voices

Low-Fi Prototyping & Pilot Usability Testing

CS147 Winter 2021

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OVERVIEW

Mission Statement
Enabling cultural immersion through the sharing of personal stories

Value Proposition
Illuminate your world with stories from locals

Problem/Solution Overview
People would like to get authentic personal perspectives on new cultures. However, there exists a barrier in asking questions directly to locals as it makes those asking the questions feel like a burden. To eliminate the need to ask questions, we provide a platform for people to share and listen to personal stories and experiences that are connected to locations and sites.

SKETCHES
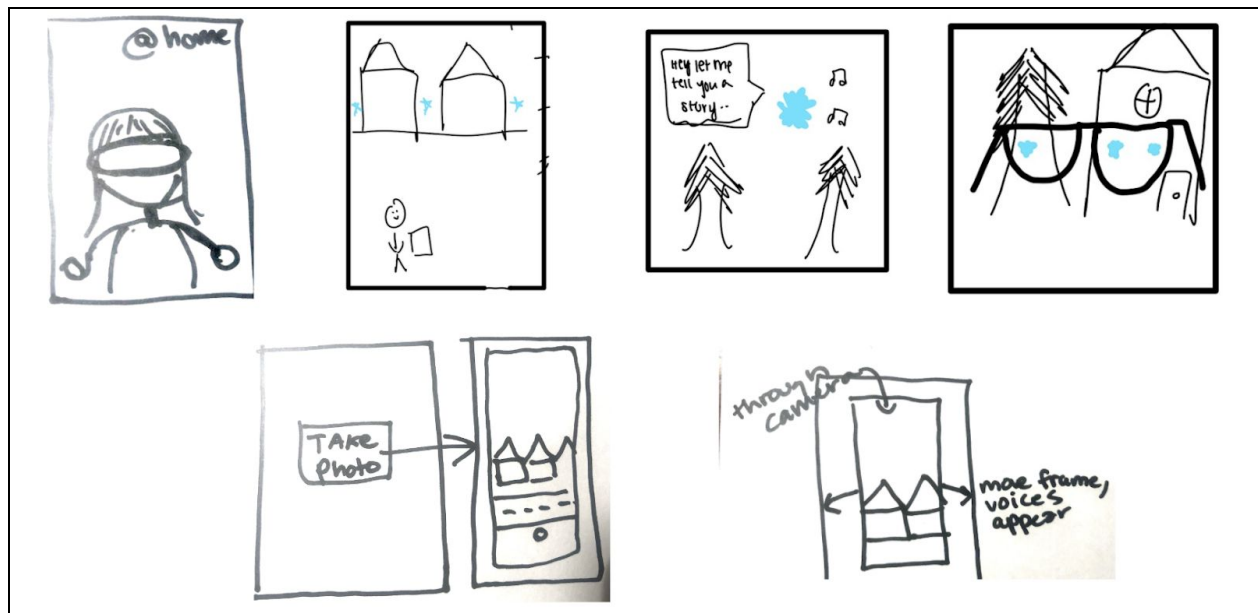
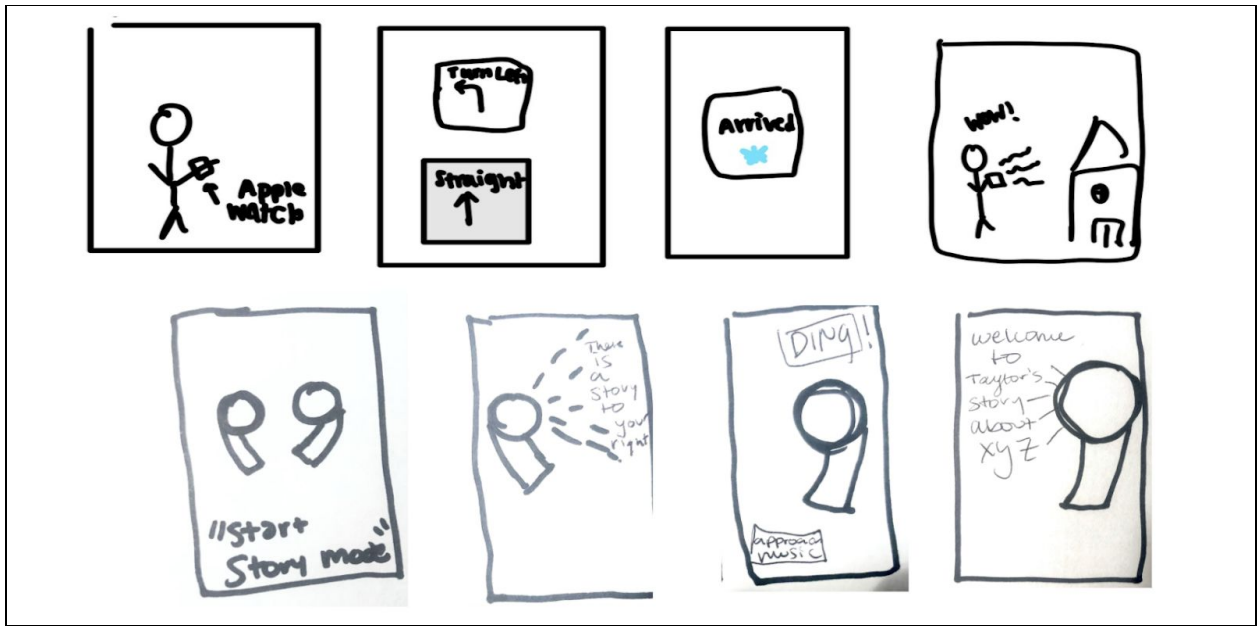**Figure 1:** Sketches of AR/VR implementation

