Women Safety Device With Tracking and Alert

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Abstract: The project presents a wearable safety device for women using the Arduino. The purpose of this device is to safeguard women in the event they might face any danger. The proposed system of the project is to share the user's location directly to the relevant authorities. The switch in the device work for sending manual alerts in case of emergency. At any emergency situation people get panicked and in that situation, they may not be able to operate their Smartphone applications, and cannot immediately defend the attacker and protect themselves. To improve the women safety by using NodeMCU by identifies the location of the individual and tracking for every hour. The proposed women's safety equipment aims to provide complete protection for women in today's environment.

Keywords: NodeMCU, Arduino

I. INTRODUCTION

In today's world, women safety has become a major issue as they can't step out of their house at any given time due to physical/sexual abuse and a fear of violence. Even in the 21st century where the technology is rapidly growing and new gadgets were developed but still women and girls are facing problems. Even today in India, women cannot move at night in many places and even at day time crowded places hundreds and thousands of incidents of physical/sexual abuse happens to women every day. Among other crimes, rape is the fastest growing crime in the country today. The device descried here is a self defence system specially designed for women in distress to help them to protect themselves. This device can be fitted in a purse, belt or fitted to the girl's sandals and the panic button attached to the belt.

The lady in danger can activate the system by pressing emergency button on belt or tilting her sandal. It is a simple and easy to carry device with wide range of features and functionality. The basic approach is to intimate instant location and a distress message to the cops and registered number like parents, friends, media, and women cell etc. so that unfortunate incidents would be averted and to provide real time evidence for swift action against the perpetrators of crime against women. The block diagram of the conceptual system is shown in below figure. The microcontroller acts as an embedded computing system and controls the activities of all the subsystems.

It is interfaced with Emergency Switch, Analog to Digital Converter (ADC), 3-Axis MEMS Accelerometer, Pressure Sensor, Body Temperature Sensor, GPS Receiver, GSM MODEM, Speech Circuit, High Voltage Shock Circuit. The microcontroller periodically monitors the status of all sensors and also keeps on checking for any incoming SMS message from the parents or any care takers. It checks for any abnormal values of body tilt, body temperature and pressure from the MEMS Accelerometer, Temperature Sensor and Pressure sensors respectively, through the ADC. If all parameters are normal and if the Emergency Switch is not pressed, it goes back in the loop and continues regular monitoring process.

II. RELATED WORK

GPS stands for Global Positioning System and it is used to find out location, altitude, speed, date and time in UTC. In this project we are going to **interface a GPS module with NodeMCU**. A simple **local web server** is created using NodeMCU and the location details are updated in that server webpage. Specialty of this IoT based project is we can **check the location in Google Maps** by clicking on the link provided in the web page. You can also open this webpage and check the location from anywhere by activate port forwarding in your modem/router.

III. METHODOLOGY

A number of sensors can be used in this system such as detecting the location of a person via the GPS and GSM are integrated with the device used to send an alert and buzzer notification to the emergency contacts.

IV.   EXPERIMENTAL RESULTS

Staring at women and passing comments can be certain types of violence and harassments and these practices, which are unacceptable, are usually normal especially on the part of urban life. Many researches that have been conducted in India shows that women have reported sexual harassment and other practices as stated above. Such studies have also shown that in popular metropolitan cities like Delhi, Pune, Chennai and Mumbai, most women feel they are unsafe when surrounded by unknown people. On social media, people can freely express what they feel about the Indian politics, society and many other thoughts. Similarly, women can also share their experiences if they have faced any violence or sexual harassment and this brings innocent people together in order to stand up against such incidents. From the analysis of tweets text collection obtained by the twitter, it includes names of people who has harassed the women and also names of women or innocent people who have stood against such violent acts or unethical behaviour of men and thus making them uncomfortable to walk freely in public.

V.   CONCLUSION

This upgraded version of the criminal detecting system not only provides a huge convenience to the Police in the identification of criminals but also saves time for them as processes are automated in the system. The novelty of this Research Paper is face detection done by using Face Encodings.

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