Code:

#include <Wire.h>

#include <SoftwareSerial.h>

#include <Adafruit\_MAX30105.h>  // Heart rate sensor library

#include <TinyGPS++.h>  // GPS library

#include <ESP8266WiFi.h>  // Wi-Fi library

// Wi-Fi credentials

const char\* ssid = "your\_ssid";

const char\* password = "your\_password";

// Server endpoint

const char\* server = "your\_server\_address";

// Heart rate sensor setup

Adafruit\_MAX30105 max30105;

// GPS setup

SoftwareSerial gpsSerial(3, 4);  // RX, TX pins for GPS

TinyGPSPlus gps;

// Wi-Fi client

WiFiClient client;

void setup() {

    Serial.begin(9600);

    gpsSerial.begin(9600);

    // Initialize heart rate sensor

    if (!max30105.begin()) {

        Serial.println("Failed to find MAX30105 sensor");

    }

    // Connect to Wi-Fi

    WiFi.begin(ssid, password);

    while (WiFi.status() != WL\_CONNECTED) {

        delay(500);

        Serial.print(".");

    }

    Serial.println("Connected to Wi-Fi");

}

void loop() {

    // Get heart rate data

    uint32\_t irValue = max30105.getRed();

    int heartRate = calculateHeartRate(irValue);  // Function to calculate heart rate

    // Get temperature data

    int temperature = getTemperature();  // Function to get temperature data

    // Get GPS data

    while (gpsSerial.available() > 0) {

        gps.encode(gpsSerial.read());

    }

    double latitude = gps.location.lat();

    double longitude = gps.location.lng();

    // Send data to server

    if (client.connect(server, 80)) {

        client.print("GET /update?heart\_rate=");

        client.print(heartRate);

        client.print("&temperature=");

        client.print(temperature);

        client.print("&latitude=");

        client.print(latitude);

        client.print("&longitude=");

        client.println(" HTTP/1.1");

        client.println("Host: your\_server\_address");

        client.println("Connection: close");

        client.println();

    }

    client.stop();

    delay(1000);  // Adjust as needed

}

// Function to calculate heart rate

int calculateHeartRate(uint32\_t irValue) {

    // Simple example; adjust as needed

    return (int)(irValue / 1000);

}

// Function to get temperature data

int getTemperature() {

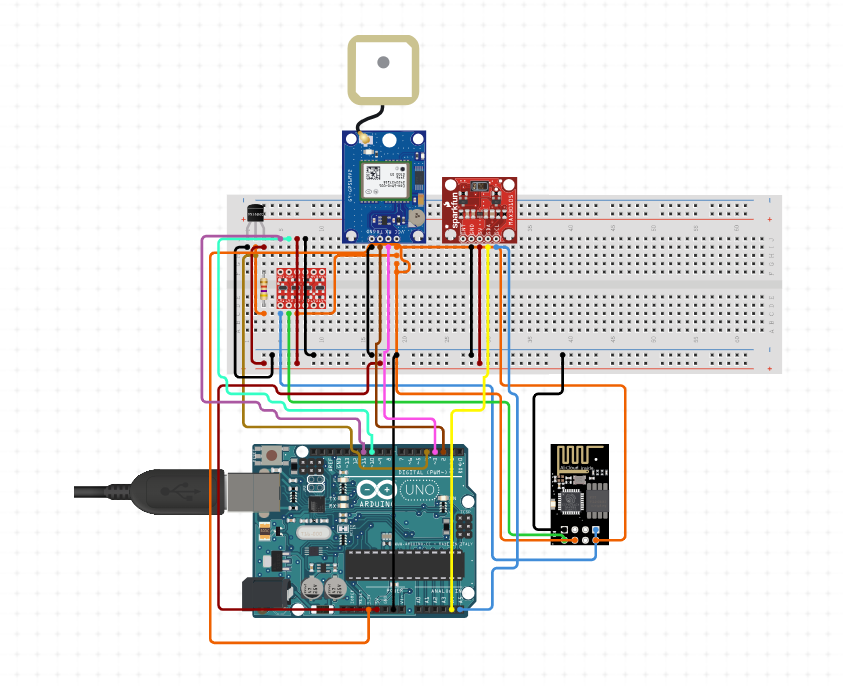
    // Example code for temperature sensor

