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SAFE SOLE DISTRESS ALARM SYSTEM FOR FEMALE SECURITY USING IOT

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ABSTRACT

The paper presents development of a sole protection of female using Arduino microcontroller which is named as 'SAFE SOLE'. With the rise of crime against women, women's safety plays a very important role. To clear up this problem, we're featuring an IOT-primarily based women's safety device with safety features. A trigger, microcontroller (ATmega328), GSM module (SIM800) (subscriber identity module), GPS module (Neo-6M), IoT module (ESP-12E), Buzzer, and Pulse Sensor are included in the contraption. If a woman feels dangerous during this task, the trigger on the device should be kept closed. Once the device is approved, it will use GPS (Global Positioning System) to track the stream area and send an emergency message to the registered adaptive number via GSM (Global Mobile Communication System), and also sends an call to the registered phone numbers. IoT area is used to properly track the Earth and notify web riders.

In this project we are adding voice play back module for sending recorded voice to authentication person, when the person in danger condition then automatically send call to that person with voice and message with GPS location. We are also using a pulse sensor to monitor the condition of the victim.

Keywords

Internet of things (IOT), Global Positioning System (GPS), Global System for Mobile Communication (GSM), Pulse sensor, Voice play back module, Push button, Arduino Nano.

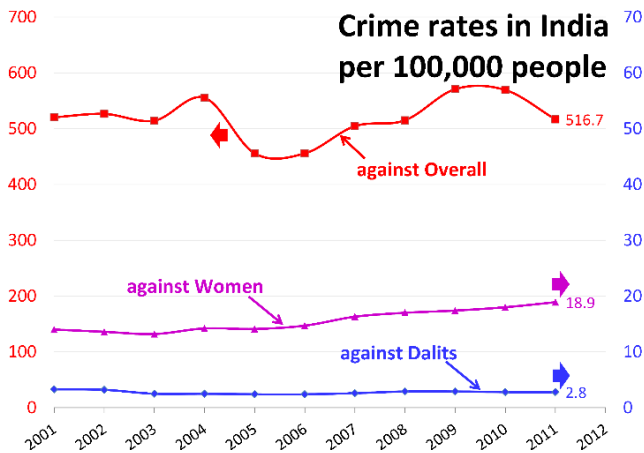
1. INTRODUCTION

The protection of women is currently in danger, mainly in India. Many preventive steps are taken by the legislature to prevent these exercises from getting out of hand, but the production rate of these wrongdoings has not been affected at the same time and has remained unchanged. In the workplace, the complexity of lewd behavior is primarily stepped by step. Lewd behavior in a working environment is the unacceptable behavior of a person who causes the following annoyance, offense, or misery A major portion of such cases was occurred to the lady by men performing in a business in a high situation. At regular intervals, women are kidnapped, assaulted like clockwork, 17 endowments passing daily. The anxiety of badgering in contrast to ladies is not just the outdoor situation, but it can also occur in homes, women do not seem to be all that truly fit as compared to men, so any assistance would be a refuge for them in the event of a necessity.

Besides, students face events such as child trafficking, seizing, after they hold on to leave or land a college transport. Your advanced transportable will enable you to submit crisis cautions to selected people and also allow people to consider your location in the event that something goes wrong. Often there is also a condition that when females have had a mishap in the night-time night and there is no one to help them, the person will not have the option in such circumstances to tell the circumstances he/she faces. Moreover, they do not have the foggiest idea about the subtleties of critical care and to understand the person where the episode is going on. Nowadays, however, there are various

advanced applications and gadgets for women's protection by PDA that can be introduced uniquely by barely or one tick or shake the flexible.

In India, women work in aerospace, politics, banking, schools, sports, business, military, police and much more. All these are actually seen in our daily lives, but behind them are many crimes against women, Streets, factories, etc. In recent years, women's safety has been questioned in incidents such as rape and acid attacks. The fact that "women support half of the sky" alone does not give women dignity and equality.



2. OBJECTIVE

The main purpose of our dissertation is to ensure the protection of working women and school children, and we are prototyping to achieve our goals. These embedded devices have a warning emergency push-button and a pulse sensor to acquire the information. The GSM device monitors the victim's current location and sends an information data to the registered mobile numbers.

