WOMEN SAFETY DEVICE USING IOT

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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 device uses wireless sensor network to communicate and to send alerts to them. The GPS and GSM are used to share the used to share the user's location directly to the relevant authorities and saved contacts. The switch in the device work for sending manual alerts in case of emergency and as panic switch to get the shock, then the Buzzer will also activate along laser diode.

Keywords: Women Safety, Safety using Ardunio, IOT Based Women Safety.

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's and girls are facing problems.
Women are adept at mobilizing diverse groups for a common reason.

They often work across ethnic, religious, political, and cultural divides to promote liberty. We are all aware of importance of women safety, but we must analyze that they should be properly protected. Women are not as physically fit as men ,in an emergency situation a helping hand would be assistance for them. The best way to curtail your probability of becoming a dupe of violent crime (robbery, sexual assault, rape, domestic violence) is to recognize, defence and look up resources to help you out of hazardous situation.

II. LITERATURE REVIEW

Women safety device and application:

In this paper an ARM controller and Android application are used in which both the device and the smartphone are synchronized using Bluetooth, hence both can be triggered independently. It can record audio for further investigation and can give an alert call and message to the pre-set contacts with the instant location every 2 minutes and can be tracked live using the application. Hidden camera detector is also a distinct feature used which ensure privacy.

A mobile-based women safety application (I safe Apps):

In this paper, mobile-based application (I safe apps) is developed with the android support to know whether a woman is safe. It gives the location of the woman in danger by giving fake phone calls, video forwarding, location and first-aid information.

III. ADVANCED SECURITY SYSTEM FOR WOMEN:

The paper purposes an automated highly reliable women security device which consists of advanced sensors embedded in a wearable dress. It consists of advanced sensors and ATMEGA8 micro controller with Arduino tool which keep user under observation at all time. It monitors the heartbeat rate, temperature and vibration in the body through sensors to check for uneasy situations.

IV. EXISTING SYSTEM

- In previous system the alert system for the women is done through the application. For the security purpose the applications contain the SOS number which will alert the family members of the victim.
- Disadvantages of existing system:
- Victim's phone may lose
- Battery may die

V. PROPOSED SYSTEM

In the proposed system we here designed equipment for alerting the system. In this project we here used the Arduino controller for the controlling the whole process of the system. The GSM is used to send SMS regarding GPS locations. LCD is for displaying and switch is pressed when the person is in danger. Here we are adding Buzzer Laser Diode which will activate when the women press the switch.

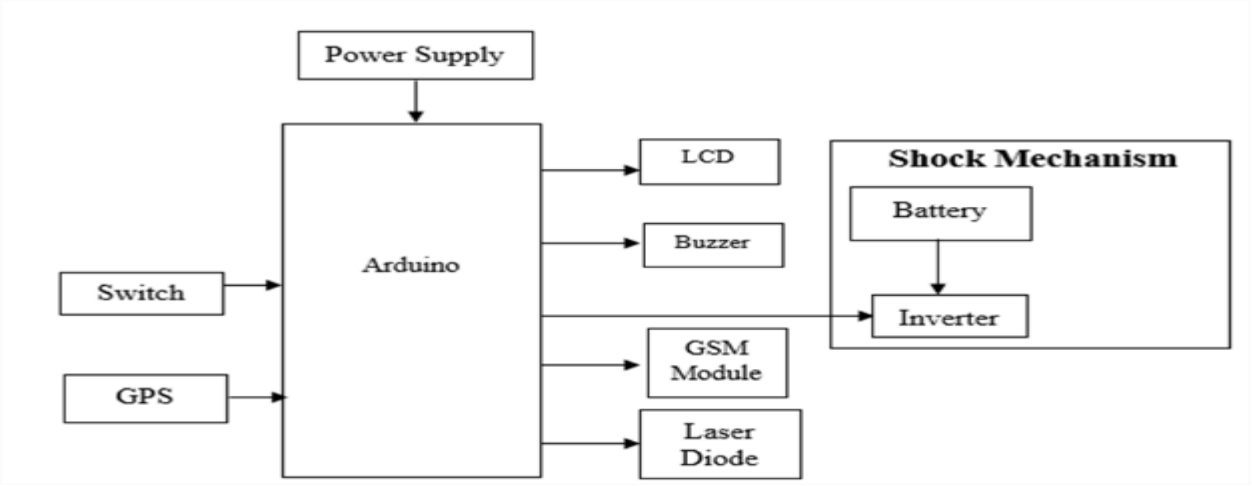


Fig 1: System Architecture

Related Work:

- Women's Security
- Bsafe personal safety app
- Safetipin – complete safety app
- Police nearby
- Scream Alarm
- Tell tail
- Circle of 6.

