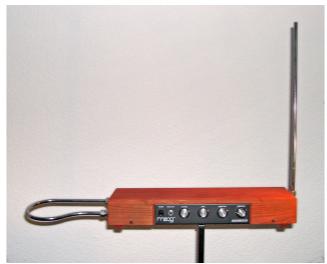
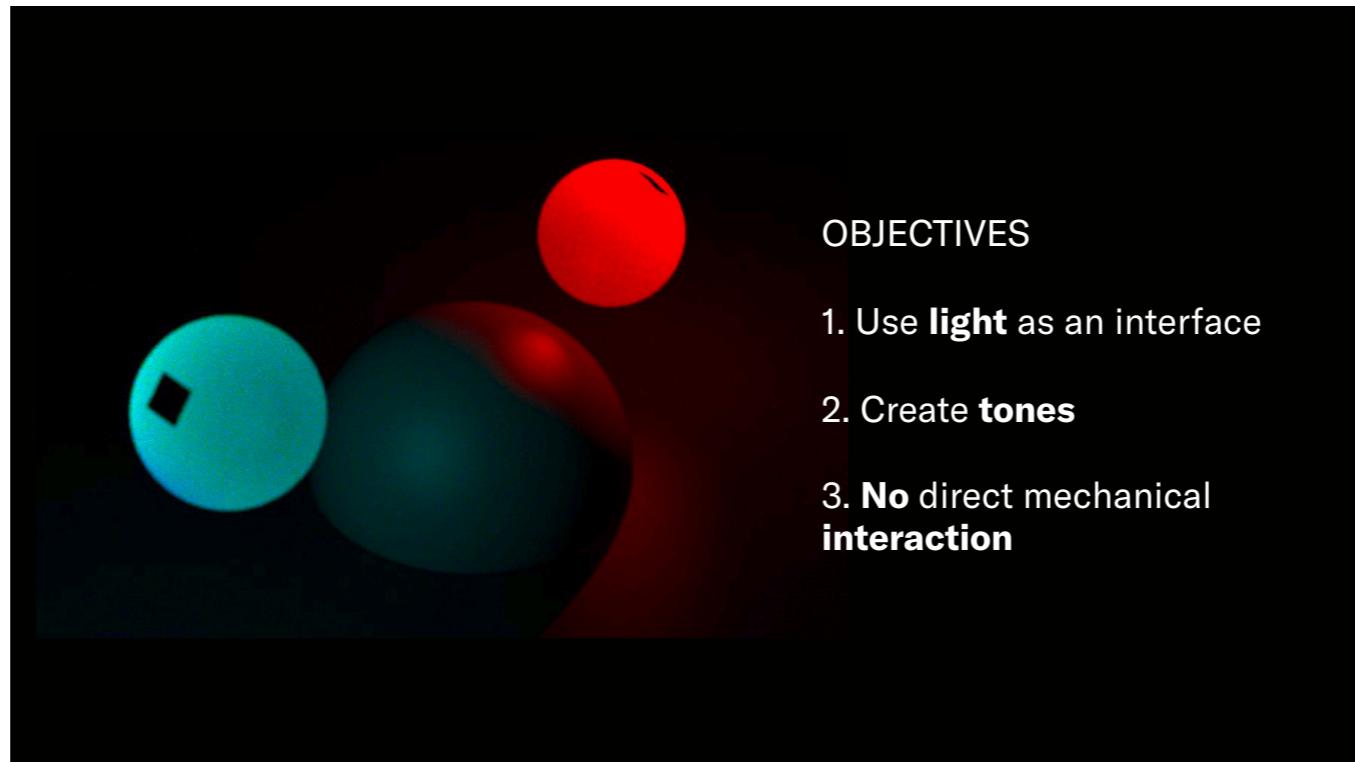


Theremin

Moritz Salla



The theremin is an electronic musical instrument controlled without physical contact by the thereminist. It is named after its inventor, Léon Theremin, who patented the device in 1928.



OBJECTIVES

1. Use **light** as an interface
2. Create **tones**
3. **No** direct mechanical interaction

Simple idea

Experimental instrument that uses light as an interface to output tones & melodies.
It can be played by a single player or as a dialog between two.

