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Documentation Website URL: https://m33-melissa.github.io/CART360/project.html

Project Description (Four Research Questions)

- **Physical/Tangible**: Small plushie, made from scratch, LED eyes, small plastic hook (backpack clasp), stroke sensor (if possible), temperature/heat sensor, speaker (calming alarm ringtone & responsive noises), on/off button, small Character LCD Screen, mode button (time hours, minutes/alarm hours, minutes), up/down and ok button (volume by default, hold down to mute, change time/alarm)

- **Code/Virtual**: Sad sounds when it needs comfort/warmth & happy sounds when it is cared for. Satisfaction meter, with less care it is uncomfortable/cold more often and with more care, it is more satisfied and needs less care. Holding down a button changes its value at an exponential rate

- **Additionals/Alternatives:** gyroscope & accelerometer, stopwatch & timer, 24h/am-pm system switch.

- **Utility**: Mainly a clock/alarm.

The artifact that we are proposing to make is an interactive alarm clock in the form of an endearing plush. It will have reactive LEDs for eyes and a small LCD screen on its back indicating the current time with buttons to access functions. With a stroke sensor on the ears and an internal thermal sensor, it will display reactions of wanting to be pet or held and the resulting reactions of being interacted with. Those reactions will be displayed by the eyes that light up, as well as an integrated speaker at its mouth (that can be muted). It is made to be a portable companion that can be attached to your backpack or clothes. Playing with it whenever you feel lonely or bored, and looking at it as an indication of time.

Think of a context and an environment where you would like to intervene. Where will you present your project? Who is it made for?

The context and environment that we want to intervene in is menial daily life, generally. For some examples, this could take place in transit, at school, or at the workplace. Peoples' lives are very complex and varied, but we want to offer a portable companion as an artifact. This pet is very adaptable to different people and their daily lives. It is easily accessible for petting, holding, and comforting. Its eyes light up and beg for attention which allows for an escape from your routine life. There to either distract you from reality or to bring you back to reality with its alarm function. Similarly to a stress ball, it is there to be held and played with. Whenever you have moments of stress or whenever you need a break from what you're doing. There are no consequences to not taking care of it, it shouldn't be a chore to interact with, but rather a choice.

If it is being noisy, mute it; if its lights are bothering you, turn it the other way. It will still be accessible as a regular clock.

How it intervenes, is by giving the participant something to take care of and bond with. While still allowing for some functional use and application into the participant's life. It is made for the kind of person who is open to playfulness, open to calmness, and bonding with our artifact. We can assume the majority of this audience would be fairly young people but it could be much more. As people of all ages can show an interest in connecting with a toy.

Think about the kind of relationship you wish to foster among and between your users and the artifact or installation. What will your project afford users and how would the experience make them reflect on themselves, their environment, society and your intentions?

With our artifact, the kind of relationship we want to foster is mainly from a caring mindset. If possible, it would be wonderful to have multiple artifacts connect and allow users to have more personalization and connectivity with other participants. For now, our project is mainly a shared experience between one or two people and the artifact itself. This is partially because of its physical size, but we also want to form a personable relationship when one or more people are interacting with our artifact.

A part of our inspiration and context in this project is the remote aspect of our lives. Given that covid-19 has made us more interconnected online and less physically connected. We think that allowing the participant(s) to form a bond with our artifact will grant them a sense of escaping isolation in a way. This is largely symbolic and we are social animals of course. Nonetheless, we want to simulate certain aspects of life that are otherwise taken for granted.

Outside of the current global situation we also want to allow for some escapism from the pressing forces of society and routine that we have. Simulating this by using what is partially functionally an alarm is also very interesting. As it will allow the participant to integrate a device that may initially seem somewhat menial into their life. Put simply we are allowing them to introduce a toy/gadget into their life which will grant them some calmness in keeping their mind off of things to take care of an inviting and cute pet.

Think about the notion of empowerment. Is your artifact really helping or challenging users or is it just another psychological prosthesis?

A large part of how our artifact empowers people and it's differentiating factors from any other psychological prosthetic is the means of integration. Although aspects of the device are familiar and recognizable to most that would be interested. We offer a bonding experience and means of exploring a somewhat lighthearted relationship in a complex and meaningful way.

We believe that by integrating our artifact into the participant's life that it will offer them a sense of escapism, bonding, and even alleviate certain woes. It's possible that through this calming device, we can achieve a sense of catharsis which many devices in our lives aren't designed for. Essentially our artifact could serve as a possible distraction from stress, anxiety, and depression. This depends on many external factors, but as a goal, we want to offer some comfort in a way that could help with the participant's mental health.

