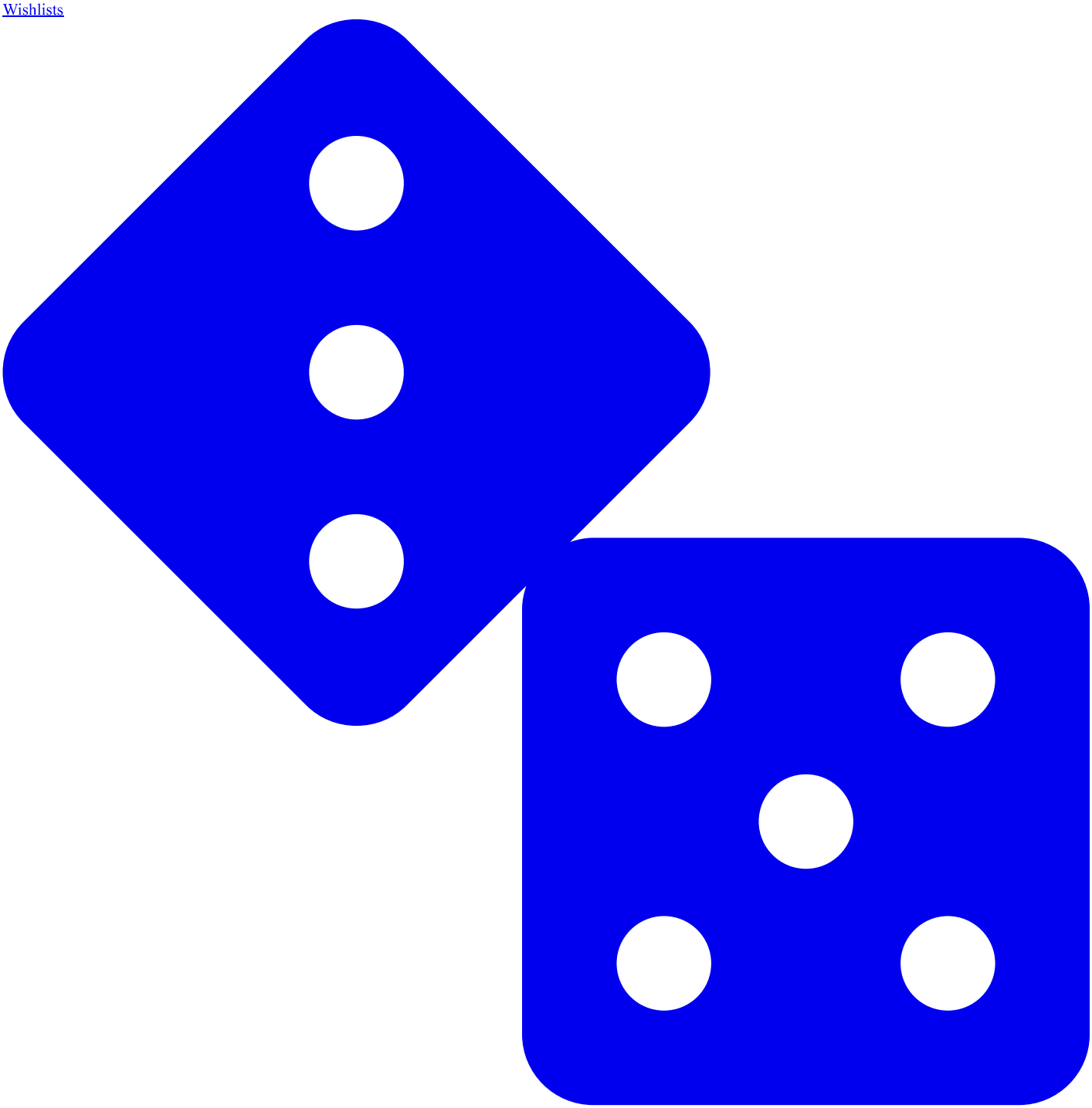

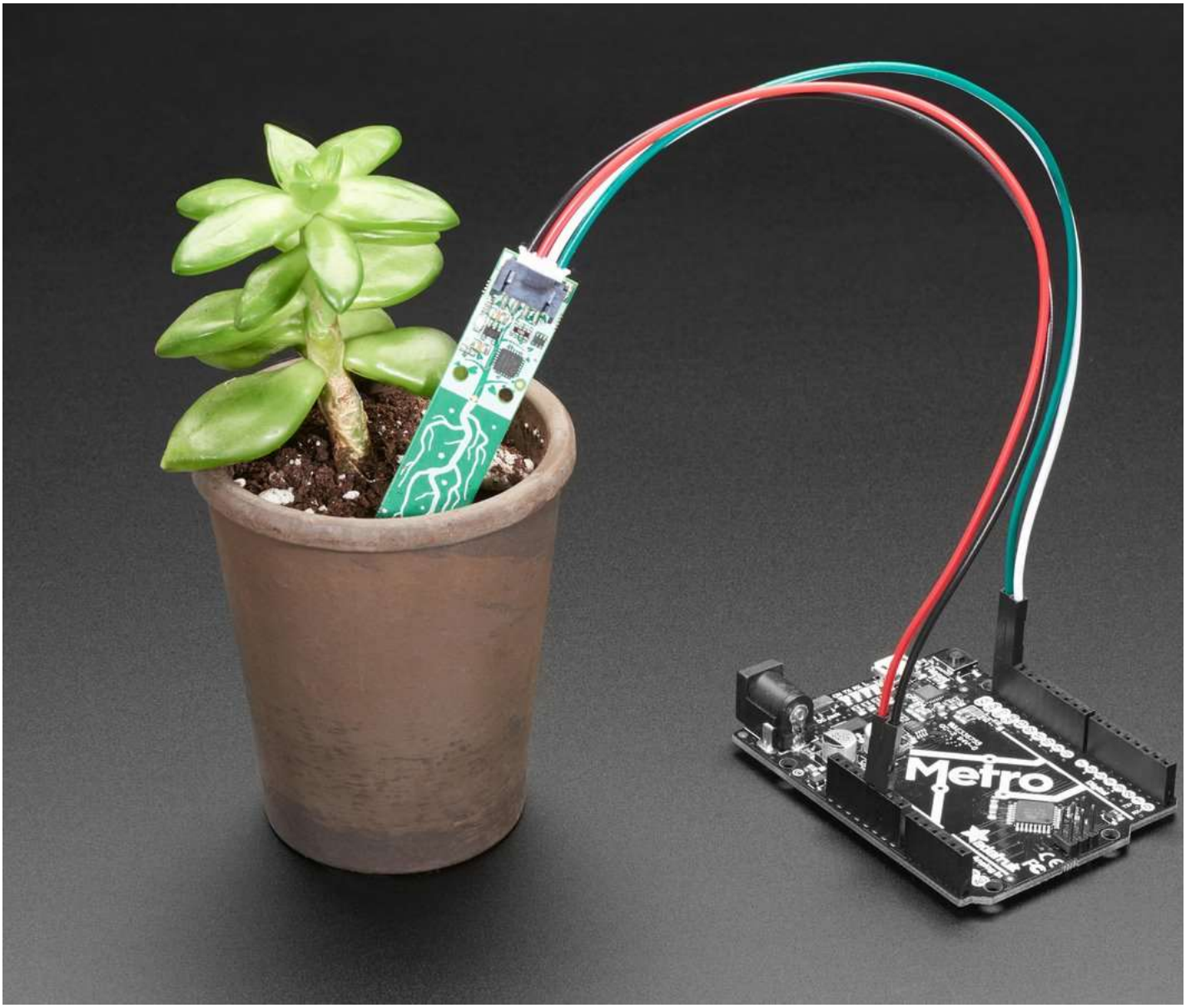

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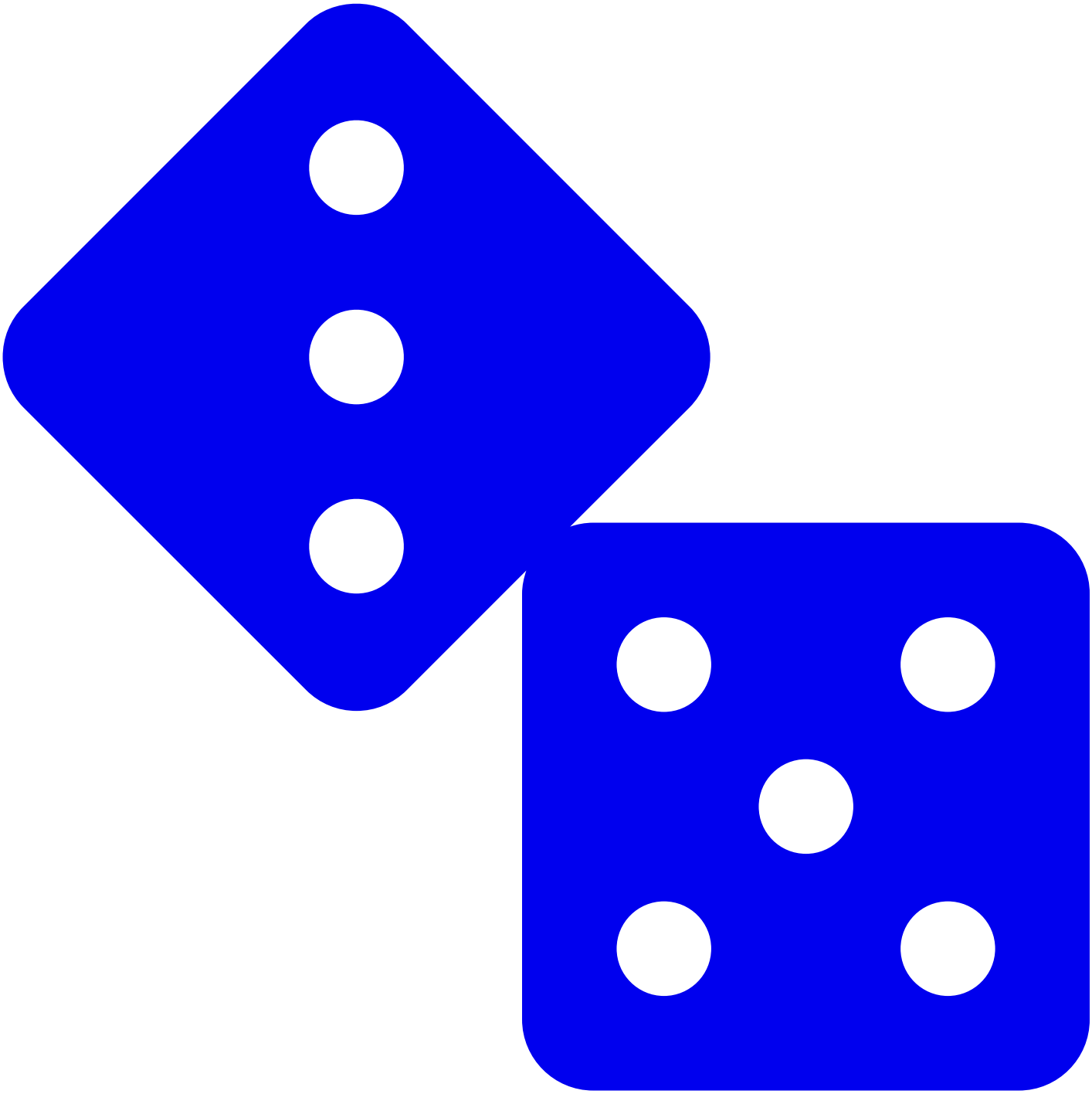

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