

Market Analysis Of Women's Safety Devices

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Abstract: Ladies are the foundation of our society, who assist with building a country with their coarseness and assurance to succeed. As they end up being on fair terms to men, there are occasions when ladies have been attacked, or treated in more terrible ways by their male partners. Because of such tormenting reasons, ladies find it challenging to get out of their homes, contemplating their security and wellbeing worries consistently. In basic circumstances such as these, there is a need for a security gadget to help ladies experience and tackle them cleverly. There have been numerous security gadgets created and planned with exceptional highlights. This overview paper delivers the market examination on such gadgets alongside our proposed gadget named *Sthree Raksha*, a Panic Intimation Device for Women.

Keywords: Bluetooth Low Energy, ThingSpeak, IoT

I. INTRODUCTION

Each young lady yearns to move unreservedly on the roads even in the odd hours of the day without agonizing over her security. The unpleasant circumstances of an attack make it challenging for ladies to get out of their homes. They will quite often consider their security and well-being worries consistently. In basic circumstances like these, there is a need for a well-being gadget to help ladies experience and tackle them keenly. In light of the injury confronted, numerous specialists have concocted exceptional gadgets that offer an assortment of highlights. In this paper, we have performed a market analysis and briefed the features of the available products in the market. We have also proposed a gadget named *Sthree Raksha*: Panic Intimation Device for Women. A prototype of this model was built and tested for various conditions. Despite all this, we anticipate a day when the media focuses on the accomplishments of women as opposed to examining their provocations.

II. MARKET ANALYSIS

A. Safelet

Safelet is a savvy armband that prepares individuals to inform their companions, family, and the police where they are and that they need assistance. Safelet works through a Bluetooth 'low energy' association and is actuated by all this while tapping on the two buttons as an afterthought. In circumstances where one can't utilize her telephone, since it is either locked, in one's pocket or tote, they can depend on Safelet to have the option to convey a crisis alarm to individuals who will need to show up for the impacted one. The safelet gadget is depicted in Figure

1. The drawback of this device is that the expense of the item makes it not reasonable to everybody. The build (which is like a chain watch) may feel awkward now and again, particularly when worn for long durations.

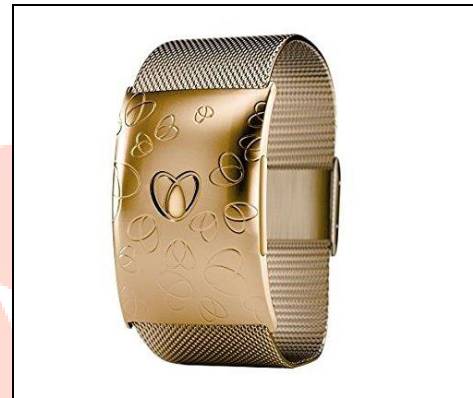


Figure 1: Safelet gadget (Courtesy: Google images)

B. Sound Grenade

Sound Grenade by Robocopp is a compact however powerful Personal Safety Alarm that emits a 120dB sound siren (Ambulance Level) when the shown pin is detached within a Range of 500-100 Meters. This device was designed in the U.S.A and is very well appraised for its utility among people. This can be very useful, especially for women, kids, and Senior Citizens. The Sound Grenade could help prevent rape, mugging, animal attacks, and so forth by scaring off anyone who comes to surprise you and alert whoever is in the range. Whenever you pull the pin, the alarm will sound continuously for 30 minutes until the pin is reinserted. The Sound Grenade gadget is depicted in Figure 2. The drawback of this device is that it would fail to help if there is no public movement in the 100m surroundings of the incident location. It also fails to alert the dear ones of the person in danger.



Figure 2: Sound Grenade gadget (Courtesy: Google images)

C. Personal Alarm Wristlet with Whistle

Individual Alarm Wristlet with a secret whistle is uniquely intended for ladies' safety. It is set in external pockets of a tote or knapsack and can be hand-conveyed. The caution is initiated when the pin is pulled and recognizes the assailant. It likewise has a LED Light that won't ever leave you out of the loop. The gadget is depicted in Figure 3. The significant drawback of this device is that it does not send the live location and alert message of the woman to friends and family.



