

MUSIC THERAPY

Interaction Design & Product Design &
UX Design & UI Design

Music therapy is a good way to treat mental illness. In order to solve the problems of region, instrument foundation and so on, and optimize user experience, I designed and made a product dedicated to online music therapy. Using this product, patients with zero foundation and no Musical Instruments can also easily complete online music therapy at home.

Personal Project: 2023.05 - 2023.8



Classification of Music Therapy Methods

The three major categories of music therapy methods: Receptive, Improvisational, and Creative Music Therapy.



For individuals with **no musical background** who have anxiety and depression, music therapy typically employs **receptive** music therapy and **recreative** music therapy methods.



Classification of Music Therapy Methods



Individual therapy



Group therapy



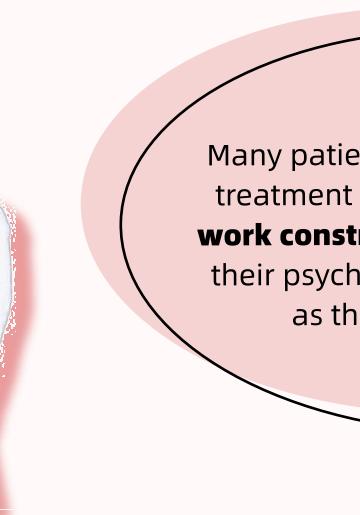
Individual therapy



Group therapy

INTERVIEW

In order to further explore the current pain points and opportunities in music therapy, I contacted music therapists on social media who were willing to share their thoughts and conducted interviews.

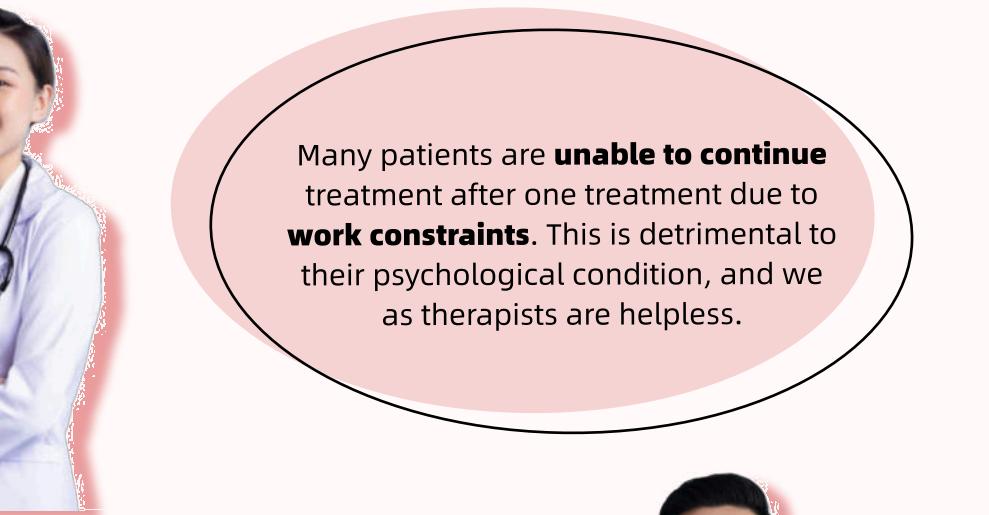


Juli

The **limitations of musical instruments and venues** often restrict the feasibility of treatment. It would be great if there could be a relatively free environment or platform.

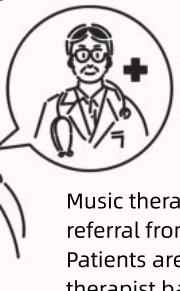


Yang



The analysis of music therapy process

Referral



Music therapy starts with a referral from professionals. Patients are directed to a music therapist based on their needs.

Data Collection



The therapist collects patient information, including medical history, to create a personalized treatment plan.

Interview



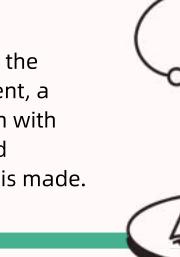
The therapist gathers patient information. This helps in understanding and creating a personalized plan.

Assessment Plan

Referrals between different therapists are **cumbersome**

Based on the assessment, a clear plan with goals and methods is made.

Treatment Planning



A personalized plan with suitable music activities is developed.

The frequency and number of treatments need to change according to the patient's condition and is **not fixed**

Treatment Planning

A personalized plan with suitable music activities is developed.

Therapy

The therapist engages the patient in musical activities for emotional regulation and rehabilitation.

The therapist reviews the process and outcomes, offering feedback and guidance.

Post-Therapy Summary



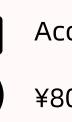
PERSONA

Cheng Lu

Anxiety Sufferer

About

Female



Accountant

Age 35



¥8000 per month

Harbin (A second-tier city in China)



Overviews

Cheng Lu, a 35-year-old accountant and only child, faces **the dual responsibilities of caring for her elderly parents and managing a high-stress job**. This has led to escalating anxiety, impacting her sleep, causing persistent work and family concerns, and even resulting in physical symptoms like palpitations. Initially relying on music apps for solace, she later turned to online music therapy to address her growing challenges.

