HTTPS://GITHUB.COM/DIONROSEMARIE/CART360-2019
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CART360
ARTIFACT REPORT

1. INSIGHTS & FUTURE DEVELOPMENT

INSIGHTS

During the creation and the development of this project, I lot has changed or disappeared from the original proposal. Just like the title of this project says, first came an idea, then came the prototype and here comes the final product. If we go back to the first idea I had, I wanted to create a little friend for students when they are studying. The intent of this first idea was to lower the level of anxiety and give them the opportunity to change their bad habits with reminders to take breaks and relax. Since the subject was important to me, I decided to keep it in the next step of the process, but rethink it a little and give it a new approach. During the presentation of the prototype, I quickly came to realize that my project was maybe too ambitious for my abilities, but also, that it was not as useful like I thought it would be. When It came to programming it, it was not as efficient as I would have love it to be. One of the level of interaction I wanted to have was the speech recognition, but I put it aside since it was not relevant enough with the subject of anxiety. While talking and getting feedback on my prototype, the little helper I had in mind changed into a lamp that the user could interact with to calm down and relax. I went back to the drawing board and rethink my project. I kept the useful parts of my proposal and implemented it with the comments of my prototype. One of the comments was that since the user interacts with the lamp, it should be a representation of the user. With this in mind, the materials should not out live the user and the lamp should also interact with the user visa versa. Furthermore, the LEDs should be calming and not flickering if we want to user to relax.

INSIGHTS

My final project is an interactive lamp with different modes that can help the user to be more calm. The object wakes up be the touch of the user and the first mode comes up. The petals light up with the blue colour to affect the environment since blue is a calming colour. The second mode is the the LEDs switching between blue and green colour by fading in fading out to help the user to do breathing exercise. He can synchros his breath with the change of colours. The third and last mode is the LEDs changing colours depending on a music in the environment. The two first modes were added due to the comments during the prototype presentation and the last one was implement from the proposal. With those changes, the lamp became more easy to use. When you are stressed out, you don't want to talk to a machine, you just want to calm down and the different modes help the user in a better way.

When I think of this project, from where it started to where it is today, I know for a fact that it could benefits of a lot of changes. For future developments, I would like the lamp to be more in touch with the user. It could be interesting to have a bracelet connected to the lamp that can track the heartbeat of the user. This way, it could activate by itself and let the user know, even if he doesn't realize it, that he should take a break.

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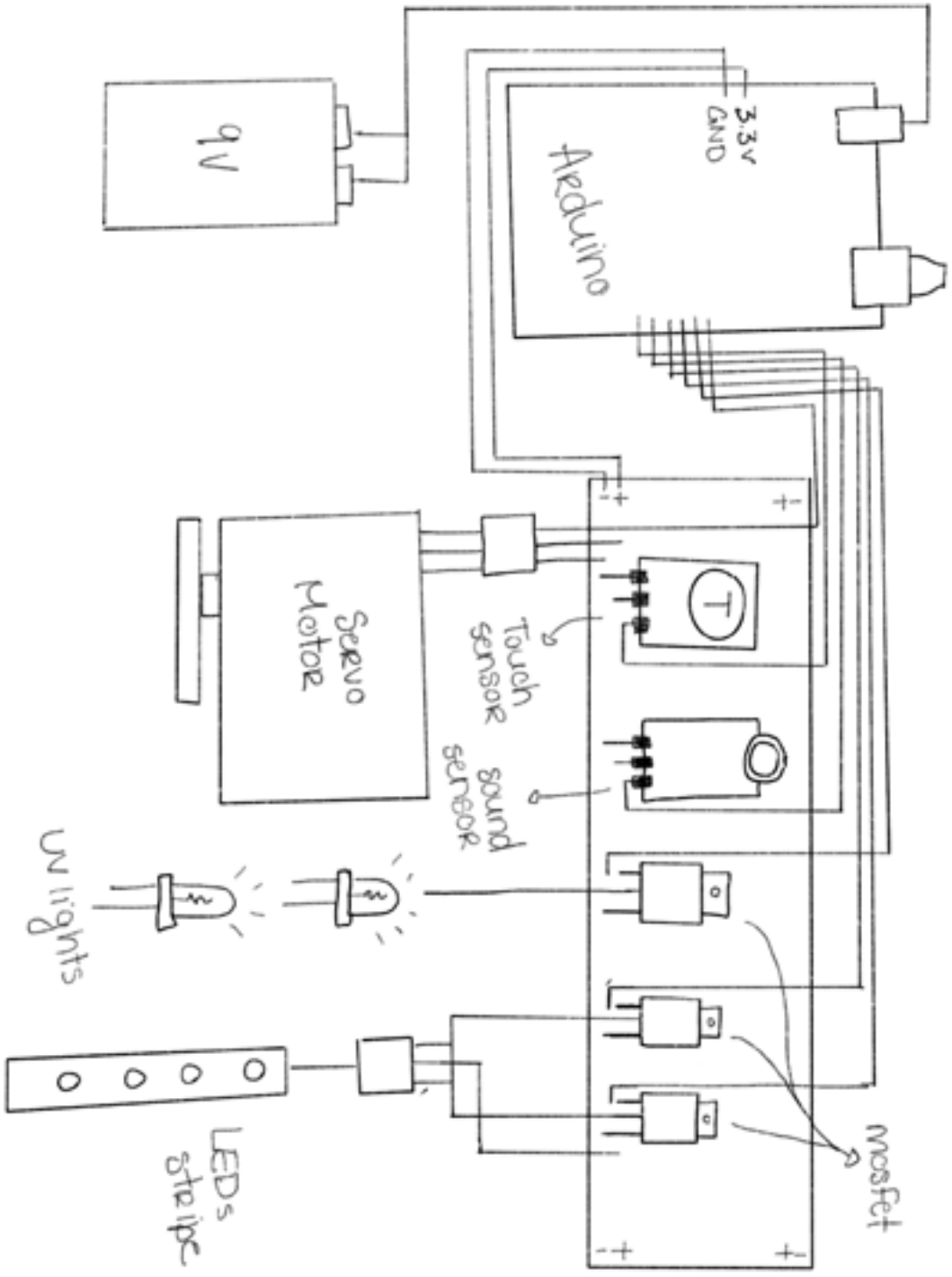
2. SCHEMATIC OF THE ELECTRONICS

