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WEARABLE GADGET FOR WOMAN' S SAFETY

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***Abstract*-- This project designs a security application using a gadget to trigger it. The button on the gadget when pressed makes the application perform functions like sending notifications of danger via SMS and G-mail to the registered contacts. The alert message to be sent can be customized every time. The message sent to the contacts contains the location of the victim which updated every time you move. The other people will be redirected to the Google maps automatically and hence they can track the victim. In addition to the other safety apps, people who have registered on our application when come in the zone of victim will be notified irrespective of the fact that he/she lives anywhere else. This app tries to ensure safety at its best.**

***Keywords*—alert message, location coordinates, registered contacts, server, nearby contacts**

1. INTRODUCTION

Introducing to the population of India, women' s security has become a high alert issue. Every day or the other we hear about thefts, rapes, molestation, killing, kidnapping of people in which the ratio of death and assault of women is much higher than men. Even though the strict laws and punishments have been introduced by the government of India still these crimes are occurring. After all at the end it comes to our-selves only for our own security. Though many gadgets have been introduced and also many telephone helpline services are brought into use still some issues occur. Sometimes situations are as such that we are unable to inform someone about the danger. There should be some solution to such problems where without using our mobile phones we are able to contact someone about the danger.

We in our project introduce you to a very simple gadget which makes the mobile application work on its own without taking the mobile out. This device can be commonly used by everyone and every day. It could be used by people of any gender whether male or female as it is for security purpose. The gadget is been automated to a very different level due to its easy operation. Depending on the situations gadget activates the system and does its task.

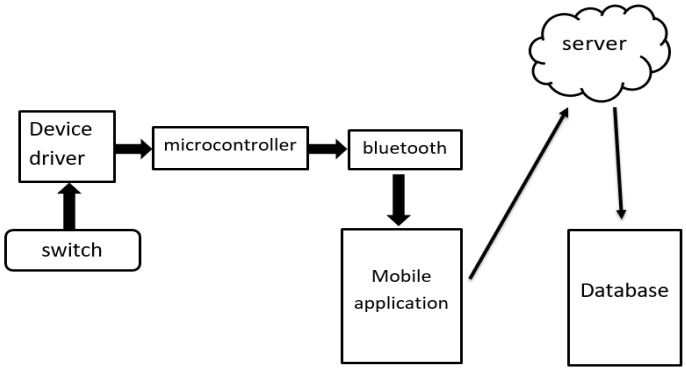

Figure 1.Block diagram

2. COMPONENTS

2.1. BLUETOOTH MODULE – We have used HC-05 module of Bluetooth. This module is used to connect the gadget to the application installed in the mobile phone. This is required to maintain the wireless connectivity in the system. The Bluetooth module is installed in the gadget only to connect the gadget to mobile' s Bluetooth.

2.2. MICROCONTROLLER – Atmega 32 is an 8-bit high performance microcontroller of Atmel' s Mega AVR' s family. Atmega 32 is based on enhanced RISC (Reduced instruction set computing). Architecture with 131 powerful instructions. Most of the instructions execute in one machine cycle. Atmega32 can work on a maximum frequency of 16MHz.

2.3. SWITCH -In the project we have used two switches; one switch is used to trigger the system to send the alert. The second one is used as a reset button. The reset button will make the system to go in the default settings.

2.4. POWER SUPPLY - Power supply is the first and the most important part of our project. For our project we require 5V supply, regulated power supply with maximum current rating 500Ma.The basic building blocks of the power supply are transformer, rectifier, filter, 7805 voltage regulator. Step down transformer used to step down the mains 230V to +5V AC supply. Rectifier unit is a circuit which converts A.C. into pulsating D.C. Generally semi-conducting diode is used as rectifying element. The output of rectifier has pulsating character (AC component) such, components are undesirable and must be kept away from the load. To do so a filter circuit is used which removes (or filters out) the A.C. components reaching the load. Obviously a filter circuit is installed between rectifier and voltage regulator. And then voltage regulator circuit is used, that supplies constant voltage to the kit regardless of change in load current. IC voltage regulators are versatile and relatively cheaper. The Bluetooth requires a supply of +3.3V. This done by using a voltage divider circuit at the receiving pin of HC-05.

