SMART ROOM CONTROLLER FOR THE HEARING IMPAIRED

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IOT BOOTCAMP MIDTERM PROJECT

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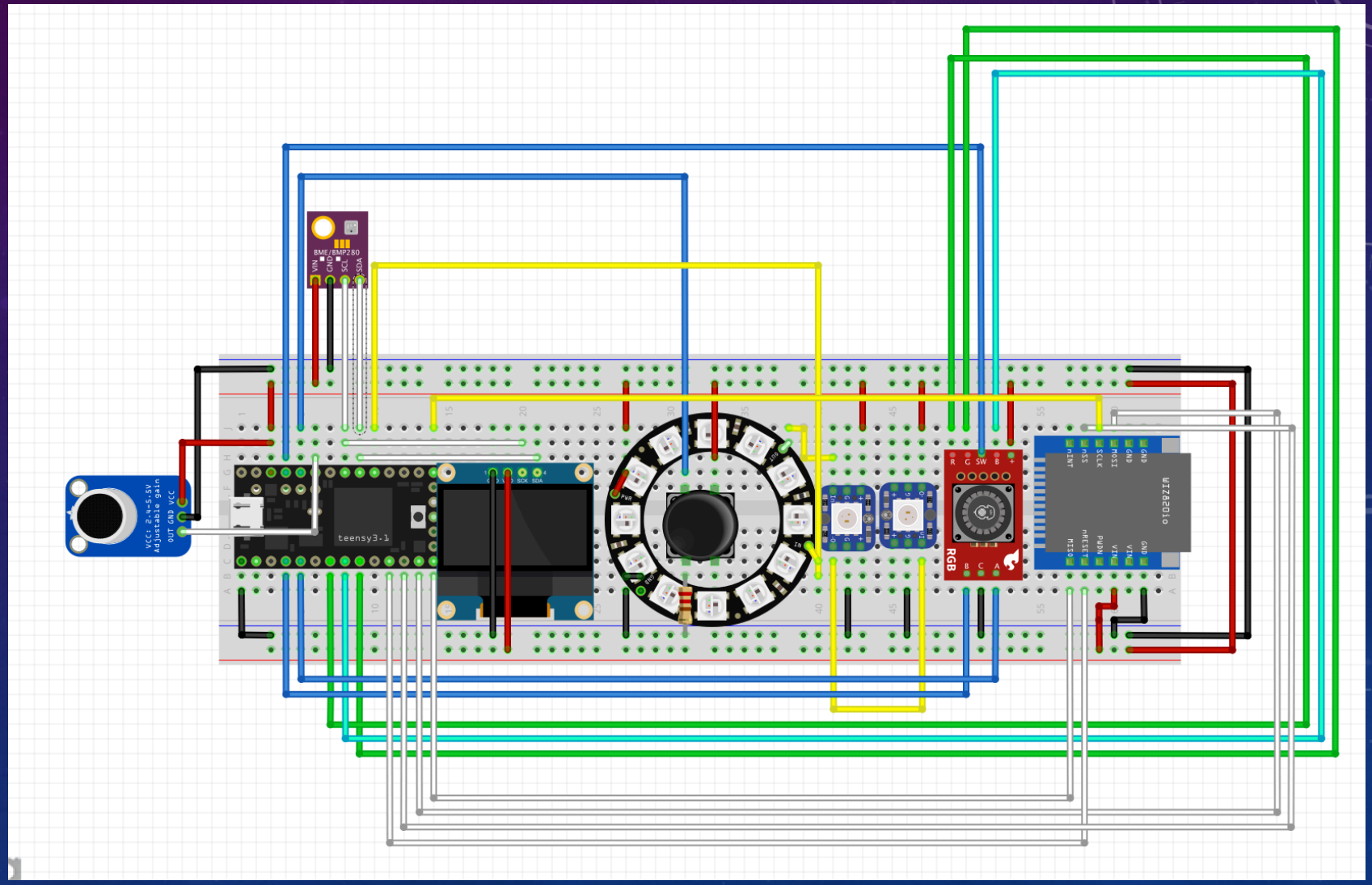
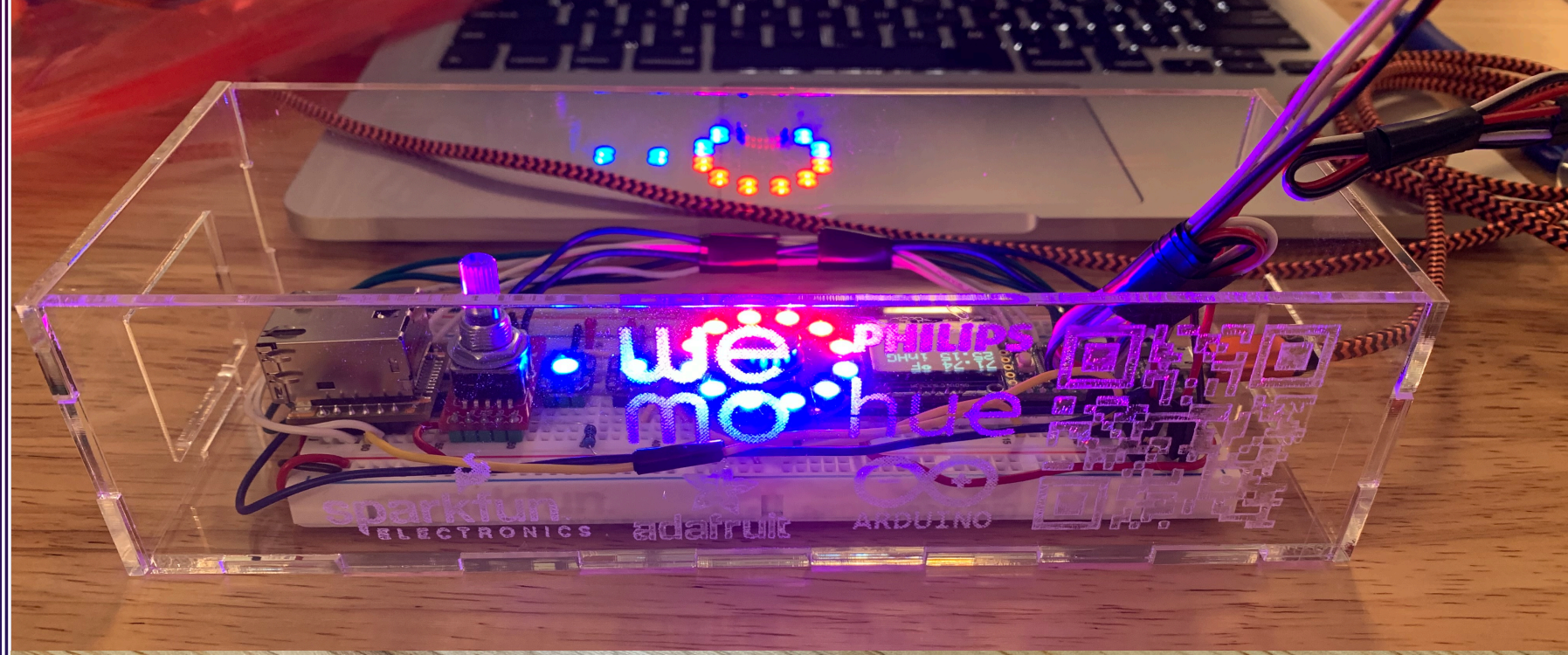
COMPONENTS USED