Pains

- Music therapy is a cyclical process, but on workdays, there's an obligation to work, and it's **not feasible** to attend in-person therapy during the day
- Living in a second-tier city, there is **a lack of specialized music therapy institutions**.
- Without a musical background and **lacking musical instruments at home**.

Value

Family

Mood

Career

Health

Key activities per day

Work

Commute

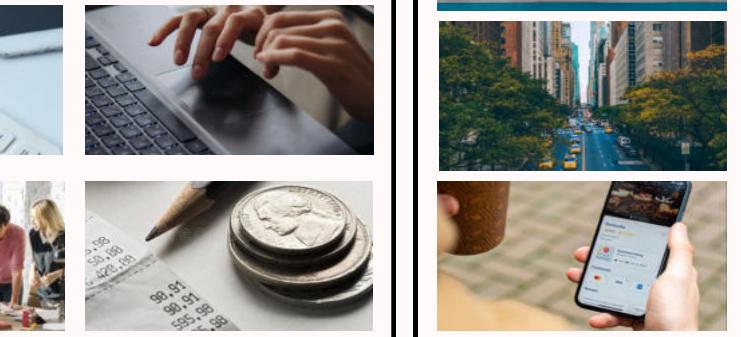
Cook

Music

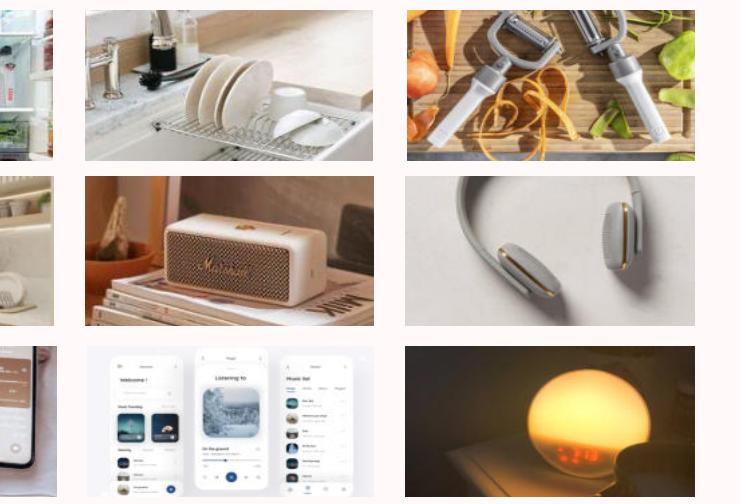
LIFE STYLE

Something she encounters or uses in her daily life, including scenes and products.

Office



Home



Commute

IDEATION

Definition

In order to solve the problem that office workers cannot have offline music therapy during working hours, it is necessary to provide an online music therapy platform.

Because most patients do not have a musical foundation and do not have instruments at home, instrumental equipment is needed for online music therapy.

In addition to music therapy with therapists, patients also need to play their own healing music for auxiliary therapy.

Light interaction can complement the interactive experience between therapist and patient for online music therapy to achieve better results.

It can function independently as an electronic instrument or a music player, and it can also be integrated with external devices such as a smartphone app.

