



Arduino Based Women Safety Security System

M Jayanthi, Ishani Mishra, Vutukuri Gowtham, R M Poornima,
Madala Bhanu Prakash and N S Sneha

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Jayanthi M
Electronics and Communication
Engineering
New Horizon College of Engineering
Bangalore, Karnataka, India
jayanthisathish1012@gmail.com

Ishani Mishra
Electronics and Communication
Engineering
New Horizon College of Engineering
Bangalore, Karnataka, India
mishra.ishani@gmail.com

Vutukuri Gowtham
Electronics and Communication
Engineering
New Horizon College of Engineering
Bangalore, Karnataka, India
gowthamrao.v@gmail.com

Poomima R M
Electronics and Communication
Engineering
New Horizon College of Engineering
Bangalore, Karnataka, India
prnmramesh@gmail.com

Madala Bhanu Prakash
Electronics and Communication
Engineering
New Horizon College of Engineering
Bangalore, Karnataka, India
bhanuprakashmadala5@gmail.com

Sneha N S
Electronics and Communication
Engineering
New Horizon College of Engineering
Bangalore, Karnataka, India
nssneha9986@gmail.com

Abstract— The Arduino Based Women Safety Security System (ABWSSS) is used to mainly intimate the concerned person as well as police about the current location of the women especially who is in emergency and crisis. Our ABWSSS model will help women to protect themselves from harassment in future in India and across the Globe as crimes are increasing day by day. The main device includes GPS & GSM module. The GSM system will transmit the message to the numbers recorded in the system, while the GPS system will track the present location. When system switched on, it tracks location by GPS & send messages to the person who can help her. This security system has the capacity to send a message to the pre-set persons contact with the instant location every 2 minutes and can be tracked live using this application.

Keywords— GPS, GSM, Wi-Fi, Arduino.

I. INTRODUCTION

The project aims to design an intelligent security system for women. The system is capable of tracking the location of the women when the button is pressed. The system sends alerts to the predefined numbers in the case of an emergency. It consists of a Wi-Fi module which is used to send the location to the mobile application.

The abbreviation GPS stands for "Global Positioning System." This GPS receiver is capable of determining the latitude and longitude of the location where it was present. This information is very useful and can be processed to alert the boat drivers. The GPS shares the received data from the satellites. For this information, the GPS communicates with at least three satellites in space.

The main controller of this project is a microcontroller. When the magnetic switch is activated, it will be read by the microcontroller, which will receive the location of the woman through GPS and send this location to the pre-defined mobile number in the form of latitude and longitude values through GSM and Wi-Fi, and also activate the buzzer for alerts. The status of the project will be displayed on the LCD module.

II. LITERATURE SURVEY

1. Womens' Safety Device-By Basavaraj Chougula, Archana Naik (2014) that the device includes numerous modules including GSM shield (SIM 900A), ArduinoATMega328 board, buzzing alarm, GPS receiver, a set of sensors for activations and battery unit. It needs to be done for the women's safety.
2. The use of GPS and GSM-based vehicle tracking by women employees is part of a security system. Akshay

Mohite, Poonam Bhilare (2015), It describes a GPS and GSM primarily based totally vehicle tracking and girls worker protection device that offers the mixture of GPS device and specialised software program to tune the automobiles area in addition to offer signals and messages with the help of an emergency button.

3. Usha Kiran Reddy and P. Sumitha's Self-Defense System for Women's Safety with Location Tracking and SMS Alerting (2017), A device used to get the location of girl who is in trouble.
4. bSafe - bSafe is a private security app that forms a "social protection network" of people who are alerted in the event of an emergency.

III. PROPOSED METHOD

1. Block Diagram:

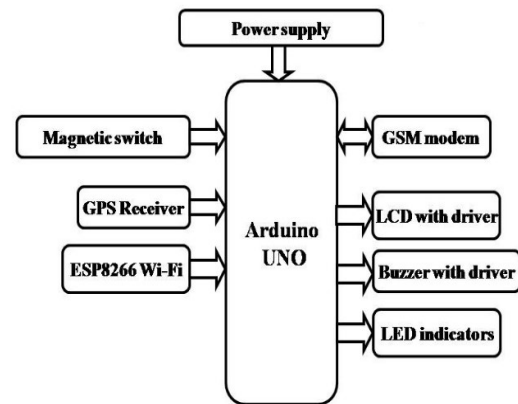


Fig. 2.1 Block Diagram of the Project

The Device is composed of GSM, GPS, Wi-Fi Module, LCD -Display, Power supply which are connected to main processor Arduino uno micro controller.

A. Power Supply

The Arduino can be fuelled from a USB port or from an external source. And the method of powering it is chosen automatically.

Peripheral power can originate from a battery in one form or another. The connecting of a 2.1mm center-positive connector into the board's power jack through additive. Leads from a battery can be inserted into the power supply's Vin pin headers and ground.

