

John Brechbill
Design Portfolio

2023



VoiceLock

VoiceLock

Addressing the negative experiences associated with checking in to an Airbnb.

This project was developed at the Masters of Design program at The University of California, Berkeley. The goal of the project was to utilize speech recognition technology to develop a product in 4 weeks that also increases accessibility. I decided to focus on the travel experience, specifically staying at hotels and Airbnb's. These experiences can be cumbersome especially for the elderly or those with disabilities, and it all starts with checking in. With Airbnb's popularity increasing, I found a opportunity area to specifically focus on this market segment.

During the check in process at most Airbnb's, fine motor skill as well as some technical knowledge is typically required. This can either be a light up key pad or a small lockbox - both options prove to be cumbersome for some portion of the population. After interviewing several family members about this topic, they echoed my concerns and told me they too have had trouble remembering the pass codes for these lock boxes. As we are all aware, remembering a phrase is much easier than remembering a series of numbers, and with the risk of low cell phone service high when traveling, it's best to have some of these things committed to memory.

Hence, I developed the voice activated lockbox. The playground inspired shape allows two accordances. It captures sound so the password does not get shared too broadly, and it provides a slim, tamper proof receptacle to drop the key into after the users stay. It's a fun idea that has some merit in the real world.

Technology

3D Printing, Rasberry Pi, Speech to Text, Proximity Sensor

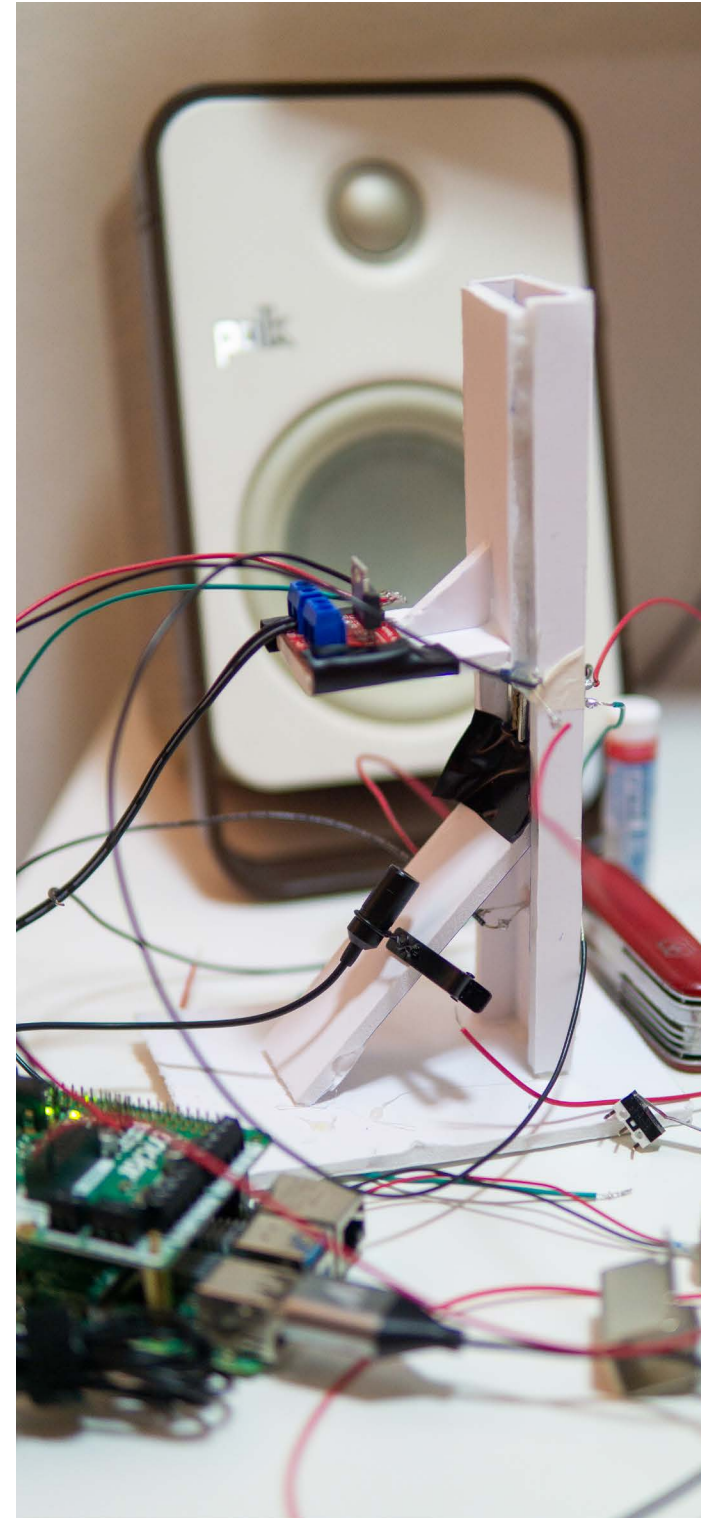
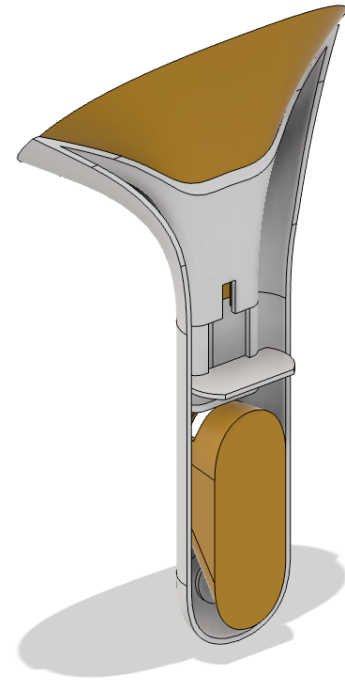
Role

Solo Contributor

Year

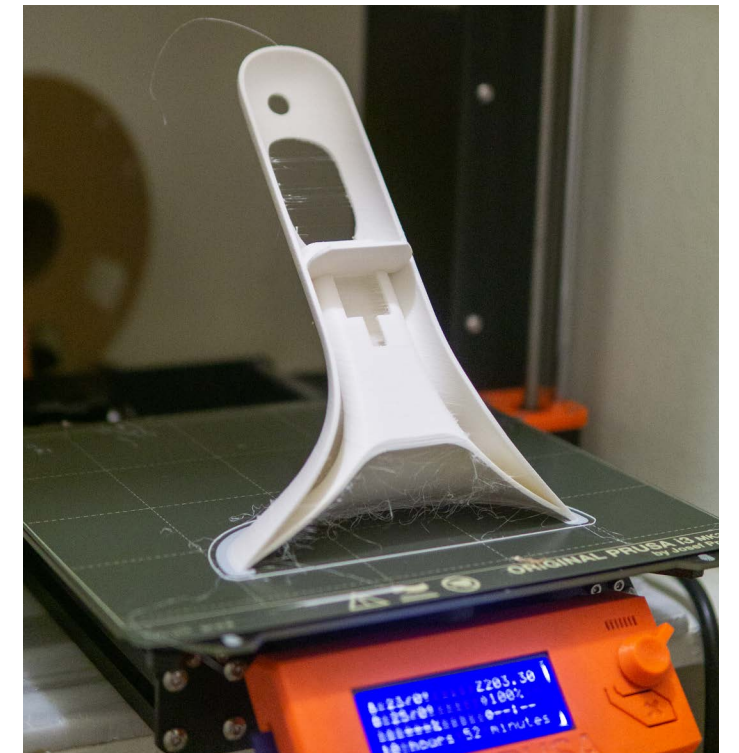
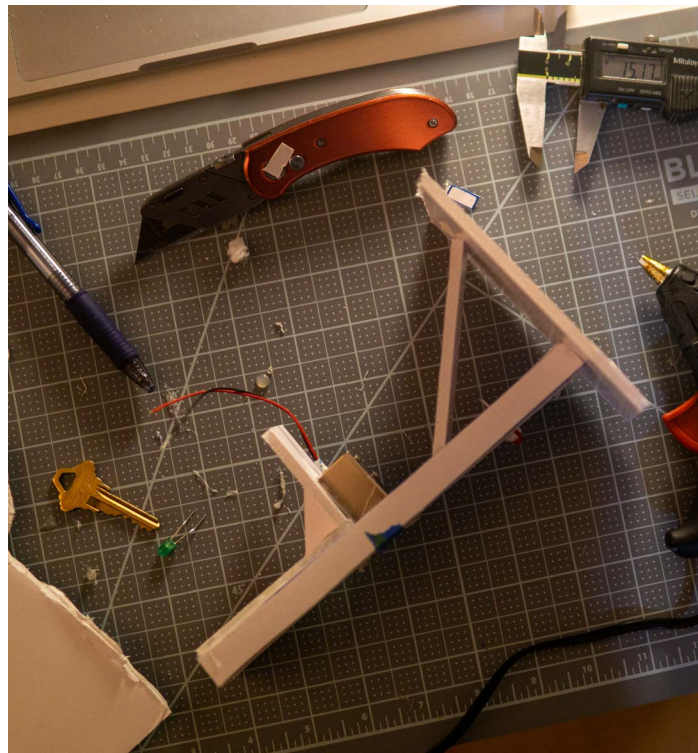
2022





Prototyping & Development

The prototyping phase of this project began with sketches. After settling on the playground voice toy as my inspiration, I created a mockup that functioned the same as the final product and allowed me to test all the electronics and moving parts. In this phase, I used a Raspberry Pi with a microphone attached to feed data through my Python program to Google Voice. If the word spoken was the recognized password, then the Raspberry Pi would send a signal to the 12v relay which would then open the trap door, allowing the key to fall through. It was a simple mechanism, but the difficult part was detecting the key, which was achieved with a small pin that would physically move when the key was present.



