WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Woman's Safety Device

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ABSTRACT -

This project aims to design and develop a wearable safety device for women, providing an effective solution to enhance personal security. The device incorporates advanced technologies such as GPS tracking, emergency alert systems, and self-defense mechanisms. The proposed system enables women to quickly alert authorities and contacts in emergency situations, ensuring timely assistance and support. This project focuses on designing and developing a wearable women's safety device, leveraging advanced technologies to provide an effective solution for personal security. The device integrates GPS tracking, emergency alert systems, and self-defense mechanisms, enabling women to quickly alert authorities and contacts in emergency situations. The proposed system aims to reduce response times, increase user safety, and provide peace of mind for women in distress.

KEYWORDS :-

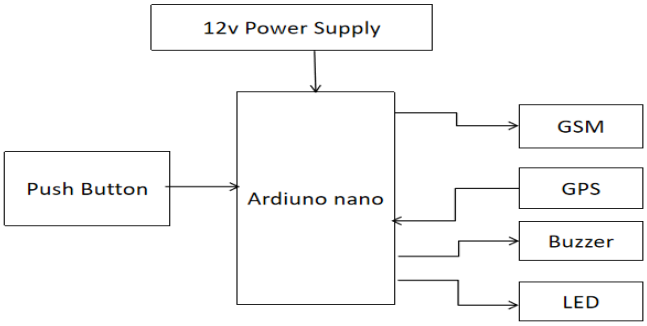
- Women's safety device
- Emergency alert system
- Women's empowerment

INTRODUCTION :

In recent years, women's safety has become a critical issue globally. With rising concerns about harassment, assault, and violence, ensuring the safety of women, especially in public spaces, women safety is a top priority for many governments, organizations, and individuals. According to the National Crime Records Bureau (NCRB) in India, there has been a steady increase in incidents related to crimes against women, including sexual assault, harassment, and abductions. The frequency and severity of these crimes, particularly in urban areas, underline the urgent need for preventive measures and emergency response solutions that can provide immediate assistance to the victims.While mobile phones have become an essential tool for communication, they often fail to serve as an effective solution in emergencies. The problem lies in the fact that in a distressing situation, victims may not have the ability to reach for their phones or use them due to fear, injury, or unconsciousness. . These devices can be worn on the body, making them readily accessible when needed, and they often feature emergency functions such as sending distress signals, location tracking, and communication with predefined contacts or authorities. Wearable safety technology offers a discreet, automatic, and effective way to respond to threats, ensuring that assistance is always within reach.Several safety devices and mobile applications have been developed to address the issue of women's safety. For example, mobile safety apps, such as "bSafe" and "Circle of 6," enable users to send instant alerts to contacts in case of distress. However, these apps still rely heavily on smartphones, meaning that they depend on network connectivity and the user's ability to operate them. Additionally, many wearable devices, such as smartwatches, do not feature robust emergency functions and may not provide an immediate response when needed.

BLOCK DIAGRAM :

Figure 1: Block Diagram



WORKING :

The Women's Safety Device operates in a straightforward manner, ensuring that emergency alerts are sent out quickly and efficiently. Below is a step-by-step breakdown of how the system works:

1.Normal Operation:

- The device continuously monitors the user's GPS location and tracks any abnormal movements.
- The Arduino Nano continually checks for signals from the panic button, GPS, and other sensors (if included).

2.In Case of Emergency:

- If the user presses the panic button, the system is activated.
- The Arduino Nano reads the signal from the panic button and immediately sends a message containing the user's GPS coordinates to the predefined contacts via the GSM module.
- At the same time, the LED lights begin flashing, and the buzzer sounds to alert people in the vicinity.
- The system ensures that both the distress alert (SMS) and local alerts (visual and audible) occur simultaneously**.**

3.Emergency Communication:

- If necessary, the GSM module can be used to make a voice call to the predefined emergency contacts or authorities.
- The GSM module communicates via SMS or voice call, depending on the available network.

LITERATURE SURVEY :

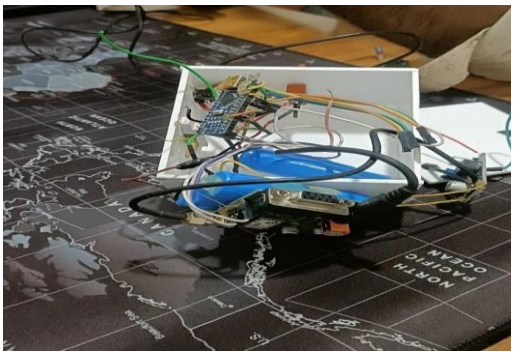
- Wearable Safety Devices for Women Using GPS and GSM – **Patel et al. (2017)**
- Real-Time GPS Location Tracking System for Women's Safety – **Singh (2019)**
- A Review of IoT-Based Safety Systems for Women – **Gonzalez et al. (2018)**

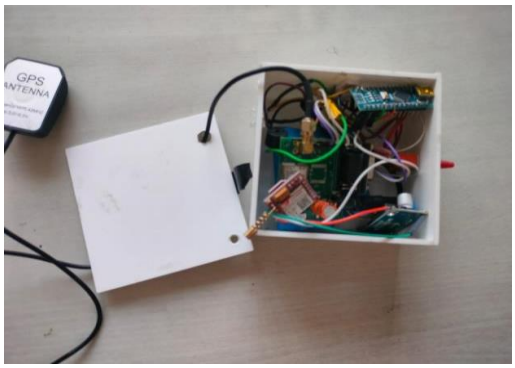
METHODOLOGY :

The methodology for the Women's Safety Device project involves a comprehensive approach to design, develop, and test a wearable device that provides effective personal security solutions for women. The research phase begins with a thorough literature review of existing safety devices, identifying gaps and areas for improvement. User surveys and interviews are conducted to gather insights into the needs, concerns, and preferences of potential users. Stakeholder analysis is also performed to identify key stakeholders, including law enforcement and women's organizations. The design phase focuses on developing a wearable device prototype that incorporates advanced features such as GPS tracking, emergency alert systems, and self-defense mechanisms. The user interface is designed to be intuitive and accessible, ensuring ease of use in emergency situations. During the development phase, the hardware and software components of the device are developed, integrating technologies such as GPS, accelerometers, and communication modules. The testing and evaluation phase involves thorough functional testing of the device, user testing to gather feedback on usability and effectiveness, and performance evaluation to assess response times, accuracy, and reliability.

ACTUAL SYSTEM

Figure 2: Actual System





CONCLUSION :

The Women's Safety Device project aims to provide a wearable solution for women's personal security, leveraging advanced technologies such as GPS tracking and emergency alert systems. By designing a device that is both effective and user-friendly, this project seeks to empower women and provide them with a sense of safety and security. The device has the potential to make a significant impact on women's lives, and further development and implementation can lead to a safer and more secure society.

Key Takeaways

1. Wearable technology can play a vital role in enhancing women's personal security.
2. GPS tracking and emergency alert systems are crucial features for women's safety devices.
3. Empowering women through technology can lead to increased confidence and independence.
4. Wearable safety devices have the potential to reduce response times and improve outcomes in emergency situations.

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