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Women's Safety jacket With GPS Tracking and Electric Shock

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Abstract – Women's 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's 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. It is useful because once an incident occurs with a woman she may or may not get the chance to press the emergency button. In a button press alerting system, in case a woman is hit on the head from behind, she may never get the chance to press panic button and no one will know she is in trouble.

Key Words: Arduino, Panic Switch, GPS, GSM module, battery, Stun gun.

1. 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 jacket (similar to a blazer for women). It is an easy to carry device with more features and functions. 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 pre-defined numbers. This model is also useful for small children's, elderly aged people also. The main purpose of our project is to provide safety to the women's from the dangerous zone. In this project we are providing facility to secure the women's by providing this kit. As the women feels insecure at that time she can press the button .GPS will calculate the latitude and longitude co- ordinates of that area. The controllers read this value and send those data to the pre-defined number which is already saved in program.
The device uses wireless sensor network to speak and to send alerts to them. The GPS and GSM are accustomed share the accustomed share the user's location on to the relevant authorities and saved contacts. The switch within the device work for sending manual alerts just in case of emergency and as panic switch to urge the shock, then the Buzzer also will activate along laser diode. The alert mechanism is triggered through one amongst the above mechanisms during a hazardous event. When the alert mechanism is triggered, GPS and GSM are accustomed send the message containing the placement of the victim to relatives and officials. the placement is shipped as a Google Maps link for straightforward access. The system architecture of the alert mechanism is shown in Fig. 1. The situation coordinates are received from the GPS module whenever the alert mechanism is triggered. The GPS gets the situation coordinates from the satellite. As these coordinates are difficult to interpret, the situation coordinates is converted into a Google maps link for simple access. After the coordinates being received a Google link is created which contains the victim's location. This link is distributed to the registered numbers with the assistance of GSM.

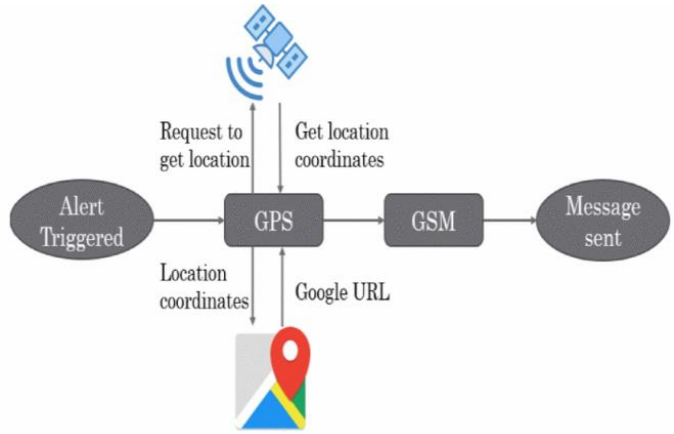

Fig.1: System architecture

2. LITERATURE SURVEY

In this paper an ARM controller and Android application are used in which both the device and the smartphone are synchronized using Bluetooth, hence both can be triggered independently. It can record audio for further investigation and can give an alert call and message to the pre-set contacts with the instant location every 2 minutes and can be tracked live using the application. A hidden camera detector is also a distinct feature used that ensures privacy. [1]

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 them, she can just press the button and the location information is sent as an SMS alert to a few pre-defined numbers in terms of latitude and longitude. The controller used is ATMEGA328P. It is interfaced with a push button, a GPS module, a GSM modem, and an LCD Display (16×2). If the switch is pressed, the controllers take the current location information from the GPS module and send those data to the

predefined no. using a GSM modem. The program is developed in the 'C' language. The purpose of this project is to feel safe for the women. [2]

