

A Smart Safety Gadget to Provide Protection for Women

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Abstract

In the current situation the wellbeing of ladies has become a significant issue. The main idea frequenting each young lady is once they will be prepared to move uninhibitedly on the roads even in odd hours unafraid about their security. So, technology is being used here in creating an effective solution for it. Though the government has undertaken various measures for this issue, there is still a major lacking in the process. This paper describes about providing a better and effective solution for the security of women in their day-to-day life progress by using a hardware device. When the heartbeat rate exceeds the given threshold level it immediately turns ON the AI Camera to check the surroundings and also recognizes the facial expression of the victim at that time and also it can track a location via GPS and send SMS of the victim place to the police control room and registered persons via GSM. The Sound Detector is used to convert a voice signal into text message to the registered persons and police control room.

Keywords: GPS Module, GSM Module, Heartbeat Sensor, AI Camera.

Introduction

In this day and age, ladies security has become a major issue as they can't leave their home at some random time in light of physical/sexual maltreatment and a dread of savagery. Indeed, even inside the 21st century where the innovation is quickly developing and new contraptions were grown yet ladies' and young ladies are battling with the issues. Ladies are adjusting at assembling various gatherings for an original explanation. They regularly work across old, strict, political, and social partitions to push freedom. We are for the most part aware of significance of ladies wellbeing; however we should dissect that they should be appropriately protected. Women aren't as truly fit as men, in a problem circumstance a hand as aiding would be help for them. The paper mainly targets on ensuring safety to women in their daily life at any situations. In case of emergencies where the situation is incessant, the device helps in providing help service by passing the information of current location to the nearby police and the registered contacts. The device also provides an advanced way of detecting the heartbeat, surroundings, facial recognition and also the voice command in the time of crisis for the women.

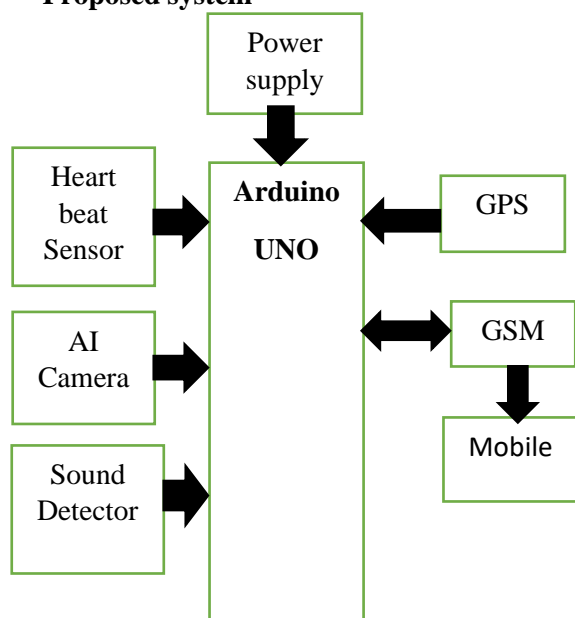
Existing systems

[1] A unique Approach to Provide Protection for Women by utilizing Smart Security Device comprises

of Arduino Controller and Sensors, for example, temperature LM35, flex sensor, beat rate sensor, sound sensor, MEMS accelerometer, GPS, GSM, ringer, LCD. At the point when the lady is in danger, the gadget detects the body boundaries like heartbeat, change in temperature, and the development of casualty by flex sensor, MEMS accelerometer and in this manner the voice of the casualty is detected by sound sensor. At the point when the sensor surpasses the limit level the gadgets gets actuated and follows the area of the person in question, area is sent to the enlisted contact number. [2] Smart Security Solution for Women dependent on IOT is the incorporation of various gadgets; equipment comprises of a wearable, brilliant band, which constantly speaks with Smart telephone through pre-modified application that demonstrations an interface among gadget and the telephone. The information like as the beat rate, temperature of the body alongside the movement of the body coordinated by the brilliant band is observed by the pre-introduced application in the telephone. GPS of the advanced cell to follow the area and screen the development for simple track capacity! The assistance message is sent to the relatives and the closest police headquarters through the GSM facility. [3] An Android Application for Women Safety Based on Voice Recognition utilizes voice-based contact list, they can choose contact by means of voice and settle on telephone decision when required. It permits sending of instant messages between cell phone gadgets. Voice acknowledgment and transformation in text will be significant aspect of the framework. while ladies or youngster in the perilous zone [4] IOT Based Child

