

AN ADVANCED EMBEDDED SYSTEM FOR WOMEN SAFETY BY USING GSM AND GPS

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ABSTRACT:

The world is becoming unsafe for women in all aspects. The crime against women is increasing at a higher rate. The employed women are feeling unsafe due to increasing crimes. This paper proposes a quick responding mechanism that helps women during trouble. When someone is going to harass, she can just press the button and the location information is sent as an SMS alert to few pre-defined numbers in terms of latitude and longitude. The controller used is ARDUNIO UNO. It is interfaced with a push button, a GPS module, a GSM modem and a LCD Display (16x2). If the switch is pressed, the controller takes the current location information from the GPS module and sends those data to the predefined no. using a GSM modem. The program is developed in 'C' language. The purpose of this project is to feel safe the women's. Here we are using MEMS technology to easily find out the position of the women's. In case any unwanted position then to easily inform and location will send to authority peoples with help of GSM MODULE.

Keywords: GSM, GPS, Switch, LCD.

1. INTRODUCTION:

Even the common man's conversation on the streets often steers towards the escalated and horrendous attacks on women. An overbearing concern each of us has towards the women in our families has lent a sense of urgency to our dialogue on the critical and pressing issue of women's safety. Many special devices are primarily western and most of them have not reached India yet. Another issue is the high cost of manufacturing these devices. To make applications efficient, they would require GPRS services which might not be feasible. Applications get hanged, which lowers down the response time. These applications

consume too much of battery power. Most of the applications available in the market do not work without the Internet or mobile network. This is exactly where the government needs to step in and try and mitigate cost and infrastructure issues for the corporations working in this direction. The problem with apps is that they tend to be clumsy. The women have to open her phone, unlock it, open the app and then press a button. Also, most of the times, the perpetrators usually go for the phone first. The need is to develop independent devices like safety bands, rings, key rings etc. that can be carried around in disguise and used faster, and which will allow the women to send emergency messages with

their location in times of distress. The device called as “Virtual Friend” is especially designed for the women in trouble. It is a device used for the women in chaotic situation. The basic approach is to use the Arduino Uno microcontroller based on ATmega328P has the function of send and receive data which is provided by Arduino GSM shield using GSM network. The current location of the victim is identified by the GSM network using Arduino Uno by initiating the user’s smart phone. At once the Arduino Uno gets the coordinates of the current location the Arduino transfers the coordinate details to the user’s smart phone via Arduino GSM shield. The SOS light is a signal used to alert the passerby and it gives the sign of universal help to the victim who are in distress. The alarm buzzer is activated if the woman is in danger situation. In the critical situation the women send the message or make a call including the location of the particular incident to the registered contacts through the use of GSM and GPS. Even if the device is thrown away it sends the message and making a call to the registered emergency contacts until they picked up or open the message.

OVER VIEW:

India which sees itself as a promising super power and an economic hub can achieve its goal if and only if a large numbers of women participate in the development process. This paper presents an examination review on the primary need of intelligence security system with technology requirement and experiments to build the system. Since the prediction of such incident is not possible hence to minimize the possibility of physical violence (robbery, sexual assault etc.) by keeping all the help tools ready to safely escape from violent situation. This reduces risk and brings assistance when needed. The social networking is the part of our life and also a

source for women harassment by uploading the offensive photograph taken by hidden cameras, even though these cases might happen with innocence males, in some such cases these guys end their life by committing a suicide. The de facto spokesperson of United Nation Ban Ki-Moon, stated that there is one universal truth applicable to all countries, cultures and communities: violence against women is never acceptable, never excusable, and never tolerable [1]. The report of WHO states that, a violence act against female gender disturbed the public health life of society and also it violates the human rights of women [2]. The status of women in India has gone through many inordinate changes over the past few millennia. In modern India, women endure to face social challenges and are frequently victims of abuse and violent crimes and, according to a global survey conducted by Thomson Reuters, India is the fourth most hazardous country in the world for women, and the vilest country for women among the G20 countries. This paper focuses on a security system that is designed exclusively to serve the purpose of providing security and care to women so that they never feel helpless while facing such social challenges. The Delhi Nirbhaya case that prompted the whole nation was the utmost motivation for this paper. It was high time we women needed a change [3]. The suggested device is more like a safety system in case of emergency. This device can be tailored in a jacket (like to a blazer for women). It is comfort and easy to carry device with more features and functions. The emergency push button is held to one of the buttons in the jacket. The main purpose of our invention is to intimate the parents and police about the current location of the women by message through GSM. A GPS system is used to track the current location of the victim and a GSM modem is used to send the message to the

