

Advanced IoT Enabled Safety and Tracking Button Device for Women

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Abstract: Smart Chip using IoT project introduces a cutting-edge safety solution designed to enhance personal security through real-time tracking and emergency response functionalities. With the increasing need for effective safety measures in today's fast-paced world, this project leverages the Internet of Things (IoT) to provide a comprehensive safety system that addresses critical concerns related to personal security.

At the heart of the system lies a compact chip embedded in a specially designed jacket. This innovative feature enables continuous location monitoring, ensuring that users' whereabouts can be tracked in real-time. This capability is particularly beneficial for individuals in vulnerable situations or those who require constant supervision, such as children, the elderly, or individuals with disabilities.

In emergencies, the system is equipped with two essential buttons: a panic button and a safe button. The panic button allows users to instantly send alerts to designated contacts and trigger alarms, facilitating rapid response from guardians or emergency services. This feature is designed to provide users with a sense of security, knowing that help is just a button press away. Conversely, the safe button offers reassurance to guardians, indicating that the user is safe and secure in their current environment, thereby reducing anxiety for caregivers.

To complement the hardware, a user-friendly mobile application serves as the central hub for managing the system. The application simplifies the registration and login processes, allowing users to create profiles and customize their safety preferences easily. Furthermore, the app provides real-time tracking capabilities, allowing guardians to monitor the user's location on-demand. This feature fosters a proactive approach to safety management, enabling timely interventions if any irregularities are detected. In addition to enhancing personal safety, the Smart Chip project also emphasizes user empowerment. By providing individuals with a means to actively manage their safety, the system encourages confidence and independence. The integration of IoT technology not only streamlines communication between the user and their guardians but also opens up possibilities for future enhancements, such as integration with other smart devices and systems for a more comprehensive safety network.

Keywords: Internet of Things, Real-time tracking, Personal safety, Hypertext Transfer Protocol, Global Positioning System, Message Queuing Telemetry Transport