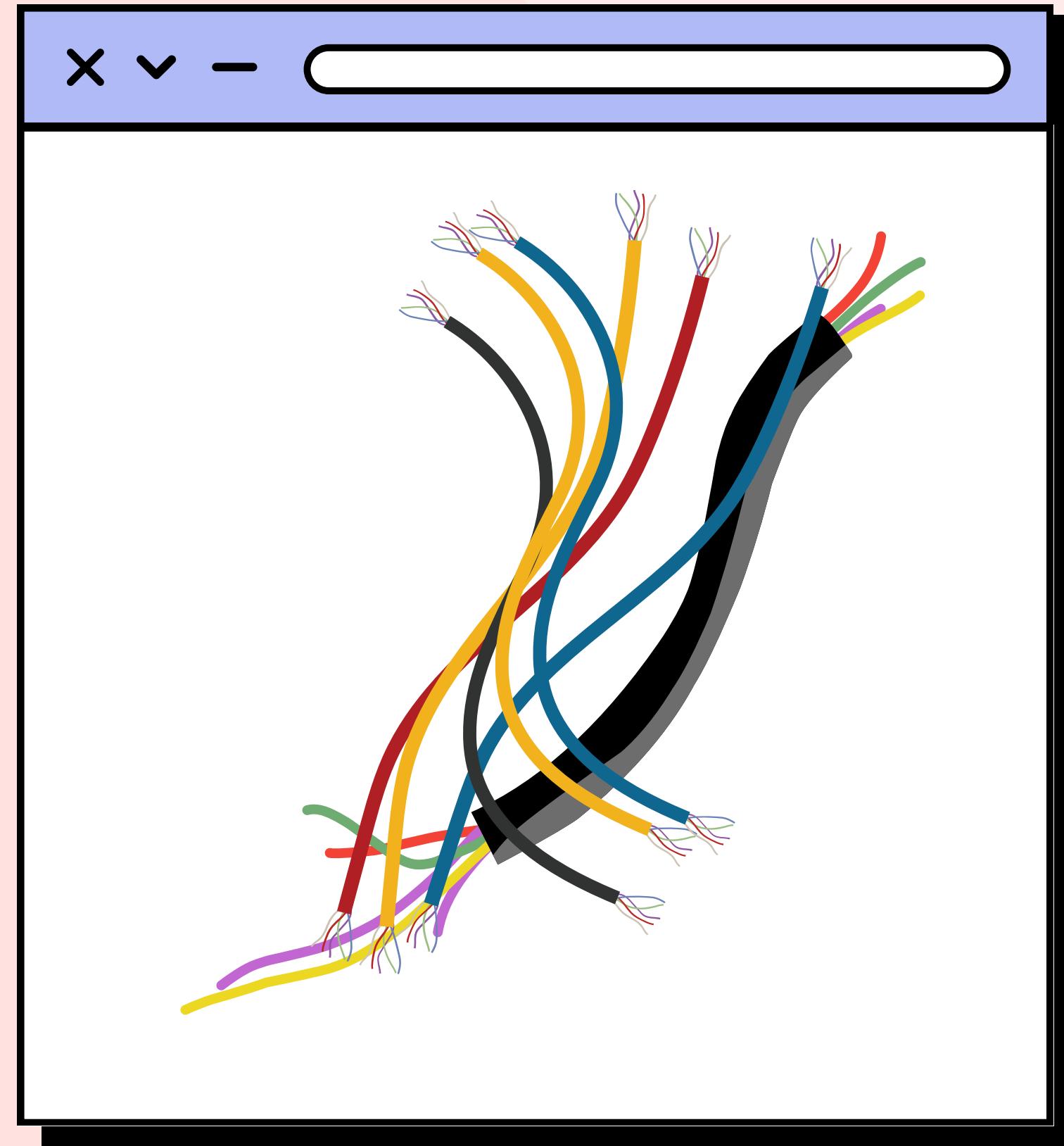


How to make your own Taylor Swift Eras Tour bracelet

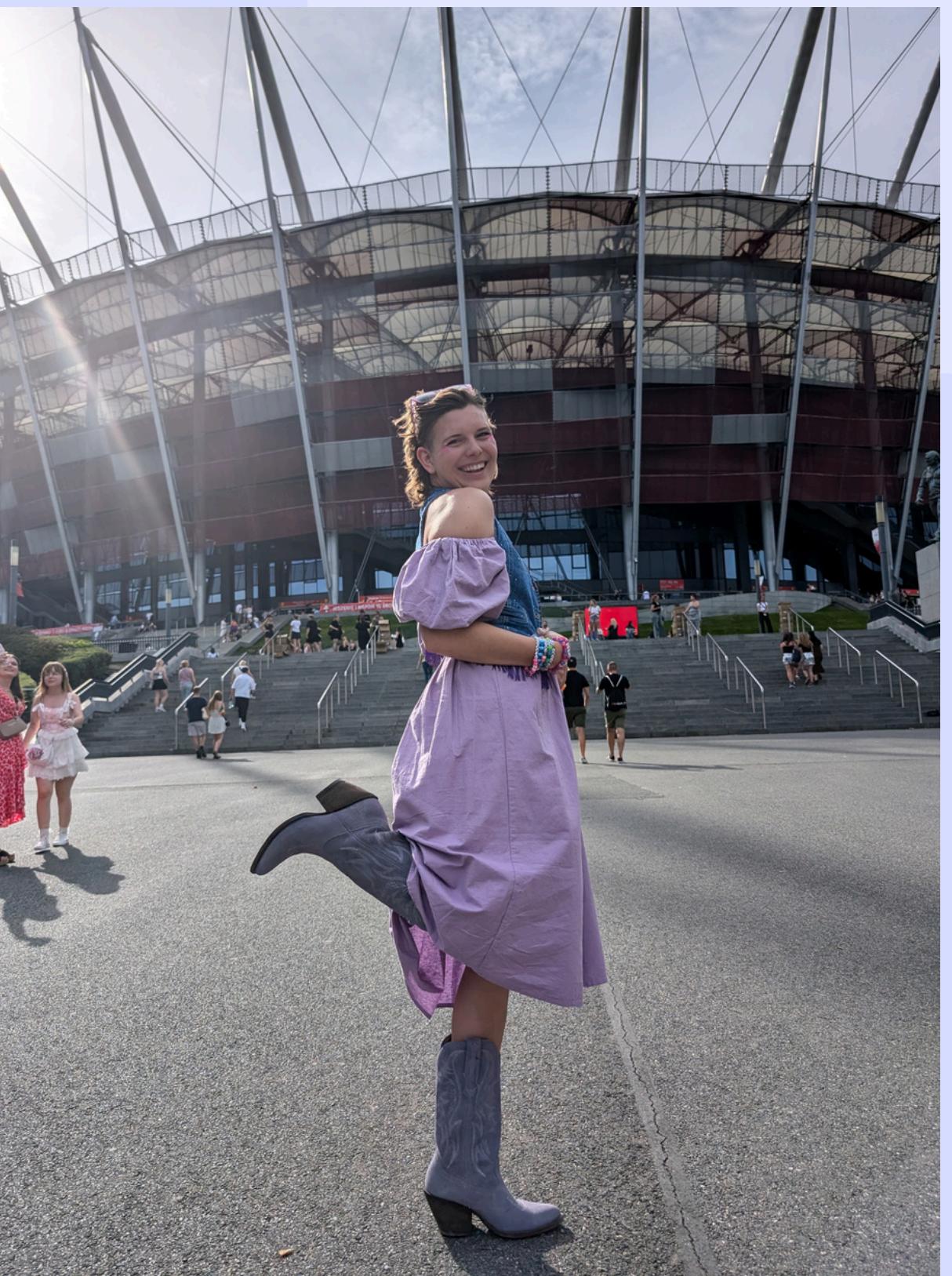
Mandy's Version

**What are you
going to get out
of this
presentation?**

(other than stickers!!)



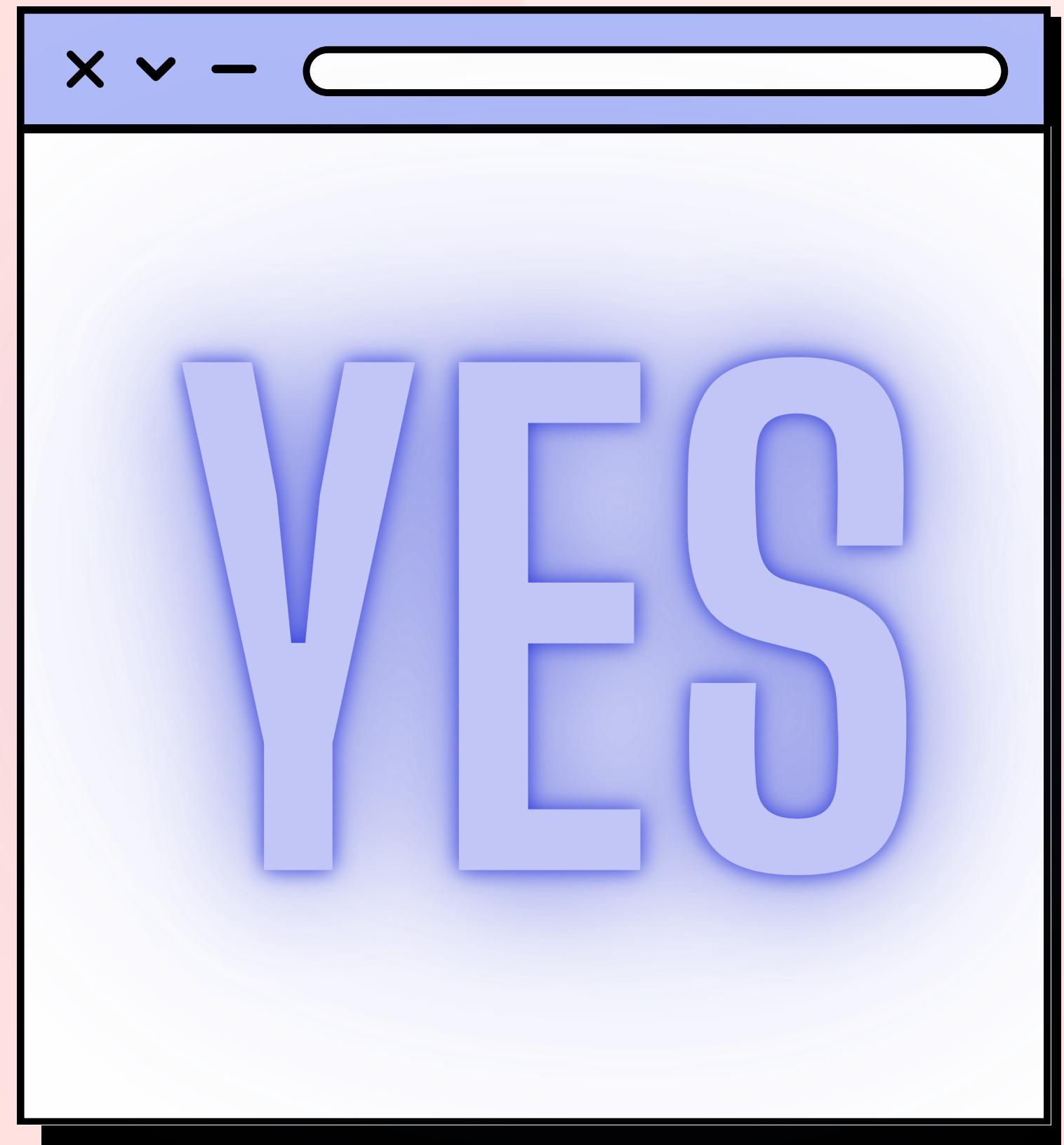
X V -







Did I make this
presentation
while watching
the Eras live
streams?

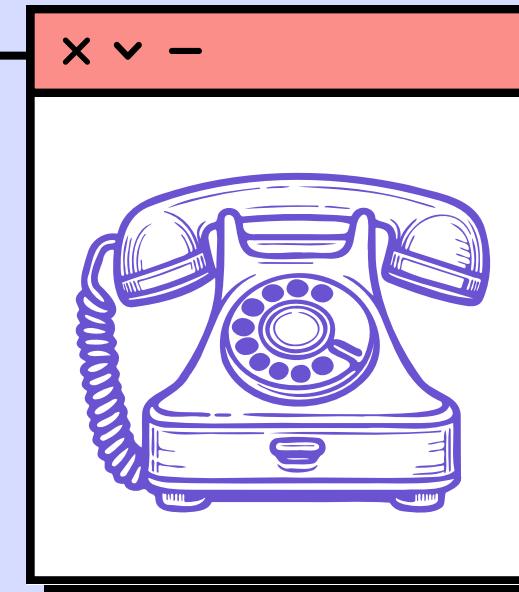


Who am I?



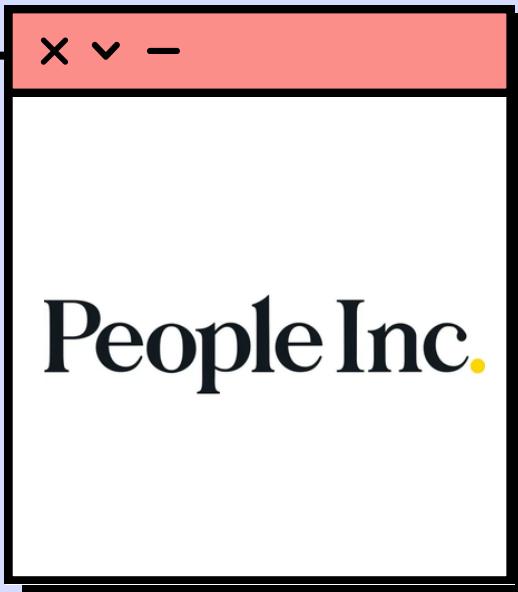
Graduated 2019
BSc

University of Alberta
Canada :)



Hardware
Nerd

Made a rotary phone
dial for my phone



2019-present
Senior Engineer

Digital publishing
40 brands



InStyle **People**
EntertainmentWEEKLY

Goals

X V -

- 1 Going over all the ways to make crowds shine
- 2 Science behind Eras Tour bracelets
- 3 How to make our own!
Clunky version :P
- 4 How to make it fill a stadium
- 5 Other fan projects for inspiration

How people think the LEDs are programmed

GPS

Artifical Intelligence

lol

Sound activated

**Bracelets connect to their
nearest bracelet, on and on
until one is close enough to a
tower for signal**

How to program any LEDs

Addressable LEDs (pixels)

How taylor's screen is done

How to program any LEDs

Addressable LEDs

How taylor's screen is done



How to program any LEDs

Addressable LEDs (pixels)

How taylor's screen is done

Bluetooth

Need your phone to connect

Enter your seat number

How to program any LEDs

Addressable LEDs (pixels)

How taylor's screen is done

Radio Waves

Must be in assigned seats

Bluetooth

Need your phone to connect

Enter your seat number

How to program any LEDs

Addressable LEDs (pixels)

