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# A Smart Asset Tracking System with IoT for Women and Child Safety Applications

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**ABSTRACT:**

As worries about women's and children's safety and security have grown in recent years, creative solutions are needed to deal with these problems. Using Internet of Things (IoT) technology is one promising strategy. to create a smart asset tracking system designed with women and children's safety in mind. An outline of such a system is provided in this paper. The suggested solution consists of wearable gadgets with sensors and GPS that are smoothly connected with a centralized IoT platform. Wearable technology serves as a personal safety beacon, with each item made to be both discrete and pleasant for its owner. The system allows for real-time communication and continuous GPS tracking, which PS systems are currently the most well-known position tracking gadgets. These technologies, however, are unable to pinpoint precise locations within a structure, on a given level, or within a person's area. This study suggests a smart asset monitoring system that allows objects, supplies, and personnel within a structure or other facility to be watched over. Our system will utilize both IoT and RF communication to achieve this solution. Any object can have its position accurately classified by the program in the exact space where it is stationed. The technology makes use of tiny radio frequency circuits as monitoring apparatus. The system used components of a monitoring micro controller to keep an eye on these RF circuits. The battery-operated tracker circuits are limited to installation on specific objects or entities. By installing the tracking circuits in separate rooms, the prototype is put into use and tested. Once a tracking object enters a room, the tracker circuits are positioned within two to three meters of the object.

## INTRODUCTION:

Ensuring the protection and security of women and children has become crucial in the fast-paced world of today. The Internet of Things (iot) is used by a Smart Asset Tracking System created especially for women and kids to enable real-time monitoring and location tracking. By enabling guardians and caretakers to closely monitor the whereabouts and well-being of their loved ones, this ground-breaking system provides peace of mind. Important characteristics: Real-time position Tracking: By using GPS technology, the system gives guardians exact position data, enabling them to keep an eye on the tracked person's

movements in real-time. Geofencing: Establish safe zones and get warnings when the tracked individual goes into or out of these regions in advance, ensuring they stay inside protected areas. Notifications in Case of Emergency: With a single button press, the user can instantly transmit SOS or distress signals to pre-identified contacts. Battery Efficiency: Because of their efficient power consumption, tracking devices have lengthy battery lives that allow them to track continuously without needing to be frequently recharged. Easy to Use Interface: Guardians can easily monitor and control the tracking devices with the system's user-friendly mobile application and web dashboard. Advantages: Enhanced Safety: Offers an extra degree of protection by monitoring women's and children's whereabouts, particularly in strange or possibly hazardous settings. Peace of Mind: Provides parents, guardians, and caregivers with comfort by giving them information about the security and welfare of their loved ones. Rapid reaction: By giving emergency services or contacts precise location data, the technology facilitates a prompt reaction in the event of an emergency

## PURPOSE:

In the context of women's and children's protection, this study presents a Smart Asset Tracking System that makes use of Internet of Things (IoT) technology. In order to protect women and children, the system uses a network of linked devices, such as communication modules and GPS-enabled trackers, to monitor and track the position of valuable items, such as personal possessions. Real-time location data is used by the Internet of Things (IoT)-based asset tracking system to enable continuous monitoring and immediate alerts in the event of emergencies or unforeseen circumstances. By means of an intuitive user interface that can be accessed through mobile applications or web platforms, guardians or caregivers can actively monitor the movement of assets, thereby augmenting the general safety of women and children in diverse settings.

## EXISTING SYSTEM:

Numerous tracking systems utilizing RFID, GPS, and other technologies are available on the market. It is true that these technologies are unable to pinpoint precise locations within a building, on a given floor, or within a person's personal area.

## PROPOSED SYSTEM:

This paper suggests a smart asset monitoring system that makes it possible to keep an eye on the people, products, and equipment inside a building or other facility. Our system will utilize both IoT and RF communication to achieve this solution. With every item, every RF is allocated. The monitoring unit is linked to an RF receiver, which provides the status of its presence. This data will be updated on the IOT server, and a GSM module will be used to deliver SMS. an ESP32 controller with built-in WiFi and an RF receiver.

## TECHNICAL SPECIFICATIONS:

### HARDWARE:

| | | |
|---|---|---|
| Microcontroller | : | ESP32 |
| Crystal | : | 16 MHz |
| LCD | : | 16X2 LCD |
| Wireless Module | : | RF 433Mhz-2.4Ghz |
| GSM module | : | SIM800c |

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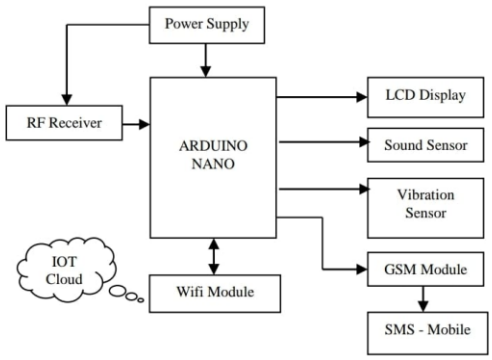
Power Source : 12v 1 amp Adaptor

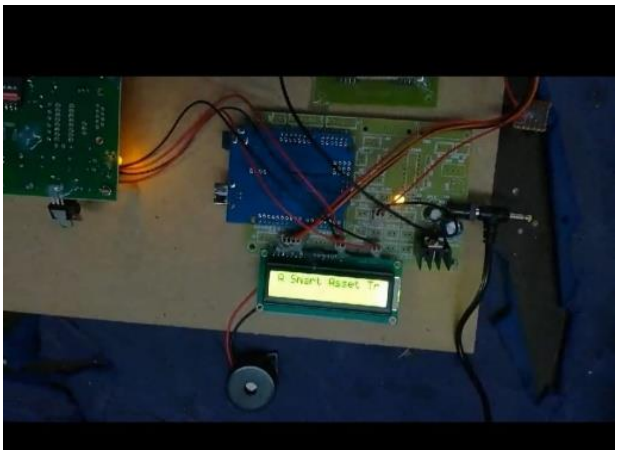
## BLOCK DIAGRAM:




## CONCLUSION:

In conclusion, an intelligent tracking system using Internet of Things applications for women's and children's safetyIn the quickly changing world of technology today, families, caregivers, and society at large now place a premium on women's and children's safety. One innovative way to properly solve these issues is via a smart tracking system that makes use of Internet of Things technologies. Women and children can feel more confident and at ease in their everyday lives because to the combination of advanced safety features, geofencing, two-way communication, and real-time tracking all combined into one gadget. Making sure a child is safe while returning from school or giving an aging family member the ability to call for assistance in case of an emergency are just two examples. All users may easily access and utilize these systems due to their user-friendly interfaces, extended battery life, and smooth connection with other IoT devices. Families and caregivers can feel even more secure knowing that assistance is always there when needed thanks to the customizable settings, real-time alerts, and remote location data monitoring features. In summary, a smart tracking system for kid and women's safety that integrates Internet of Things applications is a big advancement in using technology to keep vulnerable people safe. These solutions use the Internet of Things to its full potential, enhancing personal safety while also fostering a culture of empowerment, alertness, and community support. The advancement of technology is ongoing. anticipate even more cutting-edge additions and upgrades that will expand the usefulness and reach of these indispensable safety instruments.

## RESULT:



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**REFERENCE**:

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