



Got IT!
Final Report
Seng 310

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Imagine Dictations

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1.0 Problem Description

For years, brainstorming has been integral part of the creative process. In grade school, students are taught to work together. A lot of these sessions yield excellent ideas, but many are forgotten because no one is taking notes. Students and professional teams need a way to record and manage their ideas in an unobtrusive way.

There exist a few solutions to this problem, but each is flawed in its own way. The first is hiring a note-taker, this is effective for large businesses but is too costly for small businesses and students. The second is using voice recorders, but the information is often useless due to a lack of organization. The final and most common solution is having a member take notes, but this excludes that member from the meeting.

Our proposed solution combines each of the existing methods. A digital note taker that transcribes and organizes topics and ideas. This removes the cost and burden of hiring or assigning someone to take notes, and increases the value of meeting data by organizing it effectively. With this solution meeting attendees can start the application and only focus on ideas. This app is called **Got IT!**

2.0 Proposed Solution: Got IT!

Got IT is a voice powered software that records and transcribes entire meetings. Additionally, the app also organizes collective ideas into relevant combinations to allow fast review after meetings.

2.1 Voice-to-Text

The cornerstone of the app is its transcription. The user is only expected to start the recording, after, they can focus solely on their colleagues and ideas. Furthermore, the app displays what was said for the user to review in case they miss part of a meeting.

2.2 Idea Organization

The app allows a user to view full transcripts, but also provides an abridged version for quick review of the topics that were discussed. Our team's hope is that visualizing the ideas not only reminds the user of what was said, but also helps them combine and create better ideas. These ideas can be reorganized and shared by users.

3.0 Main Personas

This section describes our two main personas considered during the creation of Got IT and the main scenarios they appear in.

3.1 Connor in Uvic Engineering



Figure 1-Connor on Vacation in Montreal

Connor is a 19 year old male at the University of Alberta, working for a degree in Software Engineering. Many of his classes have group projects. As such, he has become accustomed to brainstorm sessions and developing ideas in his teams. However, Connor has a learning disability, making it especially hard for him to focus on his teammates ideas and build his own. He typically tries to write down what others are saying, and get copies of all the notes that were taken during meetings. Often, not all key ideas are written down; they are only spoken, and so he struggles to stay in tune with his colleagues. This leads to him being both frustrated with himself and his group members, as he feels excluded and that he is not contributing as much as he should be. Connor uses Got IT to easily recording entire sessions so he can re-read them later to ensure that he has not missed any important details, as well as focus on helping his team rather than frantically copying down notes.

Connor represents a major user group we are targeting: collaboration in academia. During our user testing phase, our team found that a majority of the user base would find

this app useful in academic environments. He also represents a common disability many people in academia face: attention deficit disorders. With this in mind, we designed the app to be very easy to operate and use minimal options to allow Connor and people like him to not become distracted but rather focus on their team collaboration.

Scenario:

Connor meets his team to start brainstorming. They need to come up with an idea for an app for their human computer interaction class. Before they begin, Connor unlocks his iPad and opens the app. He sets it to record while the group discusses the app and its various features. They talk for about an hour and forget the iPad is there, as it was covered with a piece of paper. As they are cleaning up, they find it and turn off the recording. Later in the evening, Connor opens the app and reviews what was talked about. Certain ideas are grouped together and separated as per their topic. Connor reads through the topics and adjusts some of the individual ideas as they were categorized incorrectly. Afterwards, Connor sends a copy of the idea sheet to his other group members.

This scenario outlines Connor using the app to review what was said in his meeting. He re-reads the whole script so he can get a clear context of all the ideas that are in the condensed version, which helps him remember everything, despite being unable to focus heavily during the meeting.

3.2 Frank in Downtown Vancouver



Figure 2- Frank at his startup, Lost World

Frank, 36 years old, works as the manager of a small startup company in downtown Vancouver that uses agile development. The company is too small to afford a large number of staff members to effectively control meetings. He makes \$95,000 annually but is stressed due to the additional amount of time he spends reviewing and re-discussing issues at the company. Due to the fast-paced agile development, Frank does not have large amounts of time to invest in learning new complicated systems or working on maintenance heavy systems. Frank hosts official meetings with his entire team for a few hours every week. The team consists of 5 people, excluding Frank, and the meetings tend to cover many different issues. Frank's team is small and inexperienced in recording minutes, making it difficult to efficiently conduct meetings and remember them afterwards. With no-one skilled in note-taking, it normally ends up with a patchwork set of notes taken by everyone in the office. Frank wants to replace the current system with one that would allow him to effectively take comprehensive notes on all meetings without having to hire or train anyone.

Frank represents the third largest age demographic from our research. Frank represents our core user, the business user, who uses the app in professional meetings. The main use Frank would have is the group note-taking feature for his team meetings. His difficulties in finding note takers are also a reflection of our findings.

Scenario:

This week Frank and his team start the application, begin recording, and start the meeting. They go through the meeting as usual without anyone minding the application. Afterwards, George wants to go over one of the issues raised at the beginning of the meeting. Frank and George use the application to access the recorded notes for the meeting, find the specific notes for that issue, and then review the transcript for the same before returning to their other tasks.

4.0 Prototype Evolution

The following section outlines the evolution of the Got IT app from paper prototypes to its high fidelity version. Each of the different prototypes will be described briefly, and be used to walk through our use case for creating a room and recording a memo. This use case can be seen in appendix C.

4.1 Paper Prototypes

When we were coming up with ideas to design Got IT, we decided to sketch some of our ideas to convey the conceptual model to other members of the team. An example of one of these prototypes is shown in figures 3 and 4. Once we reached mutual agreement on

the look of the application, our team moved to the next stage of the process and created a low fidelity prototype on the computer via Balsamiq. Some aspects of the design were changed along the way.

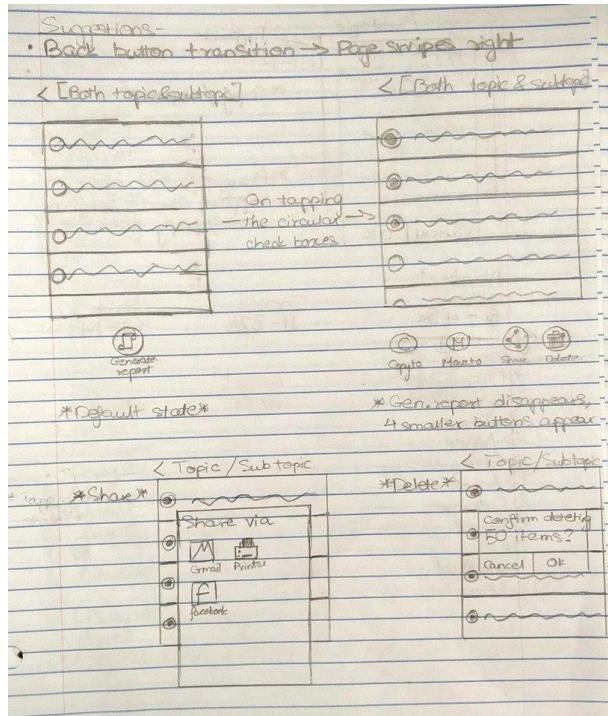


Figure 3- Early Mockup of Idea Revision Screen

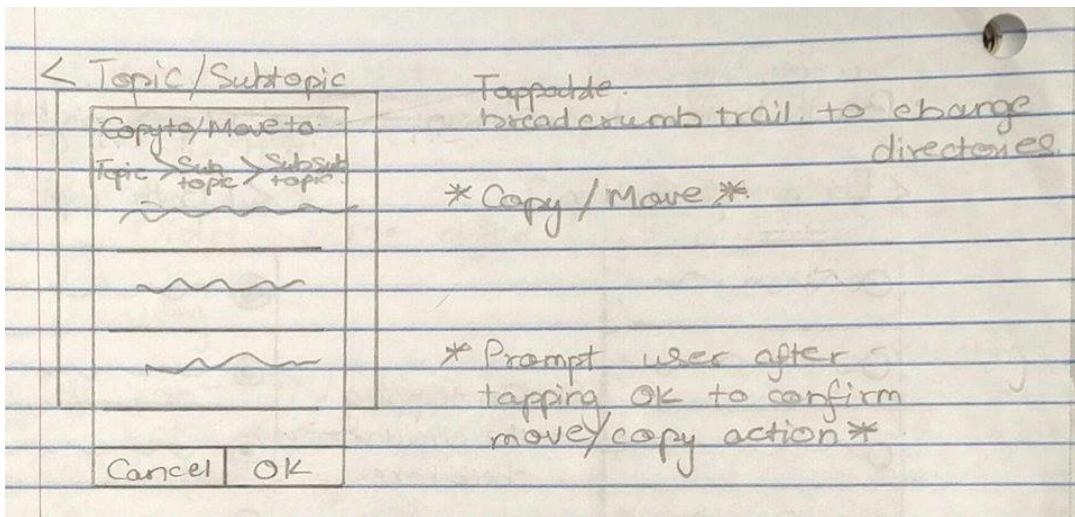


Figure 4- Early mockup of Idea Reorganization

4.2 Low Fidelity Mockup in Balsamiq

Our team opted to use Balsamiq Mockups to create our second set of prototypes. It solidified our decision to use tabbed navigation, which we later validated with cognitive walkthroughs.

