GPS based Women Security System using ESP32

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Abstract **- Today in the current global scenario, women are facing many problems like women harassment. This paper covers descriptive details about the design and implementation of "GPS BASED WOMEN SECURITY USING ESP32". The device consists of a ESP32 Microcontroller, GPS module (Neo-6M), Buzzer and MEMS Sensor. In this project, when a Woman senses danger if the button is pressed then device is activated, it tracks the current location using GPS (Global Positioning System) and sends emergency message to the registered mobile number and nearby police station. IoT module is used to track the location continuously and update into the webpage. Neuro will produce non-lethal electric shock in emergency situations to detect the attacker, And we have also included image capturing feature is included. buzzer is used as an alarm to alert the nearby people so that they may understand that someone is in need and If suddenly fall down then MEMS sensor will send the last location in case if the device gets defected. The main advantage of this project is that this device can be carried everywhere since it is small.**

Index Terms-IoT technology, GPS, ESP32

I. INTRODUCTION

In Today's World the safety of women is in danger especially in India. The rate of crimes against women is not decreasing but in fact increasing at an alarming rate especially harassment, molestation, eve-teasing, kidnapping and domestic violence. Many preventive measures have been taken by the government to stop these misbehaving activities but still has not affected the growing rate of these crimes and has remained unaffected. The problem of sexual harassment in work place is increasingly coming out day-by-day. Majority of such cases are happened to woman by men working at high position in an organization. Women is getting kidnapped at every 44 minutes, raped at every 47 minutes, 17 dowry deaths every day. The fear of harassment against women is not only the condition at outside but it may also happen at homes, Students face incidents like child trafficking and kidnapping, when they are waiting to embark or disembark a school bus. Loaded with security apps for women, your smart phone can help you send emergency alerts to chosen people and also let people know about your whereabouts if anything goes wrong. Nowadays though there are many apps and devices evolved for women safety via smart phone which can be activated only by a touch or one click or shake the mobile.

II. LITERATURE SURVEY

Shaista Khanam, Trupti Shah [1] proposed algorithm for women safety using fingerprint module. This paper gives a detailed approach towards women safety. Here fingerprint is required for activation of device, electric shock producing circuit, GSM and GPS module for alerting and location tracking. At the time of emergency, it is hard to place the finger in the fingerprint module and recognition is not possible, if there is any undesired stuff (wet or dust) in the finger. To avoid this problem the fingerprint module will not be used in the proposed system. Naeemul Islam, Md. Anisuzzaman, Sikder Sunbeam Islam, Mohammed Rabiul Hossain, Abuja far Mohammad Obaidullah [2] developed a device for safety and protection of women. Here three push buttons are implemented to define the types of accident victim is facing. To control a whole system a PIC16F887A microcontroller is used. Since it is a 40 pin IC, it increases the size of the device, which will make it difficult for

women/children to carry all the time. Pavithra, S. Karthikeyan [3] developed a survey on women's safety mobile application. This application helps women to discover and help them in any critical situations. It helps findsout the exact area of the individual and send SMS to the parents.

III. METHODOLOGY

This work develop a women's safety system which providesthe current location details of the women in danger using GPS module. IoT module will track the current location of the victim and update in the webpage. In addition to location tracking it also provides some safety and security to women like giving electric shock to the attacker. The proposed system of this project is shown in Fig.1.

Workflow of the proposed System

The workflow of the women safety and security is explained in this section. The flow chart of the proposed system is illustrated in Fig.4.2.1.

Step 1: Start.

Step 2: Switch ON the 12 Volt power supply.

Step 3: Emergency button is pressed.

Step 4: If GPS receives signal, GPS will start calculating the current latitude and longitude values of the victim and send it as SMS to the registered mobile number.

Step 5: If any vibration or fall down then detected by MEMS sensor, get the last location from GPS and send to Parents.

Step 6: IoT module tracks the last location of the victim and that location is updated in the Webpage.

Step 7: Neuro stimulator is turned ON, to apply shock to the attacker.

Step 8: Buzzer is turned ON to alert the people in the surrounding.

