

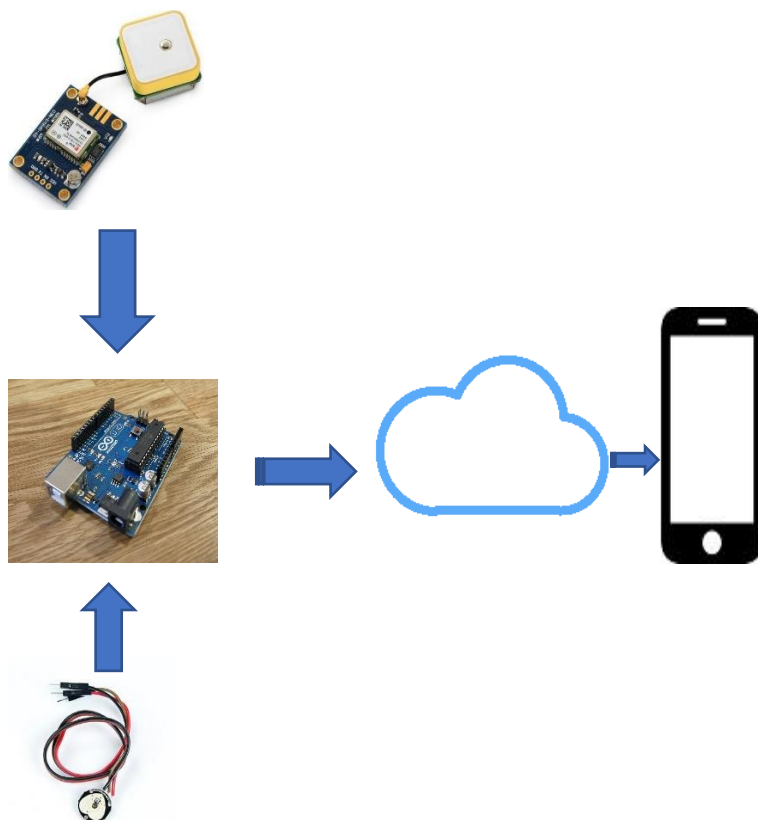
IOT BASED WOMEN SAFETY GADGET

Design Document

The aim of the project is to send the location and health status of the person when the button is pressed. The data is sent to the cloud using LoRa module. The mobile app gets the data from cloud and notifies the user if the button is pressed.

This project contains the following components

- Arduino board
- Mobile phone with custom project app
- Sensor
- LoRa module
- GPS module
- Customized 3D printed box



1. Microcontroller: ATmega328 with Arduino boot loader running at 16MHz.

2. LoRa Module: Ra02

3. Power supply:

- The Arduino Uno can be powered using a USB connector or Vin pin of the board(7-12v).
- The 3.3V supply required for LoRa module is provided by Arduino UNO 3.3V pin.
- LoRa Ra-02 module is connected Arduino board.

4. Eagle PCB CAD software is used for design of two-layer custom board.

5. Sensors: Pulse rate sensor is used.

6. GPS Module: NEO-6m GPS Module which is used to determine time, position and speed if you are travelling.

SOFTWARE:

FIRMWARE:

The firmware will be written in ARDUINO IDE. This is possible due to ATmega328 microcontroller is loaded with Arduino boot loader.

The firmware will do the following functions:

- The firmware reads the commands from the sketch and it collects the data using sensor and GPS module.
- It pushes the data into the cloud and sends the data when button is pressed.

MOBILE APP DEVELOPMENT:

The Mobile App Development will be done for android based mobile phones. The mobile app will receive location and health status from cloud when button is pressed.

