A Safety Device for Women Security Using GSM/GPS.

[1], Zakir Khan, [2] Hyderali Khan, [3] Vishwajeet Jagtap,

[1]Pursuing BE, [2] Pursuing BE, [3] Pursuing BE,
Under the Guidance of :- Prof.Vineeta Philip
[1]Electronics and Telecommunication,
[1]AISSMS Institute of Information Technology, Pune, India.

Abstract: Today, according to the current scenario, the common question in every girl or women's mind, considering the rise in increase of issues on women assault and harassment in the recent year is mostly about her safety and security. Our main objective behind implementing this project is to ensure women safety. In this project the components used are GSM module, GPS module, Arduino Uno (ATmega328P microcontroller), buzzer, switch, sensor. The main working principle of this is that anytime the women faces a danger, all has to do, is to hold on the emergency button of the device. Once the device is activated, it tracks the place i.e. latitude and longitude of the women using GPS to already registered mobile number and the police control room. Our device is made for women and by using these devices they should feel free and safe to walk around in the society and even their parents and loved one's won't worry about their daughter's and other women of their house. The device made is a solution and the main advantage of this is that it is small and easy to carry. The accuracy is more of components and it is reliable.

Index Terms - **GPS tracker and GSM Modem, Emergency Switch/Button or Sensor, Buzzers, Sensor, Arduino, etc.**

I. INTRODUCTION

In today's world, women safety has become a very important issue as today girls and women can't even step out of their houses at any given time. This because they are in danger of the assault, harassment and violence against them going on in the society. Even in 21st century where the technology is rapidly growing and new gadgets are being developed still there are crimes taking place. We all know that our society is aware regarding the women safety issues, but it is also duty of each and every individual that they should be properly protected and must remain safe guarded women are not as physically fit as men in an emergency situation. Today due to the present situation of the different metro cities and other big Cities, women safety and security has emerged as one of the most important requirements in our country. The only thought today in every girl and women's mind is that when will they be able to move freely on the roads and some lonely places at day time or during night time without worrying about their security and safety. The rising assaults and misbehavior on the girls and women of our society must come to an end so that they move around freely and get equal opportunities that men get to fulfill their own dreams. Nowadays women and girls suffering violation and harassment are even denied of their basic human rights and even denied from the opportunities which are provided to them. In today's world of globalization and advanced technology and smart electronics products and devices it is important to have simple and the cost-effective safety device which helps the victims during the danger. They often work across ethnic, religious, political and cultural to promote liberty. There are several apps to reduce the risk of sexual assault on women by informing control center and their associate through SMS but in a lay of those apparatus. This paper mainly focuses on a security system that is designed to serve the purpose of giving security and helping them to face the problems so in any condition the women will never feel helpless.

II. GOAL AND OBJECTIVE

The word "security" in general usage is synonymous with "safety," but as a technical term "security" means that something not only is secure but that it has been secured. The main purpose of our project is to make women feel safe in all situations even if they have to leave their home late night. In this project we are providing facility to secure the women's by providing wireless key GSM and GPS module with controller.

III. EXISTING SYSTEM

Keeping the same concept in mind many developers have come up with innovative solution. Few of such applications/solutions are as follows-

- **USING PRESSURE SENSORS:** The proposed system is to develop a portable device which resembles a normal belt. It consists of Arduino Board, threshold of the pressure sensors crosses the device will get activated automatically. Immediately the location, area, place of the victim will be tracked with the help of GPS and the emergency message will be sent to three contacts and one to police control room every two minutes with updated locations.

- **VithU app:** A very popular Indian crime television serial on channel V initiated this particular app. When this app is used on phone it begins to send messages to user after every two minutes giving the link of location.

- **SHE (SOCIETY HARASSING EQUIPMENT):** It consists of electronic device which has electric circuits that gives 3800kV.This can be used by victim to come out of this situation and ask for help immediately.

