TREA-SURE BOX

ANQI MA 2022/12/7

OBSERVATION

The inspiration for making this came from a friend of mine who felt a broken trust when a friend of hers did some cheating on him over money. I thought the theme of trust was interesting and wanted to express this personal feeling through an intention. I felt that money in this case was a good point of opportunity. I started to think about making a jewel box, a box of sparkling gems and jewellery that represents your most precious personal feelings and private possessions. It takes the form of an expression when one approaches, initially defensive, but when you initiate the approach it is usually an expression of a friendly smile. But reaching in to take the gemstone sets off an alarm, a process of broken trust.

CURRENT SITUATION

5% of the global population

"Guess who I am?" 280 people defrauded of over $1.2 million by scammers posing as friends

68.4% University students scammed

68.4% of respondents attributed their lack of social experience

SKETCH

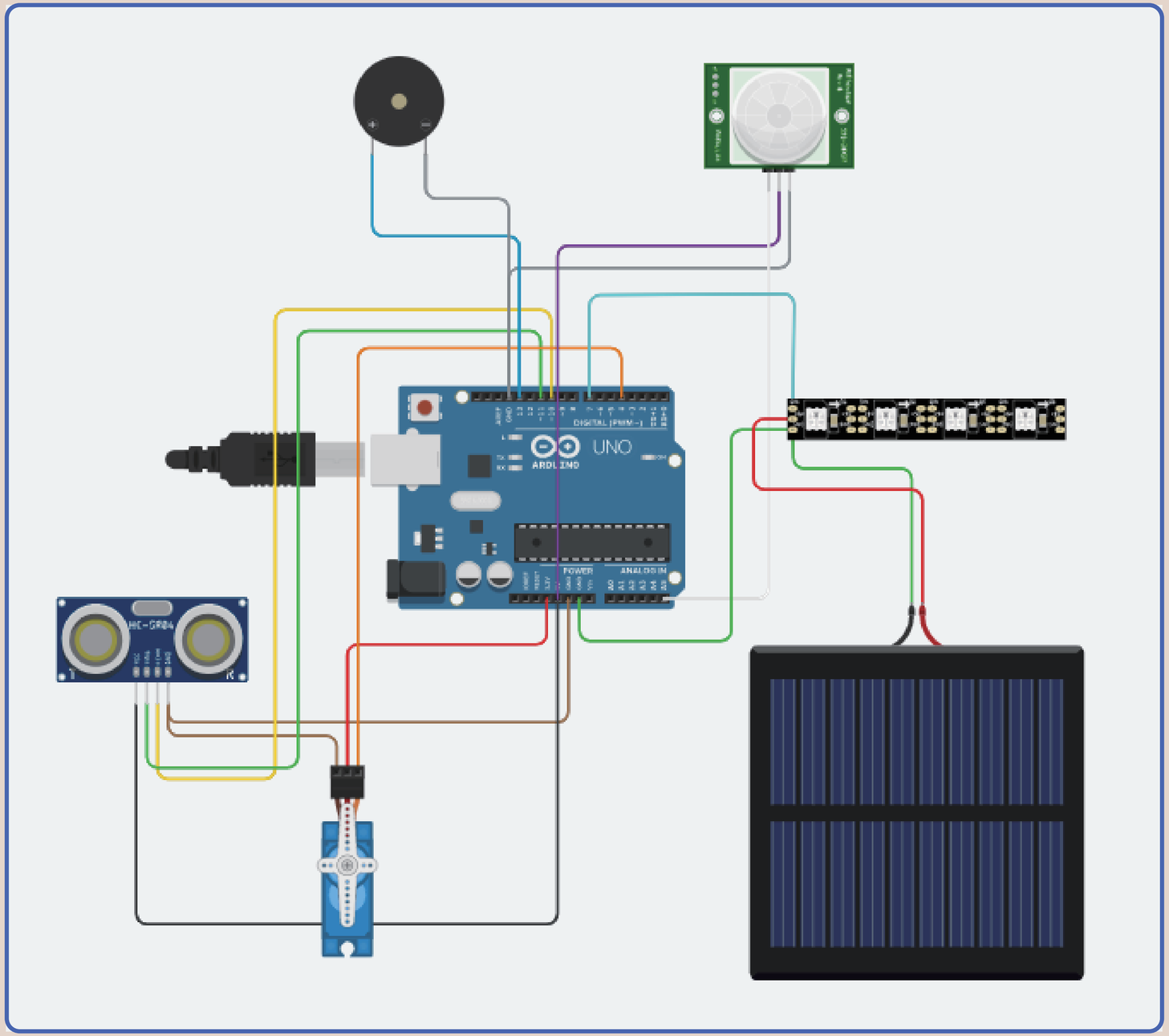
HARDWARE

IUPTU：

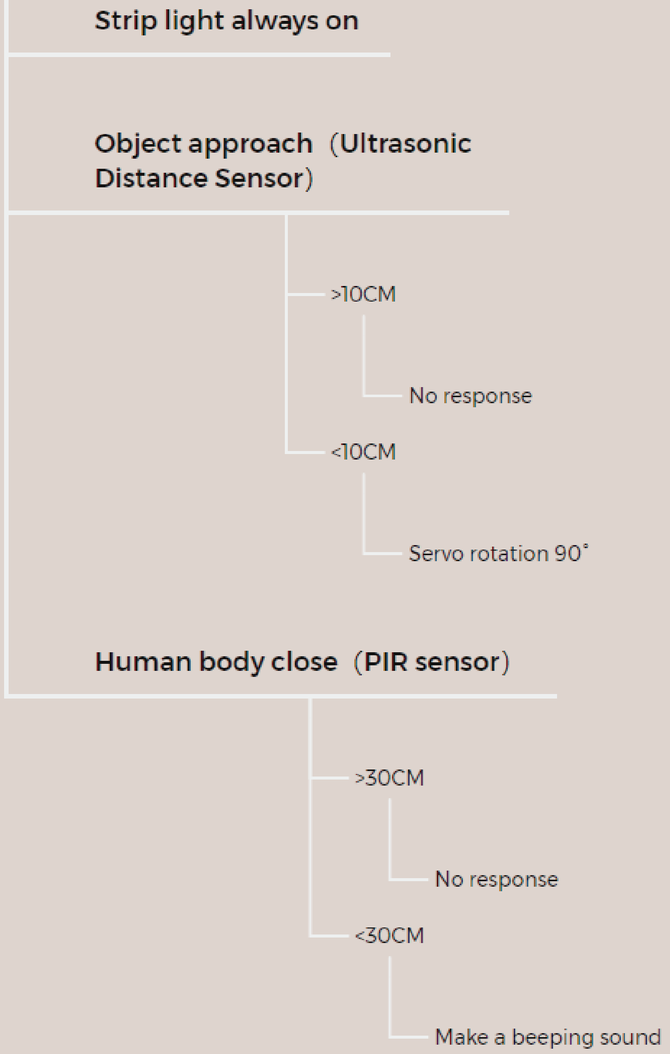
Ultrasonic Distance Sensor
HC-SR04 5V Version
PIR sensor

OUTPTU：

Micro Servo 9g FS90
buzzer
plastic gems(NUM_LEDS 60)

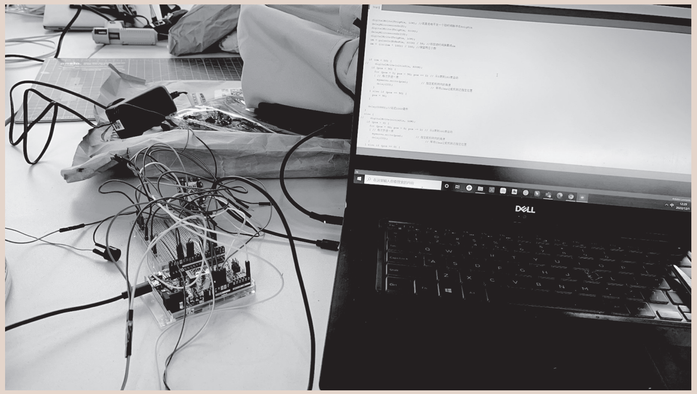
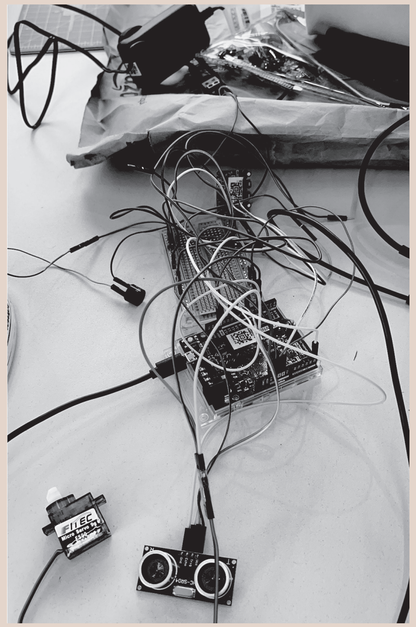
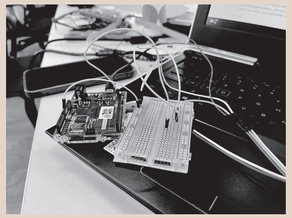
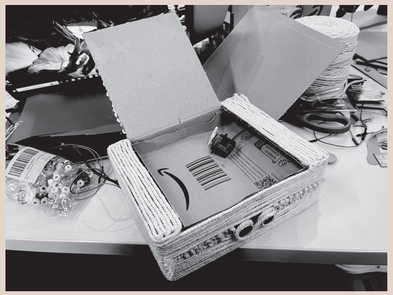
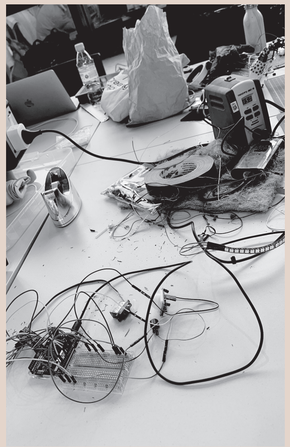
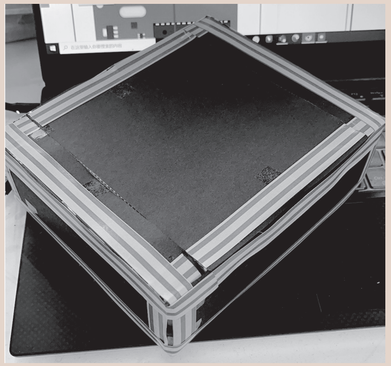


