

# Gorby

Final Presentation

**Overcoming Nicotine  
Reliance in Young Adults**



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Visual Lead



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Branding Lead

# Agenda

1

**Topic of Interest**

2

**Research Methods**

3

**HMW**

4

**Concept**

5

**User Testing**

6

**Final Solution**

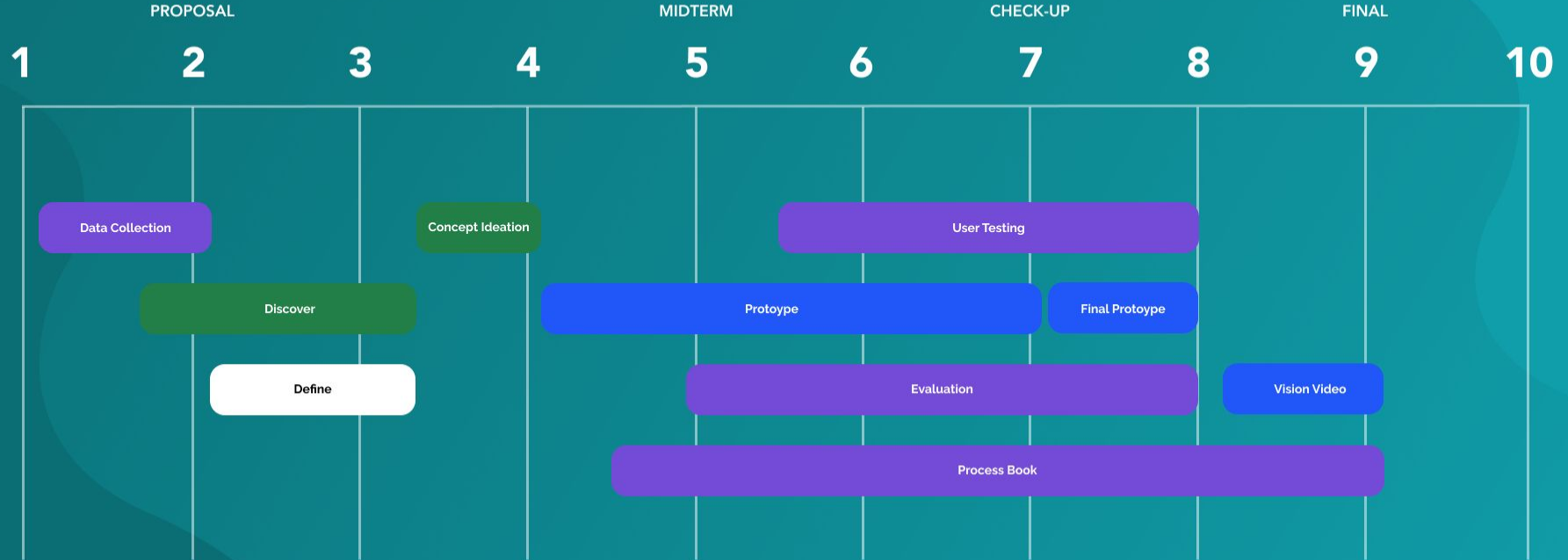
7

**Programming**

8

**Final Deliverables**

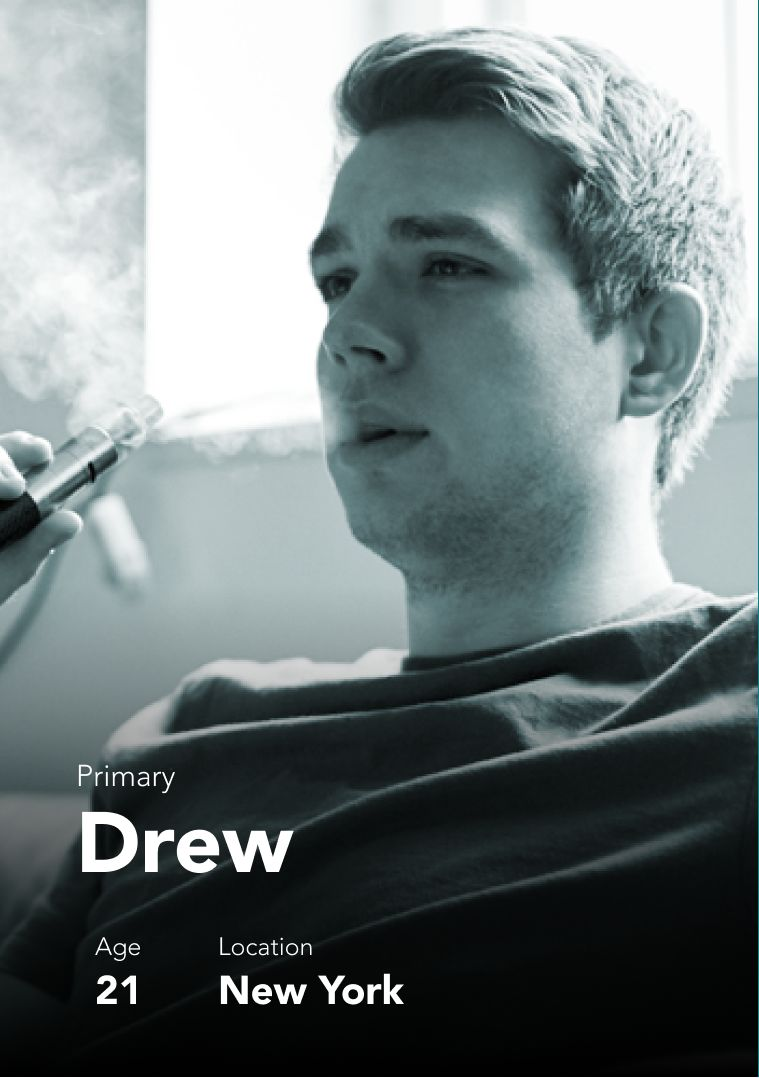
# Our Plan



# Our topic of Interest.

Recovering from a vaping and smoking addiction.





Primary

# Drew

Age

21

Location

New York

## Biography

Drew is a sophomore college student, who has been addicted to nicotine since his junior of high school. He started smoking only because all of his friends were, and didn't realize the effects it would have on his health. He has tried to quit multiple times, but hasn't been able to overcome his triggers and withdrawals. During his quitting attempts he's relapsed at parties when all of his peers expect him to smoke. He wants accountability, but is scared to ask his friends who smoke to help him.

### Drew's Frustrations

- Has no one to ask for help to quit
- In social situations peers expect him to smoke
- Symptoms of withdrawals

### Drew's Needs

- Accountability
- Overcoming triggers and withdrawals
- Healthy coping mechanisms

## Drew Personality





# Drew's Current Journey



|              |  |   |   |  |  |   |  |
|--------------|--|---|---|--|--|---|--|
| <b>Do</b>    | Throws out Juul and cigarettes to help quit smoking.   | Suffering headaches from nicotine withdrawals, and craving his Juul from being stressed out from his school work. | Withdrawals only get worse and starts suffering from insomnia on top of constant headaches. | Withdrawals start to slowly get a little better with every day that goes by. | Goes to a party, and relapses when his friends ask him if he wants to smoke.     | After smoking the night before, his withdrawals come back and to start the process all over again.                                  | Buys another Juul, tired of the withdrawals and thinking he can't overcome his triggers.                       |
| <b>Think</b> | "I'm actually going to quit smoking this time"<br><br>"If I don't have my juul and cigarettes I won't relapse" | "I wish I could hit my Juul more than anything right now"<br><br>"The withdrawals can only get better from here"  | "How am I going to get through the day"<br><br>"Is this going to keep getting worse"        | "I still feel horrible, but it's becoming more bearable"                     | "I'll just smoke this one night"<br><br>"I feel amazing without the withdrawals" | "I didn't know smoking one night would make all the worst withdrawals come back"<br><br>"Am I actually going to be able to do this" | "I'll just quit later, I this will be such a long grueling process"<br><br>"What's another few months or year" |
| <b>Feel</b>  | <b>Determined, Focused</b>   | <b>Stressed, Frustrated</b>   | <b>Tired, Stressed</b>  | <b>Motivated</b>   | <b>Relieved</b>  | <b>Stressed, Frustrated</b>   | <b>Complacent</b>  |

**Opportunities**

Hold the user accountable for relapse, and allow them to use their social network for support.

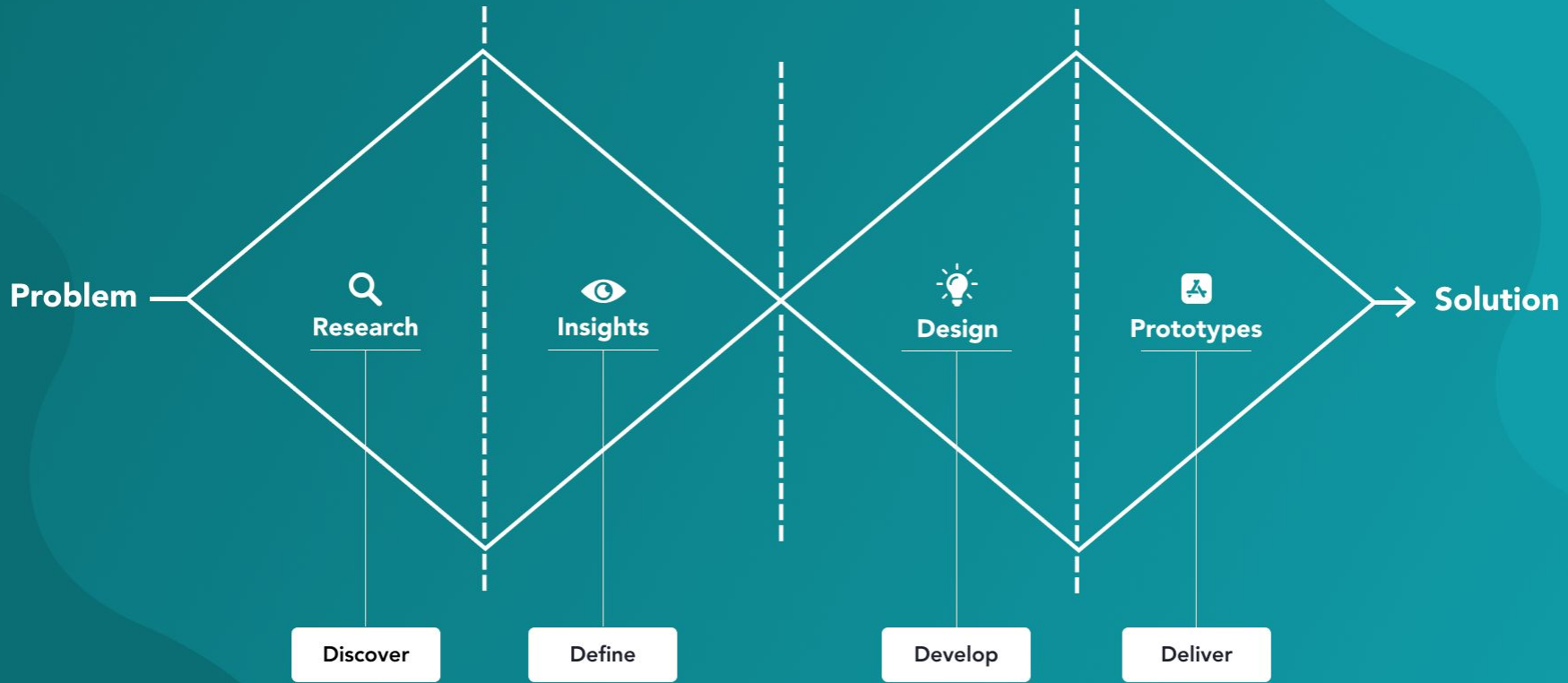
Provide positive reassurance and encouragement to users after no longer smoking for a few days.