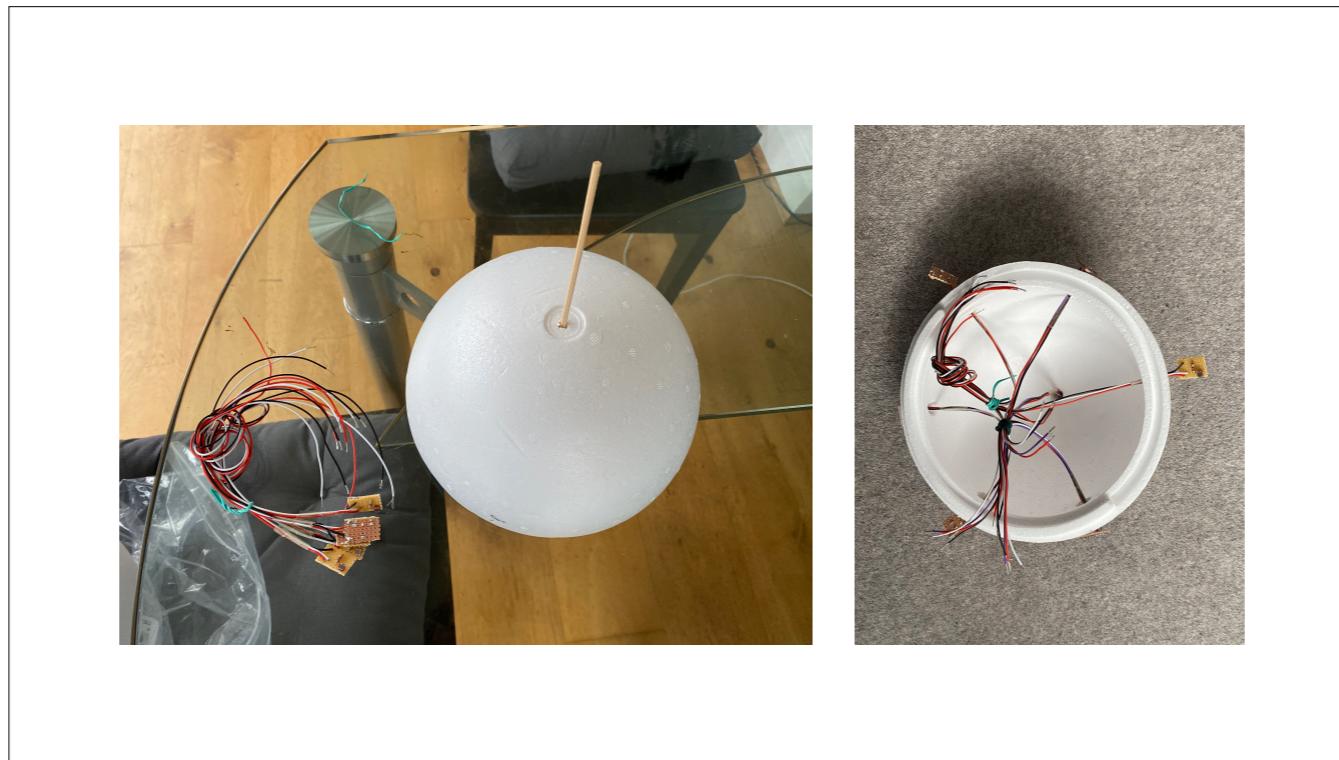
IN

4 RGB color sensors
4 Photoresistors

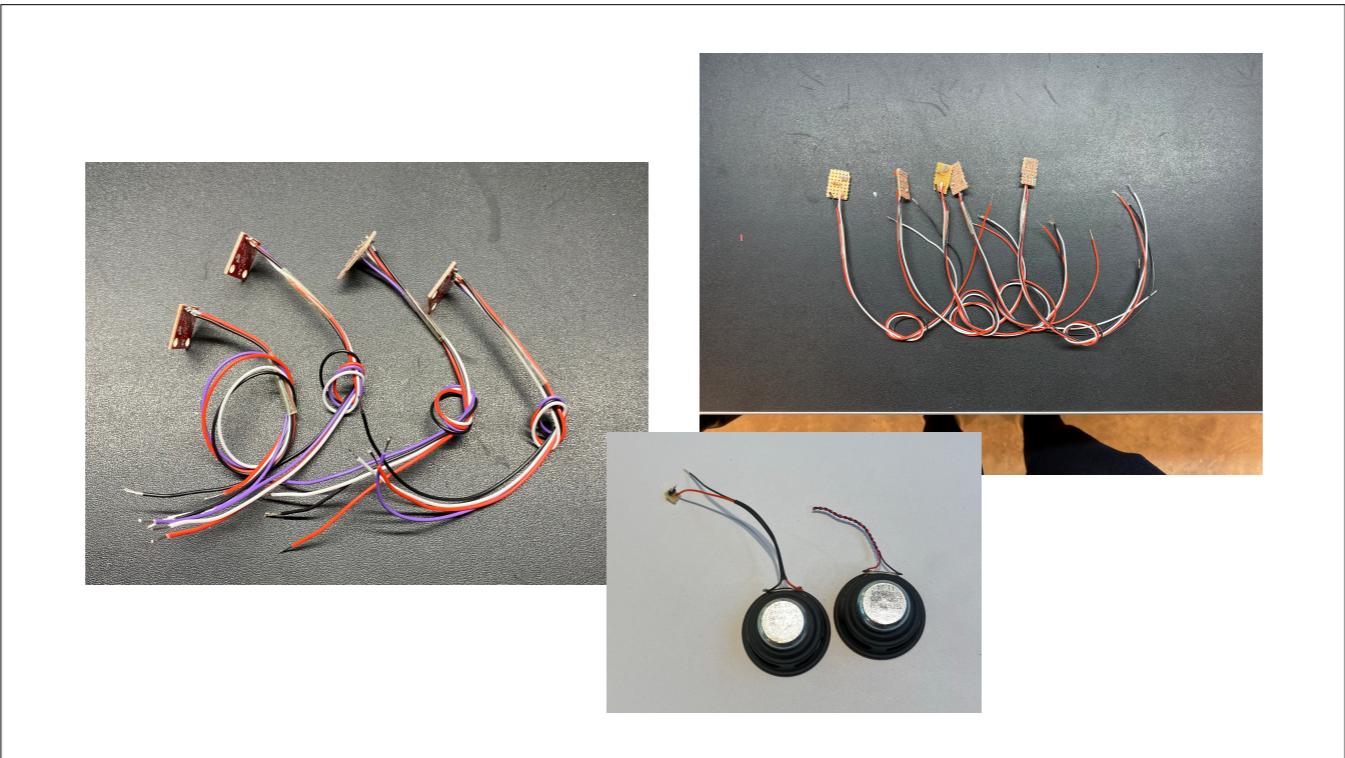
