



Android Low Energy Device Based Security System for Secure India

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Abstract

Personal safety is the major concern for everyone in today's world. Women feel insecure due to crimes that happen in our world. Nowadays various devices and app are available but it doesn't seem to protect them. In case of any attacks from any victims, people's needs a protective device which acts like a protector at the time of attack. This fuels an innovative idea of a Bluetooth aided safety band for a woman who meets the attacks or threats. This research paper focus on creating wearable band device which is connected with smart phone via Bluetooth. In case of any emergency period, the smartphone of the client sends a alert message to predefined numbers with exact location of the device. The main advantage of this band has more reliability, convenience and easy operations between those devices.

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1. Introduction

In today's world women are facing many problem and they can't step out of their house because they is no safety for women. Even in this century many new device have been developed but still many crimes and incidents are happening. This device seems to be compact and small in size and carried everywhere or placed in body. It has the ability to help women from the stranger and it protects them. It has a press button that is used to inform the relatives and police station. Sustainable and viable economic growth now and in the future. Education takes place in a school environment, with classrooms of multiple students learning together with a trained teacher. It appears in the form of pre-school, primary, secondary, tertiary, vocational and special. This device is connected through mobile phone and automatically send the message through app .In this device, there is a shock mechanism the person can use them in emergency situations to attack the stranger.

The essential methodology is to scare the location moment area and a discomfort message to the police and the pre-set numbers, so serious incident can be turned away and to give continuous proof to the activity against the criminals of crime against ladies. This gadget can likewise be scaled down in future and can be installed in gem specialists, wrist watch, and cell phones and so on. so as to make this gadget helpful. This can likewise help police office to decrease the violations, which are against ladies, and the proof can be utilized to follow the wrongdoing. The simple strategy (single click) is to intimidate the on the spot area and a misery message to the police officers and the pre-set numbers, so that unlucky incident can be averted and to supply actual time proof for the motion towards the perpetrators of crime towards women. This system can additionally be miniaturized in future and can be embedded in jewelers, wrist watch, cell telephones etc., in order to make this system handy. This can additionally assist police branch to decrease the crimes, which are towards women, and the proof can be used to hint the crime.

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2. Statement of problem

The current situations among the world, the women security are an important concern for the many fast moving worlds. As we have seen many incidents are happening in this world and crime against the women is increasing. In olden days women were restricted to home and the duties.

According to the statistics, it is discovered that each and every two out of three ladies have suffered trauma in the remaining year. According to the survey of women, it is discovered that female are dropping their self-belief due to the fact of such incidents. The current scenario of the world, the women's are competing with men in all the fields, We can see female going to wonderful success levels in all fields, can also it be corporate, scientific, education, commercial enterprise or any different field. Last few crimes towards girls in particular the case in Delhi used to be very dread and fearful. Because of such crimes, women protection has turn out to be a most important topic. Nowadays ladies are making and reaching to incredible success altitudes in many fields, like industries, corporate companies, scientific, education, business or many other field. Last not many crimes beside women mainly the situation in new delhi remained anxiety and terrible. Due to such wrongdoings, ladies security has become a significant point. As per the insights, in the world or society, it is exposed that two out of three womens are harassed and have suffered hurt recent year in the world. And from the perspective of ladies, it was exposed that ladies are dropping their confidence in light of such incidents.

3. Existing System

This research has identified some existing safety mechanisms, and it found that there is no significant monitoring system for women's and young girls. This create many problems and issues for the women's and girls in many places like working places, society and public. Even there is no significant safety mechanisms for protecting the women's from the misbehavior and sexual assault activities also. And also there is no self-defense system for their security safety. It has a disadvantage that if the person phone is thrown away then they can't escape and there is no use of this model. The size of the device is large and it cannot be carried everywhere.

4. Proposed System

The block diagram of this device is shown in below figure. The microcontroller is the backbone of the device and it controls the device. Bluetooth module

that connects with app and starts the function. It is interfaced with Emergency Switch and Bluetooth.

