

Analyzing the user Experience and Identifying Challenges Related to the Adoption of Women Safety Systems

Adv. Preeti Singh

LLB, LLM

ps696383@gmail.com

Abstract: *The number of physical attacks and other violent crimes against women has gone up recently. Women are increasingly employed in industries and other commercial sectors, which requires them to travel at odd hours and visit isolated and distant locations as part of their profession. Defense is not the only tactic that might be used to halt this increasing abuse. Developing a security plan that provides women with a safety net is essential. Consequently, a simpler safety solution is needed, one that may be activated by just pressing a button and notifies the victim's loved ones right away. In order to ensure that women never feel helpless in the face of such societal concerns, the project's primary focus is on a safety system designed especially to provide them protection and safety.*

Keywords: Safety system, raspberry pi, Internet

I. INTRODUCTION

Regarding the status of women in India, there have been some noteworthy improvements during the last few centuries. In modern India, women still face social challenges and are often the victims of abuse and violent crimes. According to a worldwide poll by Thomson Reuters, India is the worst country in the G20 for women and the "fourth most dangerous country" in the world. Concern about women's safety is rising, both in India and beyond. The police's inability to respond quickly to allegations of suffering is the primary issue with the way they have handled these situations. Among these restrictions is the victim's incapacity to discreetly and dependably get in touch with the police; moreover, the victim could not even know where the crime was committed.

This assignment's primary emphasis is on a security framework created especially to provide women the safety and well-being they need to confront social difficulties without ever feeling powerless. This attempt was primarily motivated by the national outcry after the Delhi "Nirbhaya" case. It was long overdue for us women to take action. Using this approach, we will create an Internet of Things-based women's safety device to assist in removing these barriers. The GSM and GPS enable message and call sending and receiving, video streaming, and audio recording, while the Raspberry Pi acts as the platform's controller. The user discreetly and easily presses the panic button on the gadget. The emergency contacts on the pre-selected list will get a message with the user's location as soon as the panic button is pressed. Furthermore, the camera and microphone start to broadcast video and record sounds, respectively.

II. LITERATURE REVIEW

2016 International Conference on Computation System and Information Technology for Sustainable Solutions, "A method for the personal safety in real scenario," Jijesh J. J., Dinesh Prasanna A., Suraj S., D. R. Bolla, and Sridhar N. K. Concerning IEEE: Women, children, and the elderly are more prone to have mishaps because they always feel as if they need help moving about. Thanks to technological improvements, individuals may now call the police and their family using a simple gadget that they can use in an emergency. This portable device, which the user may switch on and off as required, can be used to send emergency messages to the selected locations and help find the victim with the use of GPS and GSM. In addition to an electric shock function to subdue the attacker, the gadget contains an alarm system and a help call button.

"SMART GIRLS SECURITY SYSTEM," (IJAEM) 2014; Priyanka Das, Priya Patil, Monika Monu, Archana Naik, and Prof. Basavaraj Chougula: An alternate perspective on using technology to protect women is provided in this article. When activated, the gadget resembles a standard belt and tracks the victim's whereabouts using a GPS (Global Positioning System). Additionally, it transmits emergency signals to the police control center and three emergency contacts via the GSM (Global System for Mobile Communication).

Poonam Bhilare, Akshay Mohite, Dhanashri Kamble, Swapnil Makode, and Rasika Kahane, "Women Employee Security System using GPS and GSM Based Vehicle Tracking," International Journal for Research in Emerging Science and Technology, volume-2, issue-1, January 2015. This article suggests a GPS and GSM-based automobile monitoring and female employee security system. It uses a GPS device and specialized software to track the location of the car and provide alerts, messages, and emergency button triggers. The position of the automobile as recorded by the device may be seen on Google Maps.

Dr. Sridhar Mandapati, Sravya Pamidi, and Sriharitha Ambati's article "A Mobile Based Women Safety Application (I Safe Apps)" appeared in the IOSR Journal of Computer Engineering (IOSR-JCE) in January–February 2015.

