

SMART SAFETY DEVICE FOR WOMEN USING IOT

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ABSTRACT

Every day there is a lot of news of physical violence, rape and violence against women, and this number is increasing, especially in big cities. The presence of CCTV helped to some extent but the suspect could not be identified at the time of the attack. The aim of this article is to enable women to use technology to become self-sufficient, thereby reducing crimes against women and girls in India. The goal of the Internet of Things is to integrate everything we have created and implemented with SIM 800 GSM modules, force sensitive resistors, impact sensors, Bluetooth modules, LCDs, resistors, transistors, diodes, LEDs, Arduino UNO, buzzer, etc., PCB, breadboard, transformer, switch, Arduino compiler and Neo6mv2 GPS module. The proposed system has dual security where a sick woman can seek help and share her location through the emergency number. It can activate the system in **three** different modes depending on the situation required, and sometimes it seems to appear at strange or bad times. The victim can activate the device using the alarm button or Bluetooth module. The internal heart rate sensor, GPS module and GSM module will be automatically activated when the device is turned on.

I INTRODUCTION

Security is the condition of being protected against danger or loss. In the general sense, security is a concept similar to safety. The nuance between the two is an added emphasis on being protected from dangers that originate from outside. Individuals or actions that encroach upon the condition of protection are responsible for the breach of security. The word "security" in general usage is synonymous with "safety," but as a technical term "security" means that something not only is secure but that it has been secured. This project is designed with ATmega328. This Project presents women safety detection system using GPS and GSM modems. The system can be interconnected with the alarm system and alert the neighbors. This detection and messaging system is composed of a GPS receiver, Microcontroller and a GSM Modem. GPS Receiver gets the location information from satellites in the form of latitude and longitude. The Microcontroller processes this information and this processed information is sent to the user using GSM modem A GSM modem is interfaced to the MCU. The GSM modem sends an SMS to the predefined mobile number. When a woman is in danger and in need of self-defense then she can press the switch which is allotted to her. By pressing the switch, the entire system will be activated then immediately a SMS will be sent to concern person with location using GSM and GPS. This project uses regulated 5V, 750mA power supply. 7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier issued to rectify the ac output of secondary of 230/12V step down transformer.

II LITERATURE SURVEY

[1] Empowering Women's Safety with smart IoT Technology: A Robust Protection System N.V.K. Ramesh Akhila Alaparathi, RishithaSettipalli, Pranathi Velga, B. Veenapani's Technology to create a system aimed at enhancing women's safety. It might involve various components such as wearable devices, sensors, and

communication systems to monitor and respond to potential threats or emergencies. Additionally, the project might explore how data collected from these devices can be analyzed to provide insights and improve the overall effectiveness of the safety system. Overall, it appears to be a comprehensive approach to address safety concerns for women using advanced technology.

[2] G. Gulati, T. K. Anand, T. S. Anand, and S. Singh ‘Modern era and security of women an intellectual device The Technology and women's security, possibly proposing innovative solutions or strategies to address safety concerns. It might explore how advancements in technology can be utilized to create safer environments for women, both in public spaces and private settings. The term "intellectual device" suggests a thoughtful and strategic approach to leveraging technology for women's security. Overall, it seems like a scholarly examination of contemporary issues related to women's safety.

[3] K. M. Opika and C. M. S. Rao, “An evolution of women safety system. The historical development of safety systems designed specifically to address issues concerning women's safety. It may discuss the evolution of these systems from traditional methods to more contemporary approaches, incorporating technological innovations, legislative measures, and societal changes.

[4] Dr. m. d. Rokade, Dr. Sunil S. Khatal.” Touchless Heart Rate “Prediction with The Help Of Facial Expression Using Image Processing the new method for predicting heart rate without the need for direct contact with the individual. It may discuss the limitations of traditional heart rate monitoring methods that require physical sensors attached to the body and propose the use of facial expressions as an alternative.

[5] W. Akram, M. Jain, and C. S. Hemalatha, “Design of a smart safety device for women using IoT. The motivation behind the design of the smart safety device, highlighting the importance of addressing safety concerns faced by women in various contexts, such as public spaces, transportation, and homes.

