WOMEN SAFETY AND HEALTH MONITORING WRIST LOOP USING LATEST TECHNOLOGY

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Abstract: Security for women has become a major issue as the number of crimes over women and girls increasing day-by-day. This paper describes about women safety and their security by using electronic device to both detect the problem & alert Authorities This paper suggests a new perspective to use technology to protect women. we use an android based smart phone with an integrated feature that alert and provide location-based Information. This Document describe GPS and GSM based "Women Security System "that provides the combination of GPS devices as- well-as provide alerts and message with an emergency button Trigger. Whenever somebody is in Trouble They Only have to press Volume Key Button After that a message alert is sent to Register Contact list and a Voice Call to the Number registered first and give a message "I AM In TROUBLE PLEASE HELP ME" Now a day safety of women is becoming very poor with the help of this Application The project was development in Android Which Graphical User Interface it provide the level of reliability, availability and compatibility .All these make Android an appropriate language for this project because Android language is based on JAVA language.

1. INTRODUCTION

This project presents an alert system for PROBLEM detection using common commercially available electronic devices to both detect the PROBLEM and alert authorities. We use an Android based smart phone with an integrated tri-axial accelerometer.

Data from the accelerometer is evaluated with several threshold values and position data to determine a PROB. The threshold is adaptive based on user provided parameters such as: height, weight, and level of activity. The application adapts to unique movements that a phone experiences as opposed to similar systems which require users to mount accelerometers to their chest or trunk. If a PROB is suspected a notification is raised requiring the user's response. If the user does not respond, the system alerts pre-specified social contacts with an informational message via SMS. If a contact responds the system commits an audible notification, automatically connects, and enables the speakerphone. If a social contact confirms a PROB, an appropriate emergency service is alerted. Our system provides a realizable, cost-effective solution to PROB detection using a simple graphical interface while not overwhelming the user with uncomfortable sensors.

I PROB is a very powerful software especially developed for the safety of girls, whenever somebody is in trouble they don't have to sit and find contacts or find ways to send SMS, or msg the near ones. They might not have so much time, all that they have to do is shake the smart phone above the threshold value, vigorously., immediately an message alert is sent to the persons mom, dad and whoever they wish to, if their guardians also have a Smartphone. Even though if it is in silent mode. When a message called ALERT is received it automatically changes its profile to general and gives a voice notification YOUR SON / DAUGHTER IS IN TROUBLE PLZ HELP…. PLZ HELP…. PLZ HELP…. REPEATEDLY AS A RING TONE until they listen and stop it. If they want to find where their ward is all that they have to send is LOC as an SMS to their smart phone, it will respond with the current location of their ward.

If parents want to track their ward, they must send TRACK message as a SMS to their ward's Smartphone, it will respond with the location every 5 minute once, which is stored and gets connected with the GOOGLE MAPS using GPRS and plot the ROUTE in live.

We come across many issues regarding the safety and security in day-to-day life.

"Arak shakadal", what we call as police force which is only meant for the protection, security, and safety of citizens. If the unsafe situation like this type is known to police like force, then only they can give protection to needy women. Unfortunately, nowadays the scenario is quit e different; after the incident happens, such forces come to know. As such, cases are increasing day by day; what a woman can do in such kind of situation? Making phone calls to her well-wishers for help. Constraint is distance of her well-wisher from her place. If the place is unknown, the identity of place is also the constraint. Moreover, in trouble (unsafe situation), it is difficult to call anybody for help. Even a woman may be unaware of the place where she is and cannot give place identity. In recent days, the incidents like physical harassments are more common. As one of the solutions to this problem, this proposed system is being developed using the VR (voice recognition) technology. Voice recognition could more generally be called as speech recognition or sound recognition, which is used to identify words and phrases in spoken language. At the same time, it converts them to a machi ne-read able format. This technology was first used in 1952 to convert spoken words into machine-readable format digit by digit using the ASR (automatic speech recognition) algorithm. The performance of this technology is measured by accuracy and speed. It is easy to handle and comfortable.

