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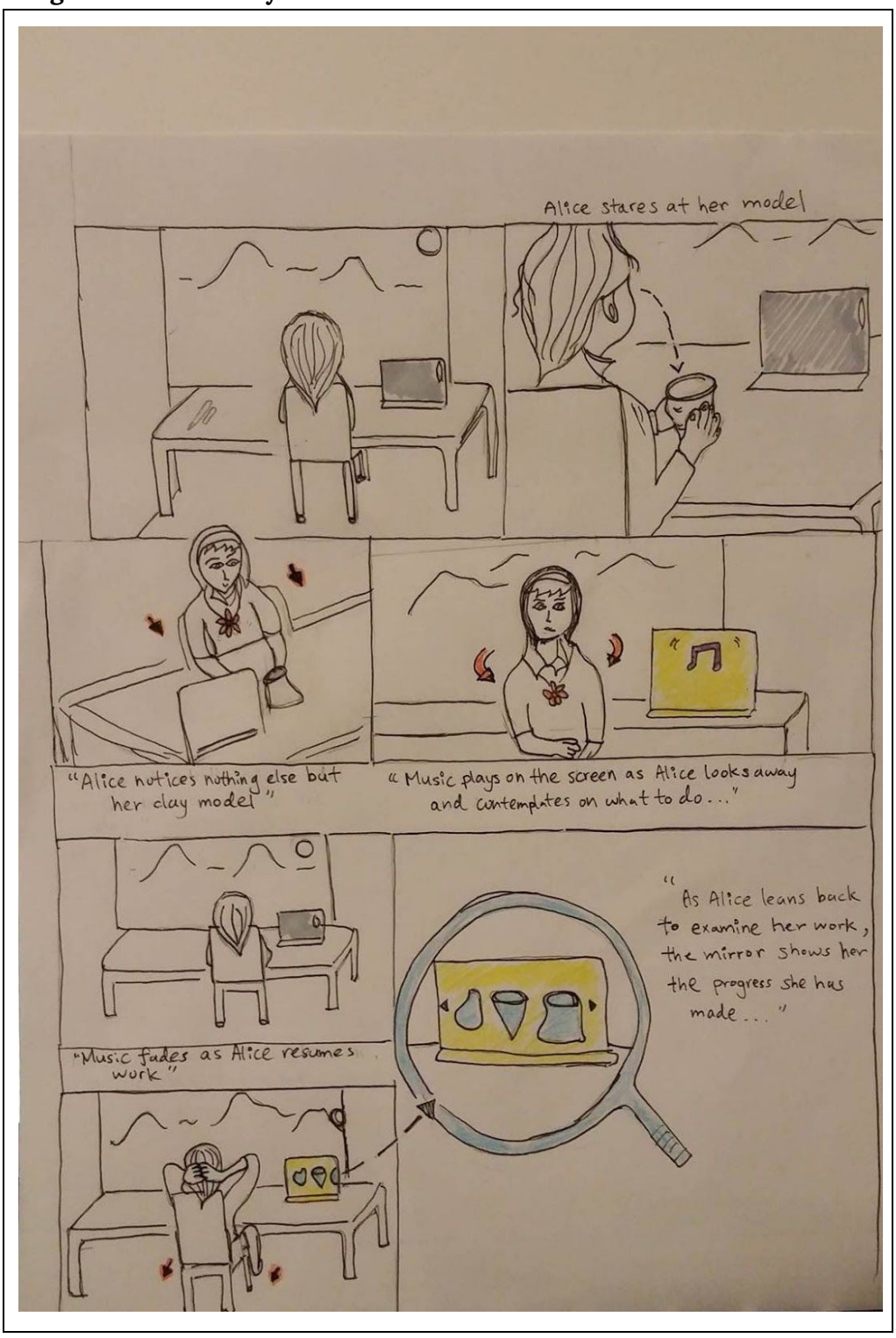
Design Report Practicum 4 Cycle 3

Image of refined Storyboard



Description of Persona

Alice is a sculptor and she finds that she was able to realize how creativity is everywhere in this world and that it is her job as an artist go and seek those experiences out. She doesn't think that "art" is the only way to express the inspiration that is the world; however, she does find it the most enjoyable through sculpting. She is excited to explore different ways in which different mediums of art intersect, especially with the expressiveness of computer technology. She wants to continue to create art, and find different practices to enhance her skills as an artist, and hopes to be able to be a professional artist instead of having this just be a hobby of hers.

