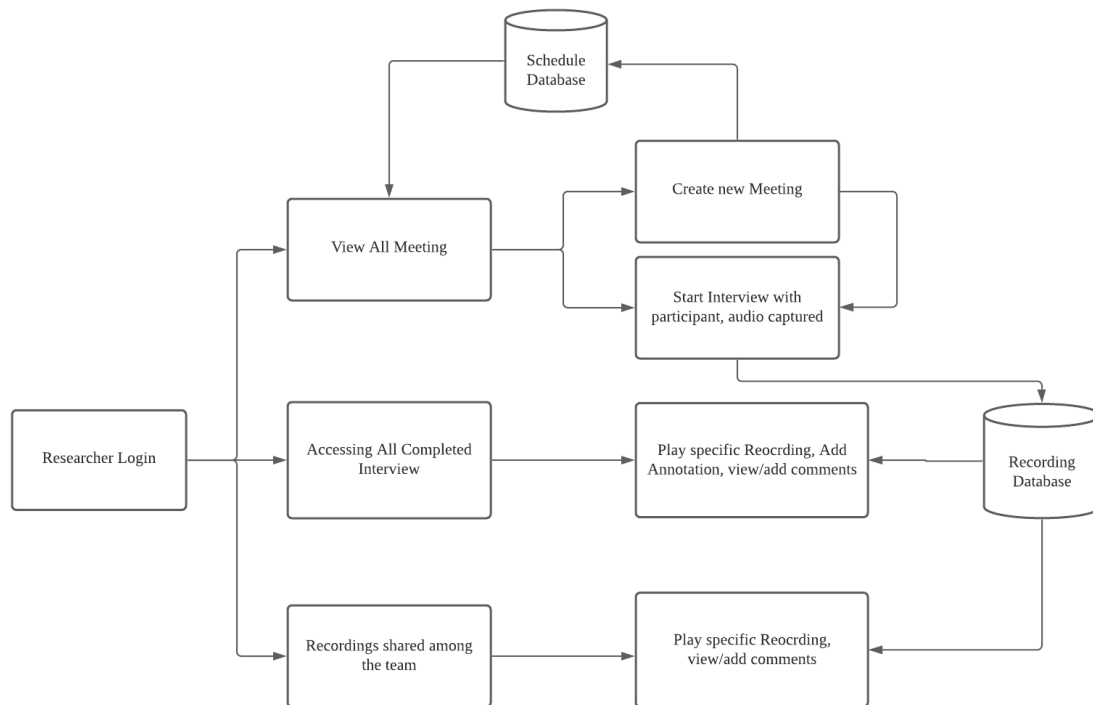
First interface is a login page, it is connected to Firebase Authentication. The system generated user id is also stored with other user information in the database. We also store other identifiers for future use, for example, to identify if the user is a senior or junior researcher.

Once logged in, there are three main interfaces:

1. Scheduled meetings: Under this panel, it is connected to the scheduled meeting database and displays all the appointments made. The panel will extract all the recorded scheduled meetings made from the researcher. It will also be able to create new meetings and update the database. Once the meeting is created, it can bring the researcher to the recording page. The recording is saved under a recording database. Researchers can add annotations along the way.
2. All Completed Recordings: This page will retrieve all completed recording and its information that belongs to the researcher that is logged in. Researchers can also go to the specific recording, replay, and add annotation.
3. Team Shared Recordings: This is where recordings that are shared among the team are. There is the access to team button to view and add/delete team members. Once a team member is added/deleted, it will adjust the shared

recording database to reflect the changes. Only the recording ids that are accessible to the group will be extracted from the recording database and displayed here. Once the user clicks on a specific recording, it will bring the researcher to the replay panel. At this page the researcher can view all the comments made either by the researcher or other researchers, but not be able to add annotation.

Reflection

Specialist:

1. Project management: This project has taught me about project management. It's important to balance between the time we have and the features we want, and then prioritize the features accordingly.
2. Working with programmers: It is a great experience working with programmers. I learned about the structure of our app and how the features are made.
3. Presentation: I learned a lot from the presentations. Listening to how other groups tell great stories helps me improve my presentation skills. The feedback from the professor, TAs, and classmates is very useful, which helped me understand which parts are too vague and allowed me to think from the audience's perspective.
4. What would I do differently: If I could start over the project, I would do more thorough user research at the beginning to gain more insights on what user researchers need. I would conduct more interviews with user researchers about the obstacles they encounter at work. This way, I will have more ideas on what I can offer to them.

