
Ghost Catchers
Better than busters!


00
INTRODUCTION
Meet the team!

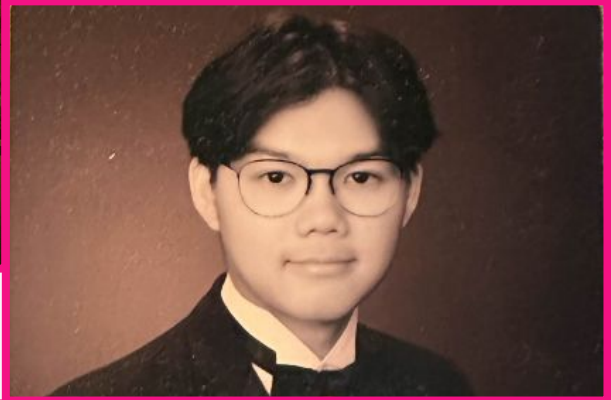
OUR TEAM

HARRISON TRINH

- Incoming freshman at UCSD
- EE Major

KOREY HUYNH

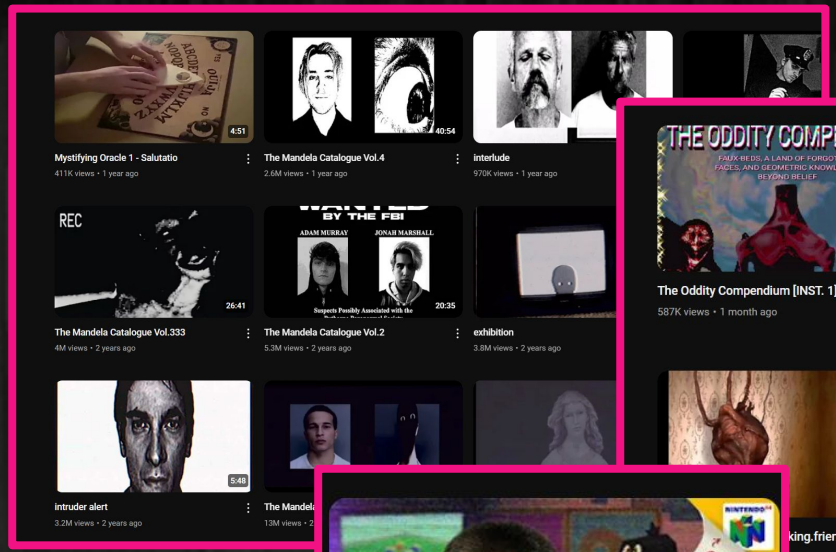
- Incoming freshman at UCSD
- EE Major




01
THE GOAL
Oh no what do we do!?

CHILDREN

- Too addicted to their devices!
- Don’t believe in the supernatural!
- Don’t use their imaginations enough!


4:51
Mystifying Oracle 1 - Salutatio
411K views • 1 year ago
40:54
The Mandela Catalogue Vol.4
2.6M views • 1 year ago
interlude
970K views • 1 year ago
REC
26:41
The Mandela Catalogue Vol.333
4M views • 2 years ago
BY THE FBI
ADAM MURRAY
JONAH MARSHALL
20:35
The Mandela Catalogue Vol.2
5.3M views • 2 years ago
exhibition
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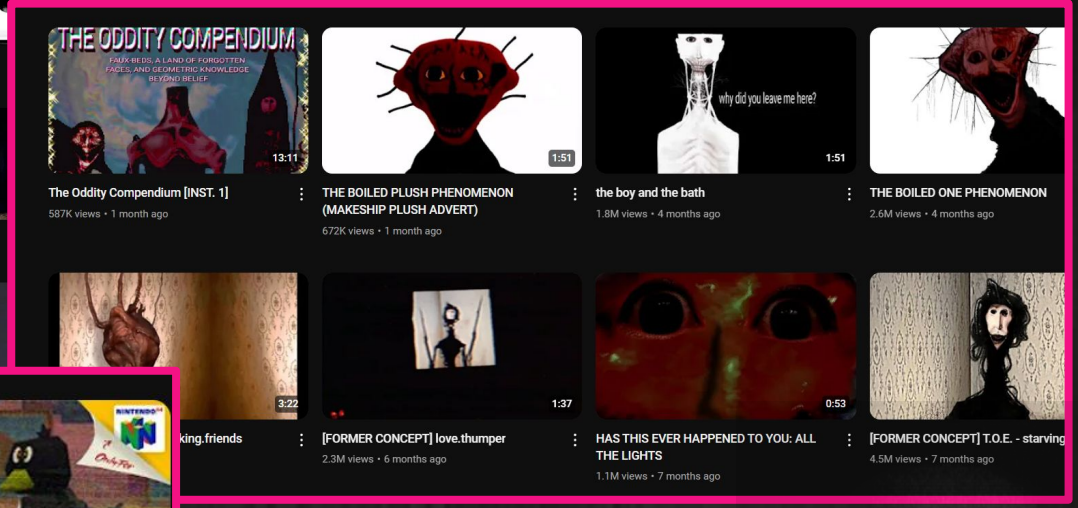
5:48
intruder alert
3.2M views • 2 years ago