The board can work with a peripheral supply ranging from 6 to 20 volts. If the supply voltage is less than 7 volts, the 5v pin may deliver less than 5 volts. It's possible that the board is shaky. If the voltage surpasses 12 volts, the voltage regulator may overheat and cause the board to dart. The recommended range voltage is 7 to 12v.

B. Arduino UNO

It's an ATmega328P board-based microcontroller. It has a quartz crystal with a frequency of 16 MHz, 14 digital input/output pins, a USB port, and a power jack. There is a reset button on it. Simply connect it to a computer through USB to begin using the AC to DC converter. Based on the coded programmed, a typical ARDUINO UNO board can be utilized for a variety of purposes.

The name "UNO" was chosen to commemorate the release of the ARDUINO programmed. The Arduino version 1.0 is the standard, and it has been modified to later versions. The UNO board was the first of a series of USB ARDUINO boards, and it served as the platform's standard model.



Fig. 2.2 Arduino UNO

C. GSM Module

GSM (Global System for Mobile Communication Module) sends an extreme message to selected contacts and the police control room whenever someone feels insecure.



Fig 2.3: GSM Module

D. Global Positioning System

The GPS module serves as a satellite, receiving data often and transmitting it to the RS32. The US Department of Defense (DOD) is in charge of its development. The GPS signals are received by the module's antenna input, and a complete sequential data packet comprising area, acceleration, and time information is sent over the serial line. The module can be utilized in a variety of applications, including navigation, fleet management, tracking systems, mapping, and robotics, and gives current date, time, longitude, latitude, altitude, speed, and travel direction, among other data.



Fig 2.4: GPS Module

E. LCD with driver

A LCD Driver moreover suggested as a LCD Display Driver or LCD Controller is a consolidated circuit that gives a mark of connection between a chip (MPU) or microcontroller (MCU) system and a liquid valuable stone exhibit (LCD).

Inside a LCD Glass there are various little units, one unit is contained two polarizers, between which are two terminals, between which liquid pearls are accessible. A LCD controller drives turning voltage across the two cathodes so much that the typical is zero (to avoid dependable plan of pearls)

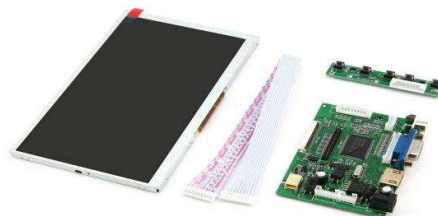


Fig 2.5 LCD with driver board

F. Buzzer

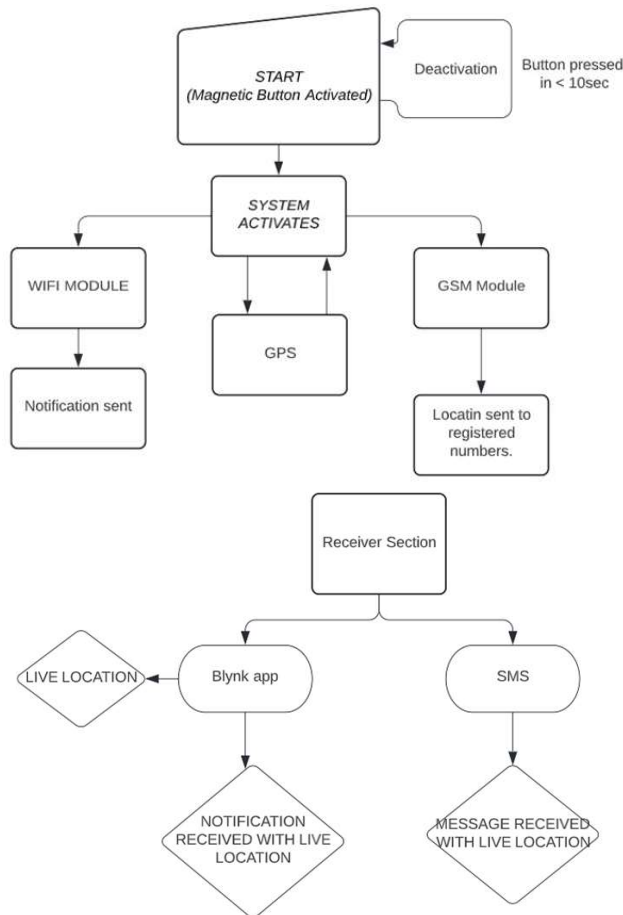
In light of contra of the piezoelectric impact the sound is created by the piezo bell. The primary rule of the piezo ringer is the age of strain variety which is in light of the utilization of electrical potential across the piezoelectric.

The ringer can likewise be utilized in the alert circuits and so on.



Fig. 2.6 Buzzer

2. Flow Chart:



IV. CHALLENGES & ISSUES IN DEVELOPING SECURITY SYSTEMS

Orientation based mercilessness out in the open spaces creating with extending people thickness, an alternate of people in etropolitan regions, creating awkward nature and nonappearance of opportunities for an enormous degree of bothered youth, metropolitan bad behavior generally speaking is on the rising. Extreme Wrongdoings against women are besides developing as a piece of this affiliation.