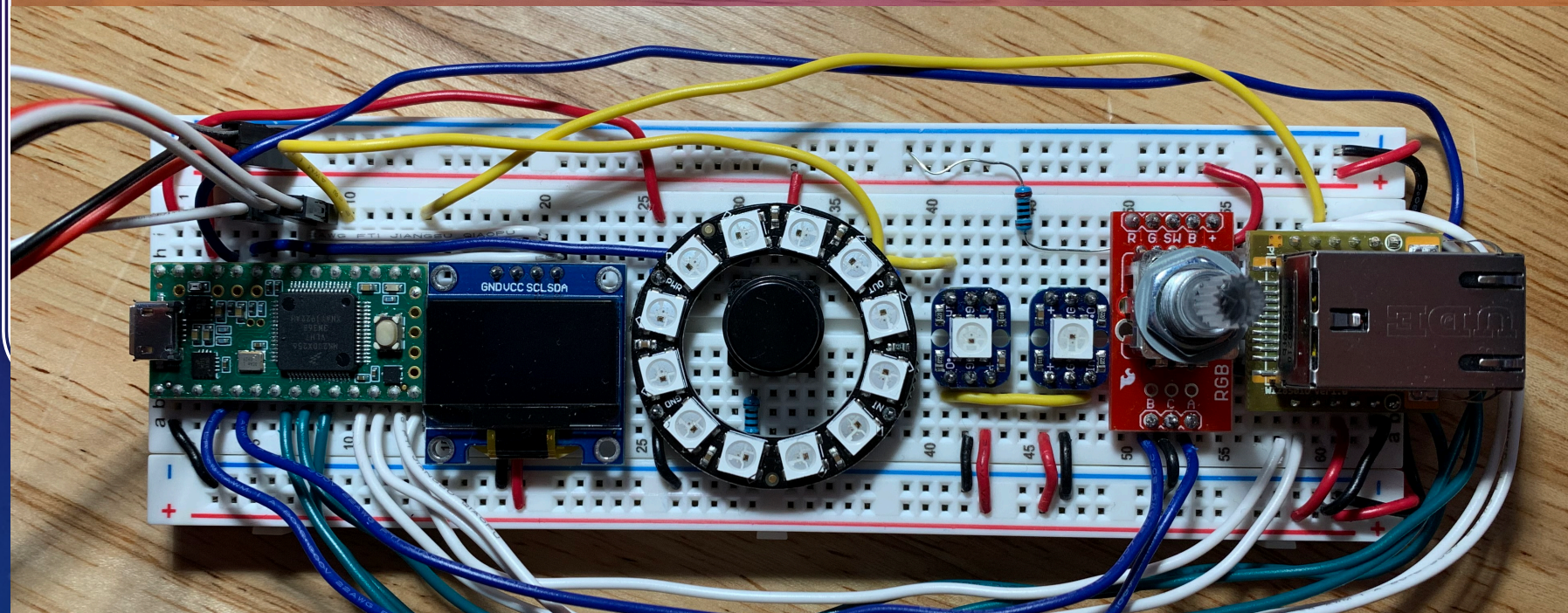
- Teensy 3.1
- MAX4466 Microphone
- BME280
- OLED
- Push Button
- NeoPixels
- Encoder
- Ethernet Port