4.2.1 Home Screen

The home screen represents step 1 and 2. The user would open the app and be immediately presented with the home screen. The user would tap the “Create a new room” button since the room is to be joined by other people.

Our main motivation for this design was to allow the user to access all core features of Got IT from the main screen which is visible in figure 5. The user would be able to create a private memo via the record button, join existing public rooms via the join button, or create a public room via the create button. Immediately, we found that having the record and create buttons confused users, as they were not sure what the difference between the two options were. Also, this design did not have an aesthetically pleasing presentation. Our team decided that the homepage should be revised in the next iteration.

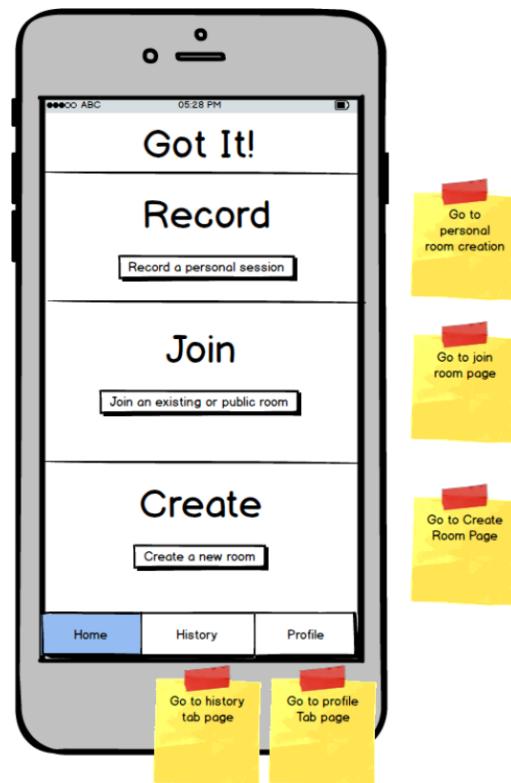


Figure 5- Low fidelity home screen

4.2.2 Room Record Screen

The room record screen represents steps 4, 5 and 6. Once the user enters a room name and password on an intermittent page (not shown in this prototype), they would be greeted with the page shown in left image in figure 6 .The users would have to tap the microphone button to begin recording. If more users want to join, the room creator would have to accept the requests manually as shown in the right of figure 6. From there onwards, the user would be free to begin recording their session.

Once the user chose to record, join or create, they would be taken to the room record screen, which is seen in figure 6. This screen featured a message log with what had been said by other people in the room, as well as what the user said, along with timestamps and a menu for additional options (such as removing users and ending the session). Our team decided to use a large microphone as the record button which would turn red if recording was in progress. These decisions were made since microphones and red are common recording signifiers in multiple other applications.



Figure 6- Low fidelity room record screens

A room owner would also be prompted if a new user tried to join as seen in the figure above. The main criticism our team found with this design was that the owner would become inundated with join requests should a large amount of people want to join. To combat this, our team implemented a more common password system to prevent malicious users from entering chatrooms. Otherwise, the simplicity of this page was praised and mostly stayed the same throughout design (excluding minor aesthetic changes).

4.3 Cognitive Walkthrough

After designing our low fidelity prototype we exchanged our prototype with Studious Fish's. We performed cognitive walkthroughs on each other's prototypes and took their advice into consideration when designing our medium fidelity prototype.

Things they liked:

- Color distinction between the listed items which improves the readability
- Consistency with icons used – layout and memorability
- Different sorting method used in history page

Things they thought that could be improved:

- Join and create room pages does not have appropriate headings
- Homepage, consistency of the size of the components
- The profile page lacks edit indicator

Things they recommended:

- Using consistent headers or indication of current page

4.4 Medium Fidelity Mockup in Balsamiq

Our team used Balsamiq again to craft our medium fidelity prototype. The main difference was that this prototype included links between pages to allow users to be more engaged while testing the design. Also, we took our findings from the low fidelity prototype and applied them to this prototype.

4.4.1 Home Screen

After opening the app, the user would click the “create room” button. This would take them to the creation screen, which prompts them for a room name and password. These screens account for steps 1 through 3.

The home screen can be seen in figure 7. The major revisions were the removal of the personal record button, which was merged into the “create room” functionality, and the addition of a recent session log. This was suggested by David Johnson, who mentioned that the home screen should not only consist of buttons, but instead have a log to allow

for quick access of recent content. Our team also decided to have all buttons appear inside of circles to add consistency and make it clear what users may tap. The circular buttons are labeled throughout the app, with appropriate icons to signify what the buttons would do. This decision excluded buttons that were common to other mobile applications such as nav bar navigation and tab bars. Upon tapping the create button, the user would be taken to the create room screen, which is a simple form with an enter button to create the room. This page is seen in figure 8.

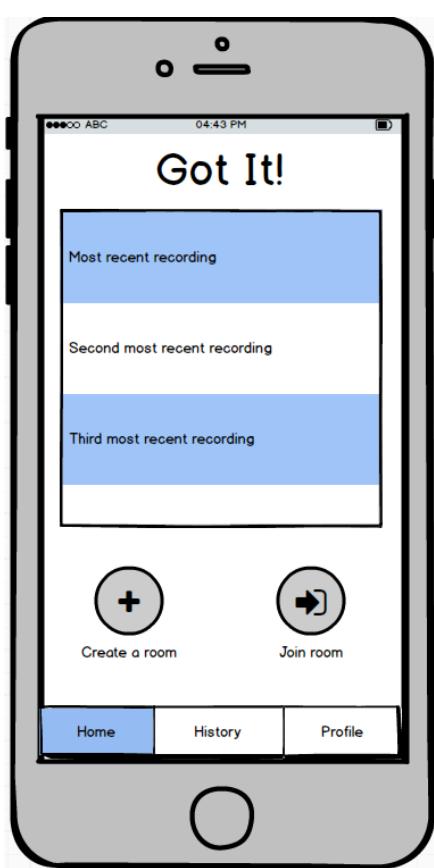


Figure 8- Medium fidelity home screen

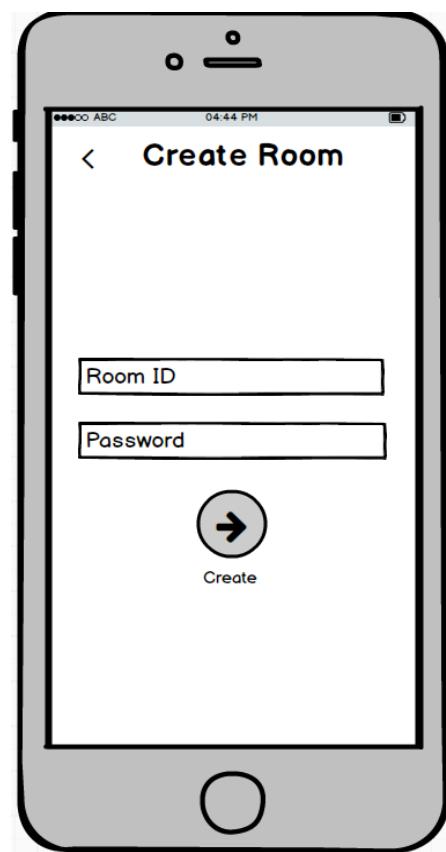


Figure 8- Room creation screen

4.4.2 Room Record Screen

Upon entering credentials, the user would be taken to the screen shown in figure 9. The user then taps the record button and is free to begin recording.

This page looks fairly similar to our previous prototype, but now includes some color to match the theme of the app. It also includes the circular button to start recording as mentioned previously. The gear button was swapped for a hamburger menu icon, as gears often signify settings, rather than additional options. Users are now free to join and

leave as they please, and the owner does not have to allow users to join, since the password system was added to the process.



Figure 9- Medium fidelity room record screens

4.5 Pilot Study results

The main results from the pilot study indicated that the team was not very prepared to move into user testing. The main reasons for this was that there was not yet a script in place to perform user testing with. At the time, the UI was still plagued by a few glitches, so users would not be able to reliably complete any use cases that were asked of them. Also, the team needed longer use cases for users to perform to obtain sound results.

4.6 High fidelity prototype

The steps and location of the main use case have not changed from the medium fidelity prototype so this section will describe any changes implemented in the high fidelity prototype.

4.6.1 Home Page

The home page on the high fidelity prototype changed numerous times due to iterative user testing. The first and last revisions in the high fidelity prototype are seen in figures 11 and 12 respectively.