Narrative Scenario/Proposed Interaction

Alice is sitting at her desk working on her clay sculpture. As she stares intently at her work and plying her hands through the clay. Her necklace sends signals to the mirror that she is currently concentrating on her sculpture via her leaning in motion. This tells the mirror not to disturb Alice. After a while, Alice feels slight stuck. She turns away from her work, and faces the back of the room as she contemplates what she should do next. The mirror receives signal that Alice is now turned away. The mirror begins to play some ambient sound in the background to help Alice become less frustrated while not being to intrusive. As Alice gets back into her flow, she leans in once again to apply her clay in various ways. The mirror slowly dials down the music in response to Alice's leaning in motion. Alice finally finishes the first stages of her clay art. She leans back to evaluate her work. The mirror realizes Alice is evaluating her work and begins to play back a few pictures of her previous prototypes, showing Alice the changes she has made throughout her sculpting session.

Since Alice as a sculptor really values her time to herself, the mirror is designed to be as in the background as possible. Our proposed interaction is as simple as Alice's orientation and lean towards the mirror. When Alice leans in, it means she is working, therefore the mirror should be off. When Alice is leaning back, it indicates that she is either relaxing, or evaluating her work, which means the mirror could play back a few images of her most recent iterations. It might help Alice think of other ideas as she works. Lastly, as Alice faces away from the mirror or the desk, it means that she is probably thinking and needs a little bit of ambient noise to help break up her routine. The mirror therefore plays a little music her orientation is away from her desk.

Cycle I

Summary of observation and interviews

Public vs. Private settings influence how much time a user would spend with a reflective surface like a mirror. With Public being less time spent and private being more. People are more self-conscious of how they are perceived in a public space, and therefore, would spend less time looking at a mirror, for fear of judgement.

One interviewee mentioned that when the screen on his computer darkens, and as the image of his face appear in the reflection, it takes him out of the immersive experience that he was engaged in. Such a user might enjoy a less accurate representation of himself on screen. Another user really finds mirror troubling for her self image, and that she doesn't like the way our culture of body image is being reflected in this practice of "checking out" yourself in the mirror.

People usually don't take their time to stop by signs that don't appear to have functional purpose to them. For example, most people never stopped by the student activities board. If it serves no apparent functional purpose, and if it doesn't present some novel experience, most people will not stop.

Persona

Alice is a student of sculptural art from San Francisco who took a year off to pursue a design apprenticeship in a small village in Puerto Rico. She is currently 22, and is excited to finish up her degree at the San Francisco's art institute. When she is not working on artistic pursuits, she likes to wander around town gathering inspiration for upcoming projects. Usually after school, between the hours of sunset, and studio, Alice likes to go for a pre-evening stroll. Usually on these walks, Alice finds a feeling. This feeling usually guides her in her creation process. When Alice was in College, she often participated in photo walks, this was how she came to realize the importance of gathering inspiration while not working. She realized that it is the easiest to flow when she is not in a chair and fixated on trying to do well.

She also enjoys experimenting with many forms of art, including photography, dancing, and music. In the near future, she hopes to develop her skills as an artist in illustration, and animation. She has not figured out what field of art she wants to pursue, but is willing to explore the intersection of traditional arts and newer forms that incorporate computer technology. She has lightly trimmed bangs, a nose ring, and a denim jacket stained with white paint. She seemed relaxed and optimistic about her current position in life. She finds the current trajectory of American youth culture troubling in the way body image types are defined, especially for women. She has a small group of friends who shares similar ideals.

