



The Dispensary

Members: Bao-Truc Tran, Phillip Zaerr, Michael Browning

Mentor: Joel Bocek



Our Problem:



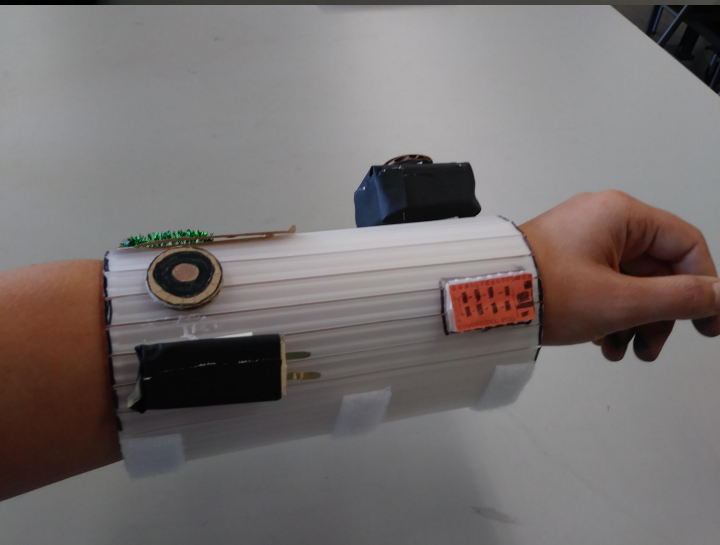
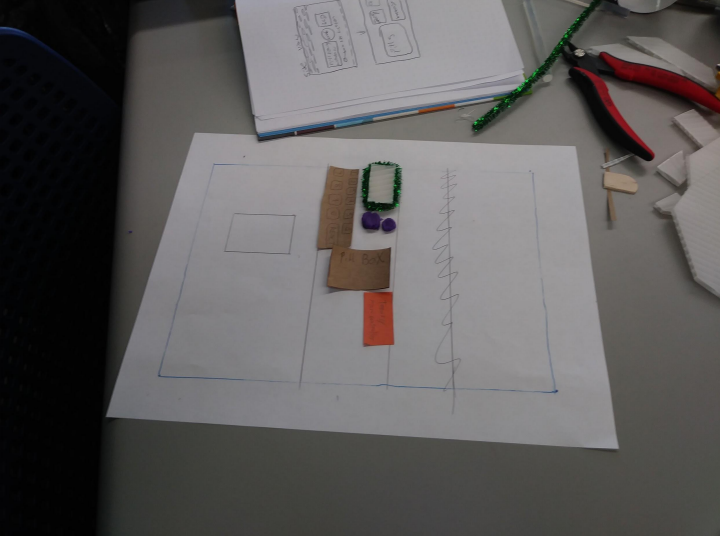
- For people on medication, it can tend to be hard to remember to take their pills because as human beings we have busy lives.
- Humans that take medication on the go.
- How it connects to Theme, if it does: Paying attention to your medication schedule.

“Tune In” - Inventions that Alter Perception or Bring Attention

History and Context

- **When we started this project:**
 - we researched the various types of pill containers / reminding apps that are already out on the market and how they worked
 - we looked at how effective they were and how often people would actually use them to take their medication on time
 - From all of this, we noticed that even after using pill containers or setting a time on an app, people will still ignore it or constantly forget even with the app due to them leaving their phone somewhere or not having their medication with them.