2. PROPOSED METHOD ARCHITECTURE

The proposed system is especially for the women safety and overcomes the disadvantages of existing system: - This proposed system is 'GSM & GPS Based women Security System'. It consists of GPS device i.e. Any Android Phone and an emergency button. GPS device must be placed inside the device (Android Phone). The device will provide the position information such as latitude, longitude of women. An emergency button is fixed on the device at a particular position. Whenever women in any kind of trouble she will press the emergency button and an alert will be immediately sent to the nearest police station. Then it is the responsibility of police squad to handle the situation.
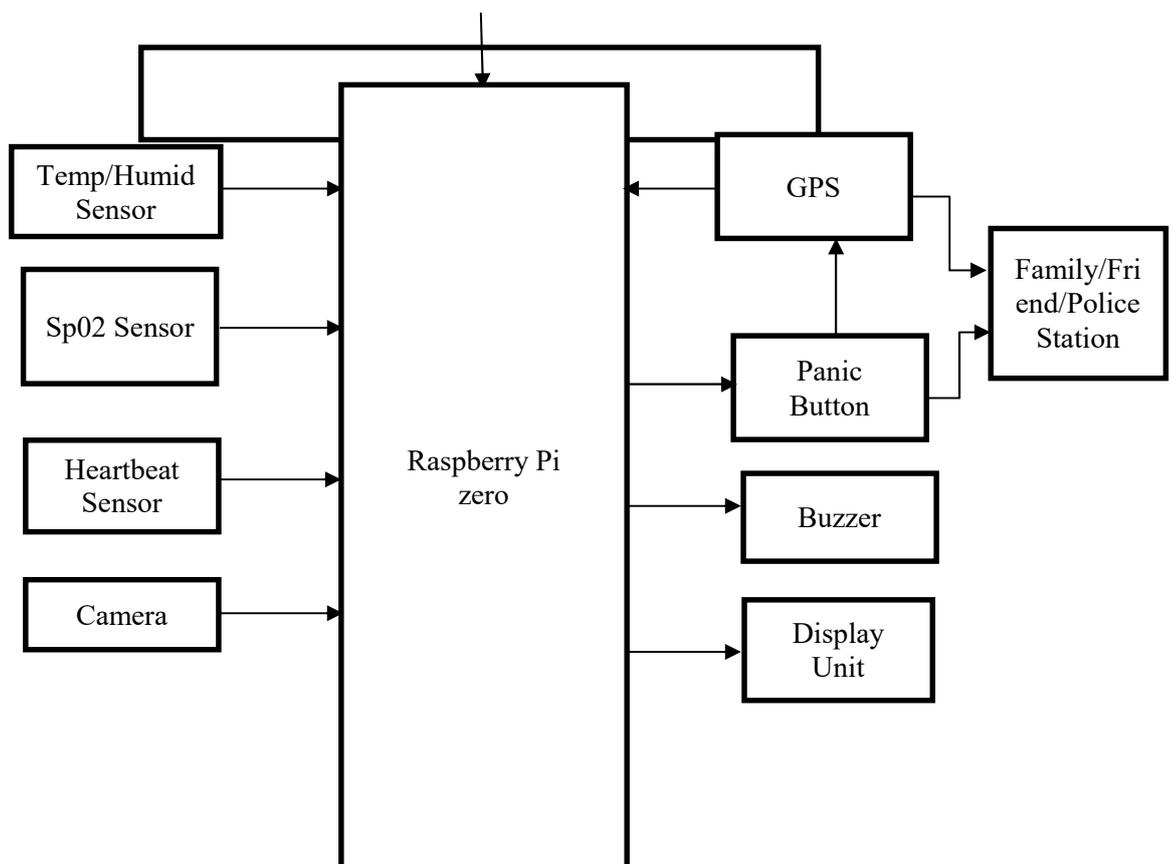

Fig 1: Proposed Block Diagram of Women safety Band

A Smart Wearable Raspberry Pi based device that aims to help women in distress. It is integrated with a smart phone application that uses GPS tracking to find the victim's location, a camera module to record the crime for evidence and Messaging notification services to aid in alerting the emergency contacts with the incident, thereby, proving to be a boon to women.

The Smart wearable device consists of a button, a RaspberryPi board, a camera module and a buzzer. When a woman is in danger, she presses the button that triggers the RaspberryPi that enables the camera module to capture an image of the incident.

