PROJECT REPORT

TITLE: IoT Based Women Safety Gadget

Project Description:

As we know, these are the days where women are considered equals and also giving tough competition to men in all the fields. But still we see the cases where they are being raped and molested. Many smart gadgets have been proposed with different drawbacks. This project actually deals with one of the drawbacks.

The project is basically split into two parts. The first part mainly focuses on sharing location and health condition to rescue team and dear ones. The second part is informing people in the locality where incident takes place. The people who receive location of the girl are going to operate a screaming alarm which is present inbuilt in the gadget. This project is used in the situations where the girl couldn't scream or rescue team couldn't reach her in time.

Project Components:

- Arduino Nano - 1
- LoRa Module(Ra02)-1
- Neo-6m GPS module-1
- Pulse Sensor-1
- Switch-1
- Buzzer-1

Project Board:

Arduino Nano is a board based on ATmega328P.It is slightly similar to UNO board. It is programmed by using Arduino IDE.

Arduino Nano Pin Configuration:

Power : Vin,3.3V,5V,GND

Reset : Reset

Analog Pins : A0-A7

Input/Output Pins : D0-D13

Serial : Rx,Tx

External Interrupts : 2,3

PWM : 3,5,6,9,11

SPI : 10,11,12,13

Inbuilt LED : 13

AREF : AREF

Arduino Nano Technical Specifications:

Microcontroller : ATmega328P

Operating Voltage : 5V

Input voltage for Vin pin : 7-12V

Analog Input Pins : A0-A5

Digital Pins : 14

DC current on I/O pins : 40 mA

DC current on 3.3V pin : 50 mA

Flash memory : 32 KB

SRAM : 2 KB

EEPROM : 1 KB

Frequency :16 MHz

Communication : IIC,SPI

LoRa Module(Ra02) :

LoRa module is used for long range communication using less power.It consists of 16 pins and operates in 3.3V.

LoRa Arduino Interface :

3.3V,GND,Nss,DIO0,SCK,MISO,MOSI,RST pins of LoRa are connected to 3.3V,Gnd,D10,D2,D13,D12,D11,D9 pins of Arduino Nano respectively.

Neo-6m GPS Module :

It operates on low power i.e, 5V and communicates using serial communication at 9600 baudrate.

GPS module Arduino Interface :

Rx pin ,Tx pin of module is connected to D3,D4 pins Arduino Nano respectively . Gnd , Vcc of module is connected to Gnd and 5V of Arduino Nano.

Pulse Rate Sensor :

It is a Biometric Heart Rate Detecting Sensor. It operates on +5V or 3.3V. It is a plug and play type sensor. It consumes 4mA of current. It's diameter is 0.625" and thickness is 0.125". + , - , s pins of pulse rate sensor are connected to 5V,Gnd,D8 pins of Arduino Nano.

Switch :

One terminal of switch is connected to 5V and the other terminal is connected to 10K resistor which is connected to A0.The end of resistor is grounded.

Buzzer :

One terminal of buzzer is connected to D7 and the other terminal is grounded.