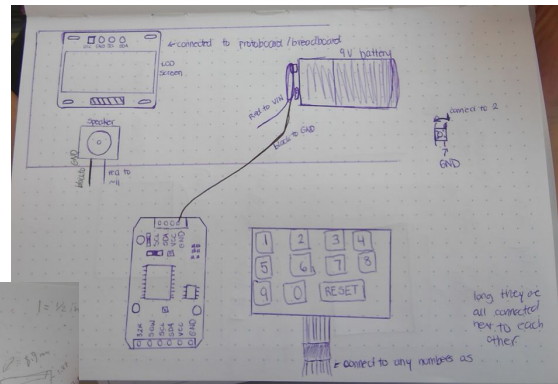
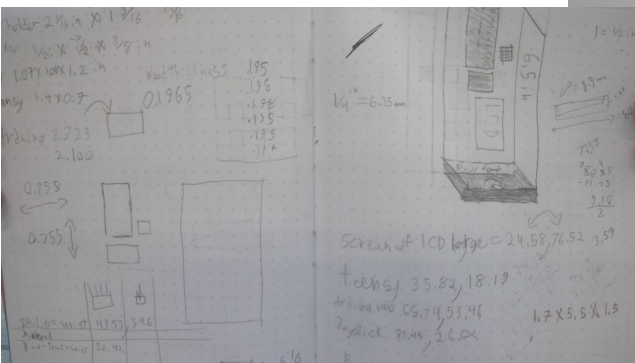
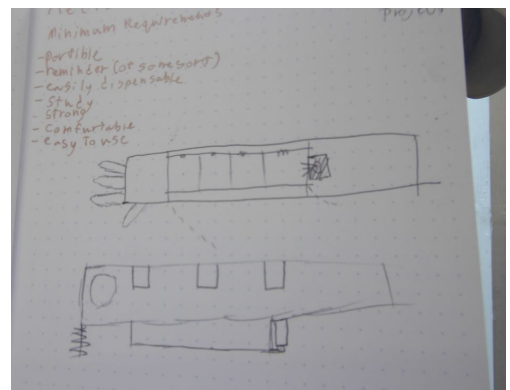
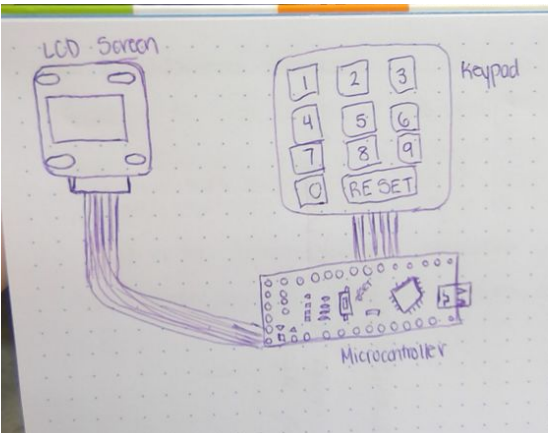
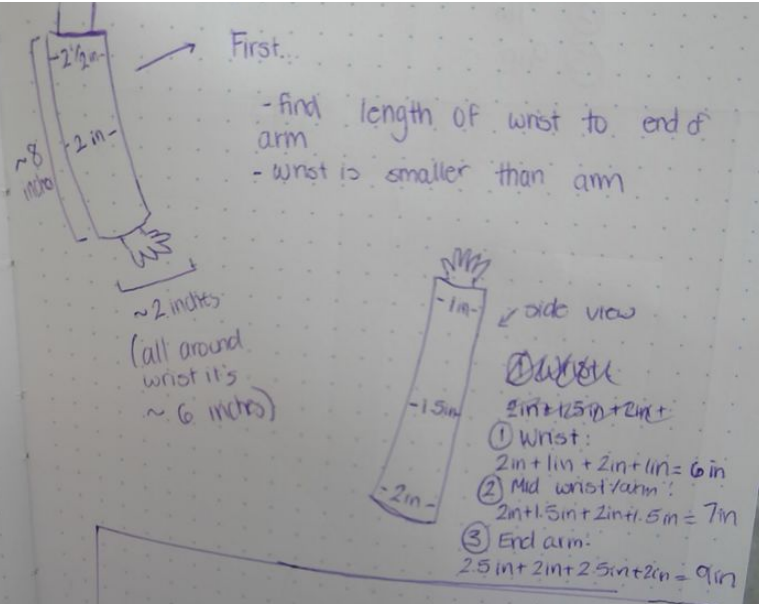