OUT

2 loudspeakers
8 LEDs

9V Battery powered

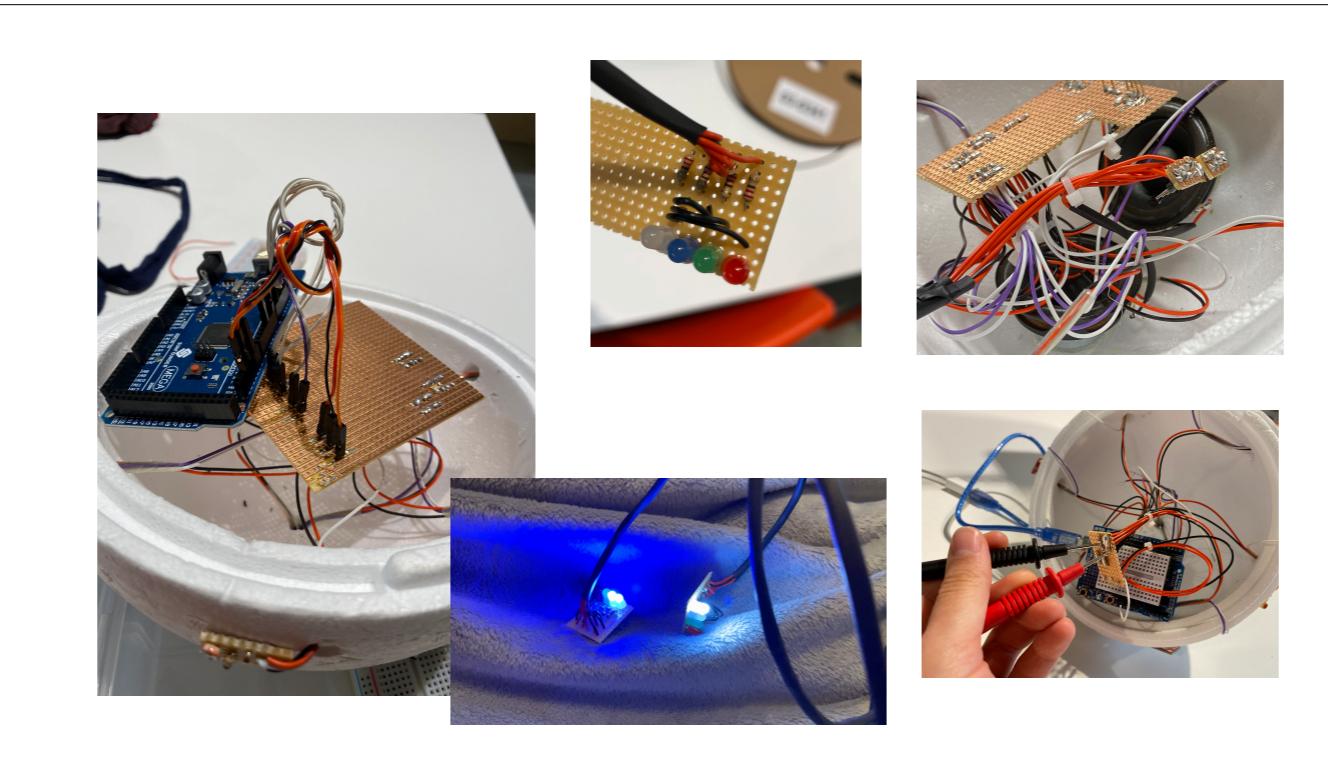


Skeleton for the enclosure