Hardware Requirements:

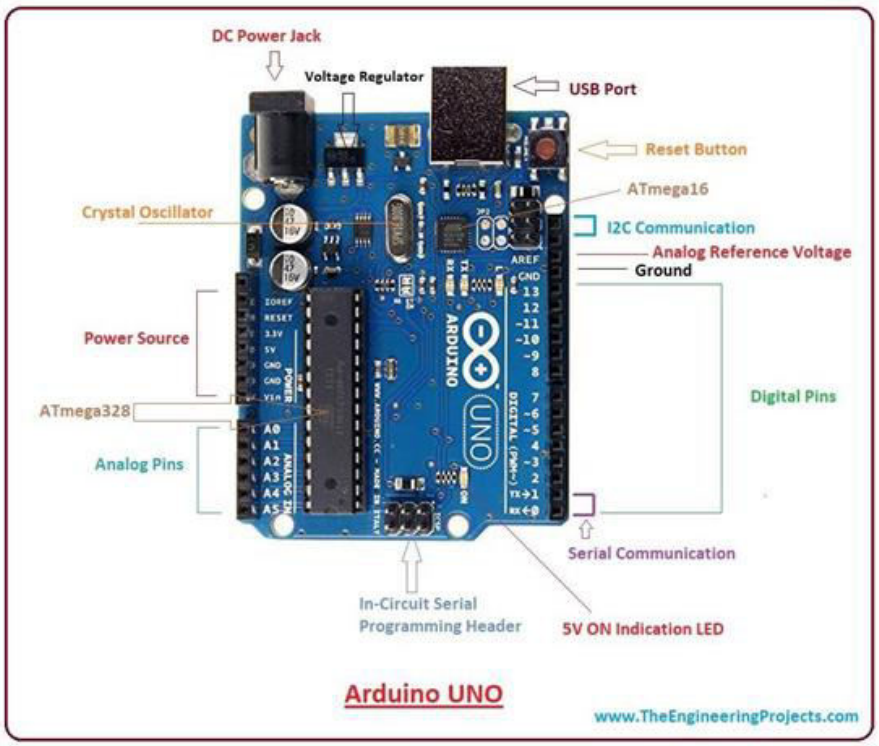
- Arduino
- GSM
- Switch
- LCD
- Buzzer
- GPS Module
- Inverter
- Battery
- Laser Diode.

Software Requirements:

- Arduino IDE
- Embedded C

ARDUINO

- Arduino Uno is a microcontroller board developed by Arduino.cc which is an open-source electronics platform mainly based on AVR microcontroller Atmega328.
- The current version of Arduino Uno comes with USB interface, 6analog input pins, 14 I/O digital ports that are used to connect with external electronic circuits. Out of 14 I/O ports, 6 pins can be used for PWM output.



SWITCH

A push-button (also spelled pushbutton) or simply button is a simple switch mechanism to control some aspect of a machine or a process. Buttons are typically made out of hard material, usually plastic or

metal.

RELAY

- A relay is an electromagnetic switch that is used to turn on and turn off a circuit by a low power signal, or where several circuits must be controlled by one signal.

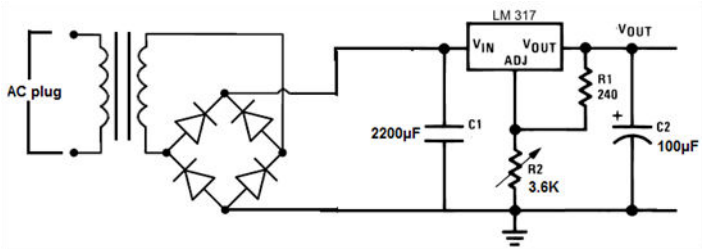
Pin Number	Pin Name	Description
1.	Coil end 1	Used to trigger(On/Off) the Relay, Normally one end is connected to 5V and the other end to ground
2.	Coil end 2	Used to trigger(On/Off) the Relay, Normally one end is connected to 5V and the other end to ground
3.	Common (COM)	Common is connected to one End of the Load that is to be controlled
4.	Normally Close (NC)	The other end of the load is either connected to NO or NC. If connected to NC the load remains connected before trigger
5.	Normally Open (NO)	The other end of the load is either connected to NO or NC. If connected to NO the load remains disconnected before trigger