Moodboard

Shapes of Orff instruments



Smooth and rounded curves



A combination of various playing techniques

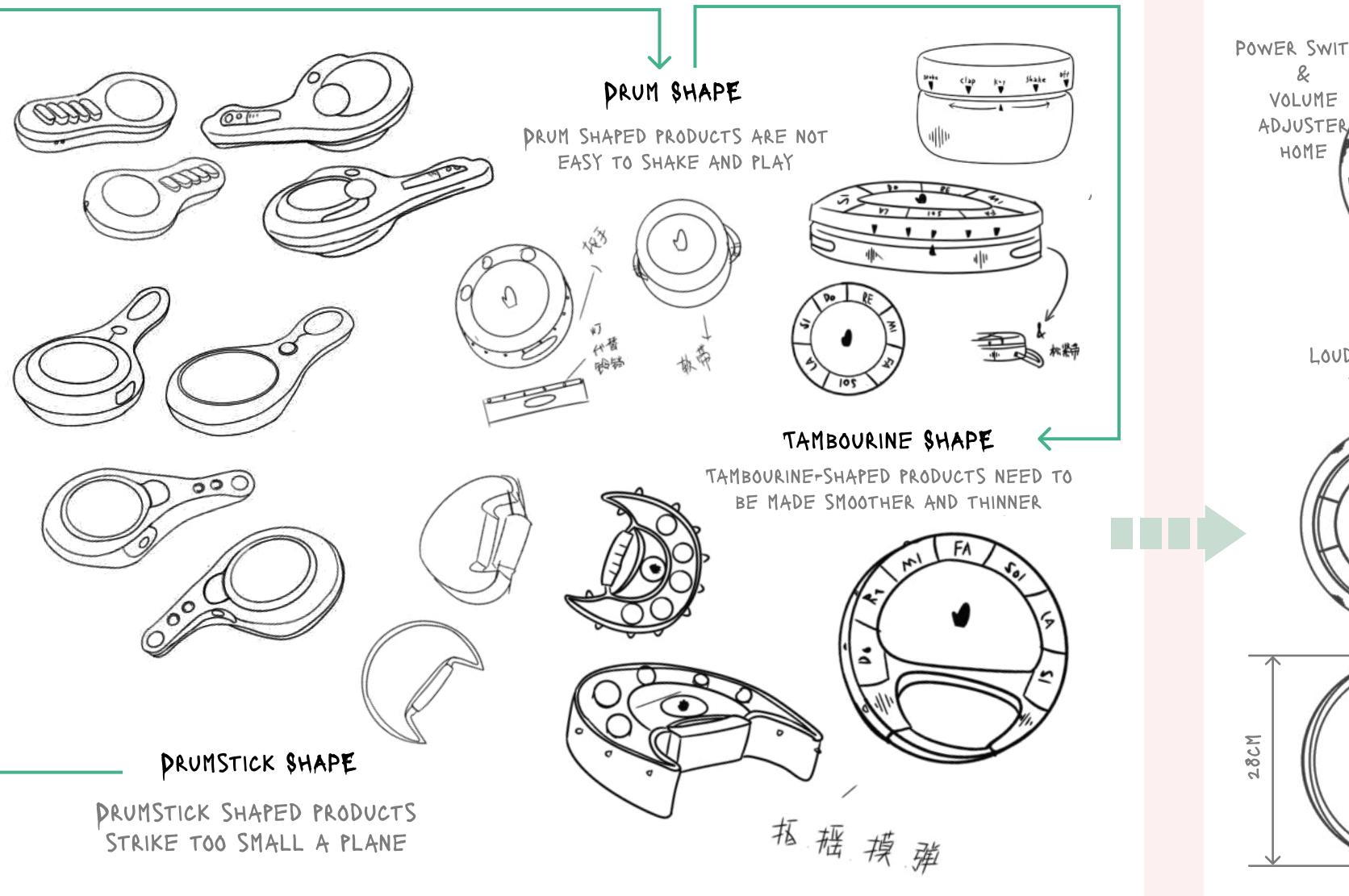