Allow users to pin trigger points, and have their social network be notified when the wearable smoke detector goes off.

# Our Process







# Target Audience

Nicotine Addiction

**18**

Graduating high schoolers

**24**

Young working adults

# Secondary Research





Family and peer support provides the reinforcement necessary for the patient's success.



The more frequently a stimulus is presented, the faster habituation will occur.



There were lower drinking consequences for those in Network Support, as alcohol is a common cause for relapse.

# Methods of Primary Research



# Primary Research

Survey:  
**51 Responses**

User Interviews:  
**1st Round: 15**  
**2nd Round: 6**

**51**

Survey Responses

**2**

Interview Rounds

**15**

1st Round Interviews

**6**

2nd Round Interviews

# Primary Research



Stress and social situations were the most common reasons users started smoking.

Stress, anxiety, and alcohol trigger users to smoke.

Users would want someone to hold them accountable when quitting.

Users who prefer to quit smoking alone don't involve friends because of fear of judgement and future conflict



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# Affinitization

**134** Blues

**34** Pinks

**756** Yellow

**12** Initial HMWs

**6** Final HMWs

Some users **didn't have any concerns** about quitting and do not care **what their peers think about smoking**

x26



Users are **more at risk** to start smoking at younger age because they are more **easily influenced by social factors, stress, and media**

x65



Users smoking **habits** are **based off** their **surroundings** and the **triggers** they face throughout the day

x145



People **without a reliable method to cope** with stress are **more prone** to smoking/vaping, especially those who have **pre-existing mental health** issues

x41



Users can **successfully quit** by **avoiding triggers** like **stress and alcohol** coupled with the **support** from their community

x46



Some users will **not feel guilty about their nicotine** dependence even if it may affect their schedule

x51



Because users **started smoking** with cigarettes or other nicotine devices, they would be **interested in nicotine** alternative products **to help them quit** on their own

x48



Some users felt as if **quitting on their own** would be best, however majority said they would have **no opposition** to being **encouraged** by their peers or **receiving support** from strangers or counselors

x133



Users have clear **preferences on who they will and won't smoke around**, which leaves a significant impact on social relationships

x24



Users feel **motivated to quit** for personal health, social relationships, and the financial **benefits of no longer smoking**

x77



Users had varying methods to **quit successfully** while also **avoiding environments** where they would be **triggered** to smoke

x56



The **quitting withdrawals**; cravings, irritability, and anxiety were difficult but I **coped with candy, music, and keeping myself busy.**

x52



**HMW**

Overarching HMW

**How might we create a product to detect user's emotions and provide insights on their environmental triggers to motivate them to facilitate change?**



## Sub HMWs

HMW develop a product that visualizes user insights on their emotional and environmental triggers to aid smoking cessation?

HMW create empathy for users in social environments that pressures or triggers them to smoke, such as stress or alcohol?

HMW create a product that enables users to quit smoking alone while also providing an empathetic community of family, friends, strangers, or counselors to create a system of accountability?

## Sub HMWs

HMW empathize with user's mental health by creating a reliable system to cope?

HMW develop a product that aids users who are more at risk for smoking due to social and academic stress, while inspiring them to care about the long-term effects of smoking?

# Product Concept



**A wearable device that can aid the users by identifying their triggers and emotions through recovery while helping them stay accountable.**

The watch allows the users network to be notified when facing a trigger or a heightened emotional state.

A wearable device that can aid the users by identifying their triggers and emotions through recovery while helping them stay accountable.

**The watch allows the users network to be notified when facing a trigger or a heightened emotional state.**

# Product Features





Direct connection to the application where you can review your insights.



Heart Rate sensor and GSR Sensor allows the application to identify heightened emotions which can signal potential for relapse.



Smoke sensor to identify when the user is around smoke.

# App Concept





**The application works in tandem with the wearable. The application extends the experience of our user's recovery.**

Here they can make friends who can empathize with their situations, post on the forum about specific topics.

Such as cravings or social situations, review their recovery insights, and earn achievements from their Gorby.

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Here they can make friends who can empathize with their situations, post on the forum about specific topics.

**Such as cravings or social situations, review their recovery insights, and earn achievements from their Gorby.**

# App Features





Meet people in the forum to  
add to your gorby lobby



Review your triggers, insights,  
and mood history



Gain achievements to rank up  
your in app Gorby



Receive advice during  
triggered events or  
heightened emotional states



Stay accountable



# 3 Scenarios



# 1. Heightened Emotional State



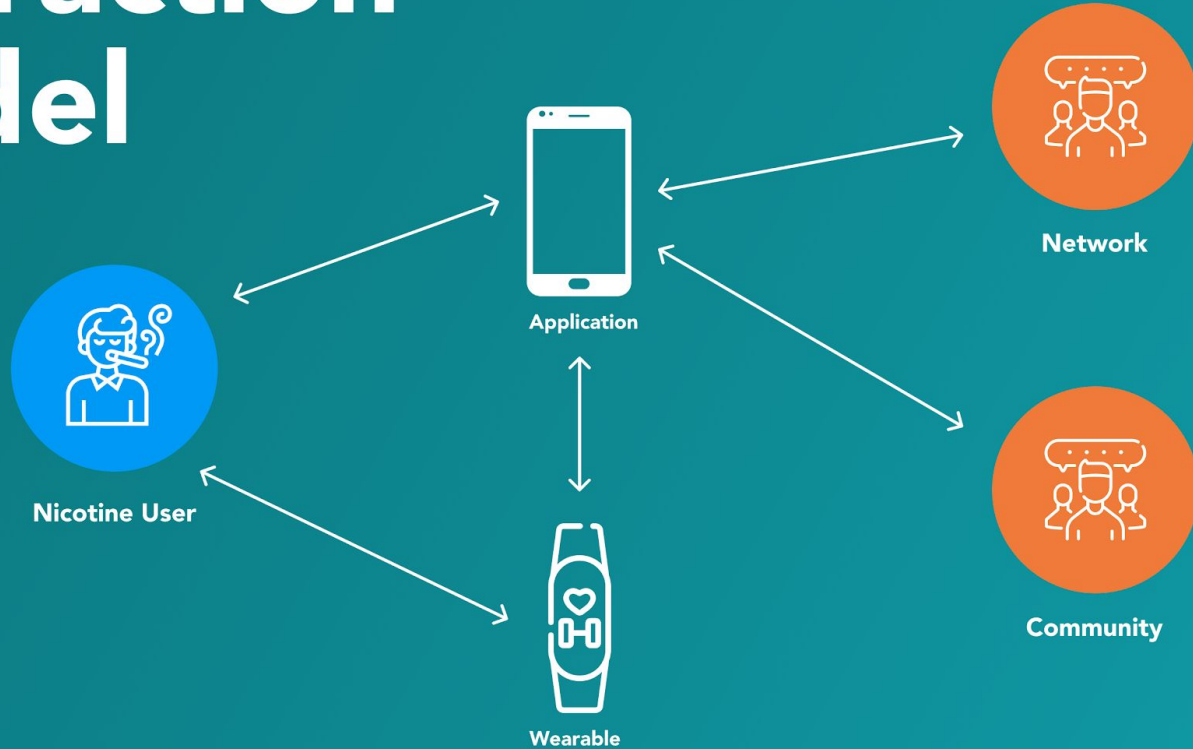
## 2. Smoke Sensor



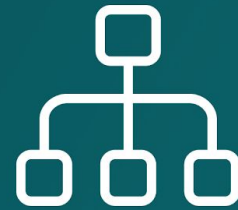


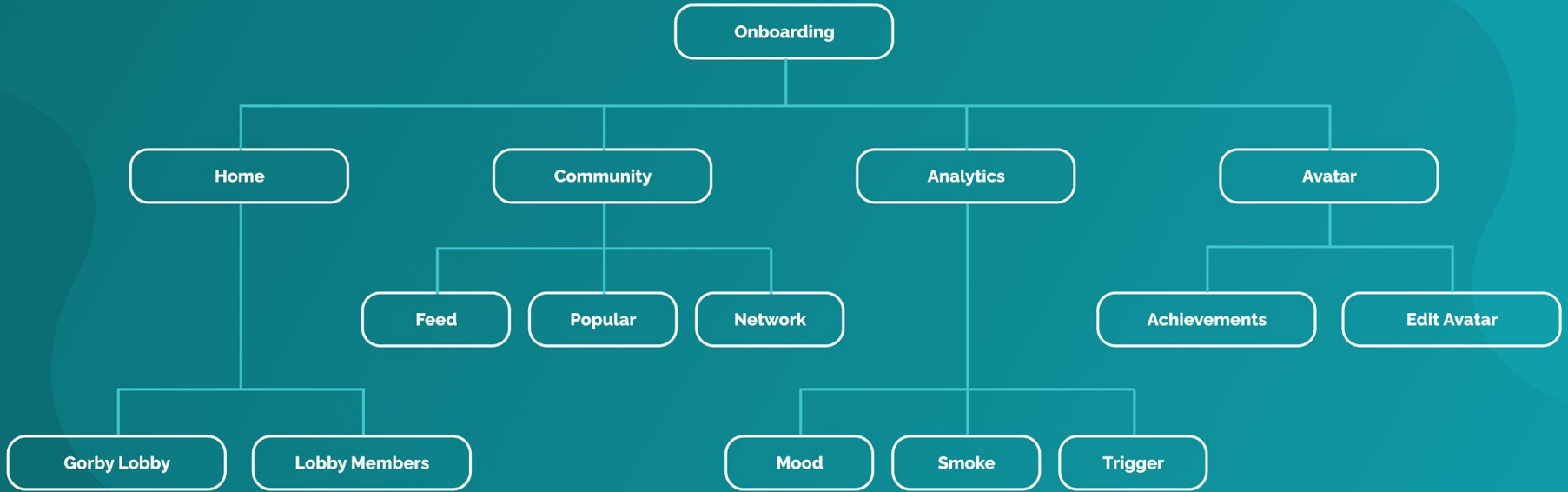
### **3. Pressed Trigger Button**

# Interaction Model



# Site Map





# User Testing Methods



# User Testing Methods

## Quasi Empirical

Used a 1 to 5 system usability scale, and calculated the average score from a post testing questionnaire.

