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Smart Device for Women Security using IOT.

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Abstract

In Today's World, Women's safety is a big concern. The safety of Women is a very important due to increasing crimes against them. Women safety matters a lot at outside the home or working places. Most of the women of various ages, till this day are being subjected to harassment, rape and murder. As women's have to travel late night generally, it's necessary to remain alert and safe. so the important goal is to provide security to women. In our project, the smart device activates in two ways, one way is it activates automatically when the pulse rate of women raise than normal pulse rate in critical situation, and second way is the device activates when women pressed emergency button of the smart device. Usually the pulse beat of a normal human being is from 80 to 90 beats per minute. But it raises to 110 or 120 beats per minute in critical situations. It react for the above threshold level and send the signal information to the smart phone application. When device activated, emergency message is sent to the family member, friend and nearby police station with the GPS location of victim. The current location of victim is tracking with the help of GPS module and message which is indicating that women is in danger is sent with the help of GSM Module. Also Buzzer and laser light is also gets on. It indicates to nearby people that someone is in danger so that they can able to help the victim.

Technical Keywords: GPS, GSM module, Buzzer, Heartbeat Sensor, Laser Light, Smart Phone.

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1. INTRODUCTION

Day by day the women safety is becoming the common issue, such apps do exist, and they are equally smart to confiscate the victim's phone. Hence the strategy to switch to an independent hardware is focused in our project. Here we introduce a device which ensures the Protection of women. The system consists of pulse rate sensor, gps and gsm, laser, buzzer and camera, which when activated, sends values to the training dataset. If the comparison result is abnormal then a popup message is send to women relatives and all the activities are recorded in camera which will be stored, it can be used by police for further investigation.

Main purpose of the system is to provide security and safety. As being an independent nation women's are not safe even today. There should be some effective measures for the security of the women's. So here in our project we have all the

implementations on sandal which are used by everyone in their day to day life. These project will provide the safety major to every women when they are in dangerous situations and whenever they need to protect themselves.

2. LITERATURE REVIEW

S. A. More , R. D. Borate, S. T. Dardige, S. S. Salekar, Prof. D. S. Gogawale stated that in the current situation, the important goal is to provide security to women from issues of women harassment. With the App revolution of smart phones, many security apps are developed every day but even the other side that is fraudulent or adversary knows that such apps do exist, and they are equally smart to confiscate the victims phone. In this project System we include wearable devices that will transmit data for comparing with the training dataset and

if irregular values in temperature, pulse rate are identified then message will be sent to her family member, nearby police station and one friend.[2]

T.Sathyapriya, R.Auxilia Anitha Mary stated that nowadays Personal safety has become a problem of significance for each, but especially for women. A recent WHO survey indicates that 35 percent of women, globally, experience some form of abuse or physical violence. day by day the count of the victim is increasing. This paper proposes a model which will help to make sure the safety of women. It describes safety electronic device for women, a wearable smart bracelet, that sends alerts to friends, family, as well as the police when they fell they are in problem. The smart device based on IOT uses a low-energy Bluetooth connection to synchronize to an application on the wearer's Smartphone. The application lets the wearer inform her situation in case of a critical situation - to her friends, family members, the police, or a group. The software or application has access to GPS/GSM and Messaging services, which is pre-programmed in such a way that whenever it receives emergency signal, it can send help request along with the location coordinates to the nearest Police station, relatives using emergency keys (SOS). This action enables help instantaneously from the Police who is in the near geographical location, who can reach the victim with great accuracy. The app also uses the Smartphone's record the incident and subsequently transmits the wearer's location along with the audio recording to the police.[3]

B.Umadevi, Dr.P.Eswaran, Dr.N.Manoharan stated that Now-a-days women harassment is increasing and women and children safety is a big question mark. To overcome this problem, this paper explores the IOT concepts such as measuring the body temperatures, heart beat rates/pulse rates by sensors to monitor their conditions and alerts nearby location police station or relatives. Since, there are some web or mobile applications for women safety and emergencies, it does not work at all situations. The lady cannot stay on the gadget at all the time. Instead, she could be monitored by wearing smart watches, etc. It could be accessed by wireless technologies like GPS, GSM, GPRS, and Wi-Fi and monitored by nearby devices.[4]

3. PROBLEM STATEMENT

In the existing system there is no monitoring system for girls, it should create many problems for them and the no safety mechanism to protect the girls from the misbehaviour activities. In addition, in the existing system there is no alert mechanism for the girl's safety, it should be done by manually only.