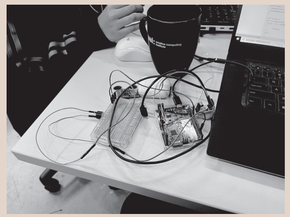
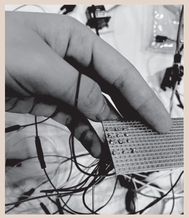
FLOWCHART



CODE DISPLAY

```
#include "FastLED.h"            // 此示例程序需要使用FastLED库

#define NUM_LEDS 60             // LED灯珠数量
#define LED_DT 7                // Arduino输出控制信号引脚
#define LED_TYPE WS2812         // LED灯带型号
#define COLOR_ORDER GRB         // RGB灯珠中红色、绿色、蓝色LED的排列顺序

uint8_t max_bright = 10;       // LED亮度控制变量，可使用数值为 0 ～ 255， 数值越大则光带亮度越高

CRGB leds[NUM_LEDS];     // 建立光带leds



//int citiePin = 3; //磁铁的信号引脚接3号口
const int TrigPin = 11;
const int EchoPin = 10;
float cm;

//扬声器
int buzzer = 13;
int frequency = 900;
int PIR_sensor = A5;
int val = 0;


#include <Servo.h>//引用舵机的库
Servo myservo;  // 声明舵机名称

int pos = 0;

void setup() {



  Serial.begin(9600);           // 启动串行通讯
  delay(1000);                  // 稳定性等待

  LEDS.addLeds<LED_TYPE, LED_DT, COLOR_ORDER>(leds, NUM_LEDS);  // 初始化光带

  FastLED.setBrightness(max_bright);                            // 设置光带亮度



   myservo.attach(4);

  pinMode(TrigPin, OUTPUT);
  pinMode(EchoPin, INPUT);
//  pinMode(citiePin, OUTPUT);

  pinMode(buzzer,OUTPUT);
  pinMode(PIR_sensor, INPUT);

}




void loop () {


  digitalWrite(TrigPin, LOW); //低高低电平发一个短时间脉冲去TrigPin
  delayMicroseconds(2);
  digitalWrite(TrigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(TrigPin, LOW);
  cm = pulseIn(EchoPin, HIGH) / 58; //将回波时间换算成cm
  cm = (int(cm * 100)) / 100; //保留两位小数



  if (cm < 10) {
//    digitalWrite(citiePin, HIGH);
    if (pos < 120) {
      for (pos = 0; pos < 120; pos += 1) // 从0度到180度运动
      { // 每次步进一度
        myservo.write(pos);         // 指定舵机转向的角度

        delay(15);                          // 等待15ms让舵机到达指定位置
      }
    } else if (pos == 120) {
      pos = 120;
    }

    delay(1000);//延迟1000毫秒
  }
  else {
//    digitalWrite(citiePin, LOW);
    if (pos > 0) {
      for (pos = 120; pos > 0; pos -= 1) // 从0度到180度运动
      { // 每次步进一度
        myservo.write(pos);         // 指定舵机转向的角度

        delay(15);                          // 等待15ms让舵机到达指定位置
      }
    } else if (pos == 0) {
      pos = 0;
    }
    delay(1000);
  }


//扬声器
 val = analogRead(PIR_sensor);    //读取A0口的电压值并赋值到val
  Serial.println(val);
  if(val > 300){
    tone(buzzer,frequency);
    delay(500);
    noTone(buzzer);
    delay(500);
  }



// fill_solid section 全部点亮/熄灭
 fill_solid(leds, 60, CRGB::MediumBlue);
 FastLED.show();
 delay(500);



} // loop()
```

