WOMEN SAFETY DEVICE FOR GPS TRACKING AND ALERTS

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ABSTRACT:

The present invention rellotes a device for women security. The object of the proposed invention is to alert people in its vicinity and relatives of victim about attack and gets the help form emergency services. The proposed device works on human behaviour and reactions to different situations like anger, fear and anxiety. This activates the device and other sensors get activate then after receiving signal from all the sensors will cause device to send message to the pre saved contacts as an alert message to receive help. This will help to take help from the police as well as public nearby who can reach the victim with great accuracy.

Key Words: Internet of Things, Arduino Nano, Wi-Fi Module, BoltIot, buzzer,pushbutton, Twillio, sensors(Temperature sensor ,pulse sensor,).

1. INTRODUCTION:

In this project we are using wireless technology for security purpose. An electronic device for women safety means that allow users to protect while traveling odd hours or when they feel helpless. This project is based on women's security as it is reported that every day there is many cases about women harassment. Although an Android based application on Women security is already out in the market but for non-android users, I thought an idea for developing a project based on women security using Raspberry pi module. Bolt Iot module receives the signals from GPS system which has present location information and then the bolt iot controller allows the GSM system to send the Alert Message to the three predefined numbers also in our jacket shock circuit is used to injure the attacker for self-defense. A camera used for the capturing image of an attacker and external memory card is used for the capturing image is save on this card.

2. METHODOLOGY

IoT based women safety device GPS tracking alerts System using Arduino which collects information of victim with the help of few sensors. It uses Wi-Fi module to communicate this information to the internet.

Figure 1. Overview system model of Proposed system

The product to be developed will help women community, to be more safe and feel confident.This system consists of sensors that keeps track of voice, GPS location data continuously and if any issues faced by a woman can alert their relations/known people by collecting thefollowing data:

○ Location.
○ Image taken in case of emergency.
○ Audio from microphone.

The collected data will be used as a threshold value. If there's a sharp changes to the threshold then, an alert message will be sent tothe contacts which are saved by the women.

Temperature Sensor
LM35 is a temperature measuring device having an analog output voltage proportional to the body temperature. It provides output voltage in Celsius. It does not require any external calibation circuitry. Thesensitivity of LM35 is 10mV/degree Celsius. It is a 3- terminal sensor wont to 150 ℃.

Pulse sensor:
Knowing the heartbeat rate data is very convenient when performing fitness, learning, etc. But, it can be difficult to measure the pulse rate. The pulse sensor or heartbeat sensor is used to solve this problem. This is a plug & play sensor specifically developed for Arduino boards that can be used in theirprojects by designers, students, engineers, artists whocan use the heartbeat data. In order to create a circuit,this sensor uses an easy optical pulse sensor along with amplification & noise cancellation. We can get fast and accurate heartbeat readings by the use of thiscircuit. This circuit can be used in mobile applicationswith a 4mA current and a 5V voltage.

Wi-Fi Module (ESP8266)

The ESP8266 Wi-Fi Module may be a self contained SOC with integrated TCP/IP protocol stack which will give a microcontroller access to the Wi-Fi network. The ESP8266 is capable of hosting an application or offloading all Wi-Fi networking functions from another application processor.

Arduino Nano

The Arduino Nano may be a small, complete, and breadboard-friendly board supported the ATmega328(Arduino Nano 3.x). It has more or less an equivalent functionality of the Arduino Duemilanove, but during a different package. It lacks only a DC power jack, and works with a Mini-B USB cable rather than a typical one.

