Women Safety Device With GPS Tracking & Alerts

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Abstract

Women safety is a very important issue due to rising crimes against women these days. To help resolve this issue we propose a GPS based women safety system that has dual security feature. This device consists of a system that ensures dual alerts in case a woman is harassed or she thinks she is in trouble. This system can be turned on by a woman in case she even thinks she would be in trouble.

Our system solves this problem. This device is to be turned on in advance by a woman in case she is walking on a lonely road or some dark alley or any remote area. Only the woman authenticated to the devices can start the system by fingerprint scan. Once started the devices requires the woman to constantly scan her finger on the system every 1 minute, else the system now sends her location to the authorized personal number through SMS message as a security measure and also sounds a buzzer continuously so that nearby people may realize the situation. In this case even if someone hits the woman or the woman falls down and get unconscious, she does not need to do anything, the system does not get her finger scan in 1 minute and it automatically starts the dual security feature. This device will prove to be very useful in saving lives as well as preventing atrocities against women jacket (similar to a blazer for women). It is an easy to carry device with more features and functions. The main purpose of this device is to intimate the parents about the current location of the women. A GPS system is used to trace the current position of the victim and a GSM modem is used to send the message to the pre defined numbers.

Keywords— *Arduino Uno, GSM Module, GPS Module, Fingerprint Sensor, Power supply, Buzzer, LED, LCD*

I. INTRODUCTION

Even in this modern era women are feeling insecure to step out of their house because of increasing crimes in our country like harassment, abuse, violence etc., The corporate and IT sector are currently in boom. Many women are working in corporate even in night shifts. There is a feeling of insecurity among the working women.

The proposed device is more like a safety system in case of emergency. This device can be fitted in a will be provided with equipment which is not visible to others the equipment consists of GPS module by which we can get the geographical location and these location values are displayed on the LCD . In the case of any emergency conditions she can press a button once then the location information will be tracked and sent to police so that she will be protected in proper time.

II.LITERATURE REVIEW

1. SMART GIRLS SECURITY SYSTEM - By Basavaraj Chougula, Archana Naik in the year 2014 that the system consists of various modules such as GSM shield (SIM 900A), Arduino ATMega328 board, GPS, screaming alarm, a set of pressure sensors for activation and power supply unit. It was high time we women needed a change.

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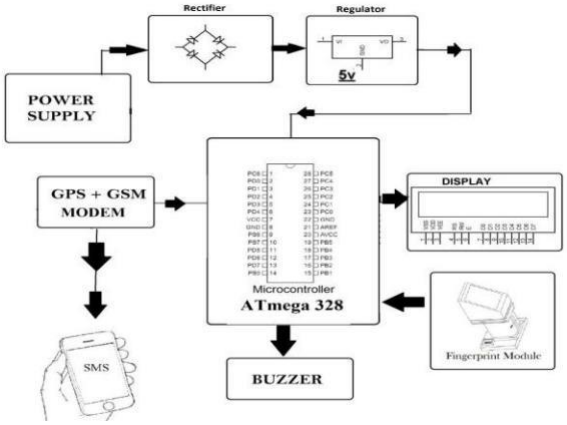
2. Women Employee Security System using GPS and GSM Based Vehicle Tracking - By Poonam Bhilare, Akshay Mohite in the year 2015, It describes a GPS and GSM based vehicle tracking and women employee security system that provides the combination of GPS device and specialized software to track the vehicles location as well as provide alerts and messages with an emergency button trigger.
3.Self Defense System for Women Safety with Location Tracking and SMS Alerting - By Usha Kiran Reddy , P. Sumitha in the year 2017, Women.

III. BLOCK DIAGRAM



A. GPS: GPS (Global Positioning System) technology is used to find the location of any object or vehicle to monitor a child continuously using satellite signals. Three satellite signals are necessary to locate the receiver in 3D space and fourth satellite is used for time accuracy. GPS will give the information of parameters like longitude, latitude and attitude. With the help of these parameters one can easily locate the position of any object. In this GPS technology, the communication takes place between GPS transceiver and GPS satellite.