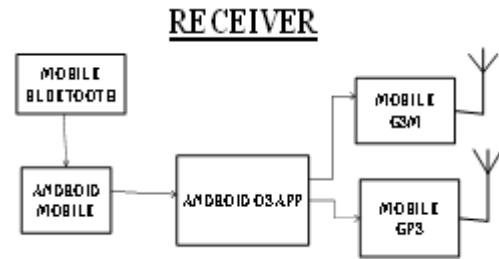


Figure 1. Receiver Model

It has a self-defense device that produces a shock and this can be used when there is no network in that place. By using this device women can feel safe and secure. It is an automatic device which would help the victim to alert others during emergency situations.

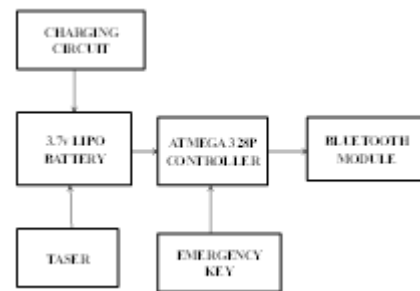


Figure 2. Transmitter Model

Implemented in Nano technology they will be available in the small size and can be carried everywhere. TASER is a self-defense device to escape her from that current scenario. Constantly the women or user monitoring and followed by the user's emergency contacts. When the user or women senses any harassment or threat, women can press the any button and practices the GPS and GSM to develop the exact location and remain sent to the emergency contacts.

5. Hardware and Software Specifications

The components used for this system are:

5.1. Atmega Controller 328p

ATmega328 is commonly used in many projects in embedded system and autonomous system. In this we are using a pro mini At mega which is compact in size. The most common implementation of this chip on the Arduino Uno and Arduino Nano .The features of At mega controller are 23 Input pin, microchip manufacturer, 32KB program memory and the program type is flash. The main feature of Atmega is Static RAM is 2KB, 1KB EEPROM and 20HZ oscillator. The device operates between 1.8-5.5 volts.

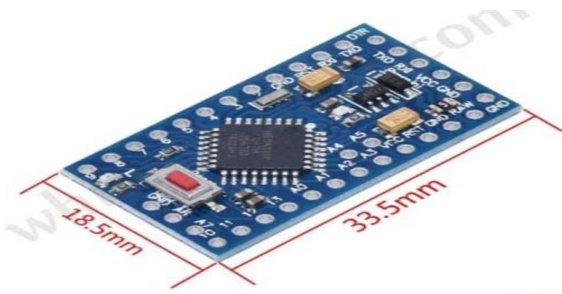


Figure 3. Atmega pro mini 328p

5.2. Bluetooth Module

Bluetooth module is a wireless technology to send information between two devices. It provides a range of 10m based on the requirement. It is communication in a serial communication that it master and slave mode which makes an easy method to interface with controller or PC. BLE is designed to connect or pair with mobile phone which is low power consumption.

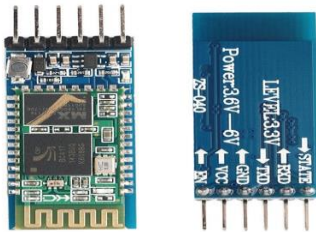


Figure 4. Bluetooth module HC-05

A lithium polymer battery is a rechargeable battery. Lithium polymer batteries are thin, light and powerful. The battery has a higher specific energy. The output ranges from 4.2V to 3.2V and the capacity of the battery is 3500mAh.

5.3. Charging Circuit

This Charging circuit is used to charge LIPO polymer battery. The Charging circuit used here is TP4056.

5.4. Taser

Taser or electric gun is small in size and the range is 25000V. A Taser can also be used as a stun gun by pressing and it is kept on the surface of the body and the shock is delivered to the person. The Taser can be kept on the surface of the body and it delivers the shock that disrupts the person's nervous system and that makes them freeze for 20 minutes.