In this way, our device is somewhat counter-cultural in that it addresses distress to an extent, which is something that can stem a lot from a capitalistic society among other factors. In relation to the prominence of social-media, manipulative algorithms, and pandering/anti-privacy to name a few. Which are all under the guise of freedom & democracy. We see that many problems arise and a possible distraction or escapism in caring for something however small or symbolic can go a long way. With the number of children predisposed to behavioral and focus issues because of some of these problems. We think our object may be able to alleviate some of these realities we face.

Think about how to successfully communicate your intentions - what Interaction Design Strategies will you employ? What are you trying to tell us?

Our plan to communicate intention is very reliant on continuity. Our device is a small, cute toy that we want people to feel very comfortable with. In reference to our projects research later in this proposal, unlike *Clocky*, we don't want it to be a burden and unlike the *Poké Ball* chain, we don't want to rely on presuppositions or some possibility of enfranchisement.

One of the ways that we will achieve this is by the alarm emitting calm music. In terms of style, this would be fairly repetitive and quite simple, maybe even reminiscent of an RPG game one played as a kid. We also want to allow for the interaction to be somewhat fun and non-demanding, while still maintaining the sense that you have to care for this pet.

Another way that we will achieve this is with a cute and approachable interface. The interactions will mostly be to stroke or warm up the pet. So it's response will be non-abrasive. With the LEDs, we want to start with blue when cold and fade to orange when warmed. For the shaking aspect, it would be very similar in that once it warmed the shivering would fade into a lower and softer vibration representing a purr and that it calmed.

In the scenario that the pet is needing comfort, its eyes will dim. We plan to somehow limit the power that the LED eyes will receive. So once it is physically pet, the eyes will return to their default brightness and we will plan to use the stroke sensor to sense this if we can get our hands on one.
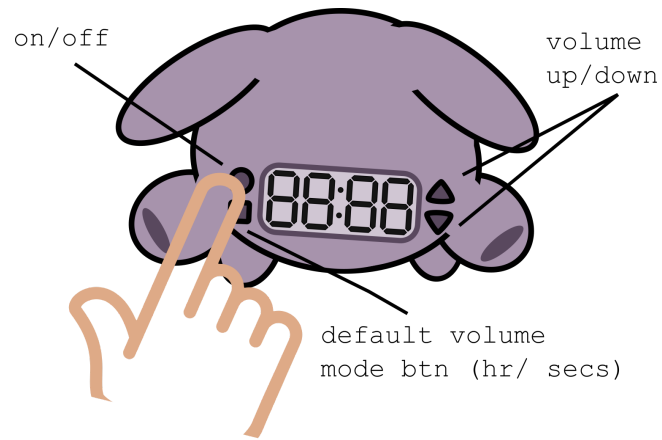
Evaluation of Sensors and Affordances

One of the sensors that we would like to use in our projects is a temperature sensor that would indicate if the user has been in contact with the artifact long enough for the heat to be transferred. It is a way to indicate that the user is taking care of (holding) the plush. The user will be prompted to hold the plush whenever it starts "shivering" and showing signs of being cold. The artifact would start shivering after a certain amount of time, at random.

