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B with U- IoT based Woman Security System

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***Abstract*— Today, woman security has become one of the most important issues in the entire country. Most of the crimes happen because of the lack of information. We are not for the rescue but for the safety of the girl, so to prevent her from any such situation. For that, we introduce our project "B With U- IoT based woman security system". We humans can't aptly respond to critical situations. Even if we have a security system, it doesn't occur to us at that time. Here, comes the need for a device which automatically senses and rescues the victim from the danger, which is the venture of the idea of our project. The proposed system depicts a smart band that gives the mix of GPS gadget particular to track the area and others to sense the heartbeat and in addition messages whenever a crisis catch trigger. Additionally, it contains stun beneath the shoe which is connected to the band using RF to create a non-deadly electric stun in crisis circumstances. By the use of a 360-degree camera in the band, live streaming is given in a website (or app) along with the location of the girl using IoT, for the parents to monitor the situation. We emphasis more on self-defense, to get her the courage to fight back, to live the rights she is born with. This concept was devised in every wake of serious crimes against women in India and to help detain those crimes.**

Keywords—Woman safety, IoT, GSM, GPS, Raspberry Pi

I INTRODUCTION

In this new world, where the woman is playing an outstanding role in each and every field, it is really shameful to know that our country is rising to the top in crimes against woman. In a country like India, where woman are considered as goddesses and are being worshiped, woman security has become such a basic issue today. Each day, the nation wakes up to hear the increasing atrocities against the woman. It's high time, we should stand up to these by changing the laws and implementing the new technologies.

The reason behind these crimes may vary but that doesn't deny a person, her right to live. We have already seen different faces of cruelties from acid attacks to the worst rape deaths. The solution for this is not cutting her wings to fly, but to fight back. Analyzing some of these cases, we could see lots of points missing. First thing is that no one is informed about her being in a danger, at the right time. If her parents have started to search for her at the time of kidnap, the attackers wouldn't have gone much far away. Second, the police were not able to locate her for days, before any worst happenings. Sometimes, we hear cases like school students being harassed but they won't inform their parents because of fear. What if the parents could check their heartbeats or condition if their child acted strange from other days? Or maybe she would have fought back by herself if she was armed with something for defense!! Actually, we can control a loT of issues by getting the information at the right time.

In this new era of technology, we propose a project "B With U" for the same using IoT. Our project is mainly a wearable device which consists of a smart band with RF connected shoe. The smart band having GPS, GSM, heartbeat sensor, 360-degree camera, and an emergency switch will continuously sense her heartbeat and location. In times of danger, even if she doesn't press the switch, from the rising heartbeat of the person, the device senses and send alert to the preset contacts along with the location through SMS. Whenever she presses the switch, along with the SMS, a non-deadly stun is turned on beneath her shoes which are meant for defending the attacker.

For a parent to detect false alerts and ensure the situation, we have created a website which is connected to the band using IoT. Through this, they can directly locate and get live streaming of the situation where she's in. Our aim is to control, inform and moreover to give her the courage to fight back, for the right of being alive.

II LITERATURE SURVEY

In the paper [1], The system allows for knowing the exact location of the individual, when the trigger key on the belt is pressed. he/she can do so by sending an SMS to the SIM number of the lady which contains a secret password. Then this system responds to such requests by sending back an SMS containing location information in terms of Latitude and Longitude also contains a shock mechanism for defense back.

The paper [2], uses 'Raspberry pi' module as the main part. There are three buttons for circuits on/off, GPS, GSM buzzer and for shock unit. In the project, It sends the location to predefined numbers in the form of latitude and longitude. when attacker attack to women that time shock circuit is used to injure attacker for self-defense. In this paper [3], The Smartband module consists of a microcontroller, BLE module, GSM module, Pulse rate sensor, temperature sensor, and motion sensor. A smartphone connected to a Smart Band through Bluetooth Low Energy (BLE).A designed application that acts as an interface between the device and the phone. The data directed by the smart band is continuously monitored by the application.GPS of the smartphone to track the coordinates and monitor the movement and Sends a message to the family members along with the co-ordinates.