The truth is that women are at risk for Violent Crime as result of their sex. Women are especially impacted by metropolitan game plan decisions, the relationship of public associations, the blend of metropolitan cutoff points. They experience a

specific impression of precariousness which can confine their entry and use of the city, and ultimately, hurt their right to the city. Meanwhile, the feeling of dread toward Crime and Brutality is correspondingly as fundamental to contemplate as genuine viciousness.

Also, Women's Safety isn't an issue of upsetting terrible way of behaving alone. Women's security is a far reaching thought which melds everything systems and contraptions which can decline Violence against women, and should be a focal part in made by neighborhood/normal Government.

While making or supporting a protected city for ladies, it is scarcely recognizable a part of the numerous factors that reason ladies and young women to feel temperamental. Impressions of vulnerability in metropolitan regions and organizations don't begin from bad behavior and violence alone. These assessments are connected with a blend of social, monetary, social and nearby issues. For example, In ghettos, hostility against young women & women are higher than in different pieces of the city. The blend of neediness, joblessness, lacking wages, social refusal and inclination can incite disillusionment among men and young fellows also, weakness for women and little young people, especially if they are in the city.

A part of the spaces which play huge parts to play in women security and prosperity are States at different levels (neighborhood, commonplace, public), Education, (tutoring approaches, non-one-sided instructive arrangement), Urban readiness (plan, rules, dwelling, transportation), Health (techniques for care of setbacks, planning of specialists to respond to survivors), Equity (permission to value, establishment, explicit courts), Administrations (water, sanitation, emergency organizations, thus on), Community affiliations, Women and ladies dissident affiliations, Youth social occasions, Concerned men's social occasions, Faith-based get-togethers, Human honors affiliations, Police, social class police and other security personnel, Private Sector (transportation and improvement associations among others), Local occupants(ensuring different depiction - injured, old, young, outsider, local, gay or lesbian, sex workers and others), Scientists and academicians and Mass media.

V. RESULTS AND DISCUSSION

The project "Android Based Women Safety Security" was designed an intelligent security system for women. The system is capable of tracking the location of the women when the magnetic switch was pressed. The system sends alerts to the predefined numbers through GSM and also sends the location details to the mobile applications. It will display the project status on LCD module.

When the victim face any strange situation then by touching the touch sensor it will send an emergency message to the chosen number and buzzer will indicate the nearby people for help which are all connected to Arduino. Then the GPS will indicate the location of the victim and these tracking will be useful for coops and neighbors to find the victim .

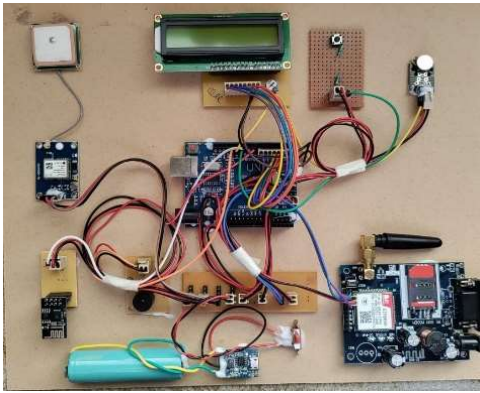


FIG 3.1 WORKING MODEL

Output:

- The live tracking can be observed using the Blynk app.
- The notification will be sent saying an alert message with location in Blynk App.
- A SMS will be sent to the registered mobile numbers saying an alert message with location.

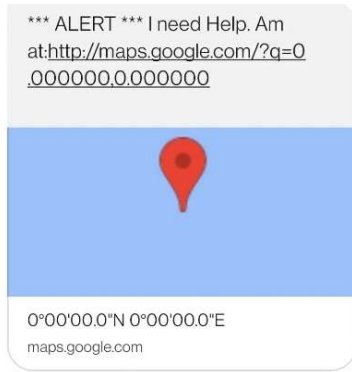


Fig 3.2 SMS RESULT

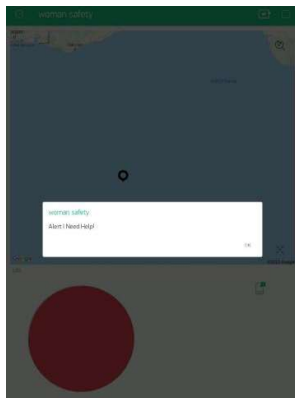


FIG 3.3 IOT RESULT

VI. CONCLUSION

Integrating features of all the hardware components used have been developed in it. Presence of every module has been reasoned out and placed carefully, thus contributing to the best working of the unit. Secondly, using highly advanced IC's with the help of growing technology, the project has been

successfully implemented. Thus the project has been successfully designed and tested.

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