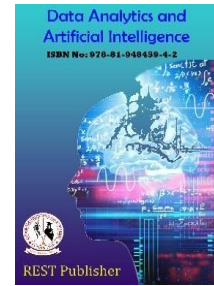




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An Arduino Based Smart Jacket for Women Safety Using IOT

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Abstract: *In the present scenario, women are keeping pace with men in every walk of life but unfortunately at cost of being subjected to abuse, harassment, violence in public and even at their own houses. They cannot step out of their houses at any time of the day, cannot wear clothes as per their will, nor can they even go for work in peace. Due to the above said reasons, it is quite apparent that there is a striving need for women security in the country. This paper, therefore, aims to apply the current trend in technology, i.e., Internet of Things (IOT) to eliminate fear filled lifestyle of female folks. Every day, every woman, young girls, mothers and women from all walks of life are struggling to be safe and protect themselves from the roving gaze of the horribly insensitive men who molest, assault and violate the dignity of women on a daily basis. Due to these atrocities that women are subjected to in the present scenario, a smart security wearable device for women based on Internet of Things is proposed. The location and the link of the image captured will be sent to predefined emergency contact numbers or police via smart phone of the victim thus preventing the use of additional hardware devices/modules and making the device compact.*

Keywords: *Women safety, GSM, SMS, IOT, DNA, SMARISA, GPS, DC, LED, EPROM.*

1. INTRODUCTION

In today's world, women safety has become a major issue in our country as women can't step out of their house at any time, especially during night. It is primarily due to fear of violence against them or being physically or sexually abused. The fear of harassment against women is not only the condition at outside but it may also happen at homes. Even in the 21st century where the technology is rapidly growing and new gadgets are being developed but still women and girls are facing problems. They often work across ethnic, religious, political, and cultural divides to promote liberty. We know that our society is all aware of importance of women safety, but it is also a duty of individual that they should be properly protected. Not only this, we must create such an environment in our society that women must feel secured outside their house even when they are alone at any time. Women are not so physically fit as compared to men so in case of a need a helping hand would be a boon for them. The best way to reduce probability of becoming a victim of violent crime is to recognize, defense and look up resources to help you out of hazardous situations. If a women is in dilemma or get split from friends during a night out or someone is following with bad intention (sexual assault) or don't know how to find back residence then this device with her will guard her and bring assistance when she needs it by giving her current location and health conditions to her associates and control center through SMS and call. This device not only provides family and police support but also helps in getting medical support as fast as possible.

2. BLOCK DIAGRAM

In the above Block diagram Arduino micro controller is connected to 12V power supply. Where the other port is connected with (GPS) which is used to identify the location of the Women. On the Other port of the Arduino Microcontroller is connected to Push Button A Buzzer is connected in the System to make a Alarm in the location. On the Other port of the Arduino Microcontroller is connected to Heart Beat Liquid Crystal Display (LCD) act as Output in the block Diagram and gives the accurate place where is happen.

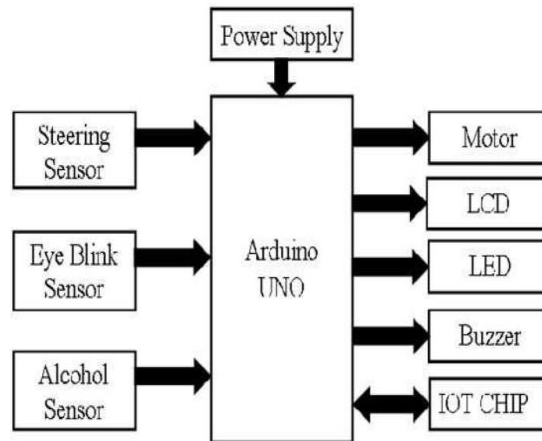


FIGURE 1. Block Diagram

3. FLOW DIAGRAM

The main purpose of our project is to provide security to the women from dangerous situations. This device consists of a key or button which can be pressed by the women when she is in need or when she feels insecure. As the switch is pressed by the women the microcontroller gets the command and it takes the current latitude and longitude value of the victim with the help of GPS module. Not only this, the pulse sensor also becomes active and starts sensing the pulse value of the victim and sends this value to the microcontroller. The microcontroller switch ON the buzzer present in the device so that nearby people may notice the critical condition and may come to rescue. And microcontroller sends the SMS of current location and pulse reading to the registered mobile number of the family member and police with the help of GSM module. The GSM sends the current location and other data at every 10sec so that if victim is changing its current location continuously then that can be easily traced by police. And this GSM module also calls the family member and police station. In case if the pulse reading also goes abnormal then the microcontroller command the GSM module to send the pulse reading by SMS and to call the ambulance so that the immediate medical help can be provided.