She finds freedom in the process of creating art for herself and no one else. She spends most of her time alone reading her favorite novels. Some of her favorite novels include:

The Hobbit: An Unexpected Journey, the little Prince, The old man and the sea, and Hitchhiker's guide to the galaxy. Alice realized that there isn't a moment that can't be spent finding inspiration. So long as she keeps her eyes open, and heart in tuned with herself, then she is confident that she will be able to continue to create her own future through her art.

Narrative Scenario #1

Alice is in her private art studio, overlooking a small public park, in front of her large wooden desk. She feels uninspired at the moment, and spent hours drawing the same thing, only to realize that she was fixated on technique but not form and creation.

She notices the ceiling above her is rippling with silver waves. (ambient) She walks into the center of the room, and gazes at the screen. The ripple stops, and the waves recede into the background. (implicit) She points her wand at the mirror and a canvas space opens up. (personal) She begins to move rhythmically, and her motions create a beautiful image on the mirror. She takes a look at the image and smiles. She is now an inspired artist.

Narrative Scenario #2

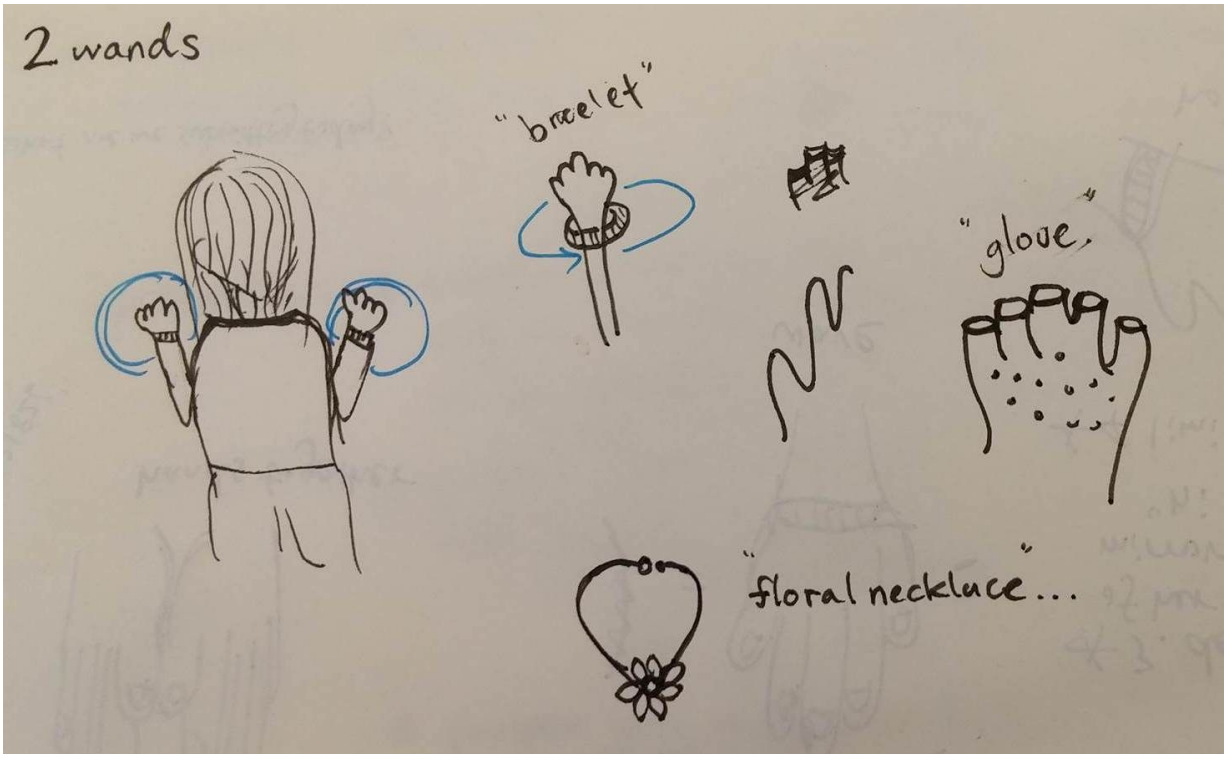
Alice is traveling on a bus when suddenly inspiration strikes. Two kids dropped paint cans all over puppies causing them to turn bright pink.
Alice direct her gaze at her pocket size magic mirror and notices an inspirational quote. The quote states, "Let your life be your inspiration." (ambient) She stares at the mirror and it illuminates. (implicit) Alice brings her wand, which is attached to the back of her hand, and taps her head twice. This gesture indicates to the mirror that Alice wants to record this moment. (personal) Alice pretends to shoot an imaginary camera and the mirror captures the moment. (intimate)