Unrivaled Ease of Use.



1. Lock Key

This is the first stage of using the VoiceLock, where the owner locks the key away & sets the passcode.



2. LED Indicates Key is Inside

This is the stage the device will mostly live at. The LED indicates a key is inside.



3. User Speaks Passphrase

The user can whisper the passphrase into the top of the device, as to not share it with anyone else.



4. Key is Released

The user can now take the key after it is deposited into the retrieval tray.





MOMENT CUBE

Moment Cube

Simplifying the smart home experience by assigning "moments" to each side of a cube.

This project was developed at the Masters of Design program at The University of California, Berkeley. The goal of the project was to simplify the way micro apartment users interact with their smart home. We settled on the idea of creating a cube with 6 unique sides, all of which can be assigned to different "moments".

The idea is that instead of controlling all devices independently, the user can turn the cube to the "plus" side, and multiple smart home products in their home will respond. The knob to the right of the cube acts as an overall adjustment for products that warrant its use. Say, if you have a moment that turns on music and makes the light dim, you could adjust the volume of the music and the lights with one knob.

We created a working prototype of this, including a doll house style presentation. We identified each side of the cube with magnets that corresponded to unique faces.

Technology

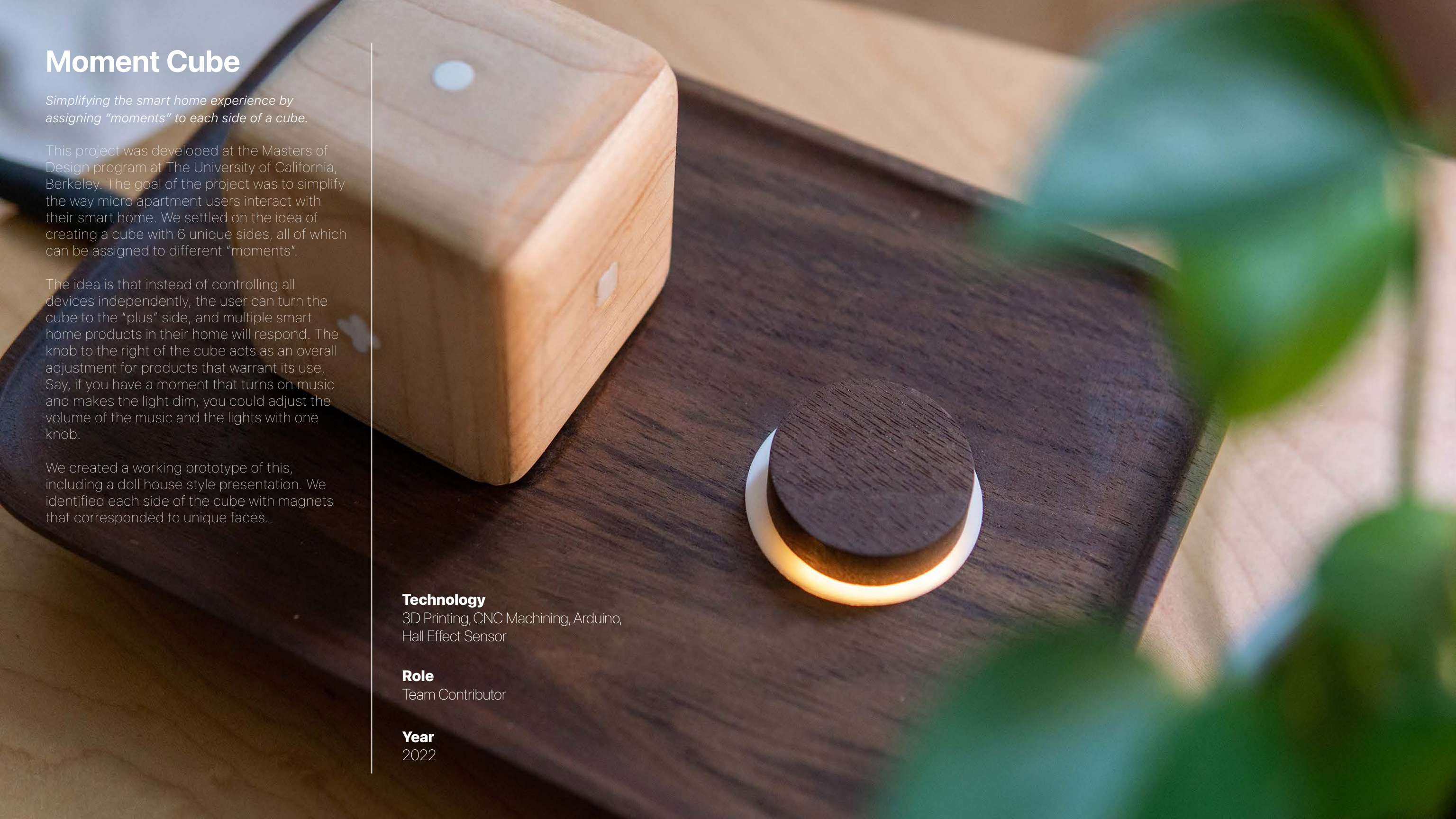
3D Printing, CNC Machining, Arduino, Hall Effect Sensor