Figure 3: Personal alarm wristlet with whistle (Courtesy: Google images)

D. Revolar

Revolar is oval-shaped and has a tiny garage clicker. It is effortlessly kept in a pants pocket. At the point when it is squeezed two times then it sends a yellow message to the assigned contacts with the current area and indicates that women are in danger. The red message is sent when the Revolar is clicked threefold. The gadget is depicted in Figure 4. One major drawback is that the cost of the device is more and is not affordable to everyone. It does not provide an alarm to indicate a threat to nearby people.

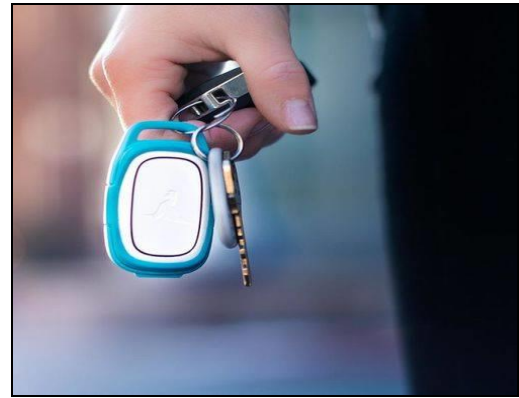


Figure 4: Revolar gadget (Courtesy: Google images)

E. Sonata Watch ACT

The Sonata Watch ACT has a versatile application that will be downloaded on the client's cell phone. By utilizing Bluetooth, the watch will work with the telephone to send trouble alarms to the organization of the watchman part. The alarm message in the application and SMS will incorporate the client's area. The gadget is depicted in Figure 5. To actuate the wellbeing highlight, upto 10 contacts can be downloaded in the application. This gadget has a specific 8 o'clock button whenever clicked two times all the while it will send the last GPS area of the client to the transferred contacts. The telephone will vibrate as a sign of an effective alarm. The application will utilize the client's versatile information, GPS, and SMS to alarm the watchman.



Figure 5: Sonata Watch ACT gadget (Courtesy: Google images)

F. Safer Smart Pendant

This device is in the form of a pendant with a little round gadget known as SAFER as shown in Figure 6. At the point when the woman feels dangerous, just a double-tap needs to be done on the secure gadget connected to the pendant. Then naturally an alarm will be shipped off to family or companions. As a result of the GPS work, the area can be sent with caution. The shrewd pendant matches with the Smartphone through the "More secure by Leaf" application utilizing Bluetooth. The guardians or gatekeepers can follow the live area once the SMS alert is sent. The guardians can likewise follow the developments and know the assessed season of appearance. One of the valuing elements of this gadget is that the watchmen needn't bother with the Smartphone. The application "More secure" additionally assists with exploring and

situating to the closest safer places. The expense of this item is 1,899 INR.



Figure 6: Safer smart pendant gadget (Courtesy: Google images)

III. PROPOSED SYSTEM

A. Introduction

A gadget named "Sthree Raksha: Panic Intimation Device for Women" is proposed here. The equipment is a brilliant gadget that ceaselessly conveys to a PDA through an android application. The gadget is intended to follow the live areas of a lady and give a report about crucial times to her loved ones.

The proposed gadget is microcontroller-based, modified to send warning messages to the saved contacts of a lady's catalog when she accepts she is in grave peril. The application approaches GPS administration, which sends area directions to the relatives of a lady when she demands a crisis help through the application. The low-evaluated gadget targets giving answers for ladies' wellbeing through:

- Recognizing the three degrees of the safety of a lady with the assistance of pressing buttons.
- Sending ready messages to loved ones.
- Sending live location at customary timespans through the application.

B. Block Diagram

The block diagram with hardware details is depicted in Figure 7. It consists of a microcontroller that is driven by a power supply. The microcontroller is interfaced with push buttons, LEDs, a smoke sensor, and a speaker.