The crimes against women have been rising significantly and often hear about molestation, eve-teasing, and rape cases in public places of society. The security of women is the most important concern these days and building a safety device to act as a rescue and to prevent harm at the time of hazard is highly necessary, especially for women. In this paper, a smart device for women's safety that automates the emergency alert system by using a pressure sensor, pulse-rate sensor, and temperature sensor to detect a possible atrocity automatically using outlier detection is proposed. This system detects and sends alerts for the dear ones with the location coordinates of the women without the requirement of her interaction in critical times. It sends an emergency message automatically to the relatives and nearby police station.[3]

3. PROPOSED SYSTEM

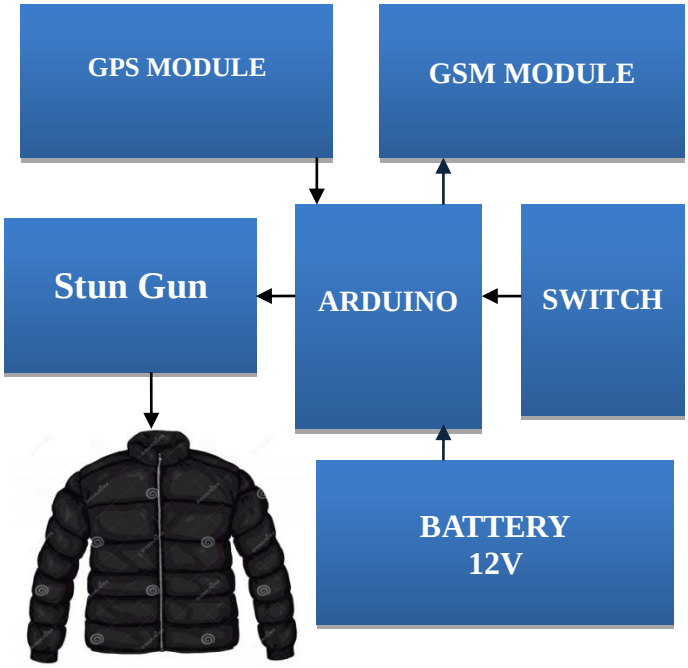

Fig.2: System Block Diagram

This project ensures the safety of women. It helps to identify and msg on resources to help one out of dangerous situations. These reduce risk and bring assistance when we are in danger helping us to send the location to the contacts. The using person can use this service by adding the emergency contacts using the emergency contacts icon in the app. When the person is emergency the user would have to press the panic switch on his/her handset, after that a distress signal(SOS) will automatically get generated from the user end and will send SMS messages to those contacts which are saved in the phone at the time of registration. The SMS message and live location contain that they are in danger and the exact location of the victim. This device has different features and acts as a very powerful alarm that works 24 hours to keep you safe. We will be very helpful in such a situation where we have taken help of this device, but if in case you come across such situation we have to press on the red button of the device will inform our parents and friends about your location as well as a text that will make them aware that you might need some help on urgent basis, finally, they can give some feedback for the device by pressing "send feedback" button. They are about the size of a flashlight, and they work on ordinary 9-volt batteries. The batteries supply electricity to a circuit consisting of various electrical components. The circuitry includes multiple transformers, components that boost the voltage in the circuit, typically to between 20,000 and 150,000 volts, and reduce the amperage.

APPLICATIONS:

- It will be used for safety of women's.
- It will be used for child tracking during school time.
- It will be used in vehicle tracking & safety system.
- It will be used for safety of elderly aged people.

4. TECHNICAL SPECIFICATION

1. Arduino Uno

Fig.3: Arduino Uno

Arduino Uno could be a microcontroller board supported the ATmega328P. it's 14 digital input/output pins (of which 6 is used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator (CSTCE16M0V53-R0), a USB connection, an influence jack, an ICSP header, and a push. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with an AC-to-DC adapter or battery to induce started. You'll be able to tinker together with your Uno without fear an excessive amount of about doing something wrong.

