

Prototype Progress Report



Documentation website: <https://github.com/uozmann/CART360/tree/main/everywhere%3Dnowhere%3Dnow/prototype>



The practicalities of ideation, iteration & prototype, & what we learnt through the process



In the ideation, we learnt that agreeing on one idea between multiple people could sometimes be complicated but efficient and inspiring. The discussions facilitated our brainstorming, and we decided on the type of interactions we wanted to incorporate into our project, the overall looks of it and its affordances.

In the iteration process, we learnt that refining our concept is primarily beneficial for us, as this process narrows down the window of possibilities so we can concentrate on thinking about the details of our project. Even though we made some changes, we stayed within our initial project's goal and philosophy.

By carefully considering our intentions, we realized that to fulfil the collapsibility and mobility of our concept, we should think of lightweight materials and a retractable structure to hold the fabric membrane. In our first iterations, we considered using wooden or metal rings for the cage structure; however, considering their weight, we decided to go with the crinoline cage structure and similar materials for the final artifact.

We visited CUCCR to look for and recuperate fabric for our project. Considering that the fabric should be as lightweight as possible, we realized we would need to buy it since we could not find any large pieces at the CUCCR. We worked on a 3D model prototype to understand and plan the physical prototype more smoothly. During this process, we made iterations and simplified the overall looks to be more minimal and homogenous.

In the prototyping process, we learnt that while adjustments due to constraints are inevitable, it is also worth it to thrive through challenges, as in the prototyping phase, it is undesirable to alter our concept due to technical difficulties. Technically, we should have spent more time working on the electronic circuits as we aim to convey a rather complex interaction based on multiple sensors and outputs. We would have an audiovisual experience where sound and light are triggered by touch. Our code has yet to allow us to trigger both entities concurrently; we are still working on the code to be able to convey our idea.

As mentioned before, we found inspiration in the elliptical crinoline cage for our structure, so we used the same techniques for our physical prototype. At first, we planned to create our prototype cage rings with cardboard. However, considering the qualities of cardboard and how easily it could bend and deform, we used silicone tubes instead to make the rings. After that, we used a couple of webbing straps and safety pins to secure the rings together in the structure. as we could not source enough lightweight fabric, we only covered part of the structure with some scraps of fabric we had.

Since we had a 3D model prototype with structure measurements, fabricating the physical prototype was pretty easy. Our physical prototype consists of the structure, an ultrasonic sensor used to trigger soundtracks using Touch Designer and a small part of our LED network, which lights up in one of our patterns. While creating the prototype, we learned how to use Touch Designer, manipulate sounds, and code our interactions, and we learnt hands-on skills such as soldering.

