Smart Security for Women Using GSM

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Abstract:- In present world of growing technology the security of women can be achieved to greater extant. the security of woman was always been an issue of concern and left the world with great challenge. the work we are going to perform in this context gives the device named "Smart Band" which enables the user full safety against violence. The smart band comprises of various modules such as GSM, GPS, microcontroller and sensors. This device responses to the health conditions such as fear, anxiety and anger, based on which it sends messages to relatives and near police station along with location coordinates.

Keywords:- GPS, GSM, Smart Band.

I. INTRODUCTION

The safety of women in the world is the growing concern at present.in modern India, women continues to face social challenges and are often victims of abuse and violent crimes. In this paper efforts are made to provide safety ensuring device for women in adverse condition. This system is called "Smart Band" which serves the purpose of security of user automatically. The automation of the system is achieved by making use of advanced technological devices and sensors, which include GSM, GPS, temperature and heart beat sensors. The Smart Band gives the precise location and health condition of victim.

II. PROPOSED WORK

Build a security system for women that is completely automated and requires no human interference whatsoever. The system should be fool proof and independent of any web application. So that safety is ensured even if the victim is not in possession of a phone at the time of the crime. This security device is combination of different modules as shown in the figure1.

➢ *Arduino Pro Mini*
    The Arduino pro mini is a microcontroller board based on ATmega328.
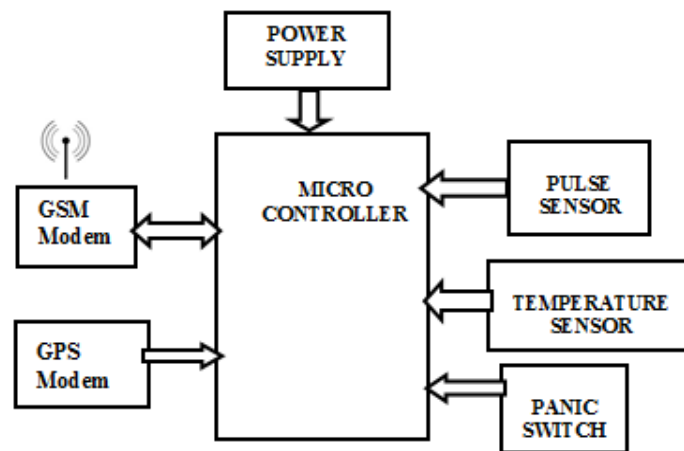

Fig 1:- Block diagram of smart band

➢ *Heart beat sensor*
    Heart beat sensor shown in fig2 gives digital output corresponding to heart beat.

Fig 2:- Heart beat sensor

➢ *GSM*

The Global System for Mobile Communications is used to communicate with prescribed user while under attack. This device sends data(message) wirelessly.
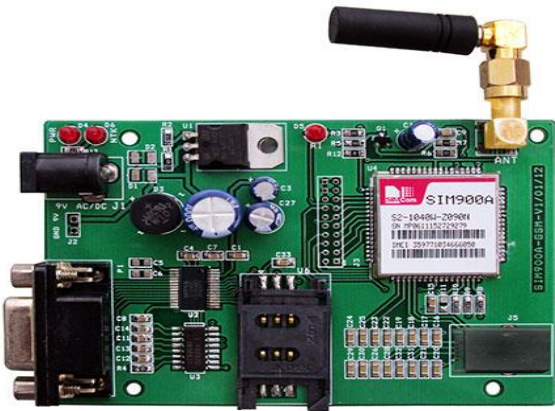

Fig 3:- GSM module

➢ *Temperature sensor*

Here temperature sensor used is LM35, whose output is proportional to Celsius temperature.
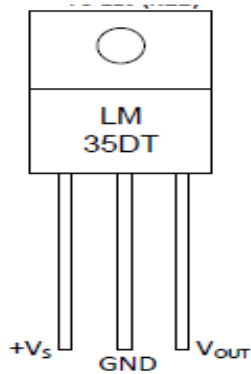

Fig 4:- Temperature Sensor (LM35)

➢ *GPS*

GPS global position system is used to know the location of the victim. Following image shows the GPS module.

Fig 5:- GPS Module

➢ *Battery*

Batteries are another way to produce electricity. They are smaller and safer. Batteries have one end that is positive and one end is negative. Battery acts as a power source for this device.

➢ *Panic switch*

This switch when pressed makes the device to send the text messages to the receiver and information of location without sensing heartbeat and temperature.
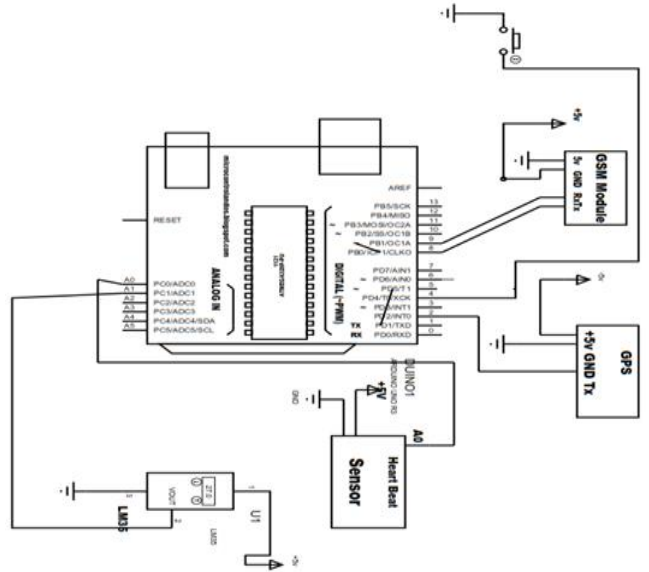
III. SCHEMATIC DIAGRAM