SCHEMATIC



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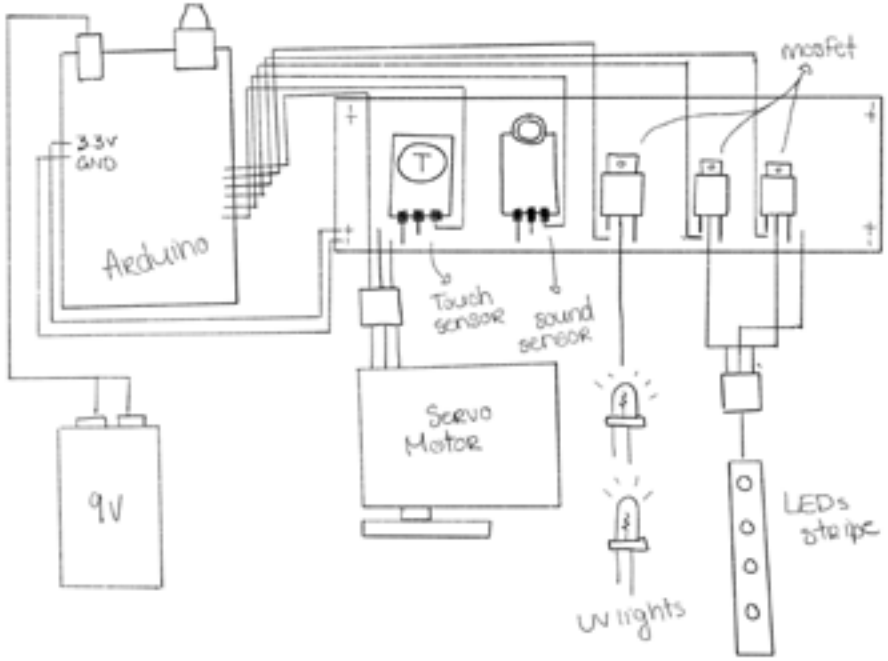