BUZZER

- A buzzer or beeper is an audio signalling device, which may be mechanical, electromechanical, or piezoelectric. Typical uses of buzzers and beepers include alarm devices, timers and conformation of user input such as a mouse click or keystroke. Buzzer is an integrated structure of electronic transducers, DC power supply, widely used in computers, printers, copiers, alarms, electronic toys, automotive electronic equipment, telephones, timers and other electronic products for sound devices.

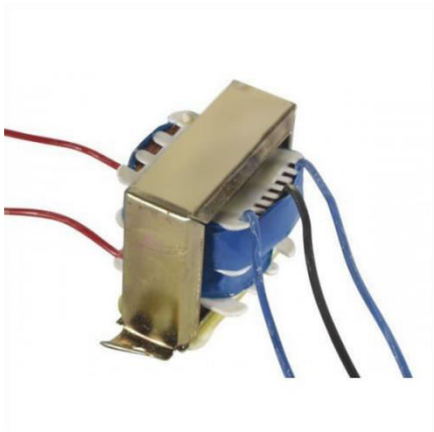
POWER SUPPLY

- A power supply provides electrical power to components. Usually, the term refers to devices built into the powered component. Computer power supplies, for example, convert AC current to DC current and are generally located along with at least one fan at the back of the computer case.



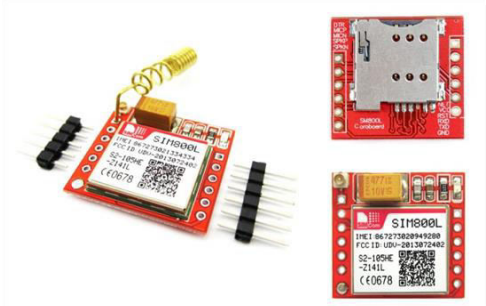
TRANSFORMER

- A transformer is a static electrical gadget that exchanges control between at least two circuits. A fluctuating current creates a changing attractive motion in one transformer curl, which thus actuates a differing electromotive power over a second loop twisted around a similar centre.



GSM

- A GSM modem is a device which can be either a mobile phone or a modem device which can be used to make a computer or any other processor communicate over a network. A GSM modem requires a SIM card to be operated and operates over a network range subscribed by the network operator. It can be connected to a computer through serial, USB or Bluetooth connection.



LASER DIODE

- A semiconductor device that generates coherent light of high intensity is known as laser diode. LASER is an abbreviation for Light Amplification by Stimulated Emission of Radiation. Stimulated emission is the basis of working of a laser diode. Laser diode is similar to LED, however, different from LED, the PN junction of laser diode produces coherent radiation. Coherent radiation means the light waves generated by the device have the same frequency and phase.

GPS MODULE

- Global positioning system (GPS) is a satellite-based system that uses satellites and ground stations to measure and compute its position on earth.
- GPS is also known as Navigation System with Time and Ranging (NAVSTAR) GPS.
- GPS receiver needs to receive data from at least 4 satellites for accuracy purposes. GPS receiver does not transmit any information to the satellites.

LCD

- A 16*2 LCD implies 16 characters can be shown per line and 2 such lines exist. Each character is shown in a lattice of 5*7 pixels in this LCD. There are two registers in this LCD, in particular Command and Data.

APPLICATIONS

- Can be utilized for the security of ladies, kids, impaired and matured individuals.
- Can be utilized as a legitimate proof of wrongdoing with correct.
- Location data for indictment.

ADVANTAGES

- Safety Device which can be conveyed by everybody.
- Ultra-low power utilization.
- Compact in size with wireless network.
- Easy and quick to install & Easy Maintenance.
- Environmentally friendly system

VI. CONCLUSION

In this project an alternative approach for device switching which combines fingerprint identification technique with Web server and GPS functionalities has been proposed. The devices switching from remote location removes the necessity of the person to be present near the device to operate it. This approach allows more than one person to control the device functionality and the authentication facility provided by the switch helps to reduce the fault correction time.

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