## Post Test Survey

Participants completed a 7 question survey about both the app and avatar.

# Participations

**13**

Mid-fi

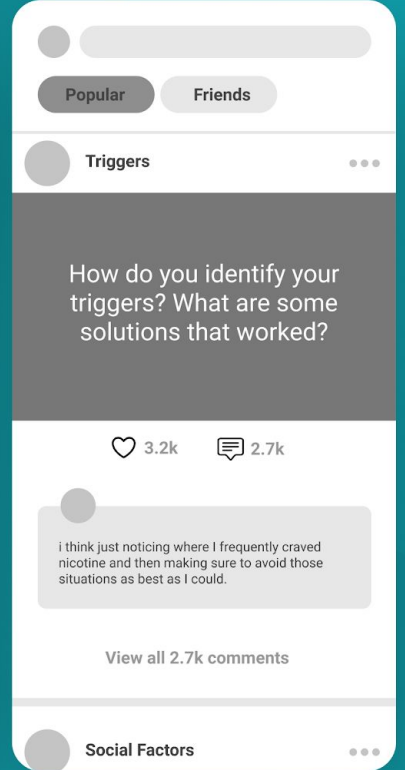
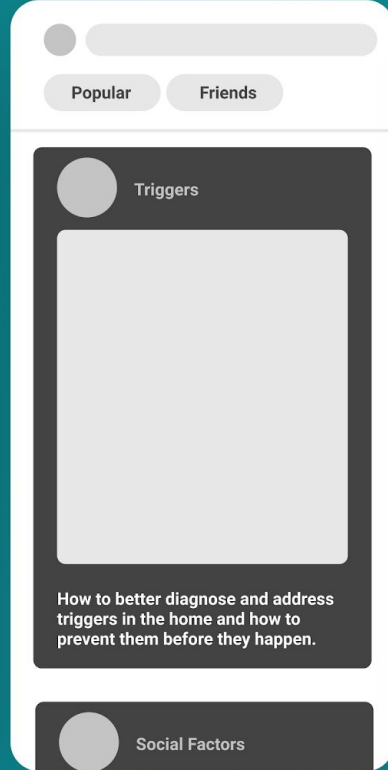
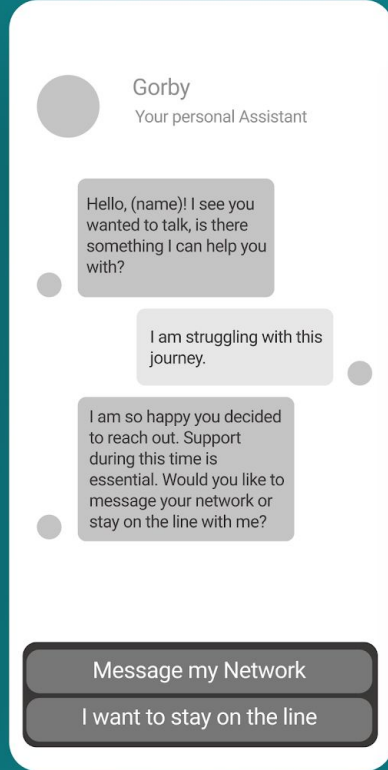
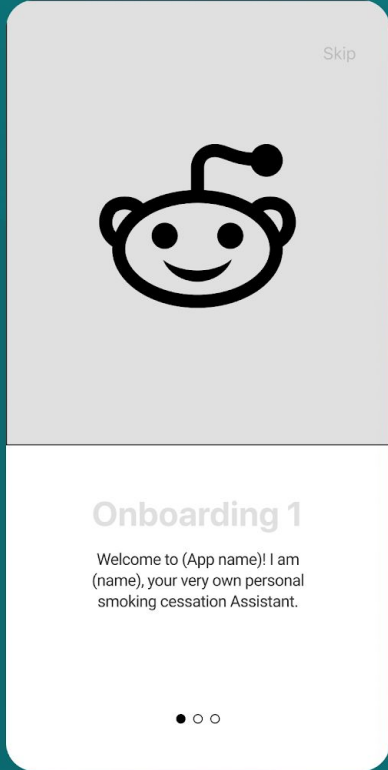
**10**

Hi-fi

# Lo-Fi Prototype







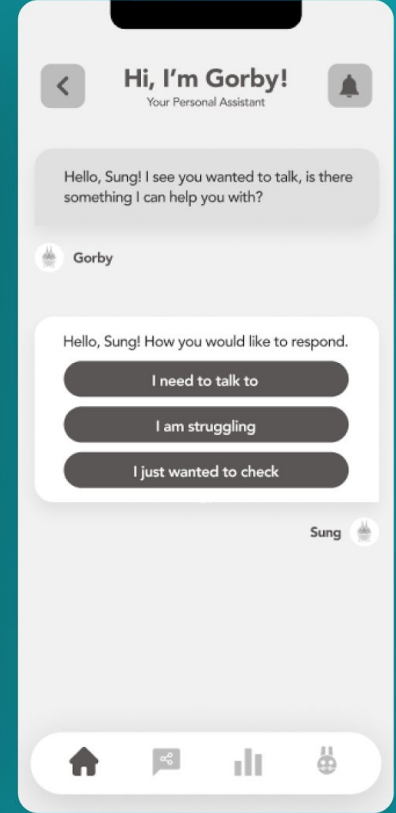
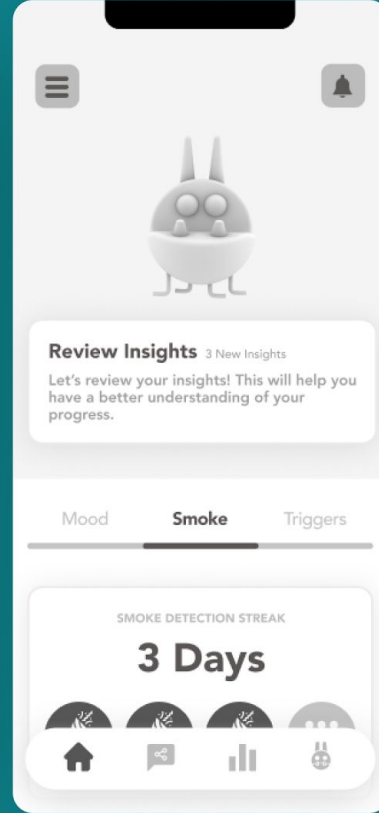
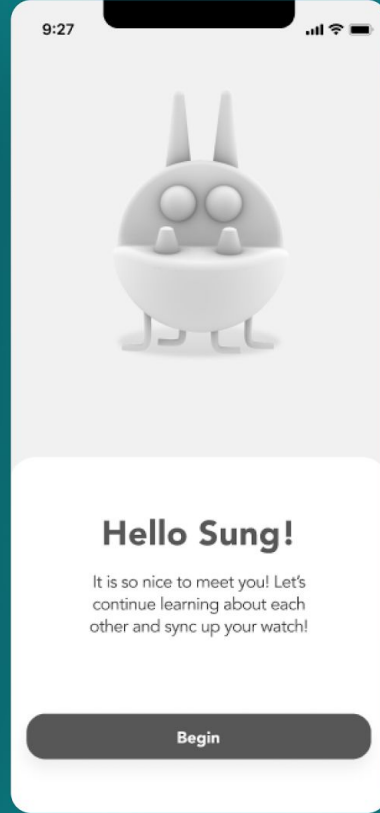
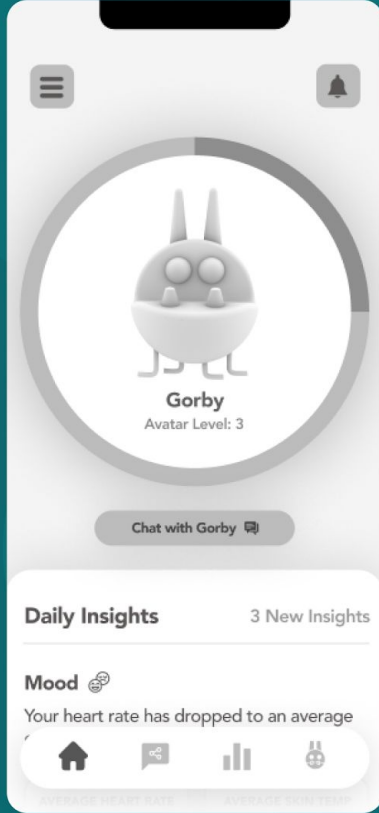
# Lo-Fi Changes

- Onboarding process has been streamlined and language reflects brand and Gorby Personality
- Log insights has changed from the home page
- The insights have become less chart dependent and are able to be accessed without the aid of Gorby
- The Community page has changed and become more concise

# Mid-Fi Prototype

User Testers: **13**





# User Questions

To gain specific insights on what to improve on, we followed up with a survey for our evaluators right after they finished testing.

- **Overall impression**
- **Best and worst parts**
- **Any changes**
- **Can the avatar provide empathy**

### User Testing Questionnaire

1) It is easy to get familiar with the platform



2) The onboarding process with pairing your wearable felt effortless and practical



3) You felt in control of the interaction, it is logical and predictable



4) You were able to understand the navigation icons in the application



5) The platform made you excited and motivated to start your nicotine recovery



6) Your smoking data insights were clearly visualized and motivating



7) The forum page is beneficial and practical



8) You would feel comfortable reaching out to your avatar, the relationship feels useful



9) Messaging people from your network makes you feel supported and accountable



10) You would use this application and recommend it to others



# Mid-Fi User Testing Results

SUS Score

# 67.9%

Percentile Ranking

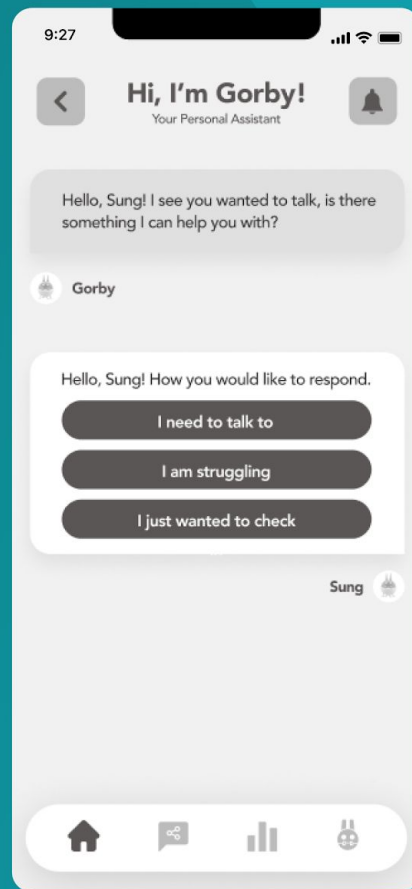
n = 13

# Mid-Fi Changes



Using our testers feedback...