THE ODDITY COMPENDIUM
FAUX-BEDS, A LAND OF FORGOTTEN FACES, AND GEOMETRIC KNOWLEDGE BEYOND BELIEF
13:11
The Oddity Compendium [INST. 1]
587K views • 1 month ago
1:51
THE BOILED PLUSH PHENOMENON (MAKESHIP PLUSH ADVERT)
672K views • 1 month ago
why did you leave me here?
1:51
the boy and the bath
1.8M views • 4 months ago
THE BOILED ONE PHENOMENON
2.6M views • 4 months ago
3:22
king.friends
1:37
[FORMER CONCEPT] love.thumper
2.3M views • 6 months ago
0:53
HAS THIS EVER HAPPENED TO YOU: ALL THE LIGHTS
1.1M views • 7 months ago
[FORMER CONCEPT] T.O.E. - starving
4.5M views • 7 months ago


WHAT HAPPENED TO CROW 64?
13:23
WHAT HAPPENED TO CROW 64?
1M views • 3 years ago


02
THE APPROACH
Focus up

HOW IT STARTED

We first started with a list of ideas and what sensors we wanted to use in our project.

TIMELINE

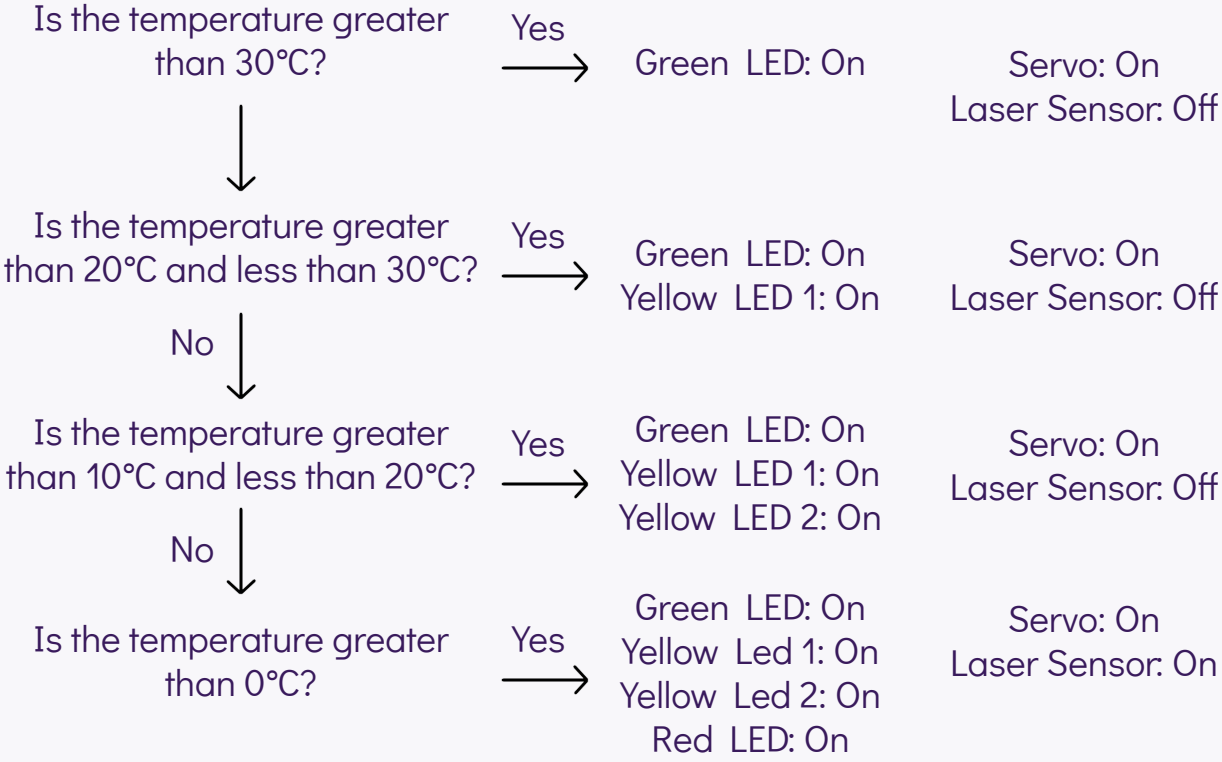
WHITEBOARD → FREE ROAM → PITCHING

Our initial thoughts and ideas

We do our own things and see where our project seems to lack

We pitch in new ideas in order to refine our original, raw project

A LOOK IN HORROR



A LOOK INTO THE HORROR PT. 2

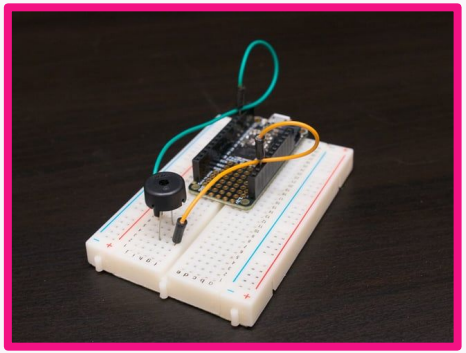
```
import time
import board
import digitalio
import analogio
from analogio import AnalogIn
import adafruit_thermistor
from adafruit_motor import servo
import pwmio

TONE_FREQ = [ 262,  # C4
              294,  # D4
              330,  # E4
              349,  # F4
              392,  # G4
              440,  # A4
              494 ] # B4