Figure 2: Sketches of Wearable Implementation
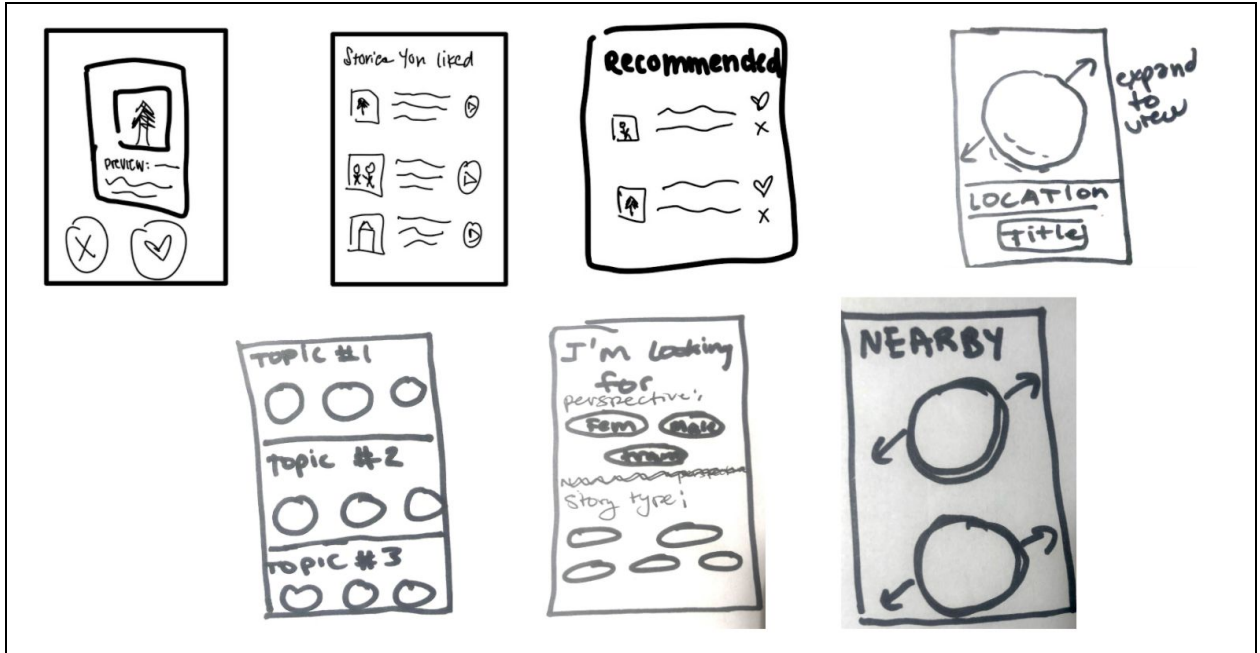

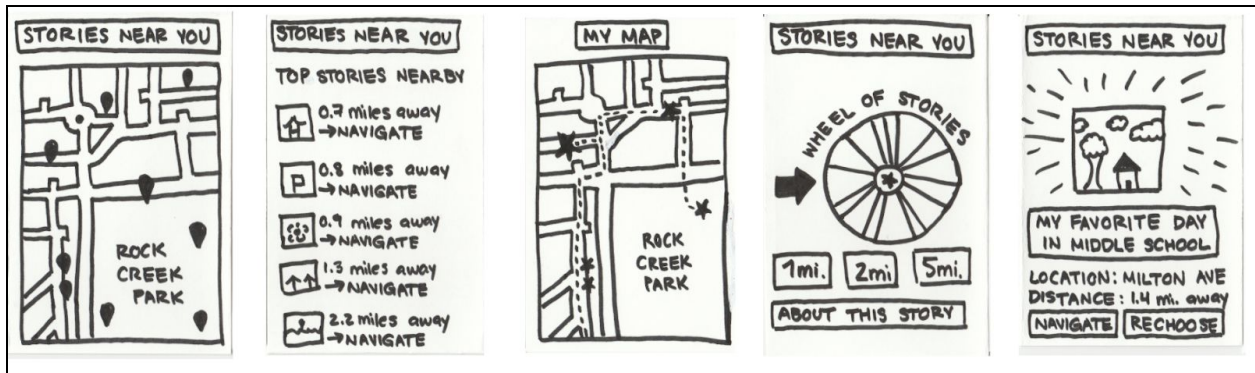**Figure 3:** Sketch of Swipeable/Tinder-like implementation