Users of the proposed system might broadcast their location and alert a select set of contacts about their risk with only one button click. When use this program for personal protection, you will never be alone yourself. The personal safety application requires the name and phone number of the person who should be contacted in case of emergency. It is possible to add more than one user to the emergency contacts list. These people will get notifications or SMS messages in the case of an emergency. To begin blasting messages as fast as the device can, the user merely has to push the corresponding SOS button. This software also provides the first aid protocols that must be followed in emergency situations.

Department of Electronics & Telecommunication, Fr. C. Rodrigues Institute of Technology, Vashi, Navi Mumbai, India; Manita Rajput, KTV Reddy, and Madhura Mahajan; "Design and Implementation of a Rescue System for Safety of Women."

In this literature, the focus is on creating a safety net that leads to a resolution that ensures the victim's defense and creates a clear path for initiating any required legal actions. Our objective is to create a semi-wearable that may serve as a tool to lessen worry in women and their families as well as provide a complete security solution. This literary work aims to create a portable safety device that functions as a safety net for women doing the following jobs: Notifies the police and the relatives of the woman who is being assaulted, providing them with her GPS locations. 2. Has a little shock built in as a protective measure.

III. PROPOSED WORK

It is recommended to create and implement a smart system for women's safety using the internet of things (IoT). The device is meant to work in the manner shown in figure 1 below. A woman must physically press a panic button in the event that she is assaulted by an adversary. This switch will turn on the controller. The Global Positioning System (GPS) will determine the area coordinates of the lady who is being abused. A GSM module will then transmit these coordinates to pre-selected mobile phone numbers, usually her family and friends. It will also capture the attacker's image, audio, and video, then transmit it to a new location where an RF module will make it visible.

The Raspberry Pi modules and parts that will be used in the system are briefly explained below: The Raspberry Pi is powered by the Broadcom BCM2837 processor, a controller board including an on-board 802.11n Wi-Fi, Bluetooth, USB boot capabilities, and a 1.2 GHz, 64-bit quad-core CPU.

GSM & GPS: A SIM 800L 3.8v to 4.2v GSM module is used. The GPS unit that sent the coordinates over GSM.

Camera: The Raspberry Pi's CSI connection is directly linked to the Raspberry Pi Camera Board. It can send out highly sharp photographs with a 5MP resolution. The board itself weighs little over 3g and is small, making it perfect for mobile or other applications where weight and size are important considerations.

Audio Device: A USB microphone is included with the Raspberry Pi. An electrical switch known as a "panic button" is designed to trigger the system and start alerting someone in case of an emergency.

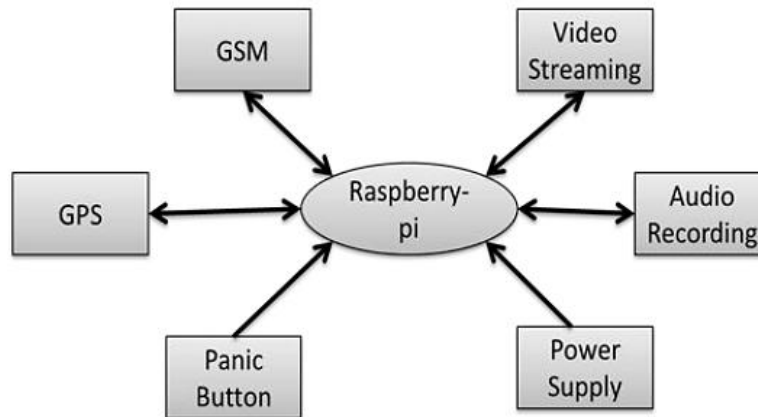


Fig 1 :Block Diagram of Women Safety System

IV. CONCLUSION

This research makes a major contribution to providing women with the most direct path to safety. The recommended design will tackle dangerous issues that women have lately faced and help to resolve them with the use of protective gear. The project's objective is to develop a low-cost, smart device that will shield women from harm and provide them a sense of security in the event of harassment, rape, and other dangerous situations. This program would help to improve the safety and protection of all abused and destitute women and children.

The system helps to maintain gender equality by providing women with a safe place to work and the ability to work late into the night. By alerting those who would harm women before they do, it reduces the incidence of crimes against them.

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