

# SECURED PERIMETER USING VOICE RECOGNITION AND LOCATION TRACKING SYSTEM

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**Abstract** - In the trendy world, the quantity of people the use of smartphones has expanded rapidly and hence, a smartphone may be used correctly for personal security. The protection of girls matters whether at home, out of doors of their workplace. The National Crime Records Bureau of India reviews that the incidents of crime against ladies have increased by means of 6.4%, and a crime against a lady is committed every three minutes in India. This literature survey describes that many cellular packages are used for the cause of the girl's safety. The cause of this WS App is to offer safety for the woman. In case of an emergency, a girl has to apply the pre-recorded mystery code that permits the GPS place tracking and alerts the police and family members through SMS. Any lady in possession of the module, whilst going through any attack or while she encounters harassment, uses the mystery keyword to spark off the module. If the guardian wants to realize the present location of the person, he/she will discover their vicinity by sending an SMS to their variety, which incorporates a secret password. This gadget responds to these situations by way of sending returned an SMS containing vicinity information, comprising of Latitudinal and Longitudinal coordinates.

**Key words:** Arduino Uno, Buzzer, GPS, GSM Secret code, SMS, Voice

## I. Introduction

In the existing era, girls are taking equal responsibilities in the society. A crucial reminder about how ladies are, nevertheless in this day and age, being subjected to violence, domestic abuse and rape campaigned lately on twitter. Women have a tendency to be by myself on their personal on the subject of fighting in opposition to rape. They are keeping their work lifestyles and the home surroundings simultaneously which requires traveling and working in odd shifts. The authorities have taken several measures to lessen the crimes in opposition to ladies, however as seen from the statistical facts the crime quotes are still high. So, to provide security as a way to protect ladies themselves from crime happening in the direction of them, an SOS emergency mobile utility is designed for women's safety. In the presenting system, Voice recognition is used to prompt the GPS for location monitoring and an SMS is sent to the police and own

family members containing area records in phrases of Latitude and When the person says the keyword such as "emergency" or any other keyword that has been already stored by using the consumer in the cellular application. In our module, a button is also brought as an opportunity alternative in case of an emergency.

## II. Literature Survey

### VithU app

In this app, by clicking the electricity button of your Smartphone 2 times consecutively, it starts off evolved sending out alert messages every 2 minutes for your contacts that you have registered into the app due to the suitable receivers.

### Amrita Personal Safety System (APSS)

It is wearable and easy-to-operate electronic tool that will help women in establishing verbal exchange with own family and police at the first sign of trouble.

### Fight back

It provides SMS and Email alternatives to alert the other individual at some point of distress, this app also updates your Facebook status.

### IGoSafely

IGoSafely app keeps on sending messages, each minute until the alarm is growing to turn out to be off the usage of the name of the game disarm code. Along with the above-stated information, go efficiently sends a thirty-2nd audio recording captured through the smartphone's microphone. It can be activated through shaking the smartphone or certainly via using getting rid of the headphones.

### Circle of 6 App

Circle of 6 has distinct notifications that the person can tap on to alert their circle. If you want a secure ride domestic or for an acquainted face to turn up and take you far away from an unusual environment, this app will assist send an

alert to any of your 6 selected On pinnacle of that, the app can connect you to the right government for an emergency, or even only for courting advice. Also, it provides your location data to the 6 close contacts.

### Chilla

A female can activate the Chilla app through shouting. On activation, with an emergency button, this app sends an alert message and also the app sends alert messages to pre-configured contacts on an urgent electricity button

### III. Existing System

In every existing app, emergencies are handled by pressing an emergency button which activates the GPS for location tracking and an SMS is sent to the police and family members of a woman, mentioned along with current time. In the existing system, the button must be pressed for an emergency purpose.

### Drawbacks

- It takes time to press the SOS button inside the app.
- Difficult to access manually.

