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IoT Based Women Security System

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ABSTRACT- Women's security is a major concern in today's world, and with the advancement of technology, we can now develop intelligent security systems that can help women feel safer. One such system is an IoT-based women's security system, which uses various sensors and devices to monitor and protect women from potential threats. The IoT-based women's security system consists of multiple sensors that are placed at strategic locations in a woman's home or office. These sensors can detect any unusual movement, sound, or activity, and immediately send an alert to the user's smartphone or other devices. The system can also be programmed to automatically call the police or any designated emergency contact in case of an emergency. In addition to the sensors, the system can also include a panic button, which can be carried by the user at all times. When pressed, the panic button will send an immediate alert to the user's smartphone or other devices, as well as to the designated emergency contacts. To enhance the system's effectiveness, the IoT-based women's security system can also include facial recognition technology, which can identify and alert the user if an unknown person is detected on the premises. The system can also use geolocation data to track the user's movements and ensure that they are safe while traveling. Overall, an IoT-based women's security system is a powerful tool that can help women feel safer and more secure in their daily lives. By leveraging the latest advancements in technology, we can create a world where women can live free from fear and harassment.

KEYWORDS: Women's security, IoT (Internet of Things), Sensors, Alert system, Emergency contacts, Panic button, Facial recognition, Geolocation data, Threat detection, Safety

I. INTRODUCTION

Women's safety is a pressing issue in today's society, with women facing physical and sexual abuse, violence, and harassment on a daily basis. Despite technological advancements, women are still not safe, and this has led to the need for more innovative solutions to address their safety concerns. Women are skilled at mobilizing diverse groups for a common cause and are often at the forefront of promoting liberty and justice. It is crucial to recognize the importance of women's safety and take measures to ensure their protection. Women are not as physically fit as men, and in emergency situations, they may need assistance. The best way to avoid becoming a victim of violent crime is to recognize the danger, defend yourself, and seek help. In India, women face social challenges and are often victims of violent crimes. According to a global poll, India is the "fourth most dangerous country" in the world for women. In response to this, we propose an IoT-based women's safety device that incorporates various sensors and devices to provide women with a secure and discreet means of triggering an alarm in emergency situations. The device includes a panic button that, when pressed, sends a message containing the user's location to a pre-selected list of emergency contacts, and the camera and mic start to stream video and record audio, respectively. This approach aims to address the constraints preventing police from responding quickly to calls of distress and provide women with a reliable means of seeking help in dangerous situations.

II. LITERATURE SURVEY

[1] Jijesh J. J, Suraj S, D. R. Bolla, Sridhar N K and Dinesh Prasanna A, "A method for the personal safety in real scenario," 2016 International Conference on Computation System and Information Technology for Sustainable Solutions. (IEEE): More accidents occur for women, children and elderly people who always feel that they need the support to move around. With the help of advanced technology individuals can make use of a simple gadget which can be used whenever they are in unpredictable circumstances to establish connectivity between police and family. The device designed is a portable one which can be activated as per the requirement of the individual which will locate the victim using GPS and with the help of GSM emergency messages can be sent to the respective locations as per the design. The gadget provides an alarm system, call for help, and electric shock to get rid of the attacker.

[2] Prof. Basavaraj Chougula, Archana Naik, Monika Monu, Priya Patil and Priyanka Das, “SMART GIRLS SECURITY SYSTEM”, (JAIEM) 2014 : This paper suggests a new perspective to use technology to protect women. The system resembles a normal belt which when activated, tracks the location of the victim using GPS (Global Positioning System) and sends emergency messages using GSM (Global System for Mobile communication), to three emergency contacts and the police control room.

[3] Poonam Bhilare, Akshay Mohite, Dhanashri Kamble, Swapnil Makode and Rasika Kahane, “Women Employee Security System using GPS And GSM Based Vehicle Tracking”, international journal for research in emerging science and technology, volume-2, issue-1, january-2015 : This paper describes a GPS and GSM based vehicle tracking and women employee security system that provides the combination of GPS device and specialized software to track the vehicles location as well as provide alerts and messages with an emergency button trigger. The information of vehicle position provided by the device can be viewed on Google maps.