Figure 4: Sketch of map-based implementation
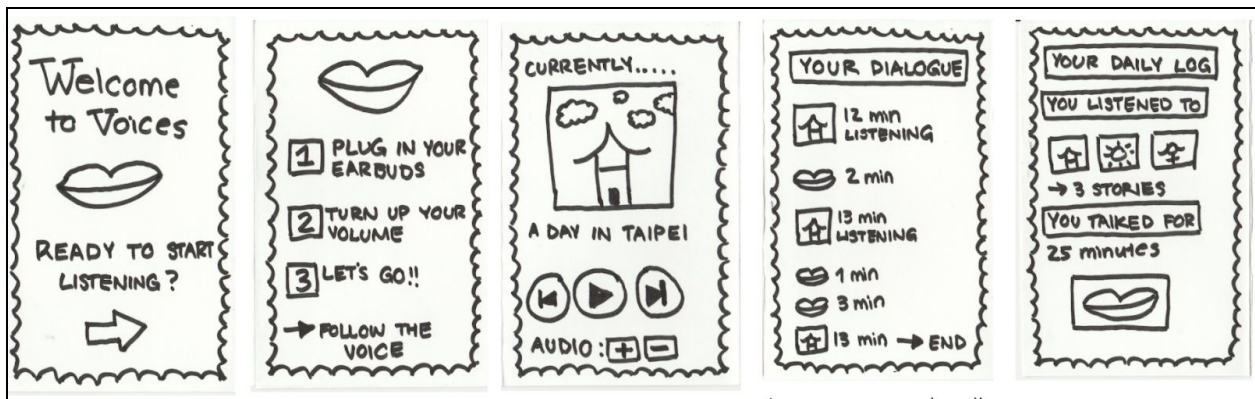
Figure 5: Sketches of voice-controlled implementation
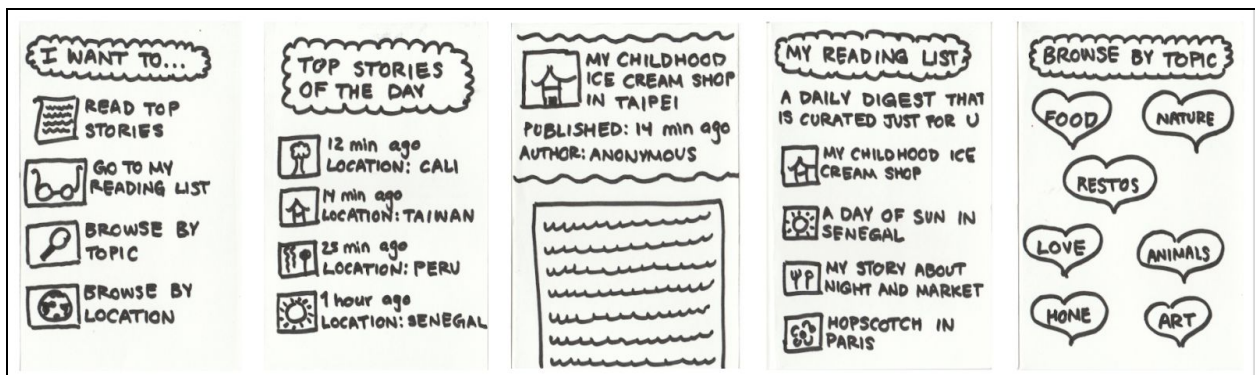
Figure 6: Sketches of Newsfeed based implementation

TOP DESIGN STORYBOARDS

We decided on our top two ideas by prioritizing diversity in implementation, feasibility, conveying our mission, and ingenuity. The interfaces that we chose were a map-based interface and the wearable interface.

Wearable/Voice Input Interface
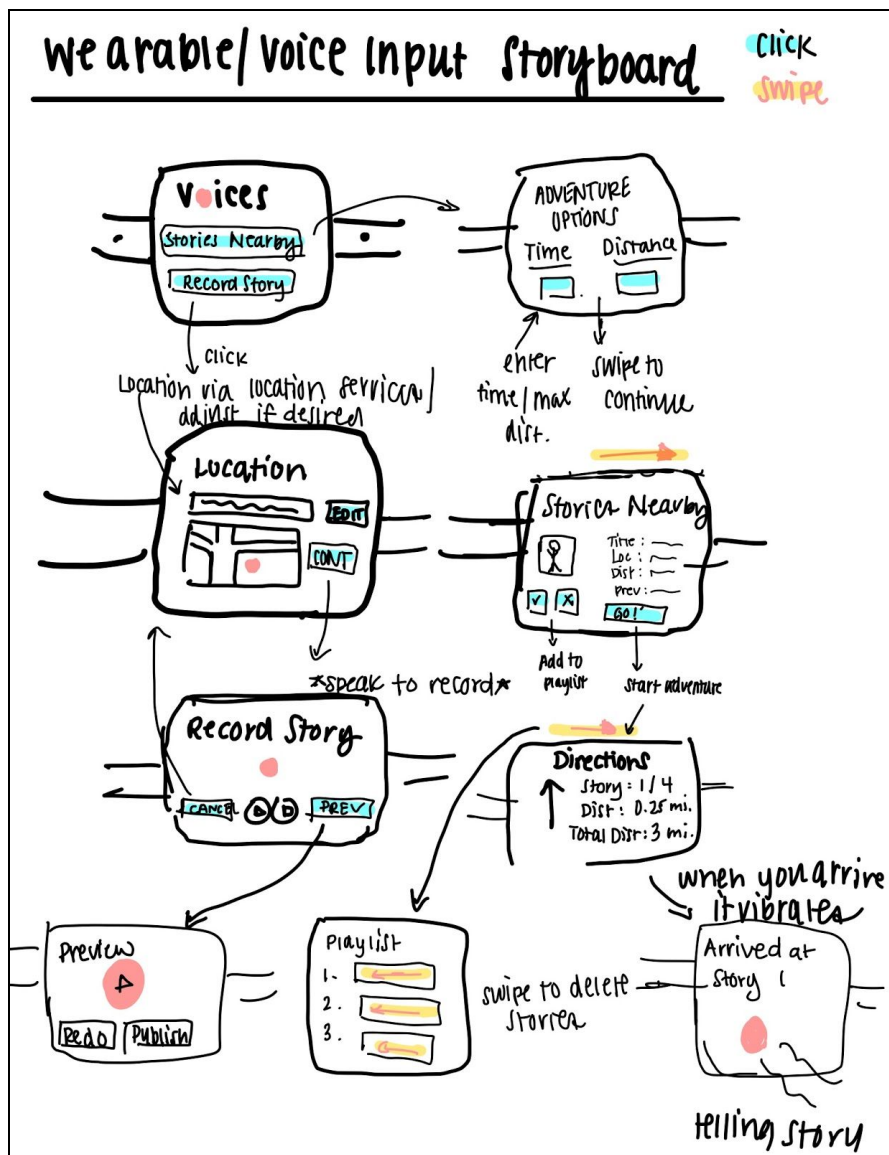
Figure 7: Storyboard for wearable interface. The design is based on compatibility with wearable devices such as Apple Watches.