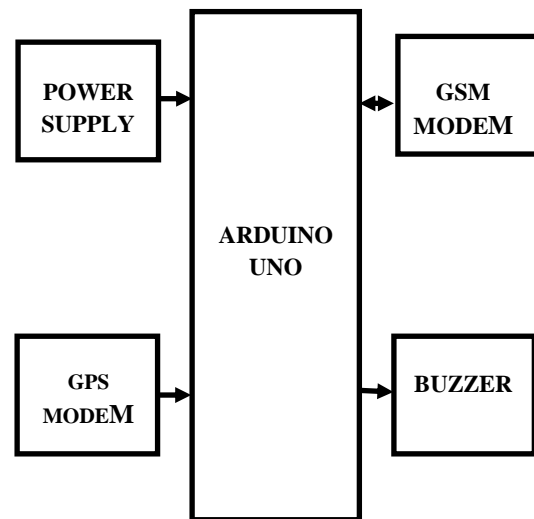
### IV. Proposed System

In this proposed system, voice recognition is used to decode the security code and thus it activates this module. Location coordinates and SMS will be sent to the police and family members containing GPS information in terms of Latitudinal and Longitudinal data. When the user says the phrase such as “emergency” or the respective keyword which has been already stored by the user in their mobile application. In this module, a button has also been added as an alternative option in case of an emergency.

From the existing work, we can infer the following as requirements for a safety device:

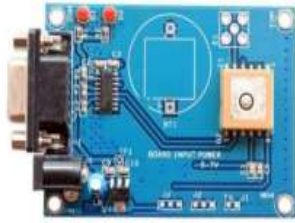
- Digital providing mechanisms for self-defense
- Location information of the user with utmost accuracy
- Feasible operation and user-friendly
- Data storage for improving performance
- Portable and Cost-efficient
- Less processing time

### V. System Design



### GSM/GPRS module

This is a quad-band module designed for the worldwide marketplace for communicate purposes. It supports frequency bands such as GSM 850MHz, EGSM 900MHz, DCS 1800MHz and PCS 1900MHz. It also functions GPRS multi-slot magnificence 12/ elegance 10 (optional) and helps the GPRS coding schemes CS-1, CS-2, CS-3, and CS-4. It is applied to set up communication among a laptop and a GSM-GPRS framework. Global System for Mobile communication (GSM) is a layout utilized for mobile communication in a massive portion of the nations. Global Packet Radio Service (GPRS) is an augmentation of GSM that empowers higher statistics transmission rate. GSM/GPRS module contains a radio transceiver modem modulated together with energy supply circuit and communication interfaces (like RS-232, USB, and so on) for the computer. The model used for designing this prototype comes with an attached mic and speaker. After setting up a connection with the SIM900 guard to Arduino, a 9V/2A DC energy deliver will be required. AT commands are used for interacting with the microcontroller, in which, communications are treated through the serial port. These commands are dispatched by using the controller. The modem will ship an acknowledgment result after it correctly gets a command. The modem helps one of a kind AT commands that can be sent via the controller/pc to speak with the cellular network. It helps TCP/IP protocol and prolonged TCP/IP AT instructions which might be very beneficial for statistics switch applications.



### Buzzer

A buzzer that is also known as a beeper is a small audio device, which can both be electromechanical or piezoelectric (piezo for short). Piezo buzzers have a piezoelectric vibration plate (also referred to as a piezo detail) inside a molded case. Sound is emitted while a voltage is implemented and the piezo element in the case vibrates. The uses of buzzers and beepers are encompassing alarm devices, timers, and affirming the users to enter like a click or keystroke. Sound due to the indoors oscillating circuit present inner it. But, the one shown here is maximum broadly used because it could be customized with the assist of other circuits to healthy effortlessly in our application. This buzzer is frequently employed by clearly powering it using a DC electricity deliver beginning from 4V to 9V. An easy 9V battery can also be used, however, it's miles advocated to apply a regulated +5V or +6V DC supply. The buzzer is normally related to a switching circuit to reveal ON or close up the buzzer at the desired time and want interval.



### Arduino Uno

It is primarily based on an ATmega328P microcontroller. The board is supplied with sets of virtual and analog enter/output pins with the intention to be interfaced with diverse growth forums and other circuits. The board contains 14 digital PWM I/O pins, 6 analogs I/O pins, and may be programmed with the Arduino IDE (Integrated Development Environment). They are both powered by means of the USB cable or by way of an external 9-volt battery. Any of the 14 virtual and six analog pins at the Uno may be used as entering or output respectively, underneath software program manipulate functions. They perform at five The Arduino Uno supports several strategies of connectivity for communicating with a computer, another Arduino board, or other microcontrollers. An ATmega16U2 in this board modulates this serial communicate over USB and suggests

a virtual com port to software program at the interfacing pc. There is an integrated LED, linked to pin 13. When the pin turns into an excessive Boolean value, the LED is on, while the pin is low, it's miles off. IOREF pin on the Arduino UNO board gives the voltage reference with which the microcontroller operates. A well-configured protect can read the IOREF pin voltage and select the ideal power source, or permit voltage translators on the outputs to paintings with the 5V or 3.3V.