[6] Poonam et al ‘IoT based wearable women safety device ‘Proposed system is a wearable device for women that includes pressure, pulse-rate, and temperature sensors, as well as Node MCU, GPS and software application, to identify a probable atrocity and send a message identifying her whereabouts to her friends and relatives. Provide a button on the wearable that may be used to manually send a notice if the victim is able to react. The sensor is Node MCU compatible. It aids in the rapid acquisition of accurate pulse measurements.

[7] S. Mohapatra, C. Ramya, N. G. Sahana, V. Savithri, and S. Yashaswini, “A smart women protection system using IoT,” The prevalence of safety concerns faced by women in various societal contexts, including public spaces, workplaces, and homes. It may discuss the need for innovative solutions that leverage technology to address these challenges and empower women to feel safer and more confident.

[8] A. Bhate and S. H. Parveen, “Smart wrist band for women security using logistic regression technique, ‘The "Smart wrist band for women security using logistic regression technique" by A. Bhate and S. H. Parveen, published in the International Journal of Recent Technology and Engineering in 2019, likely introduces a wearable device designed to enhance women's security, specifically focusing on the utilization of logistic regression technique for its functionality.

[9] Kumar et al. “Monitor-shaped device” that works with the concept of GEOFENCE, a virtual boundary that makes requests when people are in a certain area. There are also two ways to with the victim's family or friends. The device also allows women to make a loud sound when they receive the last message, even if their device is in silent mode.

[10] A. Anny Leema et al. "Women Safety Device with alarm". The various safety measures available for women and this task goes under the piece of keen security. New perspective of women security caution framework with Arduino is proposed which has the capacity of sending SMS alert to the relatives of the victim so that women can go out and do things without hesitation. [11] D. K. M. AnandKumar, "Smart garb—A wearable safety device for women. The "Smart Garb" is presented as a wearable safety device meticulously crafted to cater specifically to the needs of women. It is ingeniously designed to seamlessly integrate into their attire or accessories, ensuring both functionality and comfort. This wearable device is empowered with cutting-edge sensor technology, which serves as the cornerstone of its effectiveness. Among the suite of sensors embedded within the Smart Garb are GPS, accelerometer, heart rate monitor, and microphone.

III EXISTING SYSTEM

In the existing system there is no monitoring system for girls, it should create many problems for them and there is no safety mechanism to protect the girls from the misbehavior activities. In addition, in the existing system there is no alert mechanism for the girl's safety, it should be done by manually only.

- With U app: This is an emergency app initiated by a popular Indian crime television series "Gumrah" aired on channel in this app when the power button of the Smartphone is passed twice consecutively, it will begin out alert messages with a link to the location of the user two minutes to the contacts fed into the app.
- ILA security: The co-founders of the system, MC. Givern, James Philips and Neil Munn, have designed three personal alarms that can shock and is orient attackers and draw attention to dangerous situations.
- GPS Tracking: Integrating GPS technology allows the device to track the user's location in real-time. This can be helpful in case of emergencies or when the user feels unsafe.
- Voice Activation: Incorporating voice activation features enables hands-free operation, allowing the user to trigger alerts or calls for help discreetly.
- Movement Sensors: Sensors detecting sudden movements or falls can automatically trigger alerts and send the user's location to designated contacts.

IV PROPOSED SYSTEM

The block diagram illustrates the architecture of a smart safety device for women utilizing IoT technology. The wearable device incorporates various sensors such as GPS, accelerometer, heart rate sensor, and microphone to monitor the user's location, movements, physiological state, and surroundings. A mobile application serves as an IoT platform, allowing users to manage device settings, view real-time location, and contact emergency services or designated contacts.