Gentle light color palette

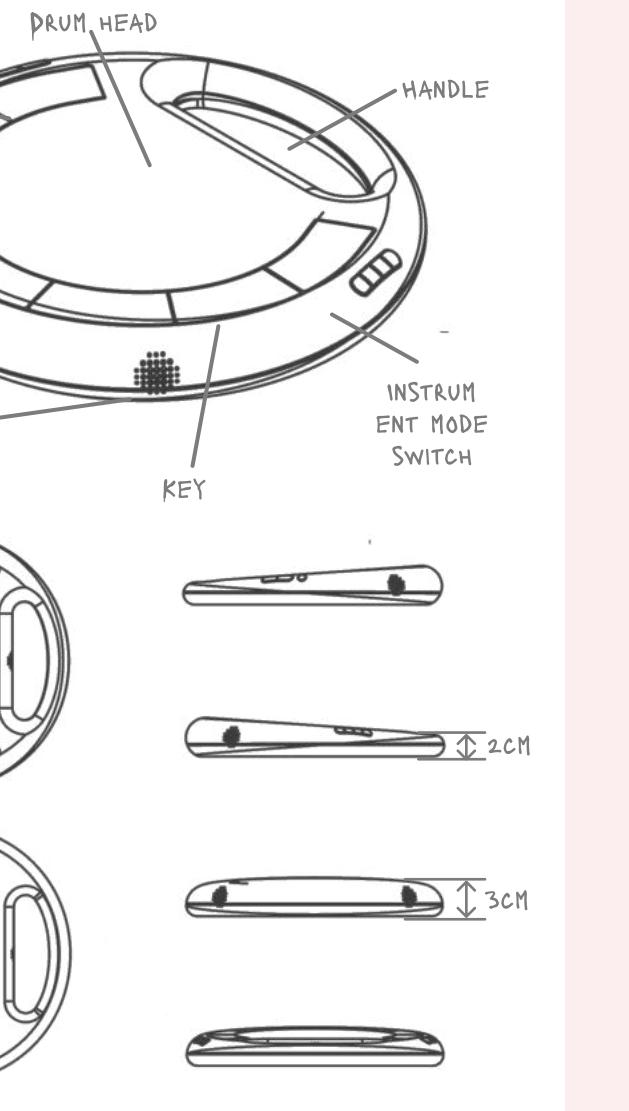


SKETCH

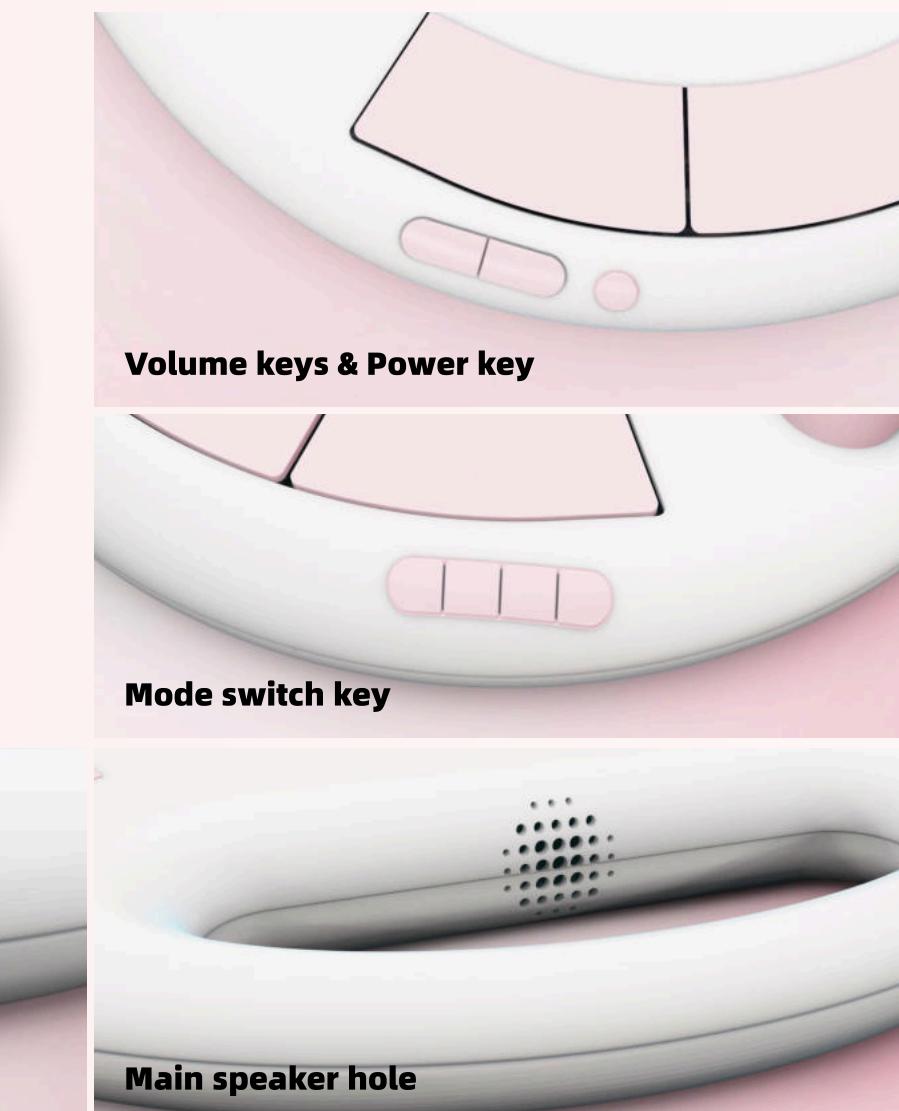
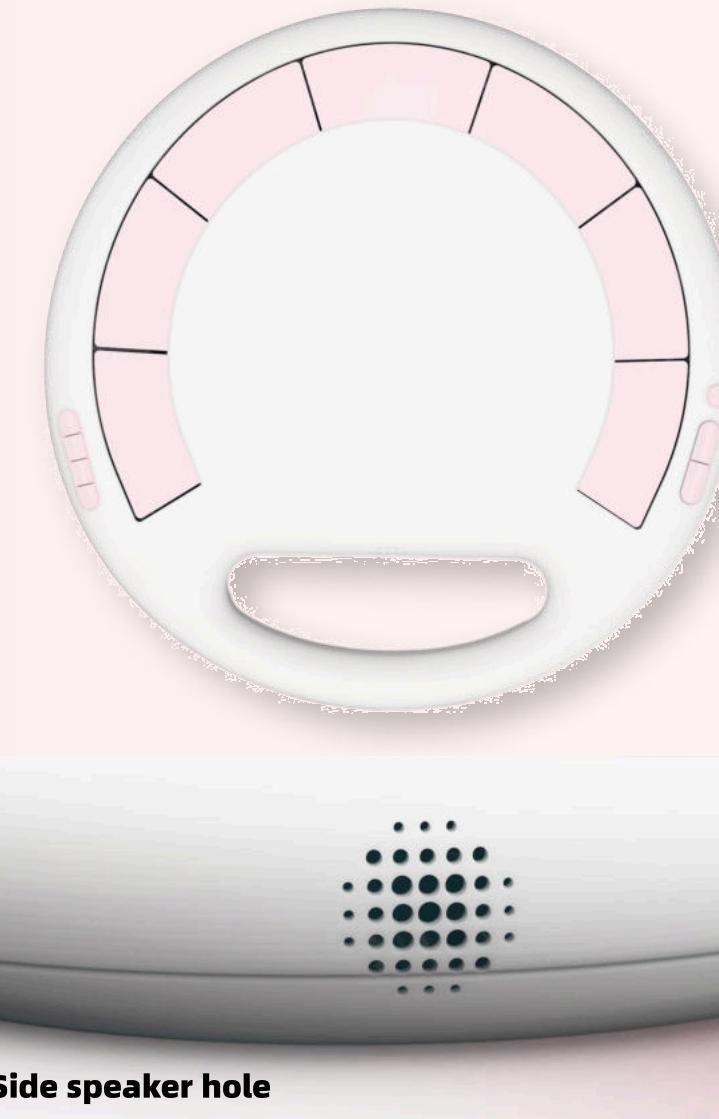
First Sketch



