

SMART INTELLIGENT SYSTEM FOR WOMEN AND CHILD SECURITY

¹VAYARA PRASANNA LAKSHMI, ²ANKANI AAKANKSHA, ³LAKKIMSETTY SATYA NAGA VENKATA RAMA SOWMYA, ⁴AMBATI BHARGAVI, ⁵PATI VENKATA SATYA SIVA

¹Associate professor, Dept of E.C.E, BVCITS, Batlapalem, Amalapuram, AP
^{2,3,4,5}B. Tech, Dept of E.C.E, BVCITS, Batlapalem, Amalapuram, AP

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ABSTRACT: The increasing concerns over the safety of women and children have led to the need for smart, real-time security solutions. This project proposes a Smart Intelligent Security System using Raspberry Pi that integrates IoT, GPS, and communication technologies to provide immediate assistance during emergencies. The system is designed to detect distress situations through manual triggers (panic button) or automatic sensing mechanisms. Upon activation, the device captures location data using GPS and sends alert messages to predefined contacts via GSM or internet-based services. Additionally, features such as live audio/video streaming, real-time tracking, and emergency siren activation enhance the system's effectiveness. The compact and cost-effective design makes it suitable for wearable or portable safety devices. This solution aims to ensure quick response, continuous monitoring, and improved personal safety.

Keywords: Women Safety System, Child Security, Raspberry Pi, Internet of Things (IoT), GPS Tracking, GSM Communication, Panic Button, Real-Time Monitoring, Embedded Systems, Emergency Alert System.

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INTRODUCTION: It is quite apparent that there is a striving need for women security in the country. It is now possible to intelligently apply the benefits of current technology to resolve societal issues. Aims to apply the current trend in technology, i.e., Internet of Things (IoT) to eliminate fear filled lifestyle of female folks. The Internet of Things (IoT) is an ecosystem of connected physical objects that are accessible through the internet. A Raspberry-Pi based wearable device called the Smart bracelet that proves constructive to the women in danger and helps them to fight such odds. The main objective of the system is to intimate an instant location and a help message through an Android app to a registered number of contacts and the police. So that untoward incidents could be prevented and to provide real time evidence for swift action against the perpetrators of the crime. So here we propose wearable Women's security system that constantly monitors user's location, pulses rate and sends message to police and emergency contacts through a wearable bracelet. A Smart bracelet is a unique device that helps the user's safety through this bracelet. This bracelet is a real-time, portable, Scramble system that consists of a button. The main need of system is to intimate an instant location through an android app to register number of contacts and the police. It provides the user another way to interact with an android Smartphone. By late 20th and early 21st century, improvement in technology helped in equipment. Smart bracelet were basically a step counter wear on the wrist but now due to the advanced electronic sensors placed within it, it can perform various functions, like fetching location, sending messages, images of user, warning you to get out of women's insecurity, everything can be done easily. Smart Bracelet have positive effect on Women's Security. These devices help an individual to secure their life. The use of smart phones with Smart bracelet helps to record and monitor activities such as location, heart rate, Images

of victim times as there could be scenarios of the child getting lost in the major crowded areas. This paper focuses on the in the major crowded areas. This paper focuses on the key aspect that lost child can be helped by the people around the child and can play a significant role in the child's safety until reunited with the parents. Most of the wearable available today are focused on providing the location, activity, etc. of the child to the parents via Wi-Fi and Bluetooth . But Wi- Fi and Bluetooth seem a very unreliable source to transfer information. Therefore it is intended to use SMS as the mode of communication between the parent and child's wearable device, as this has fewer chances of failing compared to Wi-Fi and Bluetooth. The platform on which this project will be running on is the Arduino Uno micro controller board based on the ATmega328P, and the functions of sending and receiving SMS, calls and connecting to the internet which is provided by the Arduino GSM shield using the GSM network . Also, additional modules employed which will provide the current location of the child to the parents via SMS. The second measure added is SOS Light Indicator that will be programmed with Arduino UNO board to display the SOS signal using Morse code. The different modules stay enclosed in a custom designed 3D printed case . In the scenario, a lost child can be located by the parent could send an SMS to the wearable device which would activate the SOS light feature on the wearable. Therefore alerting the people around the child that the child is in some distress and needs assistance as the SOS signal is universally known as the signal for help needed. Additionally, the wearable comes equipped with a distress alarm buzzer which sets to active by sending the SMS keyword "BUZZ" to the wearable. Hence the buzzer is loud and can be heard by the parent from very considerable distance.