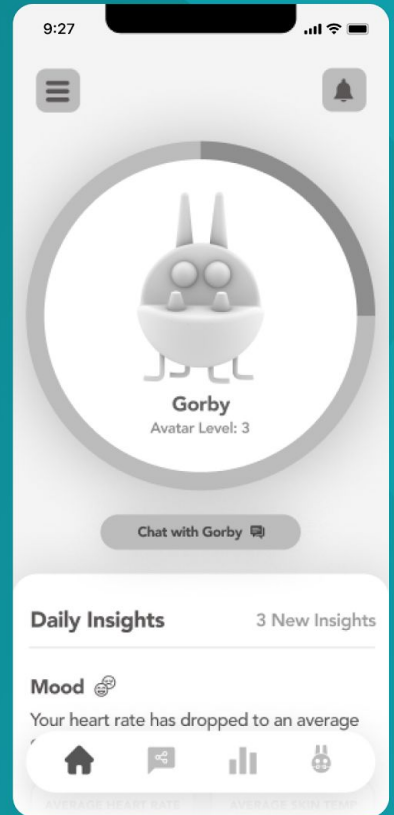
# We will remove the feature to chat with Gorby.





# Overall

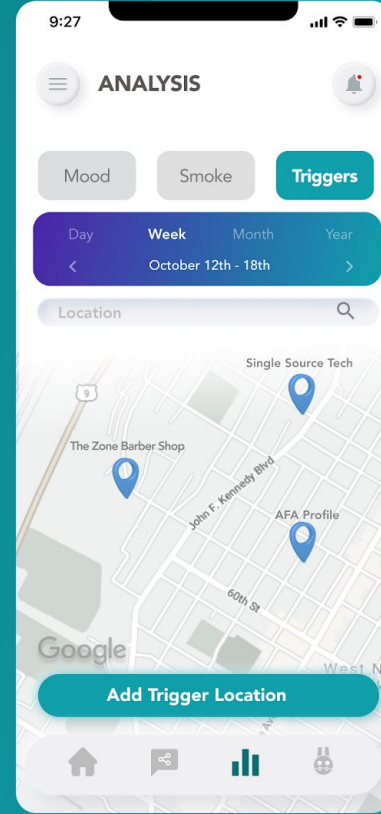
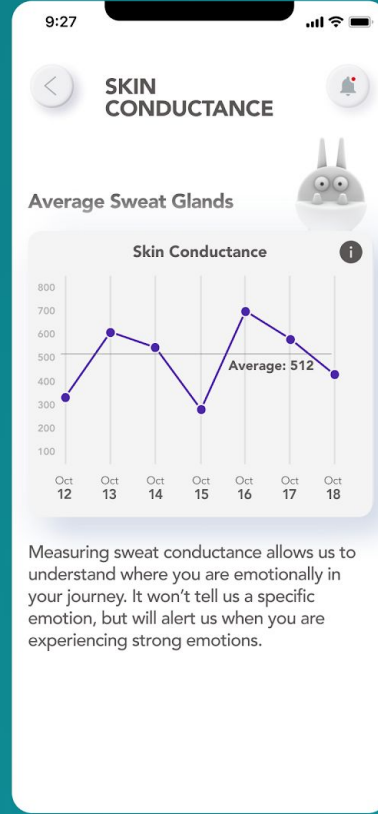
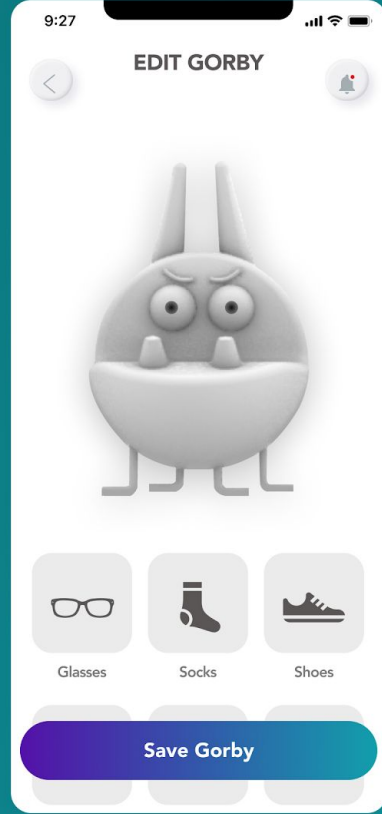
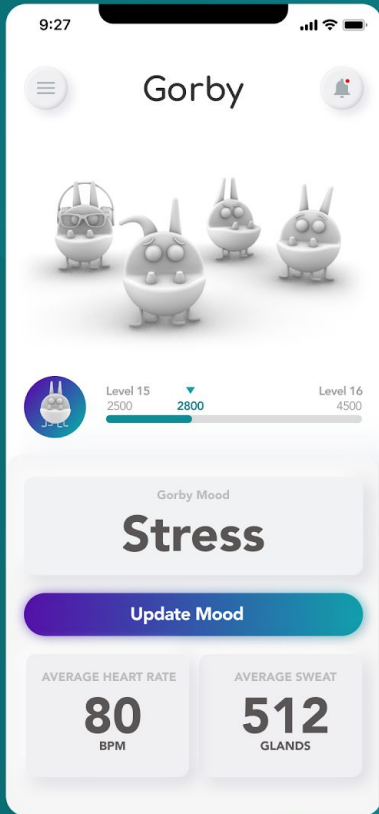
- “I feel like I want more explanation for the insights”
- “I would want to be able to make friends with anonymous users”
- “I thought for the insights having the three tabs that you had to scroll down to is weird versus having it be the full page”
- “I think being able to really customize gorby and see his emotions and animations would help me enjoy the app”



# High-Fi Prototype

User Testers: 10





# User Questions

To gain specific insights on what to improve on, we followed up with a survey for our evaluators right after they finished testing.

- **Most improvements**
- **Parts need to be changed**
- **User relationship with Gorby**
- **Removing chat feature**

# Hi-Fi First Round User Testing Results

SUS Score

# 88.25%

Percentile Ranking

n = 10

## User Testing Questionnaire

1) It is easy to get familiar with the platform



2) You felt the application paired with the wearable would support you in the suggested scenarios



3) You felt in control of the interaction, it is logical and predictable



4) You were able to understand the navigation icons in the application



5) The platform made you excited and motivated to start your nicotine recovery



6) Your insights regarding mood, smoke free streak, and triggers were clearly visualized and motivating



7) The community page is beneficial and practical, you feel connected to other users' journeys.



8) You can empathize with gorbby while seeing him reflect your emotional state.



9) Messaging people from your Gorbby Lobby makes you feel supported and accountable



10) Your achievements felt motivating, achievable and clearly defined.



# Hi-fi changes

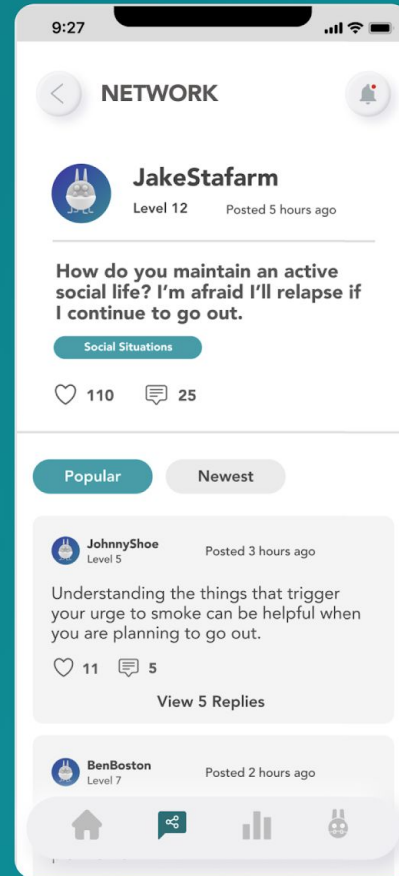


# Using our testers feedback...

Gorby lobby - making it more interactive

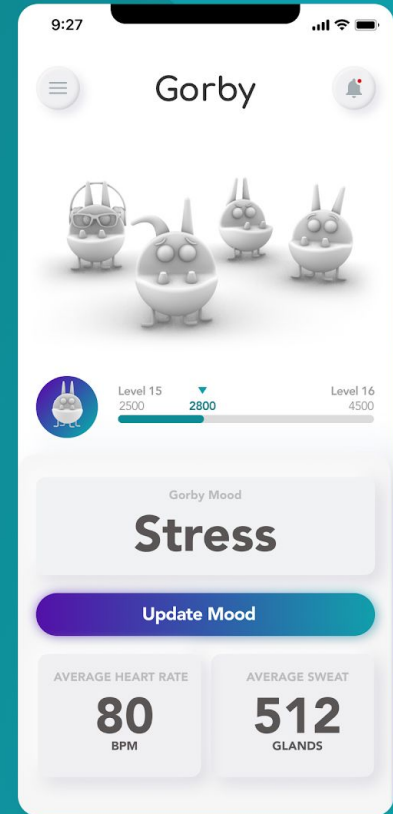
Social form - adding a feed to be able to see everyone you follow's posts and the topics

Avoid losing points



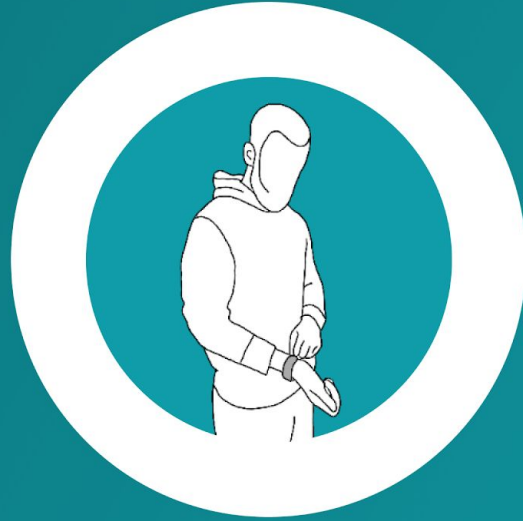
# Overall

- “The lobby was a great addition, more interactive and more connection with other people”
- “I feel like the achievement portion, I shouldn't lose points and should be able to look into the future to see what I can earn to keep me engaged”
- “The forum was by far my favorite part of the application. I love the idea of networking with other random users who are trying to quit. I feel like I would find more connections with people that I can relate too”