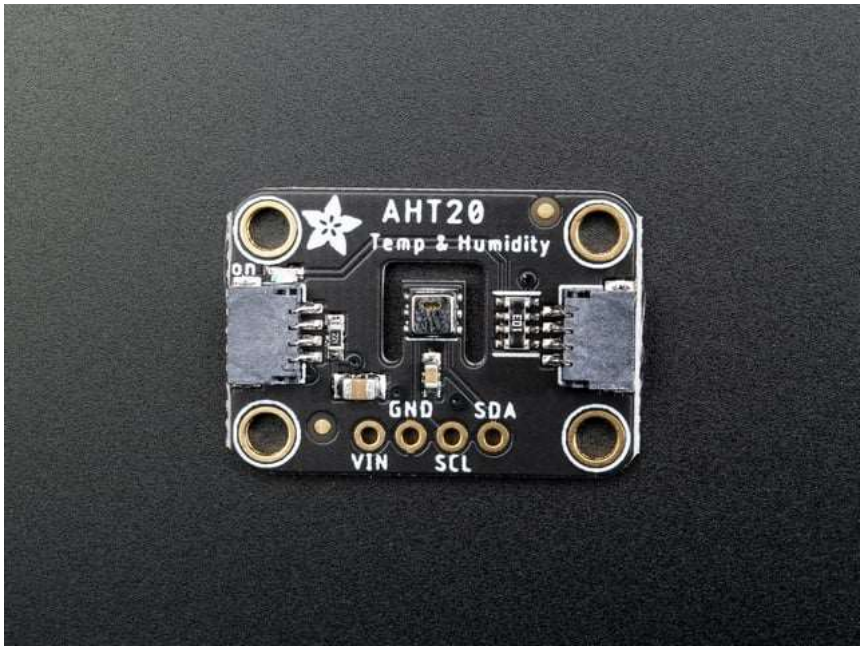
Adafruit AHT20 Temperature & Humidity Sensor Python & CircuitPython



Adafruit AHT20 Temperature & Humidity Sensor

By Kattni Rembor
Sense temperature and humidity data for less!