and Woman Safety give a signal for an emergency response and mouthpiece, by squeezing a signal for an emergency response or articulating an exceptional catchphrase that will assist with hinting the guardians and police.[5] Smart Intelligent System for Women and Child Security gadget which will have a Pressure Switch. At the point when they sense any instability from an obscure individual, he/she would then be able to squeeze the gadget by crushing or compacting it. Weight sensor detects this weight and SMS with the casualty's area will be sent to their folks/gatekeeper portable numbers spared in the gadget. on the off chance that the call isn't replied by the comparing individual for a drawn out time, a call will be diverted to the police and a similar message will be sent.[6] Foot gadget for ladies Security will be cut to the footwear of a lady will be set off watchfully on tapping her feet at least multiple times inside 5 seconds or with one touch switch framework. Alongside this unnatural ascent or fall of her pulse will likewise be detected and the estimations of a similar will be shown on the portable application which is introduced in her PDA. At the same time sound chronicle highlight in the application will record the incident. at a similar time, ringer gets sounded which would make the environmental factors caution and she can get prompt assistance. For her self-preservation, there is a blade connected to the gadget.

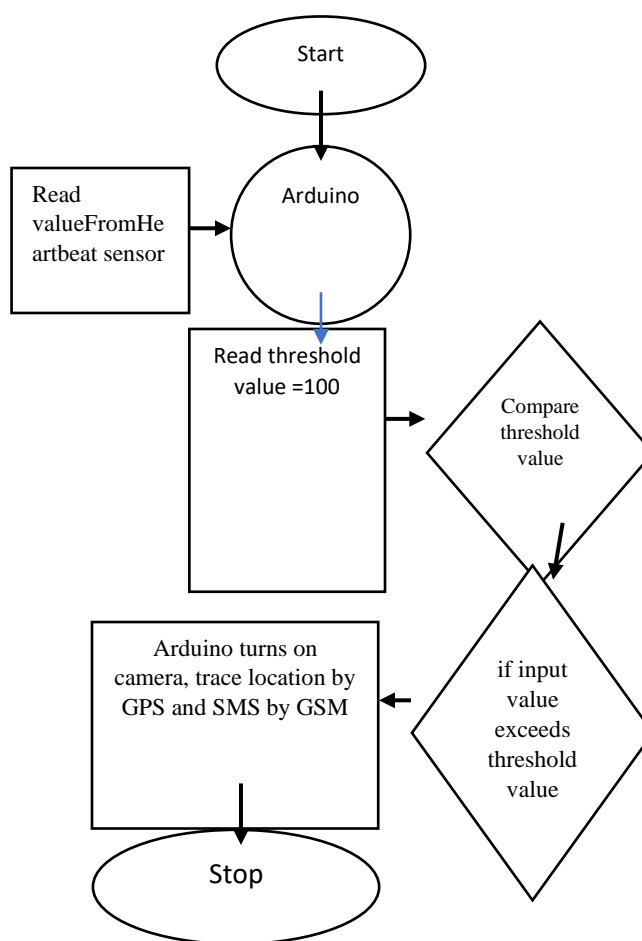
Proposed system



The figure above reflects the device proposed. The device consists of the Heartbeat Sensor, which monitors the speed of the heartbeat. It automatically switches on the AI camera to check the environment when the heartbeat rate reaches the specified threshold level and also recognises the victim's facial expression at that time. The Sound Detector is also activated when

a voice order of alerting is given to it. The inputs are sent to the microcontroller that serves as the device's core. The GPS & GSM modules are also the key component of the device that helps to locate and transmit the location information of the victim to the registered contacts. The device comes in the form of a wearable band that makes it much easier and more effective in many respects and with greater precision as well as usability. The gadget provides women and even children with the simplest and most effective way of providing security.