### GPS module

It is one of the international navigation satellites for pc systems (GNSS) that gives geolocation and time information to a GPS receiver within GPS satellites. Some limitations like mountains and buildings will block the weak GPS indicators round those areas of coverage. The GPS is essentially a receiver unit, which simplest receives the data from GPS satellites. Each GPS satellite TV for pc continuously transmits a radio wave containing the existing time and records approximately its role. Since the rate of radio waves is regular and independent of the satellite speed, the time put off among whilst the satellite TV for pc transmits a signal and consequently, the receiver gets it is proportional to the space from the satellite TV for pc to the receiver. Each GPS satellite TV for pc announces a message that includes the satellite's modern role, orbit, and genuine time. A GPS receiver combines the broadcasts from more than one satellites to calculate its genuine position the use of a process known as triangulation. Three satellites are required so as to decide a receiver's vicinity, though a connection to four satellites is ideal because it provides more accuracy. In order for a GPS tool to paintings correctly, it should first establish a connection to the desired quantity of satellites. This system can take anywhere from a few seconds to 3 minutes, relying on the strength of the receiver. For example, a car's GPS unit will generally set up a GPS connection quicker than the receiver in an eye or smartphone. Most GPS gadgets additionally use some form of vicinity caching to hurry up GPS detection. The GPS concept is predicated on time and consequently the regarded position of GPS specialized satellites. The satellites convey very stable atomic clocks which are synchronized with each other and with the bottom clocks. Any float from time maintained on the lowest is corrected daily. Within the identical manner, the satellite TV for pc places is acknowledged with extraordinary precision. The hot begin is whilst the GPS tool recalls its last calculated role and the satellites in view, the almanac used (records about all of the satellites

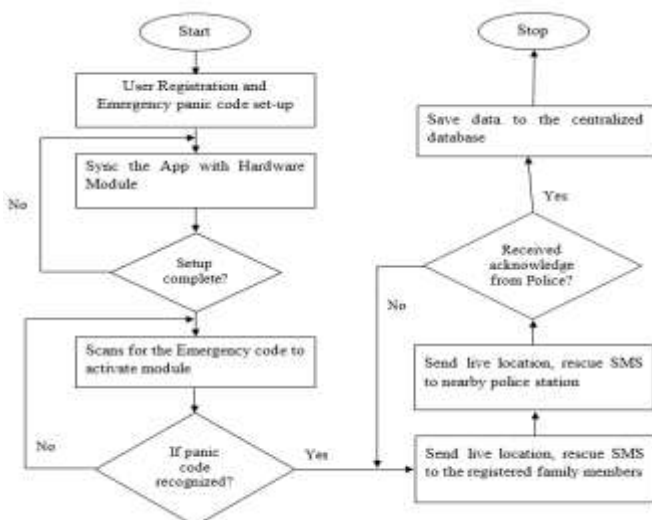
within the constellation), the UTC Time and makes a try and lock onto the identical satellites and calculate a new function primarily based upon the previous facts. It then plays a reset and attempts to reap the satellite signals and calculates a new function. The cold begin is whilst the GPS tool dumps all the facts, attempts to discover satellites and then calculates a GPS lock. This takes the longest because there may be no known facts. The GPS receiver has to try and lock onto a satellite TV for pc signals.



### Applications

- It can be used for the safety of women
- It can be used for the safety of children.
- It can be used for the safety of elderly aged people.
- It can be used for the safety of physically challenged people.
- It can be used as legal evidence of a crime with exact location information for prosecution.

### Flowchart



### VI. Conclusion and Future Work

A Supportive device with a smart device has been used to speak if attacked. There are the highest probabilities of reduced crime by means of this device. Message through GPS and GSM technology is an additional element to help

the individual. For immediately action against the crook video processing statistics can be used. Fear or anger of user has to be considered by means of using Camera software in the future which will generate the message to the manipulate room and an alarm may be activated. The device can perform the real-time tracking of the desired vicinity and detect the violence with the right accuracy.

### Advantages

- It is very efficient and easy to use.
- It helps each and every women in the society.
- It is more flexible than other systems.

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