Implementation of Virtual Friendly Women Security Device with IoT Technology

R. Arunprasath[1]

Assistant Professor, Electronics and Communication Engineering Excel Engineering College (Autonomous) Komarapalayam, Namakkal District, Tamilnadu,India

M.Jaya[2],

UG Students, Electronics and Communication Engineering Excel Engineering College (Autonomous) Komarapalayam, Namakkal District, Tamilnadu, India

M. Jothiga[3],

UG Students, Electronics and Communication Engineering Excel Engineering College (Autonomous) Komarapalayam, Namakkal District, Tamilnadu, India

C. Mohanapriya[4],

UG Students, Electronics and Communication Engineering Excel Engineering College (Autonomous) Komarapalayam, Namakkal District, Tamilnadu, India

A.Pavithra[5]

UG Students, Electronics and Communication Engineering Excel Engineering College (Autonomous) Komarapalayam, Namakkal District, Tamilnadu, India

Abstract— **IoT based women safety device is designed and implemented for effective security defense and their self protection. A three way safety module is proposed in order to provide self defense by giving electric shock, recording and tracking of evidences as well as information which results in transformation of data through SOS to the nearby police station, Here recording the information and its footage.In the views of security of women, self defense devices are designed which produced electric shock to the attacker through a nerve simulator and rings a buzzer on pressing a button. It also allows to record evidence via a video camera which gets activated through the button and stores the footage and the Raspberry Pi. A microphone and speaker are connected with the GSM module through which the user can hear and speak with the connected person. Hardware used are Raspberry Pi 3 b+, GSM module, Relay module, Buzzer and Nerve simulator.**

Keywords—IoT module, Raspberry Pi, GSM, GPS, self-defense device.

I .INTRODUCTION

In the present era women are taking equal responsibilitiesin work area. They are maintaining work and home simultaneously which requires travelling and working odd shifts. Safety is a major issue which restricts women. This is due to various reasons such as lack of evidence, withdrawing case for personal safety issues, societal norms etc. The government has taken measures to reduce the crimes through laws and legislations to assure safety in workplace, public places. It provides features for self- defence and alerting the user's emergency contacts through location information and auto-dialled call. It also has a videocamera to record evidence.

II. PROPOSED SYSTEM

This model serves as an alerting device as well as for self-defense. GSM which is capable of sending SMS to the mobile in real time and also for calling purposes. GPS is connected to the Raspberry Pi to show the exact latitude and longitude coordinates of the user location. A switch is connected here to activate the buzzer, video camera and nerve stimulator when it is pressed. The GSM module, which an attached mic and speaker, allows two-way communication with the pre-set numbers and the user can speak to theperson on the other end of the call about the situation. Fig. 1 depicts the working of the proposed prototype. Fig. 2 shows the input out connections of the device connected to Raspberry Pi.
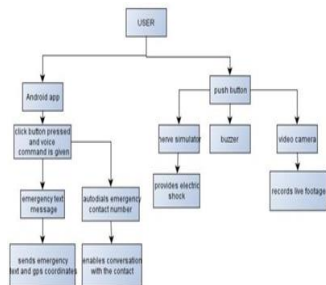

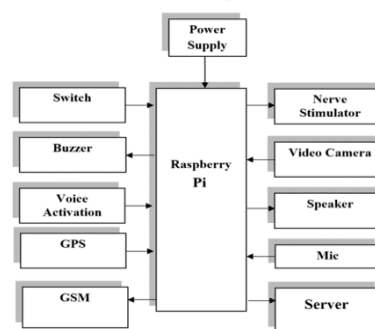Fig.1 Work flow of the 3 way women safety device

Fig. 2 Input/ Output Connections to the Raspberry

III. RESULTS AND DISCUSSION

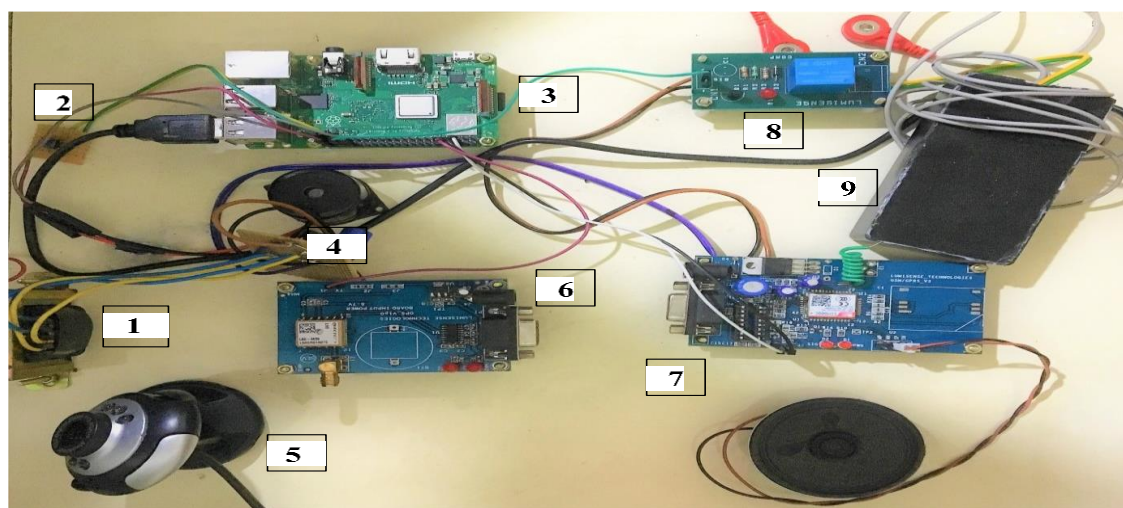Fig. 3 shows the hardware setup of the proposed design of the safety device. As shown in the diagram,

Fig. 3Hardware setup of the 3-Way Women Safety Device

hardware consists of transformer (1), push button (2), Raspberry Pi (3), buzzer (4), video camera (5), GPS module (6), GSM module (7), relay module (8) and nerve simulator (9)

Fig. 4 Relay Module on receiving input signal

On pressing the button, the relay module receives an input signal. The nerve stimulator connected to the relay module produces an electric shock, as shown in Fig. 4. Along with this, the buzzer goes off giving a loud sound. The video camera starts recording.

IV. CONCLUSION

The IoT based 3-Way Women's Safety Device serves its purpose efficiently by providing self defense mechanism to the users along with tracking information and recording evidence features. When the switch is pressed the buzzer goes off immediately simultaneously activation nerve stimulator and video camera. The response of the device is fast and it can help the user to stay safe in any place.

This prototype can be further developed further to make a wearable device. The design can be made more compact and lighter in weight so that it can be easily portable and user friendly.

V. REFERENCES

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