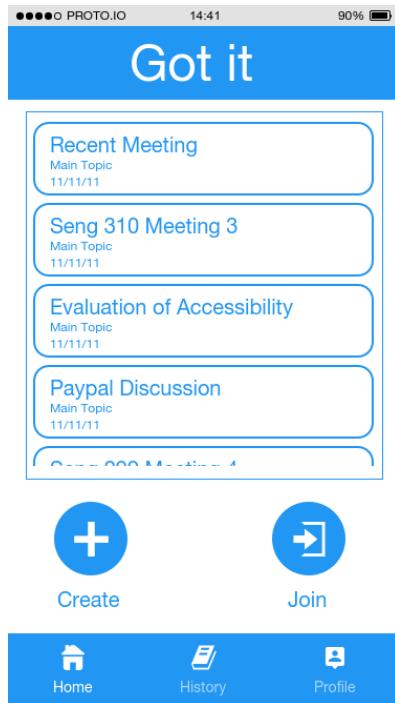


Figure 10- Original high fidelity home screen

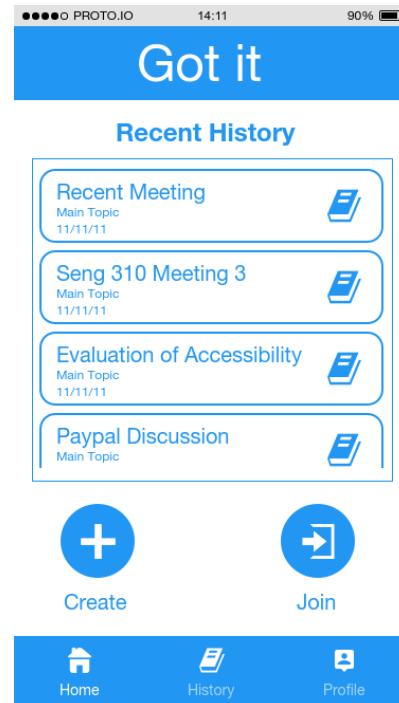


Figure 11- Final high fidelity home screen

In the original high fidelity mockup, users did not consistently determine the functionality of the log feature and as a result were often confused as to whether the log was a list of rooms available to join or a history of past meetings. To combat this, we decided to label the list as "Log", but the users still were unclear as to what the list was a log of. Ultimately, we chose to be verbose and label it "Recent History" which we found to be the most clear to the users. We also added small books to signify the list items as memos. After several iterations, we arrived at our final design which signify the functionality much more effectively than all previous iterations. This was affirmed by additional user testing.

4.6.2 Joining and Creating rooms

The process of creating and joining rooms has remained the same since the medium fidelity prototype, but was modified slightly to match the colour scheme of the app, as seen in figure 12. However, we added the option to join rooms on the same local network to the user via a similar list as seen on the home screen. This provides users with a more efficient way of joining local rooms and can be seen in figure 13.

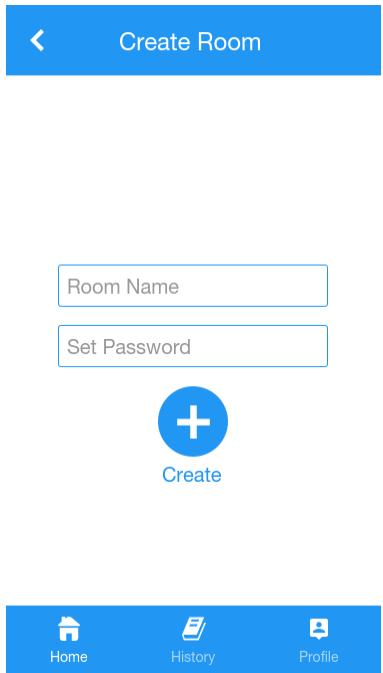


Figure 12- High fidelity create room screen

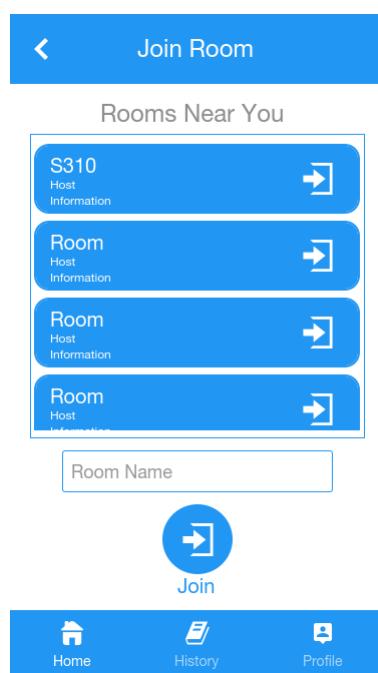


Figure 13- High fidelity join room

4.6.3 Room Record Screen

The record room screen has remained mostly the same since the previous prototypes as seen in figures 14 and 15. Two notable changes is the removal of the hamburger menu for additional functionality. We found most of the additional functionality to be redundant and opted to attach the process of leaving the room with switching screens. To make this process more forgiving the user is given a warning message before leaving the room. The second change was transitioning from a standard chat log to a more iPhone like chat screen to better follow iOS design conventions and make the chat simpler to understand. This chat change is seen in figure 15.

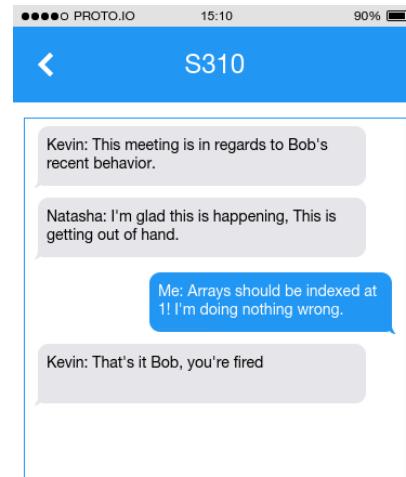
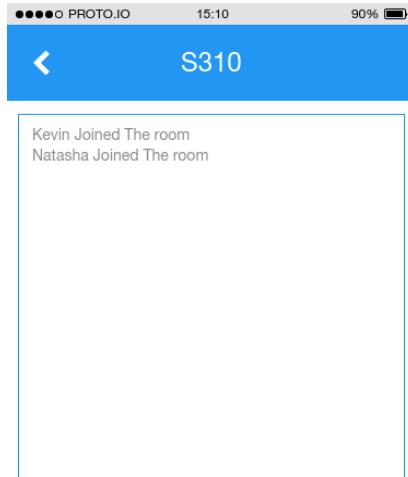


Figure 14- High fidelity room record screen

Figure 15- High fidelity room record screen with new style chat shown

5.0 High Fidelity Prototype

This section of the report serves to describe and show the aspects of the high fidelity prototype not highlighted within the “Prototype Evolution” section.

5.1 History

The history section is an integral component of the app. From here, users may access, modify or rearrange data from past meetings. Each meeting is separated into larger topics that may be further split into sub topics. Furthermore, users may generate formal reports on either the entire meeting or specific topics. The interface for this may be seen within the full prototype.

Modifying and rearranging data is a complex task that the team put a lot of thought into. We took inspiration from apps with similar functionality such as Dropbox and Google Drive. Similar to those applications, modifying or moving data is done via a menu revealed by tapping an ellipsis symbol on a topic or subtopic. Figures 16 and 17 show the menu of options available for each main topic and sub topics.

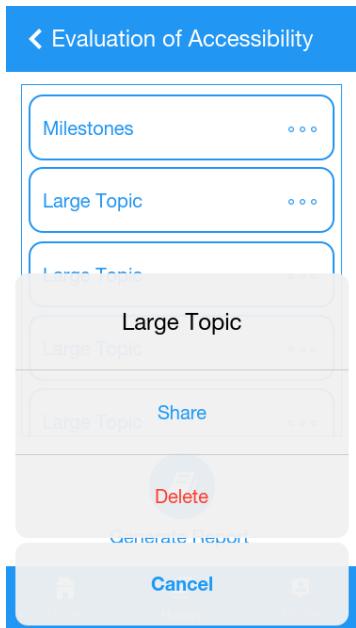


Figure 16- Large topic options

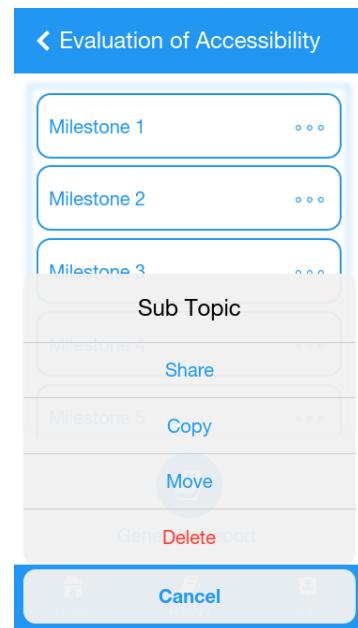


Figure 17- Subtopic options

5.2 Profile

The profile component of our app allows users to view and modify their personal information. This was not a focus of ours because countless interfaces with this functionality exist. The profile page is shown in figures 18 and 19.

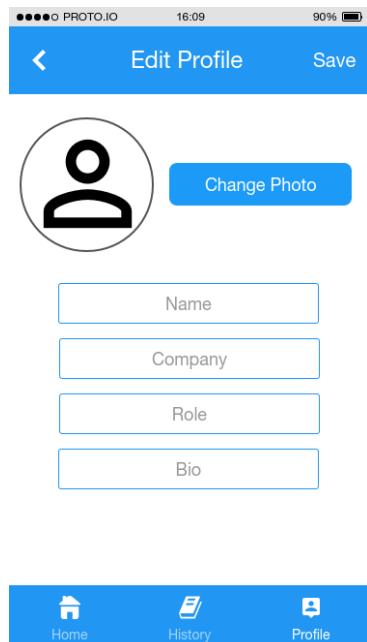


Figure 18- Profile edit screen

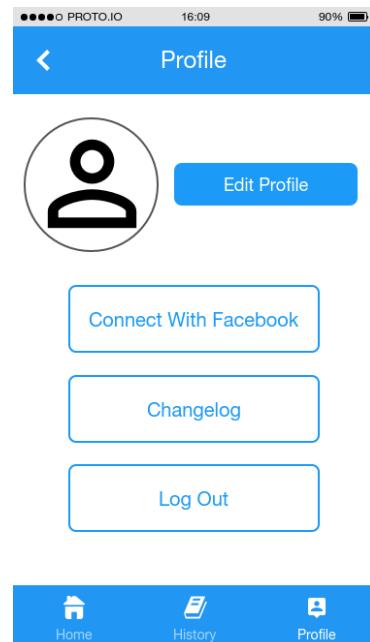


Figure 19-Profile view screen

5.3 Prototype

All functionality of the app can be viewed using the following link.