Role

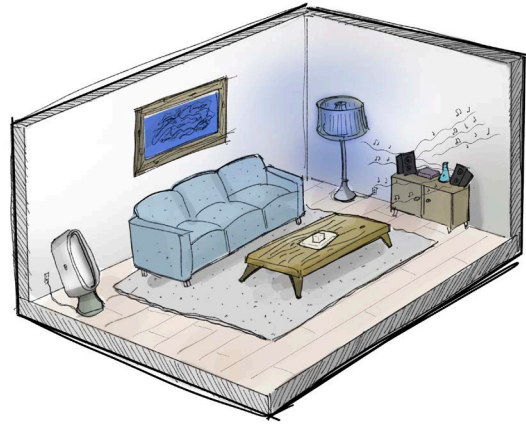
Team Contributor

Year

2022



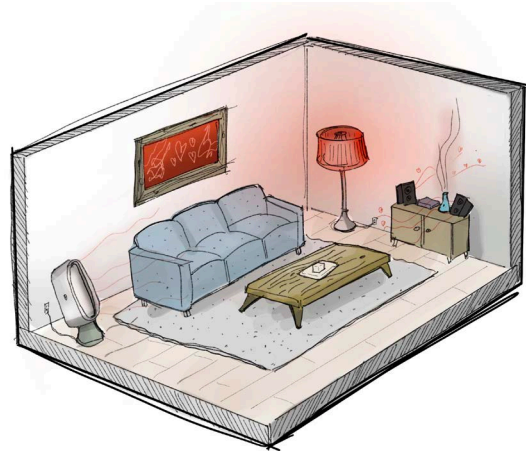
Development of the Moment Idea



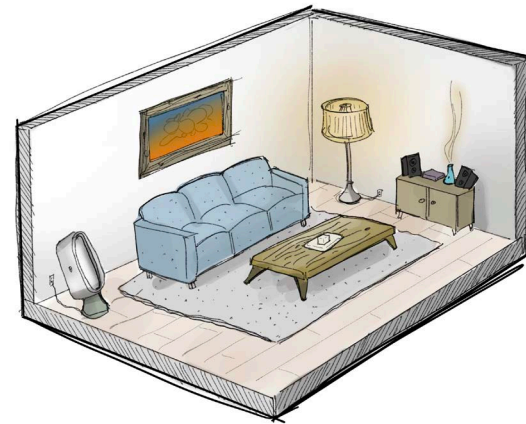
Moody - Side 1



Off - Side 2



Romance - Side 3

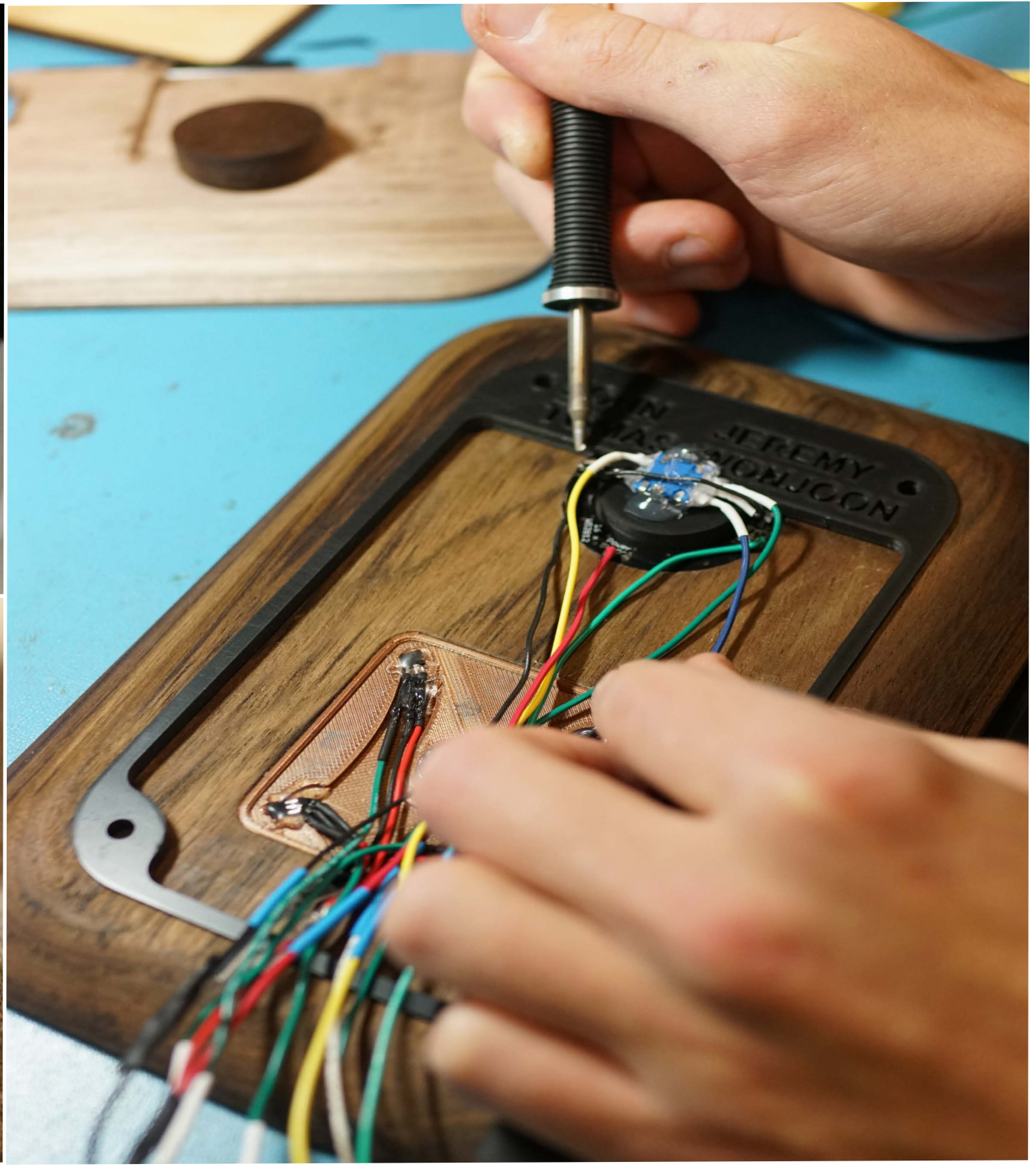
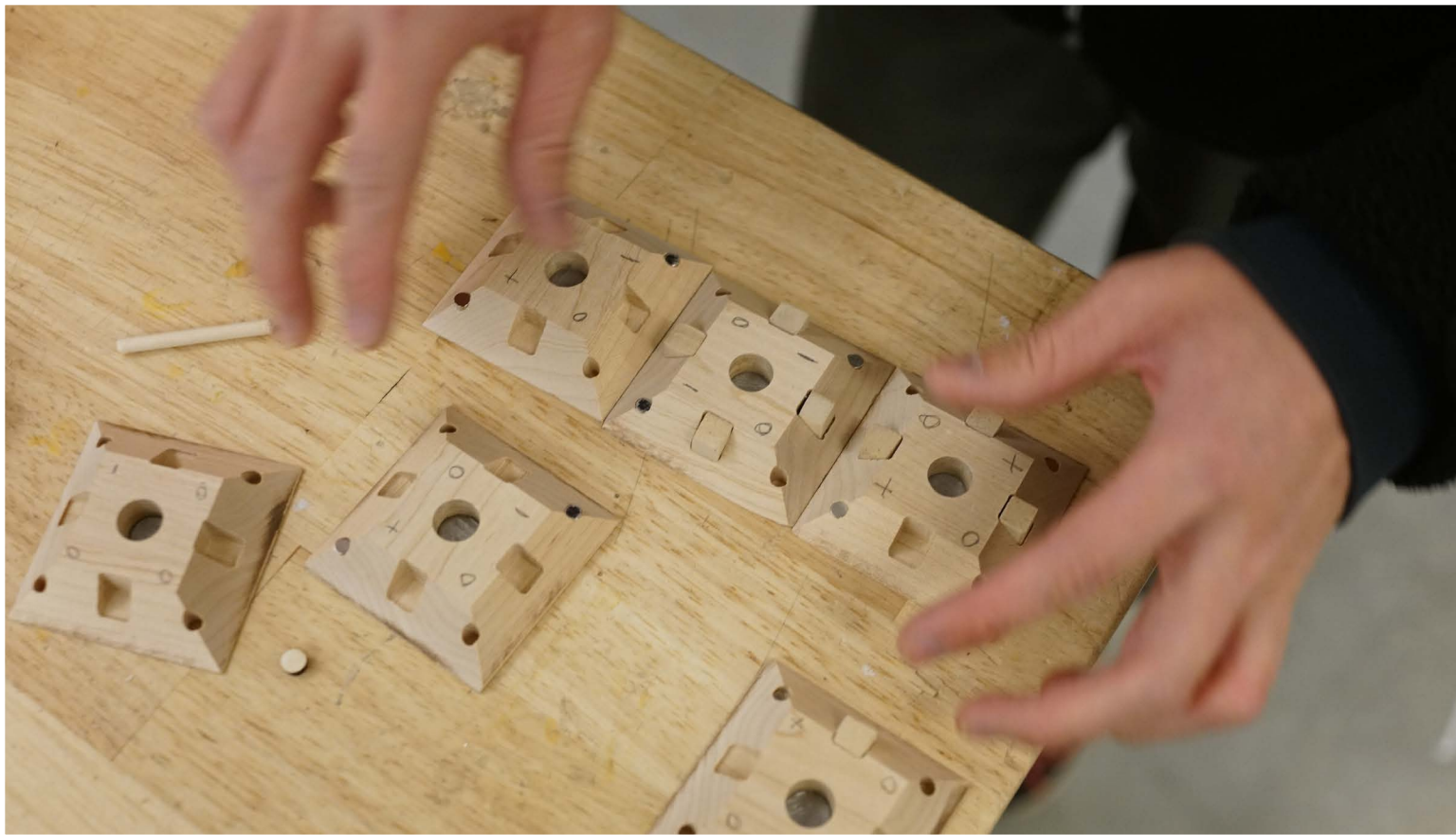


Chill - Side 4

Moments

Here we present a few different moments a user could cycle through as part of their routine.







Lounge Chairs

I developed a series of Lounge Chairs for Inside Weather.

While working at Inside Weather as the sole Industrial Designer, I designed and engineered several flat pack lounge chairs. The design brief was to break Inside Weather into the lounge chair space with a flat pack, CNC'd chair that exemplifies modern living and quality, all while retaining its ease of manufacture-ability and assembly.

This was a fun challenge. I worked on these two chairs for the better part of a year before they were in production. At the time, it was one of the most satisfying moments of my career.

