

Women Self Defence by Electric Shock System

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Abstract: Now a day's crimes in the country are exponentially increased. The primary reason behind this is the society which is prejudiced against the girl, lack of proper policing, ineffective laws etc. While the long term solutions should aim to correct the above factors. Now there is requirement of some change Microcontroller applications are becoming more popular in industrial controls. Due to integration of number of chips in one chip (micro-controller) as result, cost wise it has come down, compactness, less power dissipation. This factor made micro controller more popular in industrial controls. Due to this features it made us possible to use microcontroller in detecting the location thus avoid the crimes and save the life's. The present paper "WOMEN SELF DEFENSE BY ELECTRIC SHOCK SYSTEM" aims at providing security during emergency situations by including GPS(the location where the victim is in) and GSM(sends message to nearby police stations or family members).Normally in emergency situations a person presses an emergency key So whenever an emergency key is pressed the ALARM gets activated for a specified duration and later the system will take GPS points (the location where victim is in terms of latitude and longitude) and it will send it to the family members through GSM and as well as the nearby police station and necessary actions will be taken. Meanwhile the victim can use electric shock system to prevent the accused.

Keywords: GSM (Global System for Mobile communication) and GPS (Global Positioning System)

1. INTRODUCTION

According to the National Crime records Bureau, the total number of rape cases in India was a staggering 228,650 and Delhi, the national capital accounted for 5234 of those and in 2011 according to Ministry of Home Affairs, a total of 24193 cases were reported. This is just the tip of the iceberg. Rape is a notoriously under-reported crime, thanks to its social stigma. A woman is raped every 21 minutes in India and every 18 hours in Delhi. It's shameful for the whole world. By observing such bad conditions of women in the world, we came up with "Smart electronic module For Women". This "Smart Electronic module For Women" has the potential to help women by the technologies that are embedded in it. "Smart Electronic module for Women" provide electronic module and this electronic module is specially designed for women safety. It has a button that will be used by women to inform nearby police when they feel danger. This electronic module directly gets connected to the satellite through GPS when activated. Then the location is transferred through the GSM and this electronic module is also provided with a system that produces 60 shockwaves in 1 second in emergency situations.

II. BACKGROUND

The existing systems available and surveyed can be categorized into three ways as follows:-

2.1 Systems designed as a mobile application for the android mobile

Dongare Uma, Vyavahare Vishakha and Raut Ravina proposed a voice keyword recognizing app to recognize the user and activate the app functionality even when the mobile keypad locked. The GPS module tracks the longitude and latitude to trace an exact location of a user and sends the pre-stored emergency message including location to the registered contact numbers. The Audio Recording module starts the recording of the conversation for five minutes and stored as evidences. The message goes in queue if network problem and send when network gets available. A notification is generated for successful deliver message. Also user can select contact through voice based contact list and make a call. Note: The spoken keyword converted into a text to compare with the registered keyword.

Magesh Kumar.S and Raj Kumar.M proposed an emergency response situation recognizing app called as IPROB to provide women safety even in the situation like terrorist attacks or natural disaster, by just shaking the mobile above the predefined threshold value automatically activate the system. It starts capturing the surrounding voice to test and confirm the unsafe IPROB situation where it raised the notification and user fail to respond in predefined time then the message alert sends to the registered contacts. If the mobile profile at the receiver is in silent mode then convert it into the General profile to give the voice notification as —YOUR CHILD IS IN TROUBLE PLZ HELP...PLZ HELP continuously like a ring tone, until they stop it. If a registered contact confirms a PROB then appropriate emergency services like ambulance, fire brigade are alerted. If a registered contact responds with an audible notification, then it automatically connects and enables the speakerphone at the victim side. An integrated tri-axial accelerometer used to evaluate the unique movements that a phone experiences as threshold.

Bhaskar Kamal Baishya proposed an android app to provide security in different situations as follows. The module provide security to Women at Emergency Situations propose a Save Our Souls (SOS) app to provide the security on a single click of SOS button for the women travelling at night or alone. No need to unlock the screen, instead by just pressing the power button it directly triggers the application to run at the background, to send the emergency message including the location in the form of latitude and longitude to the registered contacts.

Archana Naik et al. proposed an app, in which a single click of SOS sends a message containing the location and/ or audio-video call to the guardian number. At receiver touch the location URL in the message to view it in the Google Map. It also provides different help tools like First-Aid help, Fake Call Help and video call. The First-Aid help tool provides the help on various health

issue problems occurred at an accidental or emergency situation during the night time. First aid help for various problems are as: unconscious and not breathing, choking, bleeding heavily, burns, heart attack, diabetes etc.