2. GSM Module

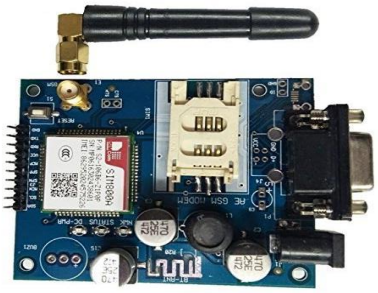

Fig.4: GSM Module

A customized Global System for Mobile communication (GSM) module is meant for wireless radiation monitoring through Short Messaging Service (SMS). This module is in a position to receive serial data from radiation monitoring

devices like survey meter or area monitor and transmit the info as text SMS to a number server.

3. GPS Module

Fig.5: GPS Module

It stands for Global Positioning System, which provides this date, time, longitude, latitude, altitude, speed, and travel direction / heading among and other data of any device. It may be interfaced with normal 5V microcontrollers with the assistance of the inbuilt 3V-5V converter unit. It consists of 4 Pins 5V, TX, RX, and GND. This standalone 5V GPS Module doesn't require external components. It consists of an interior RTC keep a copy battery and may be directly connected to the USART of the microcontroller.

4. Stun Gun

Fig.6: Stun Gun

Conventional stun guns have a reasonably simple design. they're about the scale of a flashlight, and that they work on ordinary 9-volt batteries. The batteries supply electricity to a circuit consisting of varied electrical components. The circuitry includes multiple transformers, components that boost the voltage within the circuit, typically to between 20,000 and 150,000 volts, and reduce the amperage. It also includes an oscillator, a component that fluctuates current to provide a specific pulse pattern of electricity.

5. Buzzer

The buzzers are used for alarms/warnings or as sound indicators. They are used in alarm devices (like alarm clocks, fire alarms, intruder alarms, etc.), timers, input devices (like mouse and keyboards), electronic metronomes, annunciator panels, and many consumer electronic appliances. It operates on 5V.

Fig.7: Buzzer

6. Switche

Fig.8: Switch

A switch is a device used to make or break a connection in a circuit so you can turn power on and off to something.

5. SYSTEM DESIGN

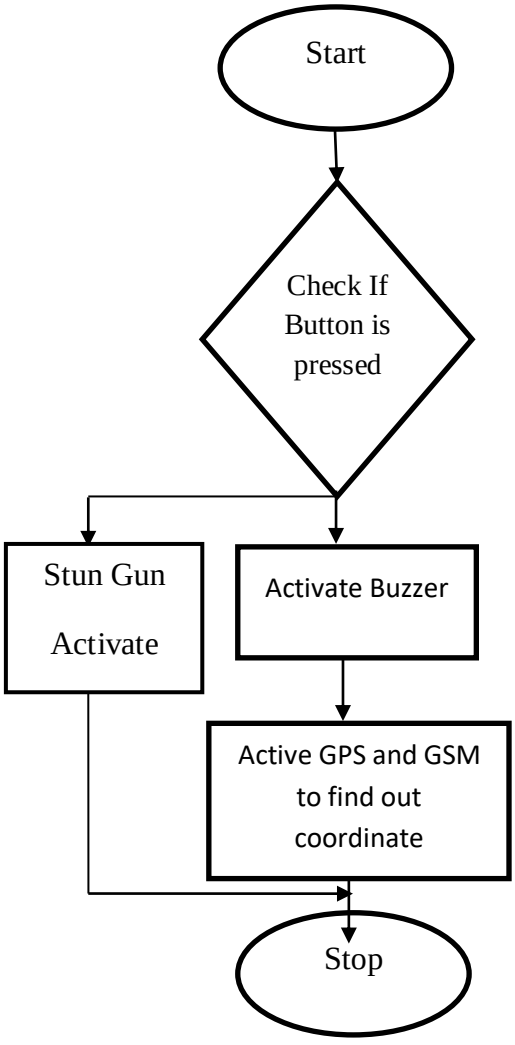

Fig.9: Flow chart

The process flow occurs when the ladies are in an exceedingly situation to retort. It contains a button which will be pressed by the girl when she feels unsafe. When the button is pressed, the buzzer is activated to create a noise to alert the people around who can help her. Then the alert mechanism is triggered. The alert mechanism is triggered through one in all the above mechanisms during a hazardous event. When the alert mechanism is triggered, GPS and GSM are wont to send the message containing the situation of the victim to relatives and officials. The situation is distributed as a Google Maps link for simple access.