Narrative Scenario #3

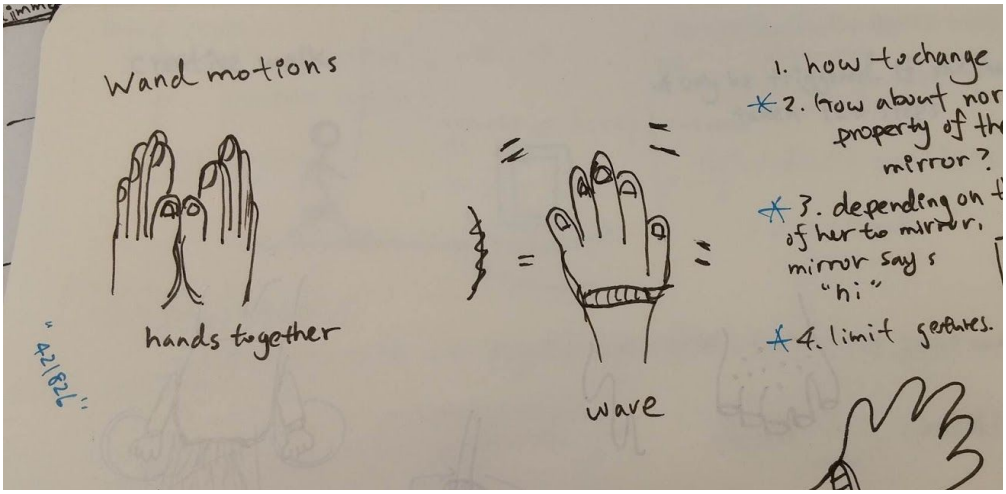
Alice is in the midst of her 8am dance performance elective at the SF academy of the arts and is having trouble mastering a dance sequence named crumping.

Luckily for Alice, positioned in front of the class is a magic mirror.
As Alice follows the instruction of the teacher, she notices, on the edge of the mirror, a small stick figure dancing exactly the same way the teacher was dancing (ambient). She reaches down and lifts up her wand. Subsequently, the stick figure enlarges. (implicit) She brings her wand to her head to initiate play-back sequence by stick figure. (personal) She holds out her wand and makes a dial motion to play back the instructor's previous sequence(intimate). Alice leaves the studio having been able to properly recall all dance sequences in the crump.