The way toward building up an unpredictable item that firmly couples equipment gadgets with significant level programming administrations requires an extra degree of arranging. For this job, we will practice a legitimate item improvement way to deal with the assistance you get acquainted with the way toward making actual equipment ventures. This technique would then be able to be utilized to design your tasks and take them to the following level. The accompanying graph depicts a normal model development process that starts

consistently, characterize the main goals you need to achieve in your article. This process includes paper goals, requirements, and development stages, integrate, test, and troubleshoot.

3. LITERATURE REVIEW

The author [1] mentions Right Now of Items (IoT), wearable gadgets where sensors collect data from the environment are packed with mounted gadgets. At that point, the data is packaged and handed-off to remote areas for inquiry. These early developments, though looking harmless, pose security and safety issues. The topic of the potential and effects of trading such gadgets arises. They review normal structure rehearsals and their security and safety recommendations based on the IoT and wearable gadgets plan stream. Two agents from each classification, the Google Nest Thermostat and the Nike+ Fuel band, taxi are selected as models of how existing security activities in the industry as an untimely idea affect the subsequent gadget and the future security outcomes of the customer. They at that point examine configuration stream improvements, through which security systems can productively be included into gadget, immensely varying from customary practice.

The author [2] explicitly describes a number of the features of the Open Door introduced by the emergence of the alleged Internet of Things and wearable innovation, and arranges production with manufacturers to enable this advancement. the web of Things and wearable technology challenge current social, economic and legal norms. These developments pose a number of questions on safety and security. Discussions arise over specialized initiatives, the interoperability structure and access to required level to enable the administration of remote systems. Those issues don't seem to be managed here. [3] At that point option to top-down guideline is to manage these worries as they build required blend of instructive endeavors, mechanical strengthening apparatuses, social standards, open and watchdog pressure, industry best practices and self-guideline, straightforwardness, and focused on requirement

of existing lawful norms (particularly torts) varying.

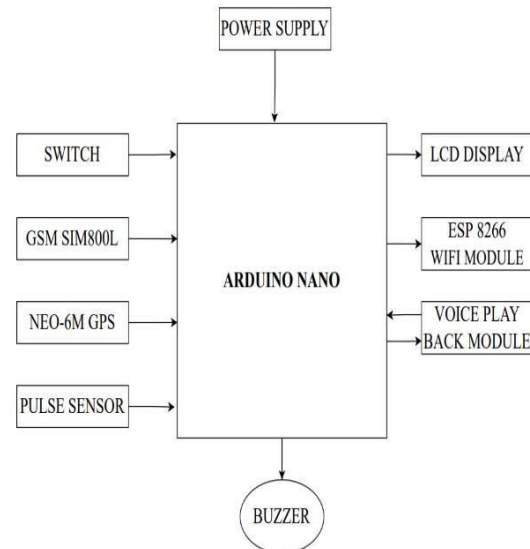
[4] The cloud idea that has as of late become the innovative hotly debated issue is incredibly old. Decentralized computing has finally arrived at the majority. Cloud provisioning is a very unpredictable subcategory of computing thought. This is a service model that allows information to be remotely maintained, monitored, supported, and accessed through System 40. Regularly Internet41, Files Anywhere.com was one of the first companies to provide the required distributed storage management. [5] Distributed storage management allows customers to store information on the server anytime, anywhere, while at the same time recovering information anytime, anywhere.

4. PROPOSED SYSTEM

In that proposed system we are using two inputs for checking women security condition by using this input we can check more accuracy and in this one we add calling option with recorded voice for better reaction to save the person.

In this system, we use pulse sensor which is used to send the information when the person is in unconscious state.

The block diagram shows the architecture and the components that we are used in the proposed system. This proposed system is the main modification of the existing system of women safety and security alert system. Now let us see about the main working principle the proposed system. Here we are using an IOT based women safety alert system. It mainly works on the technology internet of things. It also uses the help of the server. We are using an Arduino Nano in the prototype for the better working of the system. By using this Arduino nano we are having many advantages like less power consumption and less space is required, hence we are using it. The Arduino hardware and software program become designed for artists, designers, hobbyists, hackers, newbies, and every person inquisitive about developing interactive items or environments.



Arduino can engage with buttons, LEDs, motors, speakers, GPS units, cameras, the internet, or even your smart-tele cell smartphone or your TV!