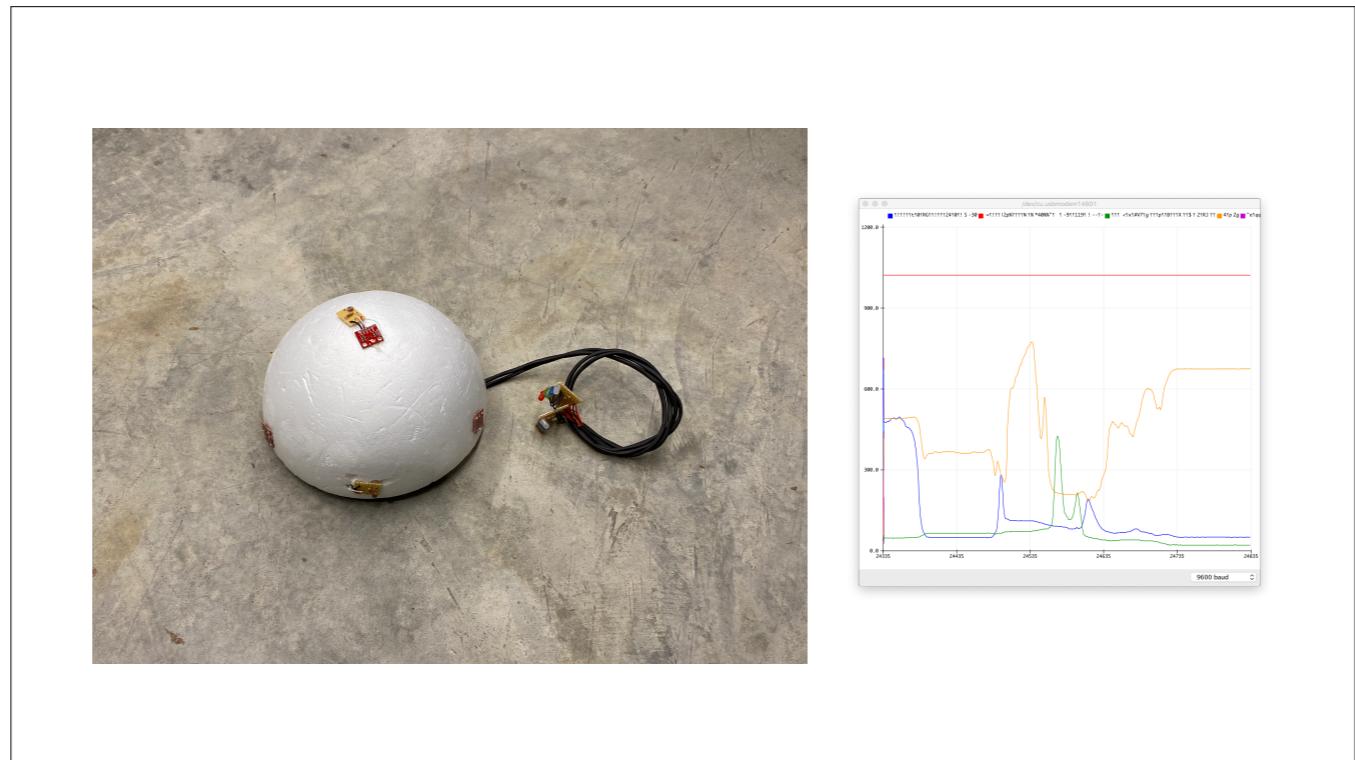
Creating components:
Programmable LED strips
Resoldering speakers
Soldering color sensors