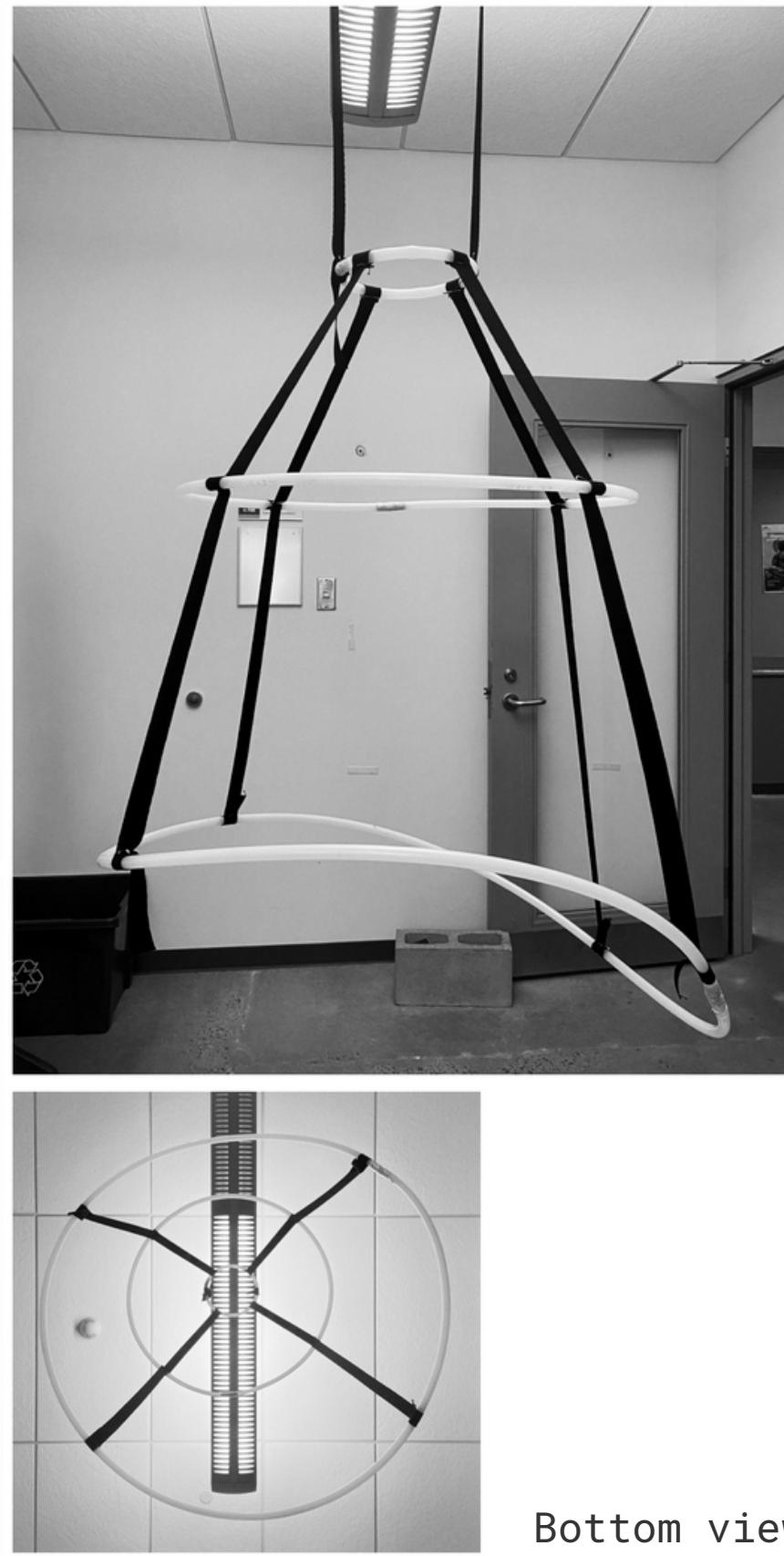