Design Process

- Our group came up with the final design after tons of trial and error.
- We wanted to make our device easily accessible by the user to the best of our abilities so we arranged all our components so that when it is time to take their pills, they can get what they need comfortably.
- Throughout our design process, we wanted to incorporate small enough components that would still allow our device to work, but aren't too big that would weigh our wearable down

Design Process



Solution Requirements and Goals

minimum

- ❑
 - ❑ reminder (of some sort)
 - ❑ easily dispensable
 - ❑ sturdy/strong/ comfortable
 - ❑ easy to use
 - ❑ see quantity of pills

REALISTIC®

- ❑
 - ❑ Make it portable
 - ❑ Make it able to fit under shirt/sleeve
 - ❑ Use smallest power source possible

REACH

- ❑
 - ❑ We can make it usable by hearing/vision impaired, such as braille for certain individuals
 - ❑ Mini wrist flask

Team Roles

- **Philip** was the chief programmer and created a program that allowed the user to input a time and for the device to go off at that said time.
- **Michael & Bao-Truc** were in charge of the structural and electrical components of this device and we were in charge of making the arm band, getting the correct dimensions for the boxes, and creating the pill box along with the one that holds all of the components in it.



Techniques and Tools

Describe all the tools/techniques that you ended up using in making your project.

- Laser cutter for the boxes
 - Makercase
 - Sketching
 - Adobe Illustrator
- Arduino Create
 - RTC library
 - Teensyduino

: Width

: Height

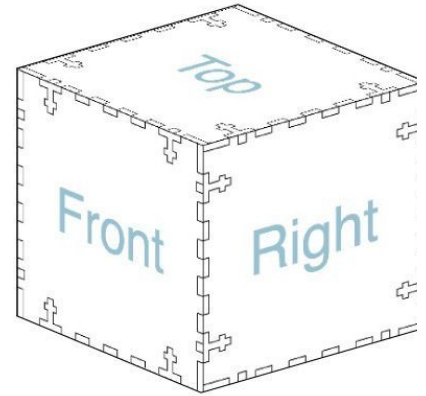
: Depth

these inside dimensions
outside dimensions?

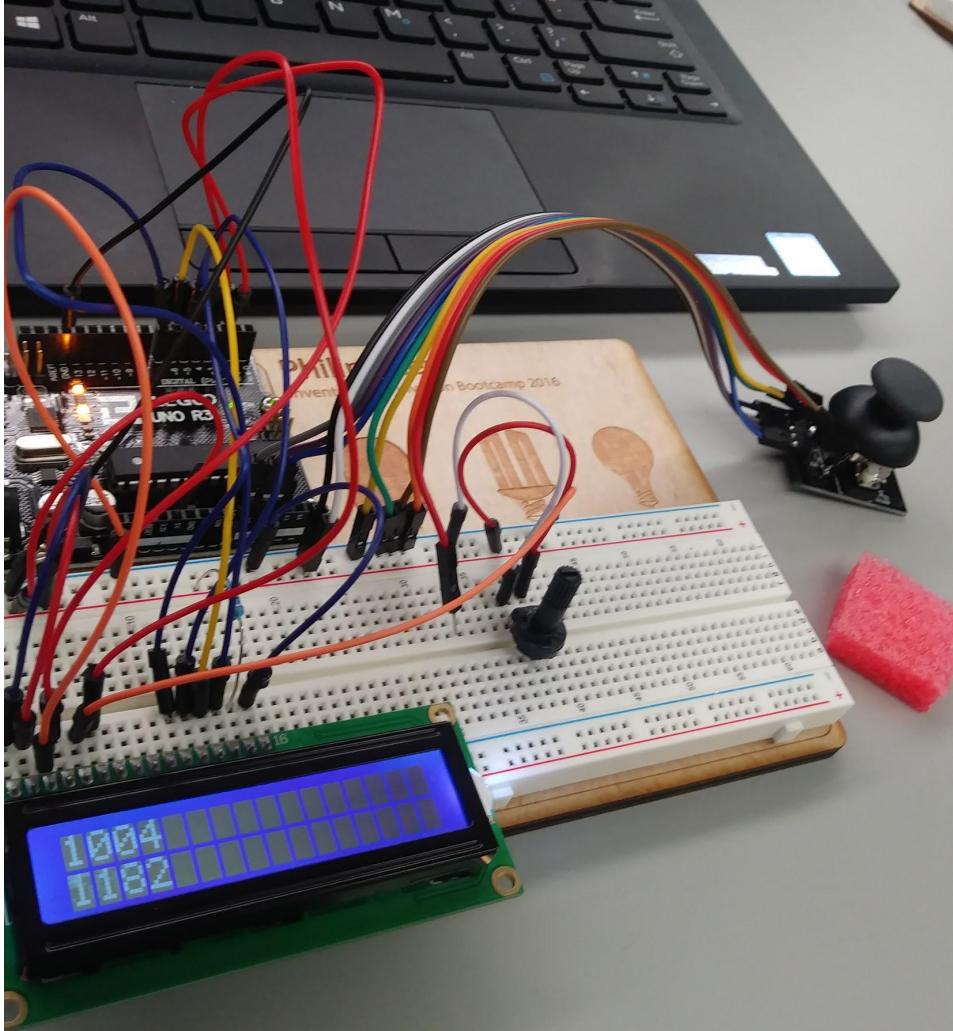
Material Thickness
8 (0.118")