Improve **durability**

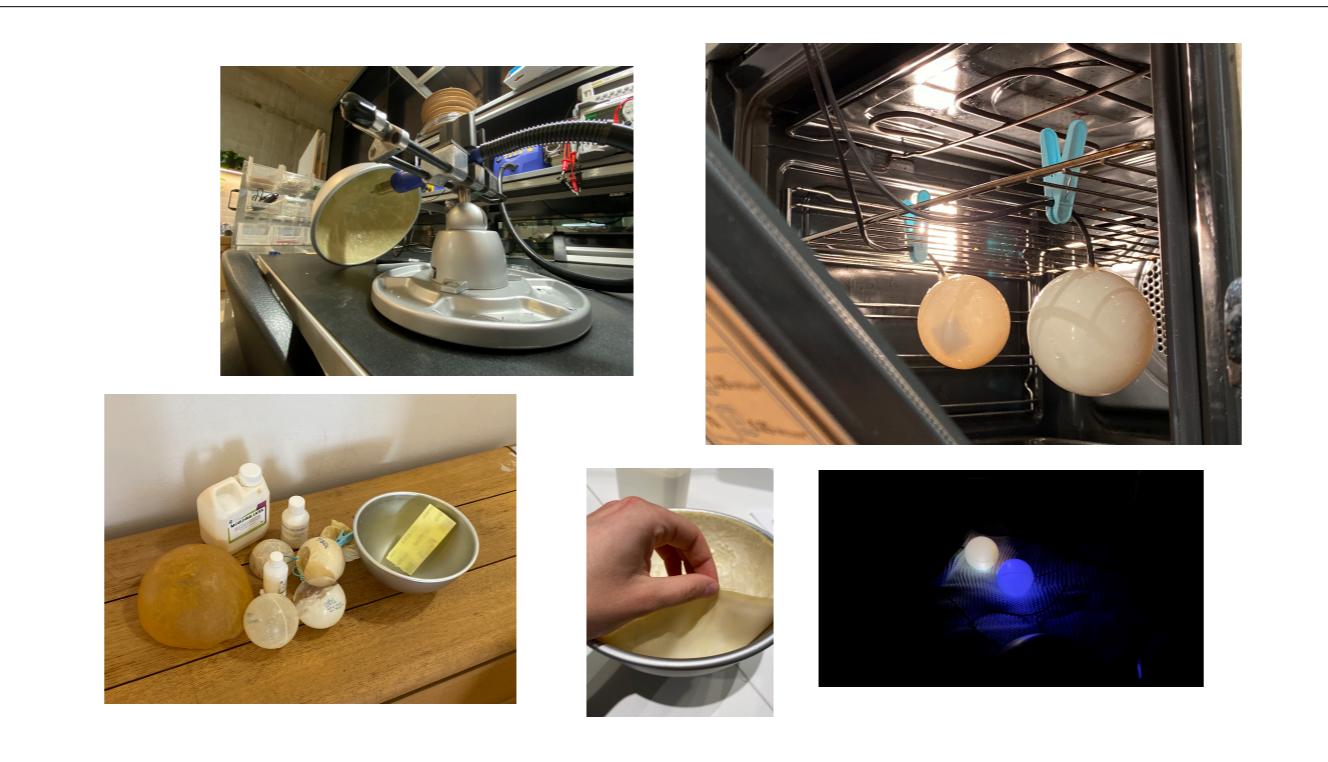


Motherboard to house electricity supply for 12 components, some needing 5V, some 3.5V

Not enough I2C connectors..libraries to use PWM