Another sensor that we would like to use is the stroke sensor from the *Handcrafting Textile Sensors from Scratch* document. We would mix strands of conductive thread with the fur of the plush so that the sensor would know if the toy is being petted. It will show signs of wanting to be petted depending on a certain LED light effect on the eyes. The LEDs would light up as a result of being petted. Due to the way the strands work and how it looks, we are thinking of using this sensor on the ears so that it doesn't look too out of place. For context, in the drawing prototype (in the Storyboard below), our artifact looks like a bunny creature, so the conductive thread could look normal on the ears if combined with normal threads.
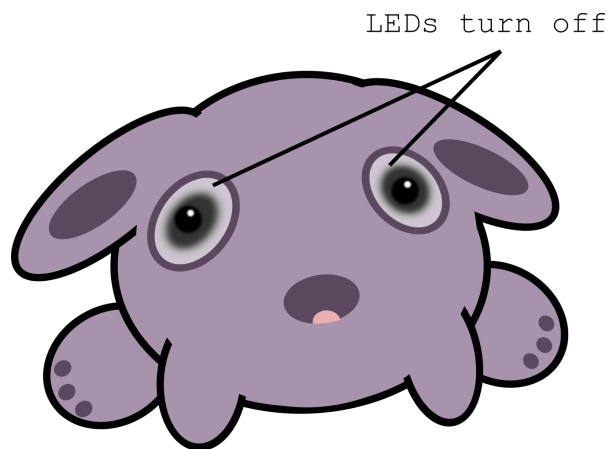
If time and resources permit, we would also like to add an accelerometer or a gyroscope to allow for a reaction from the artifact whenever the user drops or plays with the toy. It adds to the playfulness factor of the toy and further encourages the user to take care of it.
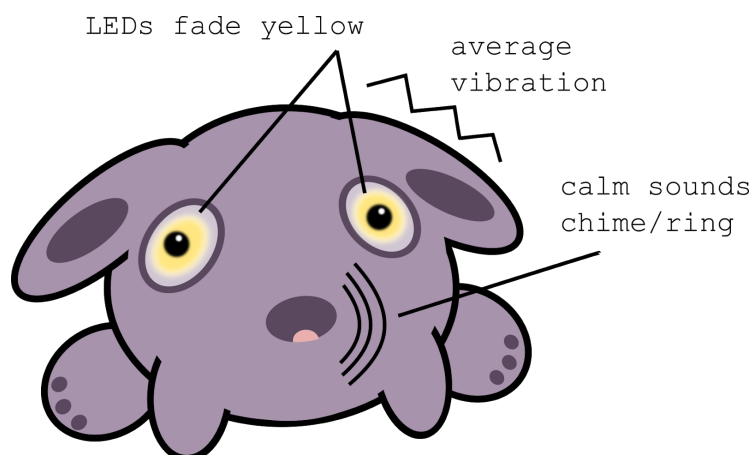
Interaction Storyboard Frames
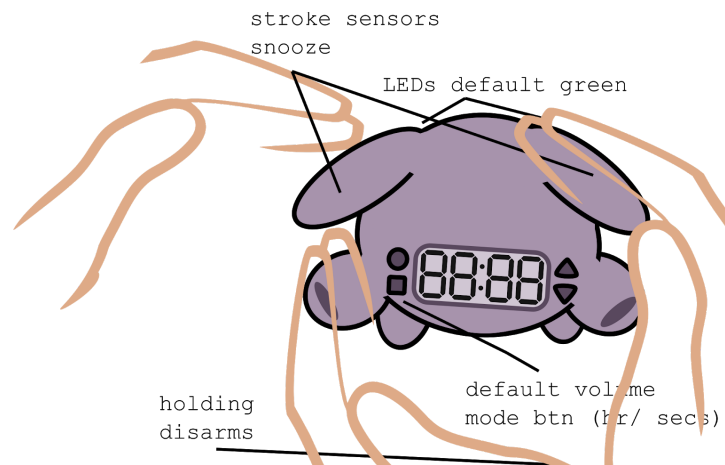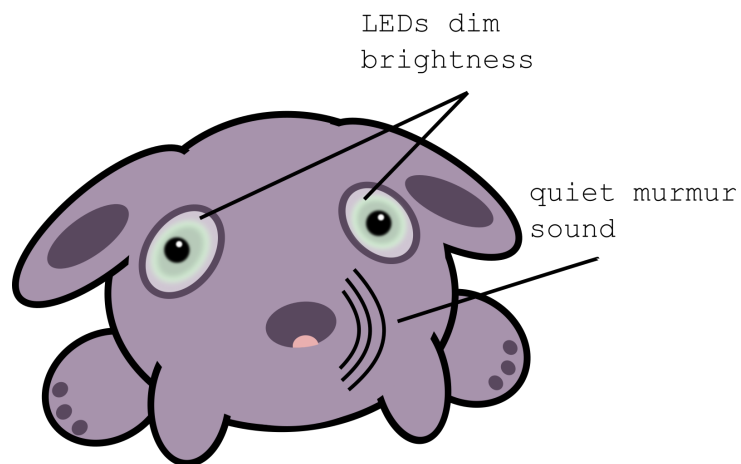
1. Setting up the alarm

on/off

volume
up/down

default volume
mode btn (hr/ secs)

2. Sleeping (device is on standby)

LEDs turn off

3. Alarm goes off

LEDs fade yellow

average
vibration

calm sounds
chime/ring

4. Turning off the alarm

stroke sensors
snooze

LEDs default green

holding
disarms

default volume
mode btn (hr/ secs)

