#include <ArduinoGraphics.h> // Arduino\_MKRRGB depends on ArduinoGraphics

#include <Arduino\_MKRRGB.h>

#include <WiFiNINA.h>

#include <ArduinoHttpClient.h>

#include <Arduino\_JSON.h>

// Air quality level PM2.5 μg/m3 (see https://blissair.com/what-is-pm-2-5.htm)

int max\_level[] = {12, 35, 55, 150, 250, 500};

String labels[] = {"Good", "Moderate", "USG", "Unhealthy", "V Unhealthy", "Hazardous"};

int color[][3] = {{0, 255, 0}, {255, 255, 0}, {255, 128, 0}, {255, 0, 0}, {128, 0, 128}, {128, 0, 0}};

long timer = 0;

// please enter your sensitive data in the Secret tab/arduino\_secrets.h

char ssid[] = SECRET\_SSID; // your network SSID (name)

char pass[] = SECRET\_PASS; // your network password

String sensor\_id = SECRET\_SENSOR\_ID;

int status = WL\_IDLE\_STATUS;

char server[] = "www.purpleair.com";

WiFiClient wifi;

HttpClient client = HttpClient(wifi, server, 80);

void setup() {

Serial.begin(9600);

while ( status != WL\_CONNECTED) {

Serial.print("Attempting to connect to Network named: ");

Serial.println(ssid);

status = WiFi.begin(ssid, pass);

}

MATRIX.begin();

MATRIX.brightness(2);

MATRIX.textScrollSpeed(50);

}

void loop() {

getAirQuality();

delay(20000);

}

void getAirQuality() {

Serial.println("Requesting data from PurpleAir");

client.get("/json?show=" + sensor\_id);

int statusCode = client.responseStatusCode();

String response = client.responseBody();

int level = 5;

if (statusCode == 200) {

JSONVar myObject = JSON.parse(response);

int PM2\_5 = atoi(myObject["results"][0]["PM2\_5Value"]);

// Find air quality level

for (int i = 0; i < 6; i++) {

if (PM2\_5 <= max\_level[i]) {

level = i;

break;

}

}

Serial.println(PM2\_5);

Serial.println(labels[level]);

timer = millis();

MATRIX.beginText(MATRIX.width() - 1, 0, color[level][0], color[level][1], color[level][2]); // X, Y, then R, G, B

MATRIX.print(PM2\_5);

MATRIX.print(" ");

MATRIX.println(labels[level]);

MATRIX.endText(SCROLL\_LEFT);

MATRIX.beginDraw();

MATRIX.stroke(color[level][0], color[level][1], color[level][2]);

MATRIX.rect(0, 0, MATRIX.width(), MATRIX.height());

MATRIX.endDraw();

}

}