When victim is in the dangerous condition, they have to keep the device near to them and they have to press the push button. Then the device will be active and GSM activates and sends the message to the registered mobile numbers. This message contains the location of the victim, which can be taken from the GPS. The mobile numbers can be given in the code the was dumped in the Arduino board. When the system activates then an alert call is also sent to the phone numbers. The components in the device are

GSM SIM800L

GSM is “Global System for Mobile Communication”. SIM800L is a miniature cell module which permits for GPRS transmission, sending and receiving SMS and making and receiving voice calls. Low value and small footprint and quad band frequency aid make this module ideal answer for any task that require lengthy variety connectivity. After connecting energy module boots up, searches for cell community and login automatically.

GPS

GPS is used to discover the longitude, range of the sufferer. The GPS tracks the place of the sufferer

if any of the sensors indicates awful output. The range and longitude of the place is tracked and the place is sent. In this we use embedded c programming to ship the messages via way of means of the use of SMTP protocol.

ARDUINO NANO

The Arduino Nano is a small, complete, and breadboard-pleasant board primarily based totally at the ATmega328P launched in 2008. It gives the equal connectivity and specifications of the Arduino Uno board in a smaller shape factor.

LCD DISPLAY

A liquid crystal display (LCD) contains liquid crystal material which is placed between two sheets of glass. By not applying any voltage applied between transparent electrodes, liquid crystal molecules are aligned in parallel with the glass surface.

WIFI MODULE

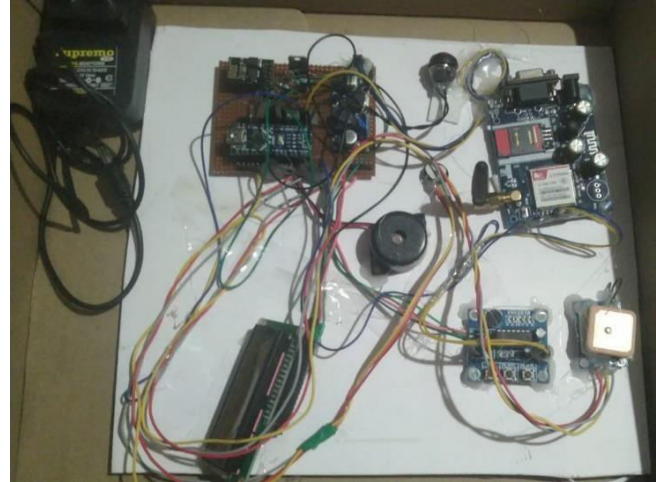
ESP8266 WIFI module is a noticeably incorporated chip designed for the desires of a new linked world. It gives a entire and self-contained Wi-Fi networking solution, permitting it to both host the utility or to dump all Wi-Fi networking features from every other utility processor.

PULSE SENSOR

A pulse sensor measures pulse waves, which are changes in the volume of a blood vessel that occur when the heart pumps blood. Pulse waves are identified by measuring the change in volume using an optical sensor and green LED.

VOICE PLAY BACK MODULE

Voice Play Back Module is based on ISD1820, which is used for message record or playback device. It can offers original single chip voice recording, nonvolatile storage, and playback capability for 8 to 20 seconds.



5. OUTPUT

The output of our proposed system is

- GSM sends a message to the registered mobile numbers and makes an alert call to that numbers.
- And we uses a pulse sensor which automatically sends message and call.

S. No.	Input	Output
1.	Push Button	SMS, Call, Buzzer and lcd display
2.	Pulse sensor	SMS, Call, Buzzer and lcd display

6. CONCLUSION

Now a day's being secure and steady may be very critical for girls. Our important goal of this undertaking is to layout a machine which may be very clean to deal with and offer private safety machine. This layout will address maximum of the crucial troubles confronted through girls and could assist them to be steady. Existing structures offer the protection through sending data to the registered cell numbers withinside the shape of SMS and email. The proposed machine will give the range and longitude values of place of the sufferer that may in addition be tracked the use of

Google maps. This machine additionally an alert name to the registered numbers and we additionally use the heartbeat sensor which sends the data robotically while the sufferer is in unconscious state. By the use of this we will lessen the crime price towards the girls. Women’s safety is a crucial problem in cutting-edge situation. The crimes may be decreased with the assist of real time implementation of our proposed machine.

We can implement this model by using touch sensor facility also



7. APPLICATIONS

1. It will be used for the many safety purposes like
 - a. Women safety
 - b. Children
 - c. Physically challenged people
2. Automotives and transport vehicles
3. For other security applications.

We can implement this model for the usage of following applications:



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