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An Innovative Wearable Device for Women Safety Using Ibeacon Technology with Ble

Mrs.S.Senthazhai[1], D.Manimozhi[2], M.Sathiya[3]
[1]Asst.Prof Department of ECE &KRISHNASAMY COLLEGE OF ENGINEERING & TECHNOLOGY
[2,3]Department of ECE & KRISHNASAMY COLLEGE OF ENGINEERING & TECHNOLOGY

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ABSTRACT: According to the reports of WHO, NCRB-social-government organization 35%Women all over the world are facing a lot of unethical physical harassment in public places such as railway-bus stands, foot paths etc. This paper describes about an one touch alarm system for women's safety using IBEACON. In the light of recent outrage in Delhi which shook the nation and woke us to the safety issues for women, people are finding up in different ways to defend. Here we introduce a device which ensures the protection of women. This helps to identify protect and call on resources to help the one out of dangerous situations. Anytime you sense danger, all you had to do, is hold on the panic switch. The system resembles a normal wearable device which when activated, tracks the place of the women using Bluetooth low energy and sends emergency messages using GSM (Global System for Mobile communication), to SOS contacts and the police control room .The proposed work shows a flexible and interoperable combination of a device and application that will accessorize and empower the citizens and serve as a multifunctional device.

Key Words:WHO,NCRB,IBEACON,Global System for Mobile communication.

I. INTRODUCTION

Security is the condition of being protected against danger or loss. In the general sense, security is a concept similar to safety. The nuance between the two is an added emphasis on being protected from dangers that originate from outside. Individuals or actions that encroach upon the condition of protection are responsible for the breach of security. The word "security" in general usage synonymous with "safety," but as a technical term "security" means that something not only is secure but that it has been secured.

New IBEACON technology uses low cost. Bluetooth Low Energy signal to enable micro-location services and to trigger actions within apps. A woman with a mobile phone only needs to pass by the Bluetooth signal to be tracked by an application. This technology used to provide safety tracking of women and young people. IBEACON technology used to track and "check in" on women and children in urban environments with automated low cost Bluetooth device .Women and young people who can be tracked easily in an urban environment, law enforcement will can access information quickly, families who want to "check in" on their loved one's travelling globally.

This project uses regulated 5V, 750mA power supply. 7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

II. LITERATURE SURVEY

In the current situation, the important goal is to provide security to women from issues of women harassment. With the App revolution of smart phones, many security apps are developed every day but even the other side that is fraudulent or adversary knows that such apps do exist, and they are equally smart to confiscate the victims phone. In this project System we include wearable devices that will transmit data for comparing with the training dataset and if irregular values in temperature, pulse rate are identified then message will be sent to her family member, nearby police station and one friend. The aim of this work is to develop a device for the safety and protection of women and girls. Indeed, even today, an evil break is made when ladies venture out with a niggling apprehension in their brains about their safety. We regularly find out about rape cases that make our blood run cold. It is a lamentable perception that there has been a significant increment in crimes against women in the previous decade. The reason can be credited to the time gap between the real time of the crime and its time of reporting to the ascendancy. In the event that by one way or another the unfortunate casualties could pass on their situation progressively, the issue can be repressed. In this project, we propose a device that sends SMS and area directions of the client to the relatives of the client or helpline number. In this system, we have

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used a GPS module to access location of user instantly. Three push buttons are implemented to define the types of an accident victim is facing. When the user faces any hassles in any place, it can push any of these three buttons. Then microcontroller will receive it and send an SMS to the specific phone number. The location of the user will be continuously traced until user switch off the system when rescued. In addition, to control the whole system we have used a PIC16F887A microcontroller powered by four AA batteries.

III. PROPOSED METHODOLOGY

The proposed system is an application, involving the introduction of IBEACON technology. The other major technological involved in this system is RSSI (Received Signal Strength Indication) and Stun Gun. The system also employs the BLE (Bluetooth Low Energy) communication technology which determines the location of the user. The information such as location, distance of the affected person from the known person are uploaded in a webpage. And the MEMS is used to detect a sudden drop in that particular person, so the X, Y coordinates determine the value obtained after a sudden drop in a particular woman.

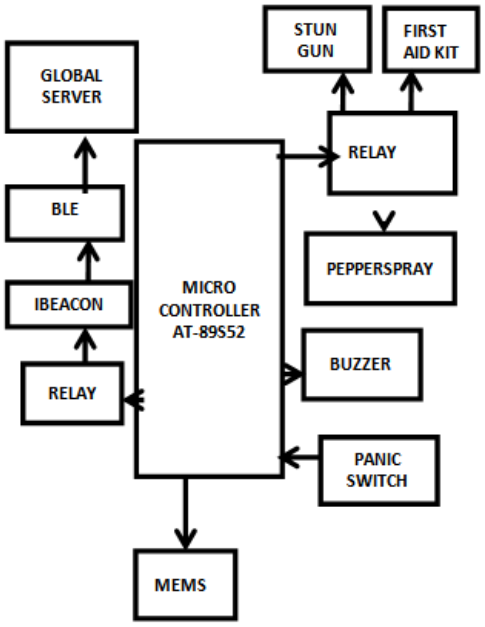
ADVANTAGES OF PROPOSED SYSTEM

- Provides high security
- Easy tracking method
- Alerts and sends signal easily to their friends, family.

