A SMART WATCH FOR WOMEN SECURITY BASED ON IOT CONCEPT 'WATCH ME'

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I. Abstract:

Today, in the current global scenario, Women were facing lot of challenges. We can hear the news of women harassments than their achievements. There are many existing apps and devices for women security via smart phones. Though the smart phones have increased rapidly, it is not possible to have the phone all the time in our hand to make a call or click on it, so here we introduced a new technique via smart watches.

When a women or child wearing this 'watch me' is exposed to sexual or vulnerable attack, the sensor present in it detects the heart beat rate of a person which will be high at the moment by the secretion of epinephrine hormone from hpa axis and gets activated, this will not only provide a alarm sound to the attention of nearby people, it will automatically make an call to our registered contact and also through GPS/GSM it will detect the nearby police station and make an ring there so it will be helpful for police to arrive soon at the spot by tracking the GPS , such a system will lead to safer and better environment.

II. Introduction:

- Today girls were not allowed to move freely even in the streets without worrying about their security Parents were worrying about their security which has become the first barrier to send their daughters for job. Because today's society is not sure safe for women. Day by day the women harassment increases. We can't change the society totally but

we can increase the security of girls by using modern technology

- Nowadays though there are many apps evolved for women safety via smart phone it is activated only by a touch or one click or shake. It is not possible to have mobiles on our hand in all circumstances.

- This concept is used to provide security to women when they are exposed to external challenges and harassments in the society.

- It works automatically based on heart beat rate which is increased due to the secretion of epinephrine hormone from hpa axis which is defined for every situation like fear , anger, anxiety ,and other kind of reactions which will trigger the sensor.

III. Comparison of existing apps and devices

Name	Applications	Disadvantages
VithU app	Alert messages are sent out to the listed contacts, who receive your message along with your physical location.	We have to click the power button for 2 times consecutively. It is not possible at all the situation.
Nirbhaya	Lets the user send an SMS alert or call to with single touch to the pre-selected	This app is also physically dependant.
	contacts with exact location. Updates every 300 meters you move. We can also Shake to alert.	
Spot N Save Feel Secure app	A special smart band which works with this app. Click on the button on the band twice to send out signal to the guardian network. Signal will be updated every 2 minutes.	For the unnoticed situation girls can't make alert previously by clicking it twice.
SOS-Stay Safe	On shaking the device or clicking the power button it sends alert message with your name and voice recording, Your exact location and battery level of your phone. Ordinary phone can receive the message.	If girls fail to shake or click button or if girls become unconscious this app is not worth for sure safety.
365 Security Guard	120db personal alarm.	It is not sure that this device will be carried

	High intensity LED flash light. Safety hammer. Belt cutter. Portable charger.	for all the places the girls move.

IV. Methodology and modules :

We can make use of number of sensors for detecting the heartbeat of a person via motion sensor and health monitoring sensor and temperature sensor. The GPS and GSM integrated with smart watches is connected via Bluetooth to the smart phone and ring the alert notification to the emergency contact and within the limited radius the police station will be found in the GPS and make a signal. Cop will be able to track the alert signal and find the location.

a) Sensor:

• Pulse rate sensor detection is used in this appliance to detect the sensor when the targeted pulse rate is achieved and to provide security to the user via smart watches integrated with the sensor ,the heart rate differs for each and every feelings

b) GPS/GSM module:

• GSM is used to send the data from control unit to base unit which will maintain the data according to the input signals from sensor so that it make a alert position to the GPS tracker

• GPS is used to track the position of the user when the signal from user is collected via GSM

• And cop tracks the signal received and find the location to be arrive

c) Temperature sensor:

It plays a vital role in human health condition which will digitally displays the body temperature of the user

d) motion sensor :

