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# SMART WATCH FOR WOMEN SECURITY BY USING INTERNET OF THINGS

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**Abstract:** As we all are aware about the problems which women's are currently facing. We also watch news regarding some of women's harassment but there are many exciting apps and devices for women's safety via smartphones , however we are unable to use mobile phone constantly due to some reasons for example while performing some household chores or working in an office. So, we introduce you some watches with latest innovations which will be capable of exposing certain sexual or vulnerable attack with the help of sensors present in them. It detects the heartbeat of the person at the present time if their is any kind of fluctuation seen it gets activated and will probably will initiate a an alarm sound to the nearest person to seek the attention as well as it will automatically make a call to the nearest police station and give it a signal because it will be the easiest way to track down using the GPS location.

**Keyword**: Smart Band, GPS, GSM, Sensor, and Bluetooth.

## 1. INTRODUCTION:

- In todays world everyone are concerned about women's safety, so the main target of this research is to develop a system which will make it easy for a women to be comfortable and safe around her work place. Until now there are may devices as well as several software developed for the safety of women although they were not up to the mark due to some errors or maybe were not able to use easily during the bad situations and were not handy enough.

- But this smart watch know as 'watch me ' is handy and easy to operate.

- The system does not need any type of button to get activated it shall get activated automatically identifying any kind of fluctuation in the heart rate and will initiate a signal to the sensor which further will perform its work. It is the fastest and less time consuming process compared to other systems .

- The main purpose of our in this device is just to provide a powerful and trustable security to all the women out there whether it be a school going girl or a working women.

## 2.1 PROPOSED SYSTEM:

Now a days there is a tremendous need for women security system which can respond faster and provide security in any critical condition. This topic will discuss about the system including the data, sensors which help us to know any kind of variation that occurs, so with the help of sensors message will be send to the nearest police station, family members, friends along with the GPS location.

With the help of the system notification/alert, message shall be send within 10 sec to those subjected members. After sending message if she does not reply in given time then three alert message would be send automatically to her family members, friend and nearest police station along with her GPS location and if she replies then system works regularly.


**Fig 2. 1 proposed system**

According to this figure this system works as follows.

ACCORDINGLY

A) Pulse Rate Sensors.

B) Temperature Sensors.

C) BLE Module.

D) Smart Band.

E) Women Security Application.

F) GSM Module.

G) GPS Module.

**A) Pulse Rate Sensors:**

According to the current head situation it provides pulse rate it acts as heart beat sensors whichcalculate per 10 second.

As we know heart rate is different in every situation and hence heart sound signal can be used for emotion recognition but the frequencies ranges from 1.2 to 1.6GHZ

**B) Temperature Sensors:**

Body temperature is an important factor to maintain our health condition in this system we used LM35 series body temperature sensors.

**C) BLE Module:**

In this system we are using BLE 4.0 Module which is HC-0.5v. It requires less power consumption to connect smart band with the smart phone and data transmission rate is 2 or 3MB per second (frequency range 2.4GHZ) transfer data in the 10m range.

**D) Smart Band:**

It is connected with the Smart phone by BLE 4.0. It consist of temperature sensors, pulse Rate sensors, micro-controller.

**E) Women Security Application:**

Basically the application is pre-programed with the standard health value of pulse rate and body temperature as per the age group whatever the estimated values are obtained from sensors get compared in this application.

**F) GSM and GPS Module:**

For the transferring signal from smart band to smart phone" GSM " is used. Also to send the message to respective family members, friends, nearest police station (GSM) is used.

And to track the current location of victim "GPS" module is used with the help of latitude and longitude of receiver.

**3. SYSTEM ARCHITECTURE:**

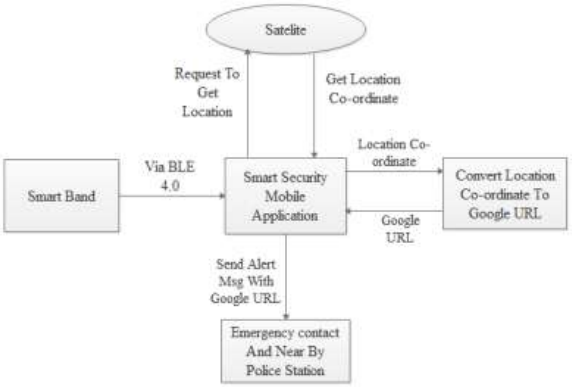


**Fig 3 System Architecture.**

**Now there is further explanation of how exactly the system functions:**

As shown in fig.3 Smart band is connected with the mobile application by BLE 4.0 as in smart security mobile application. And then according to the victims' current situation the victims heartbeat, pulse rate, temperature, this application will send a request to the satellite to get location then the satellite send a location to the application then this application will send that particular location to the google URL for converting the co-ordinate. Than it responds to the application after completion of all these steps it will send SMS Alert, Message Alert with the Google URL location to the emergency contact numbers and also to the nearby police station.

**3.1 SYSTEM ALGORITHM:**

Step 1: Women register in the system.

Step 2: Women login in the System.

Step 3: Women wear the smart band.

Step 4: Wearable device contain pulse rate Sensor and temperature sensor.

Step 5: Every 10sec. value will be compared with the training dataset.

Step 6: If any abnormal values is encountered then system send alert message on device.

Step 7: If she doesn't reply in given time about awareness.

Step 8: System track the current location of women.

Step 9: Emergency message send to family member, friend and nearby police station with her GPS location

Step 10: Also sends the message to any nearby user.

**3.2 System Feature:**

**3.2.1 Functional Requirement.**

- System should support android handset.
- System should monitor the user location periodically.
- System should properly interact with the smart band.

**3.2.2 User Interface.**

- User Login Form.
- Police Station Login Form.

**3.2.3 Hardware Interface.**

- Mobile application will get installed on android smart phone.
- These devices should have BLE 4.0 connectivity

. **3.2.4 Software Interface.**

- Operating System: Windows
- Database: MySQL
- Android 4.1 and above Supported mobile handset • JAVA, JDK 7.
- Android studio.
- Eclipse.

**4. CONCLUSION:**

In the system, Smart Band will operate with the help of containing Temperature, Pulse Rate and Heart Rate continuously.

There is no need to do any operation or activity in these application while in such a critical condition when victim is in danger. It will automatically send alert message to the respective Friends, Family Member and nearby Police station along with the location and the system will work much faster as compared to other rather than wasting time in such crucial condition so it will be helpful for women.

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