In the paper [4], Providing a stress switch/button and Galvanic Skin Response sensor. which when pressed sends out a distress signal and recognize activities by using a single triaxial accelerometer worn on the hand.

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III METHODOLOGY

IoT based girl security system is a wearable model designed for woman safety. The system consists of Atmega328, Raspberry Pi, 360-degree camera, GPS, GSM module, RF bit transmitter and receiver, shock circuit, heartbeat sensor, and an emergency button.GPS and GSM modules must be placed inside the band. The device will continuously track and provide the position information such as latitude, the longitude of the person. An emergency button is placed on the band at a particular position. Whenever the woman is in any kind of trouble, she could press the emergency button and an alert will be immediately sent to the preset contacts such as parents and police.

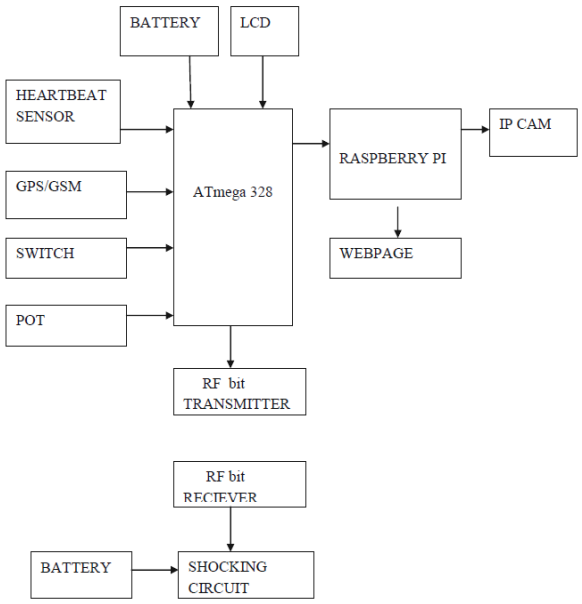

Fig. 1. Block Diagram.

After giving the power supply to the device, the heartbeat sensor on the band will start taking readings. This reading is continuously sent to microcontroller and it will compare this reading with the threshold value given to it. This threshold value can vary from person to person. After comparing this threshold value, Whenever the heartbeat goes above the threshold for at least five times, then an emergency alert or a text message is sent to the emergency contacts. Using IoT technology we can continuously monitor the changes in the sensor values. At the receiver side, our website can be used to see sensor values and positions. The device at the receiver should be connected to the internet in order to receive data from the transmitter.

From the Fig.1 Block Diagram, The whole system can be divided into four sections: an emergency part, automatically sensing part, the defense part and the parents also have one for monitoring. The emergency circuit comprises of a panic button which when pressed will directly send the text message “HELP and latitude and longitude of the current location” to the emergency contacts through GSM.

AS the switch is pressed, it will also trigger the shock circuit for defense. The person will have shock generated under the shoe for a small time delay and she can oppose the attacker with the shock. After the time delay, she can again press the switch for the shock to produce. For that, we have placed an Rf transmitter at the band which transmits an RF bit when she presses the button. The RF receiver receives it and turns ON the shock circuit. One can vary the voltage from 40 to 230v.

A. ADVANTAGES

- It is an IoT based real-time project.
- It automatically sends alert even without the girl’s consent.
- False alerts could be realized by parents through live streaming, without being panic.
- No Smartphone dependency.
- Can also be used for child safety, accidents, and patient monitoring.

Fig. 2. Prototype of the project with the shock shoe, band and the website created

B. DISADVANTAGES

- Require a minimum signal strength to sent a SMS.

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V CONCLUSION

We have now developed a project that will deal with critical issues faced by a woman in the present society and give them the courage to fight against it. It continuously monitors the situation and automatically takes actions to protect her. The true potential of this project lies in the future when IoT reaches everywhere in India. For now, we have created a prototype for the project and it could be more minimized from a band to a chip that could be placed in any type of jewelry. This work attempts to abate the social concern that has been destroying the lives of numerous woman and their families.Fig.2 depicts the prototype of the project we have developed. It contains the

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prototype of the band, shock shoe, and mobile showing the current location in the google map and the live streaming in the website.

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