

Design and Implementation of Women Safety System Based On IOT Technology

Atul Ghodake¹, Shivam Gomase², Omkar Joshi³, Mrs. Swati Aswale⁴

^{1,2,3}Students of D.Y. Patil College Of Engineering , Akurdi Pune , Maharashtra, India

⁴Professor, Dept. of Electronics & Telecommunication Engineering, D.Y. Patil College Of Engineering , Akurdi Pune, Maharashtra, India .

Abstract – Today in the current worldwide situation, ladies are dealing with numerous issues like ladies harassment. We propose to have a gadget which is the incorporation of different gadgets, equipment includes a wearable that unendingly speaks with reasonable telephone that approaches the web. This paper covers enlightening insights concerning the plan and execution.

The contraption involves a microcontroller(TTGO T-CALL ESP32 SIM800L(GSM and IOT module included)),GPS module(Neo-6M),Shock Generator circuit, Buzzer and Vibrating Sensor. In this endeavor, when a woman recognizes danger she needs to hold tight the trigger of the device. At the point when the contraption is incited, it tracks the current region using GPS(Global Positioning System) and sends emergency message using GSM(Global System for Mobile correspondence) to the enlisted versatile number and nearby police headquarters. IoT module is used to follow the region steadily and update into the site page. Paralyze Generator circuit will convey non-lethal electric daze in emergency conditions to perceive the assailant, signal is used as an alert to caution the nearby people so they may grasp that someone is up the creek without a paddle and vibrating sensor will send the keep going region in case if the device gets abandoned. The essential advantage of this endeavor is that this device can be passed on any place since it is little.

Key Words: TTGO T-CALL ESP32 SIM800L, GPS, Vibration Sensor ,Buzzer .

1.INTRODUCTION:

Ladies everywhere on the world are confronting and surprisingly exposed to exploitative actual provocation. Security for ladies is as yet a significant issue as the quantity of violations and provocation over ladies and young ladies is expanding day – by - day. In this time of innovation, cell phone is one of the devices that nearly everybody like and uses to stay in contact with loved ones. All they need is a gadget that can be conveyed wherever without any problem.

This proposed project manages a fast reacting, cost assurance framework for an individual and particularly for ladies utilizing which a lady in agony can call for help just with the press of a catch on this savvy device. Self Protection module for ladies wellbeing with area following It can assist

ladies with advances that are installed into a smaller gadget. It can possibly assist ladies with innovations that are installed.

It is uniquely intended for ladies security and insurance. It has a control button that will be utilized by ladies to educate close by police when they are in trouble. This framework straightforwardly gets associated with the satellite through GPS when actuated. At that point the area is moved through the GSM, it likewise contains a stun system to create non-deadly electric stun in crisis circumstances to prevent the assailant.

2. LITERATURE REVIEW:

- Wireless IoT based Solution for Women Safety in Rural Areas :- This proposes a framework, by making a remote organization utilizing IoT innovation with a convenient gadget for making the concerned specialists aware of forestall any disaster. Ladies will be given a reference point gadget comprising of an assistance button. If there should arise an occurrence of any crisis, the guide data will arrive at the focal stations and a caution will be set off at the unmistakable spots of the town.
- Smart Wearable Device for Women Safety Using IOT:- This framework distinguishes and sends the cautions for the darlings with the area directions of the ladies without the necessity of her communication in crucial occasions. It sends a crisis message naturally to the family members and close by police headquarters.
- IOT Based Women Security: A Contemplation :- These gadgets can produce screaming alarm or produce electric shocks to the assailant.

3. DESIGN METHODOLOGY:

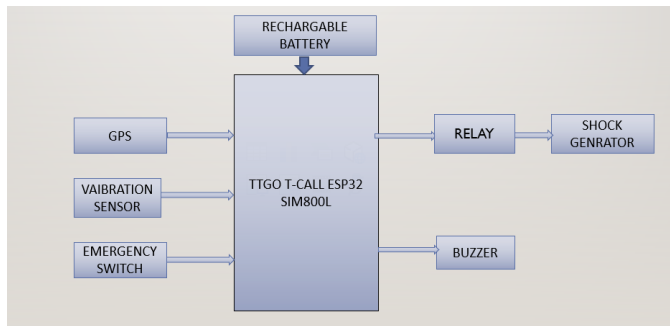


Fig 1: Block Diagram

In the above figure of block diagram we can see different blocks such as a microcontroller (TTGO T-CALL ESP32 SIM800L(GSM & IOT module included)),GPS module(Neo-6M),Shock Generator circuit, Buzzer and Vibrating Sensor. The TTGO T-Call Esp32 Sim800L it has included IOT module and GSM.

3.1 PROJECT FLOW:

First switch on the power supply. When emergency switch is pressed. The GPS will track the current location and send it as SMS to the registered mobile number through GSM. IOT module update the victim location on Webpage. Relay will be on and the shock generator circuit is turned on via relay. Buzzer will be turned on.