thermistor = adafruit_thermistor.Thermistor(board.A1, 10000, 10000, 35, 3950)

buzzer = pwmio.PWMOut(board.D10, variable_frequency=True)
buzzer.frequency = TONE_FREQ[0]
buzzer.duty_cycle = 2**15

white = digitalio.DigitalInOut(board.D8)
green = digitalio.DigitalInOut(board.D6)
yellow = digitalio.DigitalInOut(board.D4)
red = digitalio.DigitalInOut(board.D2)
laser = digitalio.DigitalInOut(board.D12)
```

```
if (simple > 30):
    leds[0].value = True
    buzzer.frequency = TONE_FREQ[0]
elif(simple > 20):
    leds[1].value = True
    leds[0].value = True
    buzzer.frequency = TONE_FREQ[1]
elif(simple > 10):
    leds[2].value = True
    leds[1].value = True
    leds[0].value = True
    buzzer.frequency = TONE_FREQ[6]
elif(simple > 0):
    leds[3].value = True
    leds[2].value = True
    leds[1].value = True
    leds[0].value = True
    laser.value = True
    buzzer.frequency = 900
```

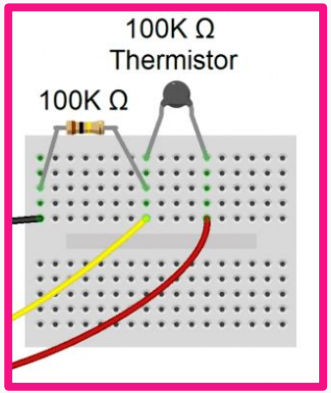
```
pwm = pwmio.PWMOut(board.A2, duty_cycle=2 ** 15, frequency=50)
my_servo = servo.Servo(pwm)

leds = [white, green, yellow, red]
for i in leds:
    i.direction = digitalio.Direction.OUTPUT
laser.direction = digitalio.Direction.OUTPUT

while True:
    my_servo.angle = 75
    time.sleep(0.7)
    my_servo.angle = 95
    time.sleep(0.7)

    leds[0].value = False
    leds[1].value = False
    leds[2].value = False
    leds[3].value = False

    temperature = thermistor.temperature
    simple = abs(int(temperature))
    time.sleep(0.001)
    print("Temperature is: " + str(abs(temperature)))
```