IV. METHOD
BLOCK DIAGRAM: -
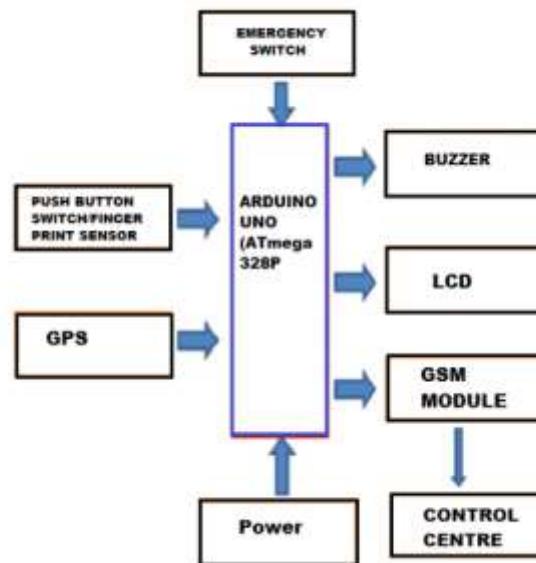
Block diagram of women safety device

DESCRIPTION: -

1. DESIGN OVERVIEW

1) **Battery: -** A 9v battery is used to power the circuit.
2) **Push Button switch: -** When this button is pressed it will send signal to the microcontroller. Then the microcontroller will send the GPS co-ordinates of the victim via GSM to the nearly police station and to their family members.
3) **Voltage Regulator: -**The microcontroller and circuitry (7805) along with it works at 3.3V-5V supply. The voltage regulator 7805 obtains a 5v DC output. Also LED indicators are used for indicating these voltages.
4) **GPS Module: -** GPS stands for Global Positioning System, which sends the current date, time, data of any device. It can be interfaced with normal 5V microcontrollers with the help of inbuilt 3V-5V converter unit. It consists of 4 pins ie.5V, TX, RX and GND. This standalone GPS module does not require external components. It consists of Internal RTC battery backup and can be directly connected to the USART of the microcontroller.
5) **GSM (SIM 900):-** GSM stands for Global System for mobile and is a digital mobile telephony system SIM 900 can fit almost all the space requirements in the M2M application with the dimensions of 24mm*24nm*3mm.This is a GSM/GPRS compatible quad-band cell phone which works on the frequency of 850/900/1800/1900Mhz and can be used not only to access internet, but also for oral communication and for SMS's and calls. The module/processor also consists of a SIM card which needs to be attached to the outer wall of the module. This module works on the voltage between 3.4 and 4.5 volt.
6) **Buzzer: -**It is an alarm used in danger so the nearby people so may understand that someone is in need and can run for their help and rescue them.
7) **Microcontroller (Atmega 328P):-**The Atmel IC is 8bit 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,3 flexible timers/counters with compare modes, internal and external interrupts serial interface SPI serial port, 6 channel IO bit, A/D converter, software selectable power saving modes and programmable watchdog timer with internal oscillator. This device operates between 1.8-5.5 volts.

2. SOFTWARE ALGORITHM

The following steps are initiated when once the unusual behavior of the user is detected. The decision is made by the inputs given by the various switches, sensors, motion detectors. The situation is pre-programmed into the system based upon which the device makes the decision and is handled by the messages.

1) Scan the contact number from SIM.
2) Get data from GPS module.
3) Convert the longitude and latitude obtained from GPS into a Google URL.
4) Attach this URL with an alert message.
5) Send this message to pre-selected ICE (In cases of emergency) numbers from SIM memory periodically until device is reset.
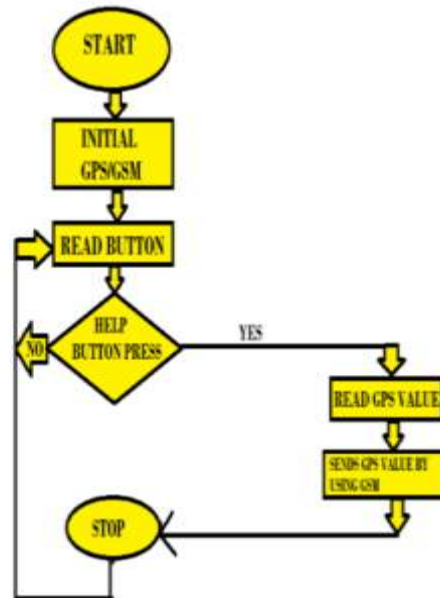
Flow chart

V. METHODOLOGY

1) To connect and integrate Arduino Circuit board with a SIM900 GSM Modem to send SMS to the register mobile and telephone numbers.