How taylor's screen is done

Radio Waves

Must be in assigned seats

Bluetooth

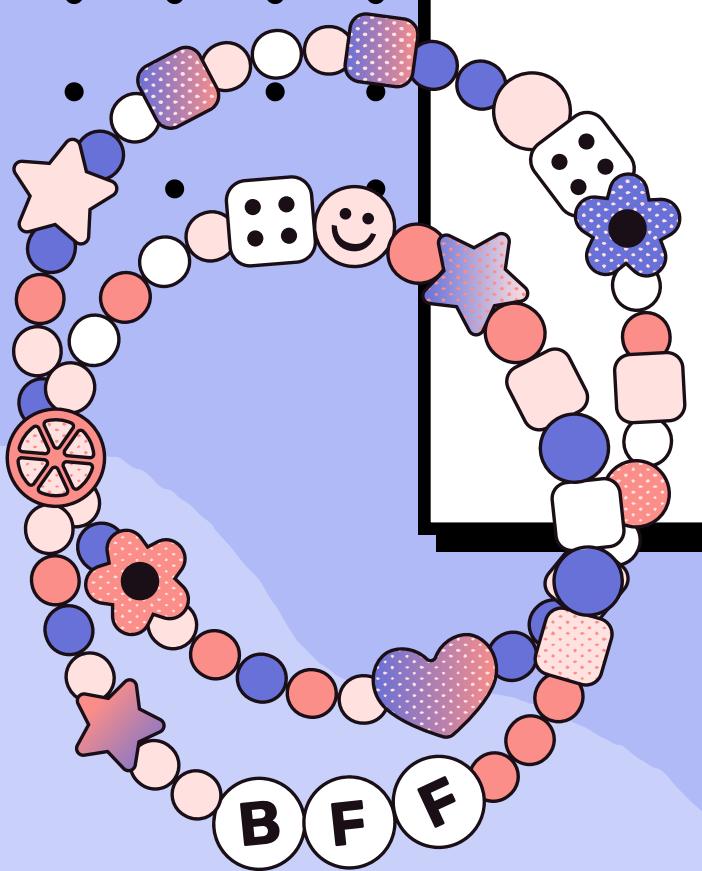
Need your phone to connect
Enter your seat number

Infrared (IR)

Light not seen by the human eye

PIXMOB

I have nothing to do with
them, I am just reverse
engineering their products :P



Reputation **Stadium** **Tour**

2018



Lady Gaga Chromatica

Ball Tour

2022

Lady Gaga Mayhem Ball

2025



[Watch video on YouTube](#)

Error 153

Video player configuration error

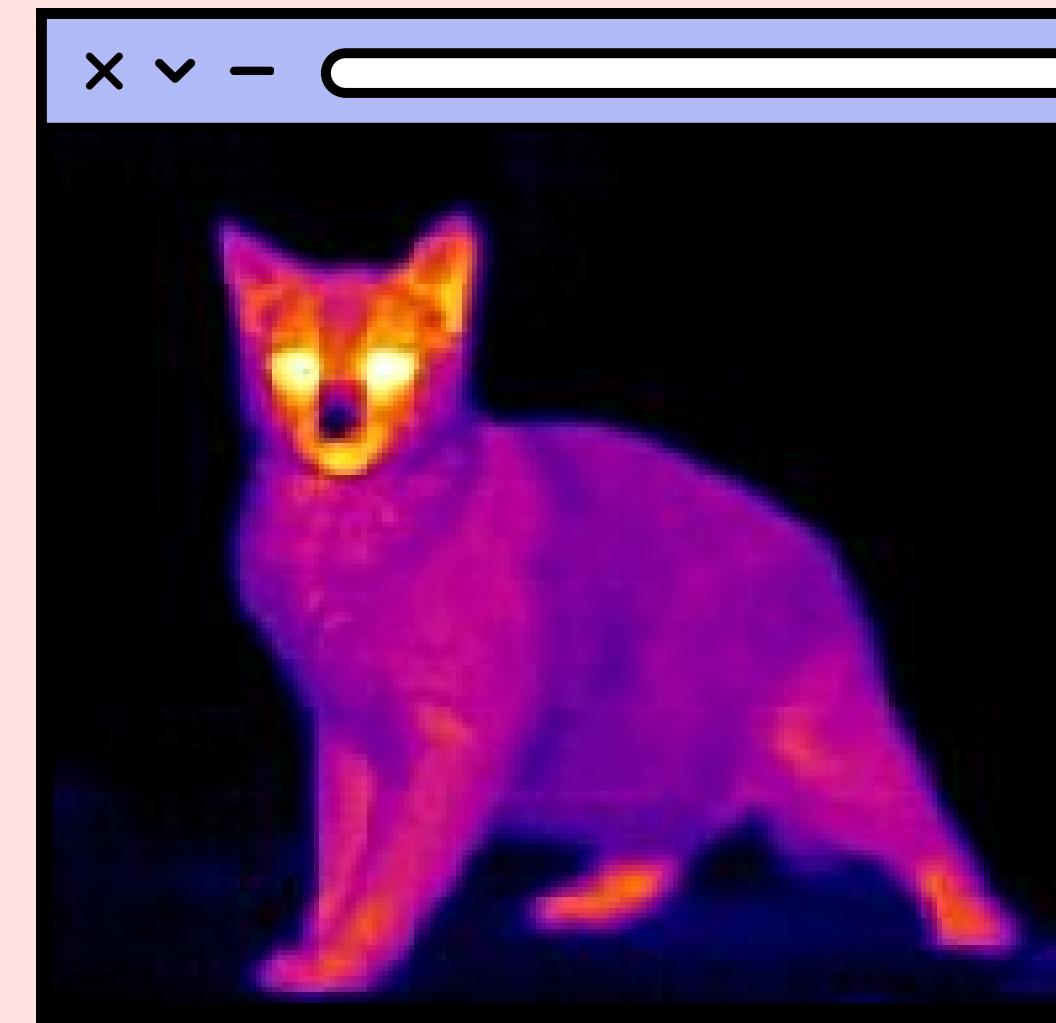
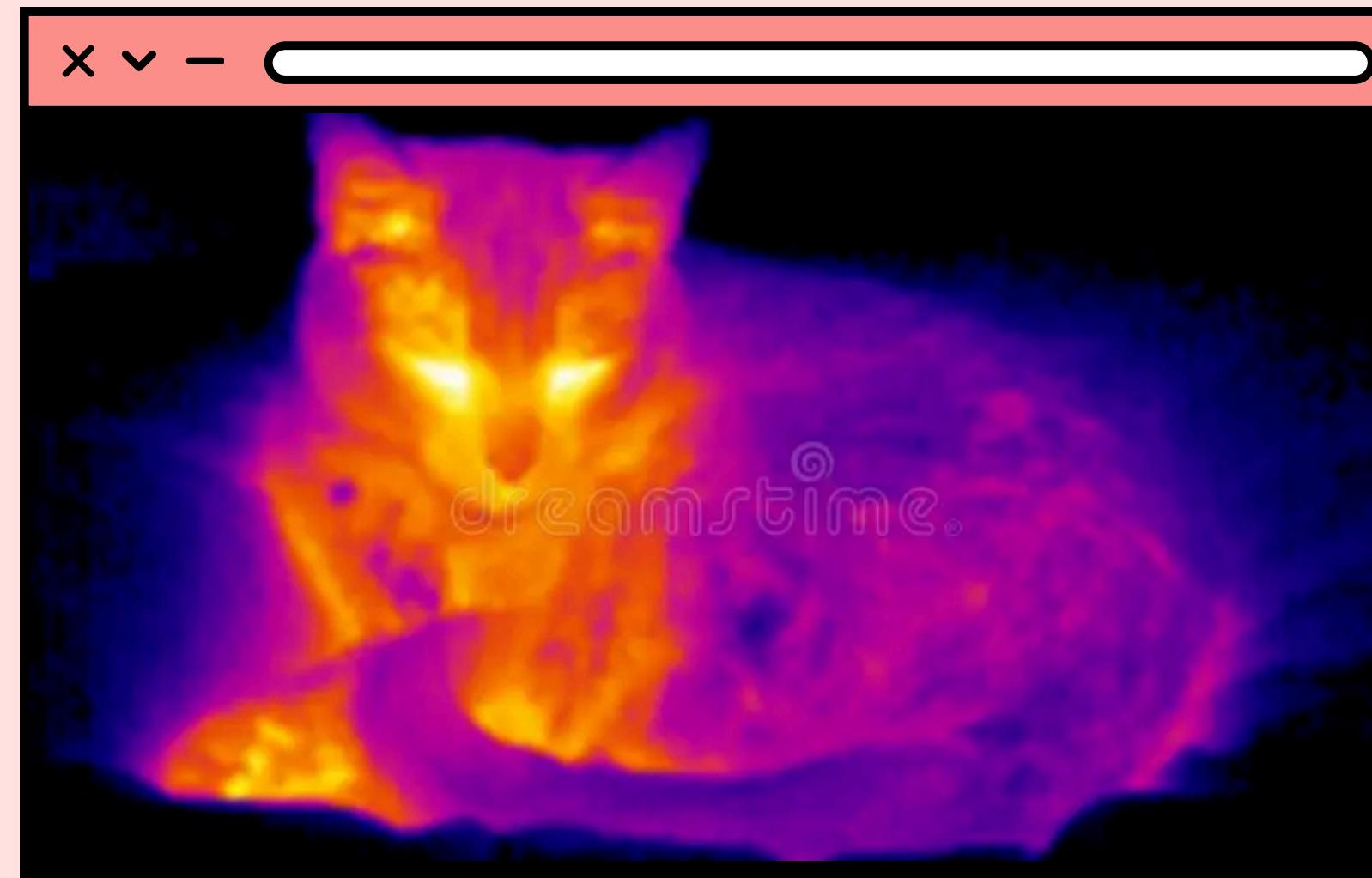
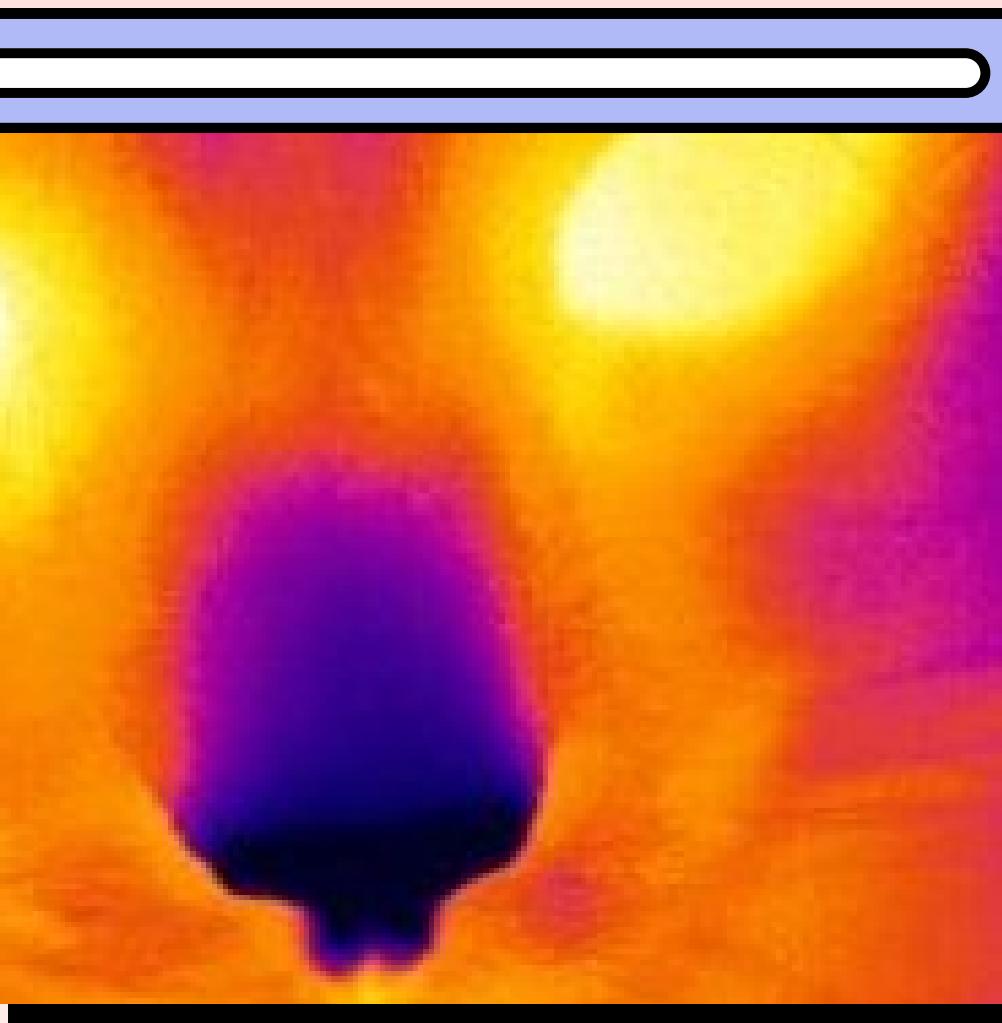


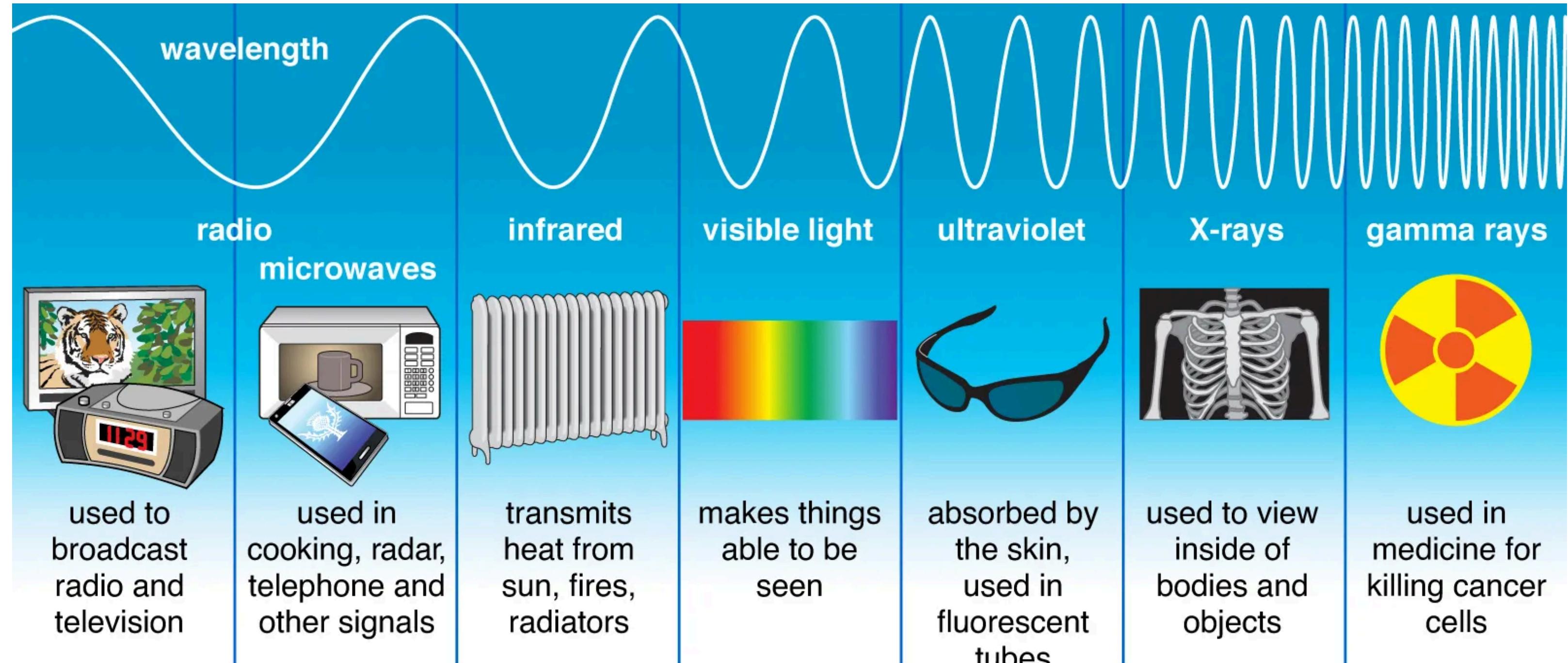
Goals

- 1 ~~Going over all the ways
to make crowds shine~~
- 2 Science behind Eras Tour
bracelets
- 3 How to make our own!
Clunky version :P
- 4 How to make it fill a
stadium
- 5 Other fan projects for
inspiration