6. RESULTS

The main purpose of our project is to supply security to women from dangerous situations. This device consists of a key or button which might be pressed by the girl when she is in need or when she feels insecure. Because the switch is pressed by the lady the microcontroller gets the command and it takes the latitude and longitude value of the victim with the assistance of the GPS module. The microcontroller put on the buzzer present within the device so nearby people may notice the critical condition and should come to the rescue. And microcontroller sends the SMS of this location and pulse reading to the registered mobile number of the loved one and police with the assistance of the GSM module. The GSM sends the present location and other data every 10sec in order that if the victim is changing its current location continuously, that may be easily traced by police. And this GSM module also calls the loved one and the station house.

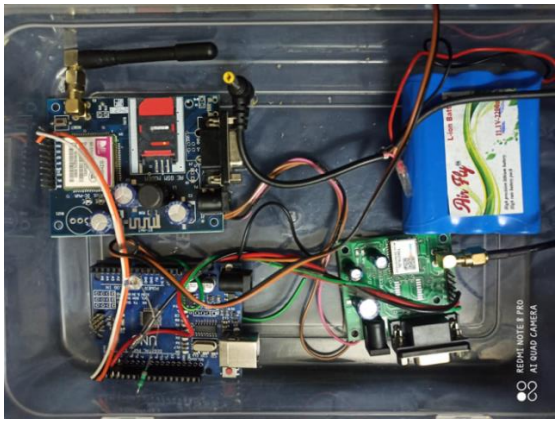

Fig.10: Proposed model

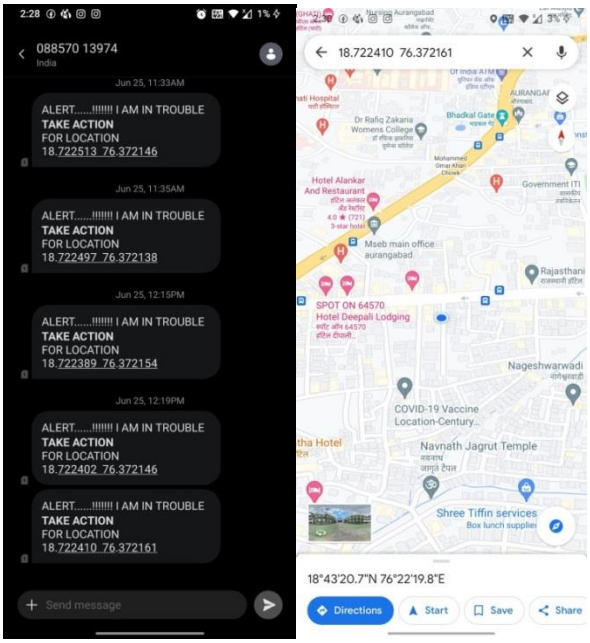

Fig.12: Massage and Coordinates

Coordinates, during this context, are points of intersection in an exceedingly grid system. GPS (global positioning system) coordinates are usually expressed because the combination of latitude and longitude. Latitude could be a measure of degrees of distance from the equator, which is 0 degrees. The north and south poles are at 90 degrees in either direction. The meridian is 0 degrees longitude and also the locations are measured per 90 degrees east or west from that time.

7. CONCLUSIONS

Our effort behind this project is to design and fabricate a gadget that is so compact in itself that it provides the advantage of a personal security system and an emergency response system that is helpful for women in incidents of crime. It is a low-cost system that can store the members' data in a particular locality and provide an immediate alert in case of crime against women. This provides women security.

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