Final Sketch



Details



PROTOTYPE

● Function



Drum



Bowl



Keyboard



Tambourine

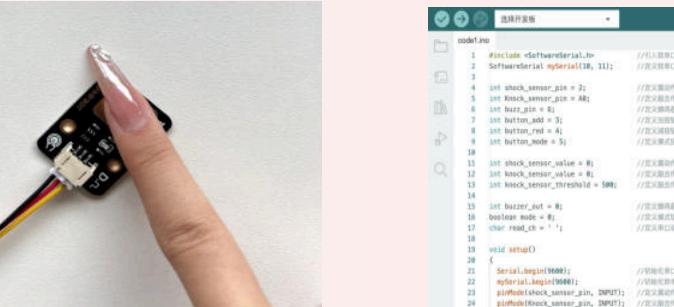
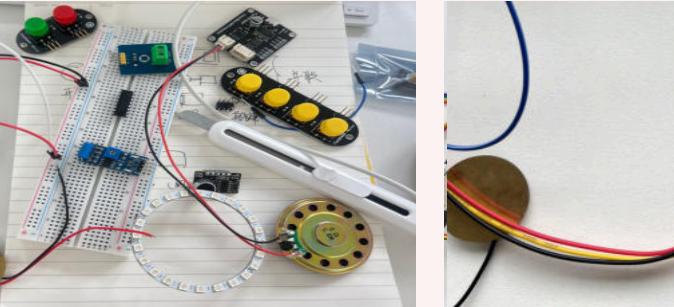


Player

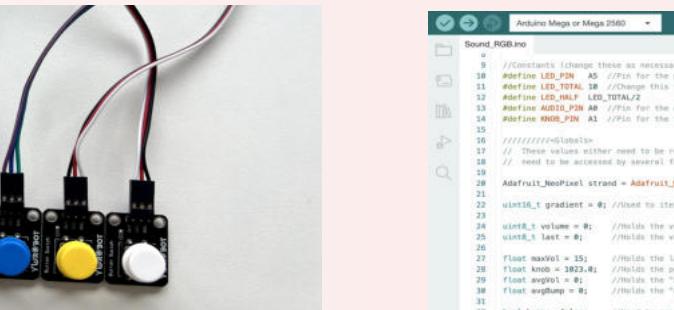
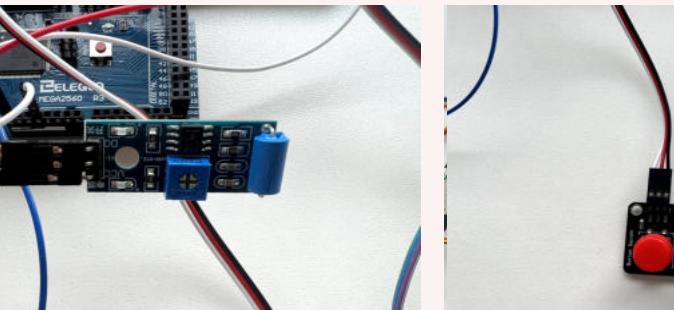


Light

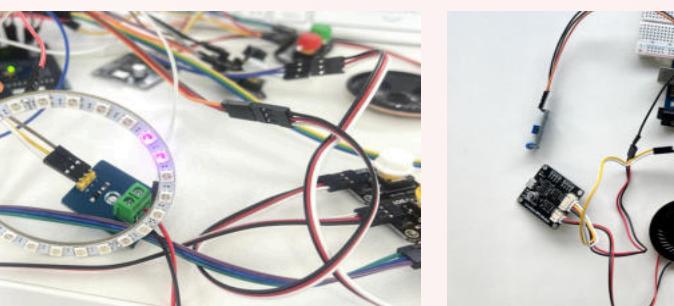
● Installation



Simulated piezoelectric ceramic plate, capacitive touch sensor: Percussion sound, touch sound



Key module, vibration sensor: Key sound, shaking sound



MP3 player module, sound sensor, RGB ring light belt: Lights pulsate, music plays

● Code

```
#include <SoftwareSerial.h>
SoftwareSerial mySerial(10, 11); //从头板的串口，引脚D10,D11
int knock_sensor_pin = 2; //从头板的电容触控模块
int knock_sensor_value = 0;
int button_red = A0; //从头板的按键模块
int button_blue = A1;
int button_yellow = A2;
int button_white = A3;
int buzzer_out = 8;
boolean mode = #;
char read_ch = '#';
//从头板的蜂鸣器
void setup()
{
    Serial.begin(9600);
    mySerial.begin(9600);
    pinMode(knock_sensor_pin, INPUT);
    pinMode(button_red, INPUT);
    pinMode(button_blue, INPUT);
    pinMode(button_yellow, INPUT);
    pinMode(button_white, INPUT);
}
```