[4] Dr. Sridhar Mandapati, Sravya Pamidi, Sriharitha Ambati, “A Mobile Based Women Safety Application (I Safe Apps)”, IOSR Journal of Computer Engineering (IOSR-JCE): Jan – Feb. 2015: In proposed system with the push of one button, people can alert selected contacts that the person is in danger and share the location. With this personal safety app, you'll never walk alone. The personal safety application requires the name and number of the person who is to be contacted in times of emergency. Users can add multiple people in the emergency contacts list. These are the people who will receive notifications or SMS in case of an emergency. All it requires is the user's action to trigger an SOS button provided and it shoots messages as fast as the device can manage. This app also provides necessary first-aid measures that should be taken at the time of emergency situations.

[5] Madhura Mahajan, KTV Reddy, Manita Rajput “ Design and Implementation of a Rescue System for Safety of Women”, Dept. of Electronics & Telecommunication Fr. C. Rodrigues Institute of Technology Vashi, Navi Mumbai, India: In this literature focus is on creating a safety system that brings about a solution that ensures both defense and creation of a seamless pathway to initiating legal procedures, if any; have to be taken by the victim. We intend to create a partial wearable that can provide a complete security solution and become a utility that eases the apprehension among women and their family members. The objective of this literature work is to create a safety system in the form of a portable safety device for women that do the following tasks: 1. Alerts family and police and gives location coordinates of the woman being attacked. 2. Incorporates a defensive mechanism by giving a mild shock.

III. PROBLEM STATEMENT

The problem statement addressed by the papers is the issue of personal safety and security for women, children, and elderly people. The papers propose various solutions using technology, such as portable devices that can be activated in case of emergency, GPS tracking systems, and mobile applications that can send alerts and messages to emergency contacts and provide first-aid measures. The objective is to provide a safety system that can help individuals in unpredictable circumstances and establish connectivity between the victim, family, and police.

IV. PROPOSED METHODOLOGY

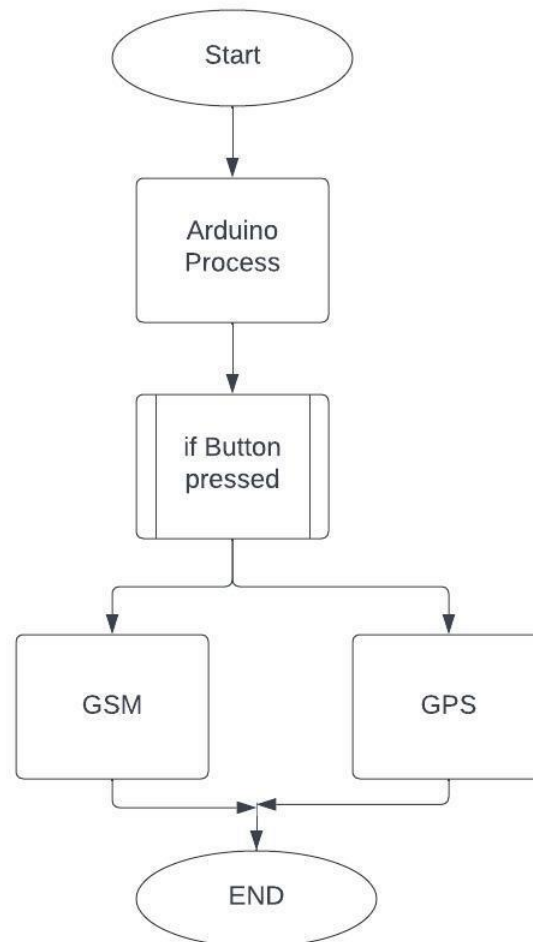


Fig1:Flow Chart of the System

The women's security system with GPS, GSM, Arduino, push button, and buzzer works as follows:

- 1 The personal safety device consists of a push button and a GPS module, which is connected to an Arduino board.
- 2 When a woman feels threatened or in danger, she presses the push button on the personal safety device.
- 3 The Arduino board receives the signal from the push button and sends the current GPS location of the device to a preconfigured phone number via a GSM module.
- 4 The preconfigured phone number receives an SMS message with the GPS location of the device, which can be used to locate the woman in distress.
- 5 The woman also receives an acknowledgment message that her alert has been sent.
- 6 The system also has a buzzer that is activated when the push button is pressed. This alerts people in the vicinity that someone is in distress and needs help.
- 7 The buzzer can also be used as an audible alarm to scare away potential attackers.