Custom Material Thickness

Edge Joints

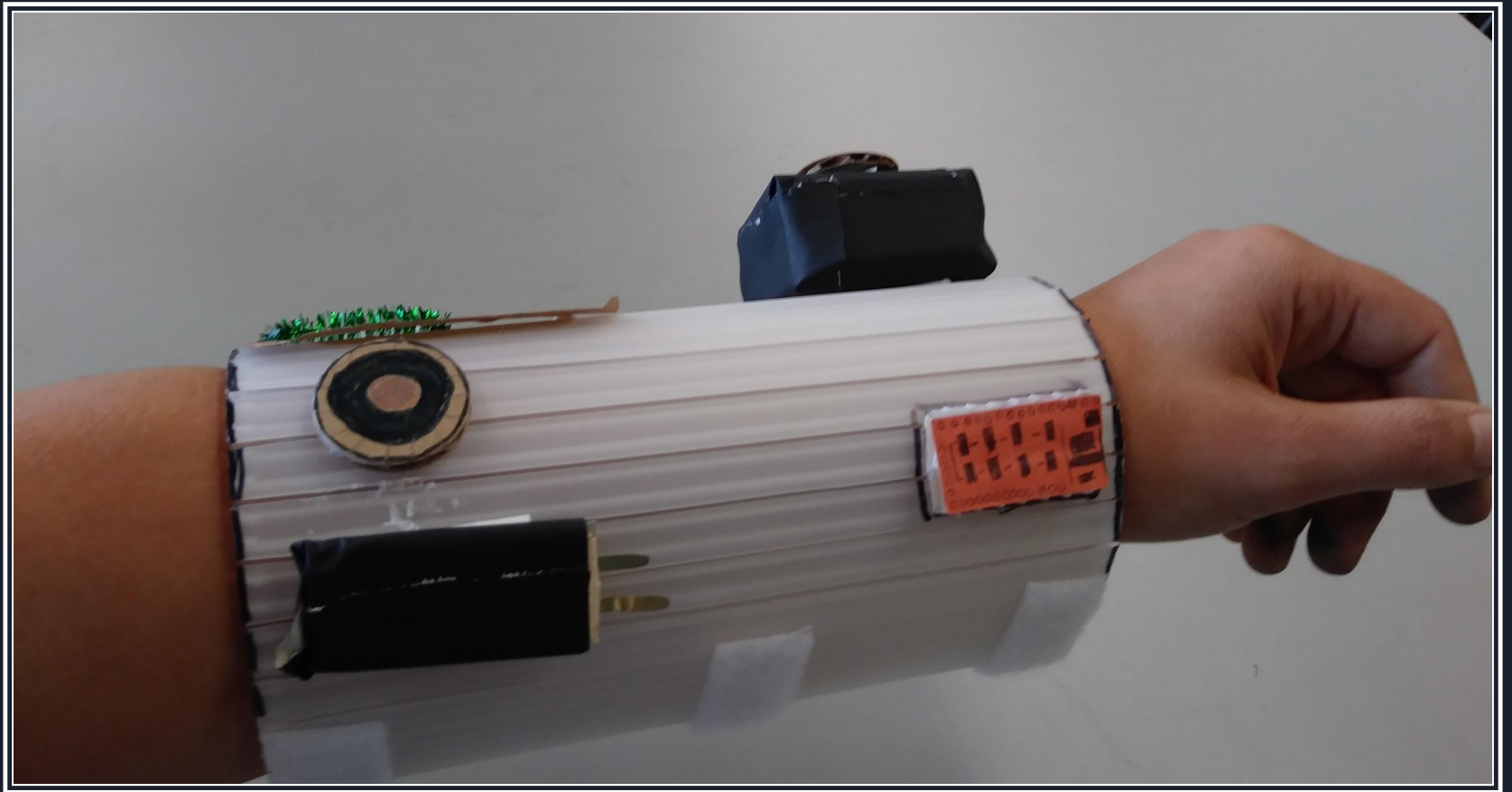