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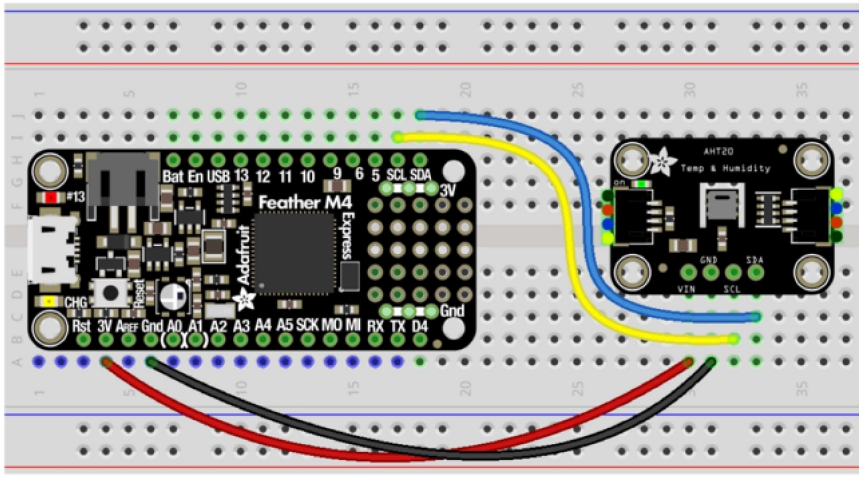
It's easy to use the AHT20 sensor with CircuitPython and the Adafruit CircuitPython AHT20 module. This module allows you to easily write Python code that reads the temperature and humidity from the sensor.

You can use this sensor with any CircuitPython microcontroller board or with a computer that has GPIO and Python thanks to Adafruit_Blinka, our CircuitPython-for-Python compatibility library.

CircuitPython Microcontroller Wiring

First wire up a AHT20 to your board exactly as follows. Here is an example of the AHT20 wired to a Feather using I2C:

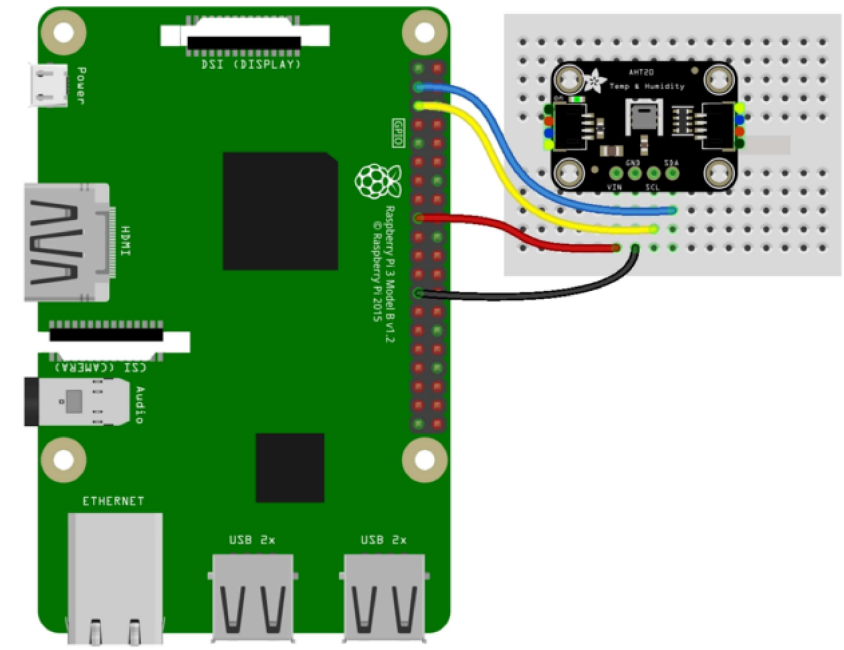


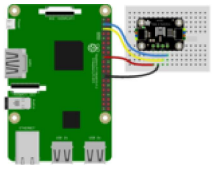
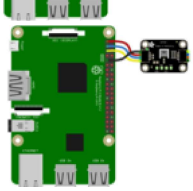
-
- **Board 3V** to **sensor VIN**
- **Board GND** to **sensor GND**
- **Board SCL** to **sensor SCL**
- **Board SDA** to **sensor SDA**

Python Computer Wiring

Since there's *dozens* of Linux computers/boards you can use we will show wiring for Raspberry Pi. For other platforms, please visit the guide for CircuitPython on Linux to see whether your platform is supported.

Here's the Raspberry Pi wired with I2C:

- 

- 
- 

- **Pi 3V3** to **sensor VIN**
- **Pi GND** to **sensor GND**
- **Pi SCL** to **sensor SCL**
- **Pi SDA** to **sensor SDA**

CircuitPython Installation of AHT20 Library

You'll need to install the Adafruit CircuitPython AHT20 library on your CircuitPython board.

First make sure you are running the latest version of Adafruit CircuitPython for your board.

Next you'll need to install the necessary libraries to use the hardware--carefully follow the steps to find and install these libraries from Adafruit's CircuitPython library bundle. Our CircuitPython starter guide has a great page on how to install the library bundle.

Copy the following files from the bundle to the **lib** folder on your **CIRCUITPY** drive:

- **adafruit_ahtx0.mpy**
- **adafruit_bus_device**

Before continuing make sure your board's **lib** folder or root filesystem has the **adafruit_ahtx0.mpy,** and **adafruit_bus_device** file and folder copied over.

Next connect to the board's serial REPL so you are at the CircuitPython >>> prompt.

Python Installation of AHT20 Library

You'll need to install the **Adafruit_Blinka** library that provides the CircuitPython support in Python. This may also require enabling I2C on your platform and verifying you are running Python 3. Since each platform is a little different, and Linux changes often, please visit the CircuitPython on Linux guide to get your computer ready!

Once that's done, from your command line run the following command:

- `sudo pip3 install adafruit-circuitpython-ahtx0`

If your default Python is version 3 you may need to run 'pip' instead. Just make sure you aren't trying to use CircuitPython on Python 2.x, it isn't supported!

CircuitPython & Python Usage

To demonstrate the usage of the sensor we'll initialize it and read the temperature and humidity from the board's Python REPL.

Run the following code to import the necessary modules and initialize the I2C connection with the sensor:

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```
import board
import adafruit_ahtx0

sensor = adafruit_ahtx0.AHTx0(board.I2C())
```

Now you're ready to read values from the sensor using these properties:

- **temperature -** The temperature in Celsius.
- **relative_humidity -** The relative humidity in percent.

For example to print temperature and relative humidity values:

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```
print("\nTemperature: %0.1f C" % sensor.temperature)
print("Humidity: %0.1f %%" % sensor.relative_humidity)
```

That's all there is to using the AHT20 sensor with CircuitPython!

Full Example Code

Download Project Bundle
Copy Code

```
# SPDX-FileCopyrightText: 2021 ladyada for Adafruit Industries
# SPDX-License-Identifier: MIT

"""
Basic `AHTx0` example test
"""

import time
import board
import adafruit_ahtx0

# Create sensor object, communicating over the board's default I2C bus
i2c = board.I2C()  # uses board.SCL and board.SDA
# i2c = board.STEMMA_I2C()  # For using the built-in STEMMA QT connector on a microcontroller
sensor = adafruit_ahtx0.AHTx0(i2c)

while True:
```

```
    print("\nTemperature: %0.1f C" % sensor.temperature)
    print("Humidity: %0.1f %%" % sensor.relative_humidity)
    time.sleep(2)
```

View on GitHub
Arduino WipperSnapper

This guide was first published on Jun 05, 2020. It was last updated on Mar 23, 2022.