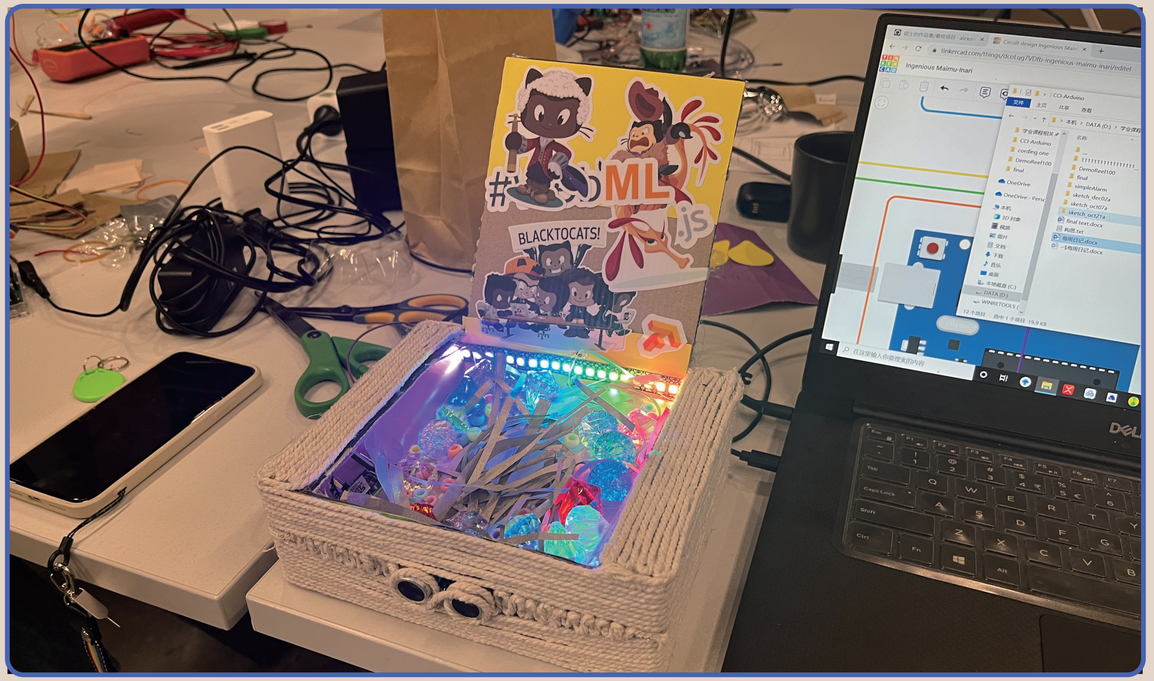



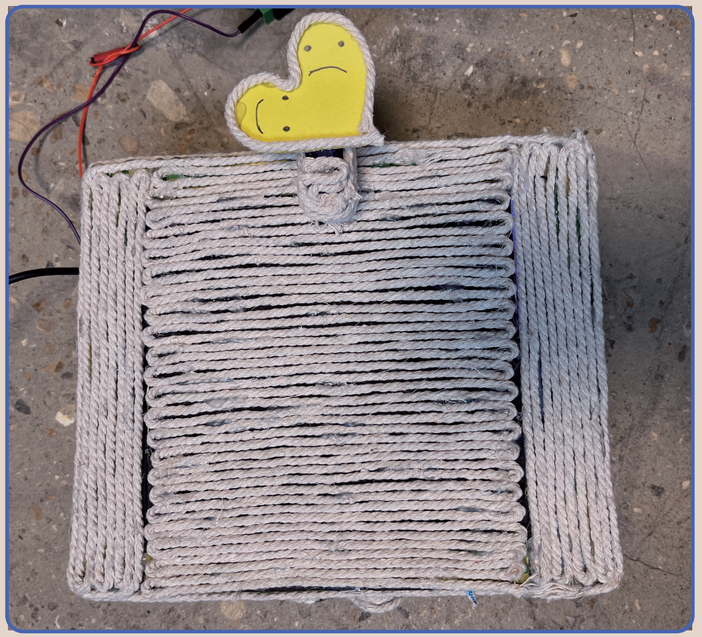

I documented my whole experiment from scratch, here are some photos of the process

FINAL SHOWCASE

VIDEO LINK: https://youtu.be/bQOcLwHImsM

Github: https://github.com/maanqii/Final-Project-Creative-Making-/upload/main



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BLACKTOCATS!