WOMEN SAFETY DEVICE WITH GPS TRACKING AND ALERTING SYSTEM

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Abstract: Women safety is an essential issue due to the rising crimes against women these days. To help resolve this issue we propose a GPS based women safety system that has dual security features. This device cannot just be used by women when in distress but also by children when their travel modes are sans elders. For elderly people with issues like Alzheimer's this device can turn out to be very useful for them as well as their families. This device sends the current location of the woman/child/elderly to the family members and concerned authorities in case of any harassment faced or if in any sort of trouble. The device also has a panic button which is an in-built 400kV electric shock generator, which upon pressing will knock the assaulter down due to a sudden shock but without any fatality. The device is made using an AVR microcontroller, a GPS module, a GSM module and a high voltage generator.

Keywords: **AVR Microcontroller, GPS Module, GSM Module, Electric shock generator.**

I. INTRODUCTION

Security is the condition of being protected against danger or loss. In the general sense, security is a concept similar to safety. The nuance between the two is an added emphasis on being protected from dangers that originate from outside. Individuals or actions that encroach upon the condition of protection are responsible for the breach of security. 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. In the modern era women are feeling insecure to step out of their house because of increasing crimes in our country like harassment, abuse, violence etc. As many women are working in cooperate even in night shifts. There is a feeling of insecurity among the working women. 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 This device sends the current location of the woman/child/elderly to the family members and concerned authorities in case of any harassment faced or if in any sort of trouble. The device also has a panic button which is an in-built 400kV electric shock generator, which upon pressing will knock the assaulter down due to a sudden shock but without any fatality. The device is made using an AVR microcontroller, a GPS module, a GSM module and a high voltage generator.

II. LITERATURE SURVEY

S. K Anisha, S. Chandana, J.J Teresa, S. Varma, M.N Thippeswamy the paper title as - Women's Wearable security and safety device - This is the safety device which uses GPS module and pi camera. The camera captures the images and uploads to a drive which will be helpful for facial recognition.

K. Tirupathaiah, P. Vyshnavi, M, M. Bhavani, S. Ajay Kumar, Mahesh Kumar, Juni Khayat the paper title as - Hiding Security System for Alone Women by Using GSM and GPS - The emergency push button is held to one of the buttons of the jacket. The main purpose of this device is to intimate the parents and police 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 predefined numbers. This model is also useful for small children's, elderly aged people.

Snehal Bhagwat, Meenakshi Funde, Ravindra Sona wane Shalaka Deore, Shubhangi Ingale the paper title as - Woman Safety and Alert System - In this paper an alternative method is proposed for women security that may serve as a better alternative to rest of the available security methods. Here the system is designed around Arduino micro-controller that uses GPS, GSM, watch, shockwave generation circuit and an accelerometer for better security.

J. Sriram Pavan, Ch. Usha, Y. Lahari, U. Manisha, S. Navya Sri the paper title as - Women Safety Device with GPS Tracking and Alerts Using Arduino - The system can be interconnected with the alarm system and alert the neighbours. This detection and messaging system is composed of a GPS receiver, ARDUINO and a GSM Modem. GPS Receiver gets the location information from satellites in the form of latitude and longitude. The ARDUINO processes this information and this processed information is sent to the user using GSM modem A GSM modem is interfaced to the ARDUINO. One of the key features is that our system can work in both online and offline mode. Police and volunteers who are positioned near the user's location in both modes, they will assist the user.

2.1 Outcome of Literature Survey

In all these papers, the authors have published different ideas in their aspect to give a solution for the safety of women. Some of these ideas are not wearable, whereas some are bulky and expensive. The idea proposed by our team is both wearable, cost efficient and smaller in size. This module can be integrated with footwear as it is an essential part of everyday life. The proposed device will send an alert to emergency contact along with the location based the trigger by mechanical sensor/switch in footwear.

III. PROBLEM STATEMENT

Women face increase in safety threat especially during night hours. They can be targeted for gold jewellery and other valuable stuff. There is a need for safety alert system which can alert family members and police in the case of emergency and also there is a need for defence system which can generate shock immobilize threat.