This page (Python & CircuitPython) was last updated on Jun 13, 2023.

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Guide Type: Product
Products: Adafruit AHT20 - Temperature & Humidity Sensor Breakout Board
Contributors: Kattni Rembor, Brent Rubell
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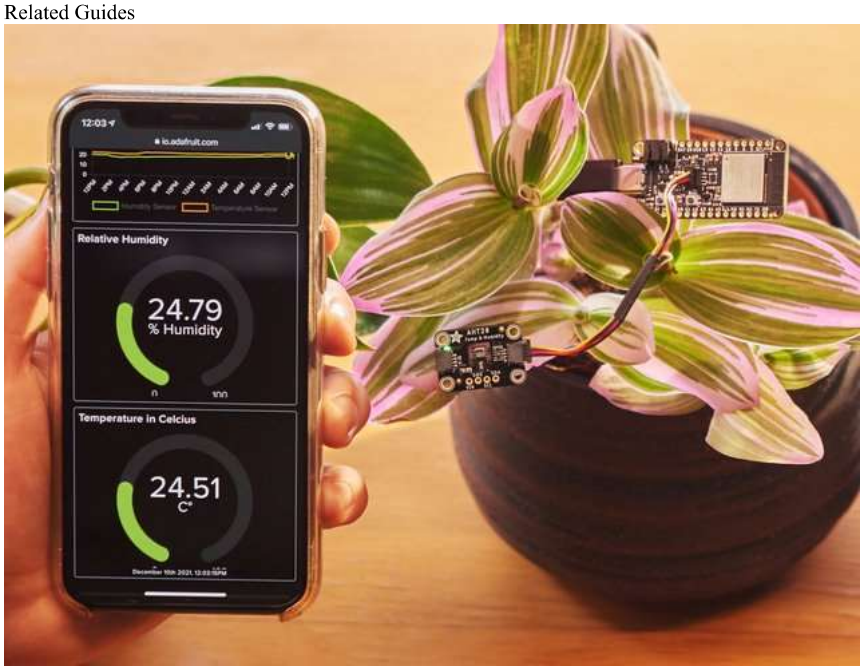

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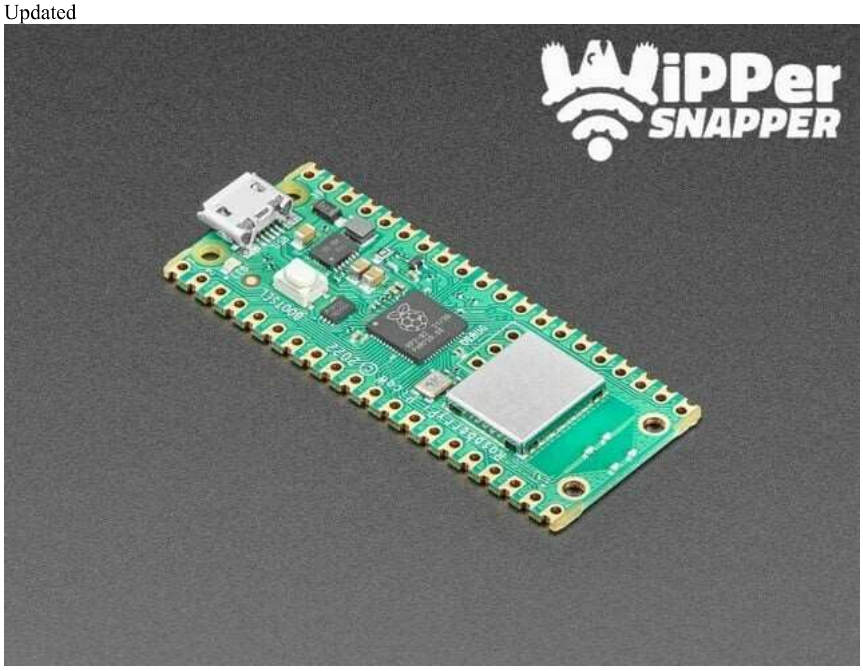

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Quick-Start the Pico W WiFi with CircuitPython
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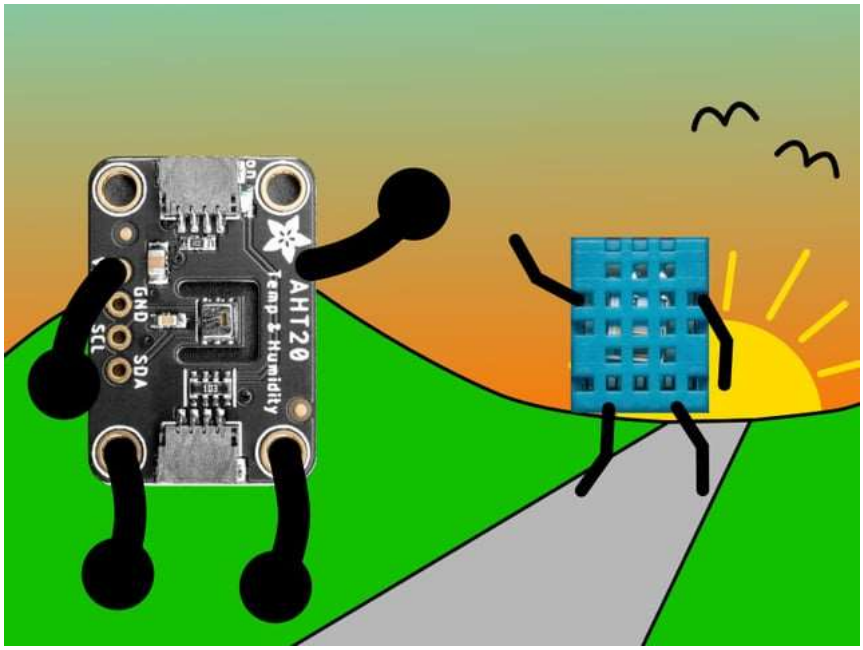

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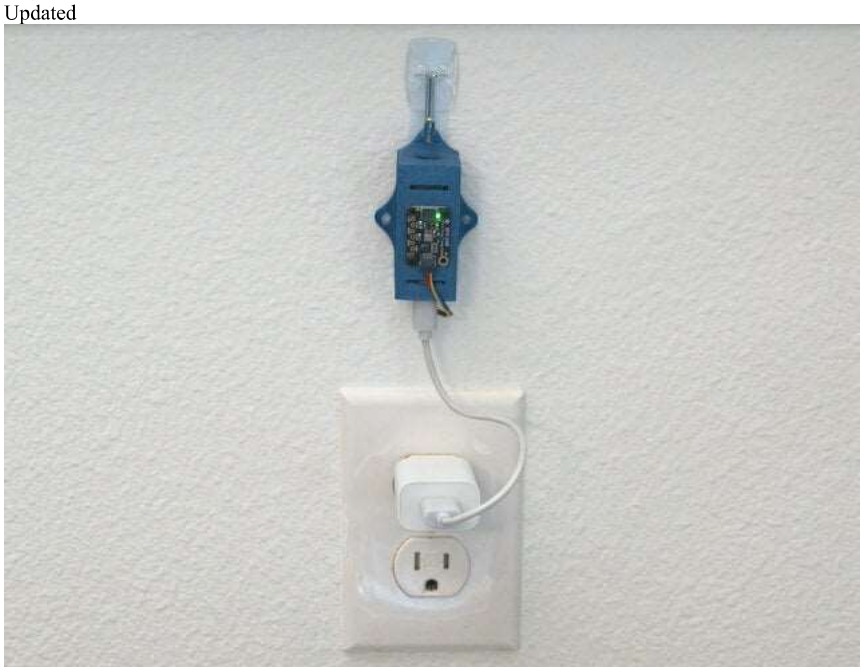

