Alexandra Salois | **github:** https://github.com/alexasalois/cart360-2019

CART 360

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PT.2: "Then" (Prototype)

"Why We Prototype"

To briefly summarize this reading, it explains the importance of prototyping while imagining and creating an artifact, as well as the different models and levels of complexity in prototypes. In fact, the main reasons to prototype are to understand, to test and improve, to communicate, and to advocate. To go into detail, understanding means you are physically experimenting with the model and exploring the possibilities visually, allowing you to freely learn and discover your creation. As for testing and improving, a prototype of an artifact allows you to go in depth about finding solutions, and making your object more efficient. Indeed, this part is the most important reason to build a prototype. For the communication, a prototype permits a better flow of information between the desired result and the potential viewers, teachers, or possibly bosses. In fact, the idea in the mind of the creator is better communicated through a visual and physical representation, since it is easier to view and understand their vision instead of trying to understand their inner thought process. Lastly, a prototype is also useful for advocating, as in advertising your product and showing it off to potential users in order to get it exposure, and a better understanding of what interests the viewers to maximize their interest for the final version. For the levels of fidelity, there are 3 levels: low, mid and high, ranking from furthest away from desired final result, to the closest representation of the finished product.

For my model, my first prototype and programming my main sensors allowed me to get an in-depth view of my desired project, and I then noticed see how some of my ideas were too ambitious, and physically interacting with the sensors and seeing how they work in real time made it easy for me to reconsider my angle and interaction. Also, when choosing the material of my plushie, I initially wanted a rough-looking fabric with a textured appearance, but at the fabric store, I was able to physically interact with the different options and by touching them, I changed and improved my initial fabric idea to a more "fleecy" material to emphasize the cuddliness appearance of the object. Also, by laying out a more detailed plan of my interaction plus the physical components of my objects, it was much easier for me to explain my concept to others, have them also understand what I mean, AND I had a clearer vision of what I wanted to do. Overall, making a prototype made me realize how some decisions that I had initially considered low priority actually really matter when it comes to the final result, and also those small decisions and changes completely aligned my vision towards a clearer, more defined vision. Seeing the prototype come to life is also motivating, as

you're seeing your own dreams in person, and the fruits of your efforts are noticeable. Building your artifact and looking back on your progress is rewarding, and you can learn from your own mistakes, one of mine being my poor time management. In fact, my struggle with my code is something that set me back while working on my prototype, and I now know that for my final version, I will need to reconsider how I spend my time not only working on the programming, but also overall time spent on this project.

Technical Evaluation of Sensors

For my project, I will be using a capacitive sensor, a sound detector and ideally, I would also include a light detector. This last sensor isn't my priority, given its low complexity when it comes to its importance to the overall efficiency of the robot. Indeed, to summarize quickly, my robot is meant to be a haunted plushie with the purpose of truth seeking, and what are the consequences of looking for the truth, in a world where we're told that ignorance is bliss, but knowledge is power. How are these concepts represented, and how do you face this dilemma?

Therefore, my light sensor is more for aesthetic purposes, playing into the "haunted" vibe: during night-time, the plushie wakes up, and is alert, since in horror movies, the scary and haunting parts are associated to the darkness. When light is detected, the plushie stays dormant, and doesn't respond to anything. Also, if you happen to piss off the plushie during your interactions at night, having daytime arrive (light) will reset the mood of the artifact, and you'll be able to fix whatever mistakes you made.

For the capacitive sensor, this one detects the close proximity and contact of a human or body with the specific chip. This sensor will allow a first level of interaction with the plushie, which will be physically petting the plushie in order to keep its positive mood. This sensor will allow the viewer to personalize their experience with the artifact, as their actions and affection towards it will determine the mood of the plushie. Ideally, I'd like to also play with the field of proximity, and enlarge it for a mini-game, which would be that you have to quickly exit the room under a countdown, detecting if your presence is still there or not. This would allow the artifact to amplify its creepiness factor and elevate the mini-game interaction with the viewer, forcing the person to physically react in the situation, which I believe will add a level of immersion.

Finally, my last sensor is the sound detector, which will first of all be used in a mini-game, as the plushie will angrily tell you to "shut up", and you won't be able to make a sound during a certain countdown. The sensor will listen carefully, and make sure the rules are respected. Ideally, I would also like the sensor to be able to detect the words "yes" and "no", so that the plushie can ask the viewer questions, and the sound detector will listen and detect the correct answer. Indeed, depending on the state of the plushie (good, neutral or bad), the artifact will ask the viewer charged

questions, such as “I am a blissful person” (this would be “good,'' therefore “yes” is the correct answer), or “I am selfish and mean” (this would mean the plushie is angry, and the viewer has to answer “yes”). Being truthful in your answers will allow the plushie to change moods from bad to neutral, thanks to the noise detector listening to the participant and classifying the correct answers.

With these three sensors, their main roles will allow the viewer to develop a personalised relationship with the plushie, and they will be able to be in control of how that relationship is felt on both ends. As a bonus, they will also allow a physical and psychological level of immersion, instead of just visually taking in and viewing the artifact.

Project’s Initial Intention V.S. Now

My project has definitely changed since the beginning of the proposal. In fact, for the proposal, I didn’t really know what was possible in programming and physically building circuits, and after talking with the teachers and reviewing my plan, it became clear that it was way too ambitious for my level of experience combined with the time frame to accomplish it. In fact, I had about 5 sensors plus motors in my first idea, which would have made a great interactive object, but was still lacking a clear motive, with the intention lacking in representation. Therefore, I kept the main theme of how appearances can be deceiving, but changed my angle to be more about the quest of knowledge, and the sometimes dark cost of getting to this ultimate truth.

With this new angle of “what will you choose between ‘ignorance is bliss’ and ‘knowledge is power’”, I simplified the sensors and kept only 2 main ones, with a third being an added bonus if I have time before the deadline. The cat plushie will now have 3 main states of “good”, “neutral”, and “bad”, but will still be holding the fish in its mouth like the original concept: if the fish is never grabbed, the cat will constantly be good, as it is undisturbed, and there is a mutual respect between the viewer and the object. If the fish is grabbed, the cat enters the “bad” mood and will then launch the mini games, and make you answer negatively charged questions, which if you answer truthfully, the mood will go back to neutral. The mood can also improve if you pet the cat. However, once the initial respect is broken (fish is stolen), the cat will never trust you again and will never go back to the “good” state, only “neutral”, leaving you to reflect on the question: was it worth it? What is the cost of curiosity and seeking answers, how do your actions affect others, and their perception of you?