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#include <ESP8266WiFi.h>
#include <Firebase_ESP_Client.h>
#include "addons/TokenHelper.h"
#include "addons/RTDBHelper.h"
#include <Wire.h>
#include <Adafruit_BMP085.h>
#include <DHT.h>
#define SMOKE_SENSOR_PIN A0 // Connect Smoke Sensor to Analog Pin A0
#define DHT_PIN_1 D5 // Connect first DHT11 sensor to Digital Pin D3
#define RELAY_PIN D3 // Connect relay control pin to Digital Pin D1
#define TEMPERATURE_THRESHOLD 30.0 // Set your desired temperature threshold in
Celsius
#define SMOKE_THRESHOLD 500 // Set your desired smoke level threshold
#define WIFI_SSID "12345678"
#define WIFI_PASSWORD "12345678"
#define API_KEY "AIzaSyC0gPSHesz3RxIsbFM48OkKK_zCBhfbtmc"
#define DATABASE_URL "https://test-26075-default-rtdb.firebaseio.com/"
FirebaseData fbdo;
FirebaseAuth auth;
FirebaseConfig config;
unsigned long sendDataPrevMillis = 0;
bool signupOK = false;
Adafruit_BMP085 bmp1; // First BMP180 sensor
DHT dht1(DHT_PIN_1, DHT11); // First DHT11 sensor
int relayState = LOW;
void setup() {
Serial.begin(115200);
WiFi.begin(WIFI_SSID, WIFI_PASSWORD);
Serial.print("Connecting to Wi-Fi");
while (WiFi.status() != WL_CONNECTED) {
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Serial.print(".");
delay(300);
}
Serial.println();
Serial.print("Connected with IP: ");
Serial.println(WiFi.localIP());
Serial.println();
config.api_key = API_KEY;
config.database_url = DATABASE_URL;
if (Firebase.signUp(&config, &auth, "", "")) {
Serial.println("ok");
signupOK = true;
} else {
Serial.printf("%s\n", config.signer.signupError.message.c_str());
}
config.token_status_callback = tokenStatusCallback; // see addons/TokenHelper.h
Firebase.begin(&config, &auth);
Firebase.reconnectWiFi(true);
if (!bmp1.begin()) {
Serial.println("Could not find a valid BMP180 sensor 1, check wiring!");
while (1);
}
dht1.begin();
pinMode(RELAY_PIN, OUTPUT);
digitalWrite(RELAY_PIN, relayState);
}
void loop() {
// Read pressure from BMP180 sensors
Serial.print("Pressure Sensor 1: ");
Serial.print(bmp1.readPressure());
```

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Serial.println(" Pa");
// Read temperature and humidity from DHT11 sensors
float temperature1 = dht1.readTemperature();
float humidity1 = dht1.readHumidity();
Serial.print("Temperature 1: ");
Serial.print(temperature1);
Serial.println(" °C");
Serial.print("Humidity 1: ");
Serial.print(humidity1);
Serial.println(" %");
// Read smoke level from the analog smoke sensor
int smokeLevel1 = analogRead(SMOKE_SENSOR_PIN);
Serial.print("Smoke Sensor Level: ");
Serial.println(smokeLevel1);
if (temperature1 < TEMPERATURE_THRESHOLD || smokeLevel1 >
SMOKE_THRESHOLD) {
if (relayState == LOW) {
// Trigger the relay if it's not already triggered
relayState = HIGH;
digitalWrite(RELAY_PIN, relayState);
}
}
else {
if (relayState == HIGH) {
// Turn off the relay if it's not already off
relayState = LOW;
digitalWrite(RELAY_PIN, relayState);
}
}
delay(1000);
```

```
if (Firebase.ready() && signupOK && (millis() - sendDataPrevMillis > 1000 ||
sendDataPrevMillis == 0)) {
sendDataPrevMillis = millis();
if (Firebase.RTDB.setInt(&fbdo, "main/temperature1", temperature1)){
Serial.println("temperature1 Value sent to Firebase");
}
else {
Serial.println("Failed to send temperature1 Value to Firebase. Reason: " +
fbdo.errorReason());
}
if (Firebase.RTDB.setInt(&fbdo, "main/humidity1", humidity1)){
Serial.println("humidity1 Value sent to Firebase");
}
else {
Serial.println("Failed to send humidity1 Value to Firebase. Reason: " + fbdo.errorReason());
}
if (Firebase.RTDB.setInt(&fbdo, "main/smoke", smokeLevel1)){
Serial.println("smoke Value sent to Firebase");
}
else {
Serial.println("Failed to send smoke Value to Firebase. Reason: " + fbdo.errorReason());
}
if (Firebase.RTDB.setInt(&fbdo, "main/Pressure1", bmp1.readPressure())){
Serial.println("pressure1 Value sent to Firebase");
}
else {
Serial.println("Failed to send pressure1 Value to Firebase. Reason: " + fbdo.errorReason());
}
}
}
```