Technology

CNC Machining, Assembly Lines,
Upholstery

Role

Sole Designer

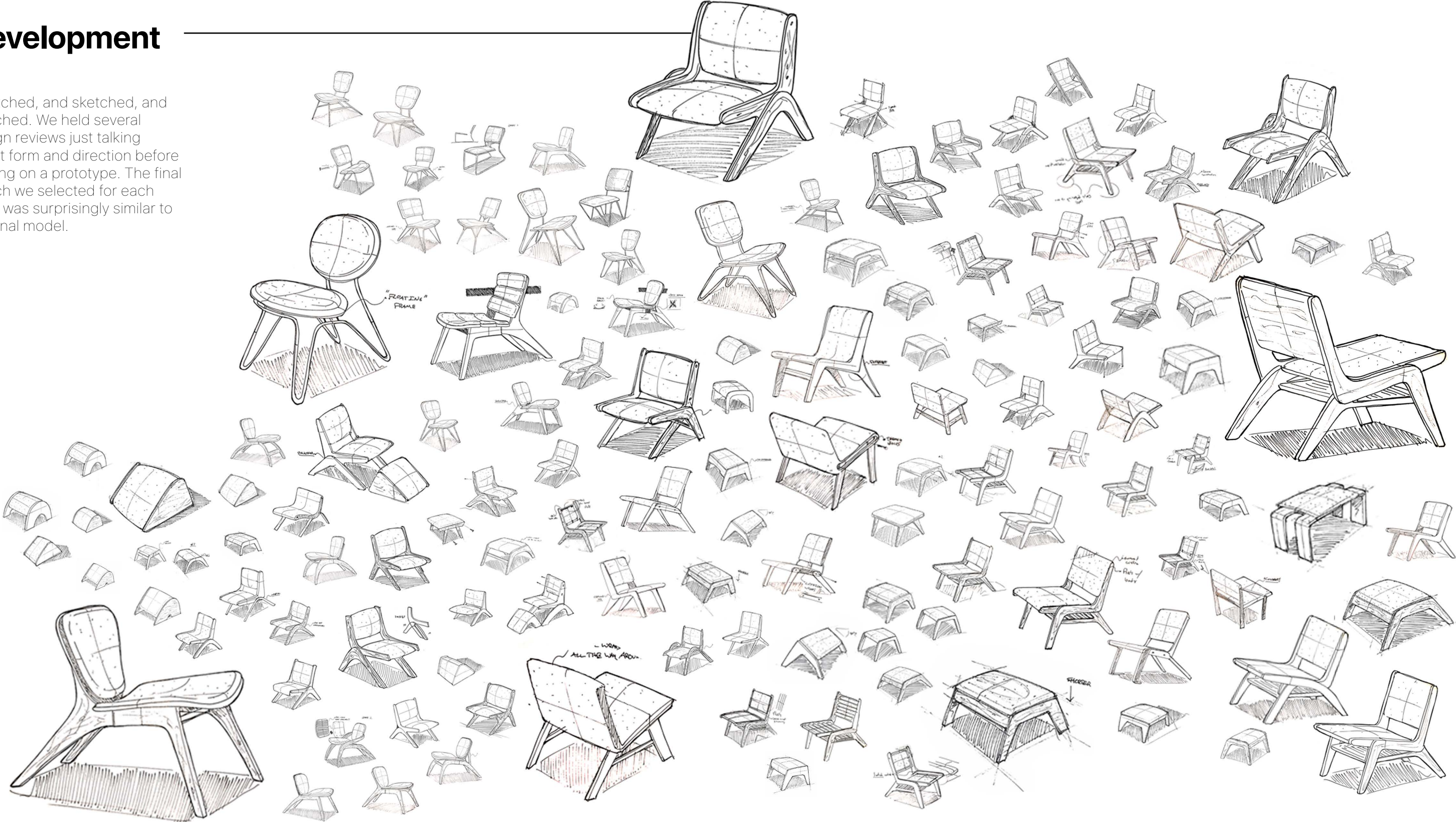
Year

2020



Development

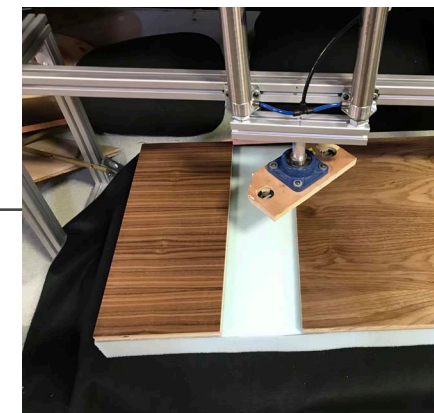
I sketched, and sketched, and sketched. We held several design reviews just talking about form and direction before settling on a prototype. The final sketch we selected for each chair was surprisingly similar to the final model.





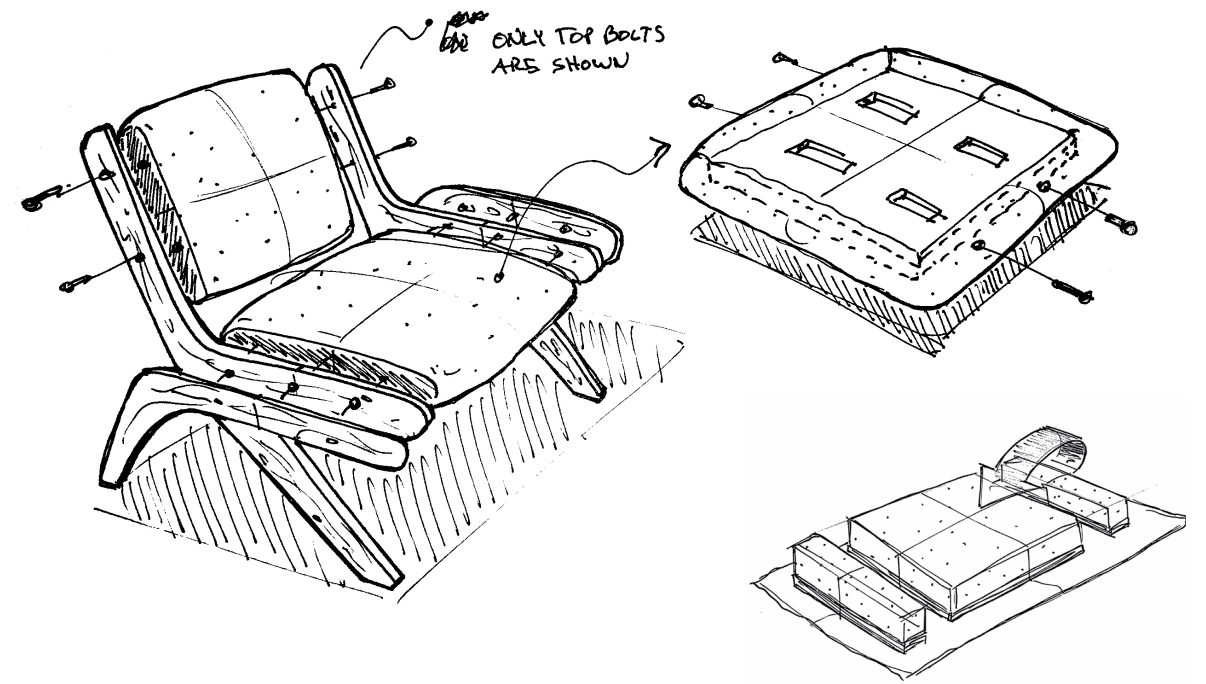
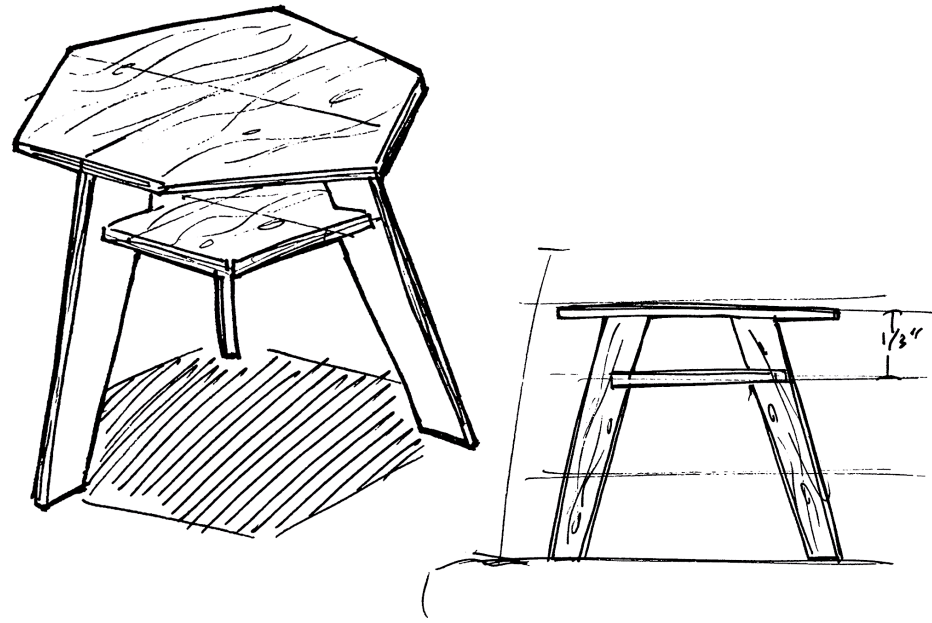
Process & Fabrication

Making one chair is easy, designing a factory that can make 100 a day is much harder. These photos show me working through that process of designing the manufacturing.