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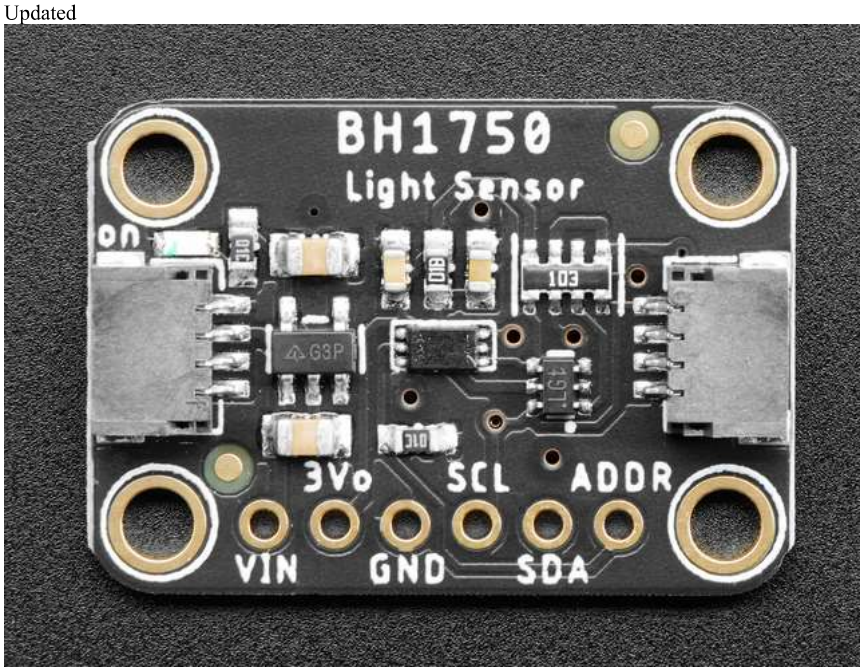

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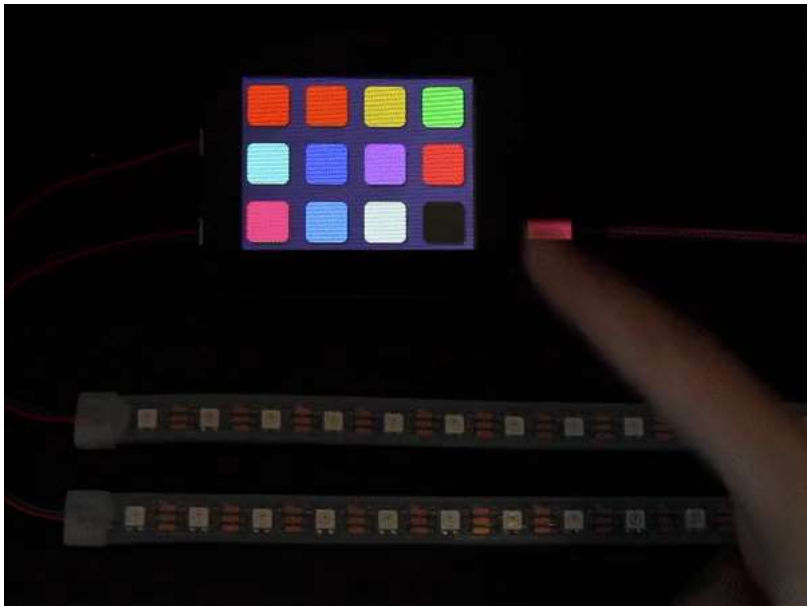

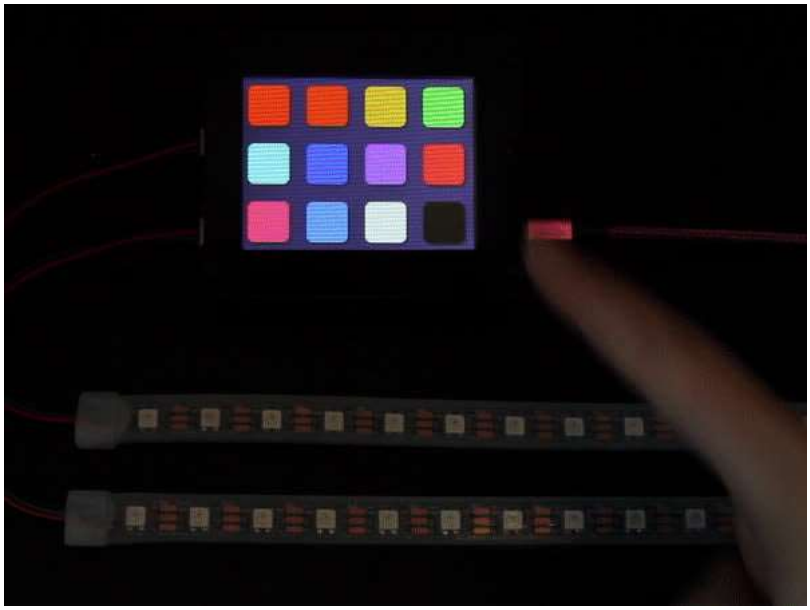

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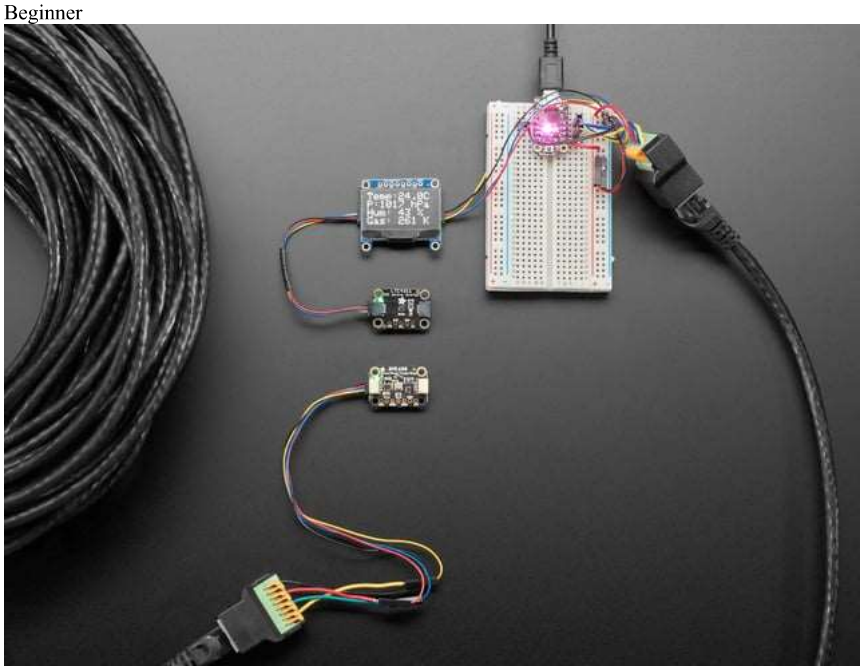