There are many android applications for smartphones are developed for the safety of women's such apps do exist, and they are equally smart to confiscate the victim's phone , for those who don't use smartphones or those who cannot keep their mobile handy at their workplace, this proposed system will be helpful. Hence the strategy to switch to an independent hardware
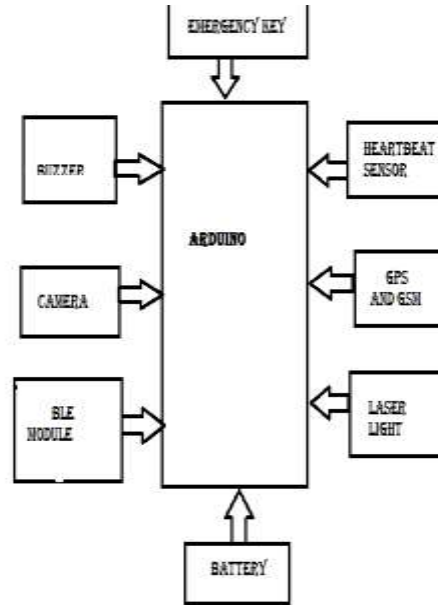
4. PROPOSED SYSTEM

Fig4.1-block diagram

4.1 ARDUINO:

Basic building block of propose system is arduino. The hardware consists of the following features- the USB plug which is used to upload the program into the board. It can also be used as a source of power supply. The plug supplies a regulated voltage of 5V. In case it is insufficient, an external power supply of 9 to 12V can be given. There are 5 analog pins (A0 to A5). The digital i/o pins are from 2 to 13. The reset button is used to reset the microcontroller in order to run a fresh program. There are 3.3V and 5V power pins to power the Arduino.

Fig 4.2-Arduino Uno

4.2 PULSE RATE SENSOR:

Pulse Sensor is a well-designed plug-and-play heartbeat sensor for Arduino. The front side of the sensor is with the Heart logo. The contact with the skin is made by that side. The digital output of heartbeat is given by heartbeat sensor, according to current health condition of person. It calculate value per 10 second and send to the microcontroller for comparing with the training dataset. Every feeling like fearness, angryness, etc have different heart rate values. It works in four frequencies ranges from 1.2GHz to 1.6GHz. The Heartbeat sensor connected to Arduino uno as follows:-

- Signal(S) to A0
- Vcc(+) to 5V
- Gnd(-) to Gnd

Fig 4.2- Pulse rate sensor

4.3 GSM AND GPS MODULE :

GSM is stands for Global System for Mobile communication. A GSM modem requires a SIM card to be operated and operates over a network range subscribed by the network operator. GSM transfer the signal fromsmart band to smart phone and also used to send emergency message to the family member, friend and nearby police station. It track the current location of victim with the help of latitude and longitude of receiver. GPS stands for Global Positioning System is a location tracker. It tracks the current location of victim in the form of longitude and latitude. The GPS Coder Module will use this information to search an exact address of that location as the street name, nearby junction etc. which is directly connected to USART of the microcontroller provides reliable positioning, navigation, and timing services to worldwide users on a continuous basis in all weather, day and night, anywhere on or near the Earth.

Fig 4.3- GSM and GPS Module

4.4 BLE Module:

BLE stands for Bluetooth Low Energy which is used to connect smartphone with smart device. It required less power consumption. Data transmission rate is 2 or 3 mb/s which is operates in frequency range 2.4GHz(ISM band) and transfer data in the 10m range.

4.5 Buzzer:

Buzzer is basically a tiny speaker that you can connect directly to an Arduino. The piezo buzzer produce sound based on reverse of the piezoelectric effect. These buzzers can be used to alert a user of an event corresponding to a switching action, counter signal or sensor input.

Fig 4.5-Buzzer

4.5 Camera: It is use to take picture of culprit.

4.6 Battery: Battery is used to power the circuit.
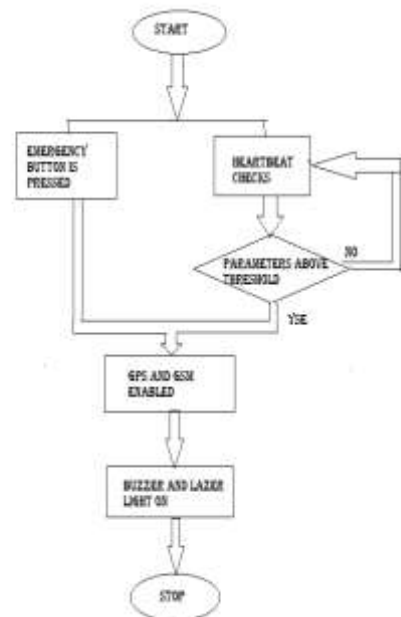
4.7 FLOWCHART:

Fig 4.6-Flowchart

5. Advantage

- Compact in size.
- Can Carry any wear
- Through GPS, live location can be known anytime.
- Can draw the attention of the people by using buzzer.
- By using camera all the incident is recorded.
- By using the current system, one can protect themselves.

6.Disadvantages

- Internet Connectivity is required all the time.
- Network should be available.
- Battery should be charged.

7. Conclusion

Our main goal of the system is to provide safety and security to every women .In our system we have developed smart device for the women security. It contains heartbeat sensor, GPS and GSM module, Buzzer and Camera. It is connected to particular mobile all the time. So, at the time of danger emergency message will be sent to the nearby police station and relatives.

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