5. Needs comforting (Dimmed eyes)

LEDs dim
brightness

quiet murmur
sound

6. Petting (Normal brightness eyes, once it is pet)

Stroke sensors are pet

LEDs turn
default brightness

satisfied
sound
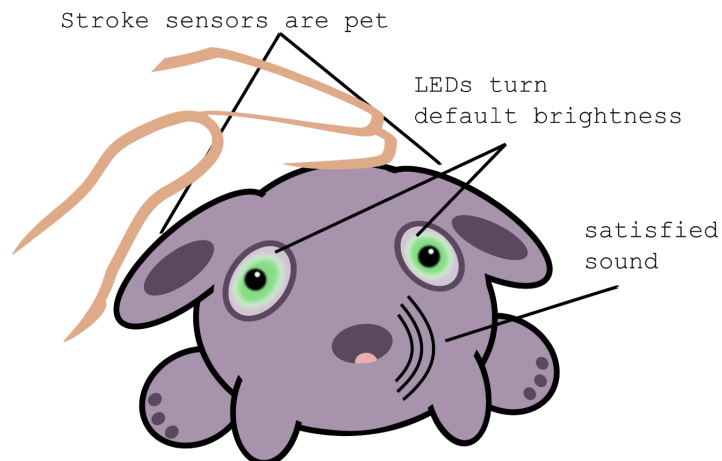
7. Needs warmth ("Shaking" vibration is fast & eyes are blue)

LEDs are blue

shaking

shivering
sound
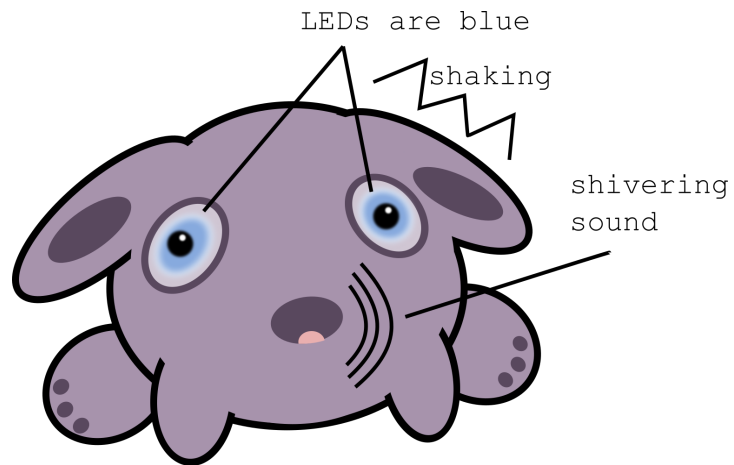
8. Holding ("Purring" vibration is soft/slow & eyes are green)

LEDs turn green

purring

satisfied
sound
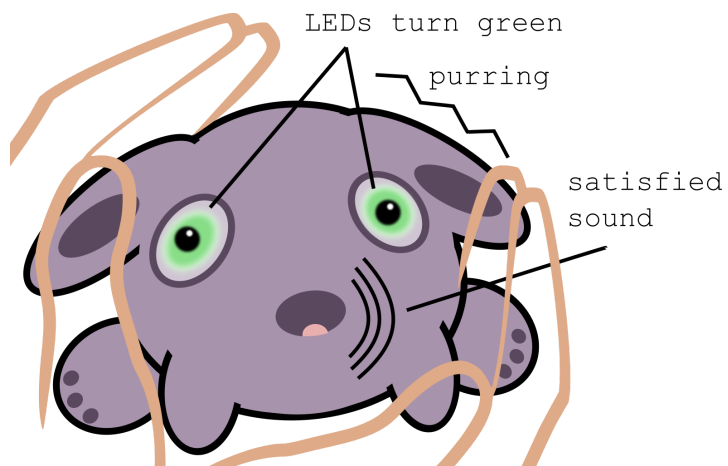
Tamagotchi

The Tamagotchi is a hand-held device which are essential virtual pet toys and a fad that took off in many places of the world in the 90s and 2000s, originating in Japan. They are very simple, to exemplify this we can look at the direct translation from its Japanese name which is egg-watch. Some of the main aspects of this toy include playing with the pet you own. The graphics themself are very simple and symbolic more than a direct representation of taking care of a pet.

An early mistake that was made was that the device when it was first introduced, had no pause button. This almost posed a threat, as it was mainly geared towards children. As you can imagine you had to take care of this pet in real-time or know about a trick where you could change the time on the device. So for school kids, this was a huge distraction and the device was viewed negatively for this. Very soon after, they simply introduced a pause button on the next version which subverted this issue.

This experience of the Tamagotchi is very insular, especially with the first version of the device that was released. In a later, more exclusive version of the device, you were able to use the infrared sensor to connect with another Tamagotchi. Even allowing you and your friend's pets to be friends. This broadened the horizons on the experience of this device, but it was still limited mostly to connecting with people you knew or could physically pair with who had this version of the device.

The narrative of the game takes you through the entire life of this virtual friend/pet beginning with the egg that hatches. As you play you are able to pet it as well as learn about what this pet is and where it comes from. Which forms a particular type of bond. The framing of the game is mostly an effort to keep your pet well-behaved, fed, and healthy and because of this, if you don't care for your pet it will die.