Map Based Interface
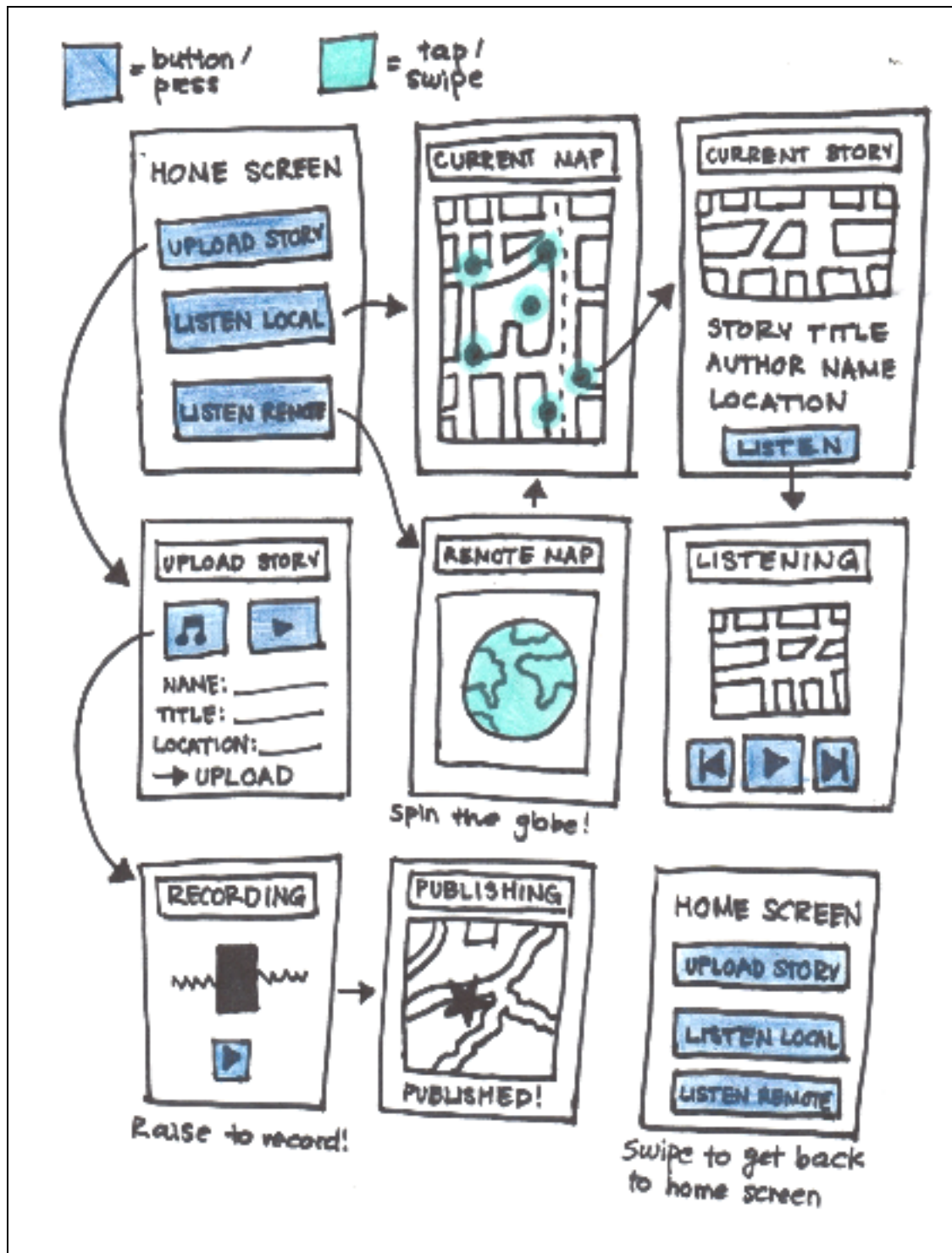
Figure 8: Storyboard for map interface. The design is based on compatibility with smartphone devices.