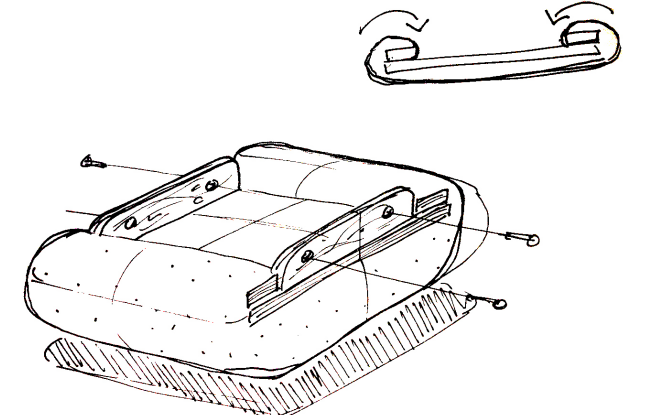
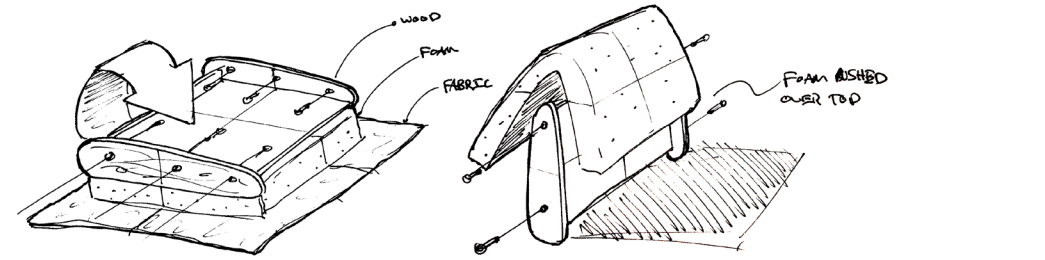
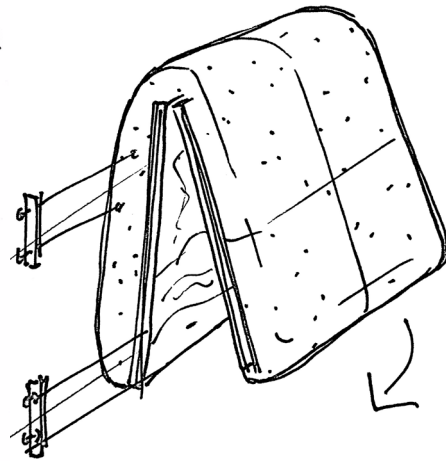
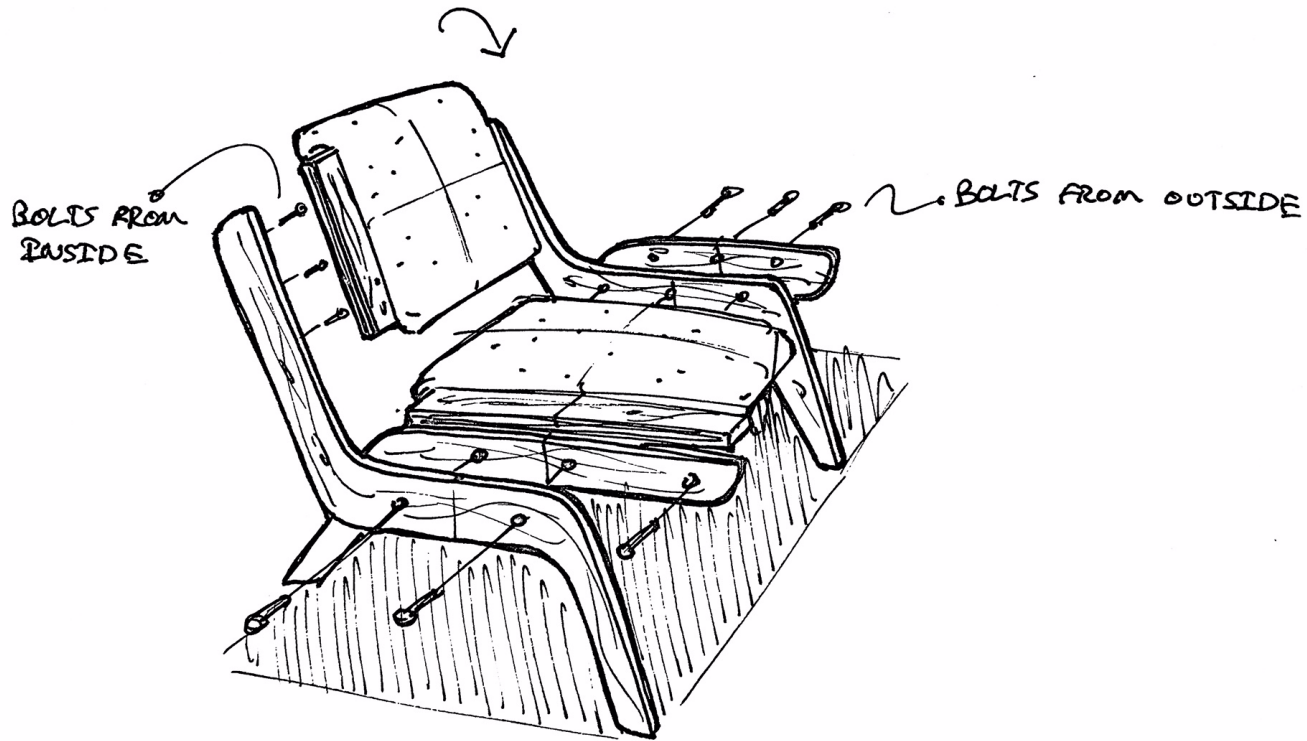


Sketching

How will it go together?



CUSHION HOOKS TO SEAT





Shapely

A plant shop designed to make owning plants just a little bit easier.

Shapely started after I purchased a 3D printer back in 2018 and had the unoriginal thought "Let me make a company out of this!"

This thought led me to create shapely, a Etsy store focused on selling plant related goods, all designed with the goal of making plants easier to own. I 3D printed and shipped all of the products from my home, at one point using my parents house in Florida as a manufacturing facility.

In the 3 years I operated Shapely, it netted over 20 thousand dollars of merchandise and countless 5 star reviews. I really enjoyed the end to end process of creating and fabricating a consumer product.

Technology

3D Printing, Shopify, Etsy

Role

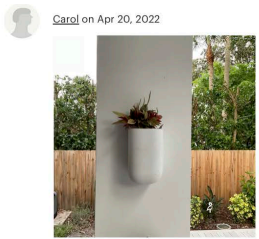
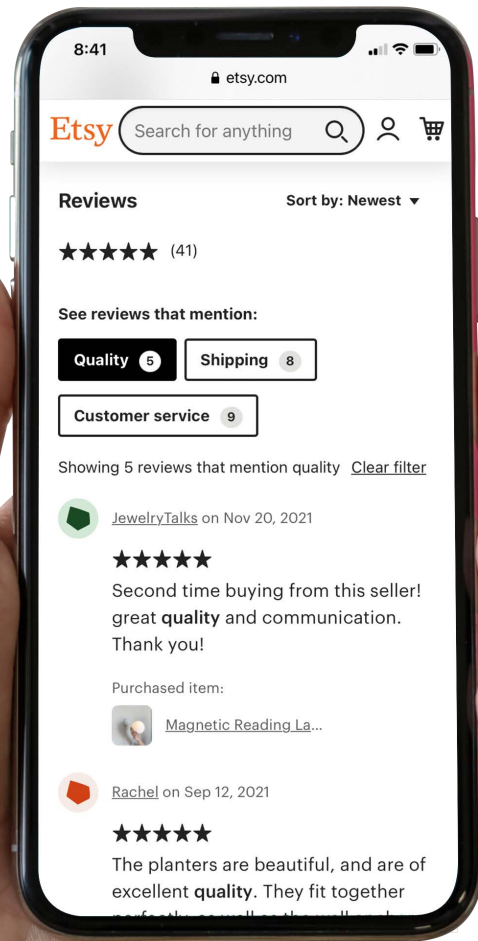
Solo Contributor

Year

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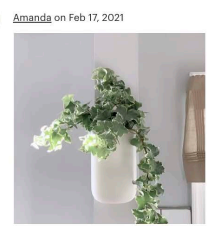


Shapely



Carol on Apr 20, 2022

★★★★★
This is a great planter. I love the way it's so easy to water. Lift the plant out, pour water in and replace plant. The wick keeps it watered for awhile. It stays on the wall with the Command Strips easily. Love this item. It made a great gift for my sister.



★★★★★
Received my self watering planter super quick! The owner of this shop was super friendly and easy to work with. The directions on how to use and hang the planter were easy to understand. Love the way it looks in my kitchen and will definitely be ordering more from this shop!