The Fake call help to escape from the meetings- parties at a time when women start feeling uncomfortable and think that, —if someone calls me then I can leave this place. Fake call rings tone same as that of normal incoming call ring and once call accepted it stop ringing. It also supports Fake Hang Up option. The guardian contacts are by-default for this app, but it able to search the cops, firemen, hospitals contacts nearby to your location. It also sends the audio-video recording via Email-Gmail of emergency situation taken by the user where user unable to speak or tell the circumstances.

2.2. Systems designed as a device with the help of Microcontroller

Thooyavan V proposed an automated highly reliable women security device which consist of the advanced sensors embedded in a wearable dresses. It consist of advanced sensors, GSM and ATMEGA8 microcontroller with ARDUINO tool which keep user under observation at all the time. It monitors the heart beat rate, temperature and vibration in body through sensors to check for uneasy situation. In such situation it will activate the GPS module to track the location and wireless camera to capture the images that get send to the control room of the receiver through GSM modules to take necessary actions. At the same time processor activate the mice unit with amplifier which strengthens the voice of the women to screams or shout above the threshold limit.

III. OBJECTIVES

Self-defense and alert system for individuals to avoid crimes in alone or being in badly lit areas:

1. Implementation of a real time monitoring device can solve the problem to an extent.
2. The basic approach is to intimate instant location and a distress message to the cops and registered number like parents, friends, media, and women cell etc. so that unfortunate incidents would be averted and to provide real time evidence for swift action against the perpetrators of crime against women
3. Shock mechanism to produce non-lethal electric shock in emergency situations to deter the attacker.

IV. METHODOLOGY

The system comprises of sections which describes a quick responding, cost protection system for an individual and especially for women using which a woman in distress can call for help just with the press of a button on this smart gadget. Self Defense System for women safety is like a Smart Watch for Women. It has the ability to help women with technologies that are embedded into a compact device.

The women wearing this device as a jacket, in case of any harassment or when she finds that someone is going to harass, she presses a switch that is located on the device or when the women has fallen the information about the attack along with the body posture and location information is sent as SMS alert to a few predefined emergency numbers. And soon help is on its way! The system will consist of embedded hardware and software code signed for this dedicated application.

The system allows for knowing exact location of the individual, as soon as the trigger key on the device is pressed. By providing the instant location of the distressed victim to the police so that the incident could be prevented and the culprit apprehended. In case if the caretaker wants to know the present location of the lady, he/she can send a message to the SIM number of the lady. A SMS as “TRACK” can be sent to the lady to know where the victim is going. This would help reduce crime against women. It also contains a shock mechanism to produce non-lethal electric shock in emergency situations to deter the attacker.

The module could be seen to be composed of sub-modules namely:

1. Sensing module: Emergency key.
2. Control module: ATMEGA328
3. Microcontroller, Power Supply Unit
4. Transmission module: LCD Module, GSM Module, GPS Module. These modules work together to determine the location of the victim in danger situation and inform nearby police station and to the relative number stored in it via an SMS.

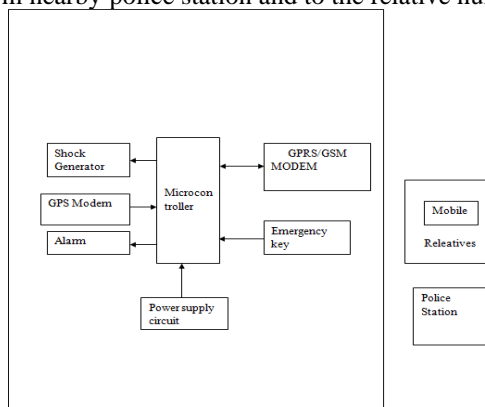


Fig 1: Block Diagram of Self Defense module

V. WORKING OF PROPOSED MODEL

Aim of the proposed algorithm is to help women by the technologies that are embedded in it. Smart Watch for Women is specially designed for women safety. When the supply is given the device will turn on GPS and GSM connected to ATMEGA also start working and it displays the current position of device. Then with the help of GPS the location (latitude and longitude) of the victim is detected and displayed on the LCD. When the victim feels danger, he/she presses the first emergency key, the kit displays emergency situation and voice kit is enabled. Now the victim gives voice command and it is recognized by the kit. If the voice command matches with the one stored in database then the appropriate action takes place. For example if POLICE gets the voice

command given by the victim, then a text message is sent to a number of police station and also an alarm is generated. Another emergency key is also provided in the kit and if it is pressed by the victim it generates an electric shock of around 12 V DC which can give severe shock to the person who is trying to mistreat. The working of selected modules is as follows:

5.1 Microcontroller:

The high-performance Atmel 8-bit AVR RISC- based microcontroller combines 32KB ISP flash memory with read-while-write capabilities, 1KB EEPROM, 2KB SRAM, 23 general purpose I/O lines, 32 general purpose working registers, three flexible timer/counters with compare modes, internal and external interrupts, serial programmable USART, a byte oriented 2-wire serial interface, SPI serial port, 6-channel 10-bit A/D converter (8- channels in TQFP and QFN/MLF packages), programmable watchdog timer with internal oscillator, and five software selectable power saving modes. The device operates between 1.8-5.5 volts.