Wearable/Voice Input Interface

PROS	CONS
Novel user experience	Voice input will have problem when referring to locations in other languages
Minimalist interface	
Voice Input takes away the need to type input	Only audio stories
	Local stories only
Don't need to look at phone while walking around -> safer exploration	Requires smartwatch & headphones, financial accessibility concerns
Encourages active, on-site exploration	

Map Based Interface

PROS	CONS
Allow people to explore locations without travel restrictions	Have to carry/look at phone for directions
Familiar Map UI	People may be distracted by phone when at on-site
Interactive experience	
Encourages exploration of current location	Less active experience than AR/wearable format
Easy to conceptualize distance to stories and plan potential routes	May be less accessible to visually impaired users
More screen real estate for other mediums of story-telling (images, videos, text, voice)	

FINAL SELECTED INTERFACE

Reasoning

Our team decided to use the map interface because it best aligns with our project's concept of connecting personal stories with physical sites and locations. Familiarity with a map interface – such as through the use of Google Maps – suggests that users will be able to easily navigate our app. Moreover, the map interface would allow users to engage with other features of the application, such as planning out "story routes" and pinning stories based on their location on the map. Users can easily see stories near them, as well as explore stories globally.

In contrast to the wearables interface – which might present significant accessibility issues due to financial constraints and disability constraints – the map interface could be better adapted to accommodate a wider range of users.