The captured image is stored in a local host server that is run on a machine. The user logs into an Android App, specially designed for the ring, that allows her to select from a list of existing contacts or add a new contact with whom she wishes to communicate. Once the desired contact is selected, the image link fetched from the server, a help message along with the current GPS location of the victim is sent to the emergency contact and police. The buzzer connected to Raspberry-Pi is activated and it generates a high frequency screeching alarm to seek the attention of the people in that vicinity and serves as a warning to the intruder, on the click of the same button. In woman safety application camera is used to find out location of the user and send surrounding images to emergency contact numbers respectively. This device is better than the existing systems and can be helpful to individuals in danger because of the following reasons:

- Criminal Identification
- Increased accessibility and portability
- A boon to senior citizens and people suffering from medical issues
- Can also employed for children safety thus preventing crimes like child abuse and child trafficking
- Need for a movement towards safer environments.

The system can be further developed by adding few sensors to sense the fear and anxiety and thus automatic response can be obtained. Addition of a voice recognition system for the access will also help to improve the performance.

2.1 FEATURES

- This project presents an alert system for Women safety detection.
- The system provides a realizable and efficient.
- The application is easier to use all the woman.
- The application is normal budget.
- This application is free for user, which does not affect user's cost

3. HARDWARE & SOFTWARE REQUIREMENTS

HARDWARE	SOFTWARE
• RaspberryPi zero	• Python
• Heartbeat Sensor	• Raspbian OS
• Temperature/humidity Sensor	
• Sp02 Sensor	
• Camera	
• GPS	

Raspberry pi Zero

Raspberry Pi Zero 2 W is the latest product in our most affordable range of single-board computers. The successor to the breakthrough Raspberry Pi Zero W, Raspberry Pi Zero 2 W is a form factor–compatible drop-in replacement for the original board. The board incorporates a quad-core 64-bit Arm Cortex-A53 CPU, clocked at 1GHz. At its heart is a Raspberry Pi RP3A0 system-in-package (Sip), integrating a Broadcom BCM2710A1 die with 512MB of LPDDR2 SDRAM. The upgraded processor provides Raspberry Pi Zero 2 W with 40% more single-threaded performance, and five times more multi-threaded performance, than the original single-core Raspberry Pi Zero. Raspberry Pi Zero 2 W offers 2.4GHz 802.11 b/g/n wireless LAN and Bluetooth 4.2, along with support for Bluetooth Low Energy (BLE), and modular compliance certification. The board has a microSD card slot, a CSI-2 camera connector, a USB On-The-Go (OTG) port, and an unpopulated footprint for a HAT-compatible 40-pin GPIO header. It is powered via a micro-USB socket. Video output is via a mini-HDMI port; composite video output can easily be made available via test points if needed

MAX30100
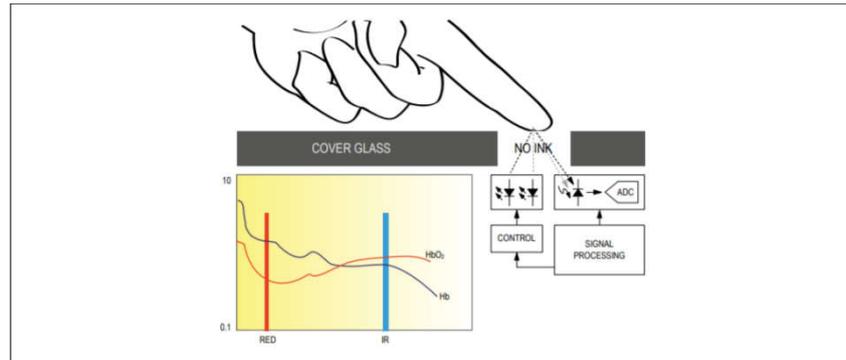
The MAX30100 is an integrated pulse oximetry and heartrate monitor sensor solution. It combines two LEDs, a photodetector, optimized optics, and low-noise analog signal processing to detect pulse oximetry and heart-rate signals. The MAX30100 operates from 1.8V and 3.3V power supplies and can be powered down through software with negligible standby current, permitting the power supply to always remain connected.

Applications

● Wearable Devices

● Fitness Assistant Devices

● Medical Monitoring Devices

DHT11

The digital temperature and humidity sensor DHT11 is a composite sensor that contains a calibrated digital signal output of temperature and humidity. The technology of a dedicated digital modules collection and the temperature and humidity sensing technology are applied to ensure that the product has high reliability and excellent long-term stability. The sensor includes a resistive sense of wet component and an NTC temperature measurement device, and is connected with a high-performance 8-bit microcontroller.