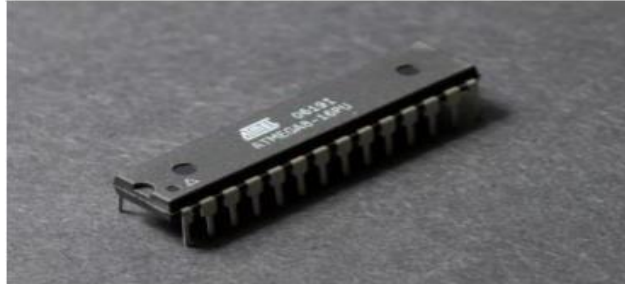


Fig 2: PIC Microcontroller

5.2 Global Positioning System (GPS) module: -



Fig 3: GPS Module

It is a navigation and precise positioning tool, tracks the location in the form of longitude and latitude based. The GPS Coder Module used this information to search an exact address of that location as the street name, nearby junction etc. In case where GPS is disabled then the system will only send the longitude and latitude.

5.3 GSM System Module: -



Fig 4: GSM Module

Global System for Mobile communication (GSM) SIM card is inserted inside the mobile device to send and receive the messages using GPRS. The GSM SIM card number is registered with the system. With increasing usage of GSM, network services are expanded beyond speech communication to incorporate many other custom applications, machine automation and machine to machine communication.

5.4 Screaming Alarm Siren module:

It makes the alarm at —user end whenever user activates the system through the SOS button. In case of the intrusion activity the alarm siren generated at the home side.

5.5 Shock Generator:

It contains a shock mechanism to produce non- lethal electric shock in emergency situations to deter the attacker.

VI. Snapshot of Working Model

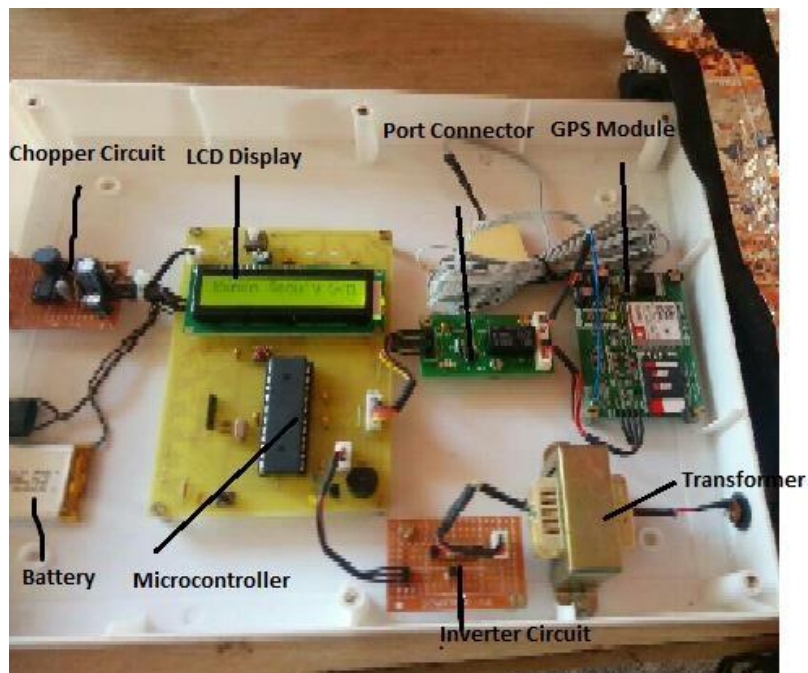


Fig 5: Working Model

7. CONCLUSION

By integrating a culturally-relevant educational curriculum (service) with a product (good) that is affordable and accessible, our innovation is helpful in saving women from harassment. In India lots of crimes happens against women every day. "Our paper" can readily solve this issue. By installing these device at small scale and will try for further progress in the same. At last our main aim is to spread this idea in the whole world that too in large scale production. Women's security is a critical and social issue in today's world. The crime (molestations, robbery, sexual assault, rape, domestic violence) against the women can be now brought to an end with the help of real system implementation of propose model. The concept can be used to provide the security for Physically Challenged Girls by adopting voice recognition kit. It can be used in the military applications to track the soldiers. The device can be used in the adventure related events

VII. References

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