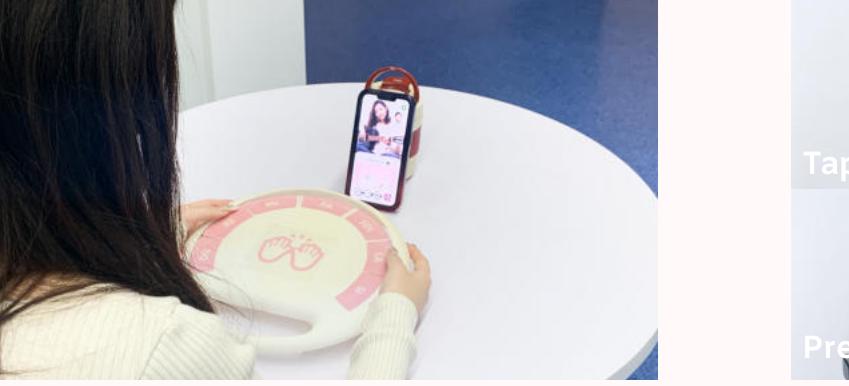
```
#include <Adafruit_NeoPixel.h>
#define LED_PIN A5 //Pin for the pixel strand. Does not have to be analog.
#define LED_HALF LED_TOTAL/2
#define AUDIO_PIN A1 //Pin for the envelope of the sound detector
#define KNOB_PIN A0 //Pin for the trimpot
// These values either need to be remembered from the last pass of loop() or
// need to be accessed by several functions in one pass, so they need to be global.
Adafruit_NeoPixel strand = Adafruit_NeoPixel(LED_TOTAL, LED_PIN, NEO_GRB + NEO_KHZ800); //LED strand object
uint8_t gradient = 0; //Used to iterate and loop through each color palette gradually
uint8_t volume = 0; //Holds the volume level read from the sound detector.
uint8_t last = 0; //Holds the value of volume from the previous length pass.
float maxVol = 15; //Holds the largest volume recorded thus far to proportionally adjust the visual's responsiveness.
float knob = 1023.0; //Holds the percentage of how twisted the trim pot is, used for adjusting the max brightness.
float avgVol = 0; //Holds the "average" volume-level to proportionally adjust the visual experience.
float avgBump = 0; //Holds the "average" volume-change to trigger a "bump"
bool bump = false; //Used to pass if there was a "bump" in volume
```

```
#include <SoftwareSerial.h>
SoftwareSerial mySerial(10, 11); //从头板的串口，引脚D10,D11
Serial.begin(9600);
volume(0x80); //设置音量为0x80-0x1E
int buttonPins[] = {0x0A, 0x0B, 0x0C, 0x0D};
const int numTones = sizeof(buttonPins) / sizeof(buttonPins[0]);
unsigned char order[4] = {0x0A, 0x0B, 0x0C, 0x0D};
void setup() {
    //Serial.begin(115200);
    mySerial.begin(9600);
    volume(0x80);
}
void loop() {
    play(0x01); //播放第1首歌
    delay(2000);
    play(0x02); //播放第2首歌
    delay(2000);
    play(0x03); //播放第3首歌
    delay(2000);
    play(0x04); //播放第4首歌
    delay(2000);
    play(0x05); //播放第5首歌
    delay(2000);
    play(0x06); //播放第6首歌
    delay(2000);
    play(0x07); //播放第7首歌
    delay(2000);
    play(0x08); //播放第8首歌
    delay(2000);
    play(0x09); //播放第9首歌
    delay(2000);
    play(0x0A); //播放第10首歌
    delay(2000);
    play(0x0B); //播放第11首歌
    delay(2000);
    play(0x0C); //播放第12首歌
    delay(2000);
    play(0x0D); //播放第13首歌
    delay(2000);
    play(0x0A); //播放第14首歌
    delay(2000);
    play(0x0B); //播放第15首歌
    delay(2000);
    play(0x0C); //播放第16首歌
    delay(2000);
    play(0x0D); //播放第17首歌
    delay(2000);
    play(0x0A); //播放第18首歌
    delay(2000);
    play(0x0B); //播放第19首歌
    delay(2000);
    play(0x0C); //播放第20首歌
    delay(2000);
    play(0x0D); //播放第21首歌
    delay(2000);
    play(0x0A); //播放第22首歌
    delay(2000);
    play(0x0B); //播放第23首歌
    delay(2000);
    play(0x0C); //播放第24首歌
    delay(2000);
    play(0x0D); //播放第25首歌
    delay(2000);
    play(0x0A); //播放第26首歌
    delay(2000);
    play(0x0B); //播放第27首歌
    delay(2000);
    play(0x0C); //播放第28首歌
    delay(2000);
    play(0x0D); //播放第29首歌
    delay(2000);
    play(0x0A); //播放第30首歌
    delay(2000);
    play(0x0B); //播放第31首歌
    delay(2000);
    play(0x0C); //播放第32首歌
    delay(2000);
    play(0x0D); //播放第33首歌
    delay(2000);
    play(0x0A); //播放第34首歌
    delay(2000);
    play(0x0B); //播放第35首歌
    delay(2000);
    play(0x0C); //播放第36首歌
    delay(2000);
    play(0x0D); //播放第37首歌
    delay(2000);
    play(0x0A); //播放第38首歌
    delay(2000);
    play(0x0B); //播放第39首歌
    delay(2000);
    play(0x0C); //播放第40首歌
    delay(2000);
    play(0x0D); //播放第41首歌
    delay(2000);
    play(0x0A); //播放第42首歌
    delay(2000);
    play(0x0B); //播放第43首歌
    delay(2000);
    play(0x0C); //播放第44首歌
    delay(2000);
    play(0x0D); //播放第45首歌
    delay(2000);
    play(0x0A); //播放第46首歌
    delay(2000);
    play(0x0B); //播放第47首歌
    delay(2000);
    play(0x0C); //播放第48首歌
    delay(2000);
    play(0x0D); //播放第49首歌
    delay(2000);
    play(0x0A); //播放第50首歌
    delay(2000);
    play(0x0B); //播放第51首歌
    delay(2000);
    play(0x0C); //播放第52首歌
    delay(2000);
    play(0x0D); //播放第53首歌
    delay(2000);
    play(0x0A); //播放第54首歌
    delay(2000);
    play(0x0B); //播放第55首歌
    delay(2000);
    play(0x0C); //播放第56首歌
    delay(2000);
    play(0x0D); //播放第57首歌
    delay(2000);
    play(0x0A); //播放第58首歌
    delay(2000);
    play(0x0B); //播放第59首歌
    delay(2000);
    play(0x0C); //播放第60首歌
    delay(2000);
    play(0x0D); //播放第61首歌
    delay(2000);
    play(0x0A); //播放第62首歌
    delay(2000);
    play(0x0B); //播放第63首歌
    delay(2000);
    play(0x0C); //播放第64首歌
    delay(2000);
    play(0x0D); //播放第65首歌
    delay(2000);
    play(0x0A); //播放第66首歌
    delay(2000);
    play(0x0B); //播放第67首歌
    delay(2000);
    play(0x0C); //播放第68首歌
    delay(2000);
    play(0x0D); //播放第69首歌
    delay(2000);
    play(0x0A); //播放第70首歌
    delay(2000);
    play(0x0B); //播放第71首歌
    delay(2000);
    play(0x0C); //播放第72首歌
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    play(0x0D); //播放第73首歌
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    play(0x0C); //播放第76首歌
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    play(0x0B); //播放第79首歌
    delay(2000);
    play(0x0C); //播放第80首歌
    delay(2000);
    play(0x0D); //播放第81首歌
    delay(2000);
    play(0x0A); //播放第82首歌
    delay(2000);
    play(0x0B); //播放第83首歌