Without latex

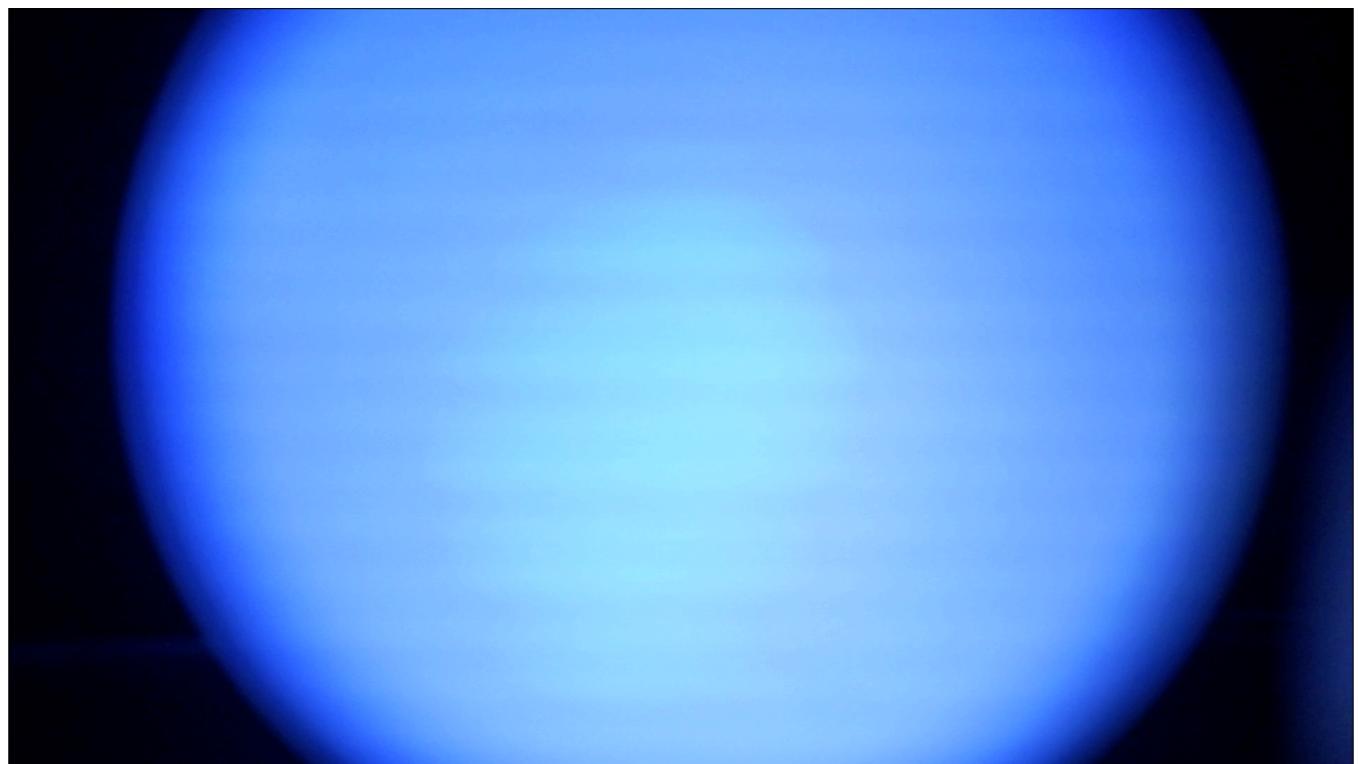


Material research Latex

Right amount of translucency (hides components, disperses light, thin enough for light to pass)