**Our final solution...**



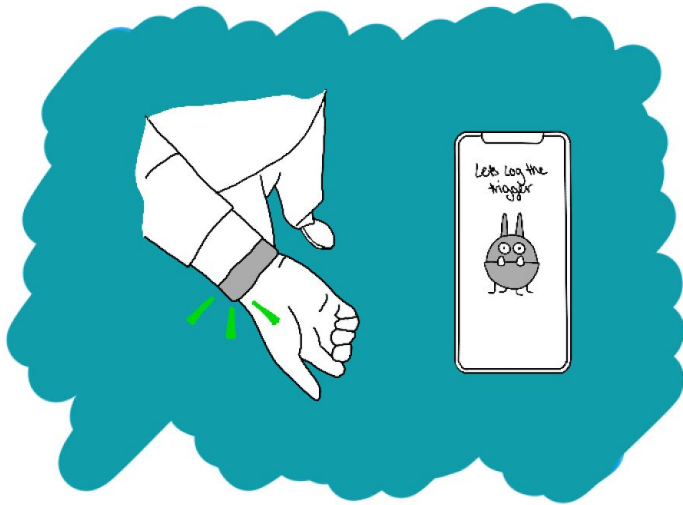
**Drew's journey to successfully  
quitting his nicotine addiction.**



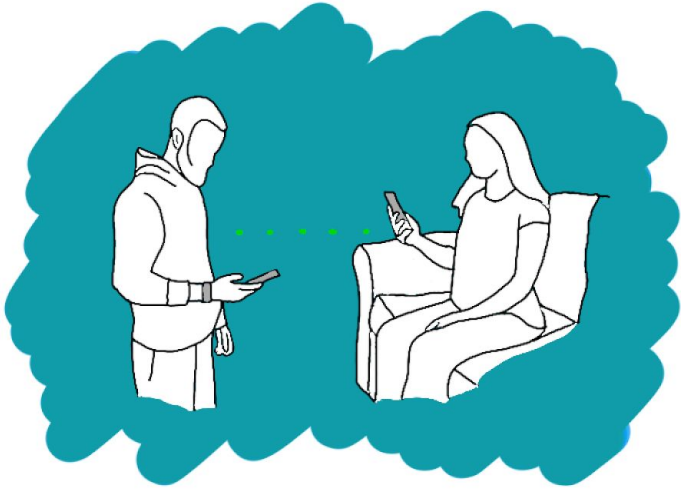
Drew is currently trying to overcome his nicotine addiction, he downloads the Gorby app and obtains his wearable bracelet to help him with his journey.



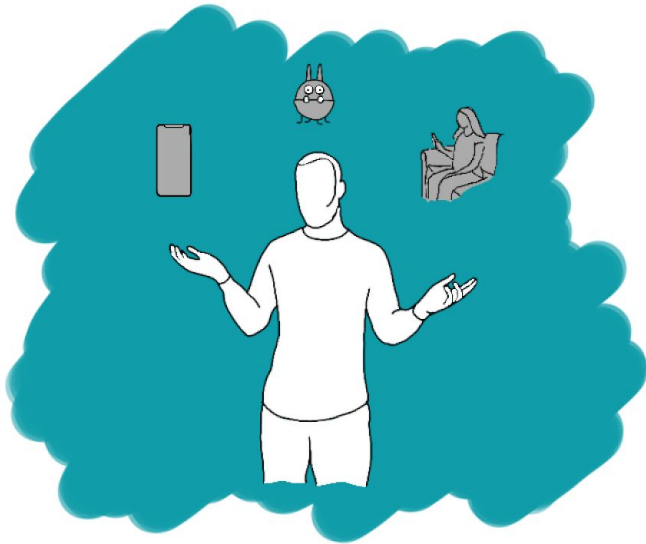
A few days later Drew goes to his friends house for a party, there are a lot of people smoking, he eventually gives in to the social pressures.



His wearable detects the smoke and quickly helps him by going through the steps to log his trigger.



Gorby helps Drew remove himself from the situation and connects him with his network for further support.

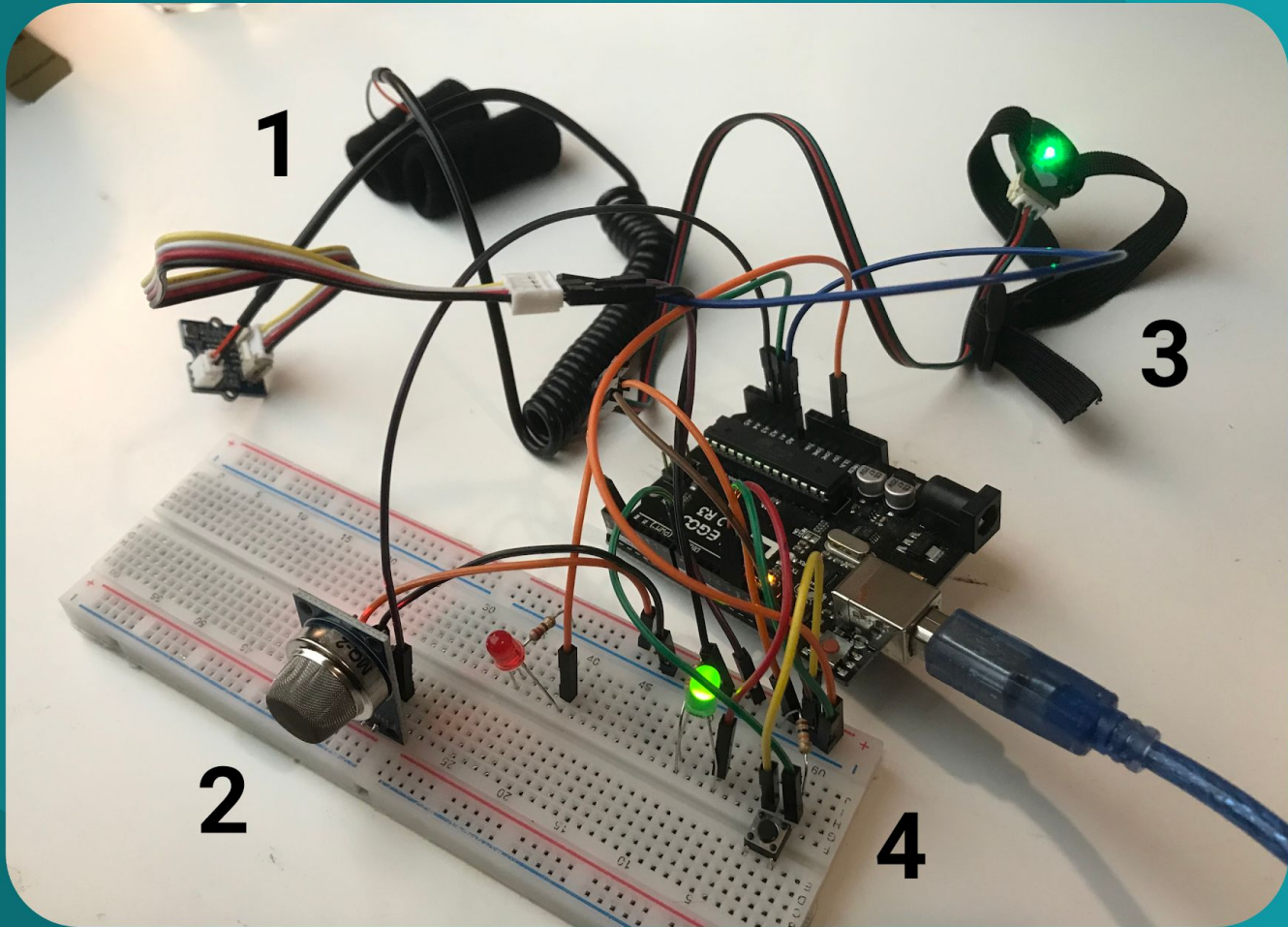


Although Drew had this slip up, he can now successfully quit smoking by understanding his triggers, visualizing his insights with gorby, and connecting with his supportive network.