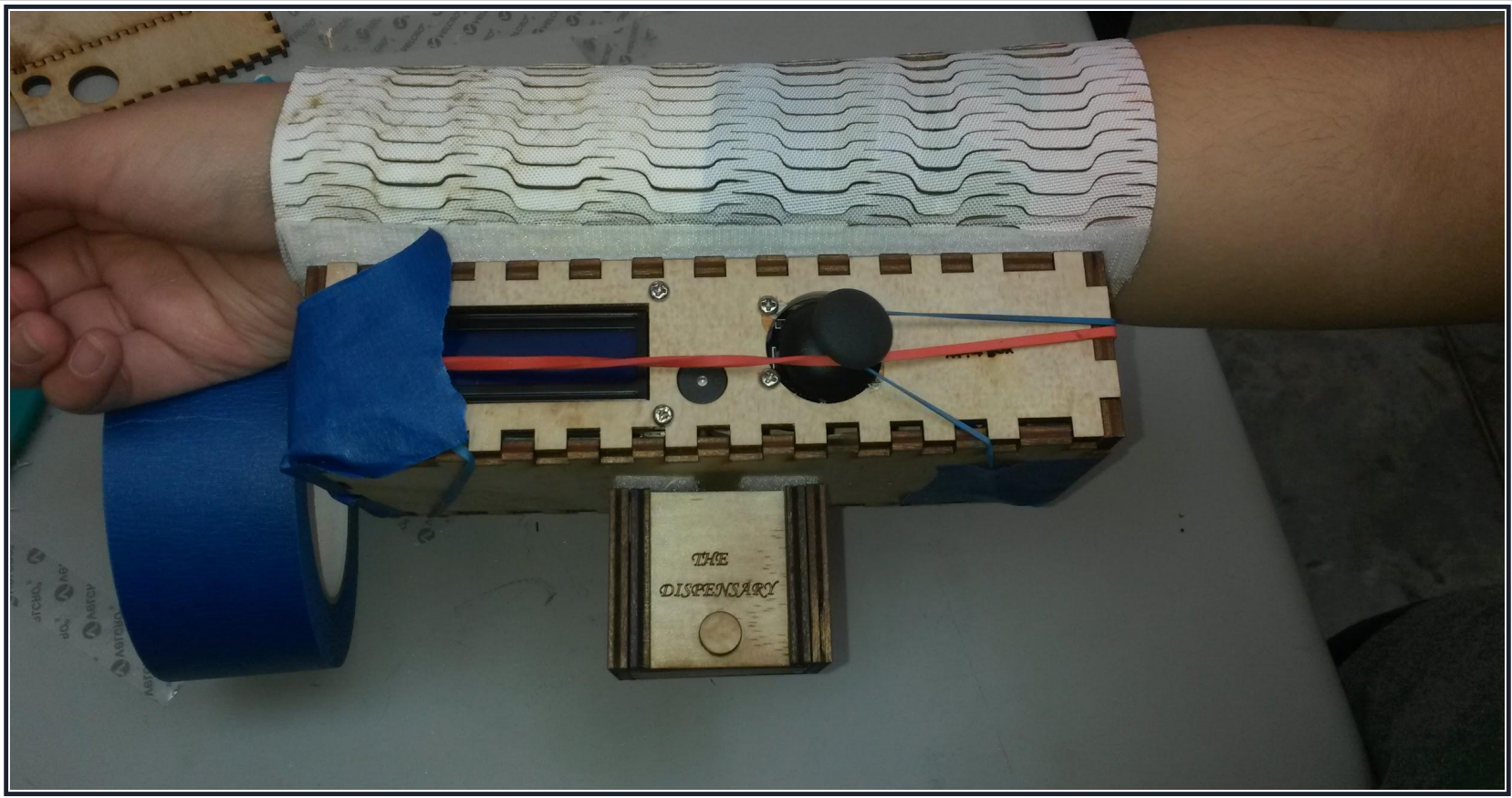
The Process

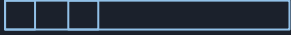