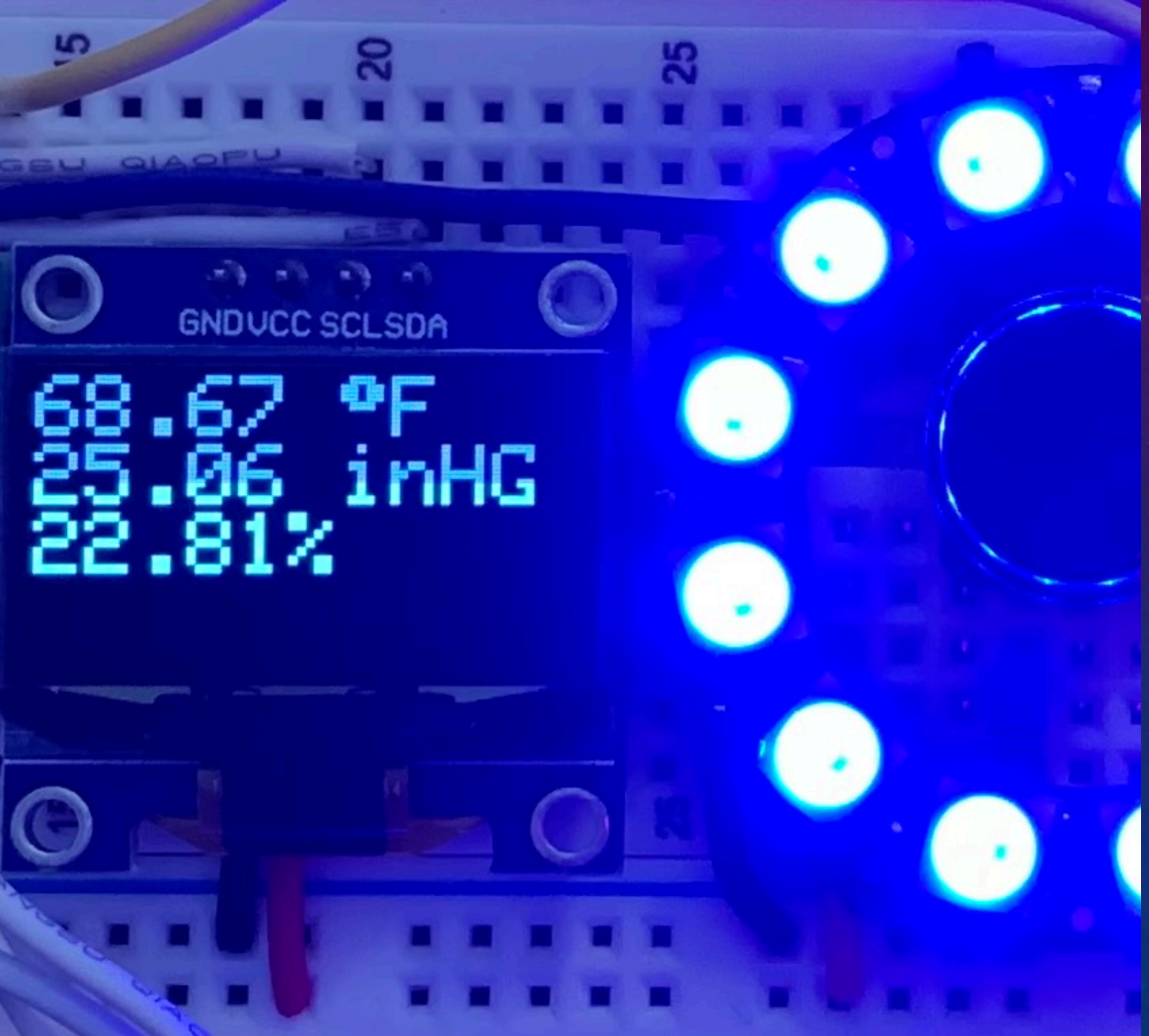


DESIGN

- Clear acrylic case
- Breadboard adhered to case
- Partner brands and QR code laser etched into case.