Step 9: Stop

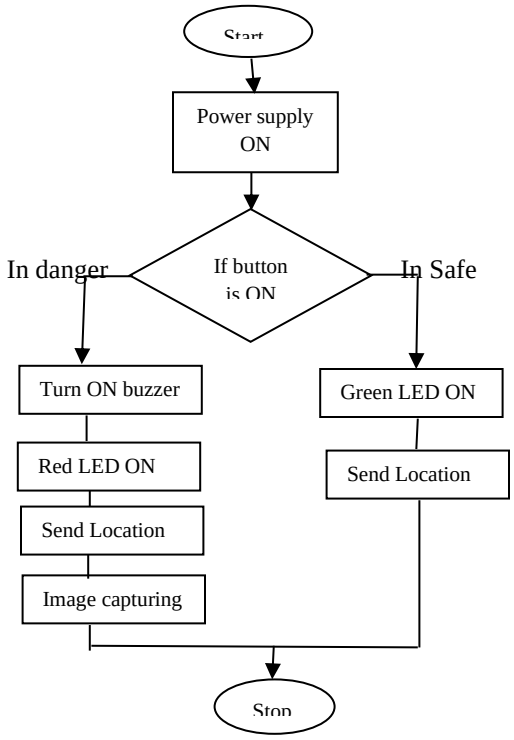

Figure1 Flow chart

IV. BLOCK DIAGRAM

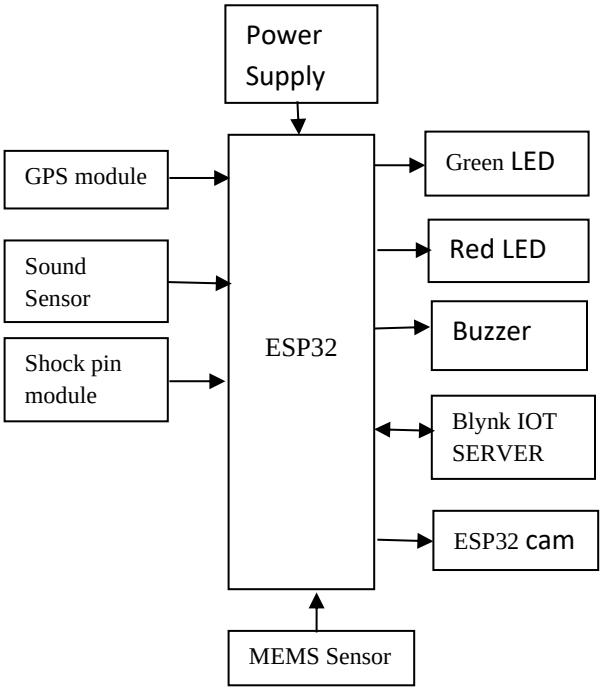

Figure2 Block Diagram

V. RESULT

When the red led is on, then we have to conclude that the person or children eitherwomen in danger. Otherwise when green led is on, the person is in safe location. When the people is in danger situation the buzzer will turned on and GPS shows the location of the child. And also provide electric shock in emergency situations to detect the attacker. And we have also included image capturing feature.

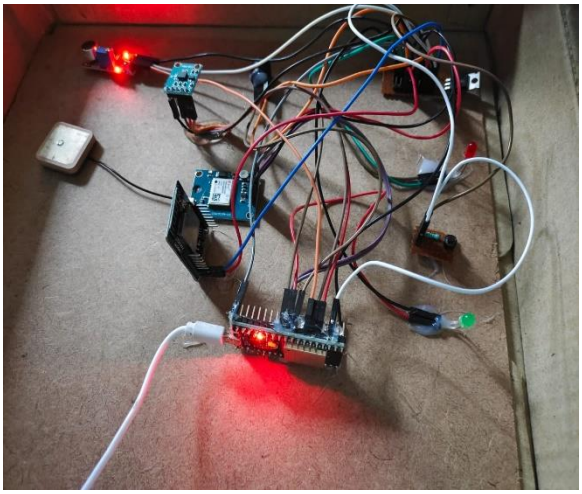

Figure3 : output

VI. CONCLUSION

Smart and intelligent GPS based automatic tracking and alert system can beeffective in the field protecting disabled, children, women etc., by using automatic calling system, this tracking system provides help by increasing the chances of tracking the victim. The device can track any objects and provides the exact locationon remote area. Tracking system also act as security device. This system can overcome the fear that scares every women in the country about her safety and security. In order to provide security andto ensure their safety a system has been proposed in this paper. Using these technologies, a self defence device is proposed in this paper by adding new feature thereby making it more secure. This paper describes the basic design concept and functionality along with the expected outcomes.

VII. FUTURE SCOPE

The most well known system that can manifest our personal and business life and make it easier is the Smart and Intelligent GSM and GPS based Automatic Tracking and Alert System. As it is apparent from the term, this is a system with which one can track or monitor the location of an object instantly. The technologies containing the emergency calling system for alert the user, radio frequency medium and globalpositioning system (GPS) system and GPS is more effective and accurate. A face detection system can be introduced with the tracking system. At the bus station this type of system can be installed by which detect the information of the object using internet.

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