2) To integrate Arduino board along with GSM module with the GPS module so that the proper latitude and longitude of the victim can be send via GSM to the register numbers when the victim is in danger.

3) To design and develop low cost, effective and easy to use personal gadget for the safety and security of women.

VI. OUTPUT RESULTS
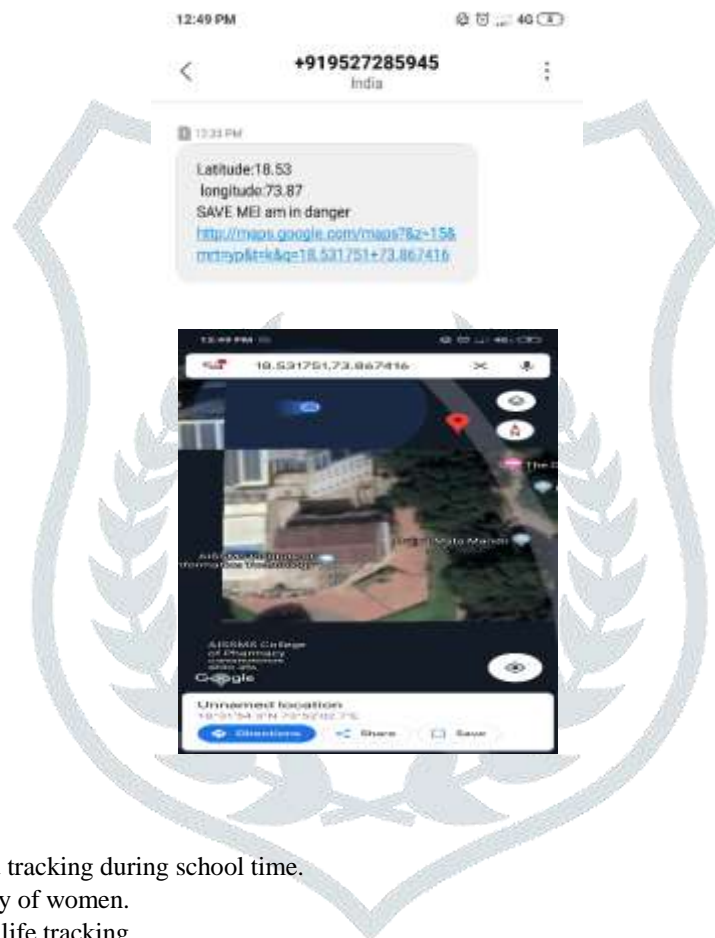
VII. APPLICATIONS

- It can be used for child tracking during school time.
- It can be used for safety of women.
- It can be used for wild life tracking
- It can be used in vehicle tracking and safety system.

VIII. FUTURE SCOPE

- We can make lipstick structure device.
- We can make shock leather jackets, bands etc.
- We can interface this system with Smart system.
- The audio messages can be sent during need.
- By using Camera, we can shoot the situation.

IX. CONCLUSION

The project design made can deal with critical issues faced by women in the near past or at night time and provide security with technically sound equipment's ideas and technology. While the society may or may not change its mind set but with this device it will help them to overcome the fear that scares every woman in the country about her safety and security and feel women independent.

X. REFERENCES

1) G C Harikiran, Karthik Menasinkai, Suhas Shirol, "Smart Security Solution for Women Based on Internet of Things (IOT), ICEEOT-2016
2) Divya Chitkara, Nipun Sachdeva, Yash Dev, "Design of a women safety device", IJOES-2014.
3) Piyush Kumar Verma, Arpit Sharma, Dhruv Varshney, Manish Zadoo, "Women safety device with GPS/GSM and Health monitoring System", IRJET March 2018.
4) Anjali Cherian V, Antony A, George R, Security system for violence against Women in public places.

5) Miss Ashwini Thaware, "A safety device for women security using GSM", IJRITCC-April-2017.
6) D G Monisha, M. Monisha, G. Pavithra, "Women safety device and application FEMME", IJST-March2016.
7) Siddam Kavitha, L. Prathima, "An Arduino based Women safety network model", IJITR-Sept-2016.