



WOMEN'S SAFETY DEVICE WITH GPS TRACKING AND ALERTS USING ARDUINO

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Abstract: With all of the technology available today, it's not difficult to create a safety device for women that will not only produce an audible alarm but will also send a note to your friends, family, or a concerned person. We have constructed a device for women safety that will allow them to notify police or anyone else using SMS and their current location. The authorities will be able to save the victim from the situation with this information.

Keywords: GPS; GSM; Arduino Board; Microcontroller; women safety etc.

I. INTRODUCTION

The fact that there has been a significant increase in crimes against women in the last decade is regrettable. Despite the fact that a range of software tools are now available to assist women, the figures have not changed. In India, 93 women were raped every day in 2014, according to the National Crime Records Bureau (NCRB). In 2014 alone, 3,37,922 incidences of crime against women were registered. We want to develop a partial wearable that can give a highly secured solution and serve as a utility to help women and their families feel safer chevalier.
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II. LITERATURE SURVEY

Many researchers have already worked on various technologies to improve women's safety. The authors of the paper [1] used a Raspberry Pi and a Raspberry camera module to create a gadget for women's safety. The emphasis here is on assisting the victim by sharing the victim's current position and information about the perpetrator to the police or to particular others. Although this gadget is designed to keep women secure, because the access numbers are fixed, it will be difficult to receive help if the person is faraway from the access number. The creators of [2] focused on two aspects when creating this project. The first is self-defense, and the second is to send the victim's location to specific access numbers. This project makes use of Raspberry Pi, Arduino Uno, GPS, GSM, and other components. The Raspberry Pi has been used to stream live photos and videos. In addition, the Arduino Uno is equipped with GPS,

GSM, and an electric teaser, which provides Victim with real-time location and self-defense [3].

The authors of paper [4] created a three-way gadget that ensures women's protection. They have developed a smartphone app that works with voice commands. This system will generate a warning message to a pre-selected phone number, sounds the alarm, records video, and assists with communication with an emergency number [5][6]. The authors of study [7][8] created a security device that included GPS, GSM, a Raspberry Pi, and several sensors. The smart band can provide location information and physical state of the victim to the victim's guardian and authorities. We constructed the system in such a way that the aforementioned issues would be resolved.

III. PROPOSED SYSTEM

The goal is to develop a safety system for women in the form of a portable safety gadget that performs the following functions:

- Notifies family and police, as well as providing the woman's GPS coordinates.
- When the panic button is touched, call a family member or the police.

The simplest technique to using Arduino is to send and receive data using the GSM shield included on the board. The GSM network uses Arduino UNO to identify the object's present location by initiating the user's smart phone. When the Arduino UNO [9] receives the current location's coordinates, it sends the information to the user's smartphone using the Arduino GSM shield. During urgent situations, the woman can use GSM and GPS [10] to send

messages and make calls to the registered contacts. The call and message are sent even if the device is lost until the user picks up the phone or views the text message. This is precisely where the government should intervene to reduce costs and infrastructural concerns for companies moving in this direction. The issue with the app is that it has a tendency to be awkward.