<https://pr.to/ZBD7FX/>

6.0 Lessons Learned

This project gave us a deeper insight into the mind of users rather than thinking from the perspective of a designer. As students (and not professional designers), we realized what kind of an influence our everyday technology had on us in terms of our designing choices and the reasons behind said choices. This section describes what our team discovered about the design process and human computer interaction as a whole.

6.1 Importance of the Design Process

Imagine Dictations explored the design process during the creation of Got IT. In order to craft interfaces, we explored the impact that different design elements could have on users, may it be leading them effectively, or dissuading them from making mistakes. This research took much longer than any of our team members expected, and led to some interesting, constructive arguments at each step of the design process. All of our team members expected that the user interface would be the simplest part of creating a successful product, but each of us found that interface designing is arguably the most important step. Some of our design choices, inspired by popular apps, were not appreciated as much by others as they were by us, leading us to believe that the industry might overlook the importance of simplicity and lean more towards aesthetically pleasing products.

6.2 Creation of Prototypes

Our implementation of Got IT's functionalities evolved in 3 stages of prototyping and testing- paper (for rough ideas and napkin sketches), Balsamiq Studio (for low and medium fidelity prototypes) and Proto.io (for the high fidelity prototype). Each stage had specific strengths and weaknesses attributed to them. Paper prototyping allowed our team to instantly share the conceptual model amongst every team member and evaluate a few designs very early in the process which helped us get started with testing. However, with how rough these prototypes were, we were not able to show these prototypes to prospective users to test with them.

To test with users and other evaluators, we moved to Balsamiq studio. This software allowed us to very easily transfer from paper to computer, and share the prototype with each member of our team. We were also able to perform our cognitive evaluations with this prototype. To transition to medium fidelity, we added links to the prototype which made our prototypes more engaging to our users.

Finally, for the creation of our high fidelity prototype, we used Proto.io. This software allowed us to mimic the functionalities and give the users an illusion of a working app, despite no work being put into developing actual functionality, which would take away from the design process. The different methods of prototyping narrowed our focus on testing the interface with users rather than being hindered by the development of functionalities.

A second lesson that came from prototyping is that many designs can have the same functionality, but the way it is “packaged” and presented to other user through the interface is of utmost importance and can ultimately decide whether your app is a success or a failure.

6.3 Designing and Conducting Effective Studies

To test our app thoroughly, our team had to strategize and form effective questions without leading the users to answer in a certain manner. We had to focus on various aspects of the application, some of which might appeal to a specific kind of user more than others. However, we had to make sure that we catered the needs of all our users in a general manner. Hence our studies were an amalgamation of multiple ideas, from a multitude of disciplines, forming a more well-rounded study. Our team thought of settings which might be more appropriate for the users, to figure out what kind of questions might extract the most amount of crucial information out of the users while remaining ethically and morally sound.

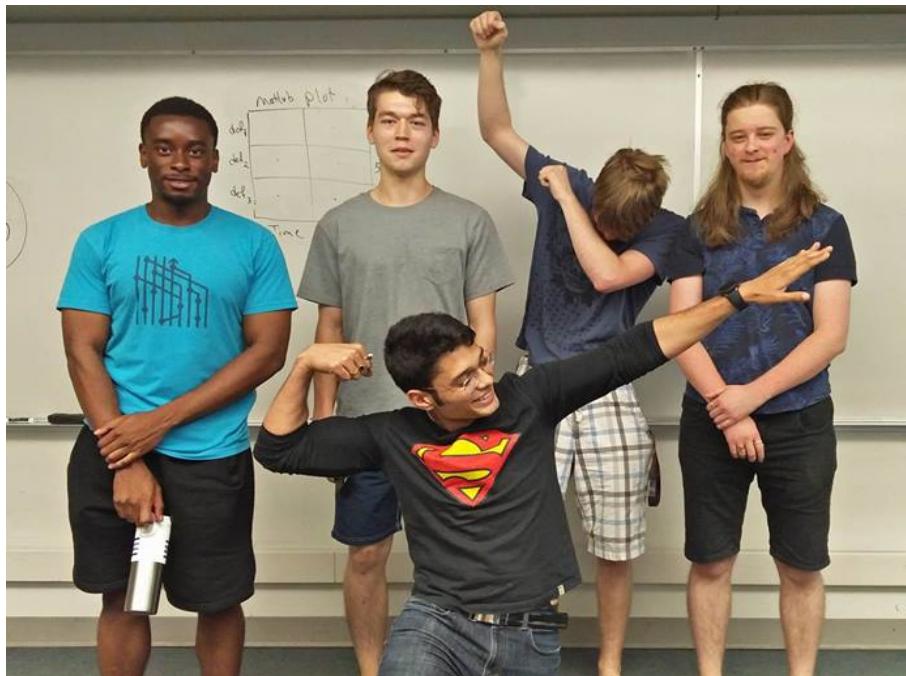


Figure 10- Imagine Dictations Team

Simply asking questions and analyzing the data was not enough. Studying and observing the users led to more promising results. However, none of this would be possible had we not achieved a good working chemistry amongst the members of our team. We collaborated effectively, allowing us to form more complete, complex, and concrete ideas. We realized that professionalism was important amongst peers, but friendship led us to enjoy our work which made us think more innovatively since our best ideas emerged from jokes or faux pas.

7.0 Future work

The profile system and social media aspects of the application would need to be more flushed out to create a viable product. Additionally, some additional feedback when moving or deleting topics and subtopics would be implemented. Constraints within the prototyping software made that aspect of the app difficult to expand. After, we would iteratively user test the product and refine the additional features. Following that, we would need to start the design process again from the beginning with system architecture and implementation details in mind.

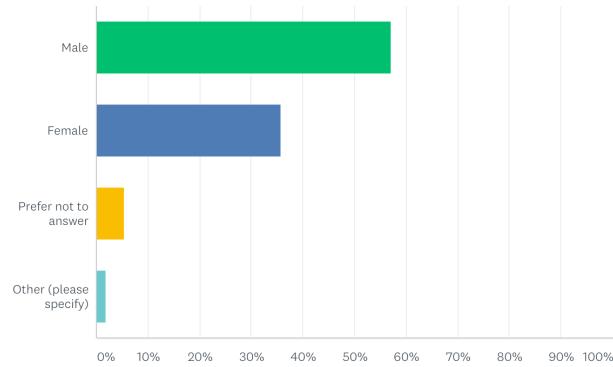
Appendix

Appendix A- Survey results

From our survey results, the team found that around 56% of those surveyed were male, 35% were female and the rest either identified as other or declined to respond. 100% of responders were under the age of 39 while those 18-29 were in the vicinity of 84%.

How do you identify yourself?

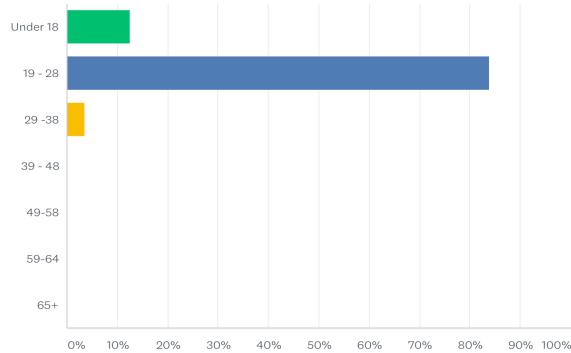
Answered: 56 Skipped: 0



A figure close to 50% represented the amount of responders that were in the faculty of engineering. The Humanities, Sciences and Social Sciences faculties accounted for responses in the area of 15%.