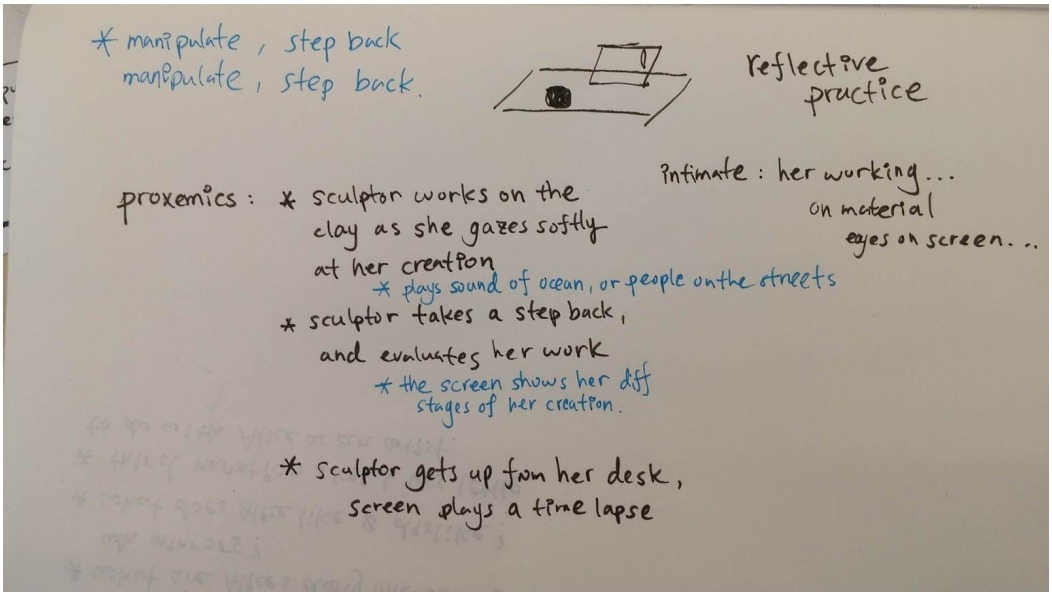
Cycle II



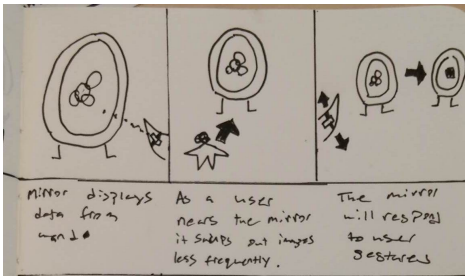
Exploring different types of wands. Should it be a bracelet? A fingerless glove? A floral necklace?



Exploring different hand gestures. Hands together. Hand waves. Holding out hands.



Exploring a different surface. The mirror sits on the desk in front of her sculpture. Exploring different proxemics.



1. **The phone transmits the data to mirror to display images.**
2. **Shows personal proxemic interaction with user**
3. **Shows waving gesture to change photo screens**

Cycle III

Link to video: https://youtu.be/FYZHlw4HP54

Description of expected challenge in implementation:
There are several implementation challenges we will have going forward as a result of our mirror and wand selections. The first challenge that arises is from the wands form factor, a necklace. No necklace that we know of has a means to transfer the necessary acceleration/gyroscopic data to the mirror for our interaction. The second challenge has to do with the implementation of gesture recognition. We spent an immense amount of time coding the simple gestures in practicum 4, and the required gestures for our interaction are even more complex! For example for the required proximity gesture, we would need to find a means to identify the location of our necklace, the location of the mirror and then calculate their distance relative to one another. The final challenge has to do with the form factor of mirror, small and compact. Our mirror is meant to set on a desk and be as unobtrusive as possible to our persona, Alice. So having a full desktop/laptop webcam setup will not suffice for our implementation.

Reading Response

Reading response #1: Smart Blender

According to Greenberg, we have come very far since the idea of ubiquitous computing was first proposed by Mark Weiser. As evidenced by the ubiquity of personal technology device such as smartphones, tablets, laptops, digital interfaces, smart home appliances, and wearable technologies. Yet, "there are still considerable problems that make these devices far from seamless". Greenberg brings up the problem that while devices are considered "smart" in relation to technology a decade ago, it still lacks two very important qualities. First, the devices are "blind to the non-computational aspects of the room", e.g. the people, other furniture, the spatial layout. Second, these devices are not seamlessly connected. The connectivity of which often requires a good amount of work and understanding from the side of the user. Greenberg proposes just as people utilizes the proxemic zones to mediate and understand the space and the people that occupy that space, the idea of proxemics is essential to realizing the visions of ubiquitous computing. Devices should know about each other. Devices should behave differently as they sense the changes of their surroundings.

