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Women Safety Device Using Arduino

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ABSTRACT: In today's world women safety is the most important issue in our country. Today we hear women being harassed and troubled and we are not able to help when urgent help is needed. There is a growth in crimes related to women harassment and the main reason that a woman is being a victim is lack of public security and inability of a woman to defend herself. In order to train herself, she must train through various self-defence courses, which is not possible for every woman.

This paper deals with how to develop and implement a prototype of a device that will increase safety of women by sending help SMS when in need. This system has Arduino which is pre-programmed, GPS Receiver and GSM Modem. GPS Receiver gets the location information from satellites in the form of latitude and longitude. This Arduino processes the information and this information is sent to user using GSMmodem. GSM modem sends an SMS to the predefined mobile number. When a woman is in danger and in need of self-defence then she can press the switch, which is allotted to her. By pressing the switch, the entire system will be activated then emergency messages will be sent using GSM and GPS, to authorized contacts and the police control room

KEYWORDS:GPS, GSM, Modem.

I. INTRODUCTION

At the present scenario women are competing with men in every prospect of society. Women contribute fifty percent to the development of our nation. But the women have fear of getting harassed and killed. All these types of women harassment cases are increasing day by day. So, it is very important to ensure the safety of women. 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 in times of distress.

The purpose of this paper is to design an easy and portable device for women safety. Here we are mainly focusing on designing a prototype in which the device can be easily carried around. Women security is a major issue of concern in today's world. Women are subjected to unethical physical harassment. Women safety methods such as various mobile apps have been tried and implemented, but the need of the time is that they need is a device that can be carried everywhere easily. The main focus is to provide safety to the women from the dangerous zone. In this paper we are providing facility to secure the women's by providing this kit. As the women feel insecure at that time, she can press the button. GSM will be activated and sends the messages to the predefined number which is already saved in program, such as control room and they can track the device immediately as there is GPS connected to it, we can monitor the location even when there is any change of location easily.

II. METHODOLOGY

In this system there are components like GSM, GPS, just by pressing a panic button in the device by a Girl/ Woman who is in danger or really needs help will be sent a message to their parent and control room immediately via cloud server with the help of GSM module. GPS Receiver gets the location information from satellites in the form of latitude and longitude. This GPS will help in tracking the location of a girl/woman who is in unsecure place. This system will easily help a woman out to escape from this dangerous situation as it smartly sends messages to the police control room and an immediate action is taken. Even other authorized persons can also take action faster if they are near the spot.

Global system for mobile communication (GSM) is a globally accepted standard for digital Cellular communication. GSM is the name of a standardization group established in 1982 to create a common European mobile telephone standard that would formulate specifications for a pan European mobile cellular radio system operating at 900MHz.



Global Positioning System (GPS) is a navigation system based on satellite. It has created revolution in navigation and position location. It is mainly used in positioning, navigation, monitoring and surveying applications.

The **Arduino Uno** is an open-source microcontroller based on the microchip ATmega328P microcontroller and developed by Arduino.cc. The board is equipped with sets of digital and analog input/output (I/O) pins that may be interfaced to various expansion boards (shields) and other circuits. The board has 14 digital I/O pins (six capable of PWM output), 6 analog I/O pins, and is programmable with the Arduino IDE (Integrated Development Environment), via a type B USB cable. It can be powered by the USB cable or by an external 9-volt battery, though it accepts voltages between 7 and 20 volts.

LCD stands for Liquid Crystal Display. LCD is finding wide spread use replacing LEDs(seven segment LED sor other multisegment LEDs) because of the following reasons: a. The declining prices of LCDs. b. The ability to display numbers, characters and graphics. This is in contrast to LEDs, which are limited to numbers and a few characters. c. Incorporation of a refreshing controller into the LCD, thereby relieving the CPU of the task of refreshing the LCD. In contrast, the LED must be refreshed by the CPU to keep displaying the data. d. Ease of programming for characters and graphics.

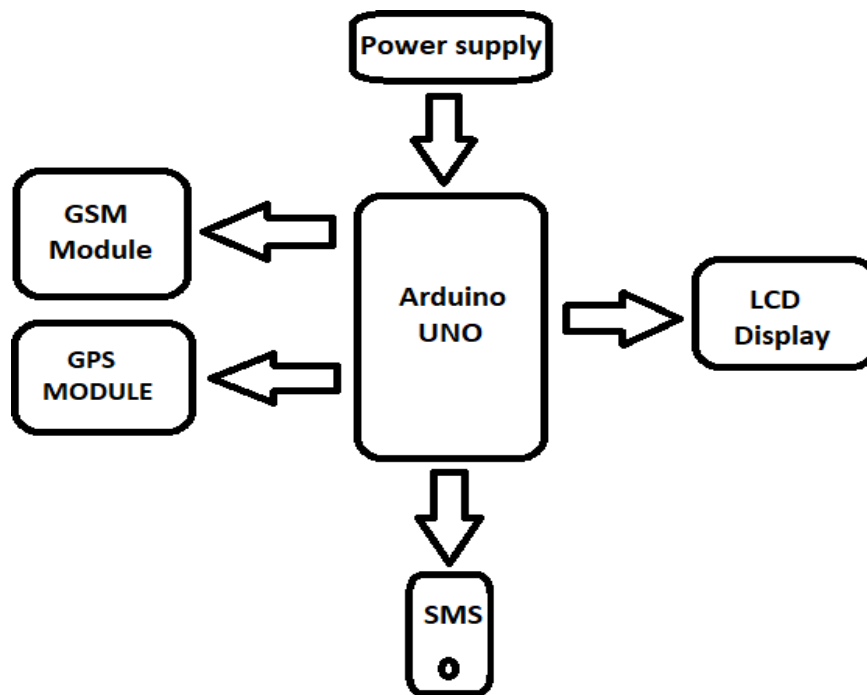


FIG 1: BLOCK DIAGRAM

III. EXPERIMENTAL RESULTS

Figure 1 shows the experimental setup of our system which has components such as Arduinouno, GSM Module, Push button and the figure 2 shows result of the system and figure 3 shows the LCD display as message sent and figure 4 shows the text message in mobile with GPS location.

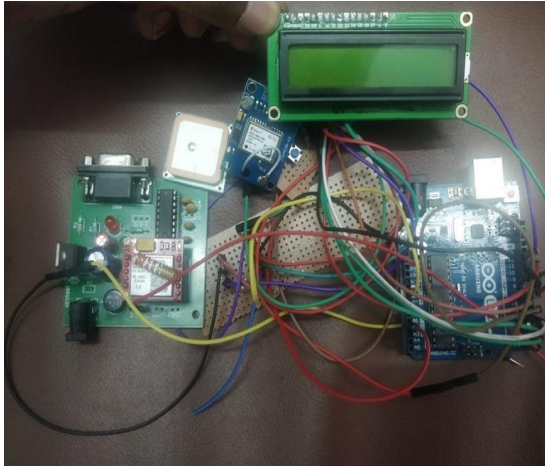


FIG 1: Experimental setup



FIG 2: When panic button pressed



FIG 3: LCD output after sending message

I want Help !!!Location:20.31 85.87

FIG 4: Message sent to mobile along with location.

IV. CONCLUSION

Our effort behind this Paper is to design and fabricate a gadget which is so compact in itself that provide an advantage of personal security system which is helpful for women in case any emergency needs or any other unavoidable situations. It is low-cost system which can store the data of the members in particular locality and provide immediate alert in case of any crime against women, this provides Women Security. Being safe and secure is the demand of the day.

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