IV. OBJECTIVES

- To design and develop women safety device with GSM and GPS technology.
- To design a compact system that can be embedded in shoes.
- To design system which can fetch GPS data in real time and send it to family members and police during emergency and to integrate shock generator.
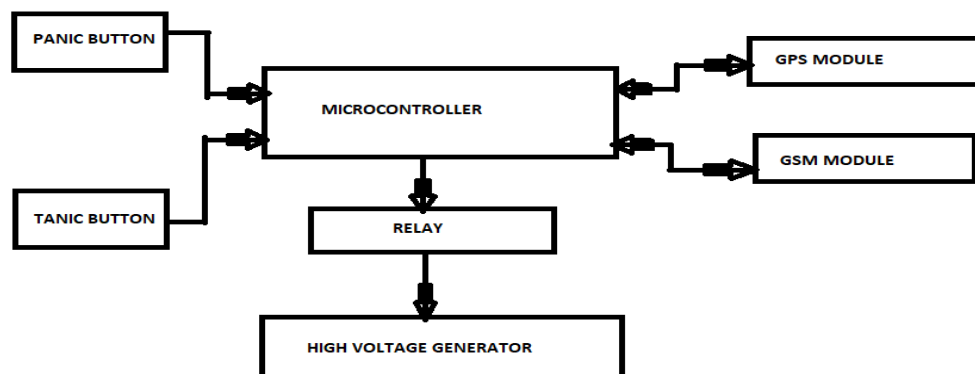
V. METHODOLOGY

Figure.1: Block Diagram

The brain of this device is the AVR microcontroller that is used. The GPS module is connected to the microcontroller using the serial port. A GSM module is connected to the micro controller through the software serial port.

There are two buttons which are connected to the microcontroller. The panic button and the taser button. On pressing the panic button, the microcontroller will extract the current location of the user using the GPS module, the location will be sent to recipient numbers (family/authorities) using the GSM module. We can add as many recipient numbers as we want. A SOS message will be sent simultaneously to all the numbers added once every 5-10 seconds. On pressing the taser button, the micro controller will turn on the relay, which will turn on the high voltage electric generator. The output of the high voltage generator is 400kv. This generates a shock to the assaulter which will knock down the assaulter for a couple of minutes without any fatality.

ADVANTAGES/DISADVANTAGES/APPLICATIONS

Advantages

- It is easy and easy to use.
- It can be used by children, teenager girls, old lady or old men.
- Compact in size.
- Environmentally friendly system.
- Alert message to mobile phone for remote information.
- Used as legal evidence of crime with exact location information for prosecution.

Disadvantages

- It is bulky in size
- When the power will turns off, then the total system will turn off, so battery is always required.
- SIM card is needed for GSM module.

Applications

- The proposed system can be used to enhance the safety of women, children and elderly people.
- Elderly people suffering with Alzheimer's can use this device during a case of emergency.
- Can be used for self-defence by women and children.
- Tourists can carry this for their safety while exploring new and less familiar places.

VI. RESULTS AND DISCUSSIONS

Methodology refers to the overarching strategy of Live location tracking technology. It involves studying the methods used in tracking and the theories or principles behind them, in order to develop an approach that matches proposed model objectives. It comprises the both hardware and software components required to the model.

