Device

- Arduino Nano
- GSM Module (SIM 800L)
- GPS Module (NEO 6M V2)
- Battery (3.7V, 18650 Li-on Battery)
- Boost Converter (5V USB Boost Converter)
- Pulse Sensor
- Buzzer

The main board of the device is the Arduino Nano. It will be the brain of the device that does all the calculations from all the modules that is connected to it.

GSM Module is the device that is used for establishing a communication between a computer/microcontroller and a GSM/GPRS system to that it can be used for mobile communications such as texting or calling. Once interfaced in a microcontroller such as Arduino, it can act just like a normal cellphone used for texting and calling.

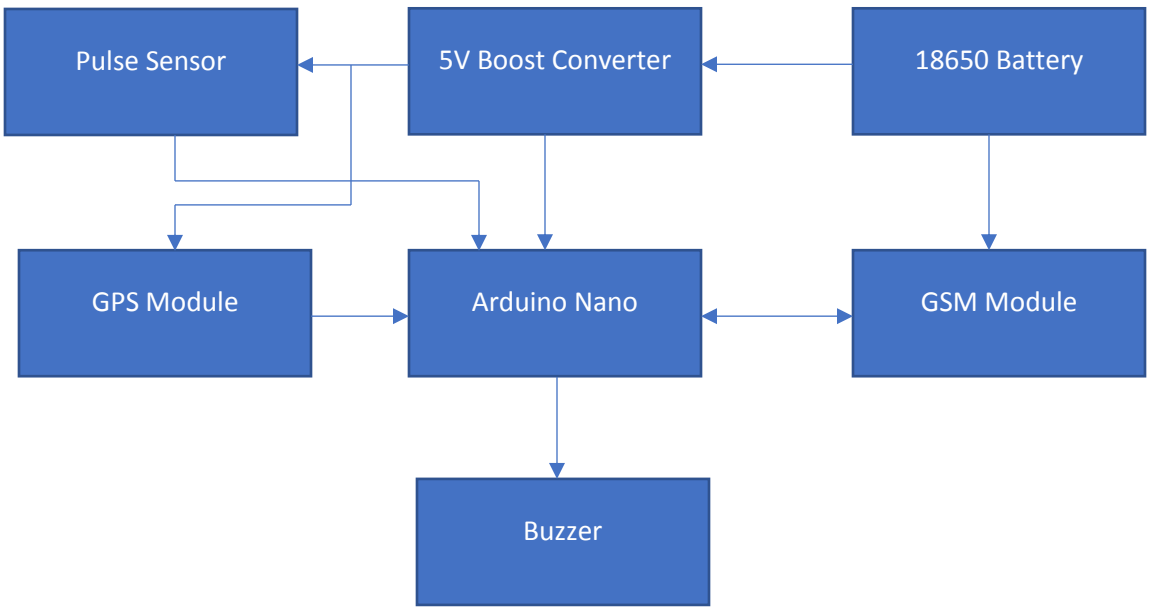
GPS Module is a device that is capable or receiving information from GPS satellites. It is typically used to know your geographical location.

The 18650 Li-on battery will be used as a power supply to the device. With a capacity of 2200 mAh.

The boost converter is used to step up the voltage of the battery since both 3.7V and 5V voltage level is required for the components of the device.

Pulse sensor is a device used to incorporate live heart rate to electronic projects.

Buzzer is device used to make buzzing sound when supplied by a voltage.



The 18650 battery has 3.7 V that is used to supply the GSM Module then it is connected to a 5V boost converter because the Arduino Nano, GPS Module and Pulse Sensor requires 5V. The Arduino and GSM module have a bidirectional communication where it can send receive data to each other. The GPS Module then can send data of the location coordinates of the geographical location where it is active to the Arduino Nano. The output of the pulse sensor is feed to the Arduino. Finally, the Arduino can trigger the buzzer to make a sound.

App

The app is made using a free platform App Builder for Android called MIT App Inventor. One function that is available in this platform is the support for sending and receiving SMS. This app requires to access the messaging platform of the android phone so that you can directly use the app and access the messaging feature of your android phone. The app will then be able to send and receive messages to the device that has a GSM module in it.

The app will also use a database, where all information about a certain messaged received will be recorded so that location coordinates and time it is received will be recorded in the app.