RESOURCES

https://learn.adafruit.com/using-piezo-buzzers-with-circuitpython-arduino/circuitpython



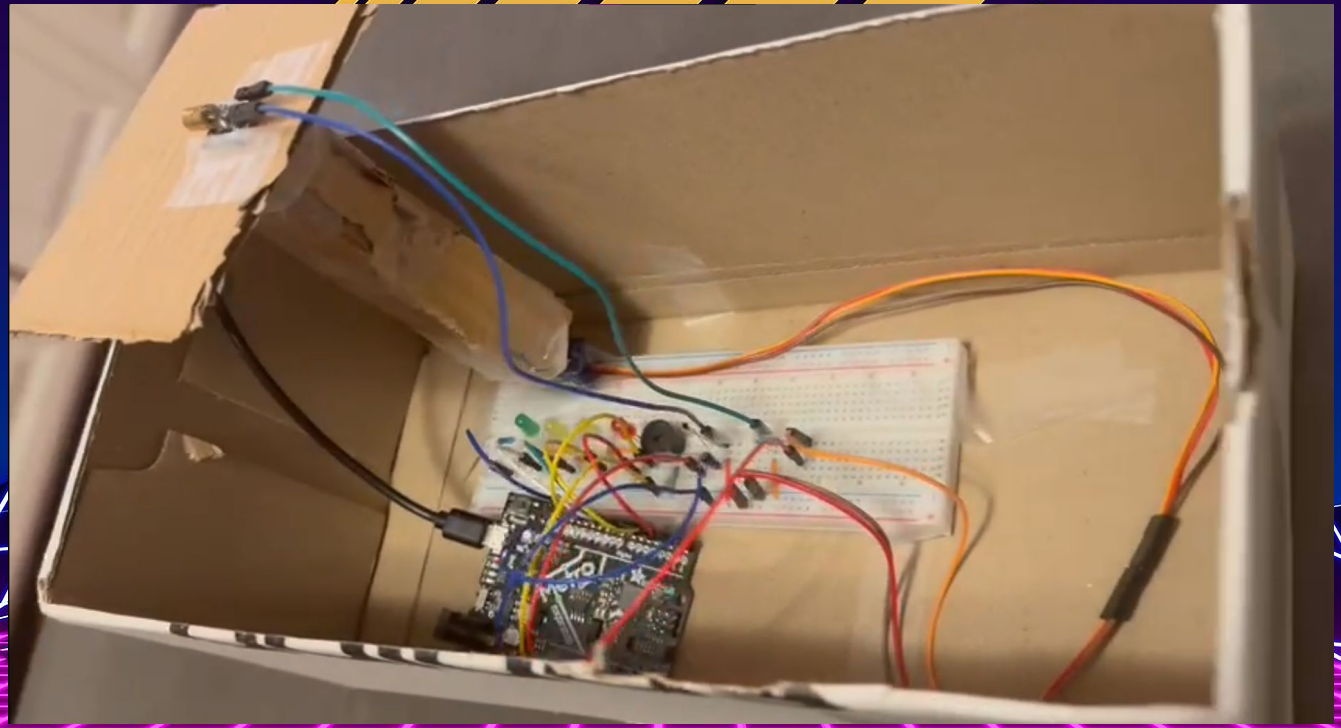
https://docs.circuitpython.org/projects/thermistor/en/latest/api.html



03

THE SOLUTION

Huzzah!



The Ghostinator-inator

Letting children use their imaginations in a more (super)natural way!

THE DEMO


04
THE CONCLUSION
Wrapping it up

TAKEAWAYS/FUTURE WORK

- Interplay Between Functionality and Looks
- A Lot of Editing Experience -> Future Demos
- Simplicity in Wiring, Circuit Design, and Coding
- Microphone Sensor -> Mode Switch
- Distance Sensor -> Activates Laser
- Segment Display Feedback -> More game-like + interactive

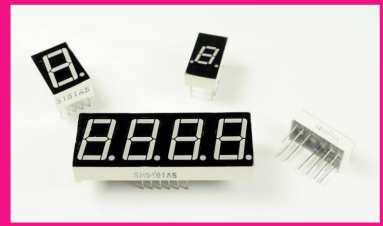
DaVinci Resolve

Audacity

Visual Studio Code
App


HC-SR04
Ultrasonic Sensor


KY-037
Microphone Sensor




THANK
YOU