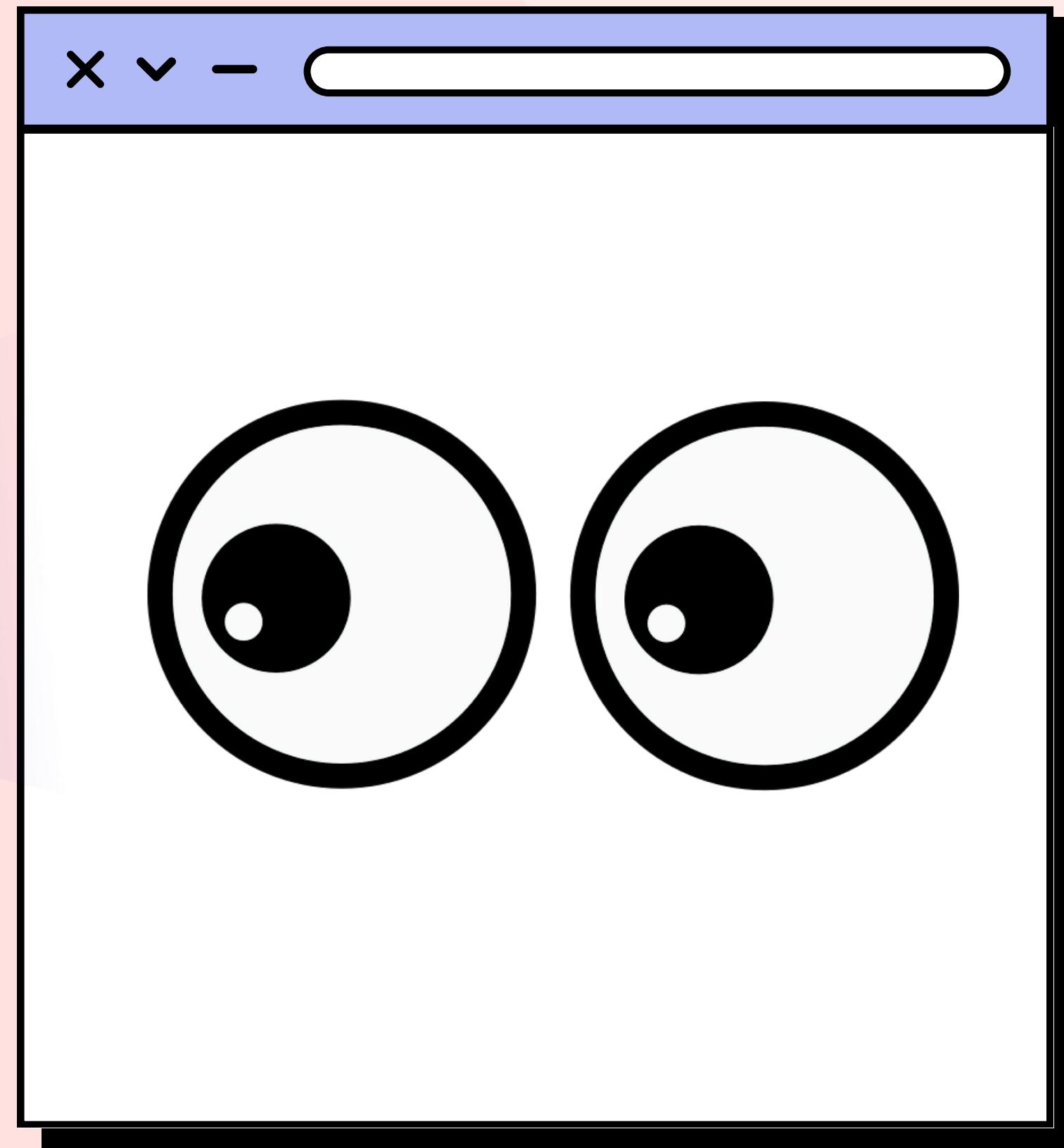
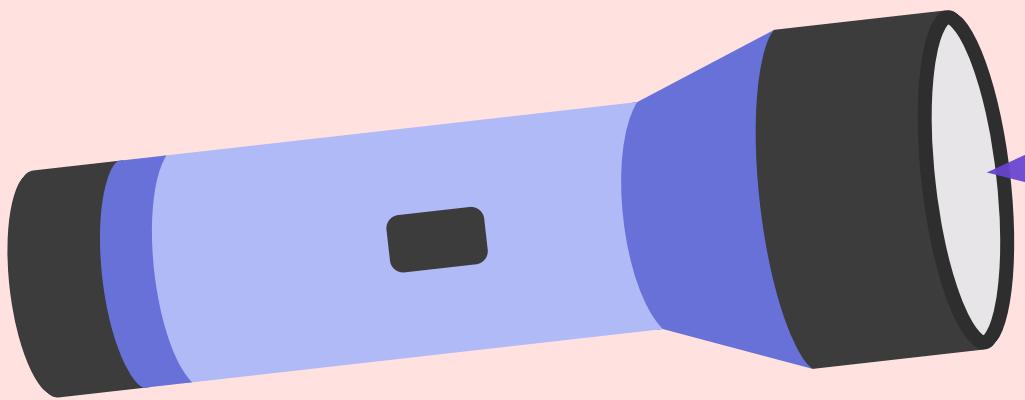
Wait isn't that the heat thing?

Hot things emit Infrared light

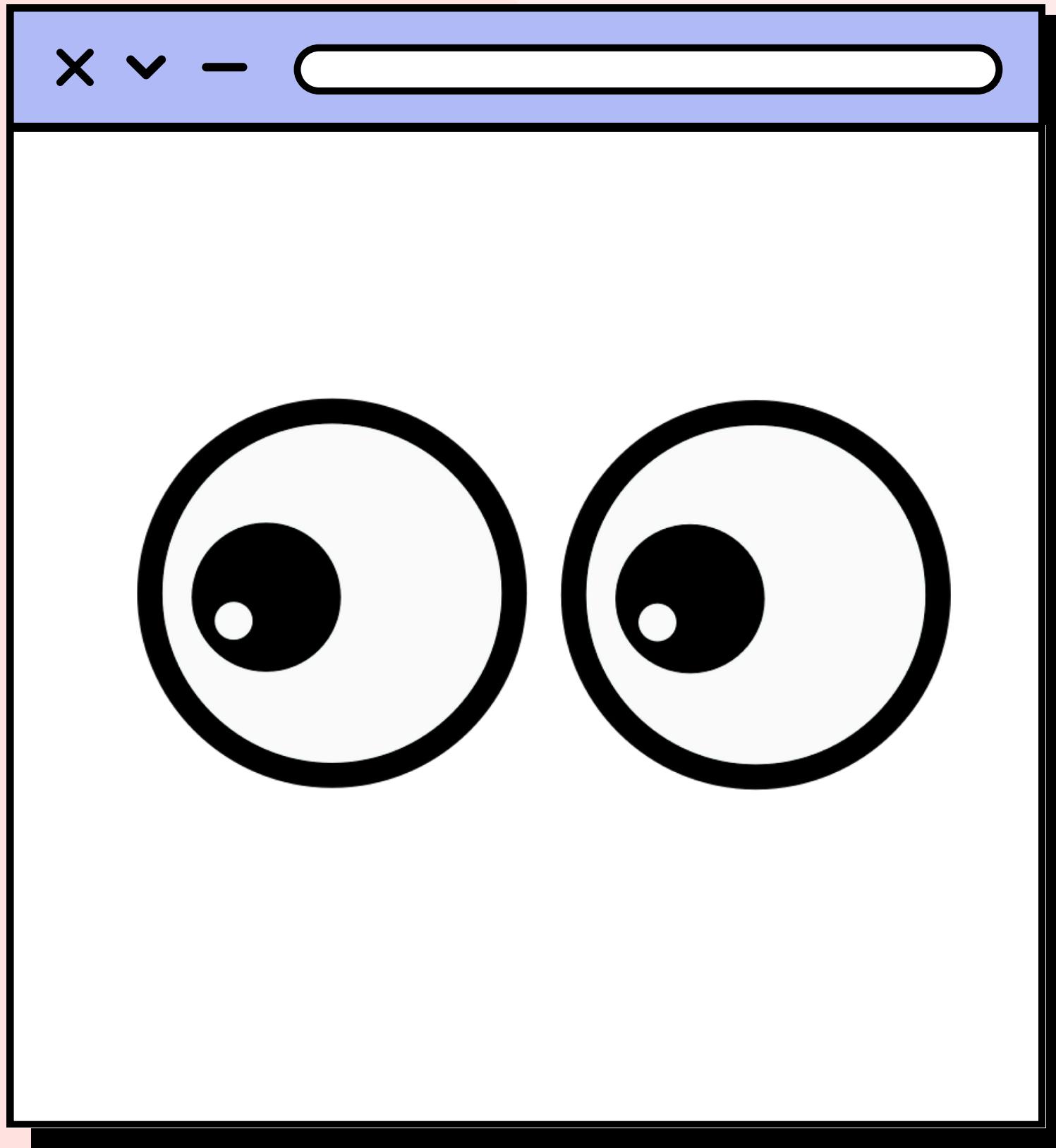
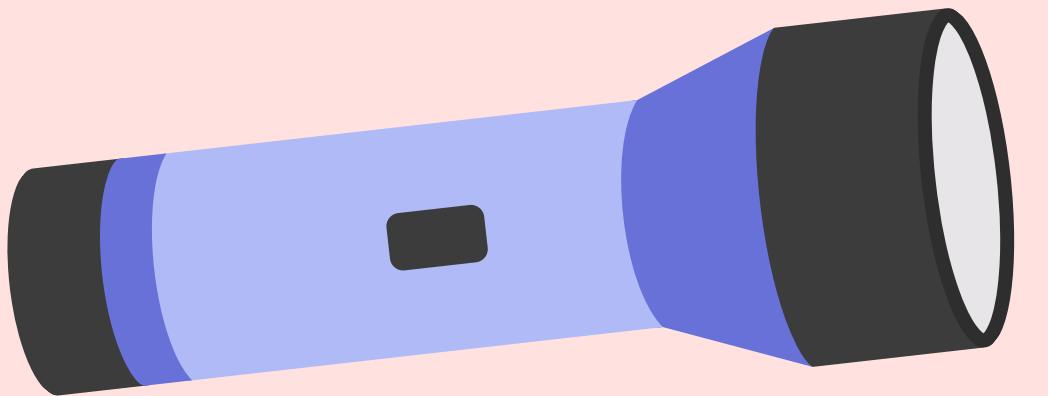


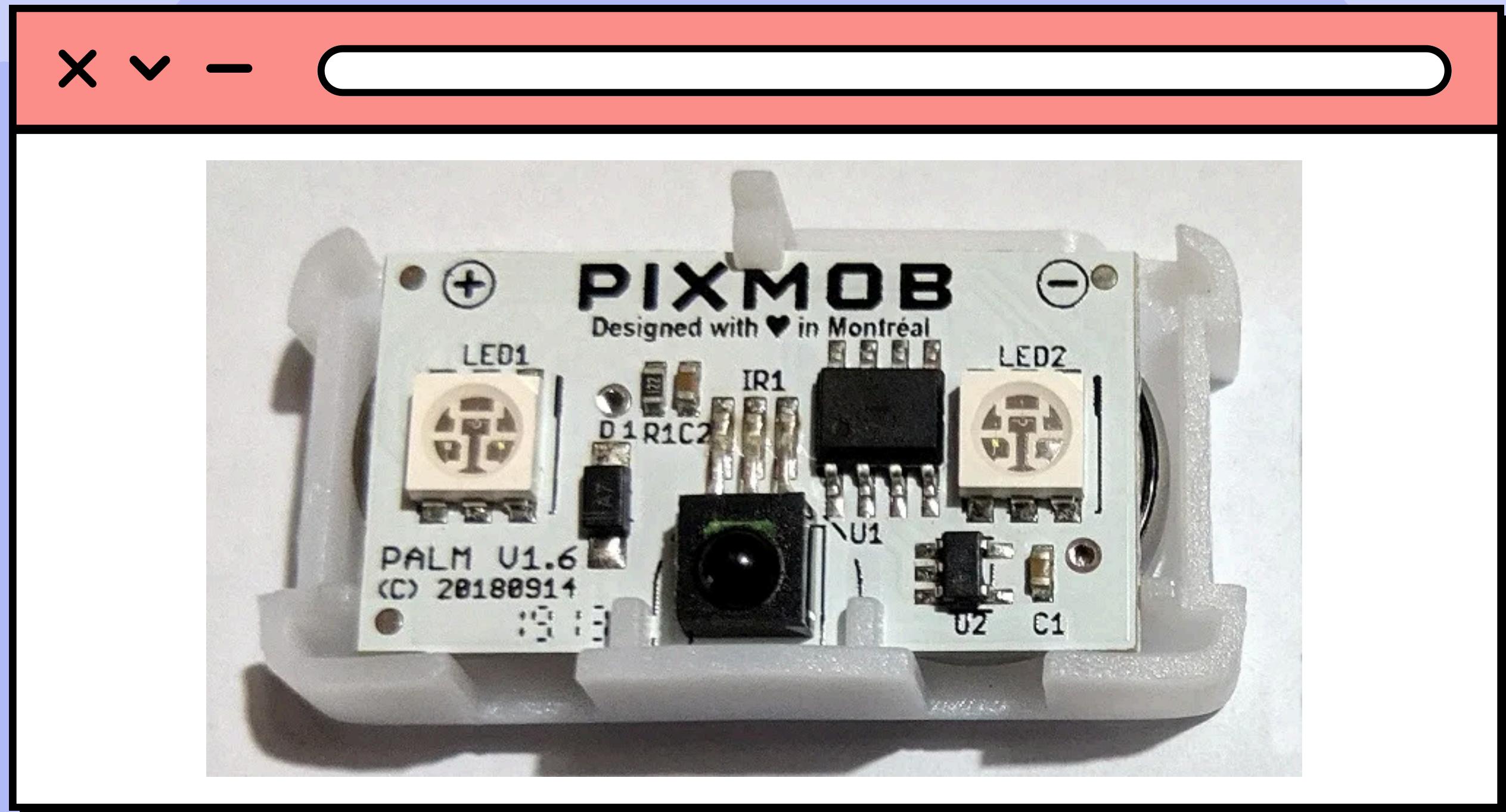


How does it get information?



How does it get information?