LITERATURE SURVEY:

ShaistaKhanam, Trupti Shah [1] proposed algorithm for women safety using fingerprint module. This paper gives a detailed approach towards women safety. Here fingerprint is required for activation of device, electric shock producing circuit, GSM and GPS module for alerting and location tracking. At the time of emergency, it is hard to place the finger in the fingerprint module and recognition is not possible, if there is any undesired stuff (wet or dust) in the finger. To avoid this problem the fingerprint module will not be used in the proposed system. Naeemul Islam, Md. An isuzzaman, Sikder Sunbeam Islam, Mohammed Rabiul Hossain, Abuja far Mohammad Obaidullah [2] developed a device for safety and protection of women. Here three push buttons are implemented to define the types of accident victim is facing. To control a whole system a PIC16F887A microcontroller is used. Since it is a 40 pin IC, it increases the size of the device, which will make it difficult for women/children to carry all the time. Sharifa Rania Mahmud, Jannatul Maowa, Ferry WahyuWibowo [3] proposed an algorithm for women empowerment. This paper discusses about violence against women and also different health issues of women. It is an application-based system. During the event of molestation using the application present in the victim's smartphone will automatically send out an emergency call to the assigned contacts. This can do only when GPS is enabled in the smartphone and if not the time delay taken to turn on the GPS is noted to be the downside of the project. An and Jatti, Madhvi Kannan, Alisha RM, Vijayalakshmi P, ShresthaSinha [4] developed a wearable device, which uses physiological signals like galvanic skin resistance and body temperature. Data is monitored using cloud platform and analysed using MATLAB simultaneously. If there is any sudden change in the physiological parameter intimation will be sent to the parents. But body temperature may also change due to some

other reasons. So, it is not fair to consider body temperature as a parameter to design a device for women safety. Sunil K Punjabi, Suvarna Chaur, Ujwala Ravale, Deepti Reddy [5] developed an intelligent system for women and children. In this system they are using a pressure switch. When they feel unsafe, she has to compress the switch, then an intimation will be sent to parents followed by a call. If it is unanswered the call will be redirected to nearby police station. M. Kavitha, V. Sivachidambaramanathan [6] proposed a device for women self-protection using IoT. In this system there are few bio sensors are used to sense the user's bodily changes. If there is any abnormalities detected on women an intimation will be sent to guardian as per preprogram of the device. R. Pavithra, S. Karthikeyan [7] developed a survey on women's safety mobile application. This application helps women to discover and help them in any critical situations. It helps find out the exact area of the individual and send SMS to the parents. Madhura Mahajan, KTV Reddy, Manita Rajput [8] designed a rescue system for safety of women. It is a simpler safety solution that can be achieved by pressing a switch and instantly send out alerts to the near ones of the individual. Nandita Viswanath, Naga Vaishnavi Pakyala, G. Muneeswari [9] developed a smart foot device for women safety. This smart device will be clipped to the footwear of the user. If the foot has been tapped behind the others on four times, an alert will be sent through Bluetooth.

PROPOSED METHOD:

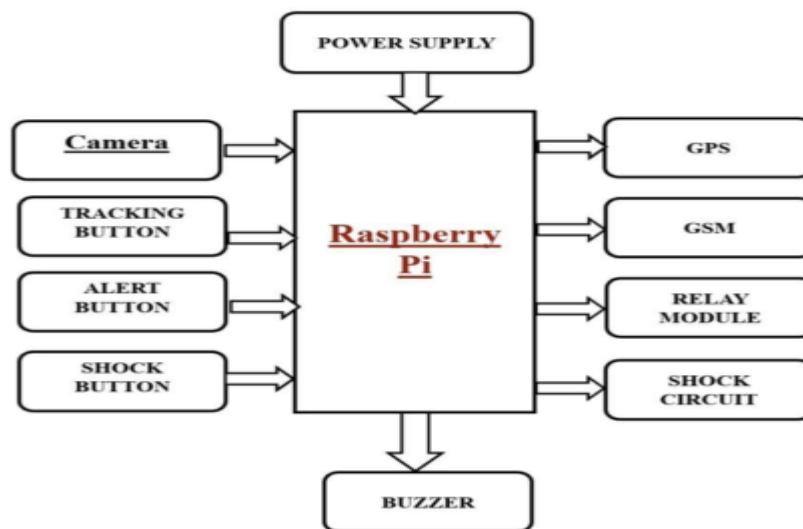


Fig1: Proposed Block diagram

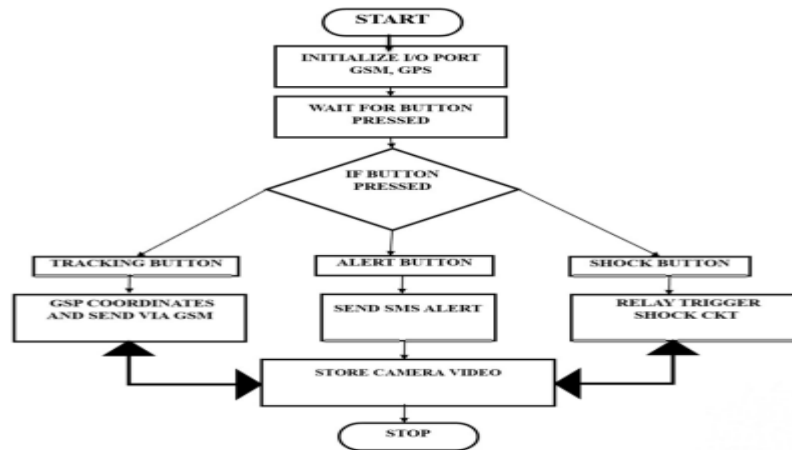


Fig 2: Flowchart

The suggested smart floor cleaner's block diagram is displayed in the above figure. The current legal framework is not robust enough to prevent crimes against women. The main objectives of the system are accurate tracking, timely processes, reasonable development costs, and acceptable quality. This study offered a way for a woman to alert the appropriate authorities right away if she feels threatened. The recommended approach measures a woman's pulse rate with a device. If it is high, our gadget and smartphone notify the closest police station and family member of the woman's location. and take a picture of the victim, sending copies to each of However, the victim and the contact person must both own. The recommended approach measures a woman's pulse rate with a device. If it is high, our gadget and smartphone notify the closest police station and family member of the woman's location. and take a picture of the victim, sending copies to each of However, the victim and the contact person must both own .This study offered a way for a woman to alert the appropriate authorities right away if she feels threatened.

RESULT:



Fig a: Prototype Hardware

Advantages

- Provides real-time location tracking during emergencies
- Quick alert system with minimal response time
- Compact, portable, and cost-effective design
- Supports live audio/video monitoring
- Easy integration with IoT platforms and mobile applications
- Enhances personal safety and security awareness
- Can operate autonomously without constant supervision

Applications

- Personal safety devices for women and children
- School transportation monitoring systems
- Smart wearable safety gadgets
- Elderly care and monitoring systems
- Public transport safety solutions
- Remote tracking and surveillance systems

Conclusion: The Smart Intelligent System using Raspberry Pi offers an effective and reliable solution for enhancing the safety of women and children. By integrating IoT, GPS, and communication technologies, the system ensures timely alerts and real-time tracking during emergency situations. Its affordability, scalability, and ease of implementation make it suitable for widespread adoption. This system has the potential to significantly reduce response time and improve safety measures in critical situations.

Future Scope: Integration with AI-based threat detection (gesture, voice, or facial recognition), Development of wearable devices such as smart bands or pendants, Mobile application with real-time monitoring and alert management, Cloud integration for data storage and analytics, Use of machine learning for predicting unsafe situations, Integration with law enforcement and emergency response systems, Enhancement with biometric authentication for user safety, Addition of voice-activated emergency triggers, Improved battery efficiency for long-term usage

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