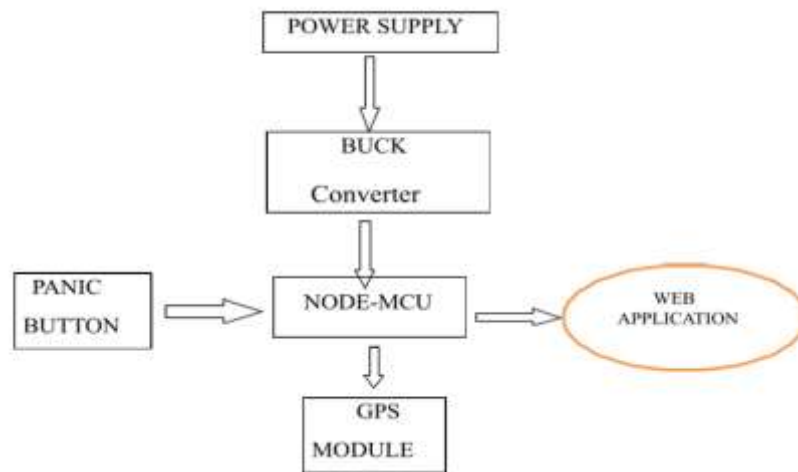


FIG 1: Block diagram of Smart Safety Device

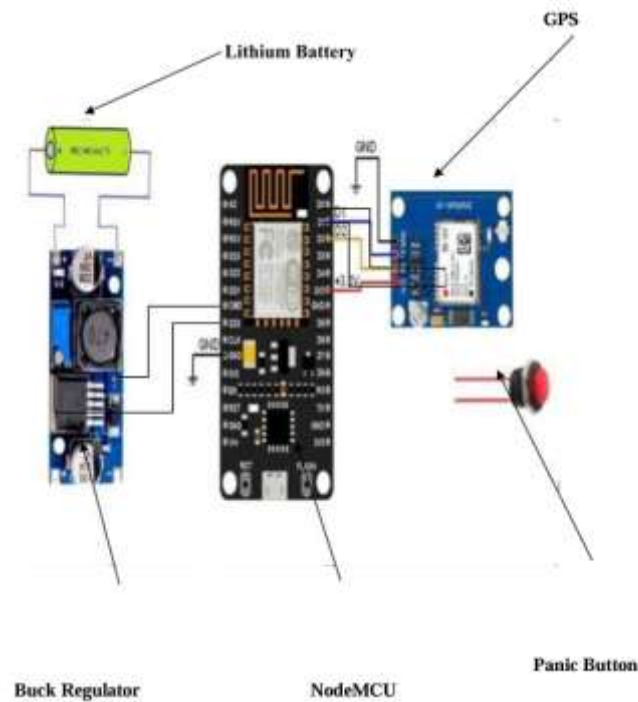


Fig 2: Internal Block Diagram

V RESULTS



Fig 3: simulation of Smart Safety Device for Women

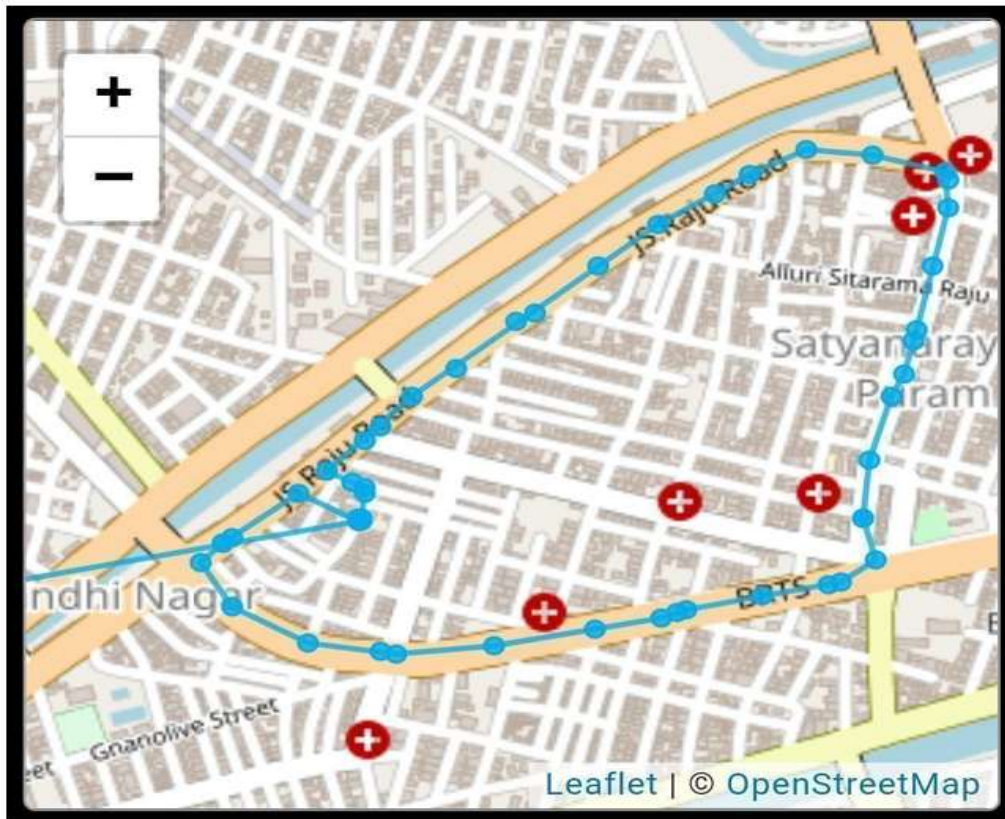


Fig 4: Location Tracking Output

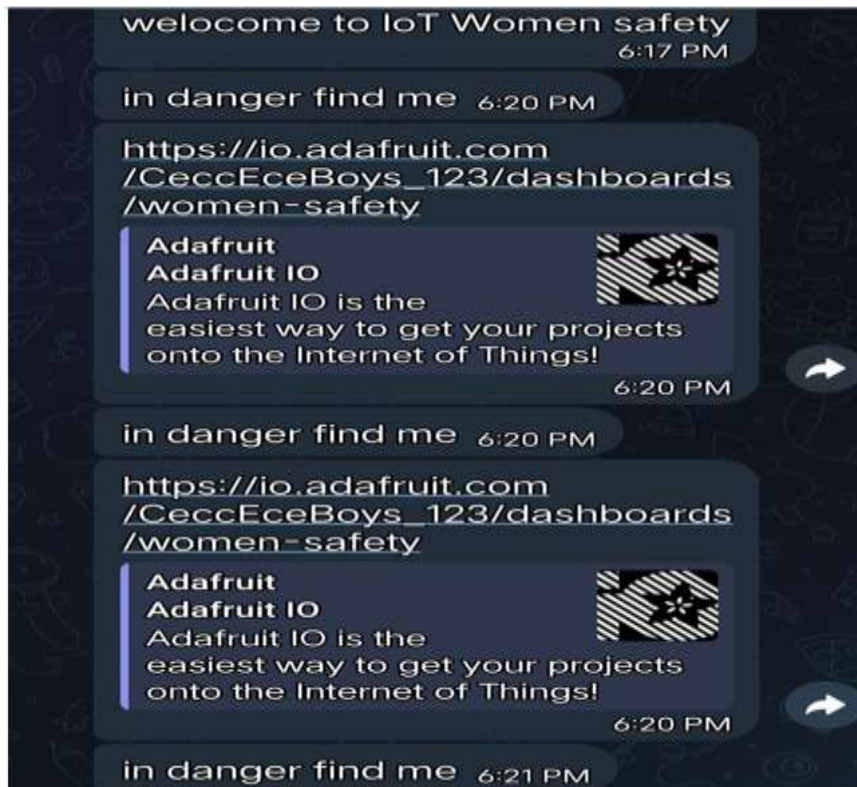


FIG 5: Alert Notification Message

VI CONCLUSION

Being safe and secure is the demand of the day. Our effort behind this project is to design and fabricate a gadget which is so compact in itself that provide advantage of personal security system. This design will deal with most of the critical issues faced by women and will help them to be secure. Existing systems provide the mechanism to track the vehicle but no other emergency mechanism is proposed. The proposed mechanism provides viewing the location of the victim in terms of latitude and longitude which can further be tracked using Google maps. This system helps to decrease the crime rate against women. Women's security is a critical issue in current situation. These crimes can be brought to an end with the help of real time implementation of our proposed system.

VII REFERENCES

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- [10] K. M. Opika and C. M. S. Rao, "An evolution of women safety system: A literature review," *Int. Bilingual Peer Reviewed Peered Res. J.*, vol. 10, no. 40, pp. 61–64, 2020.
- [11] Touchless Heart Rate Prediction With The Help Of Facial Expression Using Image Processing Trupti Ghegade1*, Dr. M. D. Rokade2, Dr. Sunil S. Khatal. [12] K. Singh, P. Kumar, and M. N. Singh, "A smart wearable device for women safety using lot," *International Journal of Engineering and Advanced Technology*