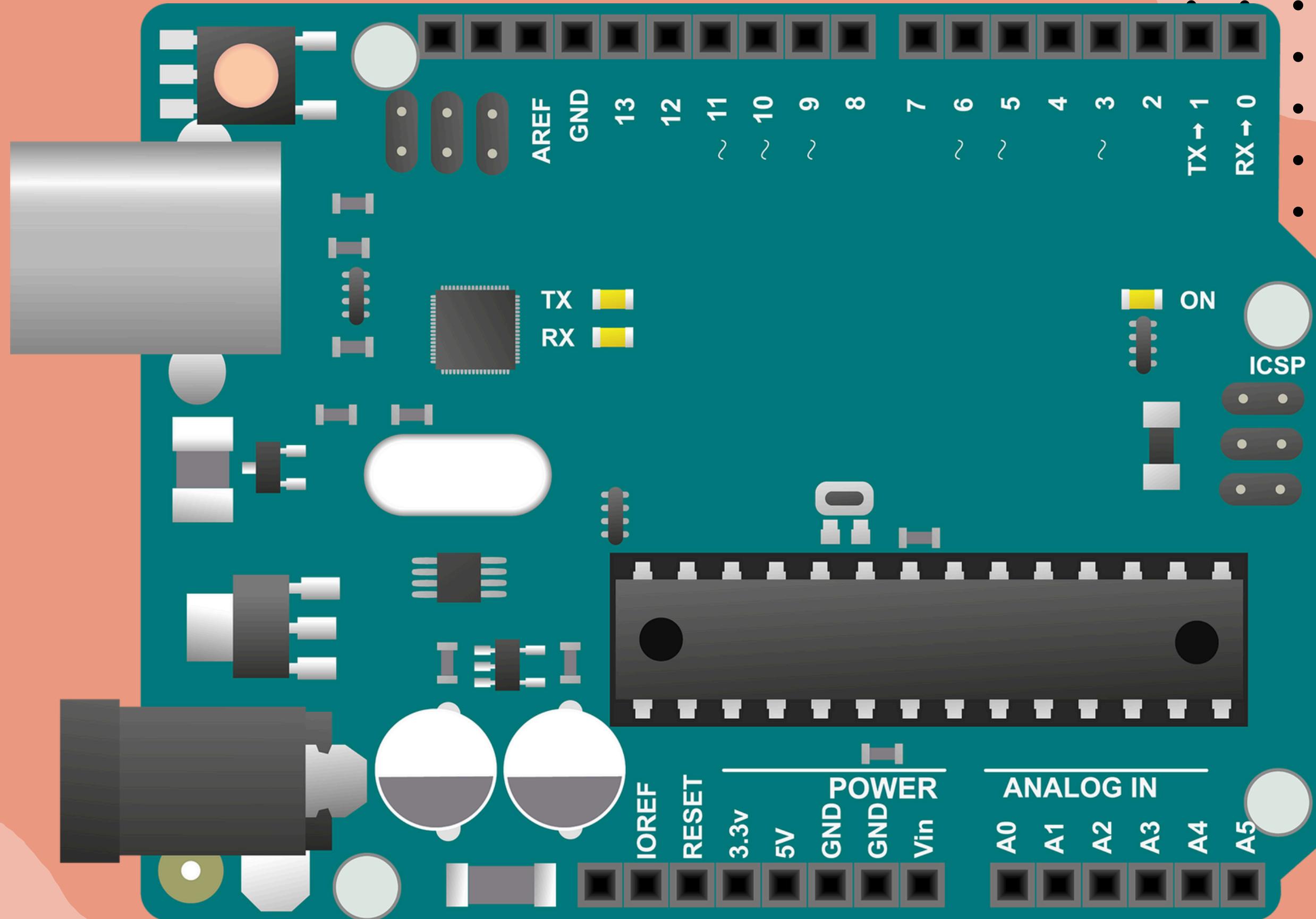


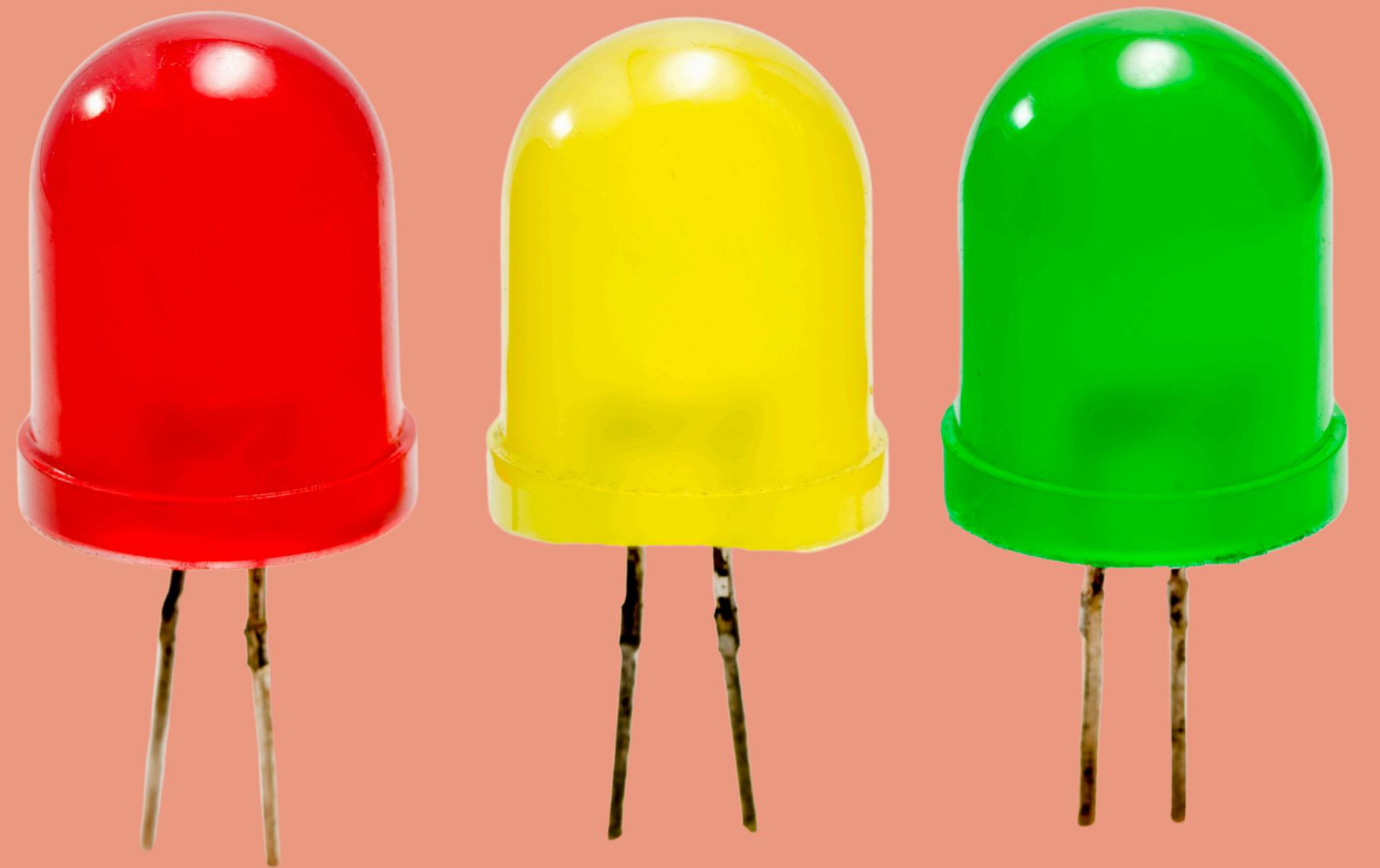


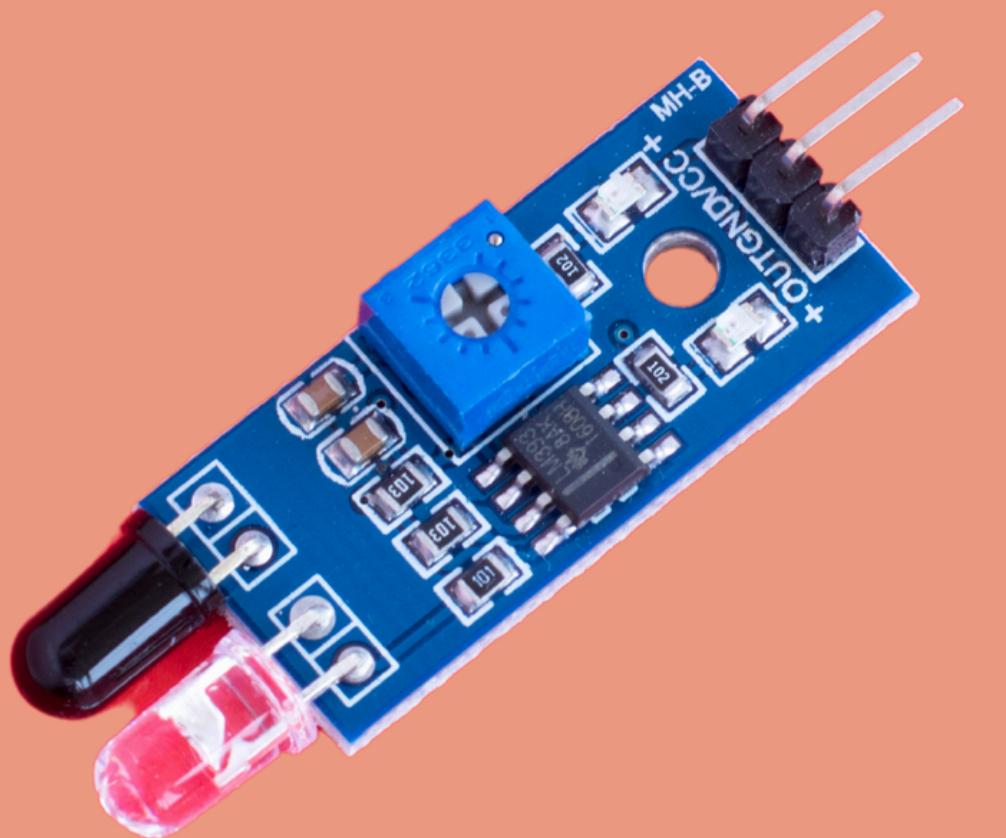
LED - Light Emitting Diode
IR - Infrared receiver
U1 - processor chip
U2 - another chip??
R - resistor
C - capacitor (filter/store voltage)
D - Diode (voltage regulator)

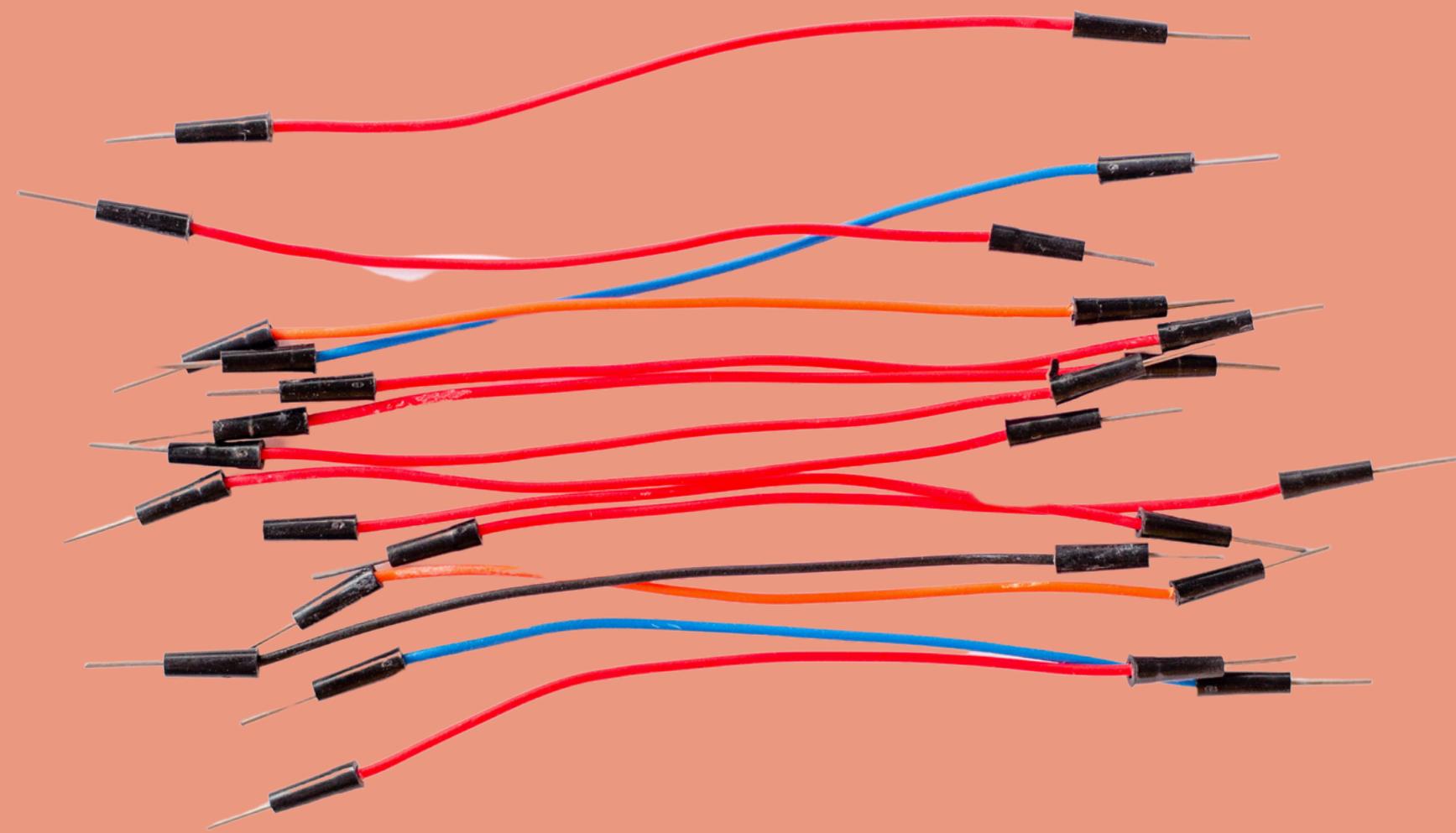
Goals

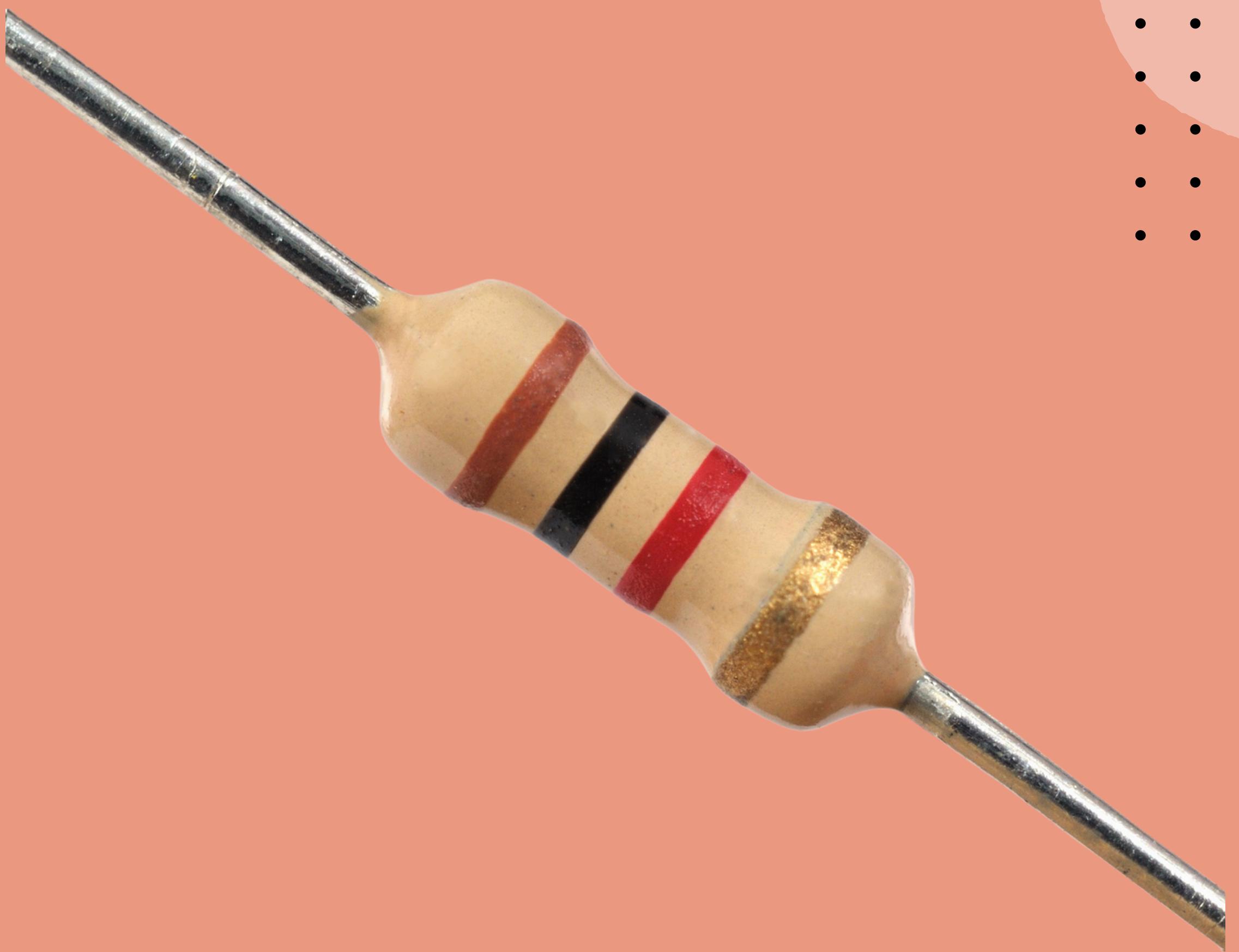
- 1 ~~Going over all the ways to make crowds shine~~
- 2 ~~Science behind Eras Tour bracelets~~
- 3 How to make our own!
Clunky version :P
- 4 How to make it fill a stadium
- 5 Other fan projects for inspiration