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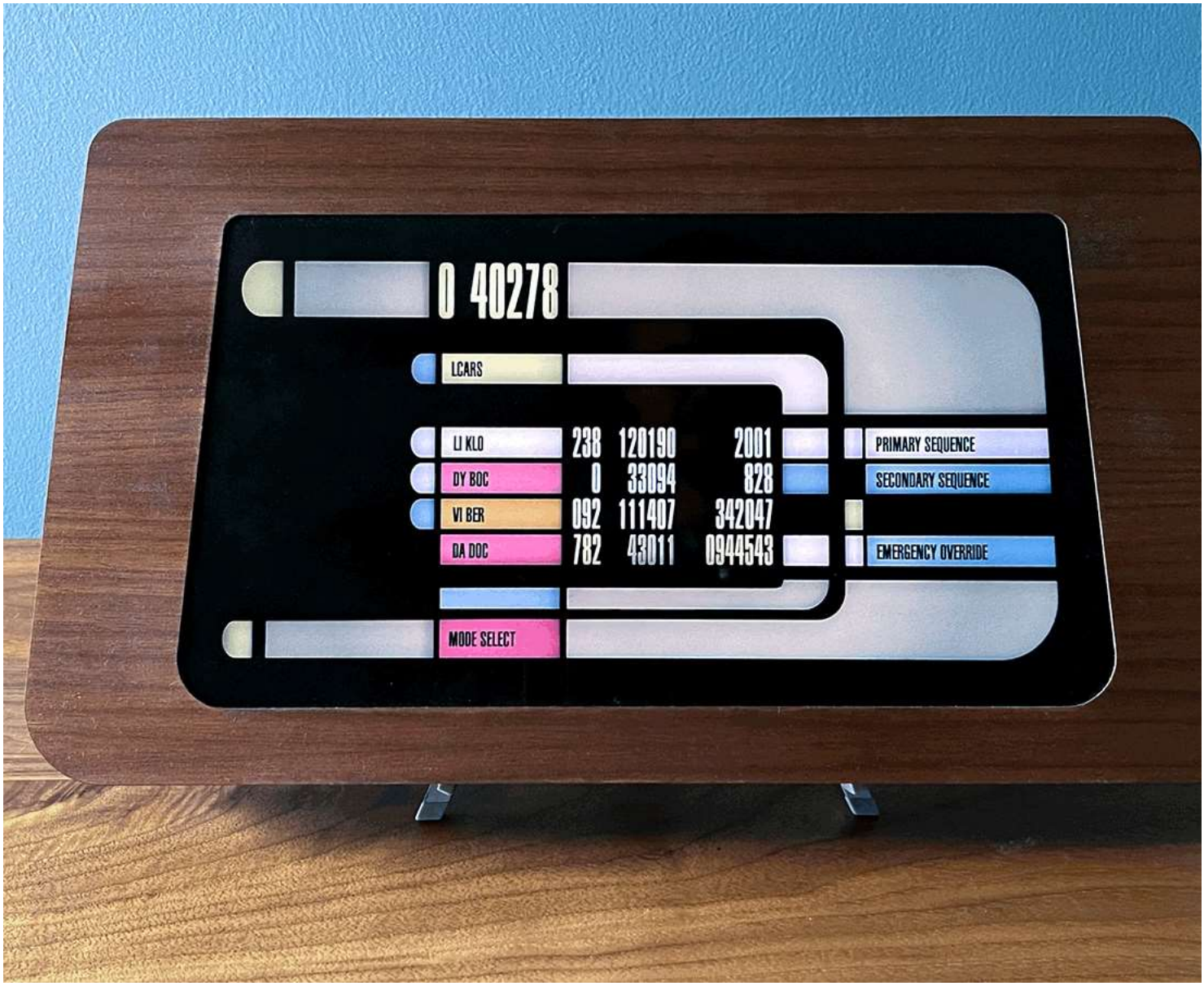
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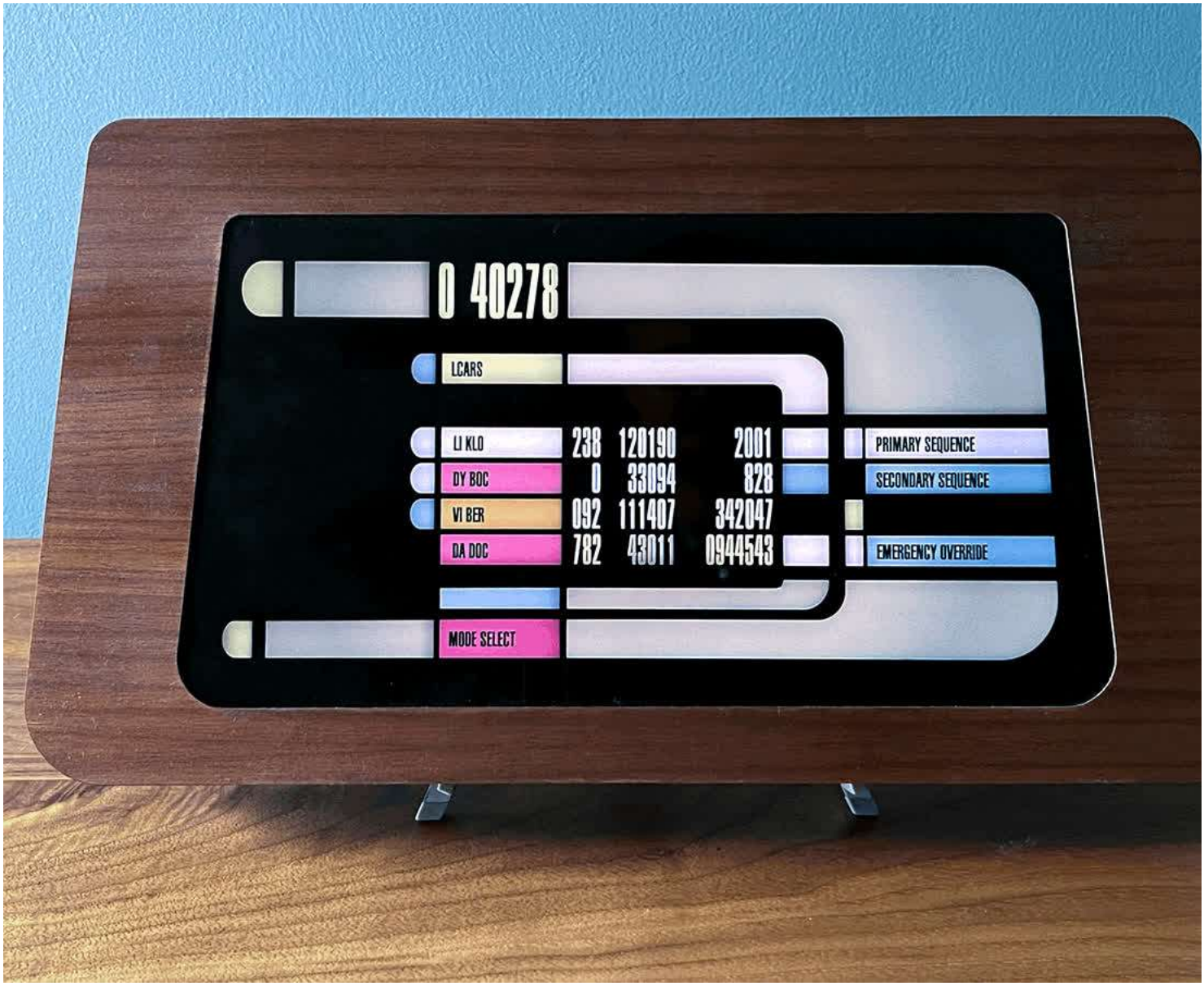