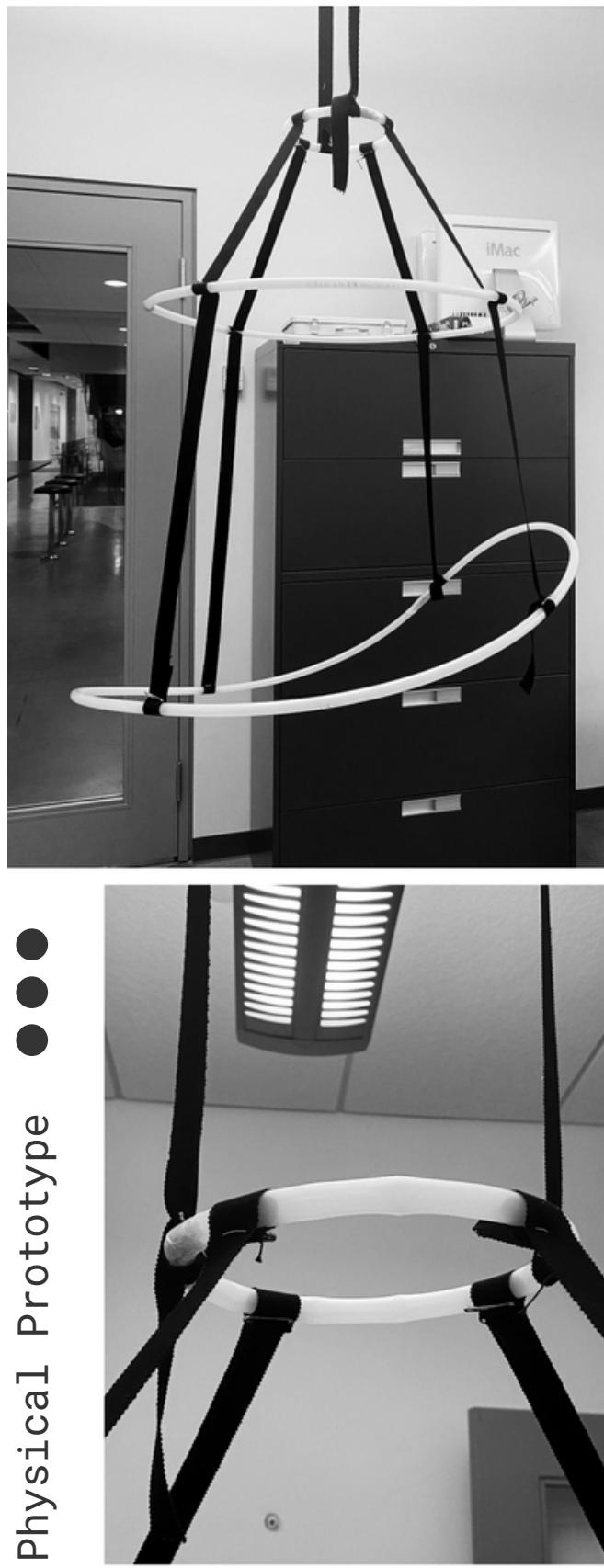