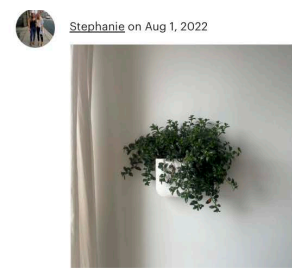
Sarah on Feb 19, 2021

★★★★★
I've spent quite a bit of time over the past year scouring the internet for 3D-printed planters, self-watering planters and wall-hanging planters (yes all three), so when I saw this I knew I needed it! I was very pleasantly surprised with how substantial it is -- much thicker walls than many of the other 3D-printed planters out there. I also love the matte white color, which blends perfectly with my walls. Very happy with this -- thank you!



Sonia on Jun 29, 2021

★★★★★
... Going custom made is just so rewarding! I have been using Lechuza pots for my orchids... but... they are quite large there is 3"... up to 5". But I have younger orchids that need much smaller pots... what to do? Nothing... nothing available on Etsy and found Shapely Design that had what I was looking for BUT... not exactly right for orchids. More designed AWESOME! At MY REQUEST... He changed the design of the inner pot to be a) transparent so I can monitor health of it and c) added two holes at the bottom for a wick. Results?? Amazing 😊 my orchids have been in their new home for thriving! Quality is on point! THANK YOU!



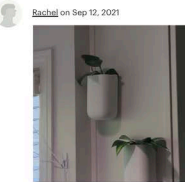
Stephanie on Aug 1, 2022

★★★★★
This planter is so easy to put up! I also feel as though my plant is growing more by having a constant water reservoir. I do wish be larger sizes available for purchase! :)



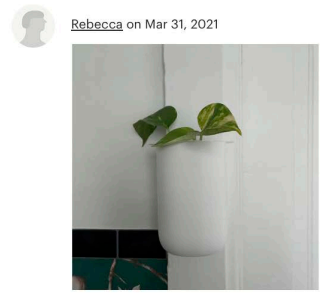
artillustrations on Sep 4, 2021

★★★★★
These planters are perfect! They shipped quickly and installed extremely easily. I tried several other planters that didn't work out. Not only do these planters look great, but they are self-watering so no need to worry about frequent watering.



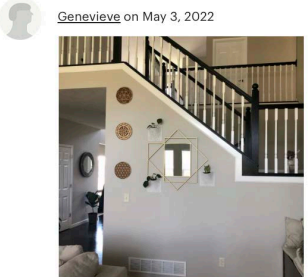
Rachel on Sep 12, 2021

★★★★★
The planters are beautiful, and are of excellent quality. They fit together perfectly, as well as the wall anchors. John communicated with me swiftly, and they are definitely worth the price. I placed them the side of my kitchen cabinets. The command strips do not hold on that kind of surface for some reason. So John sent me some screws! Now they definitely won't go anywhere! Thanks John!



Rebecca on Mar 31, 2021

★★★★★
Lovely product, friendly seller, arrived promptly. Thank you, John!



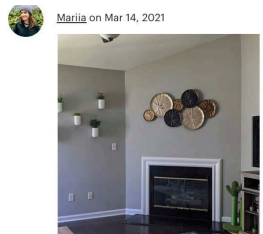
Genevieve on May 3, 2022

★★★★★
Just what I needed for my space



Flora on Jul 20, 2022

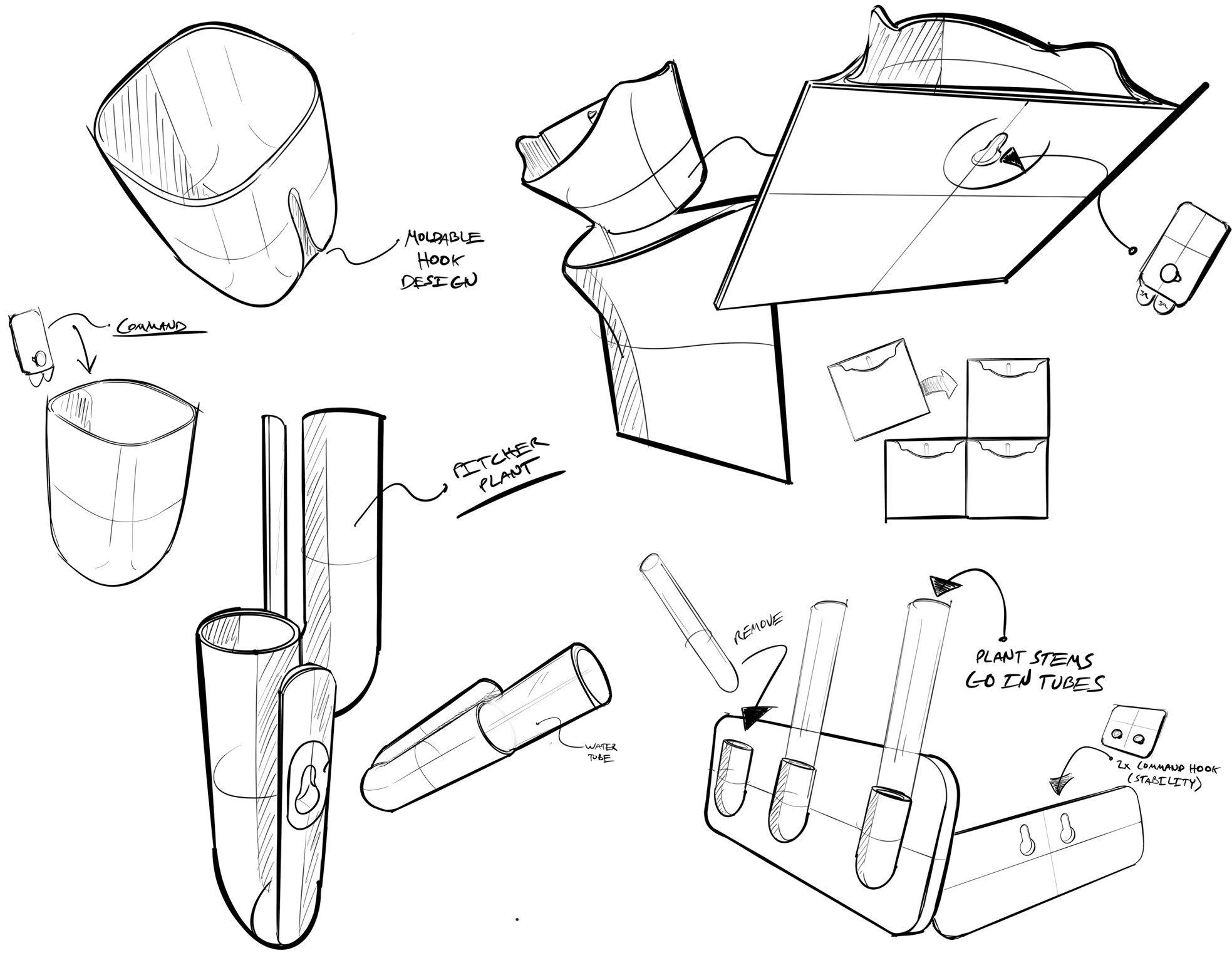
★★★★★
This is legit! Very solid piece! It finally arrived and I'm very excited to use it. It's beautiful in person. No rough edges. Robust base with very nice sized glass tubes that can be removed for cleaning. Well designed and I highly recommend these and this company. **Updated review as of 7/23/22: if I could give 10 stars I would. I'm a brute and accidentally broke one of the pegs while installing my propagation station. Reached out and the seller sent me a replacement peg in no time at all for no cost. Stellar seller/customer service and product!



Maria on Mar 14, 2021

★★★★★
I'm very happy with these planters! I've been looking for something that looks nice and out of reach of my cats. This is exactly what I needed. They are very well made and seller is easy to work with!







Shapely

Bravo Fax Machine

Simplifying the smart home experience by assigning "moments" to each side of a cube.

The impetus for the Bravo Fax Machine was to foster connection between remote workers. During interviews with people experiencing remote work, we found that they missed the small moments between co workers that foster connection, such as leaving a note on ones desk.

We decided to make this finding the focal point of the project. Using a Rasberry Pi, Camera, Thermal Printer, and LCD display, we created a fully functional "fax machine" that scanned a users note, sent that information to the cloud for processing, and then printed on another users device.

This project combined several emerging technologies with a old appliance, making it a notable exploration in the world of retro consumer devices.