The idea of a smart kitchen blender may or may not fit into the vision of ubiquitous computing. It depends on how "smart". If the blender is connected to the internet via wifi, is capable of suggesting different fruit smoothie recipes, and can be remotely controlled from an iPhone, does it fit into the idea of ubiquitous computing? I would argue that it still doesn't fit into the vision of ubiquitous computing even if the blender could play the latest hits by Kendrick while it is simultaneously blending fruit. It still lacks the important quality of seamlessness. As Greenberg would propose, the smart blender needs to leverage the proxemic zones to its user and allow that to "blend" further into the environment of human centered experience. For example, usually when I am blending a fruit juice, my concern is the fear associated with being around blenders while it is operating. Maybe too many sequels to *Final Destination*, but I would prefer to not have the blender going off while I am still standing there. One easy fix for the seamlessness would be as I walk away from the blender, the blender would begin blending and finally reaching its maximum spin rate as I am the farthest away from the blender. Additionally, the blender would be able to sense the hour of the night it is, and adjust its noise level by trading off between the spin rate and the noise level in order provide a smoother experience for the users.

Reading Response #2: Mike Weiser vs. Ishii and co.

In 1991, Mark Weiser proposed a series of principles that outlined the concept of ubiquitous computing. In 1997, Ishii proposed the concept of tangible computing. Although the prototypes and the designs may appear to be motivated from very different perspectives, I would argue that mark Weiser and Ishii are coming from very similar perspectives. They both lament the movement away from the physical world and the richness that it provides humans.

Mark Weiser said that virtual realities are just tools in computing but does not encompass the principles of ubiquitous computing because it seeks to define the human world inside of the computer instead of the other way around. "It excludes desks, offices,

other people not wearing goggles, chance encounters, and in general, the infinite richness of the universe. Ishii said, " Through grasping and manipulating these instruments, users of the past must have developed rich languages and cultures which valued haptic interaction with real physical objects. Alas, much of this richness has been lost to the rapid flood of digital technologies." However, where they differ is in their implementation as well as their vision of the potential of technology and what it means to be a human in the context of an age of constant computing revolution.

In addressing the issue of a human de-centered computing world, Mark Weiser proposed the principles of location and scale. Mark expects devices to know about other devices as well as the environment that it occupies. Mark comments on the devices of today, "If the computers today merely knew about the room they were in ..." In addition, he expect the devices to mimic the physical locations, quantities, placements, and interactions that humans are familiar with interacting with. How many notebooks do people have? How many boards, pads, tabs are usually in a room? Mark developed these principles to hide away technology, but he is still very much confined by the thinking of traditional input and output mediums, the language of graphical user interface. This is where Ishii takes a completely different approach.

According to the author, "The Tab/Pad/Board vision is largely characterized by exporting a GUI-style interaction metaphor to large and small computer terminals situated in the physical environment." While Weiser speaks of ubiquitous computing as hiding away technology by giving them flexibility of location, connectivity, and sizes, Ishii is calling for a complete integration of technology into our physical world by bridging the gap by reducing the lack of physical affordances in our technology. In fact, Ishii and co. commented that, " our vision is not about making "computers" ubiquitous per se, but rather about awakening richly-afforded physical objects, instruments, surfaces, and spaces to computational mediation, borrowing perhaps more from the physical forms of the pre-computer age than the present." While the idea of a mouse provides for the physical manipulation of a virtual object, it still does not take advantage of the rich affordances of two handed manipulation in the physical world.

LINKS:

Cycle I Doc	https://docs.google.com/a/berkeley.edu/document/d/15zHUcCQtiyBGfdUMZIvzW8oWC5y4icbdQE0nKqwGsKM/edit?usp=sharing
Cycle II Doc	https://docs.google.com/a/berkeley.edu/document/d/1bpbQglwOeaiD-XbkjVIZFtouiIsZdbeVm2oGewIUG-o/edit?usp=sharing
Cloud 9 Workspace	https://ide.c9.io/noahlopez/cyen-nlopez-practicum4