Initial sketches



Prototype 3D model





Technical Evaluation of Sensors & their associated Affordances

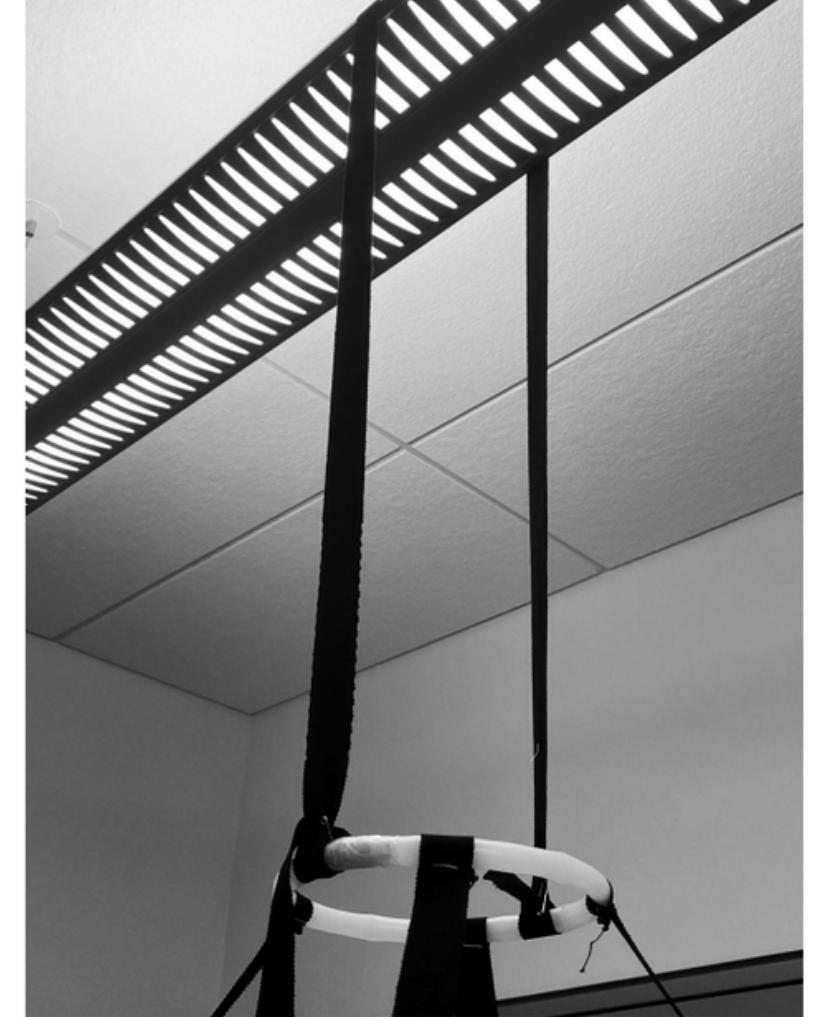
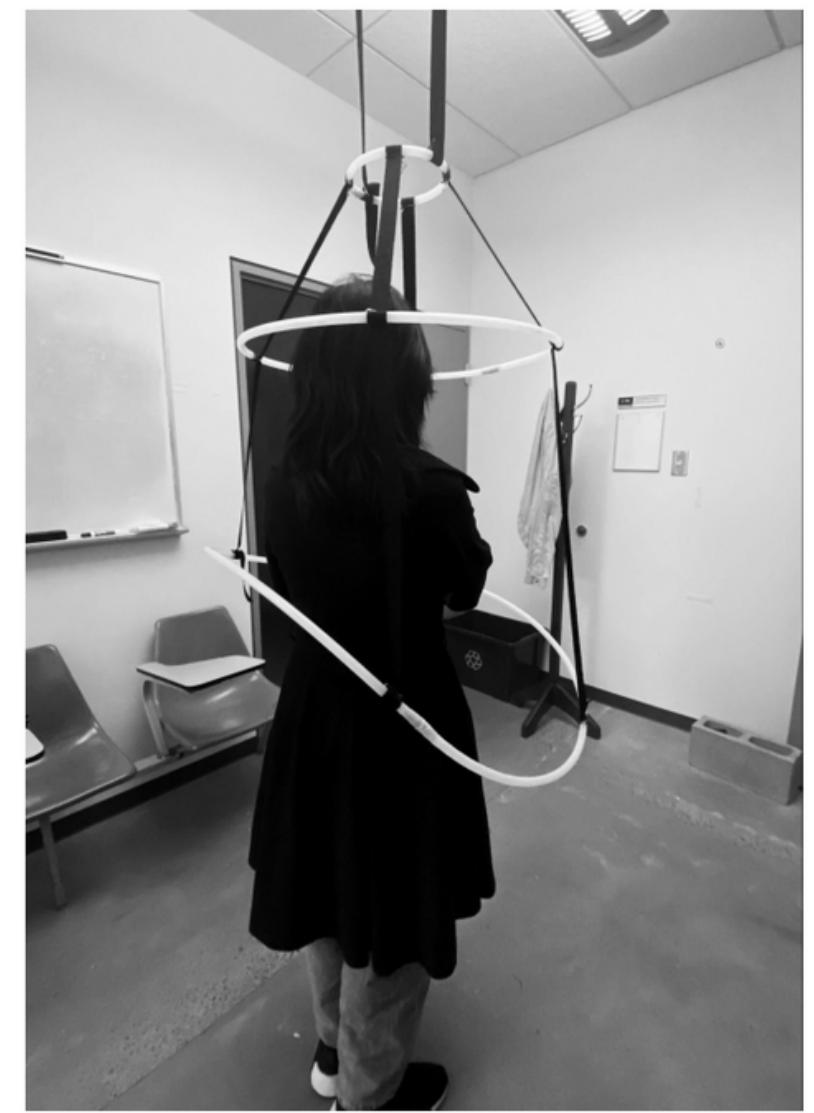
Our project's proposed interaction design strategy is centred around the cycling development and destruction of one's psychological world due to the repercussions of emotions and thoughts provoked by external influences. To convey this idea, we decided to translate the joyful, hurtful, inspiring, numbing and angering impacts one can receive through sonic experiences. The sonic experience we aim to offer is divided into two parts:

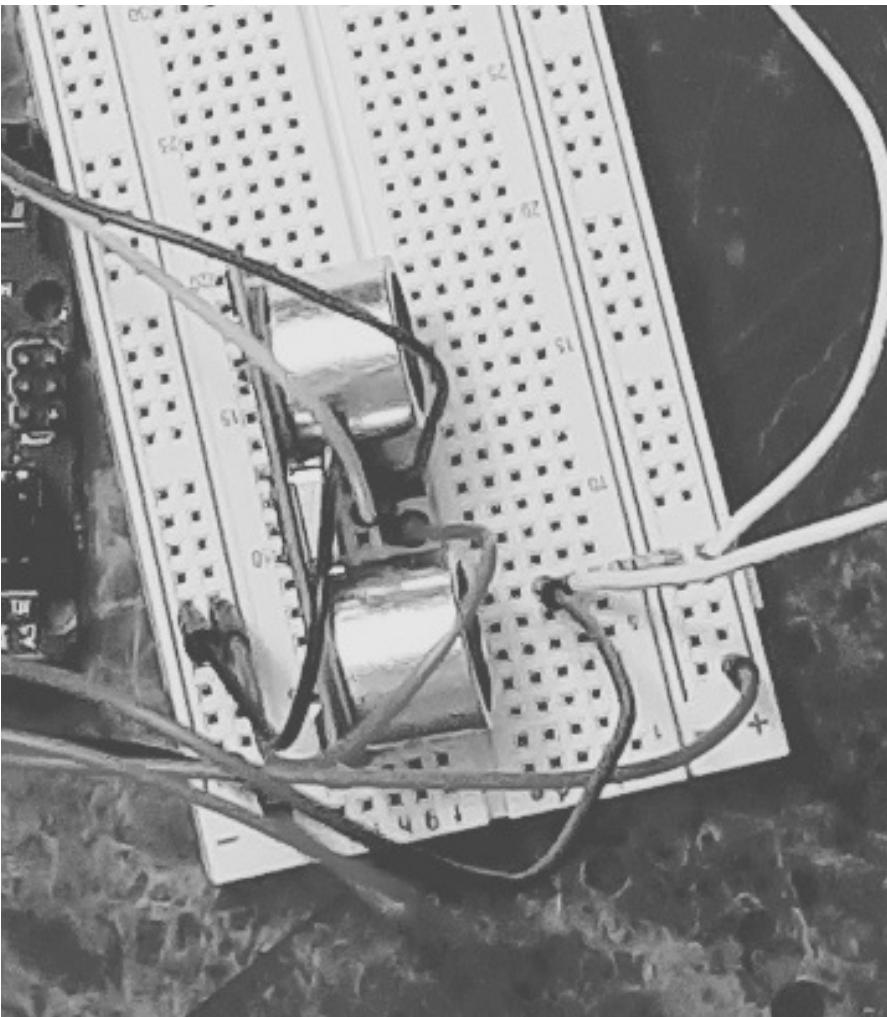
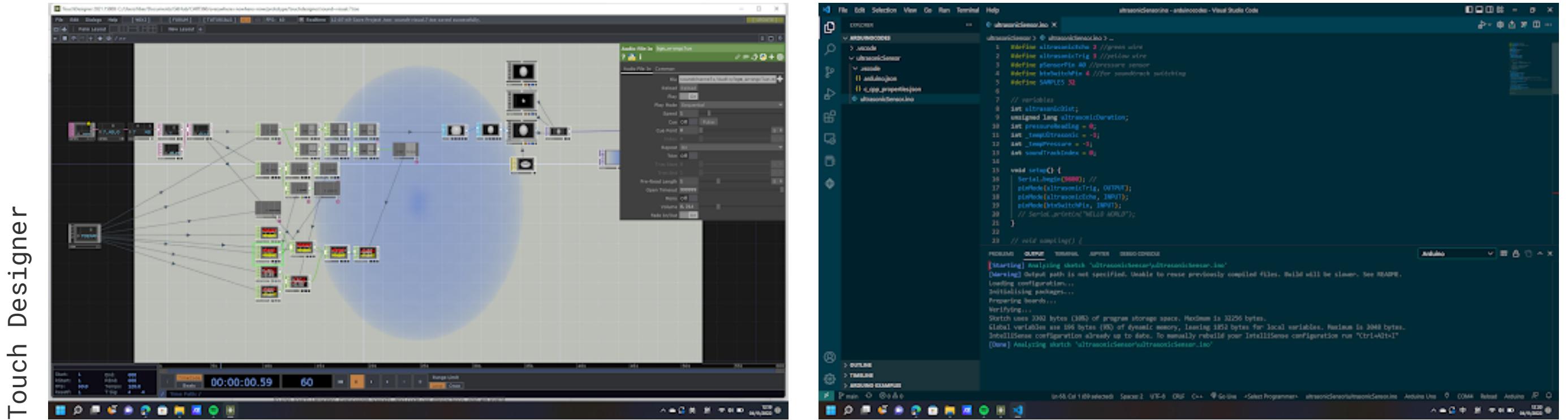
- Environmental impacts: the power of the environment on people's growth is undeniable, and the consequences of its prolonged and gradual influence are often hard to notice. For our project, we decided to use music to zoom into specific types of environments and accentuate those influences. Each music track represents a particular type of environment one can live in.
 - Triggers and sensors: We will use non-touchable sensors such as ultrasonic and capacitive sensors to trigger an environmental sound. The reason is to afford a less visible cause and effect. Also, the fact that those sensors are primarily used as on/off switches conveys the idea that once entering a particular environment, one is directly subjected to its influence.