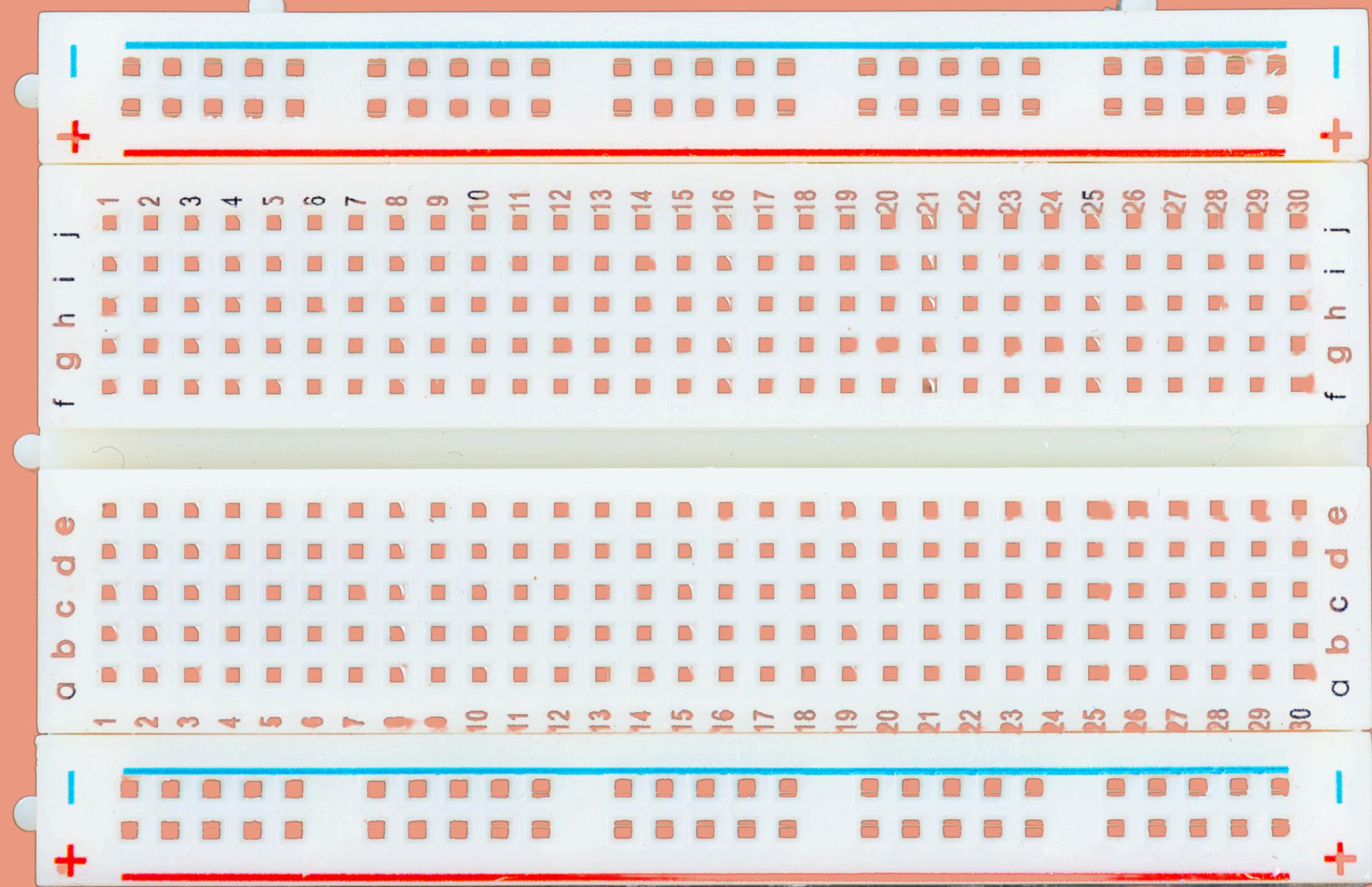


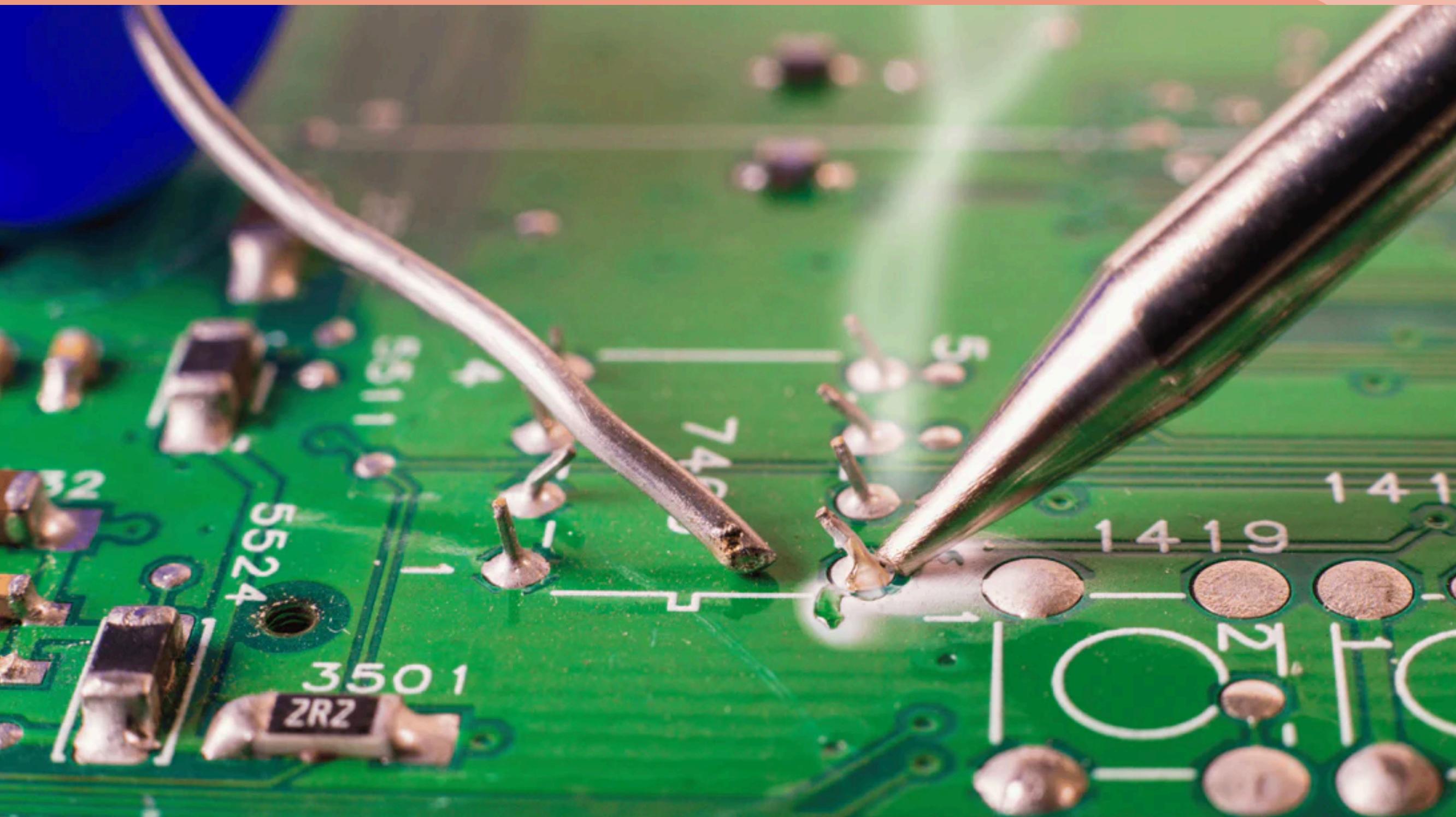


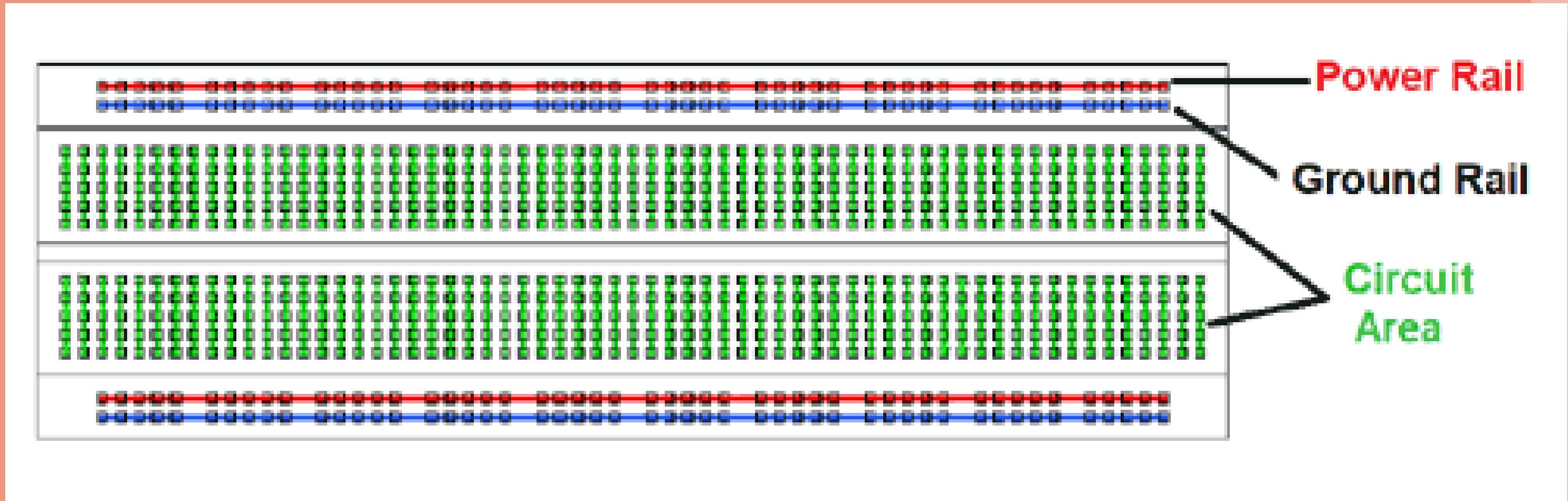


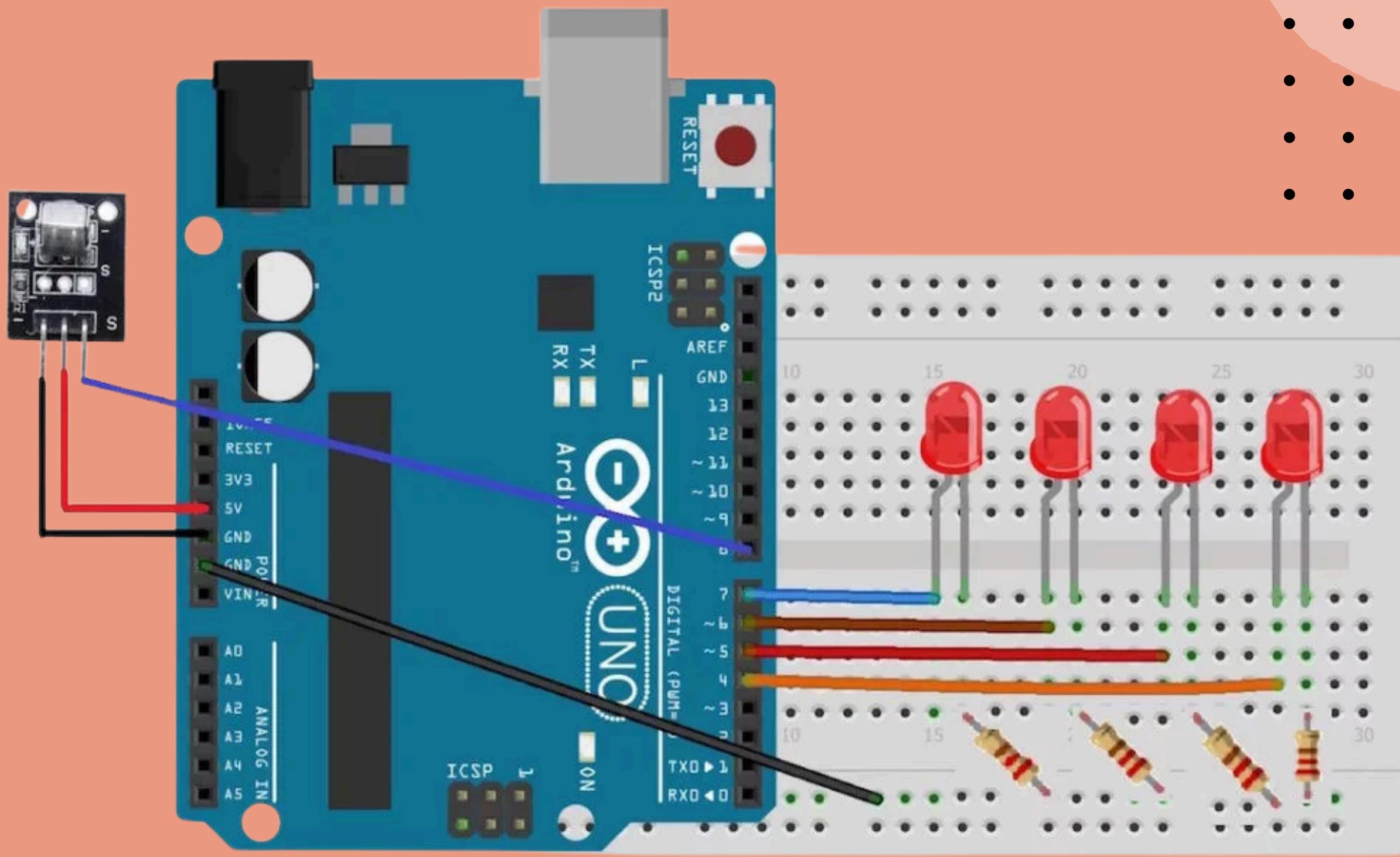




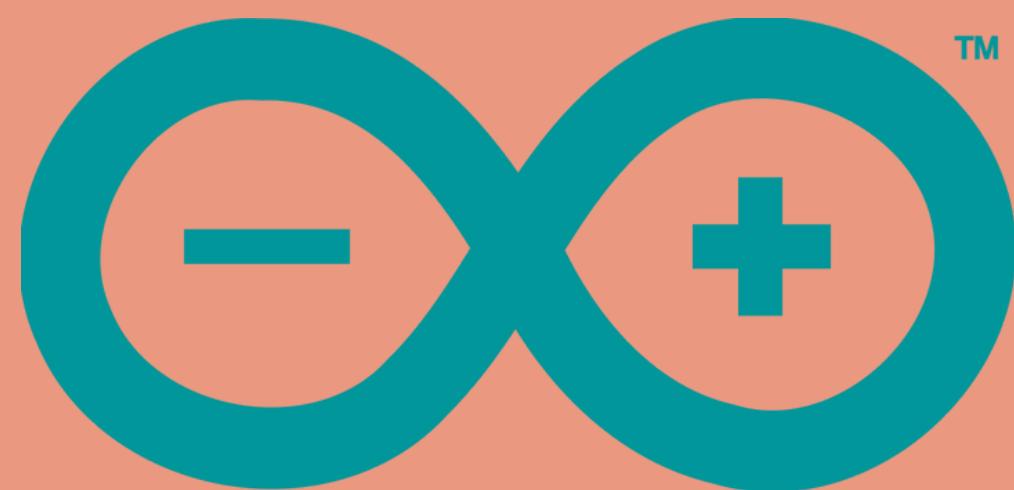








Great places to
order parts from:



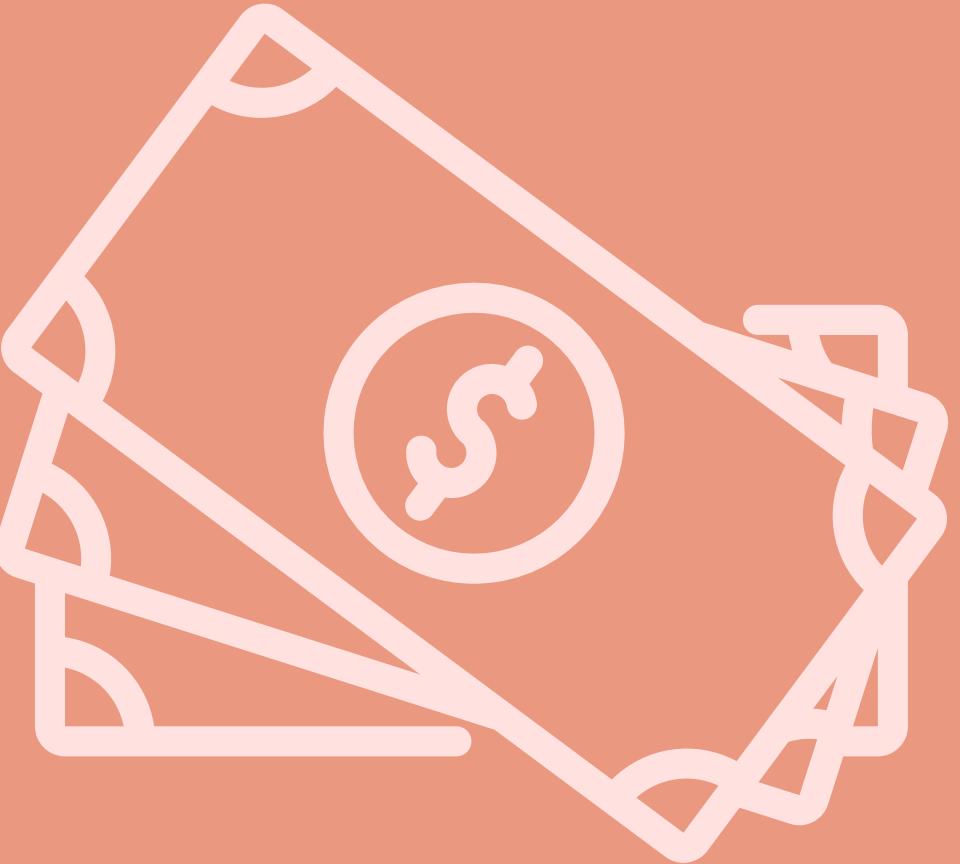
ARDUINO

DigiKey

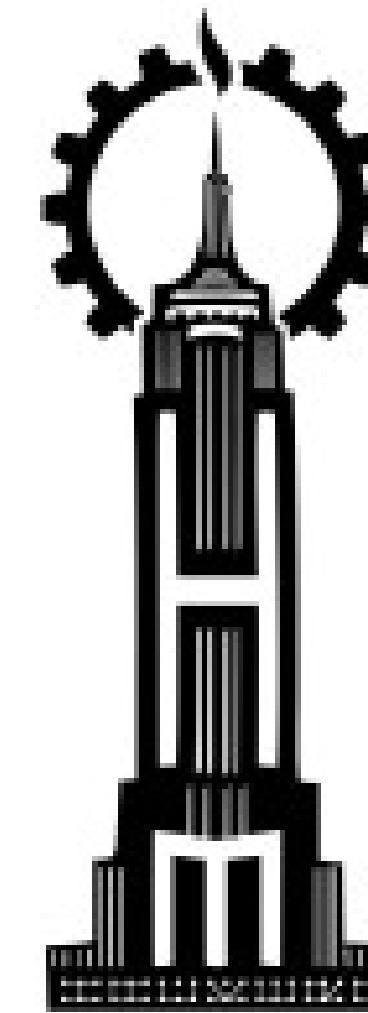


adafruit

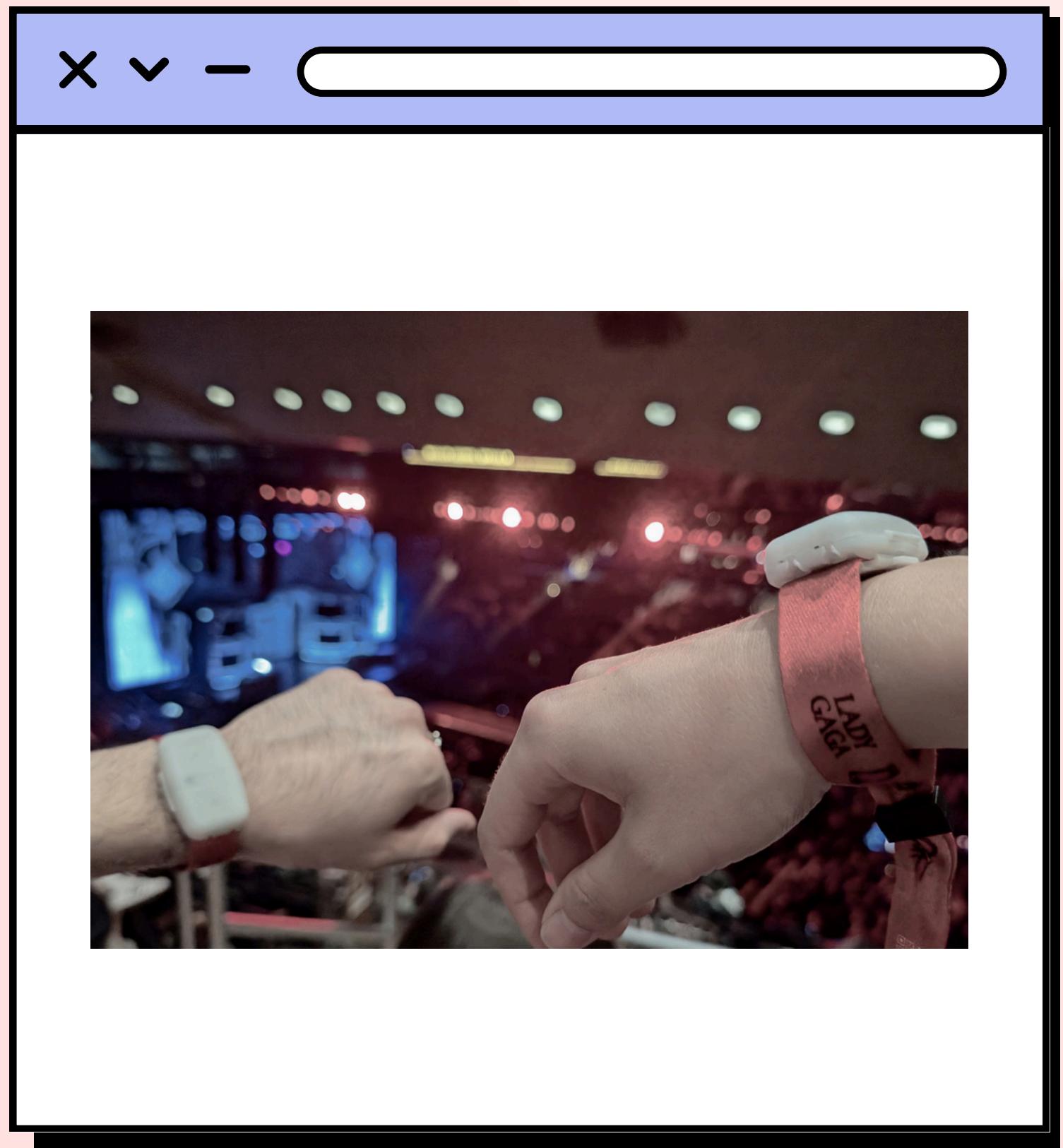
**Sensors and
parts should be
less than a dollar**