Panic button
Panic button is an electronic device which are used in emergency situation to alert someone when the victim is in danger. This device gets activated when an individual call for help. It is a resistive sensor and cannot get stable data

Bolt IoT
Bolt is an IoT network that lets companies and manufacturers connect to the internet with their devices. To connect your sensors to the Internet, the Bolt comes with a Wi-Fi / GSM chip. To receive, store and visualise the data, we can configure this system via the Bolt cloud. It has 32 bit RISC MCU, inbuild ESP8266 and auto cloud connectivity.

speakers
Speakers are one of the most common output devices used with computer systems. Some speakers are designed to work specifically with computers, while others can be hooked up to any type of sound system. Regardless of their design, the purpose of speakers is to produce audio output that can be heard by the listener.
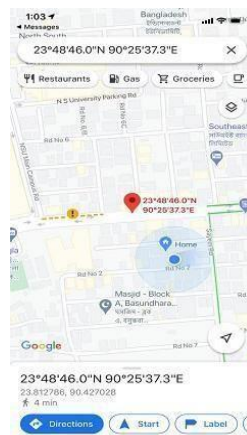
2. RESULTS
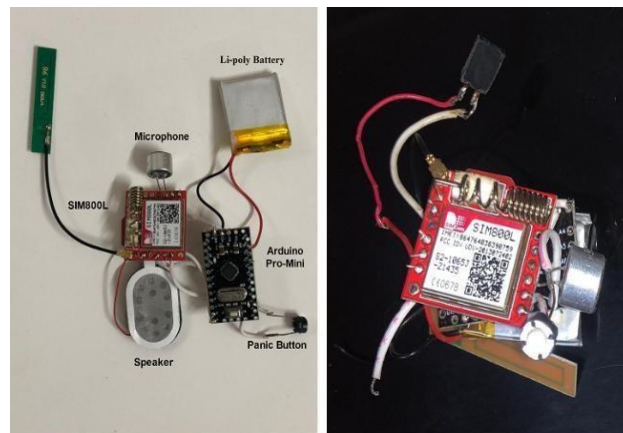
a) dissection view   b)developed view
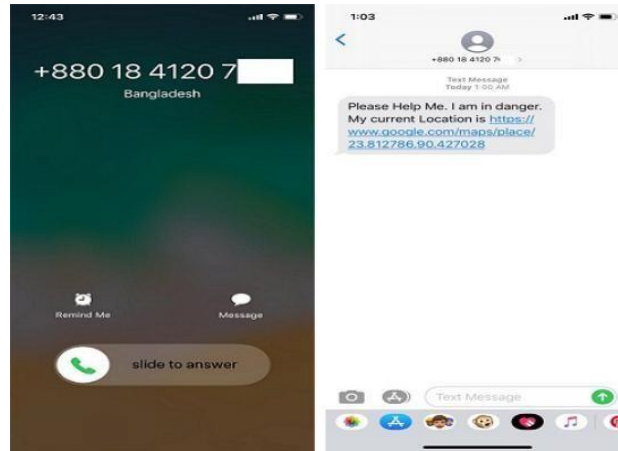
a)making call   b)sending location

c)Location in map

It illustrates the overall view of the Anti-Molestation safety device. Fig. 1a shows the dissection view of the entire device and Fig. 1b shows the developed view of the device presses the panic button, the SIM800L module call to the "999" law enforcement agencynumber through the cell phone tower, and by GPRS technology, the device sends SMS with his/her current location and update it in the application server. The authority notifies the nearby policestation to rescue the prey. Fig. 1b illustrates the form factor of our device which is too small in size to carry anywhere easily. The device can send location continuously. If the law enforcement agency or policetry to make a call to the device number, the device automaticallydiscard the call and again send SMS withvictim's current location. Here, Fig. 2a, 2b, and 2c shows the calling mechanism, location sending mechanism, and location traced in map of our safety device accordingly. Moreover, our device is so much power and cost efficient. The device runs a long with a single hour charge. Our safety device has shown a significant result among previous devices with the small form factor.

3. conclusion

In this paper, we have proposed and illustrated our device, namely, "Anti-Molestation", an IoT-based safety device. This safety device aims to help women and children from beingharassed in any situation. The device can directly inform law enforcement agencies to take legal actions against the culprits. Also, the device can send the victim's current position to the nearest police station to rescue the victim.

The device is so much user-friendly, and people ofall levels can use it without any hassle at a low cost.

Even though we have built a sophisticated system, we still have some limitations finding the victim's actual location. Location can be distorted up to 100 meters radius from the victim's position where he/she presses the button. We are trying to overcome this issue as soon as possible. Moreover, we will also give our product anaesthetic look so that we can take it to the mass production level quickly.

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