# Watch Code & Sensors







1

3

2

4

```
combined_code | Arduino 1.8.13

combined_code
#define USE_ARDUINO_INTERRUPTS true
#include <PulseSensorPlayground.h>

// Variables for Smoke sensor
int smokeA0 = A2;
int redLed = 2;
// threshold value
int sensorThres = 400; // Sensitive t

// Variable for GSR sensor
const int GSR = A0;
int sensorValue = 0;
int gsr_averge = 0;

// Variables for Heart Sensor
const int PulseWire = 1; // PulseSensor PURPLE WIRE connected to ANALOG PIN 0
const int LED13 = 13; // The on-board Arduino LED, close to PIN 13.
int Threshold = 550; // Determine which Signal to "count as a beat" and which to ignore.
// Use the "Getting Started Project" to fine-tune Threshold Value beyond default setting.
// Otherwise leave the default "550" value.
PulseSensorPlayground pulseSensor; // Creates an instance of the PulseSensorPlayground object called "pulseSensor"

// Switch button
int switchState = 0;

void setup() {
  // Smoke sensor
  pinMode(smokeA0, INPUT);
  pinMode(redLed, OUTPUT);

  // switch
  pinMode(8, INPUT);

  Serial.begin(9600);
  // Configure the PulseSensor object, by assigning our variables to it.
  pulseSensor.analogInput(PulseWire);
  pulseSensor.blinkOnPulse(LED13); //auto-magically blink Arduino's LED with heartbeat.
  pulseSensor.setThreshold(Threshold);

  // Double-check the "pulseSensor" object was created and "began" seeing a signal.
  if (pulseSensor.begin()) {
    Serial.println("We created a pulseSensor Object !"); //This prints one time at Arduino power-up, or on Arduino reset.
  }
}

void loop() {
  switchState = digitalRead(8);
  if (switchState == HIGH) {
    Serial.println("TRIGGER BUTTON PRESSED");
  } else {
  }
}
```

```
combined_code | Arduino 1.8.12

combined_code
pinMode(redLed, OUTPUT);

// switch
pinMode(8, INPUT);

Serial.begin(9600);
// Configure the PulseSensor object, by assigning our variables to it.
pulseSensor.analogInput(PulseWire);
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  if (switchState == HIGH) {
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  } else {
  }

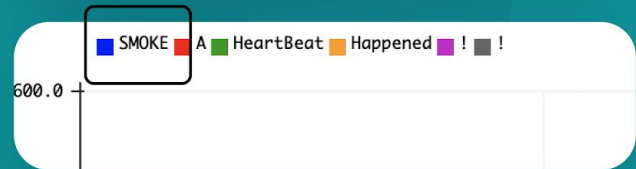
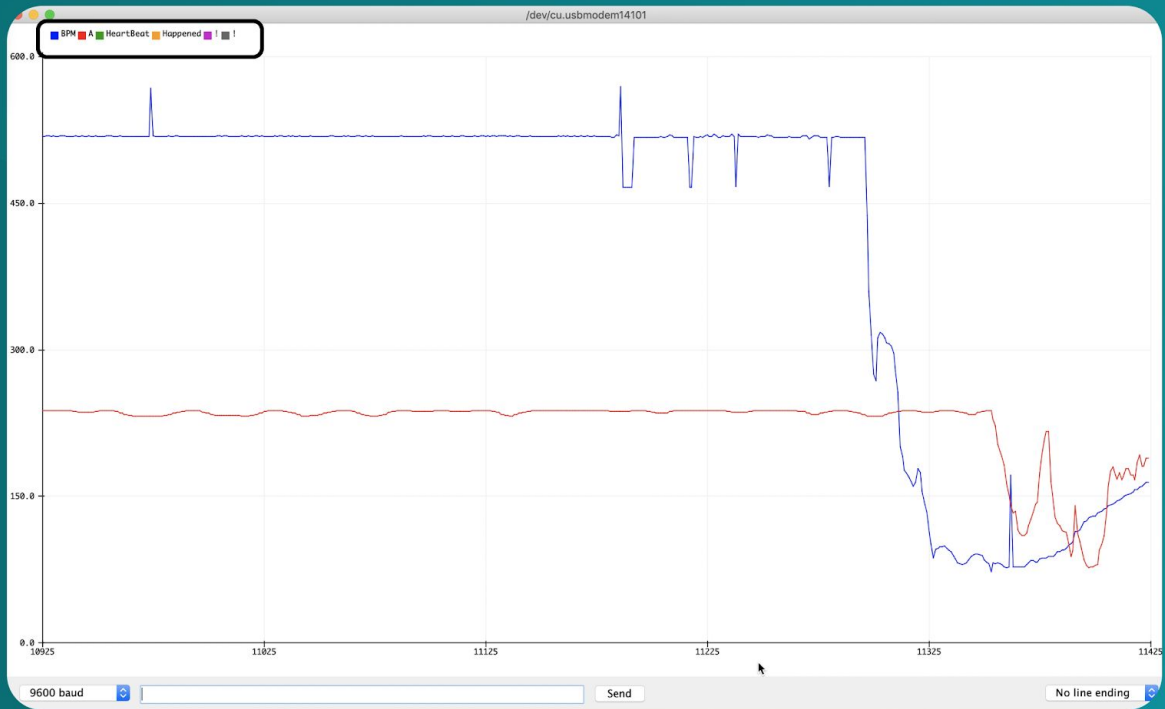
  // For smoke sensor
  int analogSensor = analogRead(smokeA0);

  // Serial.print("Pin A0: ");
  // Serial.println(analogSensor);

  if (analogSensor > sensorThres)
  {
    Serial.println("SMOKE");
    digitalWrite(redLed, HIGH);
  }

  else
  {
    digitalWrite(redLed, LOW);
  }
  delay(100);
}

Done Saving.
Sketch uses 5240 bytes (16%) of program storage space. Maximum is 32256 bytes.
Global variables use 311 bytes (15%) of dynamic memory, leaving 1737 bytes for local variables. Maximum is 2048 bytes.
```



```
A HeartBeat Happened !
BPM: 184
426
  A HeartBeat Happened !
BPM: 184
427
426
  A HeartBeat Happened !
BPM: 184
425
425
426
  A HeartBeat Happened !
BPM: 184
TRIGGER BUTTON PRESSED
425
TRIGGER BUTTON PRESSED
427
TRIGGER BUTTON PRESSED
429
  A HeartBeat Happened !
BPM: 191
428
  A HeartBeat Happened !
BPM: 191
427
427
  A HeartBeat Happened !
BPM: 192
430
  A HeartBeat Happened !
BPM: 192
427
428
431
  A HeartBeat Happened !
BPM: 179
429
430
  A HeartBeat Happened !
BPM: 174
488
429
  A HeartBeat Happened !
BPM: 173
TRIGGER BUTTON PRESSED
429
TRIGGER BUTTON PRESSED
```

Autoscroll  Show timestamp

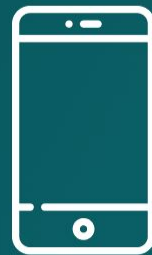
Arduino /dev/cu.usbmodem14101

```
A HeartBeat Happened !
BPM: 168
SMOKE
454
  A HeartBeat Happened !
BPM: 189
SMOKE
454
SMOKE
453
  A HeartBeat Happened !
BPM: 197
SMOKE
410
  A HeartBeat Happened !
BPM: 198
SMOKE
453
SMOKE
454
  A HeartBeat Happened !
BPM: 198
SMOKE
454
SMOKE
455
  A HeartBeat Happened !
BPM: 200
SMOKE
455
SMOKE
456
  A HeartBeat Happened !
BPM: 206
SMOKE
455
SMOKE
411
SMOKE
456
  A HeartBeat Happened !
BPM: 196
SMOKE
455
  A HeartBeat Happened !
BPM: 194
SMOKE
512
```