The GPS module provides accurate location information, while the GSM module ensures that the alert message is sent quickly to the preconfigured phone number. The Arduino board serves as the central processing unit, which receives the signal from the push button and sends the message with the GPS location via the GSM module. The buzzer serves as an audible alarm to alert people in the vicinity that someone is in danger. The system is designed to be simple, effective, and easy to use, providing a quick and reliable response in case of an emergency.

V.PROJECT PURPOSE

The purpose of these projects is to provide personal safety and security solutions for women. These projects aim to leverage technology such as GPS and GSM to develop wearable or portable safety devices that can be activated in case of an emergency or attack. The devices are designed to alert family members and the police, share the location of the victim, and provide a defense mechanism such as an electric shock to ward off the attacker. The goal is to provide a sense of security to women and empower them to take control of their safety in potentially dangerous situations.

VI.RESULTS AND DISCUSSIONS

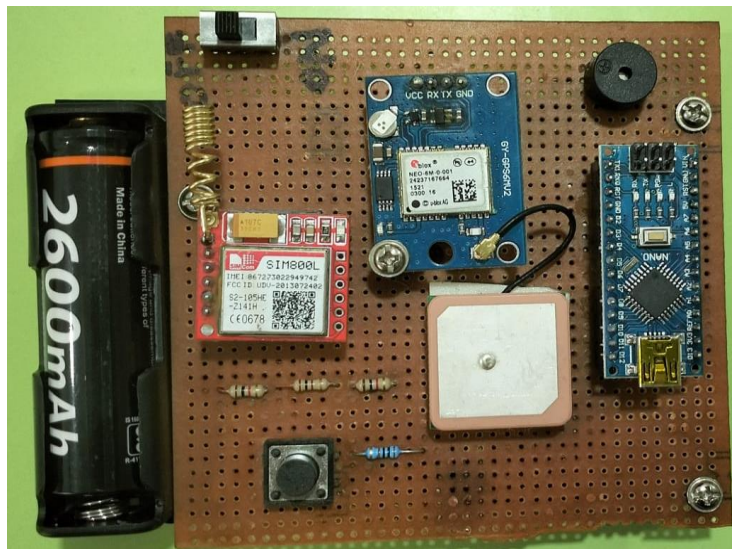


Fig2:Design of the System

After Device working .when women panic she press the button on device then Arduino read the gps co-ordinates and send through gsm of women loaction of latitude and longitude .