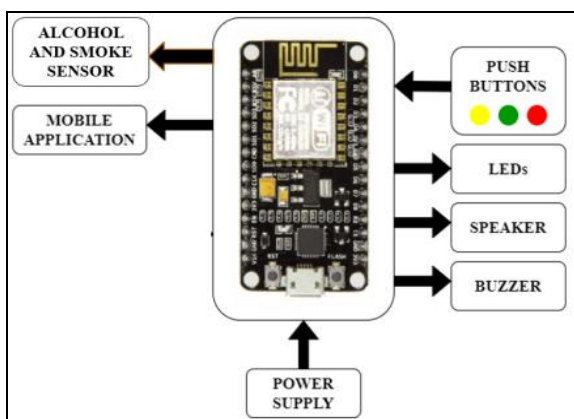


Figure 7: Block Diagram

C. IOT Cloud Workflow

The data to be received by the Android application has to be sent via a cloud platform. Here ThingSpeak Cloud platform has been used. The data is read from the hardware device and written into the channel on the cloud. And the data from the channel is read from the cloud by the android app, thus making it available for the user.

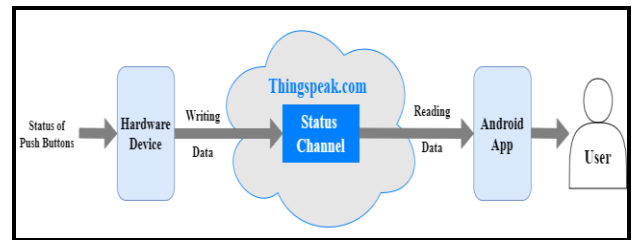


Figure 8: IoT workflow (Courtesy: Google images)

D. Flowchart

The default condition is when the green pushbutton is pressed. The alert message is sent along with the current location when the yellow push button is pressed. The alert message is sent along with the current location in every 1-minute interval when the red pushbutton is pressed. The proposed device focuses on providing low-cost implementation to save the life of women who are in grave danger. The proposed system yields end-to-end security through the advanced technologies of IoT and associated hardware technology.

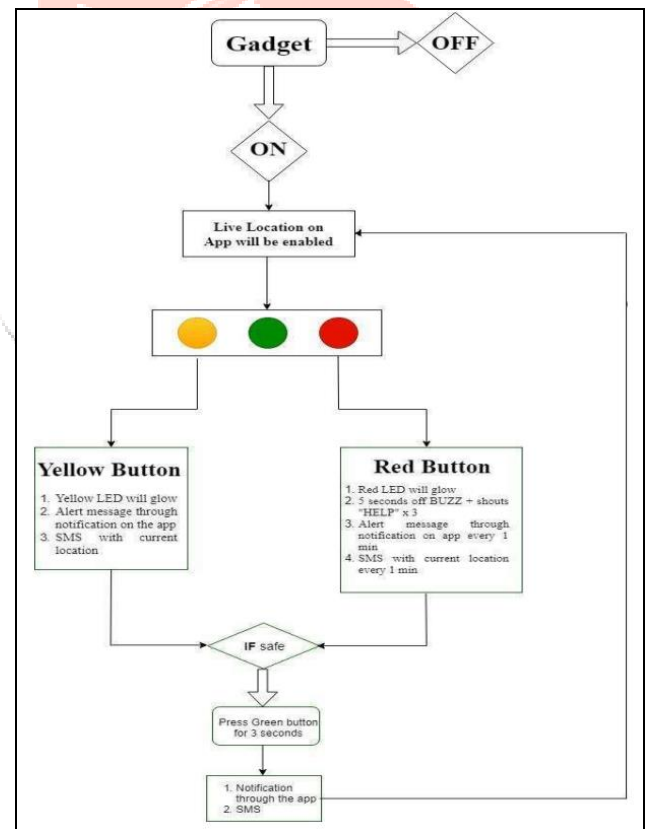


Figure 9: Flow Diagram

IV. CONCLUSION

The research evaluates the multitude of safety devices available in the market. Using such a device, makes the user feel safe and secure during critical situations. Whether it is the Sound Grenade, the Personal Alarm Wristlet, the Sonata Watch 'ACT', or the Safer Smart Pendant, they all cater to the same concern of society. The usage and presence of such devices make it evident that this is a must-needed gadget. The majority of these devices aren't pocket friendly and do not send alert messages to the near and dear ones when needed.

However, the proposed device "Sthree Raksha: Panic Intimation Device for Women" focuses on providing low-cost implementation where the system yields end-to-end security through the advanced technologies of IoT and associated hardware technology. This safety device curated for women caters to help them during emergency times, as the android app sends a message automatically to her relatives/friends by tracking her location. This is an initiative towards helping women move freely wherever they desire without any hesitation.

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