Technology

3D Printing, Rasberry Pi, Python, Thermal Printing

Role

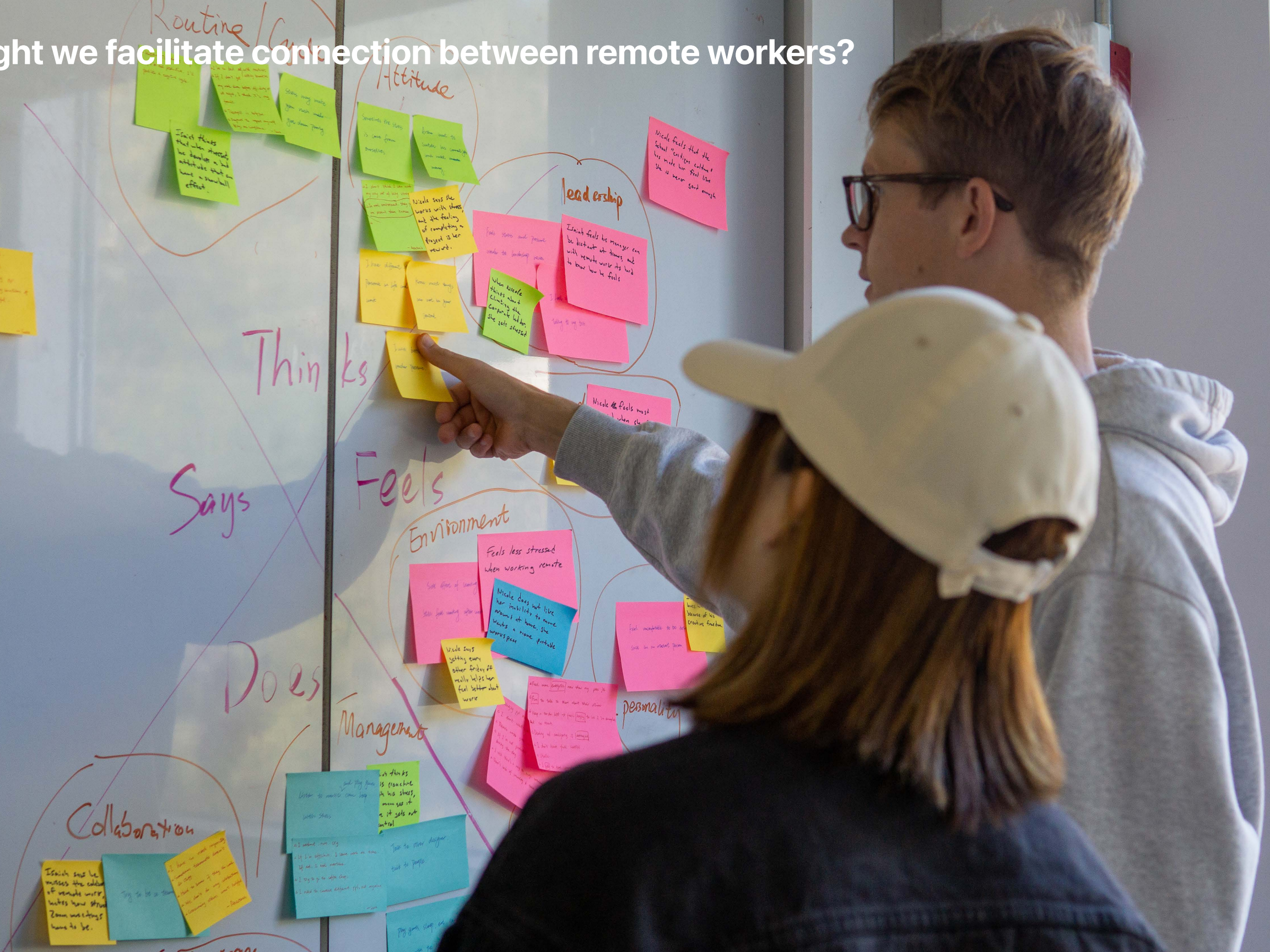
Team Contributor

Year

2022



How might we facilitate connection between remote workers?



First, we asked them.



Then we ideated.

Spontaneous Comm

Round? Table mounted - light
speaker
switch
control panel - lead button
speaker
light

A slight bump, you can see
light

Button
button like anything
light
speaker

COFFEE CUP COMMUNICATION
"WATER COOLER CHAT"
could be invented
if you had a coffee
break & you can
chat

WORK PHONE
RETRO!

SLACK MSG.
when you hear
new tasks
send ↑

see the other
take in real
time
video calling

Achievement

Toast
toast
toast
toast

Progress bar
voice button
change color
progress bar

orange
task button
speaker
light

Smart Calculator
voice
task button
task button

Task
task progress screen
light
speaker

And 2's connect
to the application
to get real good
talk status

ULTRA TACTILE
PROJECT TRACKER

Shape
change

Filing Cabinet
Digital
Input
toast

Task can collection
can
toast

FLICK OFF
simulate
them as
of screens
achievements

SAND TRACKER
soft light
warm

when you hear
new tasks
send ↑

Send? congrats
water

COFFEE SHAP
WORK STATION
ALARM

PORTABLE
WORK STATION
a desk w/
wheels

foldable

Remote - remote Work Exp

Capture emotions Beyond Words

Smiling
Cogn face

Stress

Send to
PM manager/
a?

Task can collection
can
toast

FLICK OFF
simulate
them as
of screens
achievements

SAND TRACKER
soft light
warm

when you hear
new tasks
send ↑

Send? congrats
water

Congrats

SAND WATERFALL
Shows tracks!

Tasks / Collaboration

Collaborative whiteboard
Share content
Zoom
meeting

protected number
100%

DESK WHITE
BOARD

A Light, Sound, vibration
Desk walk - talk that
Assign tasks, and allows user
to leave message for

SPONTANEOUS WHITE
BOARD
pointer

White
board
PROJECTOR

Etch a sketch
other people see
mirror

others can
edit in real
time

"Clip Board"

Stress Management

COMPUTER VISION
STRESS DETECTION
- some Google?
- what?
- break?

COFFEE PLANTER
"Smart?"

DESEAL
HOUR?
CALAPA
For walks or
buses

INNER
YOU

DESK PLANTER
"Smart?"

plant area -
grass saps
back!

others can
tell to you

change temperature

more you hug,
you get feedback
ego = "love"

here can
know about
your stress

soft on top
hard on bottom

soft cloth

light
touch

take your
laptop

COFFEE PLANTER
"Smart?"

take your
laptop

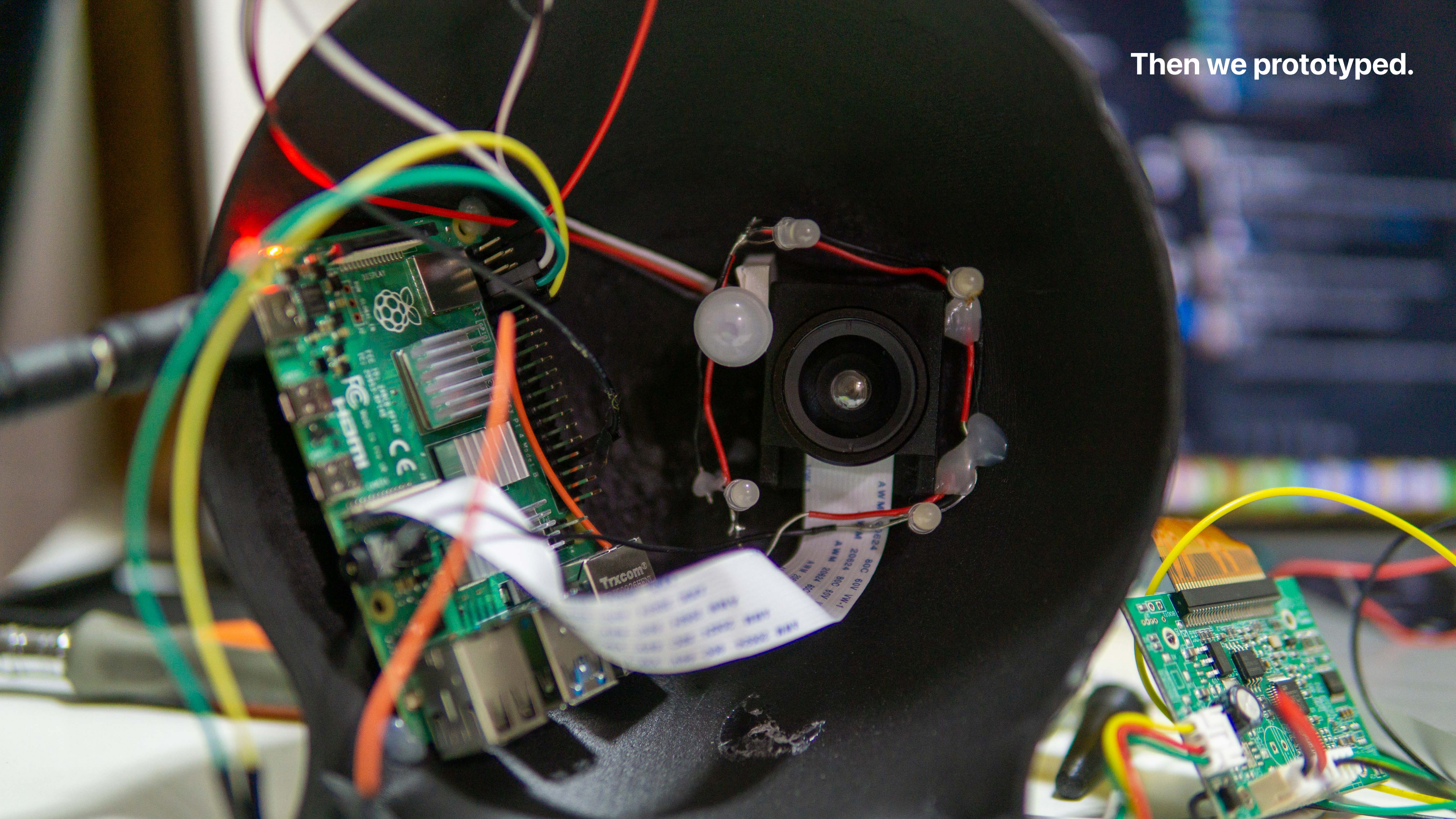
COFFEE PLANTER
"Smart?"