Fig 6:- Schematic diagram

IV. HARDWARE FUNCTION

On application of power supply of 5V the system is activated. As temperature sensor senses the temperature of the body and is connected to the microcontroller Arduino pro mini directly. The microcontroller compares the measured temperature with normal body temperature (98° F) similar with heartbeat rate sensor (normal heart beat 83BPM). When temperature and heartbeat sensor measured values crosses the standard values then controller uses the GPS inputs for location detection and generates the help message using GSM. GSM sends the message to predefine user.

V. RESULT ANALYSIS

The figure6 below shows the smart band in ON state where heart beat sensor is attached to fingertip and temperature sensor placed below the band. The band also consists of a panic switch which can be operated possibly in danger situations.
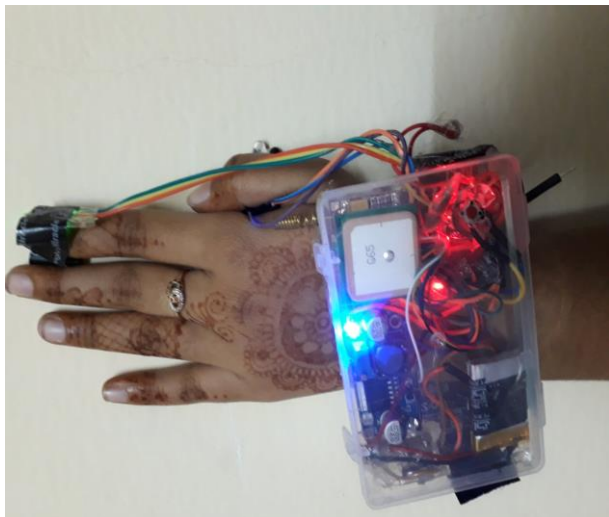
Fig 7:- Smart band when is in ON state

When someone is in danger the band senses heartbeat to be high or exceeding the range, then it sends the message as shown in the figure8.
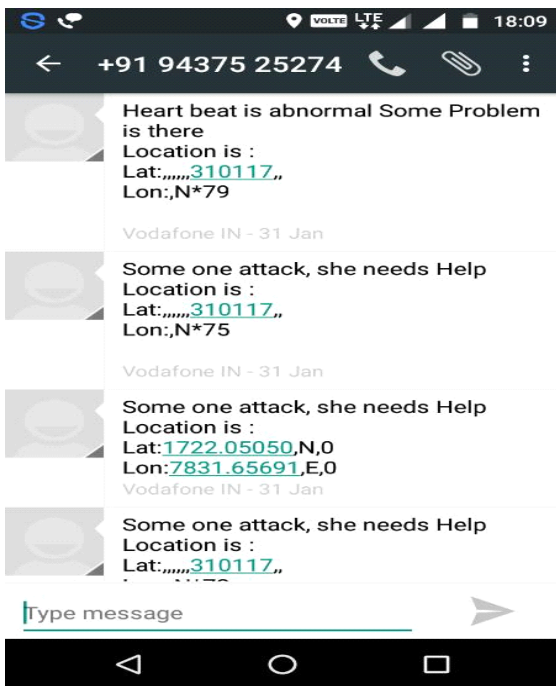

Fig 8:- message sent to the rescuer when the heart beat differs

If the person is in danger and in a position to press the panic switch then on pressing it, sends the message to the rescuer that she is in danger as shown in the figure9.
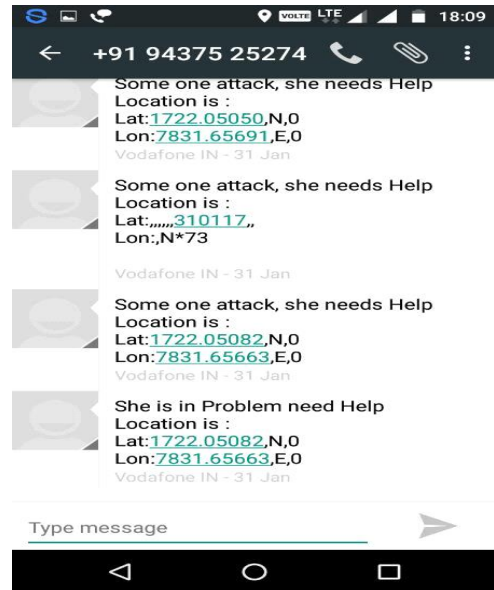

Fig 9:- message sent to the rescuer when the panic switch is pressed.

VI. FUTURIE SCOPE

There is a lot of scope to develop this product and exhibit in the market in the future. This can be made using IOT and also many extra features like the camera and voice recorder can be added to this smart band to make it more flexible**.** The product can also be produced on cost effective basis and made sure that it is available to the person of all class. We can expect a lot of improvements and a huge development in this device.

VII. CONCLUSION

The prescribed design deals with critical situations faced by women with advanced technological devices. While the society may or may not change for the enhanced, power efficient, self-assured and truly free device. This system can overcome the fear that scares every woman in the world about her safety and security. The system can perform the real time monitoring of desired area and detect the violence with a good accuracy.

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