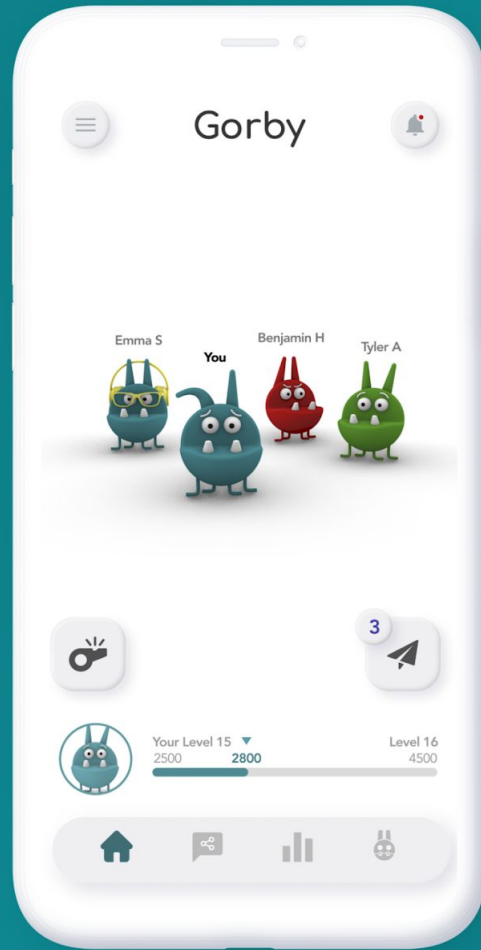
Autoscroll  Show timestamp

No line ending 9600 baud Clear output

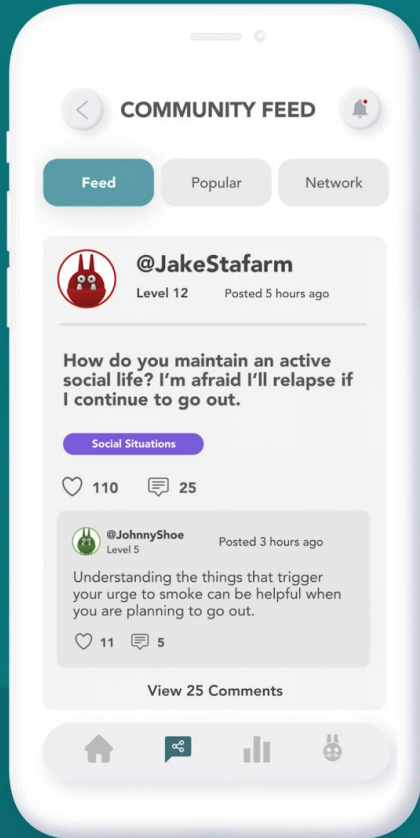
# Final High-Fi



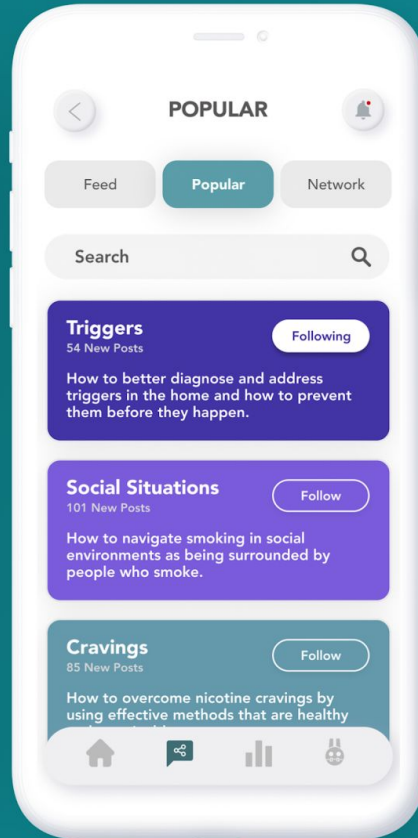
# Home Page



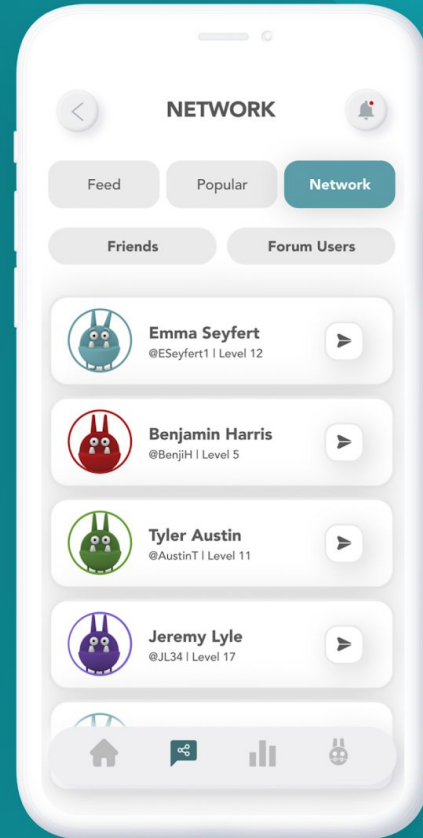
# Feed



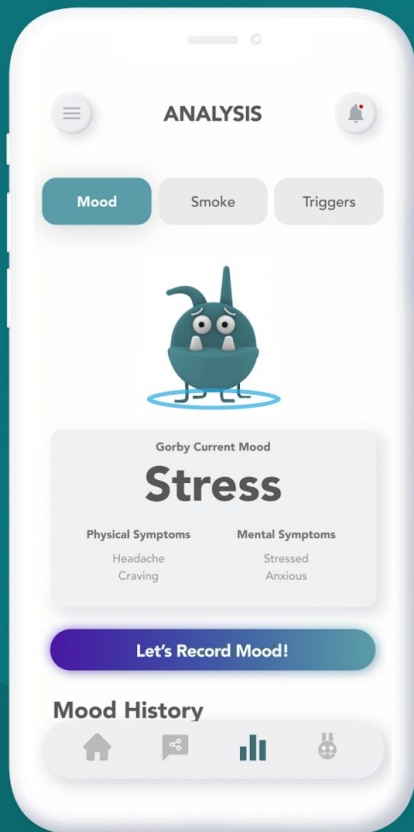
# Popular



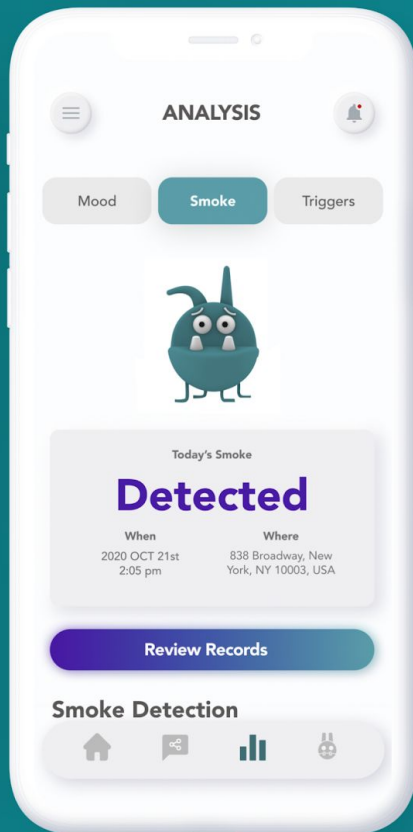
# Network



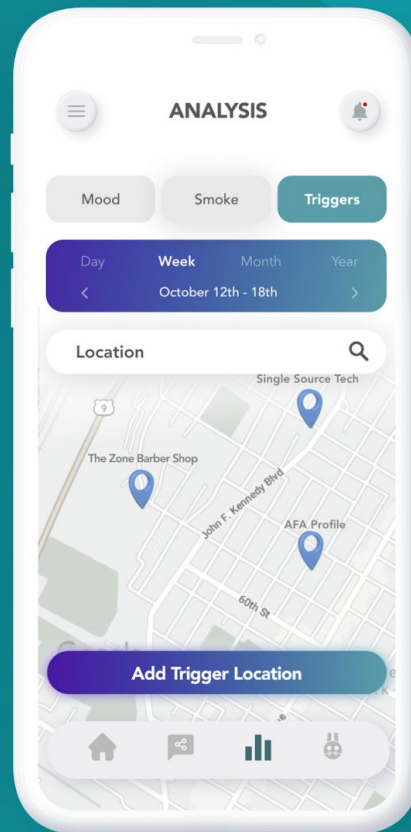
# Mood



# Smoke



# Triggers

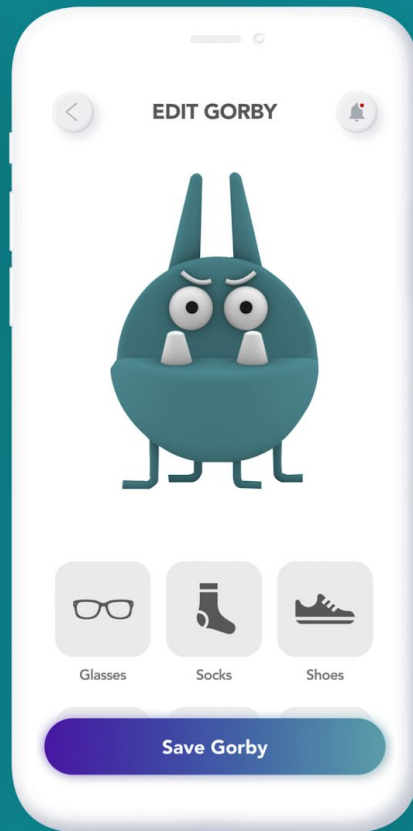




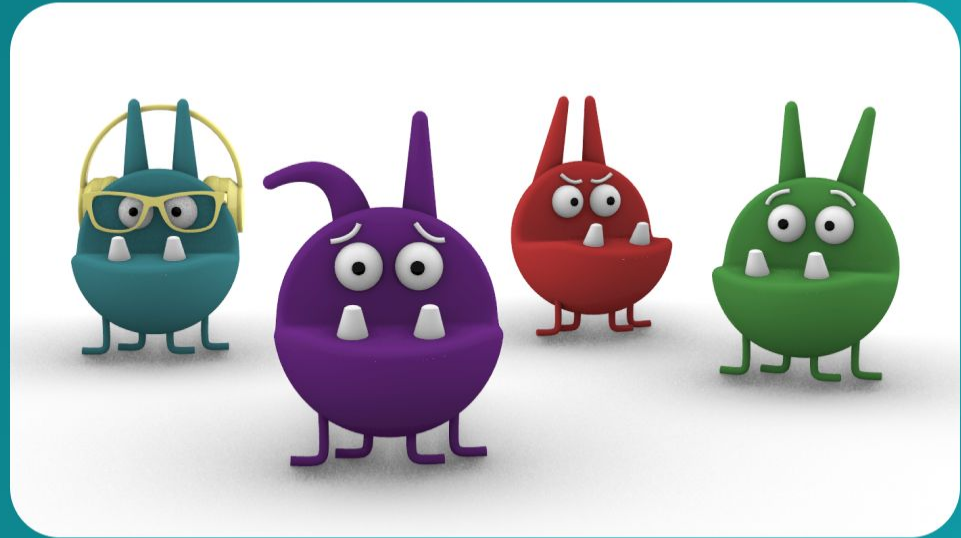
# Gorby Avatar



# Edit Gorby



# Gorby Appearances



### User Testing Questionnaire

1) It is easy to get familiar with the platform



2) You felt the application paired with the wearable would support you in the suggested scenarios



3) You felt in control of the interaction, it is logical and predictable



4) You were able to understand the navigation icons in the application



5) The platform made you excited and motivated to start your nicotine recovery



6) Your insights regarding mood, smoke free streak, and triggers were clearly visualized and motivating



7) The community page is beneficial and practical, you feel connected to other users journeys.



8) You can empathize with gorby while seeing him reflect your emotional state.



9) Messaging people from your Gorby Lobby makes you feel supported and accountable



10) Your achievements felt motivating, achievable and clearly defined.



# Hi-Fi Second Round User Testing Results

SUS Score

# 81.25%

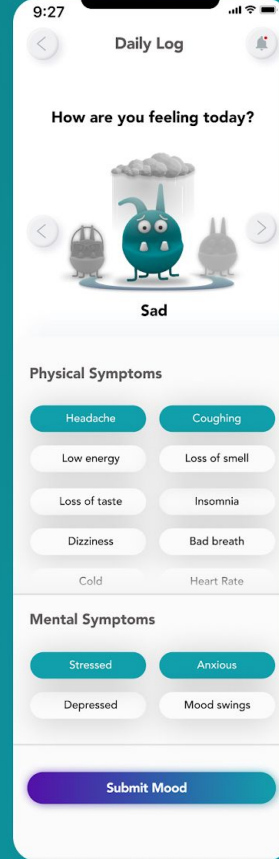
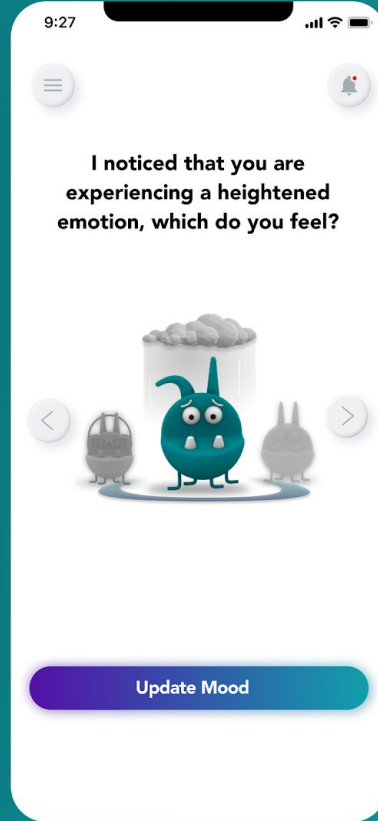
Percentile Ranking

n = 6

# User Scenarios

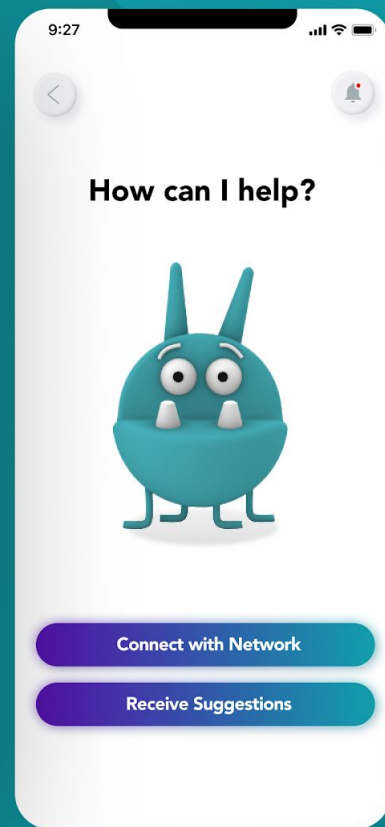
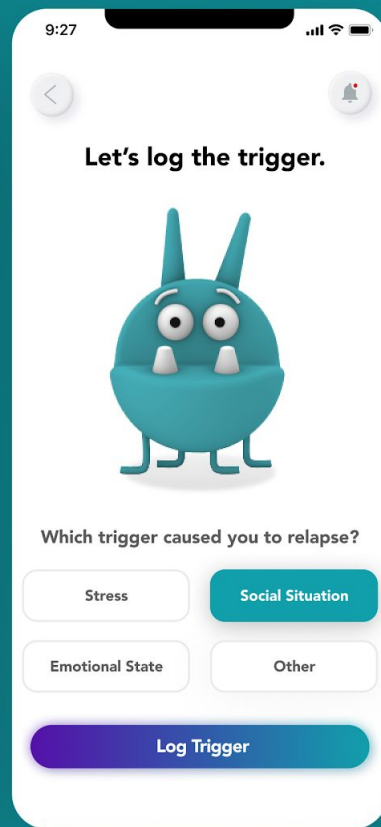
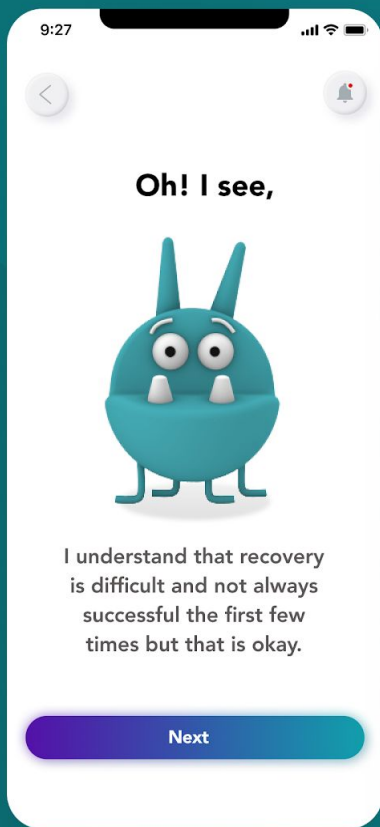