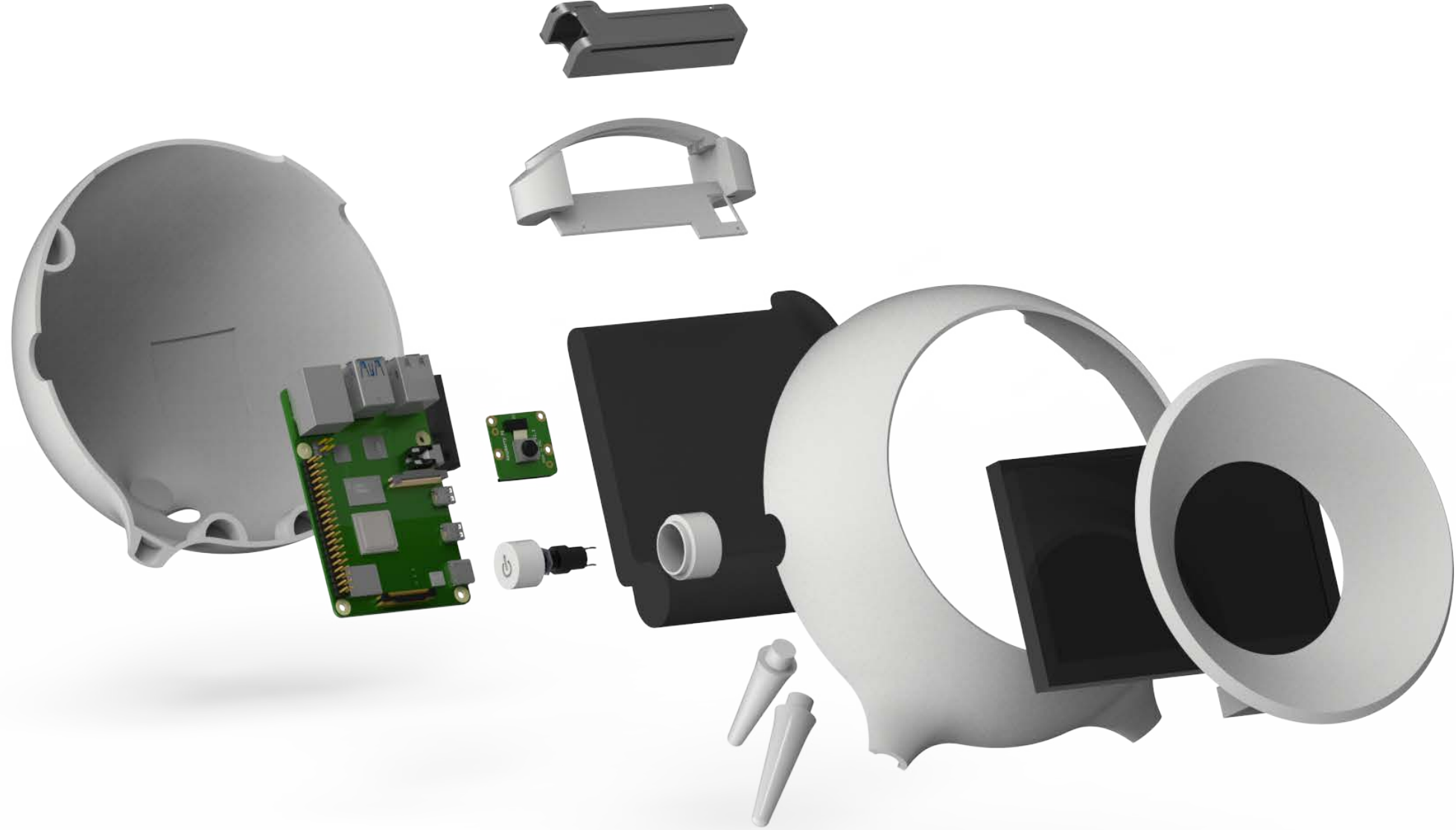
take your
laptop

COFFEE PLANTER
"Smart?"

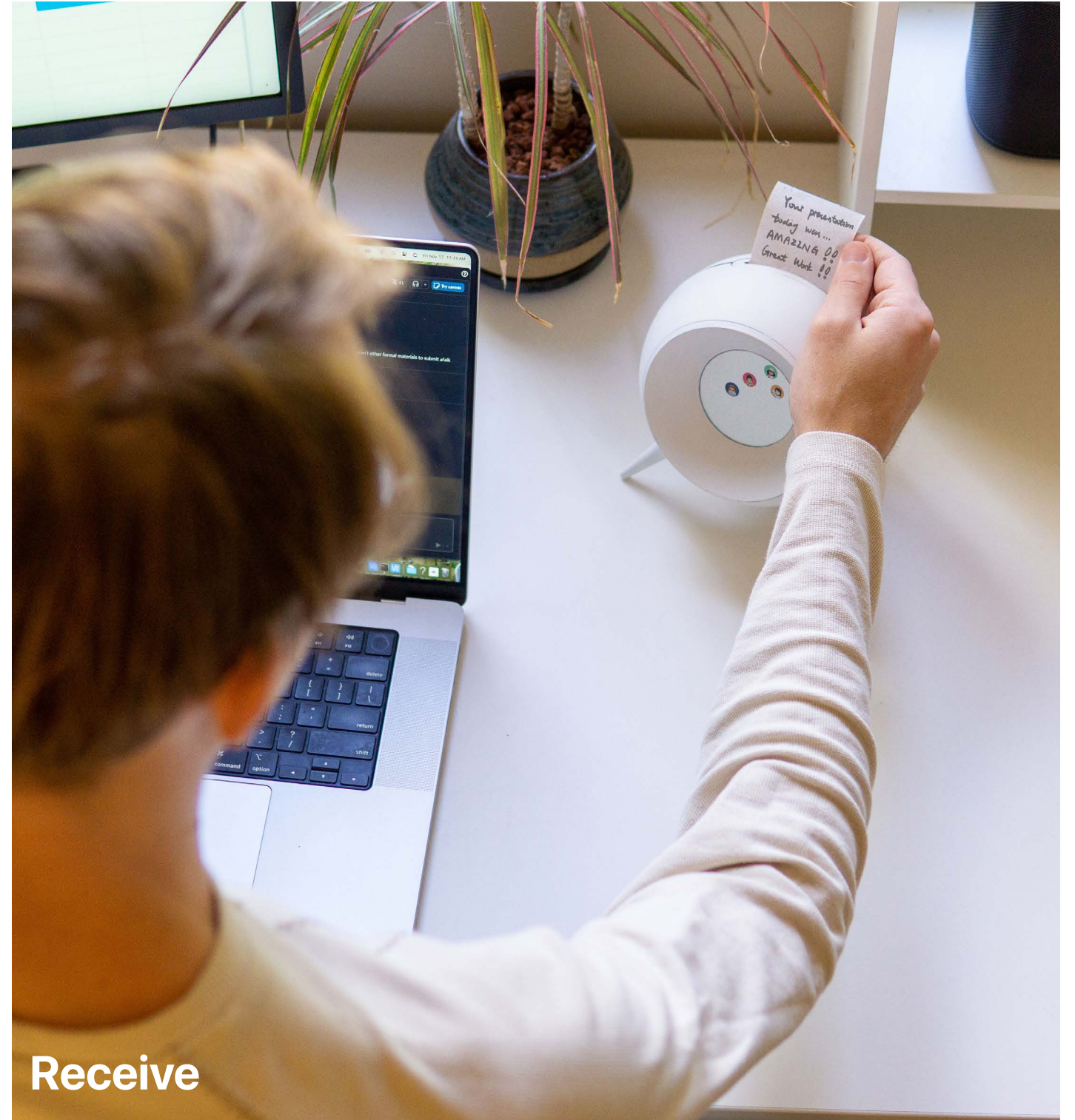
take your
laptop

Then we prototyped.





Send



Receive