B. GSM: GSM (Global System for Mobile communications) is the technology that underpins most of the world's mobile phone networks. The GSM platform is a hugely successful wireless technology and an unprecedented story of global achievement and cooperation. GSM has become the world's fastest growing communications technology of all time and the leading global mobile standard, spanning 218 countries. GSM is an open, digital cellular technology used for transmitting mobile voice and data services. GSM operates in the 900MHz and 1.8GHz bands GSM supports data transfer speeds of up to 9.6 kbps, allowing the transmission of basic data services such as SMS.
C. LCD Display: This system has a LCD display module for displaying various prompts and status information of the system. It is also used display the title messages and other messages while communicating with the system. A 2-line, 16 character type LCD display module is used. The microcontroller sends the signals to LCD module through its port pins.

D. Power Supply Unit: The power supply unit has to provide a regulated D.C supply to all sections of the system. As it is essential to operate the instrument on batteries since it is used with the person while moving. It consists of rechargeable batteries, filter capacitors and voltage regulators.

E. Fingerprint Sensor: Fingerprint processing includes two parts: fingerprint enrollment and fingerprint matching (the matching can be 1:1 or 1: N).When enrolling, user needs to enter the finger two times. The system will process the two time finger images, generate a template of the finger based on processing results and store the template. When matching, user enters the finger through optical sensor and system will generate a template of the finger and compare it with templates of the finger library. For 1:1 matching, system will compare the live finger with specific template designated in the Module; for 1: N matching, or searching, system will search the whole finger library for the matching finger. In both circumstances, system will return the matching result, success or failure.

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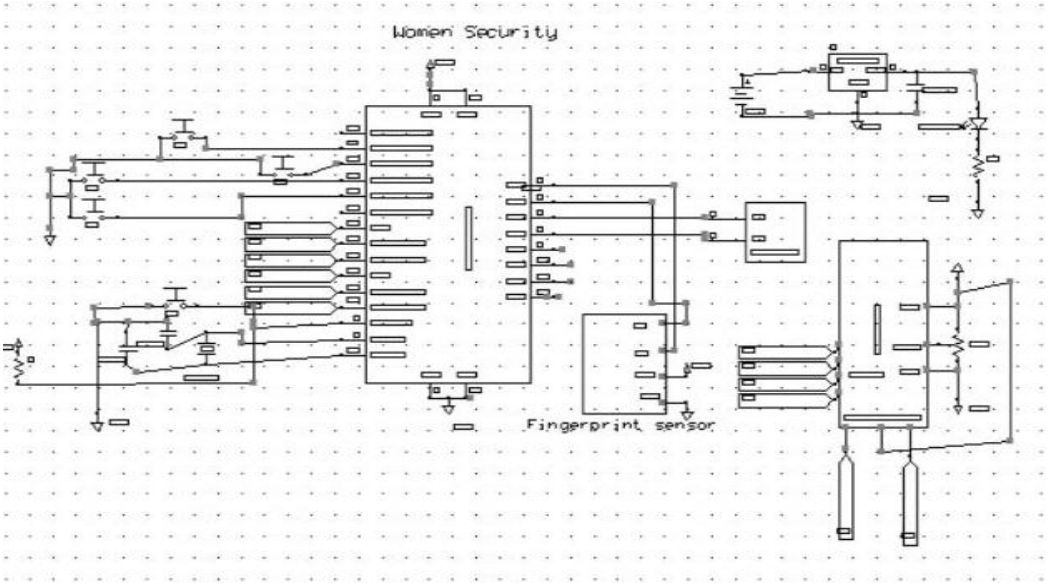
IV. SYSTEM DESIGN



V. TESTING RESULT

will be given by system on Google Map API.