FLOW CHART



HARDWARE DESCRIPTION

1. Heartbeat Sensor

It is expected to give yield of warmth beat when a finger is set inside it. This computerized yield can be associated on to Arduino straightforwardly to quantify the Beats every Minute (BPM) rate. It chips away at the rule of light regulation by blood course through finger each heartbeat. IC LM358 is utilized for this sensor. Its double low force operational intensifier comprises of a splendid red LED and light locator. One

will go about as speakers and another will be utilized as comparator. Driven must be brilliant splendid on the grounds that the light should experience finger and recognized at opposite end. At the point when heart siphons a beat of blood through veins, finger turns out to be marginally more murky so less light reach at the locator. With every heart heartbeat, the locator signal changes which are changed over to electrical heartbeat.

2. GPS Model

It comprises of six wires out of which three wires are utilized for association. The TX pin of this module which is associated with the D10 pin of the microcontroller. Voltage gracefully is about 3.3V to 5V. When Press button is squeezed, GPS begins accepting signs from 4 satellites out of the 24 satellites inside the circle. Once if the association is built up the scope and longitude estimations of the current area are gotten. The GPS goes about as a transmitter. The 5V flexibly is given to the GPS from the regulator.

3. GSM modem

It is a portable correspondence modem. It is broadly utilized for versatile correspondence framework inside the world. GSM is an open and advanced cell innovation utilized for sending portable voice and information administrations works at the 850MHz, 900MHz, 1800MHz and 1900MHz recurrence groups. 2G networks are created as a substitution for original (1G) simple cell organizations, and consequently the GSM standard initially portrayed as a computerized, circuit-exchanged organization upgraded for full duplex voice communication. GSM framework was created as an advanced framework utilizing time division different access (TDMA) procedure. GSM digitizes and diminishes the information, at that point sends it down through a channel with two unique surges of customer information, each in its own specific time allotment. The computerized framework has a capacity to convey an information pace of 64 kbps to 120 Mbps.

4. Arduino Microcontroller

The Arduino Uno is a microcontroller board upheld with the ATmega328 (datasheet). It has 14 advanced information/yield pins (of which 6 can be utilized as PWM yields), 6 simple data sources, a 16 MHz artistic resonator, a USB association, a force jack, an ICSP

header, and a reset button. It contains all that expected to help the microcontroller; essentially associate it to a PC with a USB link or force it with an AC-to-DC connector or battery to get began. The Uno contrasts from all former sheets in that it doesn't utilize the FTDI USB-to-sequential driver chip. Rather, it includes the Atmega16U2 (Atmega8U2 up to rendition R2) customized as a USB-to-sequential converter.

5. Power supply

Force Adaptor 12 Volt 1 Amp Charger AC INPUT 100-240V DC OUTPUT 12V 1A Product Description: Professional 12 Volt DC 1 Amp power gracefully is appropriate for driving a decent scope of uses including CCTV cameras and wireless routers. Highlights: 100% Brand New Excellent Quality Short Circuit, Over Voltage and Over Current Protection. Meet CEC Energy Efficiency Level IV. Inconceivably Low Fault Rates No Minimum Load. This force gracefully is a directed Centre Positive force flexibly and has a 2.1mm x 5.5mm Jack its fitting plan is for Indian force attachment. In this way, no fitting converter is required. Minimal size and light weight. High Reliability. Managed Stable Voltage. Great quality SMPS Based Adapter Power LED Monitor (LED Glow when being used) Stabilized Output, low wave and low obstruction Single Output Voltage High Efficiency and low vitality utilization Input - 100-240 VAC 50/60Hz Category - Switch Mode Power Adaptor (SMPS) Output Type - DC Output - 12Volts 1Amp PLEASE Applications: Powerful 12v 12w 1A max Current Draw.

6. Camera

It captures face of the woman and performs automatic facial recognition process. It gives input as face image to the controller. Then controller will compare between database face images and camera input image.

7. Sound Detector

The sound locator is a little board that has a mouthpiece and some preparing circuitry. It gives a sound yield, yet in addition a twofold sign of the presence of sound, and a simple portrayal of its abundance.

Conclusion

The proposed plan will manage basic issues looked by ladies and can assist with settling them with innovatively stable gear with groundbreaking thoughts. The value of this work is it not just gives wellbeing and it additionally gives security by methods for self-preservation system. The wrongdoing against the ladies will be presently finished with genuine framework execution of the proposed model.

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