AT89S52 MICROCONTROLLER

The AT89S52 is a low-power, high-performance CMOS 8-bit microcontroller with 8K bytes of in-system programmable Flash memory. The device is manufactured using Atmel's high-density non-volatile memory technology and is compatible with the Indus-try-standard 80C51 instruction set and pin out. It is mainly used to control all the operations performed by the system.

IV. BLOCK DIAGRAM:



V. BUZZER

A buzzer or beeper (BUZZERS)is a signaling device, usually electronic, typically used in automobiles, household appliances such as a microwave oven, or game shows. It most commonly consists of a number of switches or sensors connected to a control unit that determines if and which button was pushed or a preset time has lapsed, and usually illuminates a light on the appropriate button or control panel, and sounds a warning in the form of a continuous or intermittent buzzing or beeping sound. Initially this device was based on an electromechanical system which was identical to an electric bell without the metal gong (which makes the ringing noise). Often these units were anchored to a wall or ceiling and used the ceiling or wall as a sounding board. Another implementation with some AC-connected devices was to implement a circuit to make the AC current into a noise loud enough to drive a loudspeaker and hook this circuit up to a cheap 8-ohm speaker. Nowadays, it is more popular to use a ceramic-based piezoelectric sounder which makes a high-pitched tone. Usually these were hooked up to "driver" circuits which varied the pitch of the sound or pulsed the sound on and off.

PEPPER SPRAY

Pepper spray, oleoresin capsicum spray, OC spray, capsaicin spray, or capsicum spray is a lachrymatory agent (a compound that irritates the eyes to cause a burning

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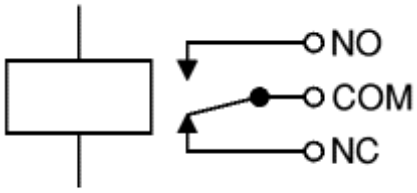
RELAY

A relay is an electrically operated switch. Current flowing through the coil of the relay creates a magnetic field which attracts a lever and changes the switch contacts. The coil current can be on or off so relays have two switch positions and they are double throw (changeover) switches. Relays allow one circuit to switch a second circuit which can be completely separate from the first. For example a low voltage battery circuit can use a relay to switch a 230V AC mains circuit. There is no electrical connection inside the relay between the two circuits; the link is magnetic and mechanical. The coil of a relay passes a relatively large current, typically 30mA for a 12V relay, but it can be as much as 100mA for relays designed to operate from lower voltages. Most ICs (chips) cannot provide this current and a transistor is usually used to amplify the small IC current to the larger value required for the relay coil. The maximum output current for the popular 555 timer IC is 200mA so these devices can supply relay coils directly without amplification Relays are usually SPDT or DPDT but they can have many more sets of switch contacts, for example relays with 4 sets of changeover contacts are readily available. For further information about switch contacts and the terms used to describe them please see the page on switches. Most relays are designed for PCB mounting but you can solder wires directly to the pins providing you take care to avoid melting the plastic case of the relay.

VI. WORKING:



Circuit symbol for a relay

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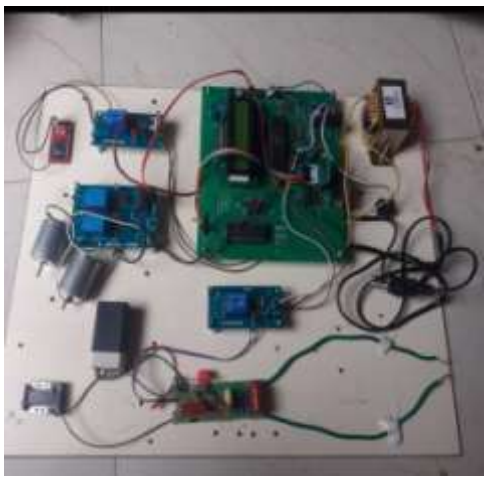
The supplier's catalogue should show you the relay's connections. The coil will be obvious and it may be connected either way round. Relay coils produce brief high voltage 'spikes' when they are switched off and this can destroy transistors and ICs in the circuit. To prevent damage you must connect a protection diode across the relay coil.The animated picture shows a working relay with its coil and switch contacts. You can see a lever on the left being attracted by magnetism when the coil is switched on. This lever moves the switch contacts. There is one set of contacts (SPDT) in the foreground and another behind them, making the relay DPDT.

VII. RESULT

The main purpose is to built a women safety device to act as a rescue and prevent any harm at the time of hazard especially for women. Through the proposed system a smart device for women’s safety which automates the emergency alert system is designed.this system detects and sends the alert for dear ones with the location coordinates of the women without the requirement of her interaction in critical times.It sends an emergency message automatically to the relatives and near by police station.the prototype is suitable to carry in any type of bags such as handbags and laptop .carrying the prototype in these bag is suggested because even the person who is triying to harm may not notice the device in the bag. Through the process of customization,this prototype can be modify to wearable like smart watches, bracelets,necklace etc. The main advantage of our proposed system is that both automatic and manual mechanism is implemented.It is also cost efficient and easy to use.



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