Extracting the current location of the women using GPS module and the extracted location is sent to concerned parents or authority using GSM module
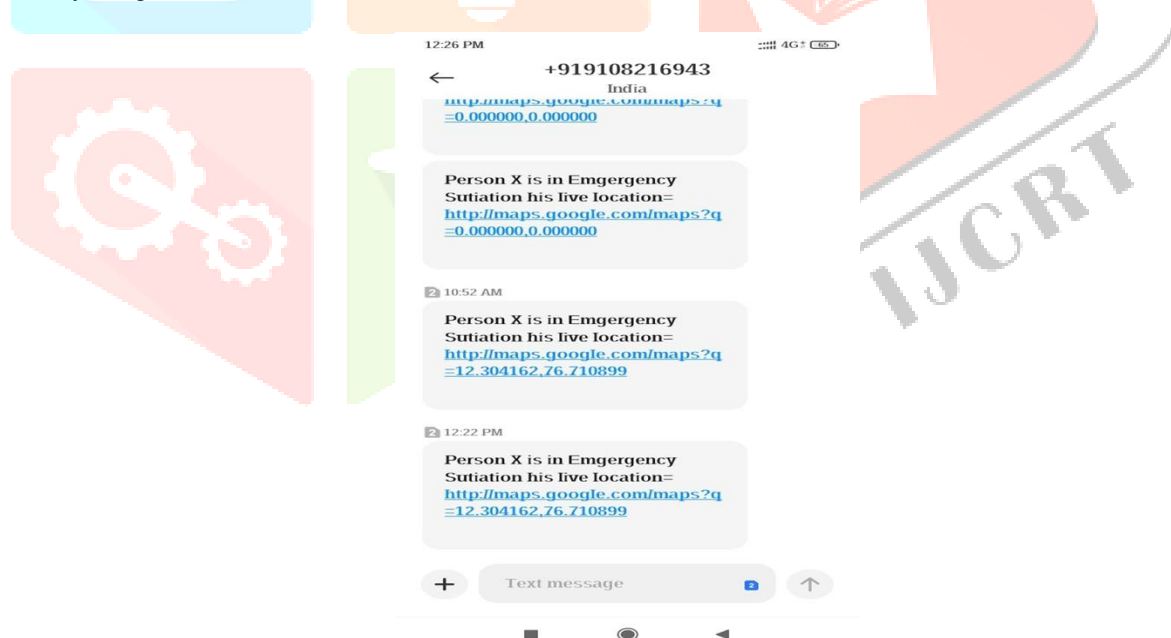

Figure.2: Live location SMS of person X which is delivered to concerned Authority.

Person X is in emergency situation. On pressing the live location map, the current live location can be traced.
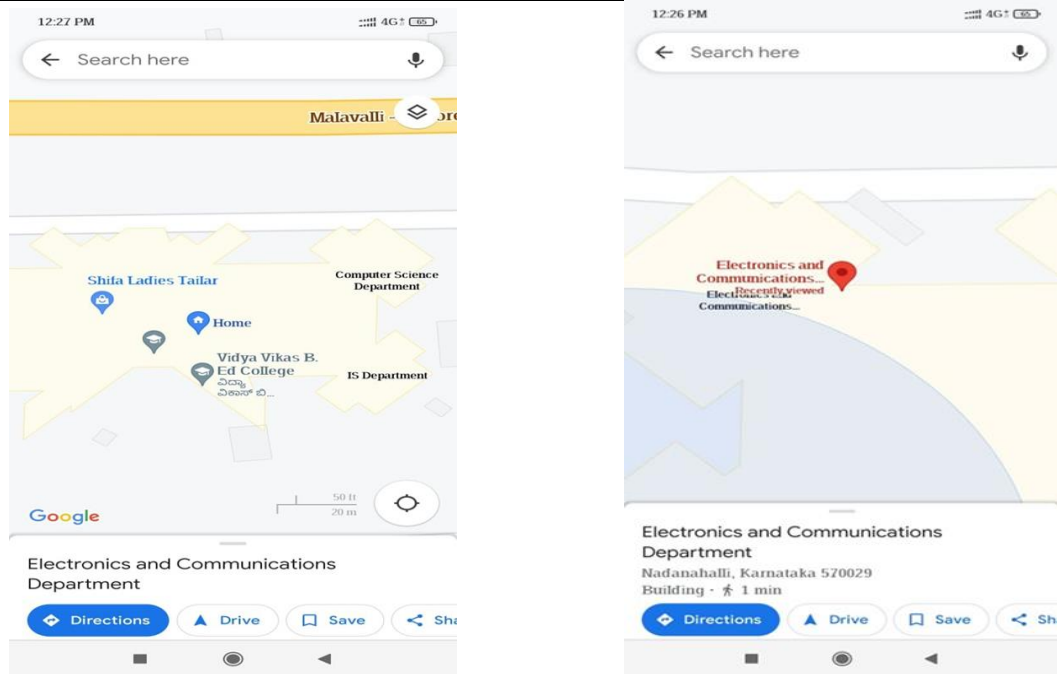
Figure.3: Traced Live location of person X.

VII. CONCLUSION

Our project focuses on improving women safety and also helps in self-defence. On successful implementation of our project, help can arrive quickly to the women in danger thereby reducing threat. Using defence mechanism, we enable women to tackle threat until the help arrives. Hence our motive of providing safety and defence edge to the women will be accomplished with the help of technology and contribute to major society problem faced by women.

VIII. REFERENCE

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