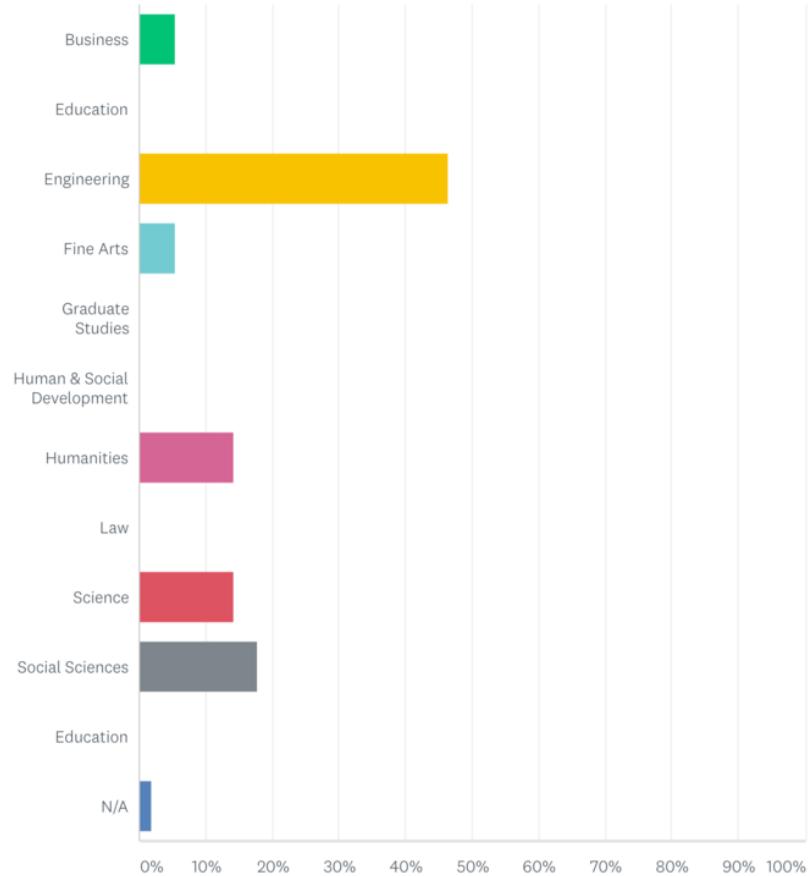
What is your age?

Answered: 56 Skipped: 0



What faculty are you in?(Select more than one if applicable.)

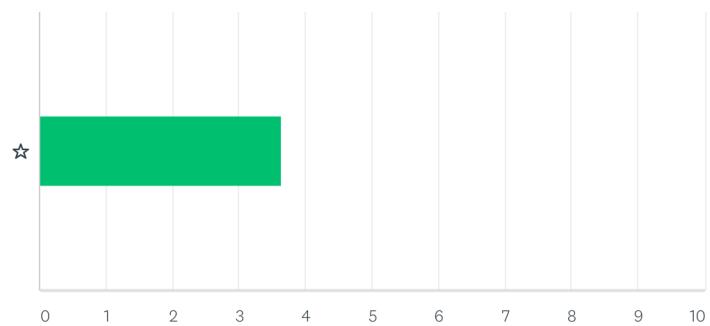
Answered: 56 Skipped: 0



When asked how good individuals believed their memory to be, we got an average response of 3.4. While not an excellent sample size, there are implications that a decent amount of people do not believe their memory to be that great and would benefit from an app such as Got IT!

How good do you think your memory is?

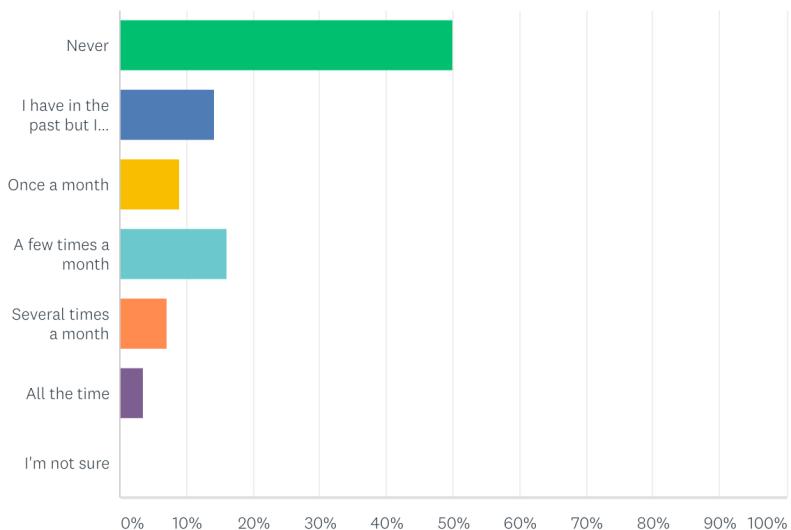
Answered: 56 Skipped: 0



When asked about whether they use a voice powered service such as Siri, Google Now, etc. the majority of responders said that they never did or did in the past. Around 25% admitted to using these services either once to several times a month. Only 4% of those surveyed claimed to use voice powered services all the time.

How often do you use a voice powered service?(Kinect, Siri, Google Now, Amazon Echo, etc)

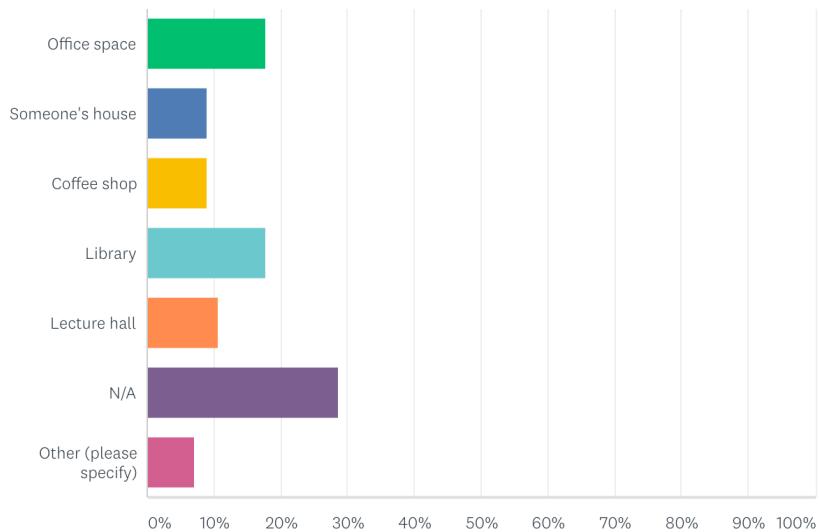
Answered: 56 Skipped: 0



According to the responses to the survey, 78% attended meetings whether they were personal or official business. 29% attended meetings a few times a week and about 5% attended meetings every day. In response to where meetings were usually held, responses were very much varied but the majority attended meetings either in the library or some office.

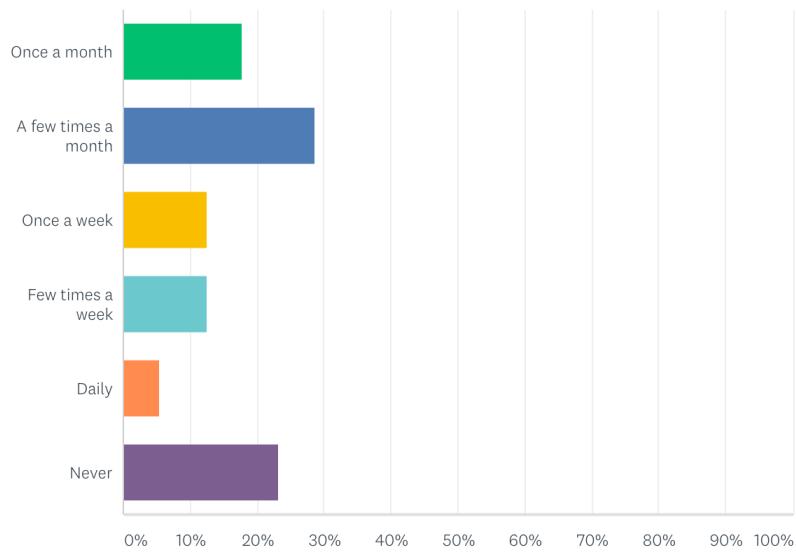
Where do you usually hold your meetings?

Answered: 56 Skipped: 0



How many meetings do you attend in a month?(Personal or official business)

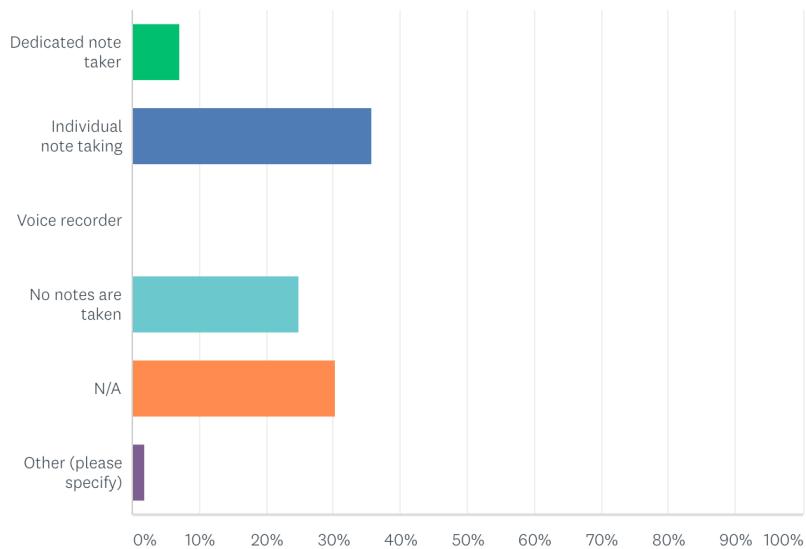
Answered: 56 Skipped: 0



55% of responders either took no notes during meetings or were unable to answer; 35% took notes individually. 8% had a dedicated note taker, but interestingly enough no one used a voice recorder during their meetings. Of those that responded to the question, how many people usually attend their meetings, the average response was 5.