Makerspaces

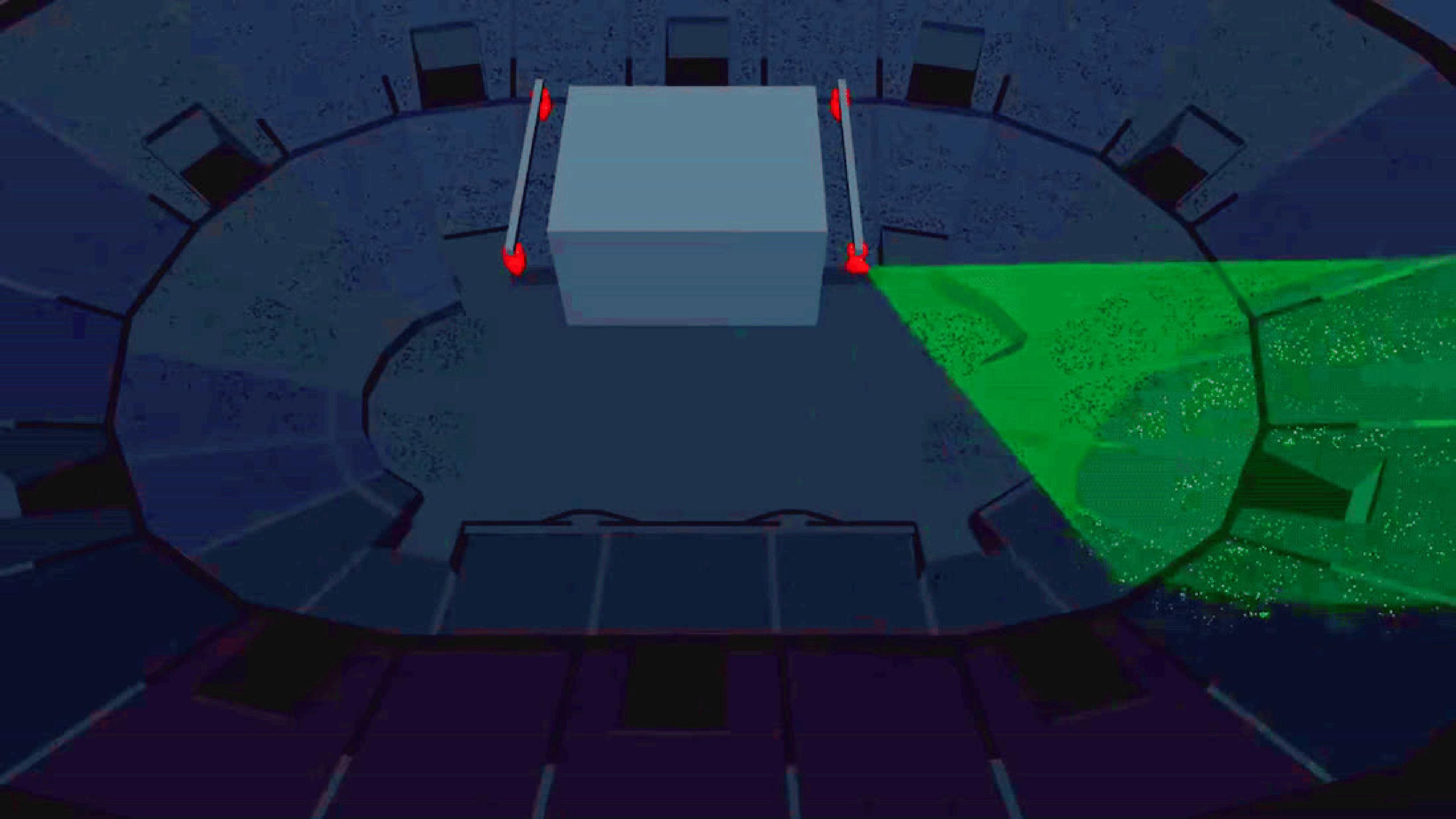


**Does pointing a
remote at my
bracelet do
anything?**

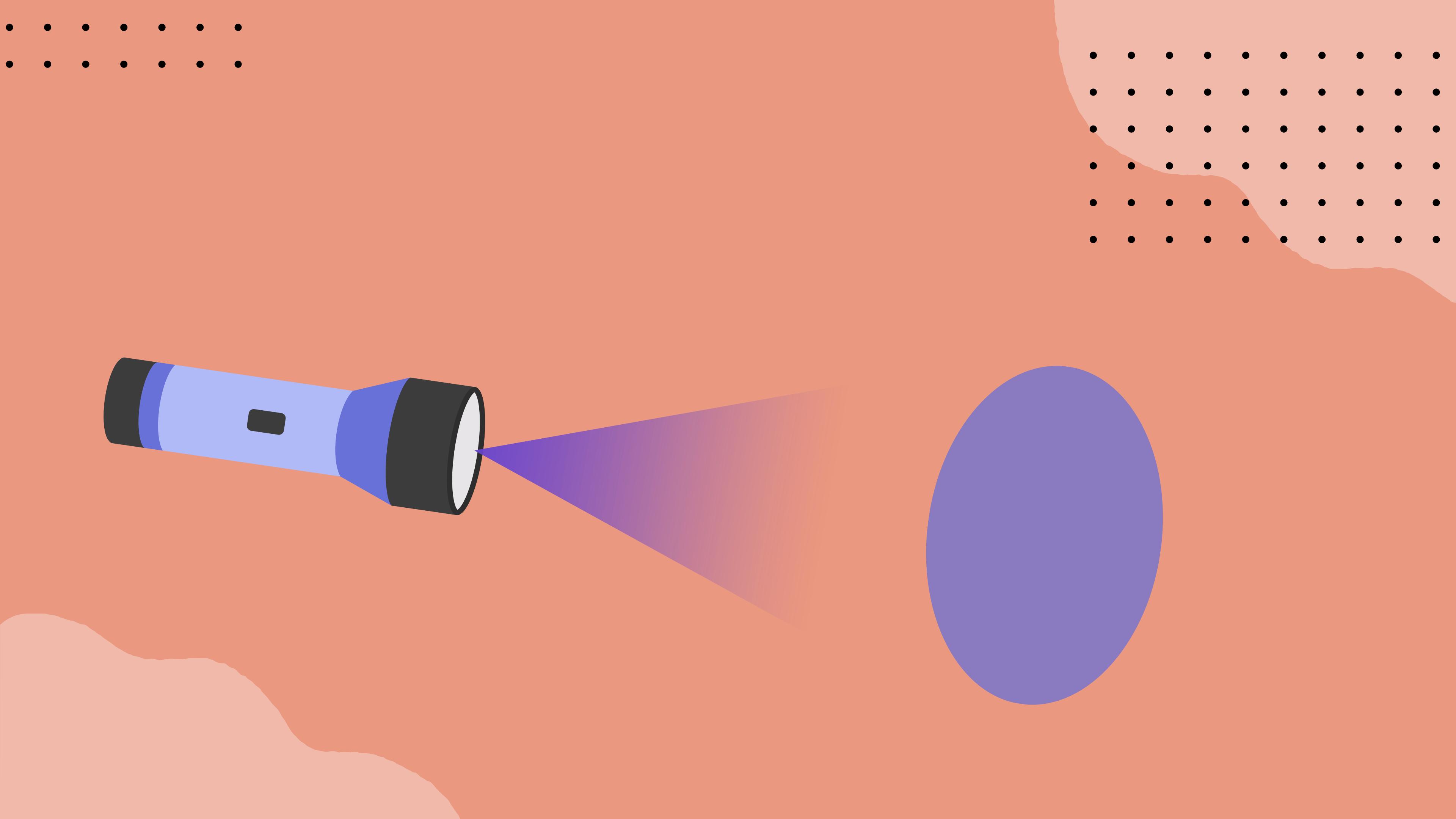


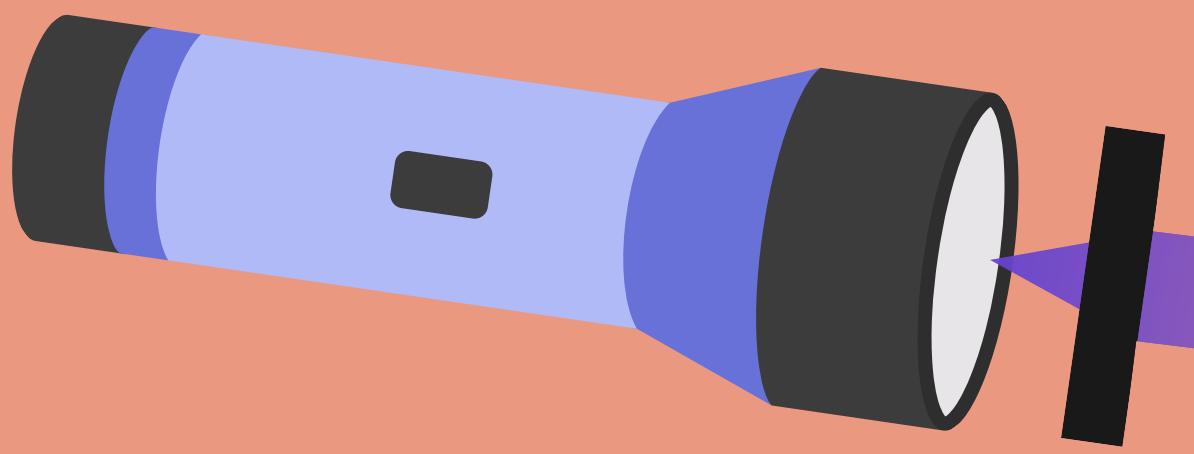
Goals

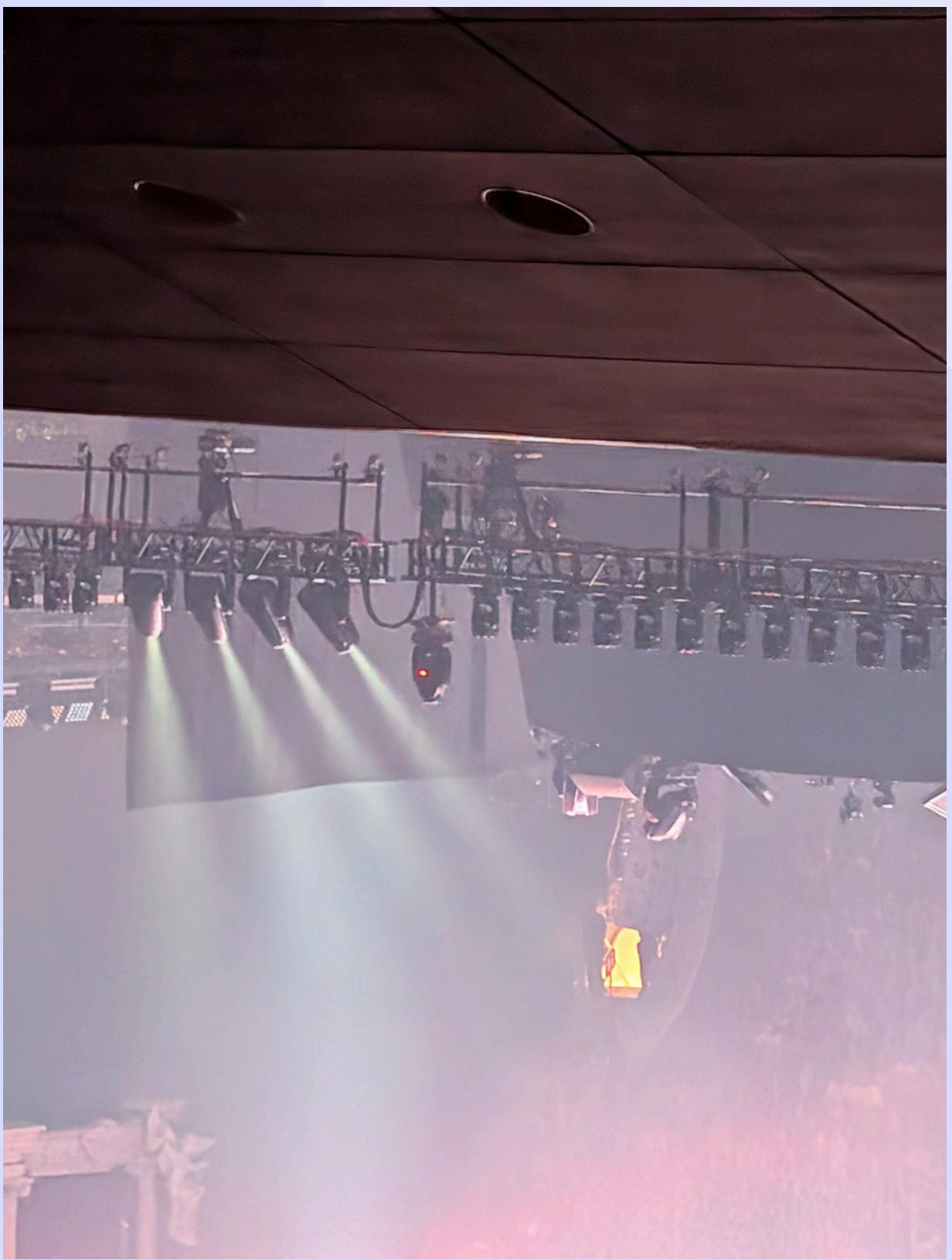
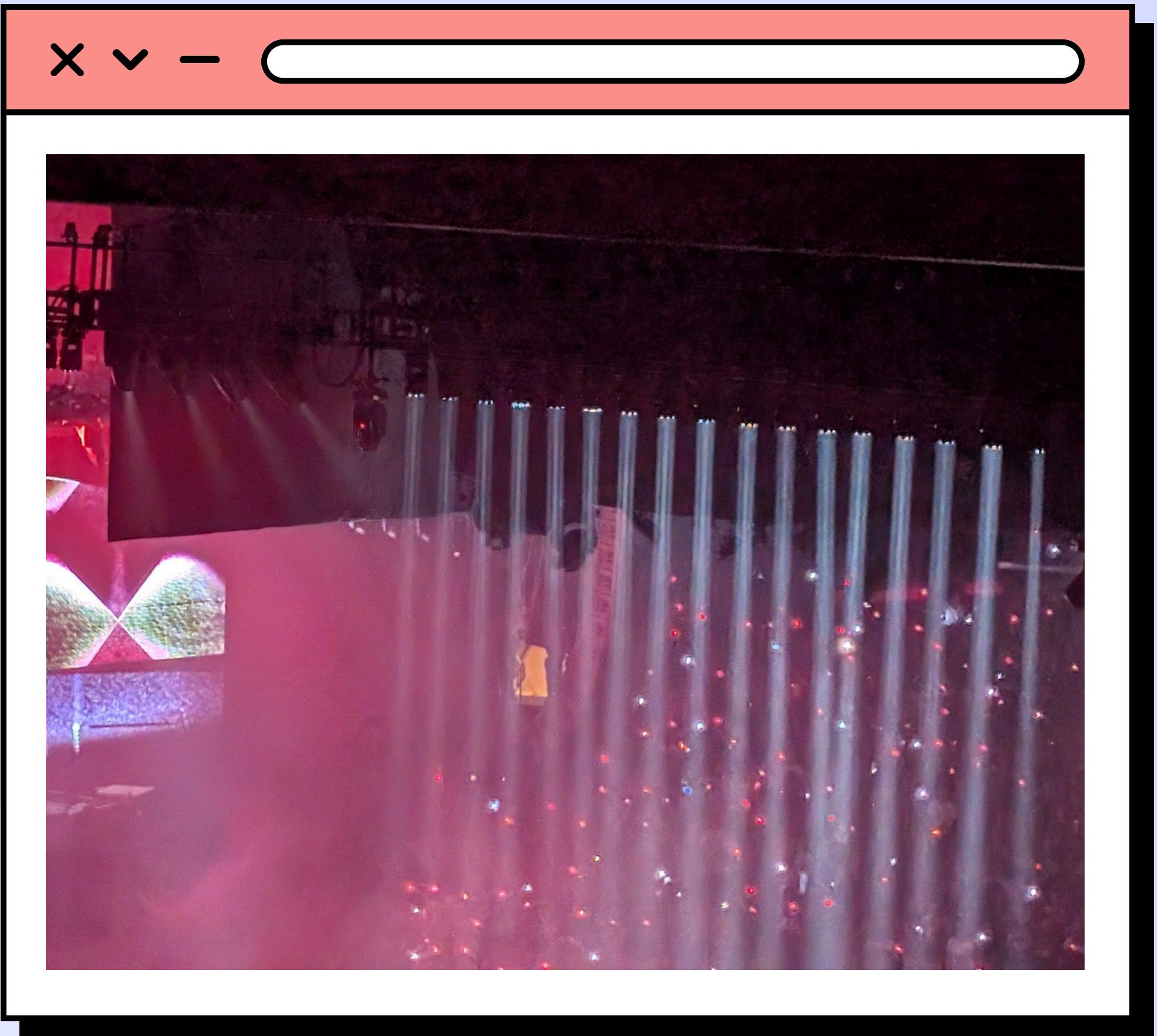
- 1 ~~Going over all the ways to make crowds shine~~
- 2 ~~Science behind Eras Tour bracelets~~
- 3 ~~How to make our own! Clunky version :P~~
- 4 ~~How to make it fill a stadium~~
- 5 Other fan projects for inspiration







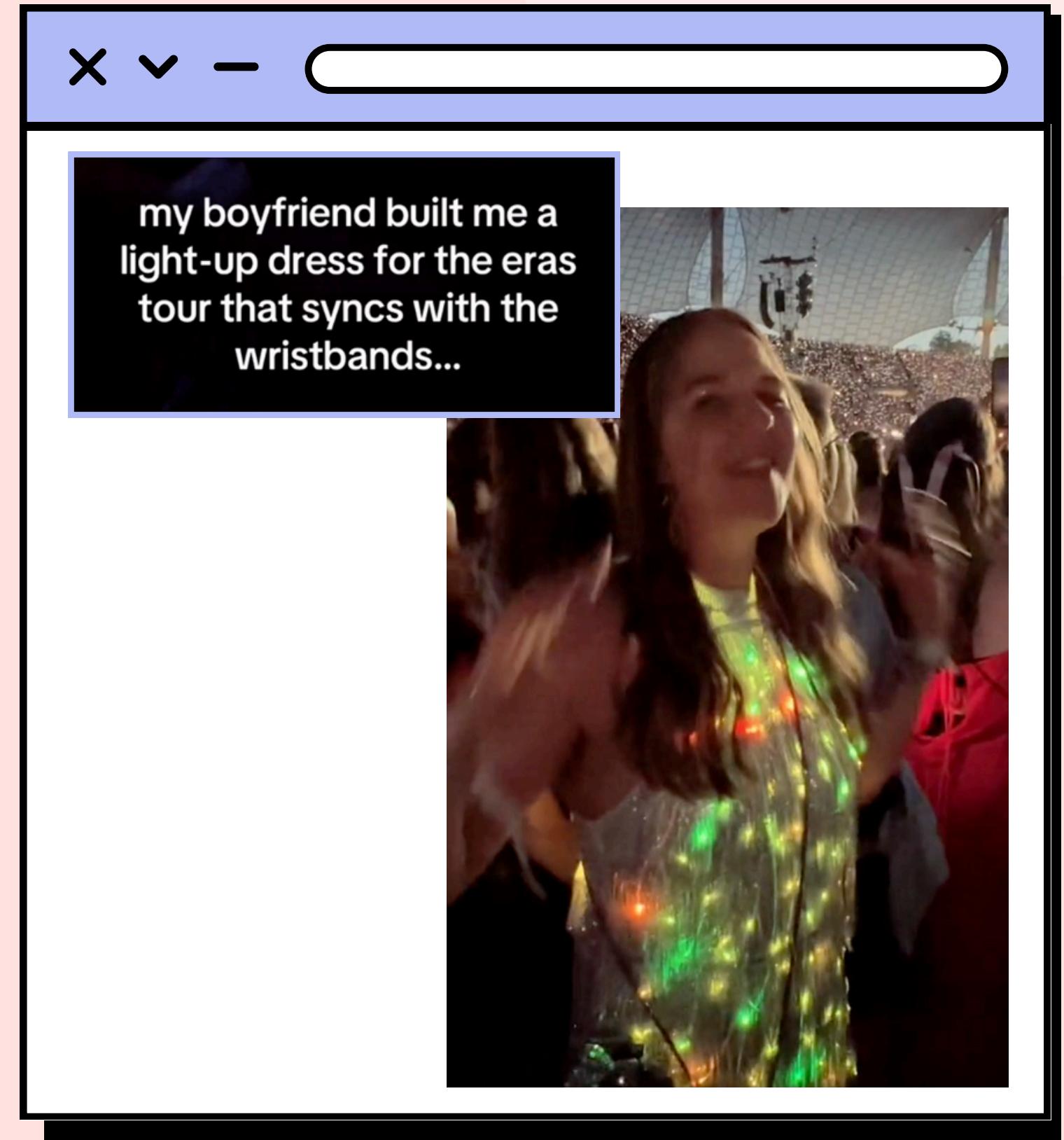




Goals

- 1 ~~Going over all the ways to make crowds shine~~
- 2 ~~Science behind Eras Tour bracelets~~
- 3 ~~How to make our own! Clunky version :P~~
- 4 ~~How to make it fill a stadium~~
- 5 Other fan projects for inspiration

A dress that
intercepts the
infrared and
mimics the
signal??