Programmers:

As programmers, we learned how to create detailed structures before making activity pages. We have to plan on the database and interface structure before starting coding. This will help distribute the work and plan the schedule properly. We also learned how to keep the balance between what we can do and what the specialist wants. Sometimes, there are some functions that specialists hope we can create. However, these functions are out of our ability or the scope of this course. Thus, we need to have meetings and discuss before we reach a consensus. Lastly, I learned to keep the code clean and easy to merge. This will make version control easier and also make the code to be easily debugged.

If we were to do this project again, we would do more research to work on more functionality. On the proposal, we planned on converting the audio to text. However, until spiral 4 of the projects, we could not find the proper API for this function. Thus, we had to give up. If we could do this project again, we could conduct more research and create this function.

Contribution by Each Group Member

Specialist - Delphine You

1. Survey
    a. I created a survey and gathered 15 detailed responses.
    b. All 15 respondents have the experience of interviewing with participants.
        i. 9 of them often work as a team
        ii. 11 of them usually record the interview
        iii. 12 of them are interested in getting feedback on their performance
    c. The data suggests that the features are in demand for the target users.
2. Design features and interfaces
    a. I brainstormed the features, discussed with programmers to narrow down, and then designed the interfaces and the logo of the app.
3. User Acceptance Testing
    a. I conducted UATs with 3 user researchers.
    b. All of them were able to intuitively use the application.
    c. Users indicated that they love the "add notes" and "comment on recording" features.
4. Test prototypes:
    a. I assisted programmers to test the prototypes and reported the issues I found.
5. Prepare presentations:
    a. I created the slides and content for the presentations.

Xinyi Yuan

Xinyi Yuan mainly worked on the function related to audio including recording the audio, saving the audio to the database, and replaying the audio. Xinyi Yuan also worked on the function that users can make notes when the audio is being recorded or being replayed.

The note label will be properly displayed on the recording interface and the replay interface. Xinyi Yuan also worked on the function of commenting the audio including letting the user type in the comment or covert speech of the comment to the text comment. Also, all the comments will be saved to the database and display properly on the replay interface.

Michael Wang

Michael built the front login page as well as creating user database/authentication. Then, he worked on building three main interfaces, schedule, recording and team shared recording page, which includes layout and connecting pages between each page and its sub features. He also built the create appointment and team sharing feature. Under creating appointment page, there is the adding tags feature in real time to associate with the interviewee. Team features include the list that controls the access to the shared recording. He also built and created three databases to proper write/read data that feeds into each interface.

Specialist Context

The app helps user researchers in three ways:

1. Organizing interviews: The app provides a schedule page for user researchers to see all the upcoming interviews with the time and participants' information on it. This will allow researchers to better manage the meetings. Moreover, recordings will be saved under participants' names, which is very convenient for researchers when organizing the recording files.
2. Finding information: The "adding notes" feature allows user researchers to find the information needed from recordings. They can add notes that indicate the time when each interview question happens. This way, when they are trying to find the reply to one question, they can find it more quickly based on the notes.
3. Facilitating teamwork: The team feature creates a co-working space which enables user researchers to see all the recording files from other team members and comment on them. Researchers can provide feedback on each other's performance during the interview.

Before InterviewLog, user researchers used a plethora of applications for organizing the interview times, participants' information, and recording files. Now with InterviewLog, everything is stored in one app, which makes it easier for user researchers to manage

the interviews. User researchers don't currently have a proper way to share the recordings with collaborators, but InterviewLog solves this problem by creating a space for team members to work together.

Future Work

For our future work, we will focus on three main features:

1. Turn audio files into transcripts: During interviews, it's hard for researchers to type every word participants say. As a result, when researchers are analyzing the data, they often need to replay the recordings to make the data more complete. However, it is very time-consuming to replay the recordings. This feature will solve this problem for the researchers so that they can just read the transcript and find the information needed instead of listening to the entire recording.
2. Desktop version: When researchers are conducting interviews, they often follow a script that includes the questions they want to ask and what they want to say. Since researchers usually look at their scripts on their laptops, allowing them to record interviews on laptops will be more convenient so that they don't need to switch between their laptops and phones.
3. Video chat: We want to apply the app to more scenarios to increase its usability. Aside from interviews, we also want to include usability testings when it's important to record the screen. Adding "video chat" will enable researchers to conduct usability testing and record the video.

State if OK or not to post each of the following on the Course Website

	Michael Wang	Xinyi Yuan	Hsiang-Huei You
i. Video of final presentation	Yes	Yes	Yes
ii. Report	Yes	Yes	Yes
iii. Source code	Yes	Yes	Yes