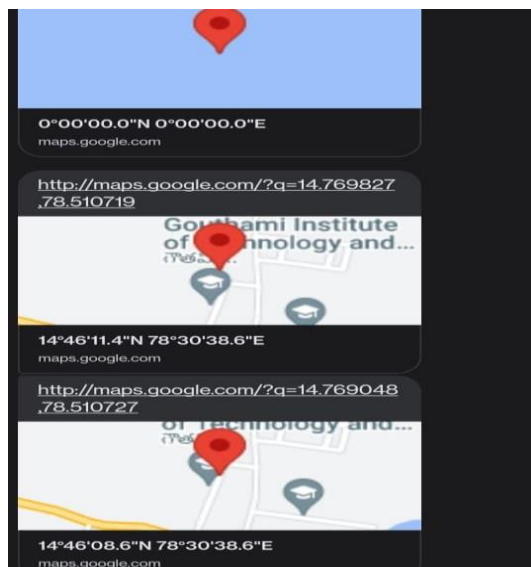


Fig 2.1 picture of moblie messege

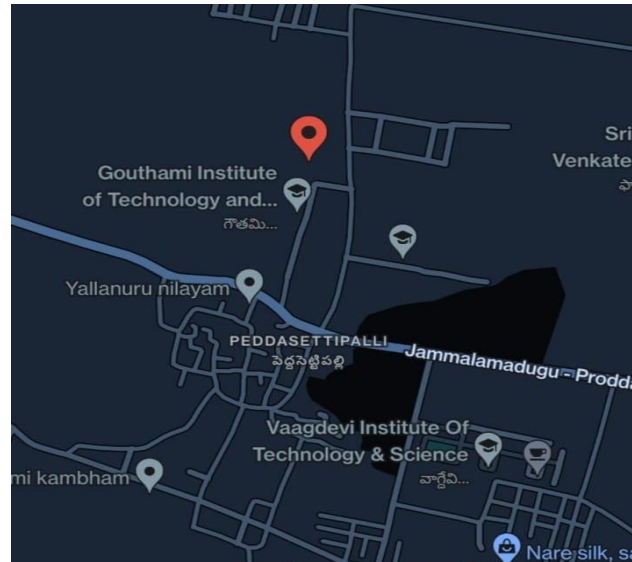


Fig 2.2 picture of google map direction

VII.FUTURE ENHANCEMENT

There are several potential future enhancements that can be made to the proposed IoT-based Women Security System. Some of these enhancements are:

- Integration with smart home devices: The safety device could be integrated with smart home devices, such as smart locks or security cameras, to provide an added layer of security for the user.
- Artificial Intelligence (AI) integration: AI can be used to detect patterns in the user's behavior and provide personalized safety suggestions. For example, if the AI detects that the user frequently walks in a poorly-lit area, it can suggest an alternative route that is safer.
- Real-time video streaming: Adding real-time video streaming to the safety device could provide an additional level of security for the user. In case of an emergency, the device could automatically start streaming video to the user's emergency contacts.
- Integration with voice assistants: The safety device could be integrated with voice assistants, such as Siri or Google Assistant, to provide hands-free operation. This would allow the user to activate the safety device without having to physically interact with it.
- Smart tracking and alerting: With the use of IoT technologies and sensors, the safety device could track the user's daily routine, and if there is any deviation or abnormality, it could trigger an alert to the user or emergency contacts.
- Automatic police notification: The safety device could be integrated with the local police department to automatically notify them of an emergency situation and provide the user's location.
- Machine Learning (ML) based personal safety: With the use of ML techniques, the safety device could learn from the user's past experiences and predict potential safety threats. This would allow the device to take proactive measures to prevent any danger to the user.

VIII.CONCLUSION

In conclusion, ensuring the safety of women is a critical issue that needs to be addressed in society. The advancement of technology has provided a platform for the creation of innovative solutions to address this problem. The papers reviewed in this document present different approaches to the use of GPS and GSM-based technology to provide personal security to women. These solutions are portable, easy to use, and can help women in distress to alert their family, friends, and authorities, providing their location coordinates. These future enhancements can be critical in improving the effectiveness of the solutions and addressing the problem of women's safety. Overall, the use of GPS and



GSM-based technology is a promising solution to address the problem of women's safety, and with continued innovation and development, we can hope for a safer environment for women.

REFERENCES

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- 2 Prof. Basavaraj Chougula, Archana Naik, Monika Monu, Priya Patil and Priyanka Das, "SMART GIRLS SECURITY SYSTEM", (JAIEM) 2014.
- 3 Poonam Bhilare, Akshay Mohite, Dhanashri Kamble, Swapnil Makode and Rasika Kahane, "Women Employee Security System using GPS And GSM Based Vehicle Tracking", international journal for research in emerging science and technology, volume-2, issue-1, january-2015.
- 4 Dr. Sridhar Mandapati, Sravya Pamidi, Sriharitha Ambati, "A Mobile Based Women Safety Application (I Safe Apps)", IOSR Journal of Computer Engineering (IOSR-JCE): Jan – Feb. 2015.
- 5 Madhura Mahajan, KTV Reddy, Manita Rajput " Design and Implementation of a Rescue System for Safety of Women", Dept. of Electronics & Telecommunication Fr. C. Rodrigues Institute of Technology Vashi, Navi Mumbai, India.



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