Grip

Sticks



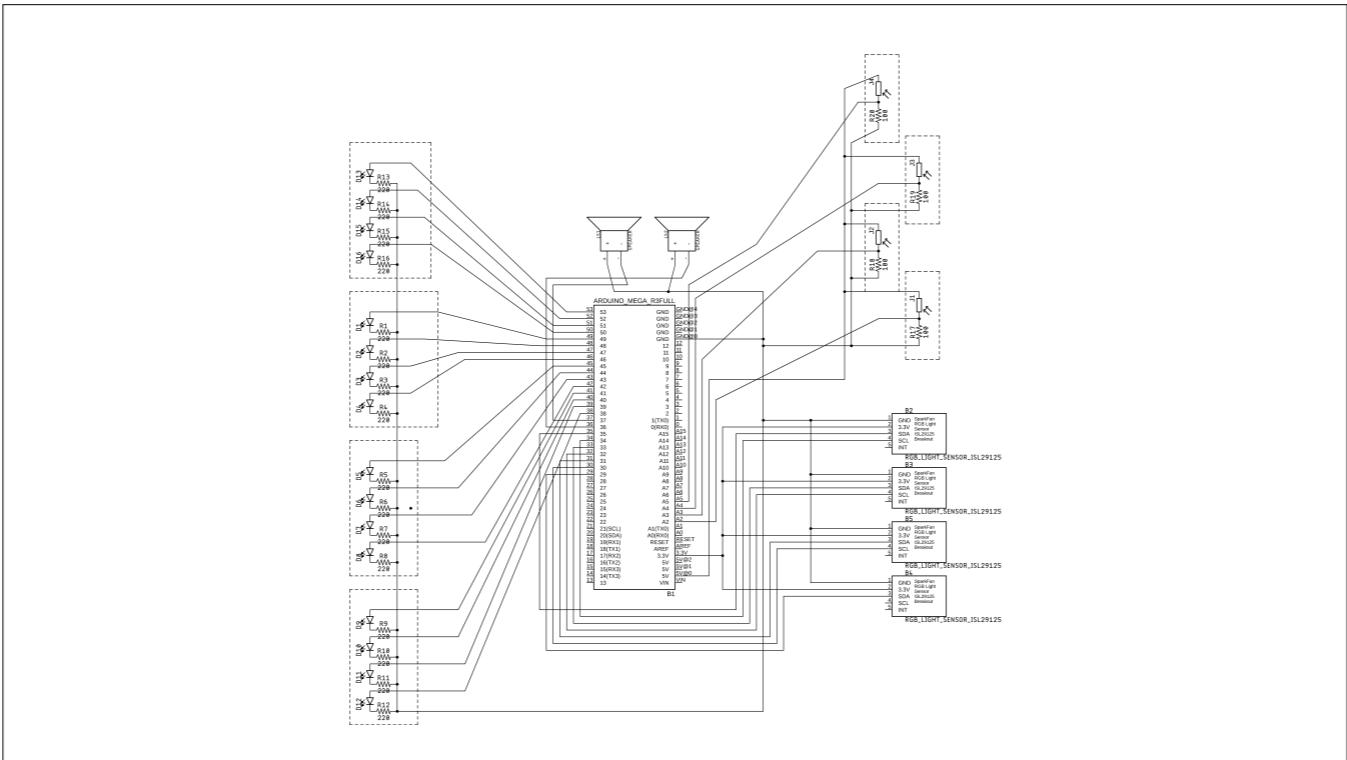
CHALLENGES

- **Sound:** Creating complex sounds with Arduino
- **Enclosure:** Function and aesthetic interdependent
 - **Fine tuning** components (LEDs to sensors...)

Mapping
Threshold
Sensitivity

No delay function because of LEDs
Timer in Arduino interfering with pins

Enclosure important



Disgusting

FUTURE?

1. Think about **signifiers** to make interaction more obvious
2. **Audio complexity**
3. **Refine silicone**

What are the future possibilities for this project?