predefined numbers. There are numerous applications that reduces the risk of sexual abuse by sending SMS but in our model we also provide an audio circuit which is more useful for physically challenged people. In this paper section 2 represents the certain analysis of the existing system, section 3 describes the proposed method of GSM based women's security system and section 4 describes the results and implementation and section 5 represents the conclusion of our proposed methodology.

When women are travelling or doing any outdoor activities and if unfortunately they go through these problems and to avoid these crimes to be faced they pronounce or rather say speak keywords which will give a signal to android but this can also give suspicion to the criminal and then he/she will throw victim's android.

A. Challenges faced By Women

The world is becoming less safer for women as they have to deal with major problems like sexual harassment, domestic violence, rape etc. Rapists and molesters still continue to commit such crimes even though in presence of strict laws and armed forces. The crimes are increasing in India as it was 195,856 in year 2008 and went up to 244,270 in 2012. Not only India but the most developed country on Earth also faces these problems in America 232,960 women were allegedly raped or sexually assaulted in the year 2006.

B. Solution with the Help of Technology

Many apps have been developed by developers to solve these problems but due to lack of features these problems are still unsolved and our eyes can read the headline of newspaper saying "Rape." When women are travelling or doing any outdoor activities and

if unfortunately they go through these problems and to avoid these crimes women can use this system and reduce their problems. Ensures the safety of women as it sends the location of the woman also it does dens the photo of the criminal. Also in India 30% of women can access the internet easily.

2. LITERATURE SURVEY

Abhijeet Mane , Manoj Gharge , Omkar Pol, They are explain Nowadays women are facing many problems like rape, molestation, kidnapping etc. This uniquely designed system will help to reduce crime rates against women. It has been prioritized to give security to women especially to the women in urban areas as they can face problems while travelling the system is not so expensive thus many women can benefit themselves. In this system there are many components like LEDS, buzzer, shock generator etc. When a woman finds herself in a wrong situation she will instruct the machine so that it can send messages to known five people with her location and the message is immediately sent without any problems. The hardware components are maintained so that there will not be an error also there is a power supply present in it a battery of high quality has been used this system will easily help a woman out to escape from this dangerous situation as it will smartly give GPS means location of a woman and then any known ones of the woman can rush at the location and help her.

C. Priya, Ramya C, Befy D, Harini G, They are proposed In our country, it has rule and financial betterment, but still there are many abuse against women. These activities can be terminated with the beneficence of mentioned product. This device is used for defense system, especially designed for women in hardship. Method/Analysis: The hardware device used for this is ARM controller. It is

the most productive system and it use up very less power. Application / Improvement: Above mentioned ARM controller is used for tracking mechanism. Tracking mechanism which is called GPS is connected to ARM controller. The capacitive sensor need to be pressed for fraction milliseconds to alert locate, and can send emergency message to the emergency contacts with intent location and the buzzer will alert to nearby people for help, then the tear gas will be released after the touching sensor is touched .Thus the victims can have enough time to escape from stranger using our application.