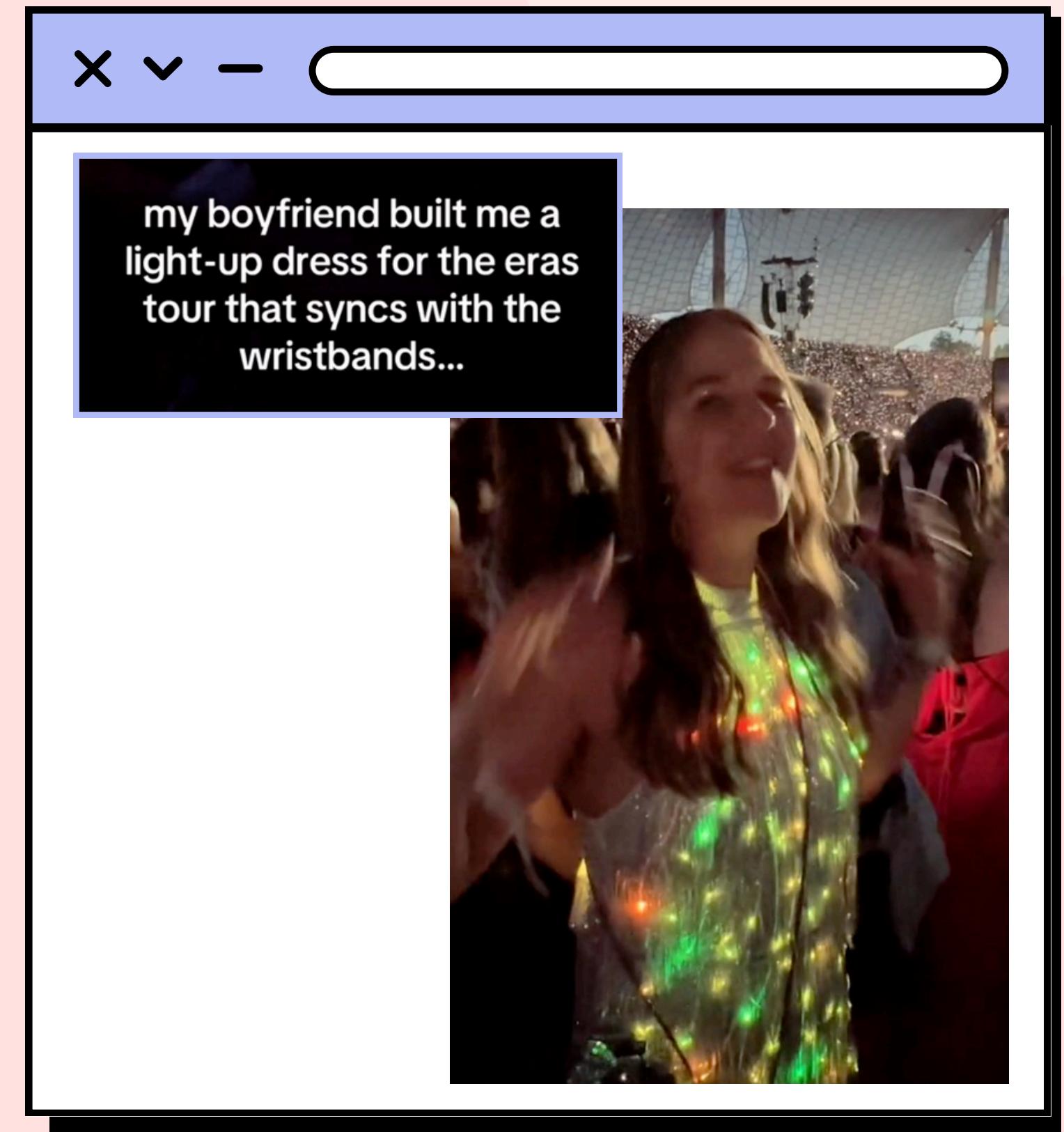


No :P

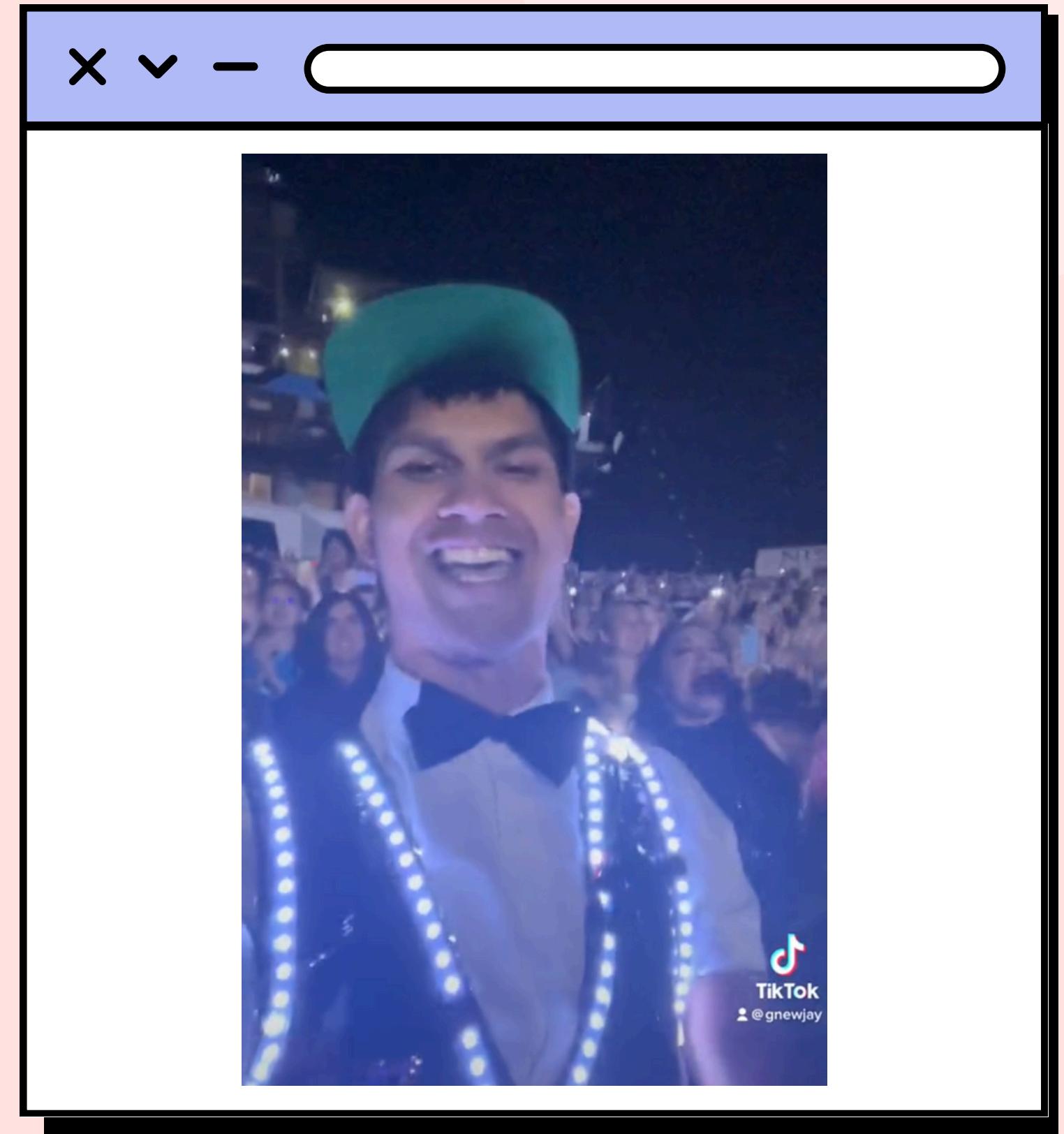
Again, much simpler

**A light sensor on the
bracelet**

**[https://www.tiktok.com/t/
ZP8LLCPNL/](https://www.tiktok.com/t/ZP8LLCPNL/)**



A vest that
intercepts the
infrared and
mimics the
signal??

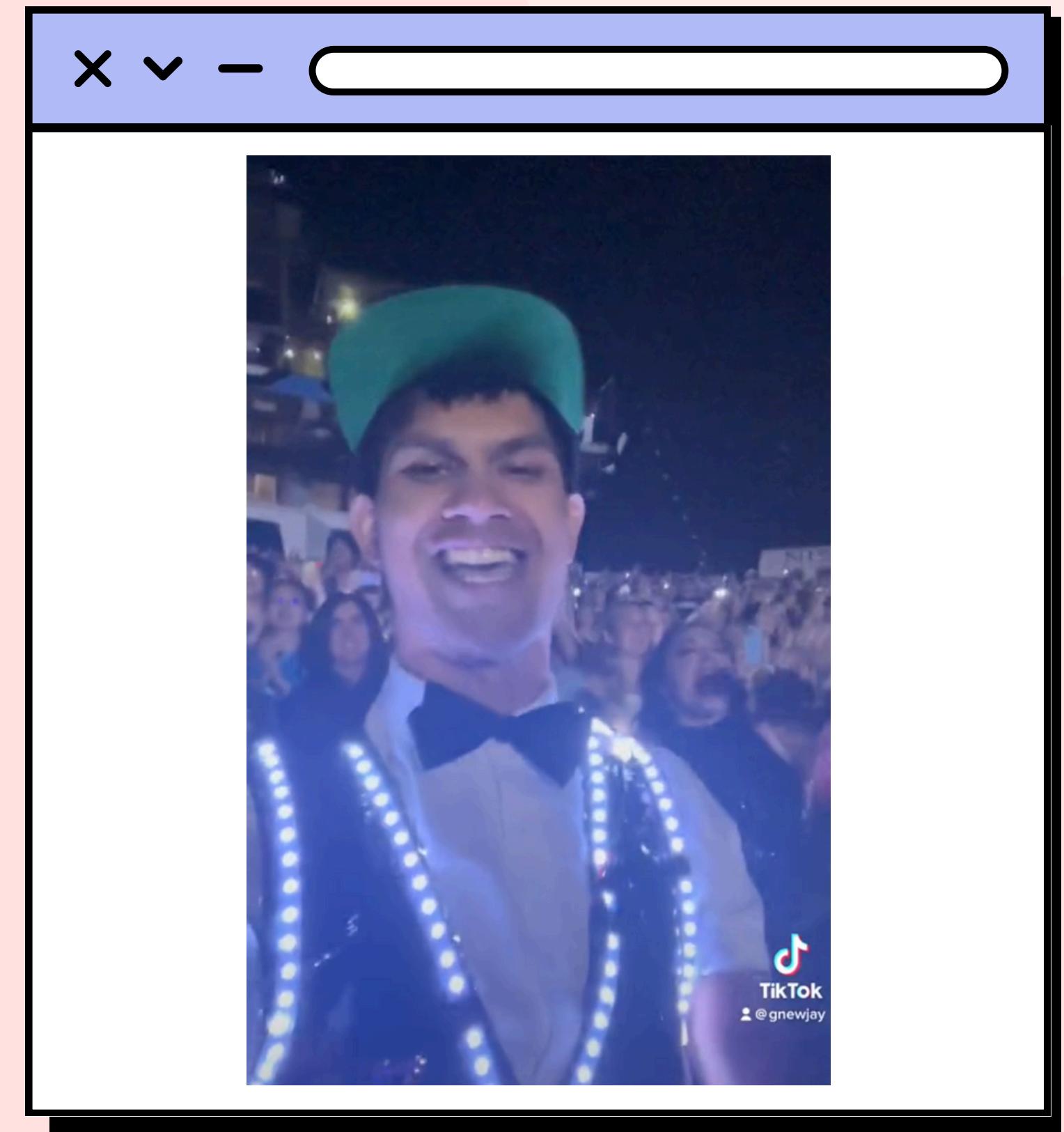


Actually yes

Pulled off a “Man in the middle” attack

Super impressive

[https://www.tiktok.com/t/
ZP8LLTwGh/](https://www.tiktok.com/t/ZP8LLTwGh/)



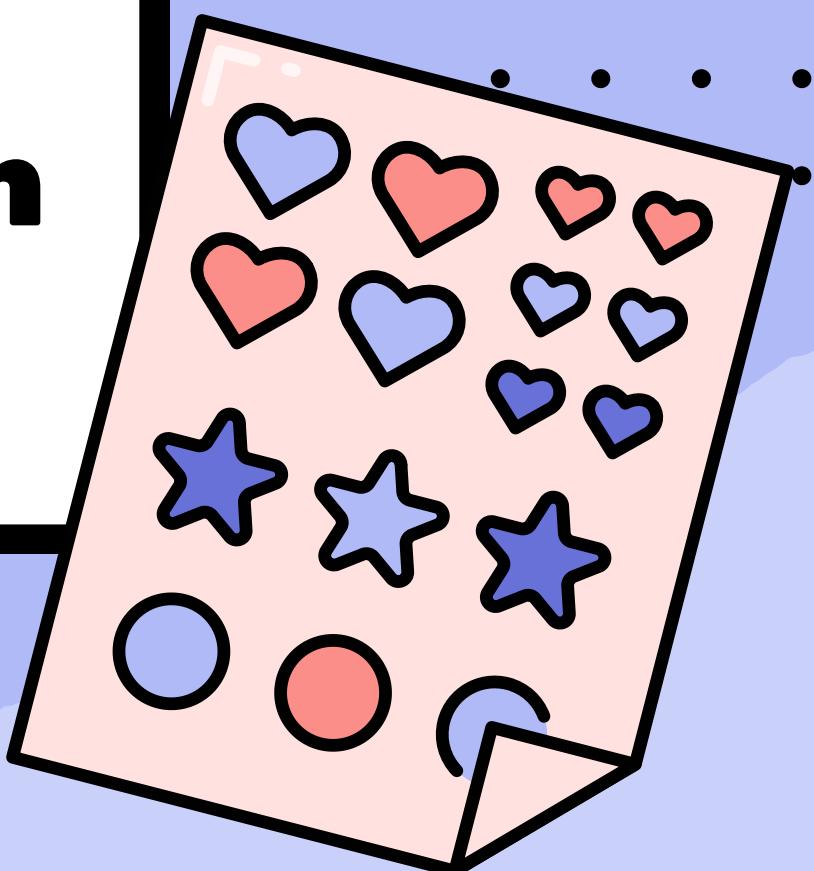
Thank you!

I have Taylor Swift stickers!

If you have kidlets I am doing
a robotics session tomorrow!



LinkedIn



Credits

- <https://www.instructables.com/Using-Infrared-Sensor-With-Arduino/>
- https://www.reddit.com/r/explainlikeimfive/comments/owdx90/eli5_how_do_remotes_actually_work/
- <https://wired.me/technology/the-tech-behind-taylor-swift-concert-wristbands/>
- <https://www.youtube.com/watch?v=GCsmZA08oD8>
- <https://www.youtube.com/watch?v=JTPKuFcrlCA>
- <https://www.youtube.com/watch?v=a-nlcLHUVT4>
- <https://gifrun.com/>
- <https://www.ardu-badge.com/IRremote>
- <https://maker.pro/arduino/tutorial/how-to-control-leds-with-arduino-ir-sensor-and-remote>
- <https://learn.adafruit.com/adafruit-infrared-ir-remote-receiver/arduino>
- <https://github.com/Arduino-IRremote/Arduino-IRremote>