5.5. Embedded C

Embedded C language is an extension of C language. This language is used to program microcontroller. It controls and monitors the devices. Embedded C header files changed from one controller to another controller. The designers of the embedded system must know the basic architecture of the microcontroller.

5.6. Mit App Inventor:

MIT App Inventor is a web app inventor and its development by Google. It is maintained by the Massachusetts Institute of Technology. It can be used by newcomers to create new apps for both Android devices and operating system. It is an open source and no license is needed to use it and it can be used by everyone for free.

6. Experimental Analysis and Results

The proposed model consists of two buttons, one for message and call and another to attack. Bluetooth module in the device pairs with mobile phone Bluetooth and gets connected with an app. In emergency situation, women can press the emergency button. The proposed Android application is used to transmit the signal to a smart phone and make a call in a danger condition. And the mobile phone will generate and send SMS to a defined number which is specified by the woman earlier and share the location too. Global positioning system has been used to identify the exact location of the women who are expecting help from others and henceforth GPS of the mobile phone will be kept ON always.

The device is specifically used for women who are in stress. It is a compact device and it can be carried everywhere. The basic operation of the mobile device is used to send SMS and share the location of the user and make a call to police station and relatives. By this method, the women can feel safe and they can easily escape from that situation.

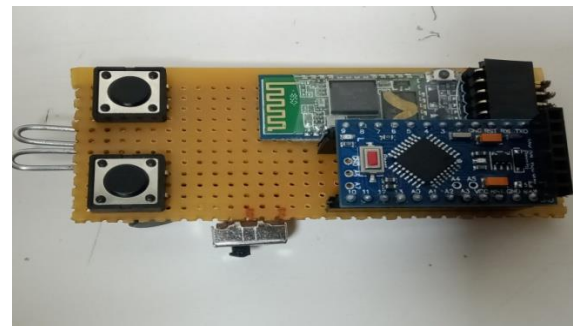


Figure 5. Hardware parts

The user can press a button that is located on the device. The Bluetooth device is embedded with it and sends a message and makes a call to the mobile phone. The mobile phone will perform the sending of messages to two predefined contacts, in which one is for police station and the other is for relatives where they can get information about location and they can use a taser which is a shock circuit and protect themselves.

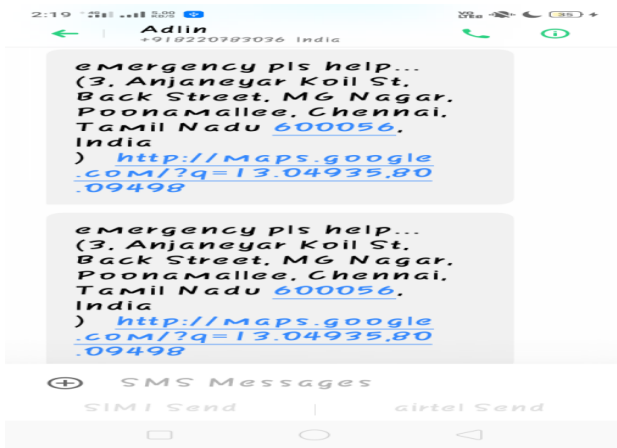


Figure 6. Output emergency detected message on mobile

7. Conclusion

This research can help to eliminate and support the women rights and equality by making safe and secured environment to female and young girls. This helps the women to live with in the living society and allows them to live free violence situations. This paper has taken many measurements of violence and crime rate. And this reduces the crime rate and harassment of ladies in future. The proposed system provides the tool for the person who feels unsafe and insecure. This device can be used by physically affected person and even children for their safety purpose. As a people of any nation, the people or government should assure the security and give protection of women at any moment. The scope of the research focus on the initiate action to eliminate the threat or offense of security issues with female and young women. Violence against female and women rests embedded in living societies in different situations like every day or occasionally. As a review there are many offenses and harassment is happening with every woman where at ever. This research will help the women who will meet the threat in the world and make new environment for the women to live without any violence

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