    // Replace with actual sensor code

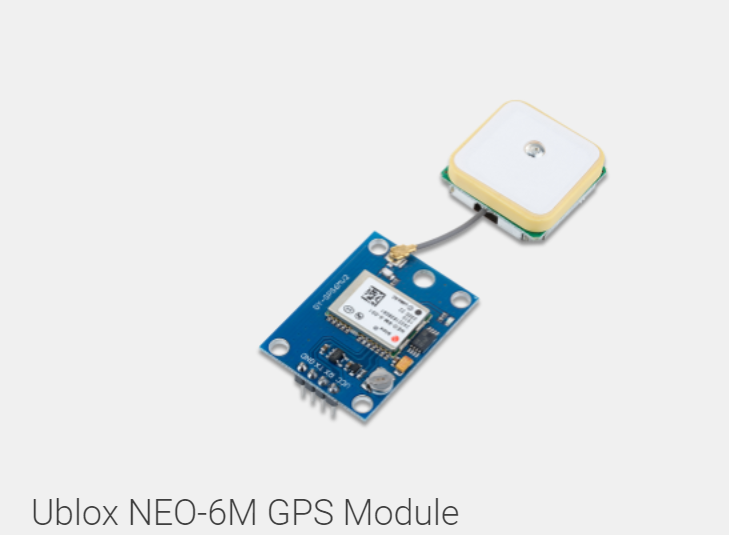
    return 36;  // Example temperature value

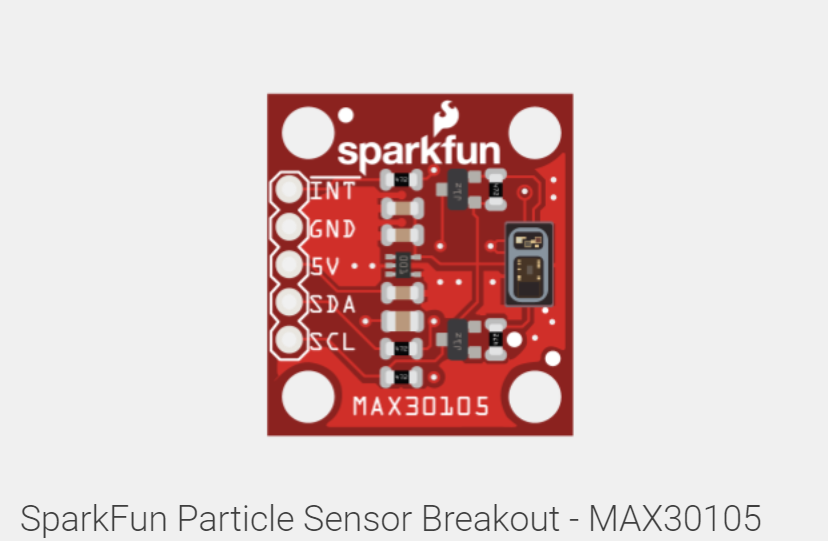
}

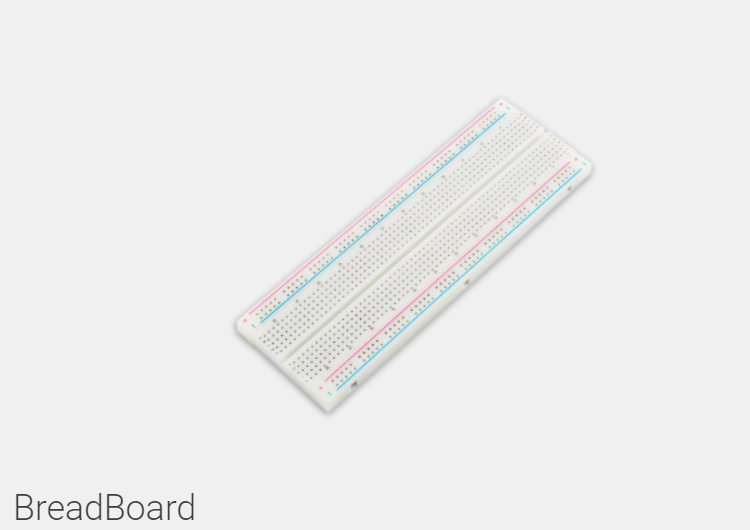
Circuit Layout:

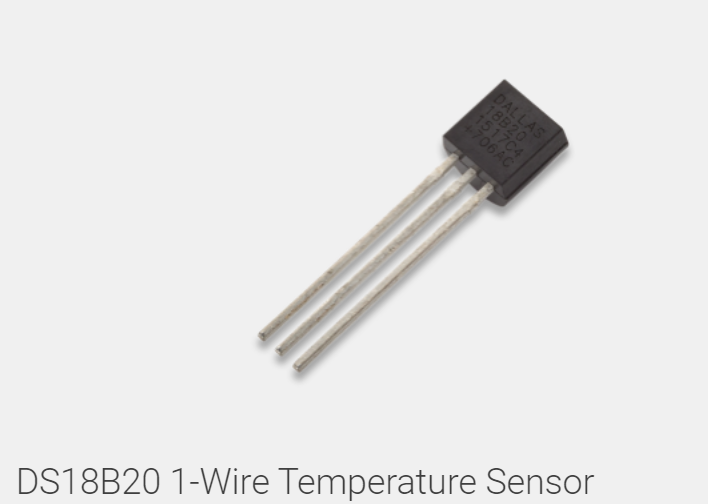


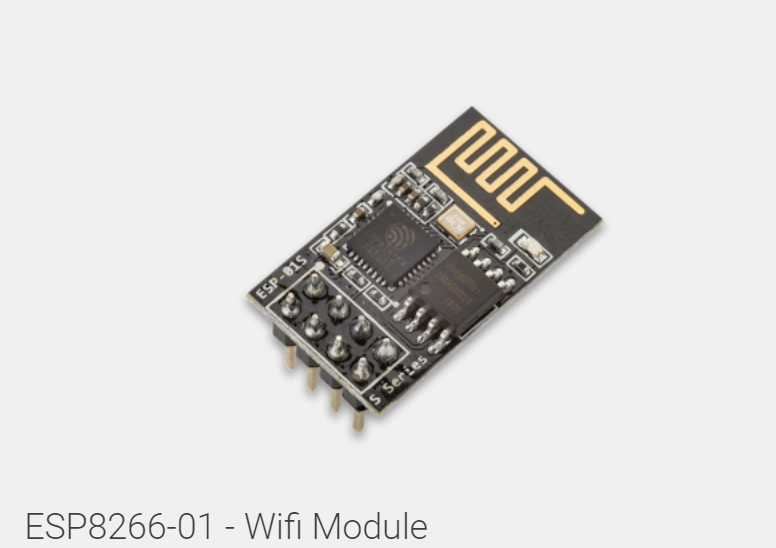
Components used:















**Components for the Health Monitoring and Tracking System**

1. **Arduino Board**: The central microcontroller to process sensor data and communicate with other devices. Arduino Uno or Arduino Mega can be used.
2. **GPS Module**: A module to track the soldier's location. The Neo-6M GPS module is a popular choice.
3. **Heart Rate Sensor**: To monitor the soldier's heart rate. The Pulse Sensor or MAX30100 are good options.
4. **Temperature Sensor**: To measure body temperature. You can use the LM35 or DS18B20 temperature sensor.
5. **Communication Module**: To send data to a remote server or cloud. An ESP8266 or ESP32 module can be used for Wi-Fi communication.
6. **Power Supply**: A rechargeable battery to power the system.
7. **Other Accessories**: Breadboard, jumper wires, and resistors for connections.