Storyboard for Three Tasks

Figure 9: Simple task – listen to a story

Figure 10a: Moderate task – find a story (locally)
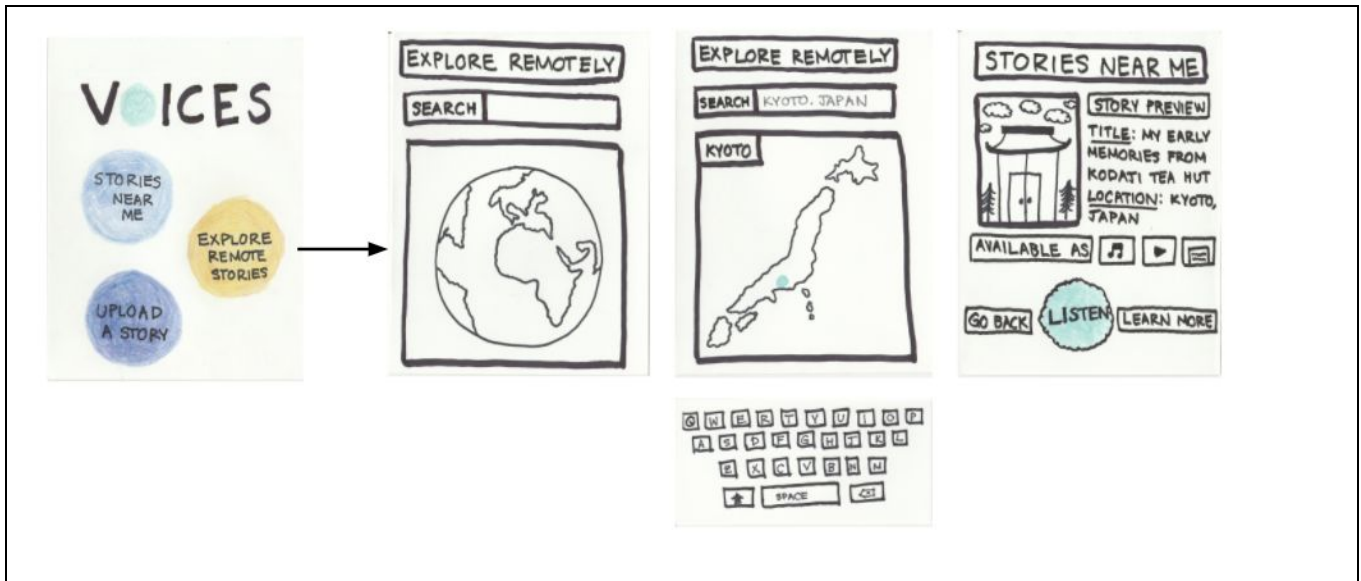
Figure 10b: Moderate task – find a story (remotely)
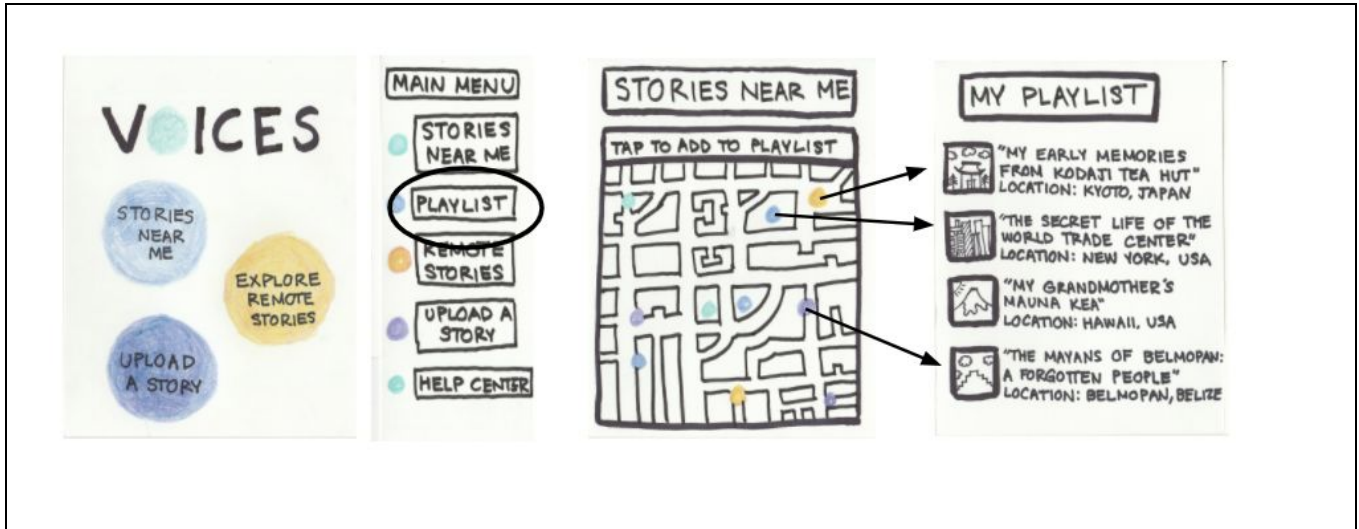
Figure 11: Moderate task – make a playlist
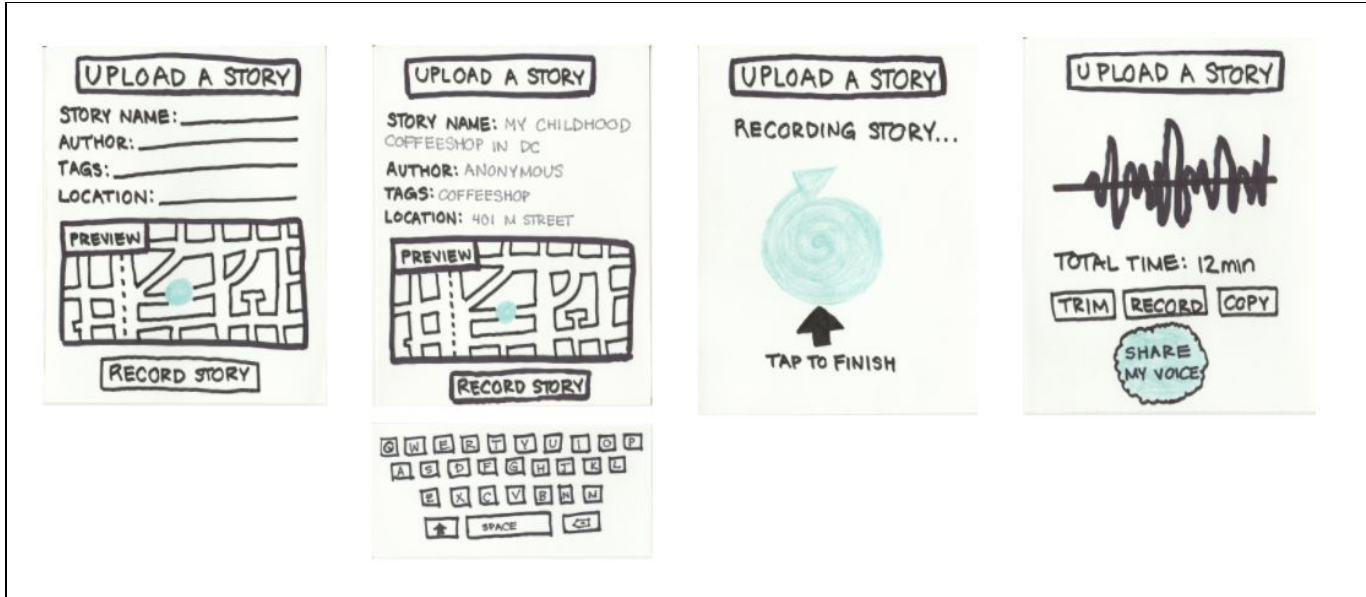
Figure 12: Complex task – share a story

DESIGN INTERFACE	FUNCTIONALITY AND REASONING
Home Screen	The home screen–which include three navigation options–serves as the starting point for the user.
Slide-Bar Menu	When the slide-bar is open, the user can easily navigate to any of the key features of the app,

	without having to return to the home screen. This was intentionally hidden from view so as not to distract from the primary features of the UI.
Map	Given that stories are connected with physical sites and locations, the map interface serves as the key component of the UI design. The map can be used for exploring stories nearby, exploring stories remotely, as well as constructing a playlist.