R Anitha, Explain It is an accepted fact that brutal crimes against women are occurring in India daily. Now many Indians do not deny or shy away from conversations relating to eve-teasing, sexual assaults or rape. Even the common man's conversation on the streets often steers towards the escalated and horrendous attacks on women. The device called as “Virtual Friend” is specially designed for the women in trouble. It is a device used for the women in a chaotic situation. The basic approach is to use the Arduino Uno microcontroller based on ATmega328P has the function of send and receive data which is provided by Arduino GSM shield using GSM network. Arduino Uno gets the coordinates of the current location; it transfers the coordinate details to the user's smart phone via Arduino GSM shield. The SOS light is a signal used to alert the passerby and it gives the sign of universal help to the victim who is in distress. The alarm buzzer is activated if the woman is in danger situation. In the critical situation, the women send the message or make a call including the location of the particular incident to the registered contacts through the use of GSM and GPS.

K. Mohana prakash, Explain detailed about a smart alarm system for women's security. Women all over the world are facing much unscrupulous physical irritation. This acquires a fast pace due to lack of a suitable investigation system. The system look like a group on the wrist merged with pressure switch as an input which when triggers shows the result loud alarm imposed for self-defensing purpose and send location and messages to the emergency contacts. The whole process will be held in Arduino Microcontroller. The digital switch incorporates with the controlling unit. Whenever the user presses the digital switch, the emergency message will be passed to the server unit via GSM SIM 800A module. By implementing the proposed system, the physical harassment on the women will be reduced.

Gowri Predeba. B, Explain in the current global scenario, the prime question in every girl's mind, taking into account the ever rising increase of issues on women harassment in recent past, is only about her safety and security. The only thought haunting every girl is when they will be able to move freely on the streets even in odd hours without worrying about their security. This paper suggests a new perspective to use technology to protect women. The system resembles a normal clothes which when activated, tracks the location of the victim using GPS (Global Positioning System) and sends emergency messages using GSM (Global System for Mobile communication), to three emergency contacts and the police control room. The system also incorporates a screaming alarm that uses real time clock, to call out for help and also generates an electric shock to injure the attacker for self defence.

3. METHODOLOGY

The whole implementation held in Arduino microcontroller and arduino programming takes as software implementation tool. The user press the emergency switch, the GSM SIM800A automatically passes the SMS to the Server unit. The following Fig. 3 shows the hardware implementation of our proposed methodology. The message transferred from GSM SIM800A to the Server unit was shown in Fig. The message transferred from GSM SIM800A to the Server unit was shown in Fig. The Sim inserted to the GSM SIM800A is used to find the users location and prevent the user.

In this system there are many components like LEDS, buzzer, shock generator etc. When a woman finds herself in a wrong situation she will instruct the machine so that it can send messages to known five people with her location and the message is immediately sent without any problems. The hardware components are maintained so that there will not be an error also there is a power supply present in it a battery of high quality has been used this system will easily help a woman out to escape from this dangerous situation as it will smartly give GPS means location of a woman and then any known ones of the woman can rush at the location and help her.

OPERATION WITH RESULTS:

The basic principle used for security system is prevention and communication by Using GPS, GSM technology. It consists of Arduino, Touch sensor, Buzzer, GPS and GSM technology. Arduino UNO is used to control the overall process. The Arduino is programmed by mean of C languages and then compiled and stored in the flash memory. It has everything needed to support the microcontroller; simply connect it to a computer with a battery to get started it with an AC-to-DC adapter. The user can tinker

with the UNO without concerned more around doing something bad, worst case scenario you can replace the chip and start over again. The touch-sensing IC TTP223B is built by capacitive touch sensor. In the groundless state, the output of the module remains at 0(low0). When the finger is touched on the sensor, the output of the module goes high (1).If the finger is not touched for 12 seconds, switches to low- power mode. Module can be installed on ductile, reflector or non-metallic material. The piezo buzzer produces the sound based on contra of the piezoelectric effect. The buzzer produces a some riotous sound for voltage variation applied to it. It consists of piezo crystals between two conductors. When a potential is applied across these crystals, they pull on one conductor and push on the other. This push and pull action, results in a second wave. KHz More buzzer produce sound in the range of 2-4KHz. A GSM module is basically a GSM modem (like SIM 900) Connected to a PCB with different type of output taken from the board – say TTL output (for the Arduino controller 8051 and other controllers) and provisions. GPS Module continuously receives the data from the satellite and transmits correspondingly to the RS232.