Clocky

Clocky is known as the alarm clock on wheels. It is a little alarm clock robot and once you set your alarm it goes off by flashing and beeping loudly to start. You can also set your snooze time, and after that passes it gets even more annoying by rolling around and spinning its body a bunch. Some of its beeps are a bit reminiscent of r2d2, apart from the base alarm siren noise.

It's recommended that if you put it on your nightstand you give 2 feet of room for it to drop down from, maximum. Clocky is also known as the runaway alarm clock, this is because it will manage to fly off your nightstand and spin around your room. Given there is no way for it to escape out of your room, the assumption is that you will have to get up and turn it off. Once you hear the main repeated beeping noise it makes sense how this would be very effective at waking someone up.

I think that there are aspects of the Clocky that translate well to our artifact. With the Clocky, I think it is specifically made for people that have trouble waking up from a conventional alarm clock. So, I assume this is a part of why the resultant Clocky is so intrusive, annoying, and over-the-top. I really love other parts of this like the little beeps that it makes intermittently, as well as the personification of a mundane alarm clock. It allows this menial device to be very demanding of attention and position itself in the owner's daily routine.

Poké Ball Plus

To accessorize their game "Pokemon Go", "Pokemon: Let's go, Pikachu!" and "Pokemon: Let's go Eevee!", they created an interactive device that would enhance the player's experience towards the game by "bringing the adventure into the real world"[1]. A physical ball with sensors and buttons to be used with the game. The components of the ball include an internal battery, an accelerometer, a gyro sensor, a vibration motor, a sound system, LEDs, a top button, a control stick (joystick), a USB Type-C connector, a strap for safety. It was conceived to be handheld and portable wherever you go, allowing for some kind of subtle companionship.

In their "Let's Go" series, the ball uses motion control, if you imitate a throwing motion with the ball in hand, you will be throwing the ball in the game as well. In the game, a Poké Ball is thrown at a Pokémon (creature) to capture them. When a Pokémon is caught, the Poké Ball Plus lights up, it vibrates in your hand, and the specific pokemon will let out a cry as if it was trapped inside the ball. At any time, even when the game is not open, you can gently shake the Poké Ball Plus and the creature inside will make a sound (unless the user muted this feature) and the ball will vibrate.

As for the "Pokémon Go" experience, it would prevent you from looking at your smartphone as it would light up and vibrate whenever a Pokémon is nearby. To capture it, you just have to press the button at the top of the ball with a chance of success (it would light up different colors if you caught it or not). It also tracks your steps since the game has a reward system for the miles you've walked.

Concluding Thoughts on Research

Our project will come together in a way that it can represent itself meaningfully. In comparison to Clocky, it will have similar functionality. Yet, offer a much more personal, calm, and less invasive experience. It is worth mentioning that our target demographic is a bit different we believe. Our artifact is more in-line with the Tamagotchi example. Although it is differentiated by it being less of a demanding toy, especially in comparison to the original version without a pause button. It is also a bit more open-ended and symbolic in the sense that it isn't a marketed toy that will be a

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[1] The Pokémon Company. Poké Ball™ Plus. Retrieved October 15, 2020, from
https://pokeballplus.nintendo.com/

craze among young people. The experience our artifact will offer is more subtle and functional as opposed to an addictive or intrusive toy.

In terms of the audience, we will share many similarities as our artifact is likely best-suited for younger people who have an interest in an evocative toy as a non-intrusive companion. The reason we are deviating from Clocky is because it already fills a certain niche for people that need a blaring and awfully annoying alarm clock. In terms of our artifact, we want to represent it as a companion which is in a sense, a therapeutic temporary relief possibly. So if we give it the same behaviour as Clocky such as the spinning, rolling around, flashing LEDs, and blaring alarm this would be quite counter-intuitive to our design.

If we compare the Poké Ball Plus to our plush artifact. It is similar in the sense that it is a playful companion; it also shares the idea of having a portable pet that you can interact with. We could say that both artifacts are based on the concepts of "fun" and "game". However, other than that, it differs widely in the sense that the Poké Ball Plus isn't personified at all. Aside from the noise (that people most likely mute because it is annoying), there is no attachment to the "companion" that can be made. It is a ball that is more functional than emotional or personal. Although our artifact has the functionality of being an alarm clock, that function takes part in making it your companion. It is there to assist you with your daily life. It is functional but more importantly, it is personal and it generates emotional responses. The main goal of the plushie is to prevent people from feeling lonely, giving them an escape. It is going against the idea of being a merely functional object.