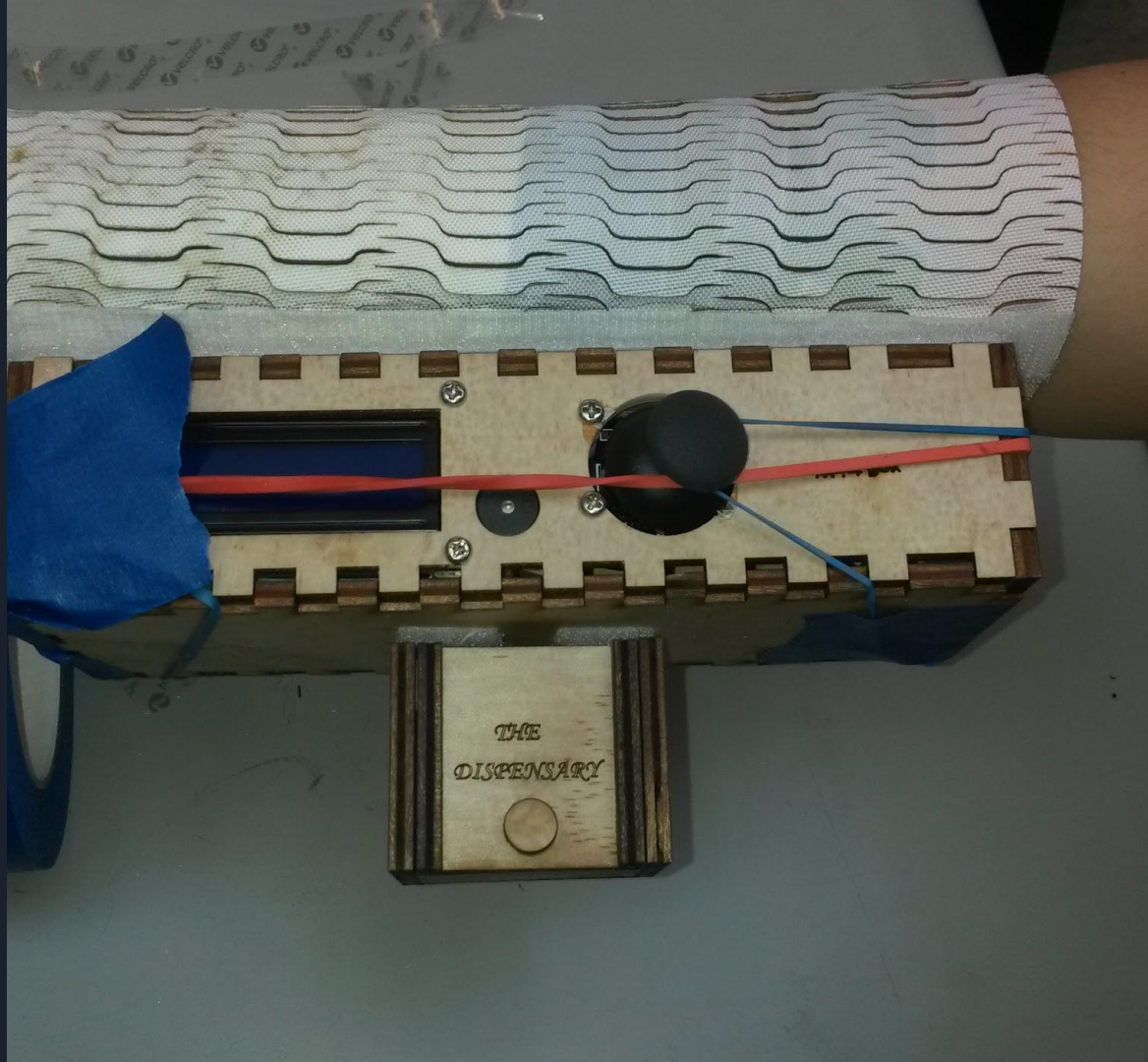
Final Product: (Photo)