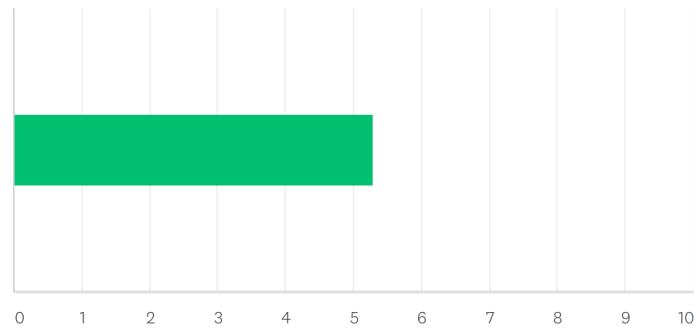
How do you normally record meeting details?

Answered: 56 Skipped: 0



How many people usually attend meetings?(Including yourself)

Answered: 48 Skipped: 8



Appendix B- User study results

During our user studies we found that users varied in where they believed the app would be most useful which confirms that the app has a wide variety of uses.

For task one, we asked users to create a room and record a memo of a grocery list. Users completed the task in an average of 36.75 seconds and in 7.25 clicks. 50% of users completed it with around 5 clicks and the other 50% in 13 clicks indicating that some mistakes were made.

For task two, users were asked to find that saved memo and reorganize it in anyway that made sense to them. This task was completed in an average of 22.25 seconds and with an average of 8 clicks. For task 3, users were asked to join a room that someone that they were working with had created. The room had a name and a password that they were to input. 100% of users found this task simple and completed it in 12 seconds. There also were not any outliers in terms of clicks which also indicate that no errors were made when completing the task.

All users thought that taking notes during meetings was important. Additionally, they believed that the app was not too simplistic. In terms of creating and joining rooms, a single user believed that creating a room was easy but the rest thought it was difficult or slightly difficult. However, they all agreed that joining rooms were simple. The app allowed most users to focus on thinking about what groceries they needed as well as finding the grocery list after it was created. Most were of the opinion that using voice control in private was not embarrassing to them but using it in public was.

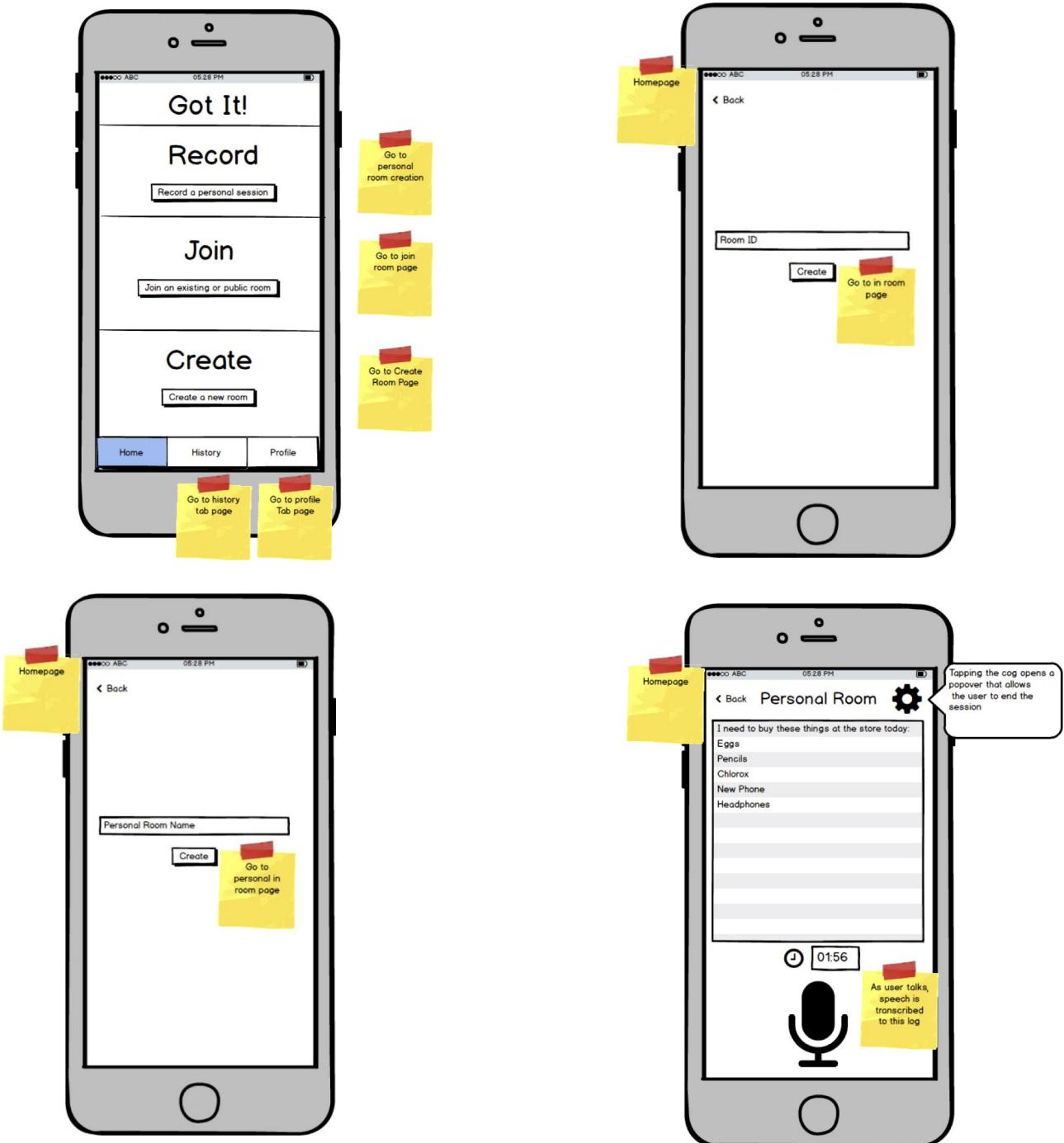
In terms of the environment they would use the app in, 50% said that they would use it in an academic environment, while the other half were neutral about it. While 75% of users were neutral in whether or not they would use the app in a professional environment, the remaining 25% said they would. Finally, 75% of users said they would recommend the app to a friend and the other 25% were neutral in their response.

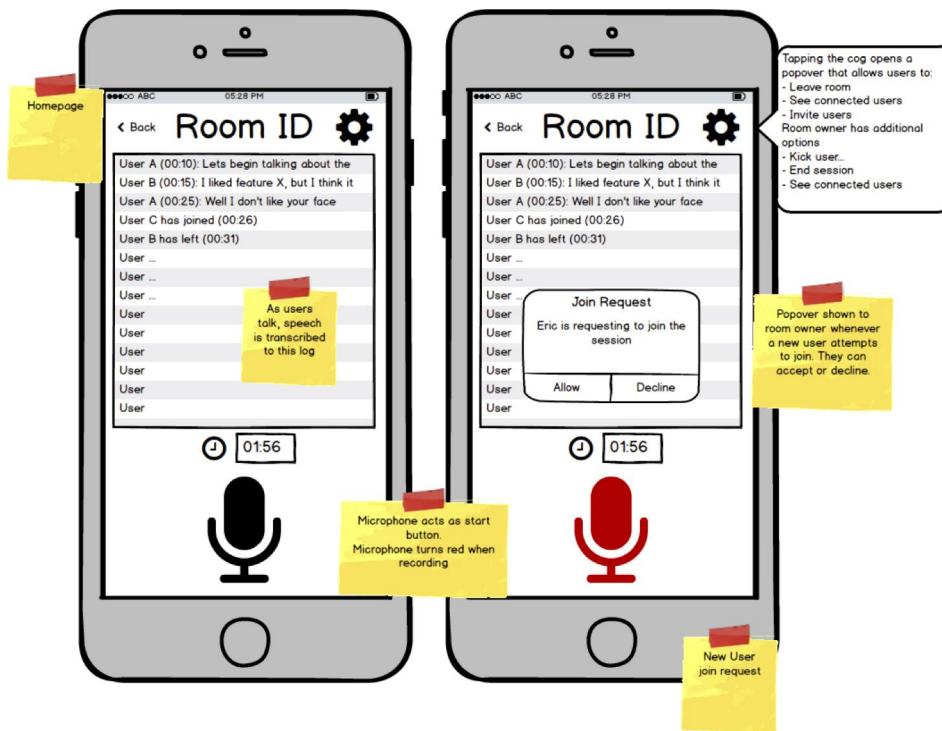
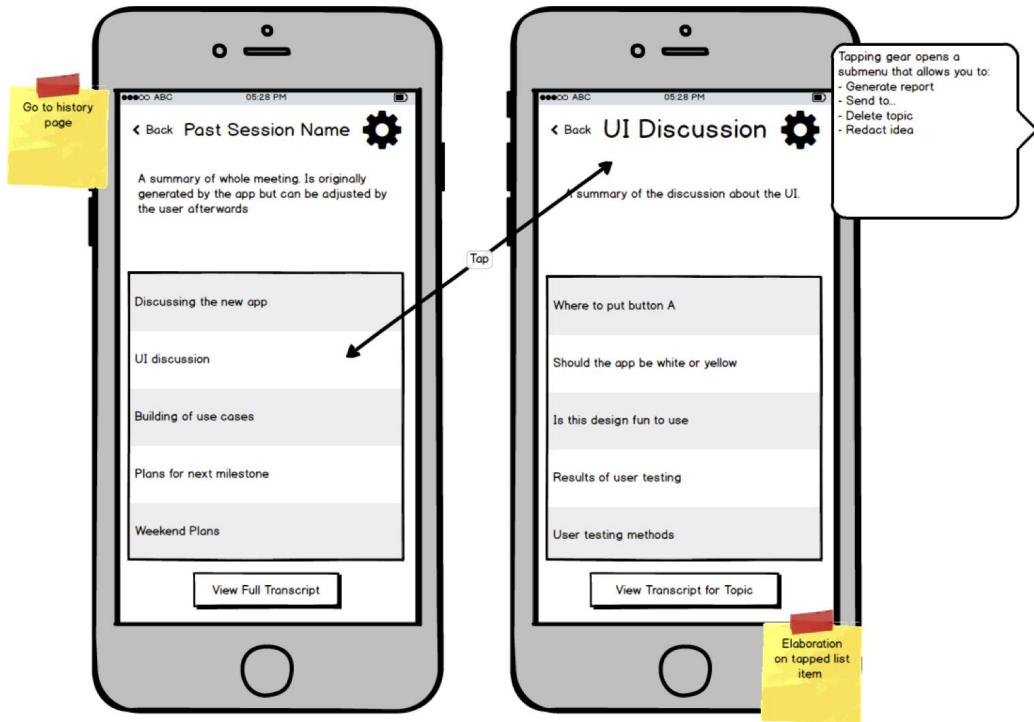
Appendix C- Use Case for Evolution: Room Setup and Recording a Memo