3. RESEARCH METHODOLOGY

3.1 EXISTING TECHNOLOGY – Many helpline services and devices have been introduced in the recent years. Many applications are available which can be used to notify other people when you are in danger. Buddy cop system has been introduced for people in the IT sectors especially women. It is a Whatsapp group created by IPS Officer Rashmi Shukla, in which all the members of a particular IT sector including police personnel are present. Whenever any of the group members who face any sought of problem can seek the help of that police personnel. Also many companies have introduced special types of wrist watches for women which contain an emergency button to alert, call or notify our parents and friends.

3.2 NEED FOR A GADGET BASED APPLICATION – Taking into consideration the increase in the security issues of the women nowadays, the existing laws and helpline services aren' t enough for a woman' s safety. Either these safety gadgets are purely hardware or only software based applications. Sometimes it may happen that a victim is unable to use her mobile phone or her gadget to inform someone. This became one of the most important need of our project to make it different and more helpful than others. Keeping this in mind we in or project have developed a very simple and an integrated gadget which can be placed anywhere like on the outer surface of bag, shoes, collar of the shirt etc. And this button is connected to the software application present in your mobile phone. This simplifies the use of gadget and the application making it easy to use and alert any of the nearby person when in danger.

3.3. PROPOSED SYSTEM – In this project we have interfaced a hardware circuit with software application on mobile phone. The circuit is connected to the software application via Bluetooth HC-05. To use the application, user should first sign up on the application. Then the user has to specify the contact details. Once the registration is done, the application is ready to use in any danger or emergency. Then we set a message template containing the danger message you want to display. Whenever an emergency is faced the victim should just press the button on the gadget. And the application starts functioning automatically. Text message and e-mail is sent to the emergency contacts and nearby user containing the message template and the present location co-ordinates of the victim. The nearby user continuously notified when the victim changes its position. The URL link sent contains GPS co-ordinates of the victim which when opened directs to the Google maps. From there the person can be tracked.