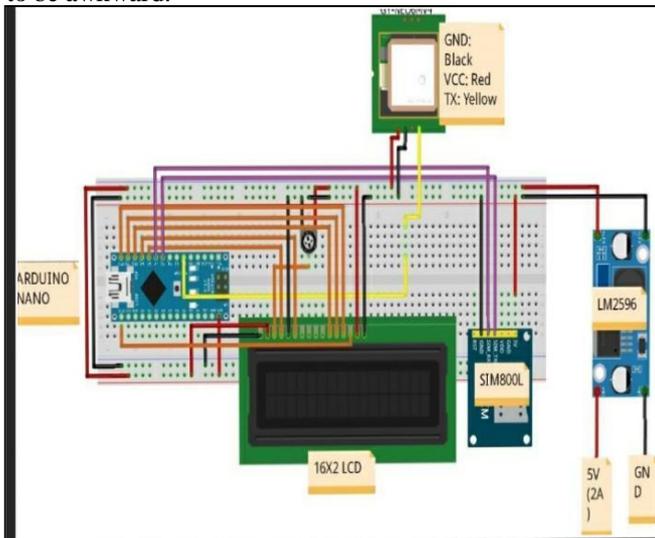


Fig. 1 Circuit diagram

IV. RESULT

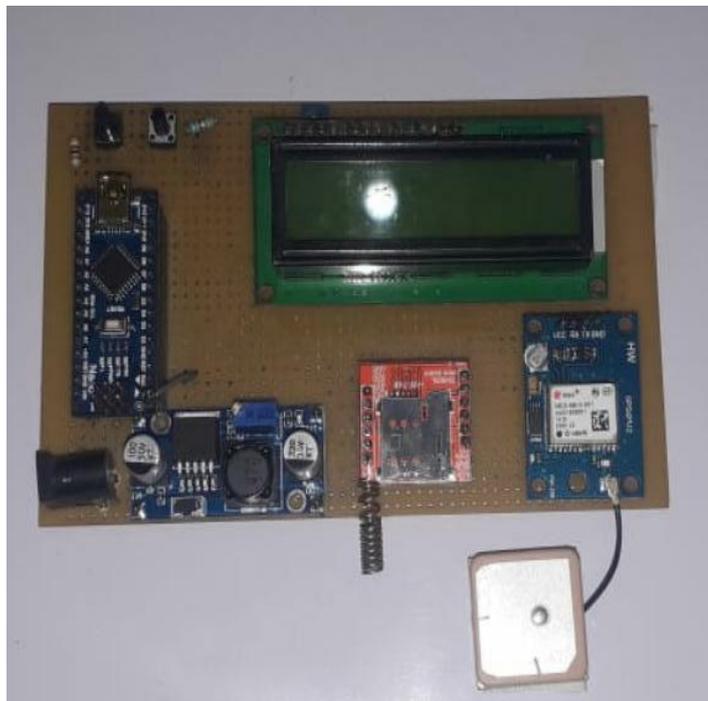


Fig. 2 Prepared device

This project uses ARDUINO to create a women's safety device with GPS tracking and notifications. The system can be linked to an alarm system to notify nearby residents. A GPS receiver, an ARDUINO, and a GSM modem make up this detection and messaging system. The

GPS receiver receives location data in the form of latitude and longitude from satellites. This information is analysed by the ARDUINO and provided to the user through GSM modem. The ARDUINO is connected to a GSM modem. The GSM modem delivers an SMS to the pre-programmed phone number. When a woman is in danger and needs to defend herself, she can use the switch that has been assigned to her. The entire system will be enabled when the switch is pressed, and an SMS will be sent to notify the person of their whereabouts via GSM and GPS.

V. CONCLUSION AND FUTURE WORK

Our goal with this project is to design and build a device that is so small in size that it can serve as a personal security system and an emergency response system for women who are victims of crime. It is a low-cost system that can save the data of members in a certain neighbourhood and issue an immediate alarm in the event of a crime against women. This gives women peace of mind. The demand of the day is to be protected and secure.

Our project's primary priority is the safety of women. As a result, we included a few unique elements in our project. Our system can operate in both online and offline modes, which is one of its primary benefits. In all modes, police and volunteers who are stationed near the user's location will aid the user. The most significant and distinctive aspect of our software, on the other hand, is that when a user is in distress, she will be assisted by fixed and moveable volunteers who are closest to the user. Because this software finds volunteers at its own judgement, the app user will receive assistance much faster. A camera module with video and audio recording capabilities will be added to the gadget. Specific information about the attacker can be transmitted to the police via the camera. We'll include a watch interface, as well as a pulse sensor and a Blood Oxygen Sensor with the Smart Band, so that the user may offer information about her physical health and her family can feel at ease.

VI. REFERENCES

- [1]. N. R. Sogi, P. Chatterjee, U. Nethra and V. Suma, "SMARISA: A Raspberry Pi Based Smart Ring for Women Safety Using IoT," 2018 International Conference on Inventive Research in Computing Applications (ICIRCA), Coimbatore, 2018, pp. 451-454.
- [2]. V. Sharma, Y. Tomar and D. Vydeki, "Smart Shoe for Women Safety," 2019 IEEE 10th International Conference on Awareness Science and Technology (iCAST), Morioka, Japan, 2019, pp. 1-4.
- [3]. S. Pandey, N. Jain, A. Bhardwaj, G. Kaur and V. Kumar, "Reach360: A comprehensive safety solution," 2017 Tenth International Conference on Contemporary Computing (IC3), Noida, 2017, pp. 1-3.
- [4]. T. Sen, A. Dutta, S. Singh and V. N. Kumar, "ProTecht – Implementation of an IoT based 3 –

- Way Women Safety Device,"2019 3rd International conference on Electronics, Communication and Aerospace Technology (ICECA), Coimbatore, India, 2019, pp. 1377-1384.
- [5]. T. M. R, Aishwarya, C. K. S, D. M. K and N. H, "IoT Based Smart Security Gadget for Women's Safety,"2019 1st International Conference on Advances in Information Technology (ICAIT), Chikmagalur, India, 2019, pp. 348-352.
- [6]. Shaik Mazhar Hussain, ShaikJhaniBhasha "Design of women safety system usingRFID,8051microcontroller and GSM based technology Prototype
- [7]. "International Journal of Advanced Research in Computer and Communication Engineering Vol. 3, Issue 6, June2014.
- [8]. Premkumar.P, CibiChakkaravarthi.R, Keerthana.M, Ravivarma. R, Sharmila. "One touch alarmsystem for women's safety using gsm" International Journal of Scientific Research in Science, Engineering and Technology & Management, 2015 March.
- [9]. Madhura Mahajan1,KTV Reddy2,Manita Rajput3Department. of Electronics & Telecommunication"Design and Implementation of a Rescue Systemfor Safety of Women" This full-text paper waspeer-reviewed and accepted to be presented at theIEEE WiSPNET 2016 conference.
- [10]. D. G. Monisha, M. Monisha, G. Pavithra and R.Subhashini "Women Safety Device andApplication-FEMME" Indian Journal of Scienceand Technology, Vol 9(10), DOI:10.17485/ijst/2016/v9i10/88898, March 2016.