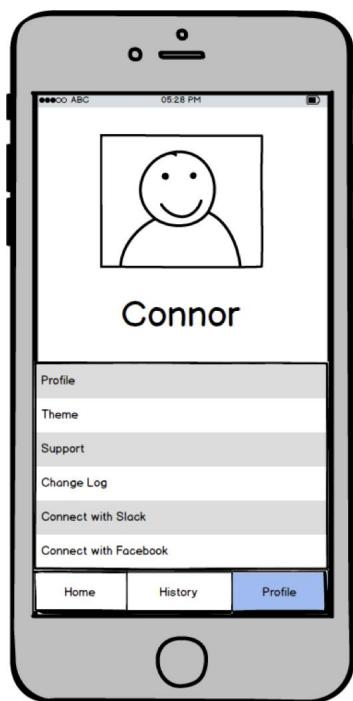
Scenario: Connor (the room creator) and his teammates show up for a meeting and Connor must create the room to commence the meeting.

- 1) The room creator opens the app
- 2) The user proceeds to create a new room
- 3) The system prompts the creator to enter a room ID and password
- 4) The user sets the room ID and creates the room
- 5) The user (and his teammates) choose to begin recording
- 6) The system begins recording

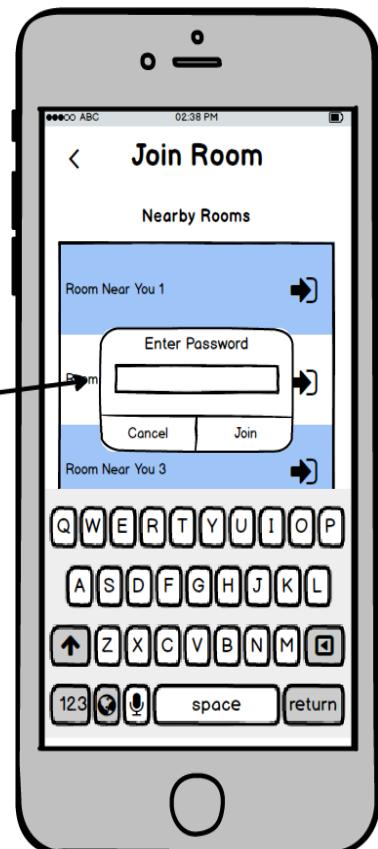
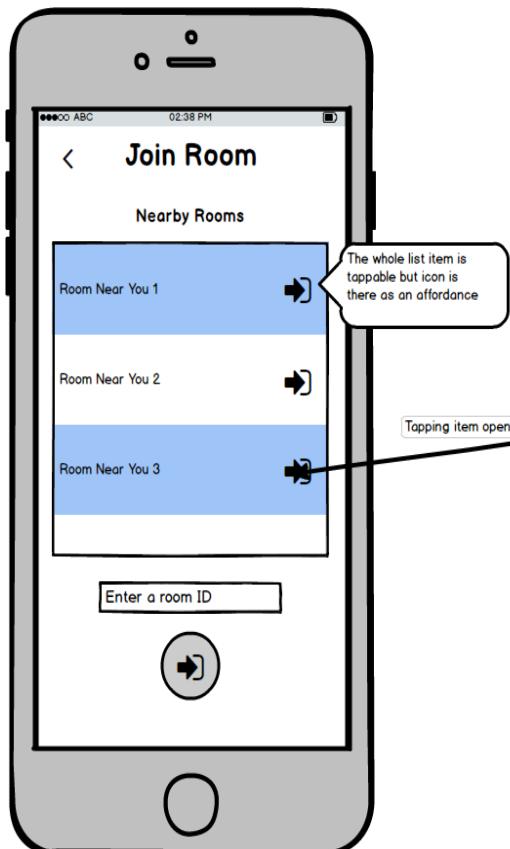
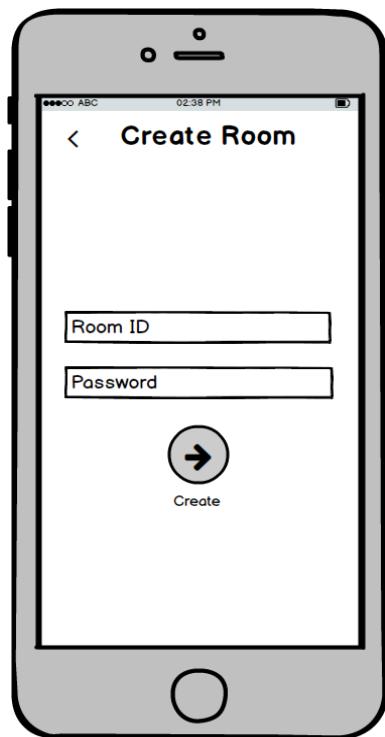
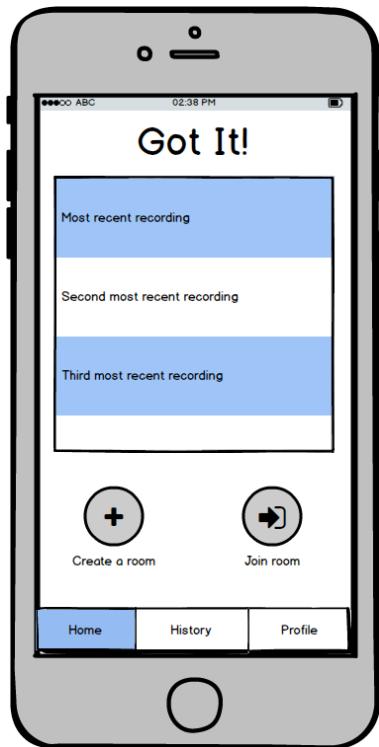
Appendix D- Balsamiq Low Fidelity Prototype