RESULTS:

This project illustrates the safety of women. To deal with the problem of security issues of women the circuit is designed so that women feel safe while going alone at night. This project gives self dependence to women by giving shock by shock generator to the attackers. And by GPS receiver we can find the position of women in the form latitude and longitude.

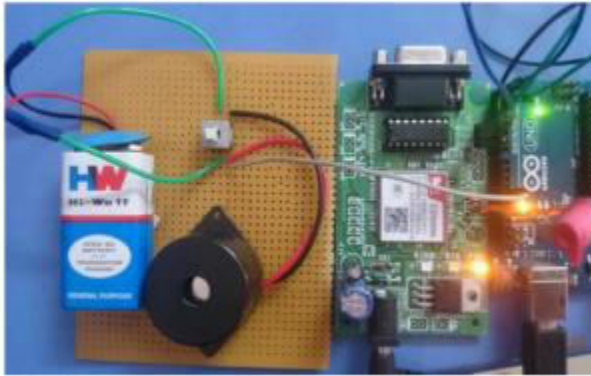


Fig. GSM MODULE

Women wear clothes, if somebody try to attack her heavy force is exerted on her. The force sensor senses force on the women continuously. When heavy force is applied on her by attacker it sense the force more than the threshold level it sends signal to the controller. The metal detector also senses for the presence of metal like knife and etc. suddenly the controller applies electric shock on the attacker through the electric shock system and alarm is raised for help. The location is tracked by the GPS module. The location and HELP message is sent to the contacts that we have stored in our system through GSM module. So women can be saved from the attackers.

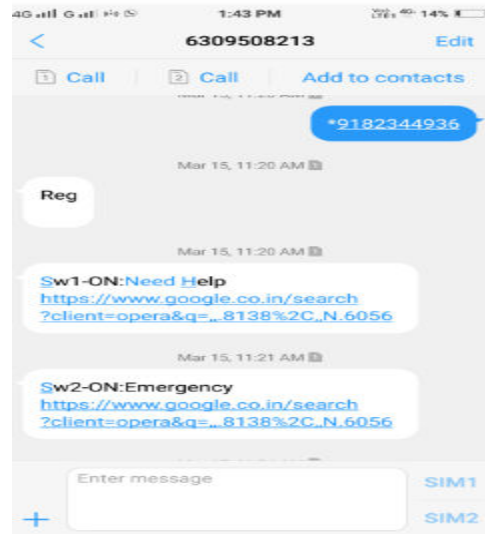
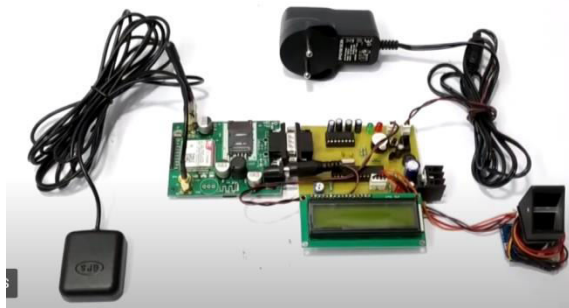


Fig. Final OUTPUT results with location.

CONCLUSION

In this research an intelligent and sophisticated Women safety is implemented and tested. The results show that the system ensures complete women safety during public transport. And system provides self defence to the women by giving shock to the attackers. We successfully implemented the system and acquired the desired output. The intelligent security system women has been developed with such a motivation that the women are provide with safe environment under all circumstances. Our primary goal is to safeguard every woman in our society to feel safe and secured. The paper would aid in enhancing the safety and security of all dependant and badgered women and children. This we believe would help not only one to feel secured but also help the law enforcing authorities to bring the masquerading culprits to light. This paper is a step closer for us to improve our social security.

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