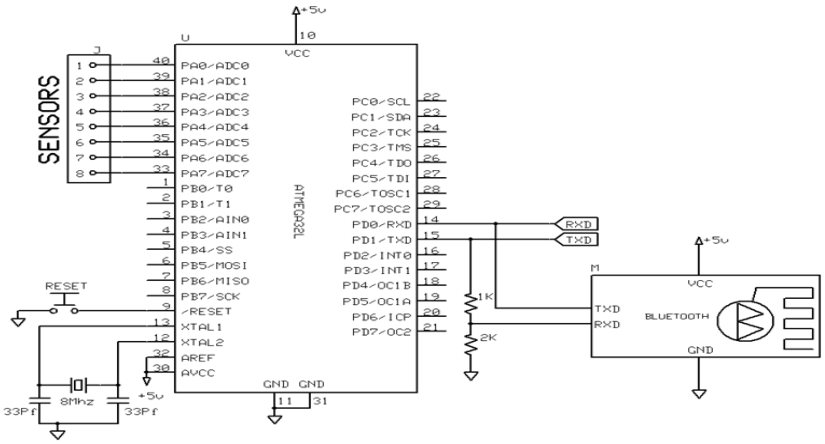

Fig:1.1 Circuit diagram

4. RESULTS

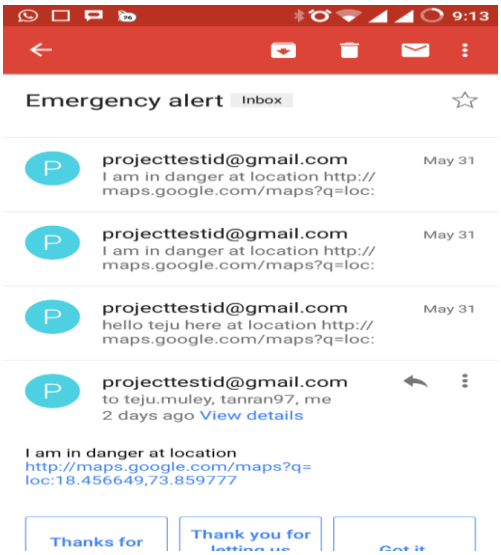

Fig:1.1 Screenshot of the message sent on e-mail

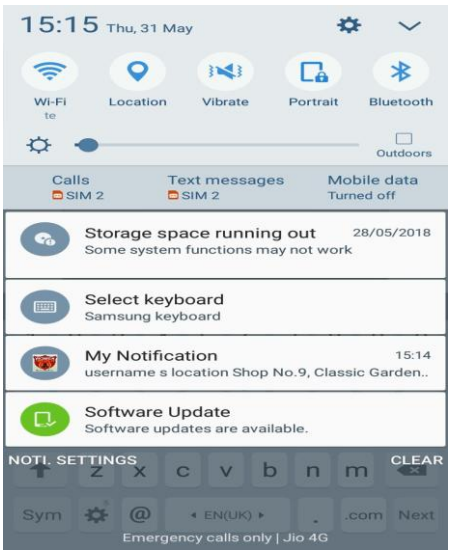

Fig:1.2 Notification sent to the nearby contact

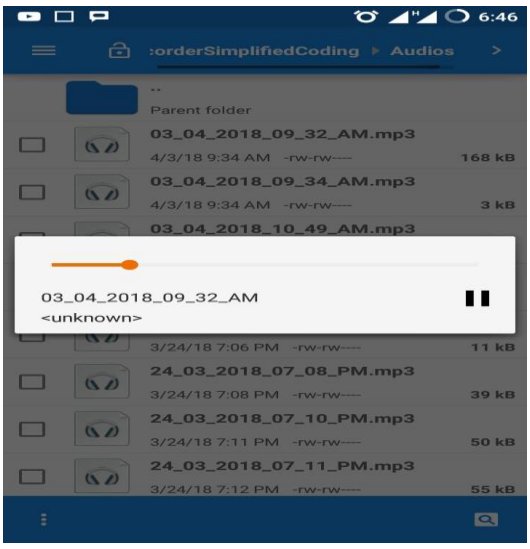

Fig:1.3 audio recording saved successfully

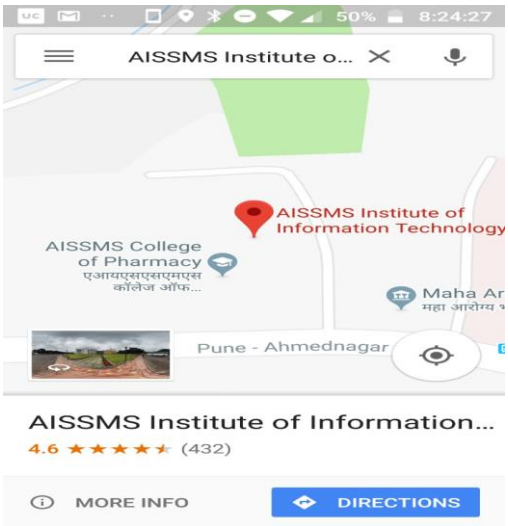

Fig:1.4 User directed to Google maps

Fig:1.5 Testing of the project

5. CONCLUSIONS

Observing the scenario of India today regarding the safety of woman, we can see that it is not at safe for women to go anywhere alone and also it is not always possible to be with someone. So, using this device we can say that women can feel secure whenever they are travelling alone as there can be someone or the other who can help her when she is in danger.

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4. IEEE paper on **USING WEARABLE TECHNOLOGY TO ANSWER WOMEN' S SAFETY** by **Tumen Poddar, Ritesh, Nagaraja Bharat,** Department of Telecommunication Engineering , CMR Institute of Technology (India).
5. .Mobile Applications like VwithU app, Buddy Cop, SOS etc.