Only three pins are available for use: VCC, GND, and DATA. The communication process begins with the DATA line sending start signals to DHT11, and DHT11 receives the signals and returns an answer signal. Then the host receives the answer signal and begins to receive 40-bit humiture data (8-bit humidity integer + 8-bit humidity decimal + 8-bit temperature integer + 8-bit temperature decimal + 8-bit checksum).
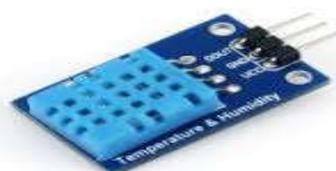
Pi Cam
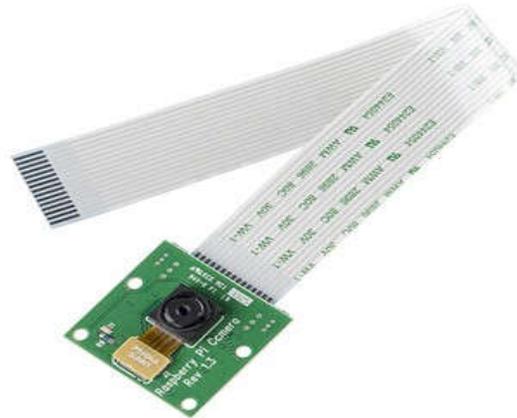
The Raspberry Pi camera module can be used to take high-definition video, as well as stills photographs. It's easy to use for beginners but has plenty to offer advanced users if you're looking to expand your knowledge. There are lots of examples online of people using it for time-lapse, slow-motion, and other video cleverness. You can also use the libraries we bundle with the camera to create effects. If you're interested in the nitty-gritty, you'll want to know that the module has a five-megapixel fixed-focus camera that supports 1080p30, 720p60 and VGA90 video modes, as well as stills capture. It attaches via a 15cm ribbon cable to the CSI port on the Raspberry Pi. It can be accessed through the MMAL and V4L APIs, and there are numerous third-party libraries built for it, including the Pi camera Python library. The camera module is very popular in-home security applications, and in wildlife camera traps.

NEO-6 MODULE

The NEO-6 module series is a family of stand-alone GPS receivers featuring the high-performance u-blox 6 positioning engines. These flexible and cost-effective receivers offer numerous connectivity options in a miniature 16 x 12.2 x 2.4 mm package. Their compact architecture and power and memory options make NEO-6 modules ideal for battery operated mobile devices with very strict cost and space constraints. The 50-channel u-blox 6 positioning

engine boasts a Time-To-First Fix (TTFF) of under 1 second. The dedicated acquisition engine, with 2 million correlators, is capable of massive parallel time/frequency space searches, enabling it to find satellites instantly. Innovative design and technology suppress jamming sources and mitigates multipath effects, giving NEO-6 GPS receivers excellent navigation performance even in the most challenging environment.

4. CONCLUSION

There are many severe problems that arise all of a sudden, that really cause threat to life. There should be some means to both detect and alert the authorities. Developing such an Android application which is an alert system for PROBLEM detection "I PROB", was a great experience. The person, who is in trouble-victim, can make use of our application to seek the help from his/her trustworthy people-guardian. The functionality that we provide in our application makes it very simple and easy to use. Whenever a person is in trouble all that he/she got to do is, to just give shake to their cell that has our application deployed in it. Once the shake is given a message seeking for help will be sent. There will not be any necessary to search the contact details, to create message and then send it. All that needed is an Android cell with our application deployed in it. When the guardian responds with a TRACK message, the current location of victim is found. Therefore, our application will be more efficient and productive in problem detecting and alerting.

Sometimes the culprits are not punished just because of the lack of evidence. But using our application one can even register the complaint to police against the culprit. Preventive measures can be taken before some crime is committed.

5. FUTURE SCOPE

In the proposed system is a combination of android and cloud technology. An android mobile having GPRS and GPS facilities will connect to cloud server for the updates for route description. Whenever a blind person wants to go from one place to another place, he must select the source and destination point and then our system will guide him in a proper way.

He will be guided to his destination by the updates received via the cloud server; Android application first gives the source (usually current location) & destination location and the date and time. The proposed system is a context aware system which will find the best route based on date and time using context aware concept and guide the user. This system uses the Google Map which gives the co-ordinates of the location and vice-versa. This system has a voice play module which will instruct the user to move in proper direction.

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