TESTING METHODOLOGY

Participants

We recruited 6 participants via cold-calling and references from past participants. We prioritized getting a diverse group in terms of race, age, gender, and occupation. We also tried to identify a spectrum of users ranging from those who are primarily "listeners" to those who are primarily "sharers". The profiles of the participants are as follows:

1. An adult male from California with UI/design experience. Listener
2. A nursing student who enjoys sharing her Hawaiian/Japanese culture. Sharer/Listener
3. An adult male who is a community engagement director from India who studied in London. Chosen for his connection to Indian culture and experiences living in other countries. Sharer/Listener.
4. A young adult who is a Spanish major at Brown University who is very involved with the Persian community in Los Angeles. Sharer/Listener
5. A young adult who is an aspiring film director from Chapman. Listener
6. An adult female who loves traveling, museums, and NPR StoryCore. Listener.

Testing Environment

All tests were conducted via Zoom. Participants used InVision to interact with the prototype either on their computer or phone, depending on their ability to share their screen.

Tasks

1. Simple: Find and listen to a story
2. Moderate: Create a playlist with a story from Kyoto
3. Complex: Share your own story

Procedure

1. Give brief context behind project
2. General questions about the interviewee's travel habits, interests in other cultures, and methods of sharing culture.
3. Brief tutorial of the interface, emphasizing that navigation is conducted via swipes and taps. We did not explain how to perform the tasks and limited our own engagement with the prototype to allow the interviewee to explore and learn about the functionality on their own.
4. Instructed users to carry out each task, observing their behavior as they completed tasks.
5. Finished by asking users about their likes, dislikes, and recommendations regarding the UI and presented functionality of the app.

Test Measures

As participants completed the tasks, we analyzed their emotions via facial and verbal expressions, specifically looking for periods of confusion, frustration and glee. We also analyzed how quickly the participants completed the tasks and any significant errors or successes they had. After completing the tasks, we probed to learn more about their reactions, pinpointing which specific aspects they like and don't like.

Team Member Roles

Facilitator: Taylor
Note-Taker: Ayelet
Computer: Baker
Observer: Krishnan

RESULTS

Overview
Testing our low-fi prototype provided essential insights into the design and usability of our app. Throughout our prototype testing, our interviewees provided us with invaluable feedback on both the task flow and user experience as well as on our design and concept more generally.

Task Flow and User Experience
- All six users struggled with navigating between different screens due to the absence of a clearly visible "back" button
- Almost all users were confused as to how to explore stories remotely, citing the terminology of "explore remote stories" as ambiguous
- Many were confused by the "available as" audio and video icons
- Two of the users found the task flow of uploading a story to be confusing, especially given the ways in which the subtasks (entering information about the story, recording the story, and editing the story) were laid out

Design and Concept
- Users appreciated the map interface, and navigated it easily
- Users wanted more clarity about the colors associated with stories
- Some users did not grasp the concept of cultural immersion, confusing stories for Snapchat-esque stories
- Users did not initially realize that stories are tied to physical locations, but once this was clarified, they loved the concept
- Users liked audio as the main medium for stories, though several highlighted the benefit of transcription for accessibility and thought additional pictures could bring stories to life
- Users wanted to personalize playlists and see them in map-view
- Users desired to see & scroll through all the stories at a given location
- Some expressed a want to share stories with friends

DISCUSSION

Testing our low-fi prototype allowed us to unveil the key pain points with our current design. We found that the biggest challenges were: navigation within the app, clearly conveying the app's concept to the user, ambiguous terminology, and confusing colors and icons.

To address the navigation problem, we will include a navigation menu at the bottom of the screen. In the navigation bar, we will employ clearer terminology. For example, we may change "explore remote stories" to "search for stories". The navigation bar eliminates the need for a home screen, so the app will instead go straight to map view.

To convey our concept more clearly, we may include a splash screen that will clearly articulate our value proposition—cultural immersion through personal stories. We hope that these changes, coupled with clear location tags for stories, will convey the central idea behind our app.

Throughout our interviews, users offered suggestions for how we could improve existing features within our map. The most notable among these suggestions were: the use of thematic groupings to allow individuals to explore related stories, increased flexibility in creating and visualizing playlists, and the ability to share stories with others. Overall, the feedback we received was highly encouraging and we are excited to incorporate these suggestions into our medium-fi prototype.

Word Count: 1483

APPENDICES
Consent Form

Consent Form

Voice's prototype is being produced as part of the coursework for Computer Science course CS 147 at Stanford University. Participants in the experimental evaluation of this prototype provide data that is used to evaluate and modify the interface of Voices. Data may be collected by interview, observation and questionnaire.

Participation in this experiment is voluntary. Participants may withdraw themselves and their data at any time without fear of consequences. Concerns about the experiment may be discussed with the researchers (Ayelet Drazen, Krishnan Nair, Taylor Lallas, Baker Sharp) or with Professor James Landay, the instructor of CS 147:

> James A. Landay
> CS Department
> Stanford University
> 650-498-8215
> landay at cs.stanford.edu

Participant anonymity will be provided by the separate storage of names from data. Data will only be identified by participant number. No identifying information about the participants will be available to anyone except the student researchers and their supervisors/teaching staff.

I hereby acknowledge that I have been given an opportunity to ask questions about the nature of the experiment and my participation in it. I give my consent to have data collected on my behavior and opinions in relation to Voice's experiment. I also give permission for images/audio records/video of me using the prototype to be used in presentations or publications as long as I am not personally identifiable in the images/audio records/video. I understand I may withdraw my permission at any time.