    delay(2000);
    play(0x0C); //播放第84首歌
    delay(2000);
    play(0x0D); //播放第85首歌
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    play(0x0C); //播放第92首歌
    delay(2000);
    play(0x0D); //播放第93首歌
    delay(2000);
    play(0x0A); //播放第94首歌
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    play(0x0D); //播放第97首歌
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    play(0x0C); //播放第100首歌
    delay(2000);
    play(0x0D); //播放第101首歌
    delay(2000);
    play(0x0A); //播放第102首歌
    delay(2000);
    play(0x0B); //播放第103首歌
    delay(2000);
    play(0x0C); //播放第104首歌
    delay(2000);
    play(0x0D); //播放第105首歌
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    delay(2000);
    play(0x0B); //播放第107首歌
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    play(0x0B); //播放第139首歌
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    play(0x0D); //播放第145首歌
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    play(0x0D); //播放第149首歌
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    play(0x0B); //播放第151首歌
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    play(0x0A); //播放第154首歌
    delay(2000);
    play(0x0B); //播放第155首歌
    delay(2000);
    play(0x0C); //播放第156首歌
    delay(2000);
    play(0x0D); //播放第157首歌
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    play(0x0A); //播放第158首歌
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    play(0x0C); //播放第160首歌
    delay(2000);
    play(0x0D); //播放第161首歌
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    play(0x0A); //播放第162首歌
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    play(0x0B); //播放第163首歌
    delay(2000);
    play(0x0C); //播放第164首歌
    delay(2000);
    play(0x0D); //播放第165首歌
    delay(2000);
    play(0x0A); //播放第166首歌
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    play(0x0B); //播放第167首歌
    delay(2000);
    play(0x0C); //播放第168首歌
    delay(2000);
    play(0x0D); //播放第169首歌
    delay(2000);
    play(0x0A); //播放第170首歌
    delay(2000);
    play(0x0B); //播放第171首歌
    delay(2000);
    play(0x0C); //播放第172首歌
    delay(2000);
    play(0x0D); //播放第173首歌
    delay(2000);
    play(0x0A); //播放第174首歌
    delay(2000);
    play(0x0B); //播放第175首歌
    delay(2000);
    play(0x0C); //播放第176首歌
    delay(2000);
    play(0x0D); //播放第177首歌
    delay(2000);
    play(0x0A); //播放第178首歌
    delay(2000);
    play(0x0B); //播放第179首歌
    delay(2000);
    play(0x0C); //播放第180首歌
    delay(2000);
    play(0x0D); //播放第181首歌
    delay(2000);
    play(0x0A); //播放第182首歌
    delay(2000);
    play(0x0B); //播放第183首歌
    delay(2000);
    play(0x0C); //播放第184首歌
    delay(2000);
    play(0x0D); //播放第185首歌
    delay(2000);
    play(0x0A); //播放第186首歌
    delay(2000);
    play(0x0B); //播放第187首歌
    delay(2000);
    play(0x0C); //播放第188首歌
    delay(2000);
    play(0x0D); //播放第189首歌
    delay(2000);
    play(0x0A); //播放第190首歌
    delay(2000);
    play(0x0B); //播放第191首歌
    delay(2000);
    play(0x0C); //播放第192首歌
    delay(2000);
    play(0x0D); //播放第193首歌
    delay(2000);
    play(0x0A); //播放第194首歌
    delay(2000);
    play(0x0B); //播放第195首歌
    delay(2000);
    play(0x0C); //播放第196首歌
    delay(2000);
    play(0x0D); //播放第197首歌
    delay(2000);
    play(0x0A); //播放第198首歌
    delay(2000);
    play(0x0B); //播放第199首歌
    delay(2000);
    play(0x0C); //播放第200首歌
    delay(2000);
    play(0x0D); //播放第201首歌
    delay(2000);
    play(0x0A); //播放第202首歌
    delay(2000);
    play(0x0B); //播放第203首歌
    delay(2000);
    play(0x0C); //播放第204首歌
    delay(2000);
    play(0x0D); //播放第205首歌
    delay(2000);
    play(0x0A); //播放第206首歌
    delay(2000);
    play(0x0B); //播放第207首歌
    delay(2000);
    play(0x0C); //播放第208首歌
    delay(2000);
    play(0x0D); //播放第209首歌
    delay(2000);
    play(0x0A); //播放第210首歌
    delay(2000);
    play(0x0B); //播放第211首歌
    delay(2000);
    play(0x0C); //播放第212首歌
    delay(2000);
    play(0x0D); //播放第213首歌
    delay(2000);
    play(0x0A); //播放第214首歌
    delay(2000);
    play(0x0B); //播放第215首歌
    delay(2000);
    play(0x0C); //播放第216首歌
    delay(2000);
    play(0x0D); //播放第217首歌
    delay(2000);
    play(0x0A); //播放第218首歌
    delay(2000);
    play(0x0B); //播放第219首歌
    delay(2000);
    play(0x0C); //播放第220首歌
    delay(2000);
    play(0x0D); //播放第221首歌
    delay(2000);
    play(0x0A); //播放第222首歌
    delay(2000);
    play(0x0B); //播放第223首歌
    delay(2000);
    play(0x0C); //播放第224首歌
    delay(2000);
    play(0x0D); //播放第225首歌
    delay(2000);
    play(0x0A); //播放第226首歌
    delay(2000);
    play(0x0B); //播放第227首歌
    delay(2000);
    play(0x0C); //播放第228首歌
    delay(2000);
    play(0x0D); //播放第229首歌
    delay(2000);
    play(0x0A); //播放第230首歌
    delay(2000);
    play(0x0B); //播放第231首歌
    delay(2000);
    play(0x0C); //播放第232首歌
    delay(2000);
    play(0x0D); //播放第233首歌
    delay(2000);
    play(0x0A); //播放第234首歌
    delay(2000);
    play(0x0B); //播放第235首歌
    delay(2000);
    play(0x0C); //播放第236首歌
    delay(2000);
    play(0x0D); //播放第237首歌
    delay(2000);
    play(0x0A); //播放第238首歌
    delay(2000);
    play(0x0B); //播放第239首歌
    delay(2000);
    play(0x0C); //播放第240首歌
    delay(2000);
    play(0x0D); //播放第241首歌
    delay(2000);
    play(0x0A); //播放第
```