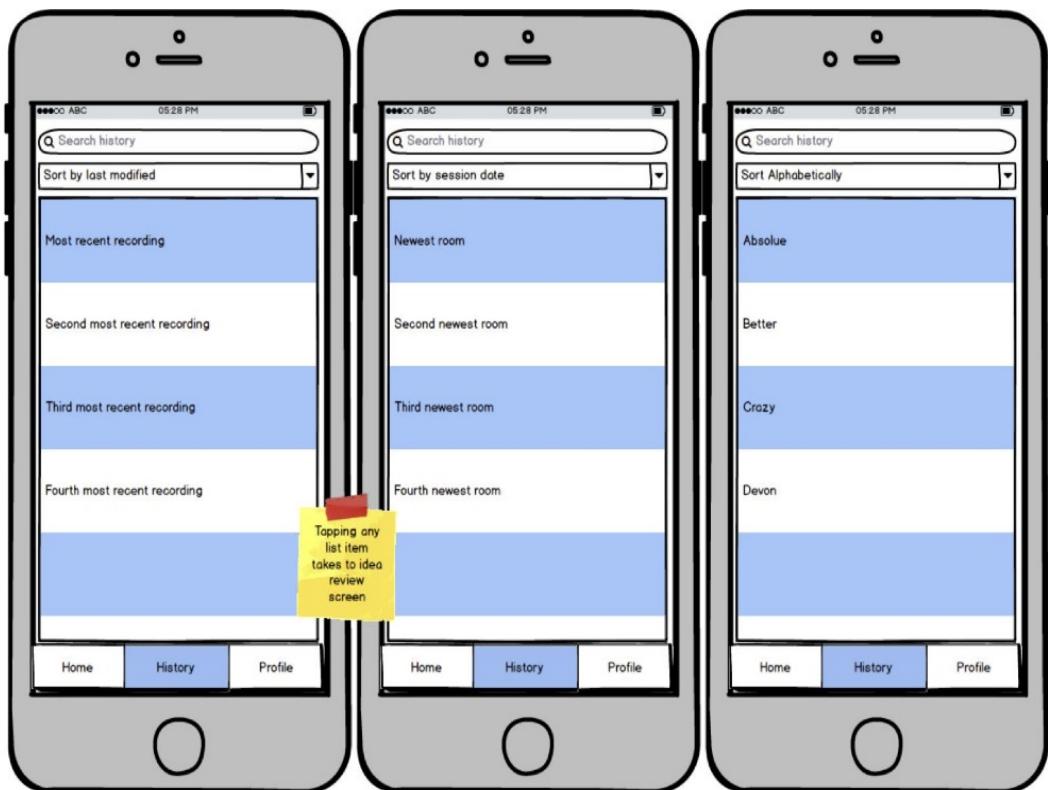
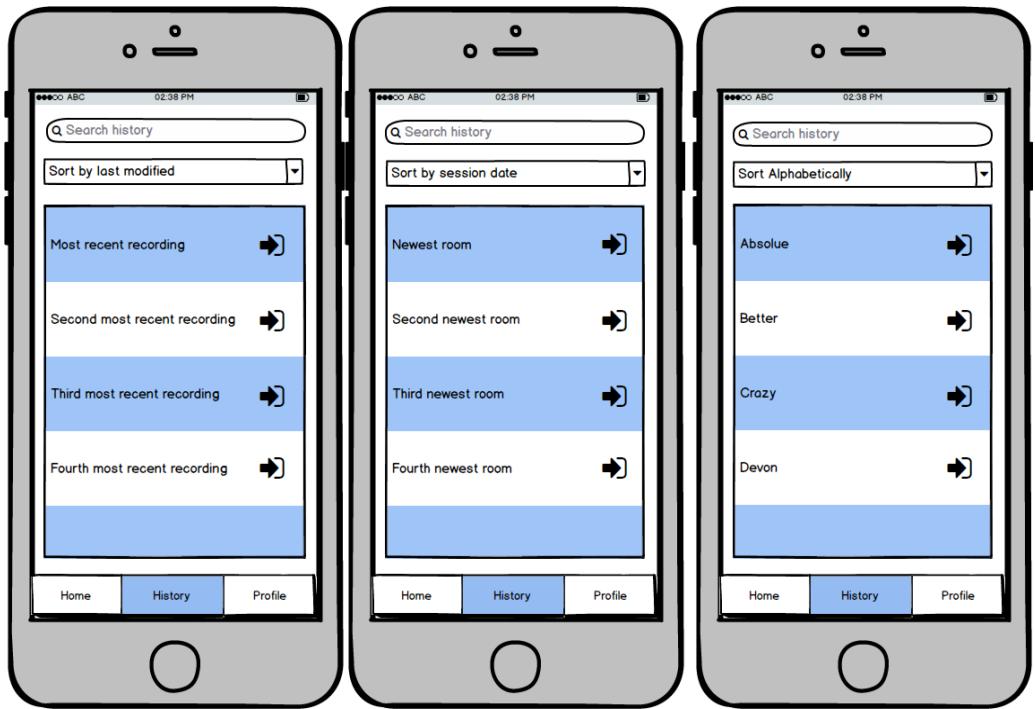


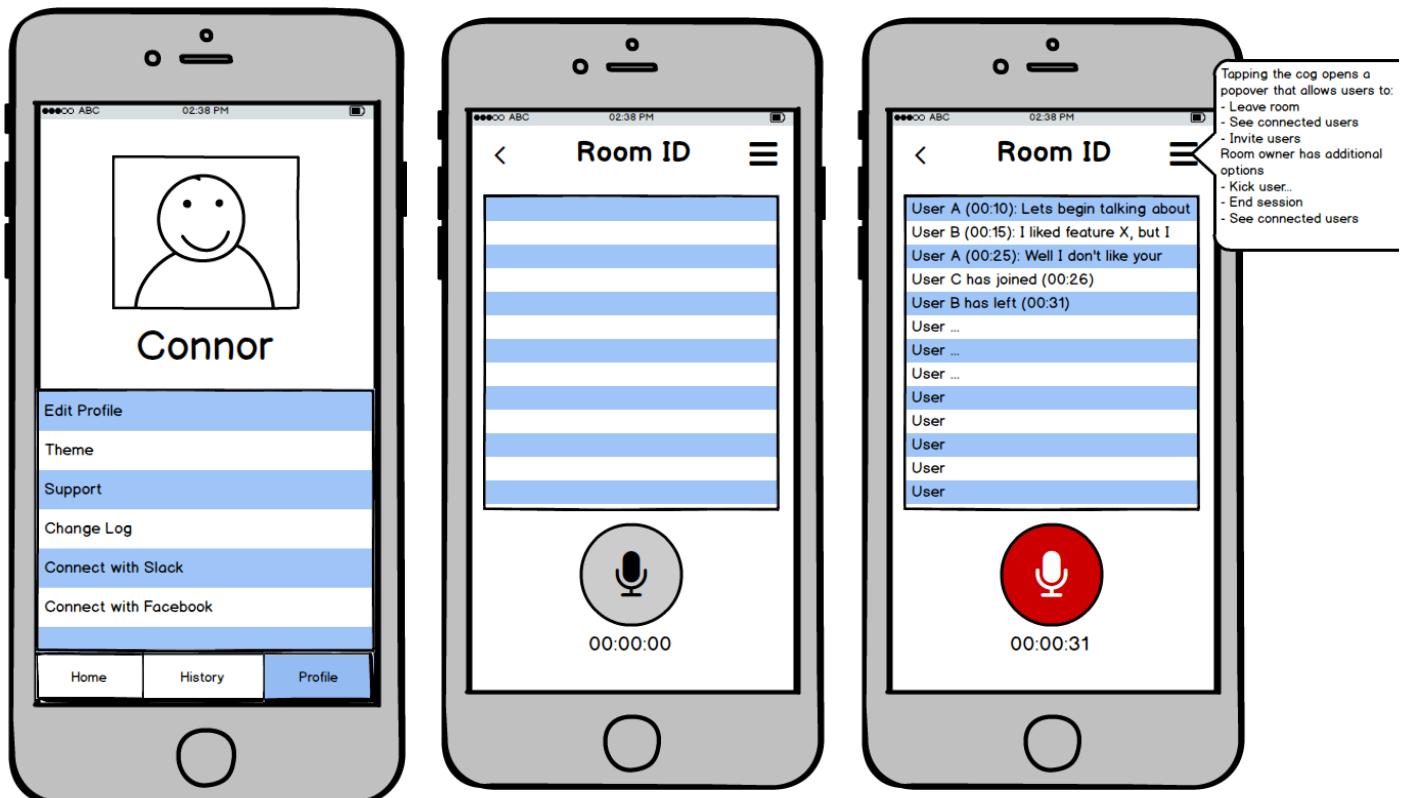
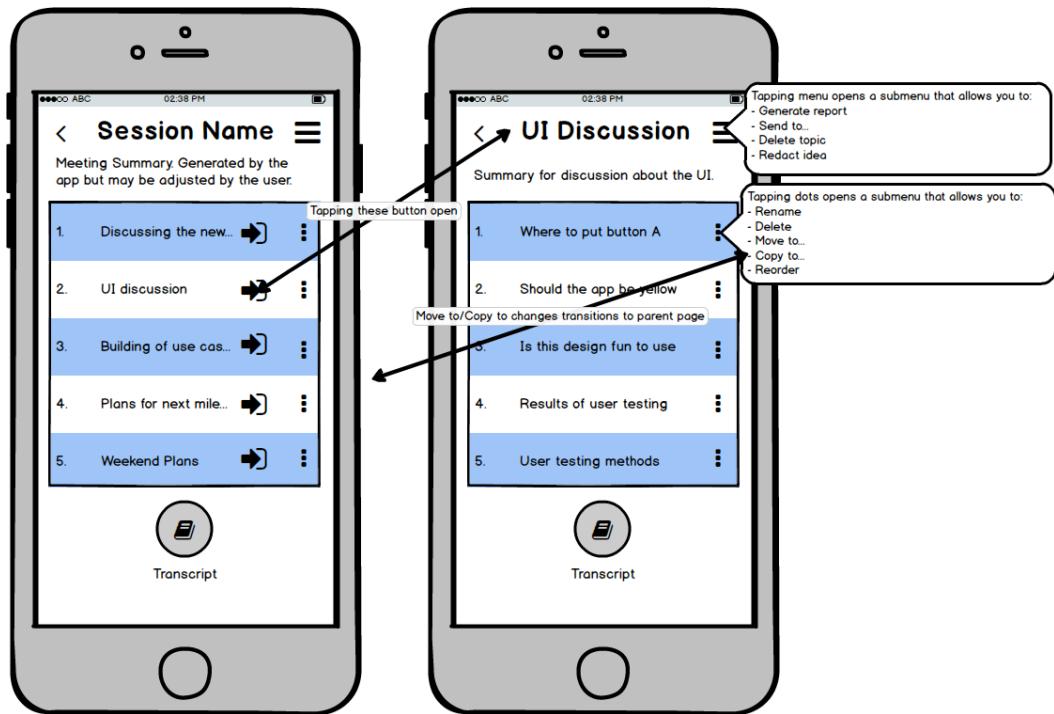




Appendix E- Balsamiq Medium Fidelity Prototype







Appendix F- Proto.io High Fidelity Prototype

The prototype can be viewed and demoed at <https://pr.to/ZBD7FX/>, but a few screens are shown below.