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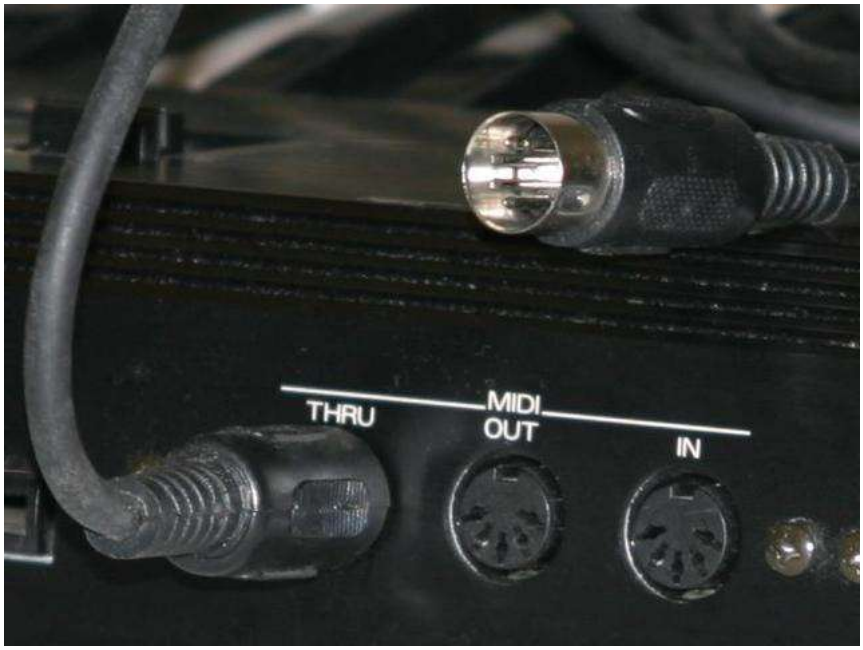

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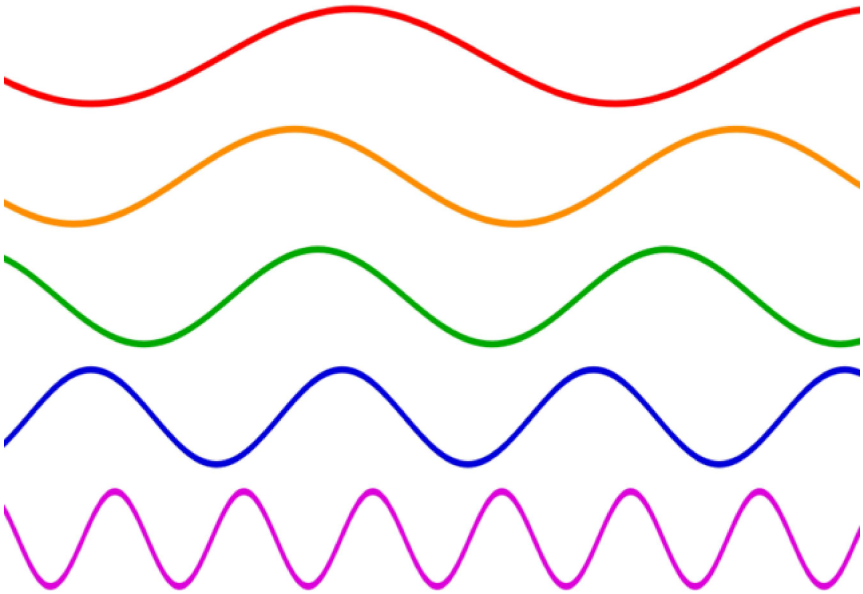

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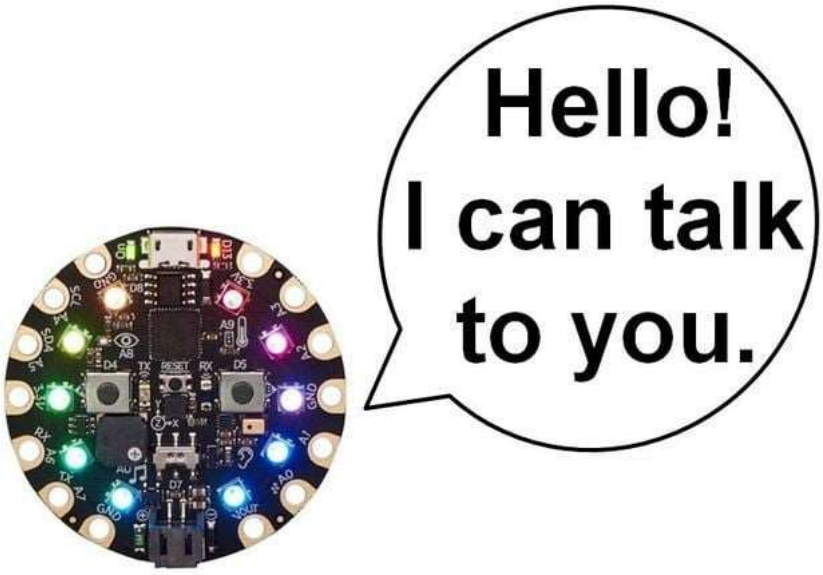