Name:_____

Participant Number: _____

Date:_____

Signature_____

Witness name _____

Witness signature_____

Interview Results:

0 (no problems), 1 (cosmetic problem, suggestion), 2 (minor usability problem), 3 (major usability problem), and 4 (usability catastrophe).

Interview 1:

INCIDENT	SEVERITY
Immediately understood that lights represented the stories	0
Didn't know where he was relative to the other stories	3
Liked having different modes of consumption (audio & video in example)	0
Didn't know how to switch between voices at the same location	3
Easily completed listening task	0
Wanted some way to refine search for stories via tags, topics, themes	2
Wanted to connect with author	2
Is there a way of organizing playlists by themes?	2
Difficulty navigating back to menu	4
Difficult going back single page instead of starting over	4
Smiled when exploring stories in different areas	0
Didn't understand when he was done uploading his story	2
Liked being able to edit/preview his story prior to publishing	0
Loved the idea of sharing stories → thought there was a need	0
Worried about putting people in boxes	1

Interview 2:

INCIDENT	SEVERITY
Smiled when listening to the concept, excited	0
Easy to find stories near you and listen to the story	0
Very speedy, easy navigation to finding stories	0
Doesn't know how to go back for a single page	4
Overwhelmed seeing everything in all caps/too many words - story preview page	2
Enjoyed the simplicity	0
Confused by the "available as" bar	1
Went to upload a story when trying to find a story from Japan	3
Spent a long time trying to figure out how to find story in Japan - remote stories wasn't clear	3
Didn't know what the written story button was	2
Didn't know what "share my voice mean"	3
Confusion with stories vs voices	4
Likes the side bar menu - simplicity	0
Likes the map, is each color supposed to denote something (like a theme) not clear	1
Would like to see each color represent a theme	1
Likes having the photos associated with the place, associating image with words	0

Wanted text to be more spaced out and not have everything in caps	1
Unclear about the preview of map when uploading a story.	2
Didn't know what the copy button is for	3
Does share my voice mute the audio	4
Wanted filters for stories	1
took story to be more like snapchat story rather than a personal narrative - needed a buzzword	4
What's different with this about snapchat or instagram	1
Loved the idea once it was explained - face glew up	0

Interview 3:

INCIDENT	SEVERITY
Easy first task navigation, "I like the colors, what do they mean?"	1
Confused at how to go back to home (want nav bar)	4
Easily completed second task of adding to playlist "Oh this is pretty easy"	0
Bit of confusion while uploading story, possibly due to to the sketch automatically filling stuff up	2
Feature: "If you did like friends... share with people"	0
"I'll tell my friends about it too"	0
"Even my mom could do it"	0
Wanted to be able to scroll through the world map/interact with it independently of the search bar	1

Interview 4:

INCIDENT	SEVERITY
The play story screen was simple	0
Preview page felt busy	1
Thought upload story title was a button	3
Wanted to go back one page but couldn't	4
Compared simplicity/approachability to apple	0
Is there a way to follow people?	1
Wanted a recommendation to follow the story he listened to	1
Didn't know where he was in relation to the map of stories near him	2

Interview 5:

INCIDENT	SEVERITY
Thought listening to a story was straight forward - smiled	0
Confused by terminology ("remote story")	2
Map looked familiar from real estate apps	0
Went to playlist first to add things to playlist rather than going to find the story first	2
Sped through the uploading a story task	0

Confused about whether remote stories includes all stories near me as well	1
How do i remove things from playlist	2
Doesn't like that there is only one playlist → wants to be able to create individual playlists	2
Didn't understand that the stories were tied to very specific locations such as buildings, monuments, historic sites, etc.	3
"I don't want to write the meat on the bone, but I can talk meat on the bone"	0
I want to be able to read the story	2
Struggled with navigation	4

Interview 6:

INCIDENT	SEVERITY
Video button of story looks like a play button (such as listening to a story), didn't recognize the difference	1
Didn't know if the colors meant different things on the map with stories	2
Didn't know if she was one of the dots, or where she was located relative to stories	3
Clicked on current voice (title) when trying to listen to story	1
Looked for the three lines symbol for a menu rather than	3

swiping.	
Went to upload a story when trying to add a story to playlist	3
Thought it was a little annoying to fill in all info because keyboard is disappearing	2
Smiled when uploading story	0
Confused by preview in the upload story (is that where I am)	1
Frustrated bc she cant navigate back to original page	4
Wants to have a tab navigation type of thing to switch between options	1
Home page and main menu didn't match (specifically with playlist)	2
Wanted a description/summary of the story before listening to it	1
Confused by icons next to "available as"	1
Couldn't navigate back one page	4
Multiple people can have a story in the same spot, wanted to know how to switch between them	3
Wants a way to queue or bookmark stories for later	2
Didn't understand that the stories were tied to very specific locations such as buildings, monuments, historic sites, etc.	4

Time to Complete

INTERVIEW	SIMPLE TASK	MODERATE TASK	COMPLEX TASK
1	66.60s	87.54	131.24s
2	23.95	97.43	57.32s
3	44.46s	47.58s	21.59s
4	33.73s	18.25s	91.43s
5	25.96s	60.25s	73.23s
6	19.30s	20.58s	59.20s