IoT Based Women Safety Gadget

FIRMWARE:

Transmitter Code:

```
int d;
#include <SPI.h>
#include <LoRa.h>
#include <TinyGPS++.h>
#include <SoftwareSerial.h>
#define USE_ARDUINO_INTERRUPTS true
#include < PulseSensorPlayground.h>
int RXPin = 4:
int TXPin = 3;
const int PulseWire = 0;
int Threshold = 550;
PulseSensorPlayground pulseSensor;
TinyGPSPlus gps;
SoftwareSerial gpsSerial(RXPin, TXPin);
void setup() {
 pinMode(7,INPUT);
 Serial.begin(9600);
 gpsSerial.begin(9600);
 while (!Serial);
```

```
Serial.println("LoRa Sender");
 if (!LoRa.begin(433E6)) {
  Serial.println("Starting LoRa failed!");
  while (1);
 }
 LoRa.setTxPower(20);
pulseSensor.analogInput(PulseWire);
pulseSensor.setThreshold(Threshold);
if (pulseSensor.begin()) {
  Serial.println("We created a pulseSensor Object !");
}
 }
void loop() {
d=digitalRead(7);
if(d==0)
{
while (gpsSerial.available() > 0)
  if (gps.encode(gpsSerial.read()))
       if (gps.location.isValid())
 {
  Serial.println("Sending to LoRa");
  LoRa.beginPacket();
  LoRa.print("Lat: ");
```

```
LoRa.print(gps.location.lat(), 6);
  LoRa.print("\n");
  LoRa.print("Long: ");
  LoRa.print(gps.location.lng(), 6);
   LoRa.print("\n");
  Serial.print("Sent via LoRa");
  LoRa.endPacket();
 }
 }
int myBPM = pulseSensor.getBeatsPerMinute();
if (pulseSensor.sawStartOfBeat()) {
Serial.println("♥ A HeartBeat Happened!");
Serial.print("BPM: ");
Serial.println(myBPM);
}
delay(20);
}
```

Receiver Code:

```
#include <ESP8266WiFi.h>
#include <FirebaseArduino.h>
#include <SPI.h>
#include <LoRa.h>
```

```
#define FIREBASE HOST "locate-228a3.firebaseio.com"
#define FIREBASE AUTH
"opl68e5raFm9qqDO5twlqQFlQkIhfG2hWdL1228V"
#define WIFI SSID "Haaa"
#define WIFI PASSWORD "12345678"
#define Nss 15
#define rst 16
#define dio0 4
void setup() {
 Serial.begin(115200);
LoRa.setPins(Nss, rst, dio0);
if (!LoRa.begin(433E6)) {
  Serial.println("Starting LoRa failed!");
  while (1):
 }
 WiFi.begin(WIFI_SSID, WIFI_PASSWORD);
 Serial.print("Connecting to ");
 Serial.print(WIFI SSID);
 while (WiFi.status() != WL CONNECTED) {
  Serial.print(".");
  delay(500);
 }
 Serial.println();
 Serial.print("Connected to ");
 Serial.println(WIFI SSID);
```

```
Serial.print("IP Address is: ");
 Serial.println(WiFi.localIP());
 Firebase.begin(FIREBASE_HOST, FIREBASE_AUTH);
}
void loop() {
int packetSize = LoRa.parsePacket();
 if (packetSize) {
Serial.print("Received packet '");
  delay(1000);
  while (LoRa.available()) {
   Serial.print((char)LoRa.read());
   delay(1000);
   String locatn = String((char)LoRa.read());
   Firebase.pushString("location", locatn);
      }
Serial.print("' with RSSI ");
Serial.println(LoRa.packetRssi());
 }
}
```