Describe the Device.

It is a medication reminder that is portable and assists one in remembering when to take their medication on time wherever they are.

What goals were reached - how many of the original solution goals were achieved.

Our group was able to successfully code a program with an audible reminder that goes off at the user prescribed time and stop when a button next to it is pressed. A spacious box for medication is included in the device.



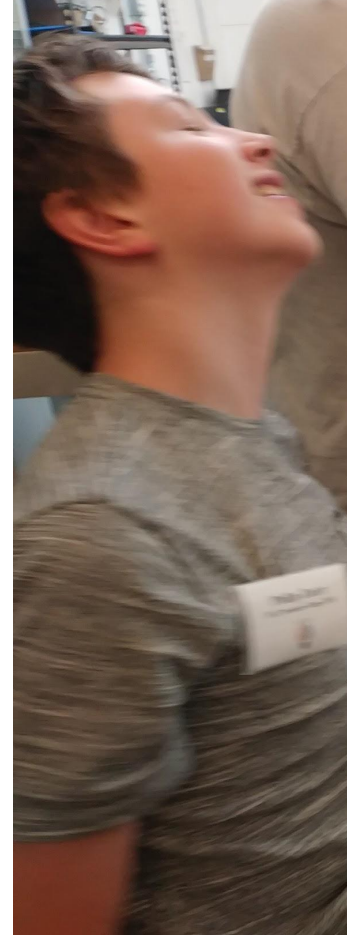
Challenges:

Phillip: Understanding what I can and can not do within a short amount of time.

Troubleshooting technologies that are new to me.

Bao-Truc: Figuring out the best way to solve new problems.

Michael: Prioritizing what part of the project to focus on.





Future Improvement

Describe what you would add to your project if you had more time/money/resources.

We would make the invention easier to conceal. The prototype is larger than we would like it to be. We would spend more time designing and fabricating the enclosure. Due to the limited time, we weren't able to make a visual reminder (like for a LED to light up at the inputted time) or look at the pills without opening the lid since we were planning to use plexiglass for the box.

Did any new solution ideas occur to you while you were working on the project?

We constantly had ideas for improvements to the design but needed to continue forward due to the amount of time left to finish.