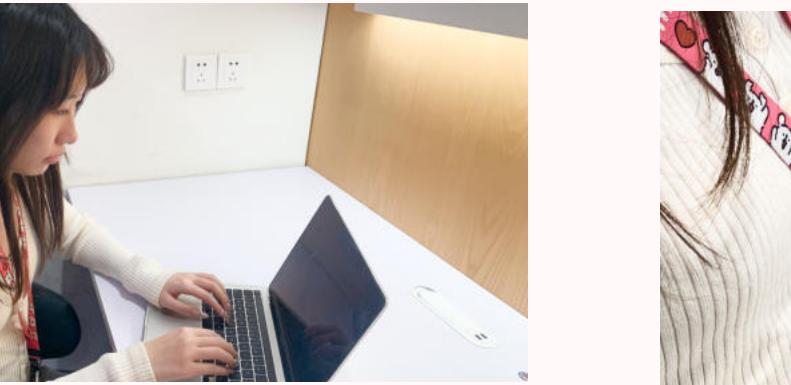
STORYBOARD



1. Cheng spends her morning and evening hours commuting.



4. Cheng connects the product to his mobile phone and enters the online treatment room.



2. The busy work puts a lot of pressure on Cheng.



5. By using the product, Cheng can easily follow his teacher in playing different instruments.



3. Cheng booked an evening music therapy course on the app.



6. After that, Cheng found some healing music to play on the app and she felt much more relaxed.