1.1 THE CIRCUIT

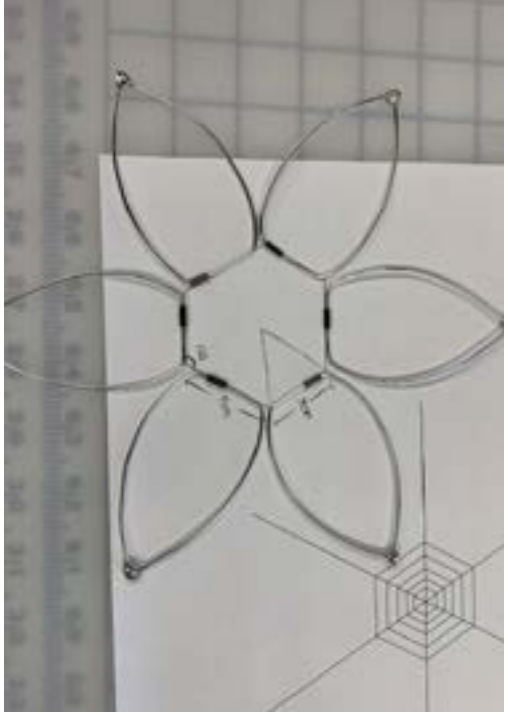
As we can see on the drawing, I have multiple components in my circuit. I have a 9V battery so I can have in my circuit 12V going through. Everything is connecte to power and to ground, but the LEDs were a little bit of a challenge. I had to add mosfet into the circuit to make sure they had the right amount of current. I was not sure how I was suppose to connect the strips with the mosfet so I had to do so research. The problem was also that sometimes, the LEDs are executing what they are suppose to, and other times they are not doing the right thing. The two sensors and the motor did not change since the prototype.

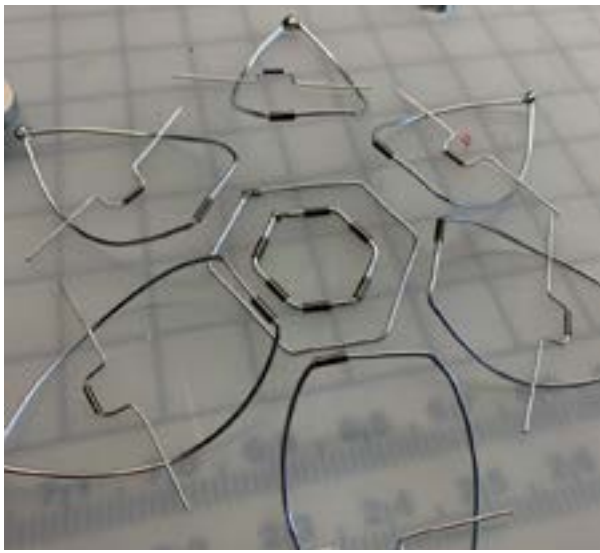
THIS = THEN =THAT

3. RESEARCH PROCESS

3.1 THE PETALS

The petals is the most imporant part of the structure since they are the first thing you see and also the fact that they support the LEDs. I made a template on a piece of cardboard and then bend 20cm metal rode of 1,5mm to make the shape of the petal. Once the six of them were made, I then did a template of two hexagones to make the centers of the flower where the petals are going to be attach to. The first one is not equal since I want petals to overlap. The smaller once, which will go on the center needs to be perfeclty shape so the petals can go up and down at the same time. One of the main problem I had with this part was the sodring. My pieces had a vernish or were too thick to stick to one another.