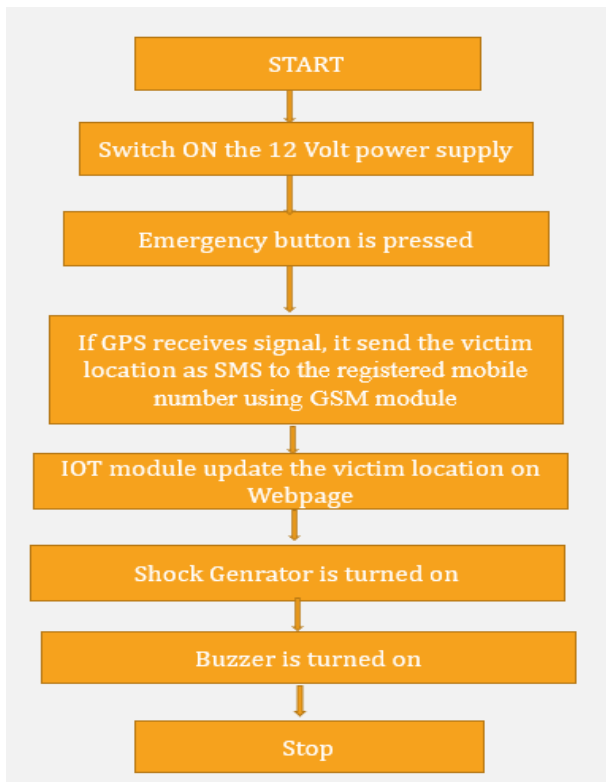


Fig 2: Project flow

4. WORKING PRINCIPLE:

4.1 CIRCUIT DIAGRAM:

From the fig given below we have build the circuit diagram on proteus software. We are send the current location through the GSM to registered mobile number and through IOT module to on a webpage . In this circuit diagram we have used GPS module to calculating the current latitude and longitude values of the victim. We have also used GSM module to send the location through the SMS to registered mobile number. Relay is used to turn on the shock generator circuit. Buzzer is on when emergency switch is pressed. We have provided 5V power supply to the circuit.

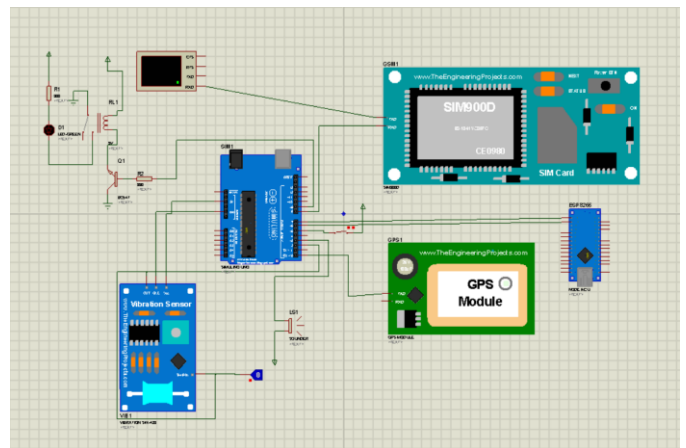


Fig 3: Circuit Diagram

TTGO T-CALL ESP32 SIM800L :- The TTGO T-Call is new ESP32 Development board that combines a SIM800L GSM/GPRS module. In our project it is used to send the SMS through the GSM to registered mobile number and IOT module to update the location on webpage.

GPS module(Neo-6M):- In our project we use GPS module to track the victim location. This module calculate the current longitude and latitude value of the victim.

Vibration Sensor:- When Circuit is defected vibration sensor detect the vibration and give the signal to the Controller to send the last location to the mobile number.

Relay:- A Relay is an electrically operated switch, in our project it is used to turn on the shock generator circuit. We use 5v relay to turn on the shock generator circuit.



Fig 4: RELAY

Buzzer:- Buzzer is used for to alert the people in the surrounding. A buzzer is add sound features to our project. A buzzer is an audio signaling device which may be piezoelectric or electromechanical.



5. SELECTION OF COMPONENTS:

- ▶ TTGO T-CALL ESP32 SIM800L
- ▶ Vibration Sensor
- ▶ GPS Module
- ▶ Buzzer
- ▶ Emergency Switch
- ▶ Relay
- ▶ Resistors, Capacitors
- ▶ Copper clad board (PCB)

Software used:

- ▶ Proteus (CKT DIAG)
- ▶ EasyEDA (PCB LAYOUT)
- ▶ Embedded C (ESP 8266)
- ▶ AVR C (MAIN PROG)

6. APPLICATION:

1. This framework additionally utilized for well being of youngsters.
2. This System Can be utilized for the security of older matured individuals.
3. It very well may be use for the wellbeing of actually tested individuals.
4. It can be use as a lawful proof of wrongdoing with careful area data for indictment.

5. It can be utilized for those individuals who are remained at home alone.

7. RESULT ANALYSIS:-

This paper has presented to our knowledge about Women safety system device present all over the world. The desired outcome of the project is achieved as per the user requirement. We also learned about the functioning of various instruments. This includes the functioning of Microcontroller TTGO T-CALL ESP32 SIM800L, GPS Module, Vibration Sensor, Relay, Emergency Switch , Buzzer.

8. CONCLUSION:

From this concept we conclude that, the Design and Implementation of Women Safety System Based on IOT Technology is technically feasible to the peoples. It is based on TTGO T-CALL ESP32 SIM800L controller provide service. It gives the correct location of the victim and is helpful for women who is in the trouble.

Implementation of this system is to feel secure to women in any time any where.

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