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Original Article

# Women Safety Device with GPS Tracking and Alert

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***Abstract***

*Every woman, young girl, mother, then females after altogether treads of life is harassed to be harmless and protect themselves. In our country even if India is mounting day by day still many crimes stylish against women. In streets, public transport, and public places exceptionally have enhance the community of the chasers. In this research, a smart church wearable scheme for daughters established the Internet of Things is projected. It is earned in the form of a smart ornament and contains IoT and Machine Learning. The Women Safety Bracelet represents a modern and ground- breaking solution to address the pressing issue of women's safety in today's society. This abstract provides an overview of the benefits of this wearable technology. In recent years, concerns over women's safety have grown substantially, highlighting the need for accessible and effective safety solutions. This Women Safety Bracelet is designed to empower women by providing them with a discreet yet powerful tool to enhance their security and peace of mind. In this, we just have to press a button, or in an emergency case, it will break, then on both cases system will send the live location to networks, household, and police department .Our proposed system resulted in a strong, elastic, cheaper and user- friendly system to solve the problem of women which helps them to live autonomously or easily.*

***Keywords:*** *Women's Security, GPS, GSM, SOS Button, Alert System, Sensor, Internet of Things.*

**Introduction**

A women's safety bracelet is a wearable device designed with the primary goal of enhancing the safety and security of women in various situations. These about personal safety, particularly for women who may face unique challenges and risks. Women's safety bracelets typically incorporate a range of features and technologies aimed at providing a sense of security The core functions of a women's safety bracelet often include GPS tracking, SOS alerts, and the ability to connect to a smartphone app. When activated, the bracelet can transmit the wearer's location to designated contacts or emergency services, enabling quick assistance in distressing situations. Many models also include features such as a panic button, audio recording capabilities, and even self-defence mechanisms like alarms or sprays. These bracelets are not just about responding to emergencies but also about prevention and empowerment. They can serve as a deterrent, as potential assailants may be less inclined to target someone visibly equipped with a safety device. Moreover, knowing they have a quick and reliable means of summoning help can boost a woman's confidence when navigating potentially risky situations. In this era of advancing technology, women's safety bracelets represent a tangible and proactive step towards addressing the ongoing issue of gender-based violence and providing women with tools to protect themselves. These devices are part of a broader conversation about creating safer environments and promoting gender equality, empowering women to lead lives free from fear and threats to their security. incorporate features res like GPS tracking, SOS alerts, and real-time communication to help women feel more secure in various situations. Keep in mind that the technology in this field is continually evolving, so there may be newer products available now.

**Objective**

1. Enhance Personal Safety.
2. Real-Time Location Tracking.
3. Emergency Alerts.

**System Architecture**

A. **Components used**



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**Hardware**

1. Arduino Mini.
2. Heart beat Sensor.
3. MPU 6050.
4. GPS SIM 800.
5. Lipio Battery.
6. GPS module.
7. BSM module

**Software:**

Arduino IDE

A. **Working principle**

The device is connected to a smartphone application, which can be used to track the user's location in real-time. In case of an emergency, the user can press a panic button on the device, which will send an alert to the registered emergency contacts and the local authorities.

B. **Block Diagram**

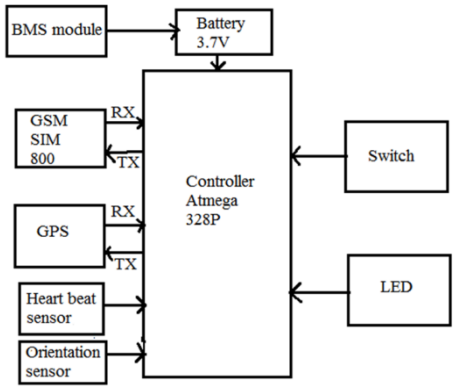


**Fig:** Block diagram

**Methodology**

- **Adding Sensors:** We Equip The Bracelet With Sensors That Can Detect Different Things, Like Movement, Location, And Even Heart Rate.
- **Alert System**: If the wearer is introuble,the bracelet can send alerts tofriends,family, or emergency services. Thisensures help comes quickly.
- **Privacy Protection**: We makesurethatthe data collected by the bracelet iskeptprivate and secure. Only authorizedpeoplecan access it.
- **API Integration:** Connect thebraceletemergency services via APIs, enablingautomatic alerts to be sent tothenearestauthorities when a distress signalisdetected.
- **Cloud-based Machine Learning**: Youcan leverage cloud-base machinelearningservices to analyze data andmakedecisions in real-time.
- **Designing the Bracelet:** First, we design a bracelet that women can wear comfortably. It should be easy to use and not draw unwanted attention.
- **Connecting to the Internet**: We make the bracelet able to connect to the internet using technologies like Bluetooth or Wi-Fi. This lets it send and receive information.
- **Safety Features**: We add features that help keep women safe, like a distress button. When pressed, it sends a signal for Help.
- **Location Tracking**: The bracelet uses GPS to track the wearer's location. This is helpful in emergencies because it helps responders know where the person is.

**Results**

The women safety wearable device is the ideology that have came to life in multiple forms, in our project we have attempted to update the working of the pre-existing devices and we succeed at the certain level .We have achieved the live sharing of the location by simply clicking the SOS button. Here in our project we have achieved the live location from the device. the system after clicking the SOS button gives command that to send the SMS or Text to the pre defined or emergency person in the source code and database. to send the text, it already has the SMS pattern and before sending it collects the location co-ordinates from GPS tracker and then decode it in the understandable format and makes it in google map's location link and the send it to the emergency person.

**Conclusion**

The Women Safety Bracelet represents a promising step forward in addressing the critical issue of women's safety. This innovative device not only provides women with sense of security but also offers tangible features that can help deter potential threats and provide assistance in times of distress. The Women Safety Bracelet's ability to send distress signals to pre-set contacts, record audio evidence, and track location in real- time can be invaluable in emergencies. Moreover, the discreet and fashionable design ensures that it can be worn comfortably and unobtrusively, making it a practical and convenient safety tool for women of all ages. However, it's important to remember that while technology like the Women Safety Bracelet can be a valuable aid, it is not a solution to the broader societal problem of violence against women. Addressing this issue requires a multi faceted approach that includes education, awareness, legalre forms, and changes in social attitudes. The Women Safety Bracelet is a step in the right direction, providing women with an additional layer and peace of mind. Still, it should be seen as a complement to broader efforts to create asafer and more equitable society for women, where violence and harassment are no longer tolerated.

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Nil.

**Conflicts of interest**

The authors declare that they have no conflicts of interest related to this research.

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