# 1. Heightened Emotional State

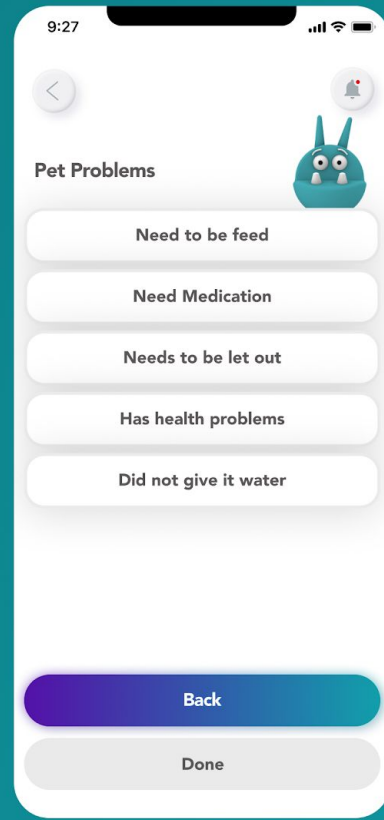
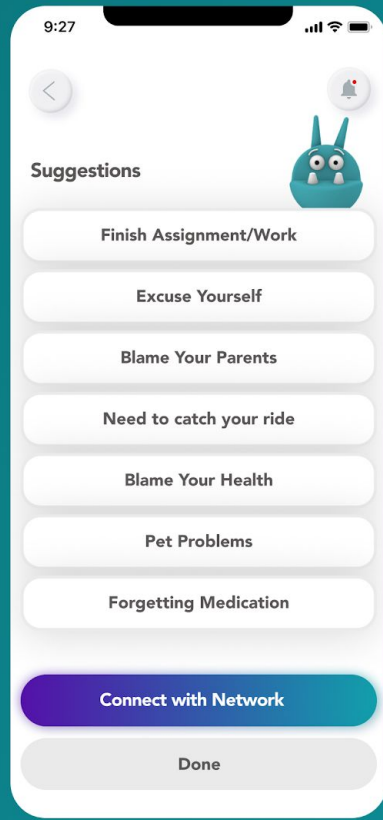




## 2. Smoke Sensor

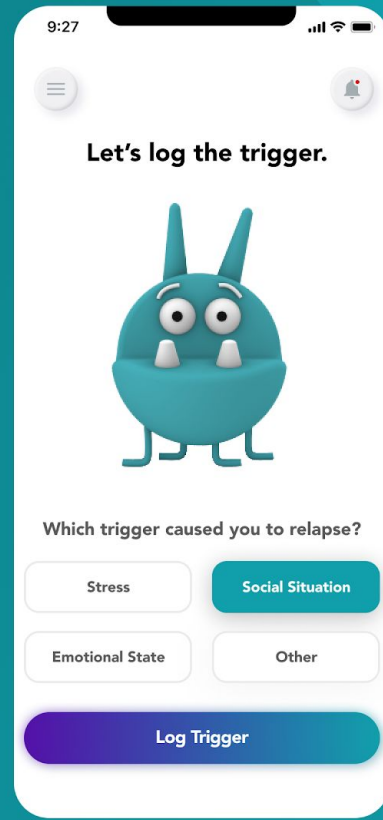
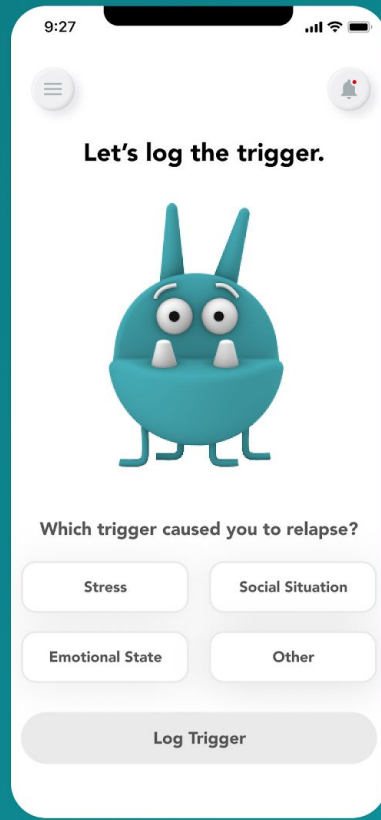
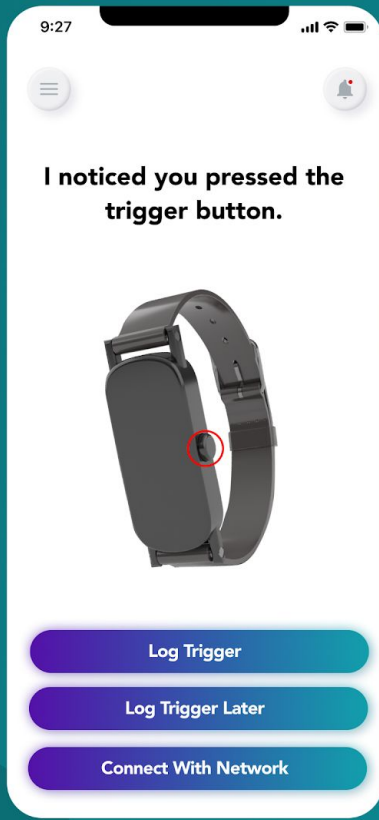








### **3. Pressed Trigger Button**



# Watch Renders



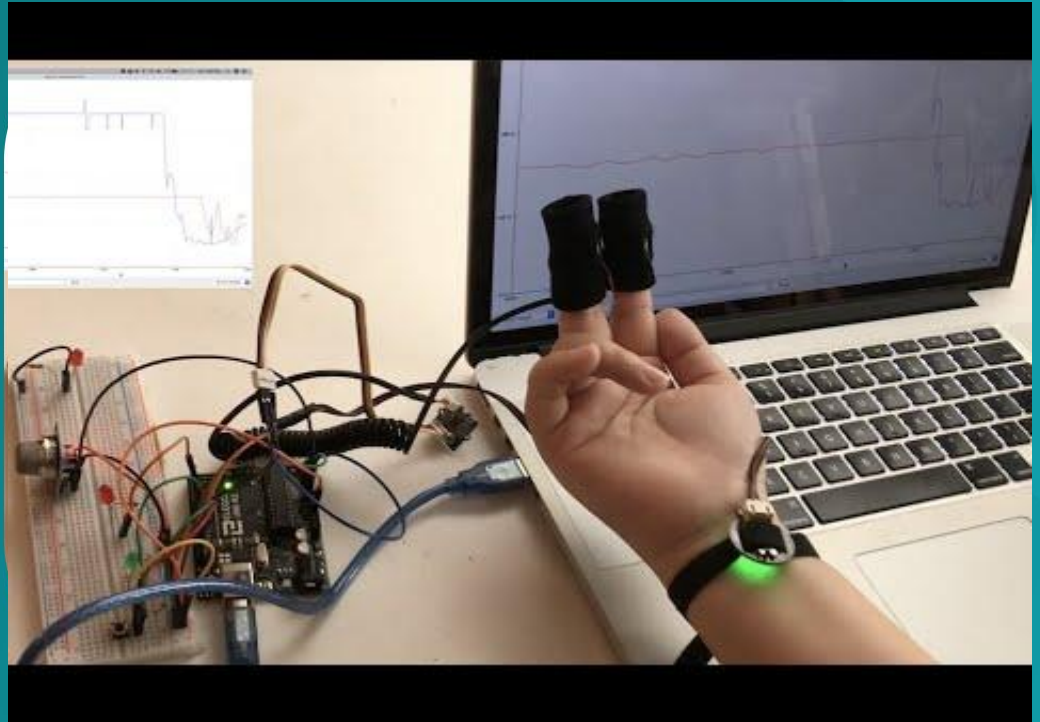




# Watch Video



# Video

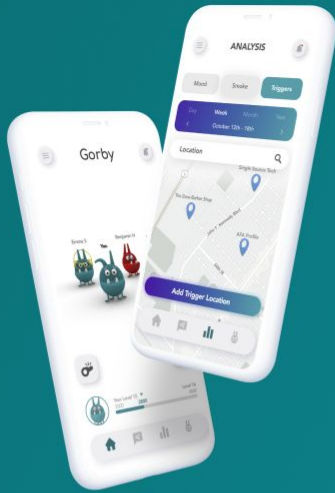




# Final Deliverables

# Executive Summary





## The Problem

Smoking is the leading cause of preventable death in the world and with the sudden resurgence of smoking rates in younger generations, users need a personalized solution to combat their addiction.

## The Solution

An app designed to facilitate smoking cessation through the use of the Gorby-E wearable. With its personalized design and ability to connect users throughout their individual journeys, users will feel more in control of their decision to quit.

# Gorby

## Executive Summary

### Application

- Meet people in the forum to add to your gorby lobby
- Review your triggers, insights, and mood history
- Gain achievements to rank up your in app Gorby
- Receive advice during triggered events or heightened emotional states

### Wearable

- Direct connection to the application where you can review your insights.
- Heart Rate sensor and GSR Sensor allows the application to identify heightened emotions.
- Smoke sensor to identify when the user is around smoke.

# Vision Video



# Lookbook



Gorby

Curb your cravings.



**Thank you!**