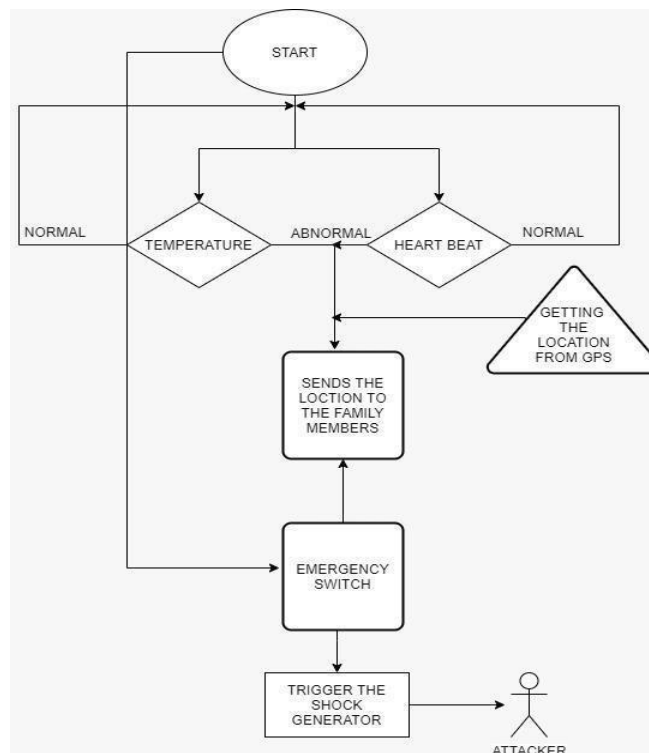


FIGURE 2. FLOW Diagram

4. PUSH BUTTON

A push-button (also spelled pushbutton) or simply button is a simple switch mechanism to control some aspect of a machine or a process. Buttons are typically made out of hard material, usually plastic or metal. The surface is usually flat or shaped to accommodate the human finger or hand, so as to be easily depressed or pushed. Buttons are most often biased switches, although many un-biased buttons (due to their physical nature) still require a spring to return to their un-pushed state. Terms for the "pushing" of a button include pressing, depressing, mashing, slapping, hitting, and punching.



FIGURE 3. Push button

5. IOT MODULE

ESP-01 is the one of the most popular ESP8266 module available in the market. ESP8266 is a self-contained SOC with integrated TCP/IP stack which helps any microcontroller having UART to access A WIFI network. It can act as both WIFI access point as well as a WIFI client. It is pre-programmed with AT commands, so we can easily access and configure it using a microcontroller. ESP8266 runs on 3.3V and its input pins are not 5V tolerant. So we need to reduce the 5V output of the ARDUINO TX pin to 3.3V by using voltage dividing resistors to connect to Rx pin of ESP8266 module. ARDUINO TTL input pins will detect 3.3V as logic high, so we can directly connect 3.3V output of ESP8266 TX to ARDUINO Rx pin.

6. BUZZER

A buzzer or beeper is an audio signaling device, which may be mechanical, electromechanical, or piezoelectric (piezo for short). Typical uses of buzzers and beepers include alarm devices, timers, and confirmation of user input such as a mouse click or keystroke.



FIGURE 4. Buzzer

7. CONCLUSION

The proposed design will deal with critical issues faced by women during night and provide security with advanced technology. While the society may or may not change its mind set but this device will help to feel women independent. This device is can be made so small that it can be used as a hand band. This paper put forth a technique where a woman, when in danger, can instantaneously intimate to the concerned authorities. The proposed technique uses GPS tracking of the smart phone to get the device's co-ordinates. This technique further uses URL of the image and alert message to inform the family and police personnel. However, this technique is effective only with the availability of smart phone to the victim and the contact personnel.

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