It is used to detect the type of motion the user is victimized when the targeted heart beat is reached
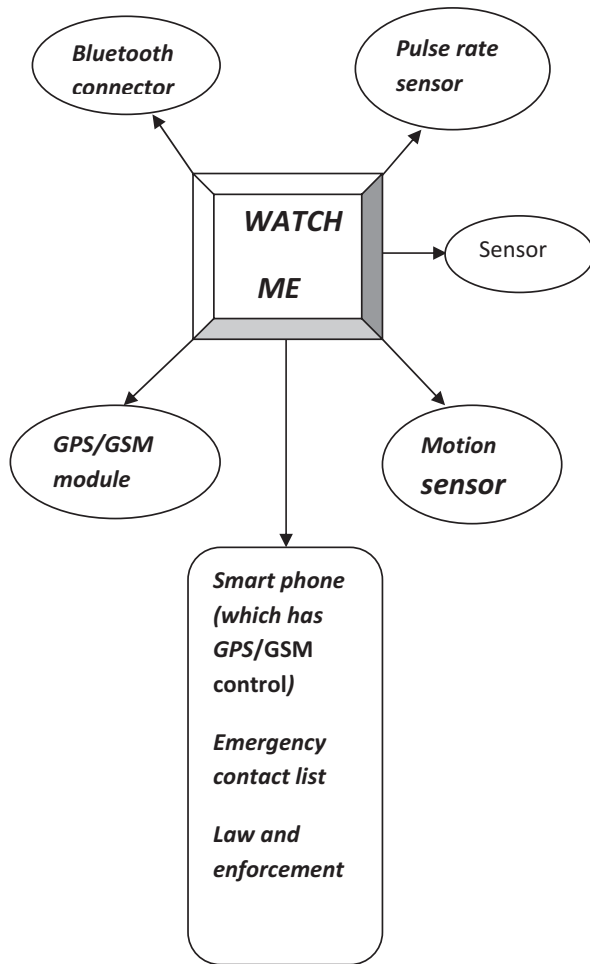
Fig 1 (Functional diagram)

- Bluetooth connector
- Pulse rate sensor

WATCH ME

- Sensor
- GPS/GSM module
- Motion sensor
- Smart phone (which has GPS/GSM control)

  Emergency contact list

  Law and enforcement

Fig 1 Functional diagram of Watch me explaining different process from alarm to alert message

V.   Working:

When the USER is exposed to vulnerable attack

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The SENSOR gets activated when the targeted heart rate for the targeted time   period is achieved.

⬇

Produces high pitch ALARM sound

⬇

The GPS tracker is used to send the user's location so that the cops can track the location.

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Through the GSM, a notification message is sent to the contacts already registered to alert them.
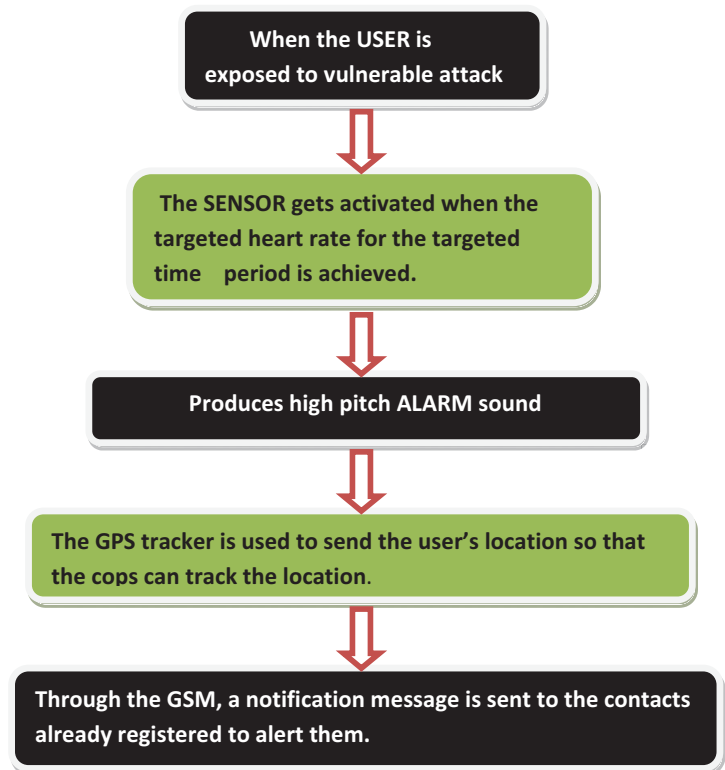
Fig 2 Illustration of actual process of the system

The basic concept on which the whole process is revolves is of triggering the heartbeat sensor when it attains the targeted heart beat rate and time period. As soon as the heart beat sensor gets activated it produces an high pitch alarm sound to alert the surrounding people to grab their attention.   Then   watch   me

immediately sends an alert signal to the nearby police station. The cops can trace the location by GPS tracker which is updated to them periodically. Then it also sends an alert message to the already saved emergency contacts so that they can get information that the person wearing watch me is under danger.

The smart watch is chosen for its portability and cost effective components. As the technology grew people nowadays prefer smart watches to wear for many technical purpose and good stylish look. The battery can be changed by replacing with new one. The battery used in watch is Lithium batteries (Li-ion polymer battery). This type of battery is used because they are easily rechargeable and occupy less space and cost efficient.

VI.   Conclusion:

Watch me really watches the girls and they don't want to click or shake this watch to help them to alert the police, their parents and surrounding. Watch me is a super fancy guard for girls at anytime and anywhere when they wear. So that girls can come out freely without any obstacles to reach their goals and future endeavors.

VII.   References:

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