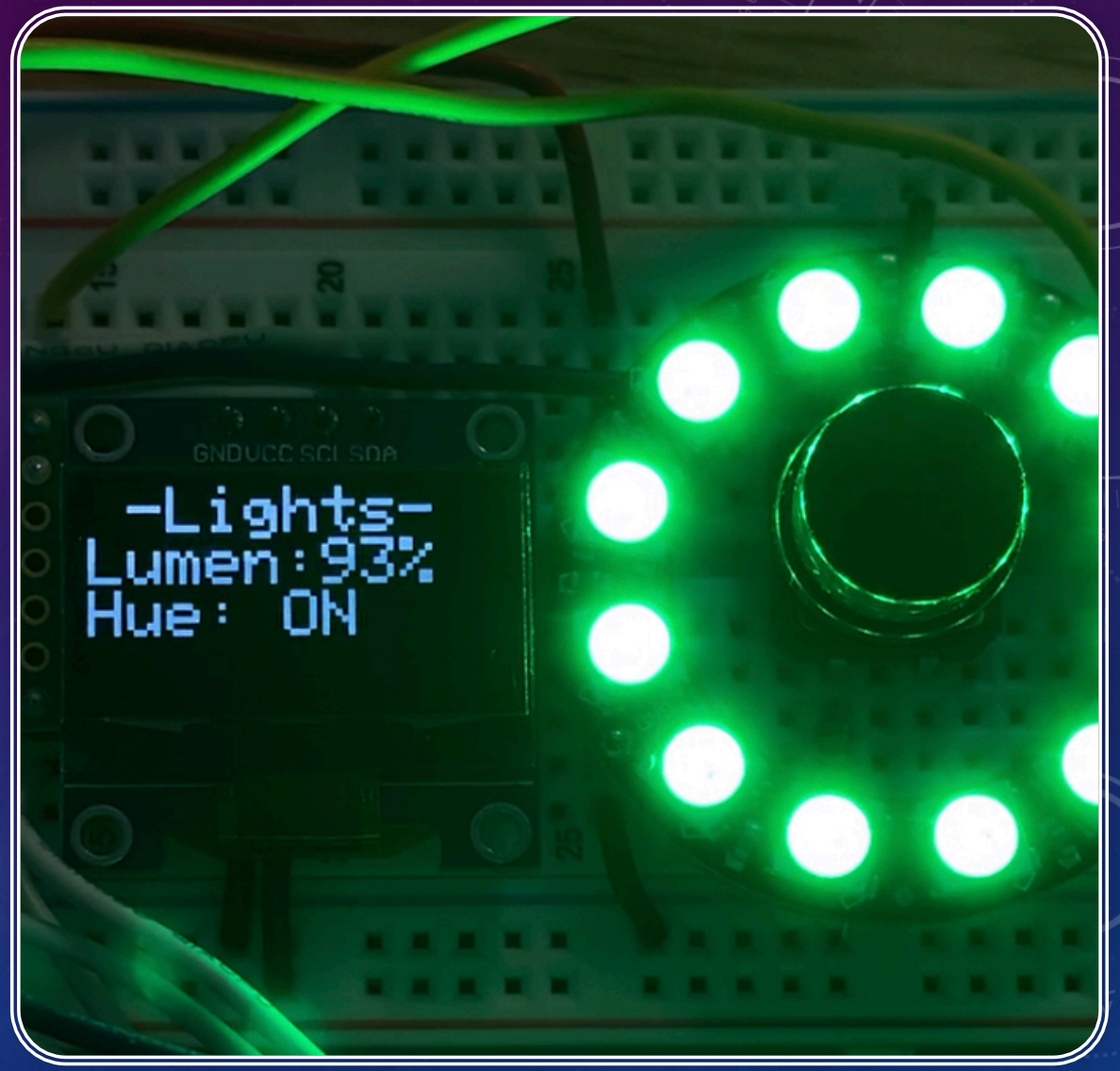


ENVIRONMENT READING

- A BME280 sensor reads the temperature, air pressure, and humidity.
- Visual reading of the environment is indicated on OLED display and NeoPixels.

HUE LIGHT CONTROL

- Hue lightbulbs are turned on by one press of the encoder button.
- Spinning the encoder affects the brightness.
- Holding the encoder button down changes the colors.
- Neopixels match color and brightness of Hue lightbulbs without delay