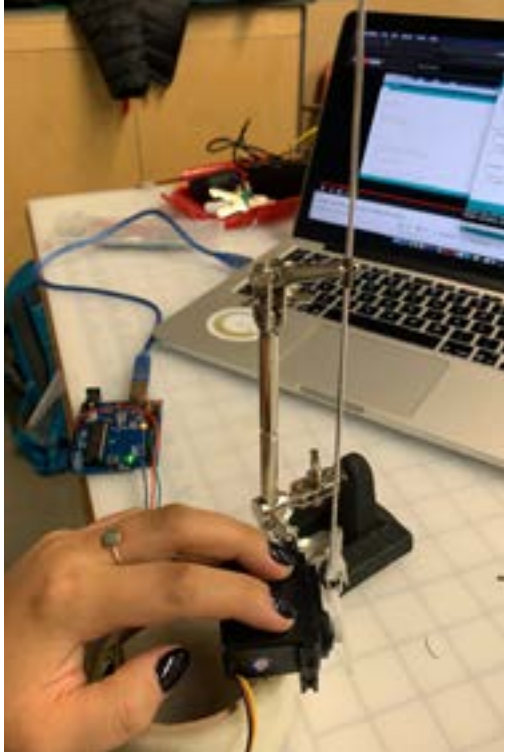


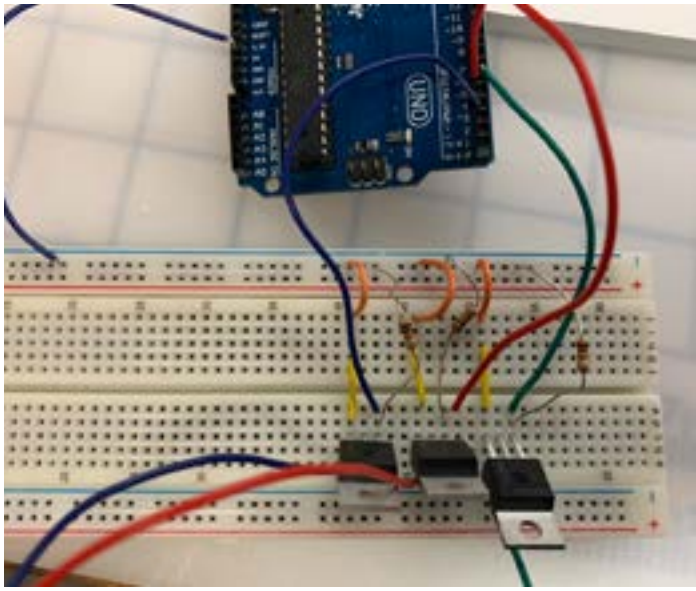
3.2 THE VASE

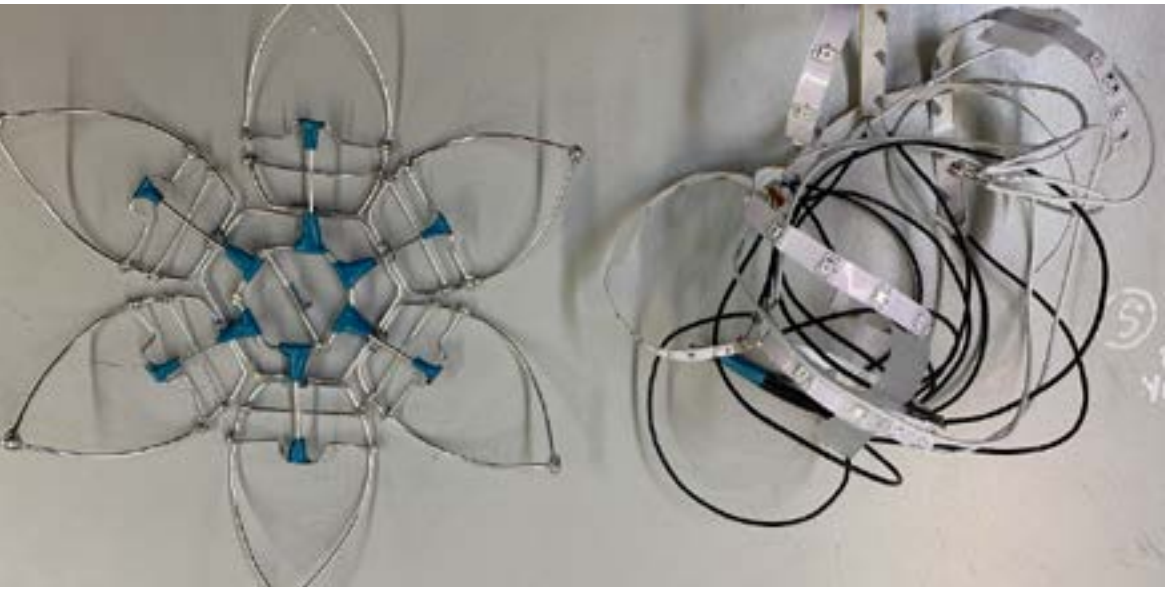
The challenge for this part was to find a metarial that is translucide, malleable at first and then becomes hard. With the help of DART Student, I made a recipe of agar agar based bioplastic with hemp. The solution solidify quickly once off the heat but took 2 to 4 days to dry completetly. I put my hemp into my solution and then apply it on a pot I had and let it dry. Since I was not happy with the result, I aslo did a test with no hemp and discover that this solution was shrinking and still really malleable. I was afraid for the fluorescent powder to fade out with the cooking and the other metarials but lucky it did not! Once I had my top part of the vase done, I made the bottom part with rope and white glue. I had to make the two parts separatly so I would be able to place my electronics component insaide easily.