- Targetted impacts: other than environmental impacts, we are often subject to targetted impacts, which are actions and consequences directed purposely at us. The experience of those impacts varies from person to person; some people may never experience a certain impact, while others have to deal with it daily. For our project, we decided to use the sounds of whispers (whispers of things said to us in the past that marked us) to reflect those targetted impacts.

- Triggers and sensors: to trigger a targetted impact, we will use touch-based sensors, mainly pressure sensors. As targetted impacts often generate more emotions, having people associate those sentiments with a physical response is one of our goals. In this way, they can share parts of their emotion through the way they interact with the cocoon, and we can observe those numbers documented by the sensors to learn about what happened inside the cocoon.

● ● ● Physical Prototype





- Ultrasonic Sensor
 - Haptic experience: no touch is needed, nor intended.
 - Dimensional experience: allows an embodiment of the cocoon, as users can manipulate its behavior once inside through their presence.
 - Hearing experience: none, nor intended.



- Pressure Sensor
 - Haptic experience: allows an emotional outlet as a response to a sound environment. Also acts as an interaction element to feed new whispers to the cocoon.
 - Dimensional experience: helps visualize a more .
 - Hearing experience: none, nor intended.

changes in Project's initial intention

Our main idea has almost remained the same; we still aim to bring an immersive audiovisual experience that integrates sound stimuli and visualization that mesmerizes the user. However, our prototype is reframed into a new structure that works more effectively with our idea of bringing consciousness.

The new structure prepares a pod-like environment for the user, just like a semi-closed cocoon enfolding their body for a more personal yet playful experience where they can explore and communicate with the artifact. The elaborated concept creates a more welcoming space that would enhance the interaction and flow of the movement to be more natural and intuitive for the user. To amplify the immersion effect, we also decided to swap using abstract visuals that would have been displayed/projected outside the artifact generating various lighting patterns inside the cocoon by implementing LEDs. The experience sequences have become more detailed as well.

The opening sequence works as a gateway which prepares the user for the experience with pulsating LEDs, fading in and out collectively. After that, the user can add sound layers with different textures and volumes that would compile together, accompanied by a lighting pattern.



● ● ● LEDs and circuits

