EFFICIENT TRACKING FOR WOMEN SAFETY AND SECURITY USING IOT

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Abstract: Women play vital roles in our society from their birth to the end of life. In the past few years, crime against women has increased to a great extent. According to the survey it is found that 84 percent of the women who experienced harassment were in the age group of 25 to 35 years, who are mostly full-time workers and students. Most of the women also don’t concentrate on their health due to the busy schedule. Women safety and security is a serious and biggest social issue and most importantly hurting the half population of the country in all aspects which needs to be solved urgently. Since no one can respond aptly in critical situations, we propose a smart intelligent device which automatically senses information and helps women in “Every single step of life”. The device is the integration of multiple devices comprises of a wearable smart-band and a secret webcam connected via Bluetooth which continuously tracks the information and communicates with smart phones that has access to the internet. The application is programmed and embedded in such a way that tracks information of the women such as call logs, messages, users, and blood oxygen levels, heart beat rate and records continuously in the internet. When SOS present in smart band is pressed continuously it automatically generates signals to the predefined smart phones and nearest police station along with location coordinates and the secret webcam in the locket captures the culprit photo which is directly uploaded to the server.

Keywords: Women play vital roles in our society from their birth to the end of life. In the past few years,

1. INTRODUCTION

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3. PROPOSED SYSTEM:

Base on the critical analysis and the requirement of safety functionality, the modules are selected as shown in figure 1. The proposed system mainly consists of two wearable devices.

1. Wrist watch tracking device
   This system comprises various features listed below.
   - Device with SIM enabled
   - Intelligent power saving
   - Long standby
   - Two way talk
   - GPS, BLUETOOTH & WIFI
   - Emergency call (another form of SOS)
   - GSM 900/1800/1900 with GPRS
   - GEOFENCE

   The smart watch is capable of storing few contact numbers. The up and down buttons on the left side of the watch, one is SOS button and other is power-off button. The device is activated when SOS button is clicked for two seconds. It is programmed that when the device is activated, it immediately sends the alert messages like “I am in danger, please help me” along with “Keep the sound with high volume at the receiver side even if it is in silent profile along with location using GPRS.

   The device is also embedded with live tracking chip which senses the pulse rate, heart beat rate, calories burnt and blood oxygen levels of the user. Normally the smart art watch always keeps tracking the information of user like day to day calls (i.e., outgoing and incoming), the button captures the heart rate, calorie burnt for every day one hour depends on the setting. The 3D implementation allows the accelerometer to measure the motion in any way that the user moves. All these in formation is stored in the server through internet. When the user is in abnormal condition, the device instantly notifies the registered contacts with the message “The user is in abnormal situation, please contact the registered contacts” along with location of the user.

   The device also has a GEOFENCE feature, which immediately alerts the receiver (the registered contacts) when the user moves out of the specified location. The device also has a GEOFENCE feature, which immediately alerts the receiver (the registered contacts) when the user moves out of the specified location.

2) Device with Camera which can be used as locket

   This device consists of the following features
   - Bluetooth
   - Camera with 0.3 Mega Pixel (spy camera)
   - Rechargeable battery

   This device has two buttons one is power-off and other is to activate. When the device gets activated, the camera captures the attacker’s picture and records in the server. These pictures will be used as evidence.

   It detects the infrared rays coming from every hidden camera placed in changing rooms, hotels rooms etc., in such cases it traces the location using GPS module and sends the notification to the user about unsafe place. We can programme according to the user decisions to register the complaint base on notification.

4. METHODOLOGY OF PROPOSED MODEL
To make the proposed system work, both the smart watch and locket camera must be charged and turned on. The following steps must be done before the user uses the system.

Step 1: Register contact numbers in the smart watch
Step 2: Set the time duration for tracking the information, so that for every mentioned time the information is updated in the server.
Step 3: Bluetooth must be enabled in both devices (i.e., watch and locket)

This System can be used in different levels for a woman.

Figure 2: Overview of women safety and security system

a) Working of safety device as Health Tracker
If the user enables Health Tracker, the system tracks the pulse rate, heartbeat, calories burnt and blood oxygen levels of the woman for every time duration depends on the setting of the user. This information will be stored in the server so that she or her family members who know the URL address can view the data. When the reading of either pulse or heart rate or calories burnt or blood oxygen levels are not in normal condition (exceeding or falling below the limit), immediately the system sends alert message “SHE IS IN ABNORMAL CONDITION, CONSULT DOCTOR” to the registered numbers with long beep sound at the receiver side.

This system will also help women to guide how much she has to walk. It informs the women to “walk” if she sits for long time and also if she walks (or jogs) for more time it informs the number of calories burnt and suggest to “stop walk”. This system helps the women to make herself fit and mainly during her pregnancy.

b) Working of safety device as GeoFence
The GPS in Smart watch tracks the movement of the woman and if she is outside of a specified area for a certain time, it sends a location notification to the registered numbers. If the woman moves out of specific area, this can be viewed at the URL as the information is stored in the server.

c) Working of safety device when women in vulnerable attack.
When the woman faces any vulnerable attacks, the only thing she has to do is pressing SOS button for two seconds. Immediately the device gets activated and sends the alert messages like “I am in danger, please help me” with long beep sound with high volume at the receiver side even it is in silent profile, along with location using GPS. This system can be used in children (girls) so that when the child (girl) moves out of specific area. This can be viewed at the URL as the information is stored in the server.

5. CONCLUSION
This Efficient, Smart and Intelligent device really helps women in “Every single step of life”. The women need not hold the device like smartphones. The only thing to do is enabling before they need. When the device gets activated it stores every information of women in the server and notifies the police and their family members (i.e., registered numbers) when required. This system acts as super fancy guard for women at any time and anywhere when they wear it. So that women can come out freely with out any obstacles to reach their goals and future endeavours.

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