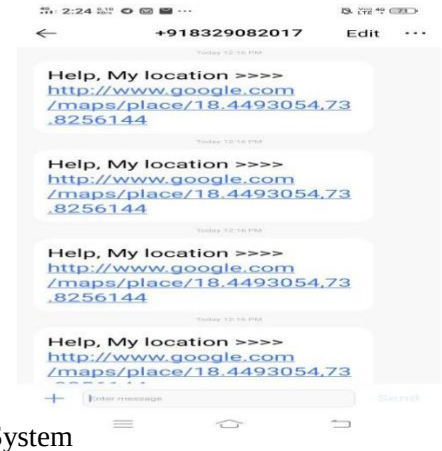


Fig 2: Shows Status Of System

Fig 3: Shows Module Found

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Fig 4: Asks to Scan a Finger

Tracing Location on the Map: System user can see the vehicle position. The user can see the reports of vehicle speed, ignition status and travelling report. The user must enter the username and password provided at the time of authentication. An internet connection is necessary for reading the vehicle information and the reports of the tracking. A strong communication network is necessary for maintaining the efficiency of the system. To show tracking of the vehicle and position Google maps system is used. An appropriate geographical location is plotted on the basis of available coordinates this will help company unit and police to trace the vehicle. Fig 6. Shows how the location

Fig 5: Shows the message containing location of the coordinates which is received.

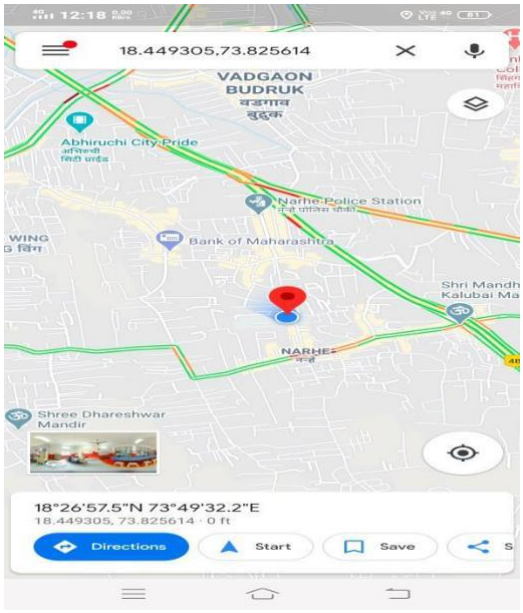

Fig 6: See Location on Map

APPLICATIONS

1. Can be used for the safety of women.
2. Can be used for the safety of children.
3. Can be used for the safety of elderly aged people.
4. Can be used as a legal evidence of crime with exact location information for prosecution.

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ADVANTAGES

1. Safety Device which can be carried by everyone
2. It is safe and easy to use.
3. It can be used by children, teenager girls, women, old lady or old men.
4. Mobile number can be changed at any time
5. Compact in size.
6. Wireless connectivity.
7. Low cost with high performance.
8. Works round the clock.
9. Fast response.
10. Environmental friendly system.

VI. CONCLUSION

This paper reviewed the emergency response system which is helpful for women in the incidents of crime. The key objective is to develop a low cost system which can store the data of the members in the particular locality and provide immediate alert in case of crime against women. This provides women security. Being safe and secure is the demand of the day. Our effort behind this project is to design and fabricate a gadget which is so compact in itself that provide advantage of personal security system. This device will probably be very useful for the women. It is certainly a short term and preventive solution. This will be proved as a multi-pronged strategy with the participation of multi stake holders of society. This system will help its users in difficult situation. This system would be highly sensitive and easy to handle. Its quick action response will provide safety and security to individual user.

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REFERENCES

1. Mr. Vaibhav A. A Study Based On Women Security System http://ijsetr.org/wp-content/uploads/2017/08/IJSETR-VOL-6-ISSUE-8-1241-1243.pdf
2. Electronic Device for Women Safety"- Times of India, Sep
3. 15 2013. https://www.ijireeice.com/upload/2016/march-16/IJIREEICE%208.pdf
4. [3]G C Harikrian ,ECE Department ,Smart security solution for
5. women India https://ieeeexplore.teee.org/document/7755365/author#authors
6. Poonam Bhilare1 ,Akshay Mohite 2 , Dhanashri Kamble3
7. ,Swapnil Makode4 and Rasika Kahane5 "WOMEN
8. EMPLOYEE SECURITY SYSTEM USING GPS AND GSM
9. BASED VEHICLE TRACKING" in international journal for research in emerging science and technology, volume-2, issue-1,January-2015.

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