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#define BLYNK_TEMPLATE_ID "TMPL266nrqJeN"
#define BLYNK_TEMPLATE_NAME "Health monitor"
#define BLYNK_AUTH_TOKEN "bsBLCHnLtBEeOMtzAgOLlZytdG8PLmQ4"

#include <WiFi.h>
#include <Wire.h>
#include <Adafruit_MLX90614.h>
#include <BlynkSimpleEsp32.h>

char ssid[] = "Zeiad";
char pass[] = "zeezoo1234";

const int BUZZER_PIN = 25;
const int ECG_PIN = 36;

Adafruit_MLX90614 mlx = Adafruit_MLX90614();

bool pulseDetected = false;
bool flatline = false;
int threshold = 2200;
int bpm = 0;
unsigned long lastBeatTime = 0;

void setup() {
  Serial.begin(115200);
  pinMode(ECG_PIN, INPUT);
  pinMode(BUZZER_PIN, OUTPUT);
  digitalWrite(BUZZER_PIN, LOW);
  Wire.begin(21, 22);
  mlx.begin();
  Blynk.begin(BLYNK_AUTH_TOKEN, ssid, pass);

  long sum = 0;
  for (int i = 0; i < 100; i++) {
    sum += analogRead(ECG_PIN);
    delay(10);
  }
  threshold = sum / 100 + 100;
  Serial.println("Threshold: " + String(threshold));
}

void loop() {
  Blynk.run();

  float temperature = mlx.readObjectTempC();
  int ecg = analogRead(ECG_PIN);
  unsigned long now = millis();

  if (!pulseDetected && ecg > threshold) {
    pulseDetected = true;
    unsigned long interval = now - lastBeatTime;
    lastBeatTime = now;
    if (interval > 0 && interval < 2000) {
      bpm = 60000 / interval;
    }
  }
}

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    }
    flatline = false;
    tone(BUZZER_PIN, 2000, 20);
}

if (pulseDetected && ecg < threshold - 50) {
    pulseDetected = false;
}

if (now - lastBeatTime > 3000) {
    bpm = 0;
    flatline = true;
    digitalWrite(BUZZER_PIN, HIGH);
} else if (!flatline) {
    digitalWrite(BUZZER_PIN, LOW);
}

Blynk.virtualWrite(V0, temperature);
Blynk.virtualWrite(V1, bpm);
Blynk.virtualWrite(V2, ecg);

    Serial.println("Temp: " + String(temperature) + "   BPM: " + String(bpm) + "   ECG: " +
String(ecg));
    delay(100);
}

```