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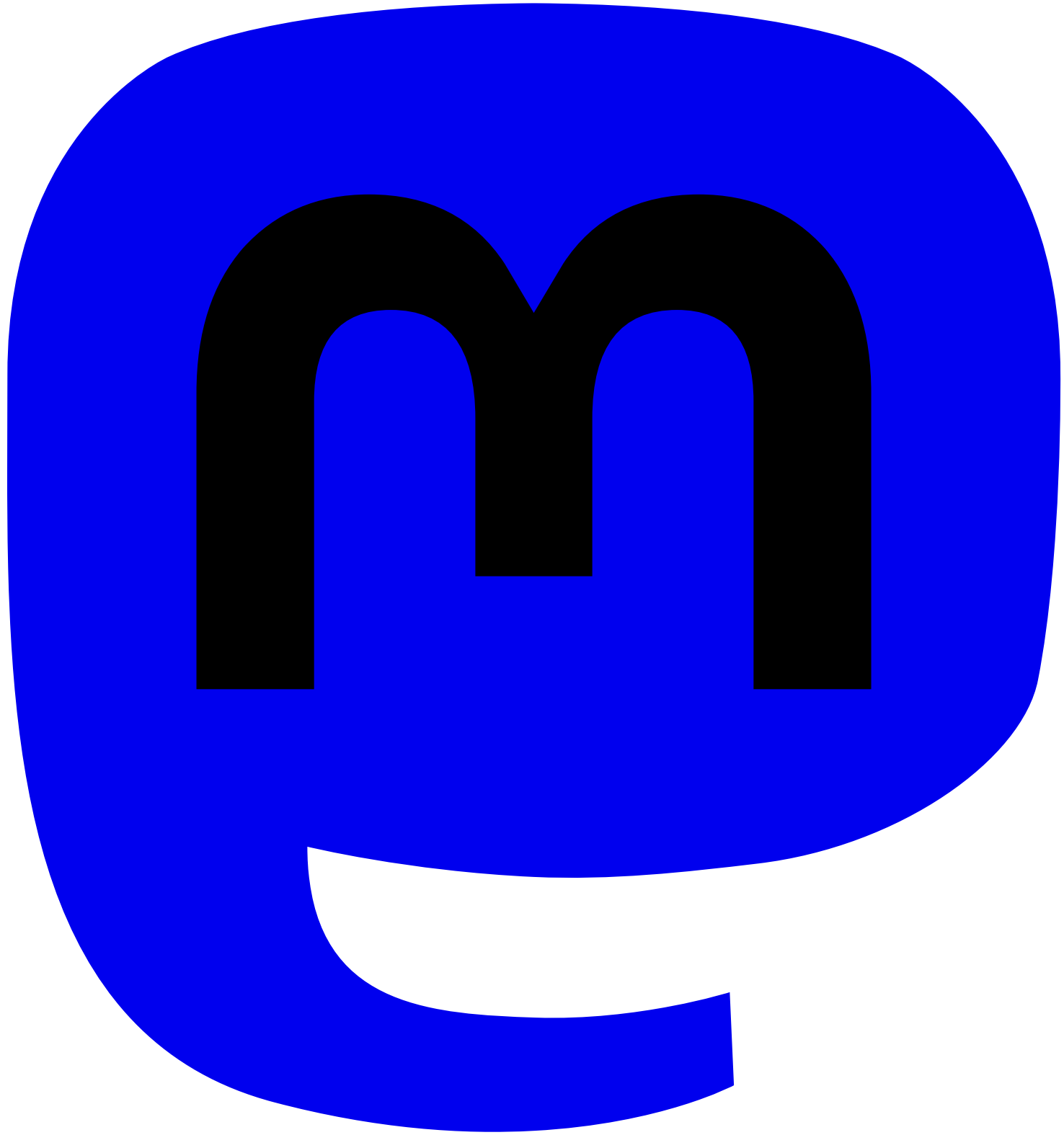
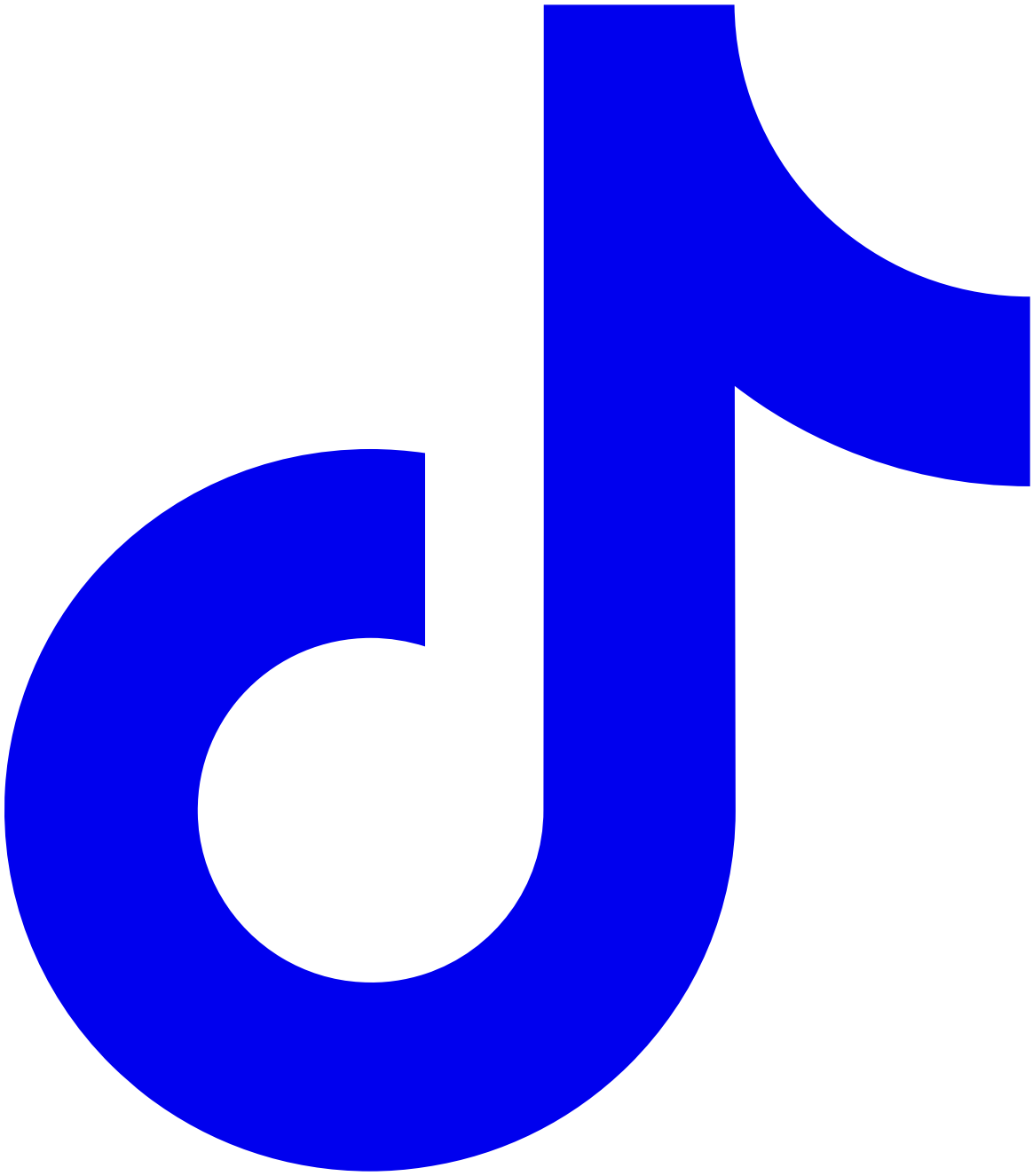
"Improvement makes straight roads: but the crooked roads without Improvement are roads of Genius"
William Blake





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