Things we Learned

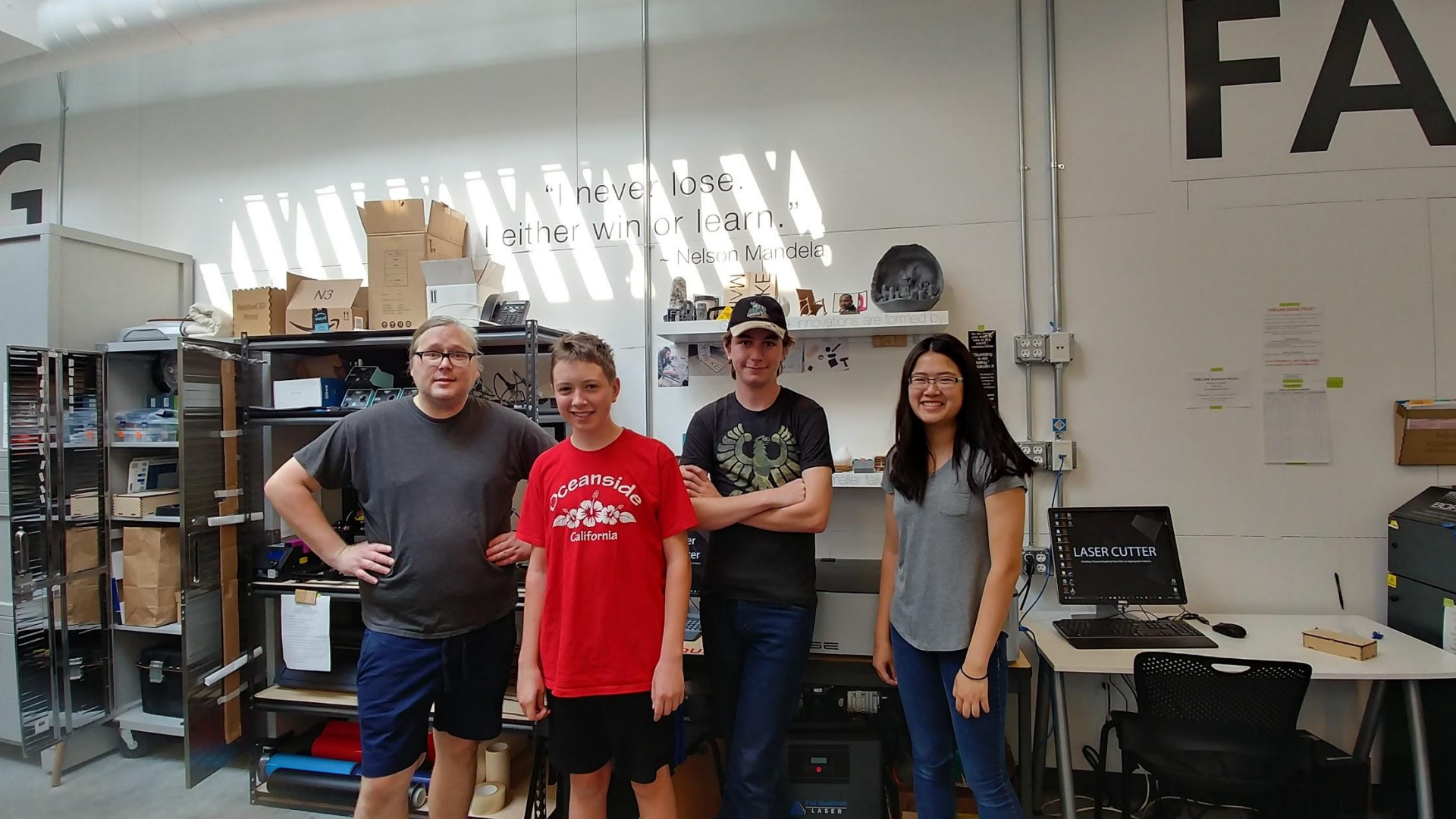
What did you learn about the invention process, group work, technical skills?

We learned to work better as a group. Philip learned a lot about coding and how to code better. Bao-Truc learned how to laser cut and 3D design a bit better. Michael learned how to work with Arduinos.

Is there anything you would do differently for your project or approach differently while inventing now that you've been through the camp?

Make it smaller and take more time in the construction designs.

"I never lose.
I either win or learn."
~ Nelson Mandela



FA

LASER CUTTER

Oceanside
California

Q&A

Any Questions?