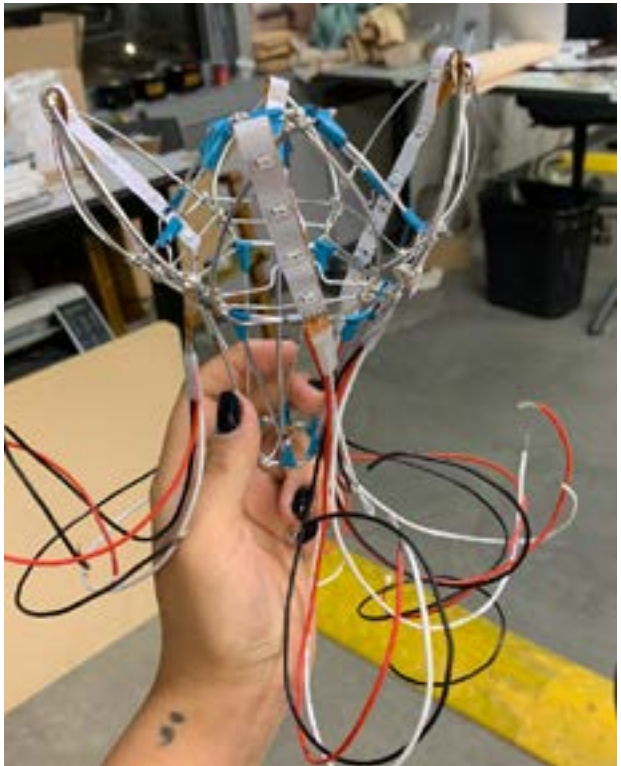
3.3 THE VASE

Since I had already did a lot of research and tests with the prototype, I already knew which electronical component I was going to use. For the final prototype, I needed to work with my LEDs. I went to ABBRA to go buy strip LEDs and UV Lights. Surprinsingly, the UV lights work really well and give the intent effect with the top part of the vase. The only issue was that it is only affecting the insde of the pot. With long exposure, it will finish by ligthing up the outside. For the LED strips, I chose the blue and green color which are helping the user to calm down and relaxe instead of the red one. I needed to use mosfets to ensure that all the different lights had the right amount of current and also to control them throught the different stage of the process.









3.4 THE ASSEMBLY

At the beginning of this last part of the project, I thought this would be the easy part. Once I started assembling the different components, it went bad really quickly. First, I had difficulty sodering wires to the LED Strip which resuled in me doing the process two times. For the second part, I decided to test every wires one by one before putting them all together. Sadly, for unknown reason, one petail is not working at all. Second, even though I measured all the metal parts, it still does not fit together. It is wobbly and also the petals don't close at the same time or overlap correctly. For the two parts mentionned, I did some tests before assembling everything, but errors appeared through the process at an unknown time. The flower is working, but not as I would have love to.

4. THE END

Overall, this project was eye oppening. Going back to the first week of the semester, I was ask what were my expections for this class. I answered that I wanted to make my ideas come to life, other then just being digital. With this project, not only an common object of our life come to life, but the user can interact with it and the object too.

I am not going to hide the fact that I am disappointed of the end result. Nothing went as expected in the assembling part and the visual aspect of this project was not what I wanted to go with. But what I have learn during the past 15 weeks is more satisfying then the end result. It started as a little robot to would be a friend to the user to end up like a lamp to help people relaxe. I never worked with electronics before and I made my project possible. I also challenge myself to make this project eco-friendly, in some way, by finding new materials that would go beyond the esthetic aspect. They do not only look pretty, they also have a purpose into the project.

What I have learn with this project is more gratifying in my eyes then the end result. With more time, with the learning of my mistakes and the resarch I did, of course the end result would be different, but not as meaning full. This artifact was intent to foster a relationship with the user and have a notion of empowerment to mean something then just an other object. Well for me, this object challenged me to go beyond what I knew and go out of my confort zone. This object is not only a lamp that can help you relaxe, but it is a physicial and tangible representation of my learning in CART360.

5. RESSOURCES

RESSOURCES

https://psycheducation.org/treatment/bipolar-disorder-light-and-darkness/blue-light-is-the-light-that-matters/

https://www.instructables.com/id/Arduino-RGB-LED-Strip-Controller/

https://learn.adafruit.com/rgb-led-strips/usage

https://forum.arduino.cc/index.php?topic=317439.0

https://www.arduino.cc/en/tutorial/fade

https://www.youtube.com/watch?v=lU1GVVU9gLU

https://www.youtube.com/watch?v=z8QR9H1zDvI

https://www.youtube.com/watch?v=yzPpjKukpJ4

THIS = THEN =THAT