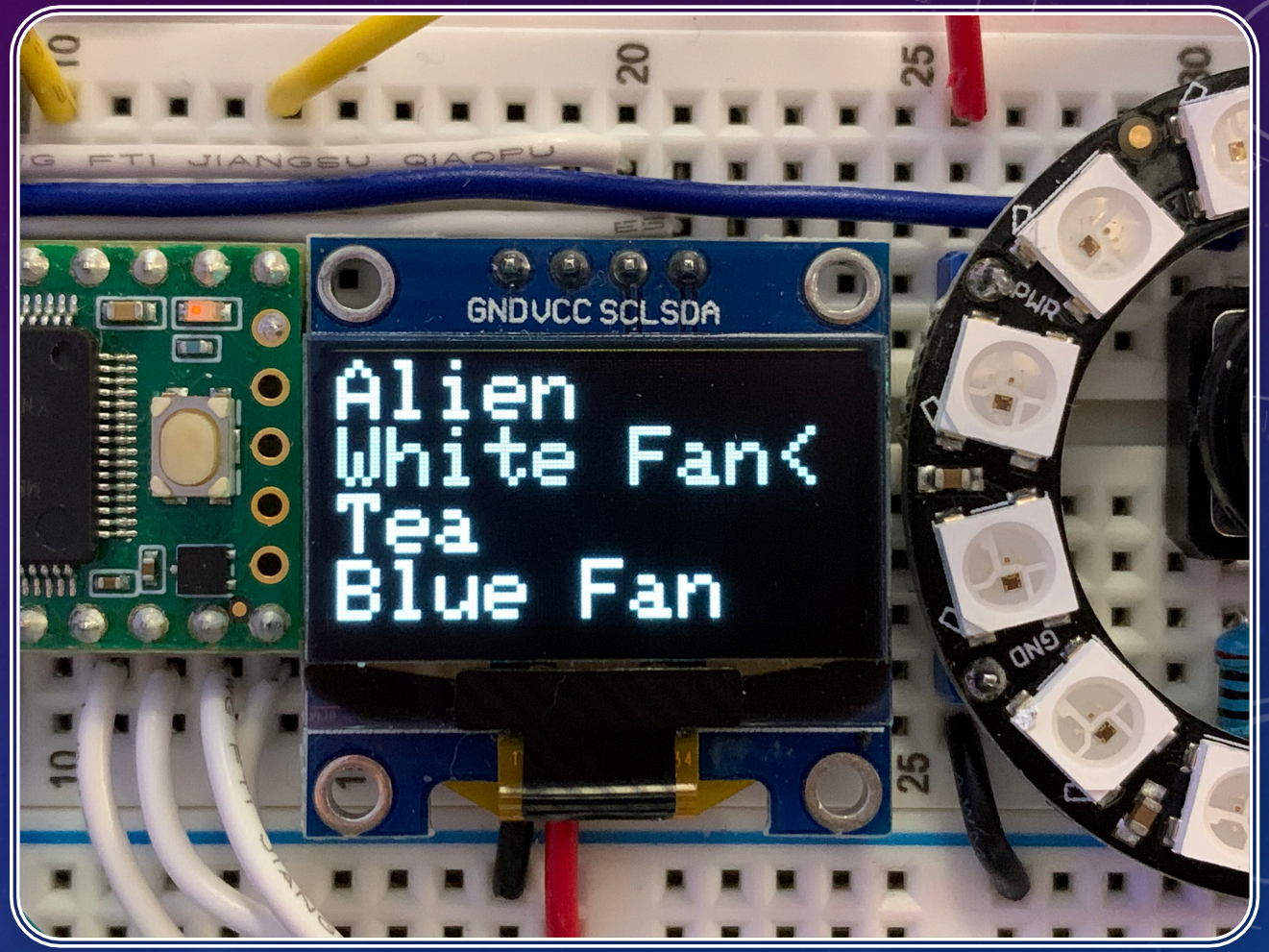


VISUAL DOOR KNOCK NOTIFICATIONS

- Adafruit MAX4466 microphone is used to initiate a visual alert when someone knocks at the door.
- After a set duration the controller resumes its last function.

WEMO CONTROL

- Rotary encoder selects Wemo outlet
- OLED displays current selection
- Outlets are turned on and off with one push of the encoder button
- Neopixel ring gives a visual indication of which devices are powered on



VISUAL WAKE UP ALARM

- A visual alarm is created by quickly flashing Phillips Hue Bulbs various color combinations.
- Alarm timer is started with one press of the encoder button.
- Much like a standard audio alarm, this alarm continues until a button is pressed.

QUESTIONS AND COMMENTS

- How could this project be improved?
- What would you do differently?
- What features are missing?