SMART SAFETY AND SECURITY SYSTEM FOR WOMEN
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ABSTRACT:
The world is becoming unsafe for women in all aspects. The crime against women are increasing at a higher rate. The employed women are feeling unsafe due to increasing crimes. This paper proposes a quick responding mechanism that helps women during trouble. When someone is going to harass, she can just press the button and the location information is sent as an SMS alert to few pre-defined numbers in terms of latitude and longitude. The purpose of this project is to feel safe the women's.

INTRODUCTION
Even in this modern era women are feeling insecure to step out of their house because of increasing crimes in our country like harassment, abuse, violence etc., The corporate and IT sector are currently in boom. Many women are working in corporate even in night shifts. There is a feeling of insecurity among the working women. The proposed device is more like a safety system in case of emergency. This device can be fitted in a jacket (similar to a blazer for women). It is an easy to carry device with more features and functions. The emergency push button is held to one of the buttons of the jacket. The main purpose of this device is to intimate the parents and police about the current location of the women. A GPS system is used to trace the current position of the victim and a GSM modem is used to send the message to the pre-defined numbers. There are several applications that reduce the risk of sexual abuse by sending SMS but in our model we also provide an audio circuit which is more useful for physically challenged people. The block diagram of the proposed system is shown in Figure 1. The microcontroller acts as an embedded computing system and it controls the activities of all the subsystems. The microcontroller is interfaced with all the other modules of the device. The program for PIC microcontroller is done in Embedded C language and is dumped using a kit.

GOALS AND OBJECTIVE:
The main purpose of our project is to provide safety to the women’s from the dangerous zone. In this project we are providing facility to secure the women’s by providing this kit. As the women feels insecure at that time she can press the button. GPS will calculate the latitude and longitude coordinates of that area. The controller read this value and send those data to the pre-defined number which is already saved in program.

MATERIALS REQUIRED:
SMART SAFETY AND SECURITY SYSTEM FOR WOMEN

- Arduino (ATMEGA 328P)
- LCD Display (16×2)
- GSM Module(SIM800A)
- GPS Module(SIM28ML)
- Power supply
- Push key

**BLOCK DIAGRAM:**

![Block Diagram](image)

**CIRCUIT DIAGRAM:**

![Circuit Diagram](image)

**ARDUINO UNO:**

Arduino UNO is a microcontroller board based on the ATmega328P. It has 14 digital input/output pins, 6 analog inputs, a 16 MHz quartz crystal, a USB connection, a power jack, an ICSP header and a reset button. It contains everything needed to support the microcontroller, simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started.
LCD DISPLAY (16×2):

This display contains two internal byte wise registers, one for the commands (RS=0) and second for character to be displayed (RS=1). It also contains a user programmed RAM area (the character RAM) that can be programmed to generate any desired character that can form using a dot matrix. To distinguish between these two data areas, the display takes varying amounts of time to accomplish the functions. D4-D7 pin is connected to the D2-D5 Pin of Arduino. RS and EN Pin of display is connected to the D6, D7 Pin Respectively also by giving a proper supply and system ground LCD is ready to display the data.

GSM MODULE:

A GSM modem is a specialized type of modem which accepts a SIM card, and operates over a subscription to a mobile operator, just like a mobile phone. When a GSM modem is connected to a computer, this allows the computer to use the GSM modem to communicate over the mobile network. While these GSM modems are most frequently used to provide mobile internet connectivity, many of them can also be used for sending and receiving SMS and MMS messages.

GPS RECEIVER:
A GPS receiver is a device that is capable of receiving information from GPS satellites and then to accurately calculate its geographical location. A GPS receiver can retrieve from the GPS system location and time information in all weather conditions, anywhere on or near the Earth.

POWER SUPPLY:
To make the DC power supply of 5volt we used step down transformer, bridge circuit, filter circuit and finally fixed voltage regulator. In this system we used step down transformer in which primary voltage is greater than secondary voltage.in this system we used 9-0-9 step down transformer.so at the transformer output we got 9volt AC. Then we used bridge circuit whose job to perform to convert AC into pulsating DC. Then filter is used to remove the noisy pulses and convert pulsating DC into pure DC. Then IC7805 Regulator is used which provides fixed positive 5V DC Output. This voltage is required to work the Arduino.

PUSH KEY:
When it is pressed then it will send GPS signal to the controller, then controller will send the GPS co-ordinates via GSM to the pre-defined numbers.

PIN CONNECTIONS:

1. Connect Pulse Sensor to Arduino Uno Board as following:

* + to +5V
2. Connect LCD to Arduino Uno Board as following:
   - VSS to +5V
   - VDD to GND
   - RS to 12
   - RW to GND
   - E to D11
   - D4 to D5
   - D5 to D4
   - D6 to D3
   - D7 to D2
   - A/VSS to +5V
   - K/VDD to GND

3. Connect 10K Potentiometer to LCD as following (refer image for potentiometer pin out):
   - GND to GND
   - Data to V0
   - VCC to +5V

4. Connect LED to Arduino as following:
   - LED1 (RED, blink Pin) to D13
   - LED2 (GREEN, fade Rate) to D8

APPLICATIONS:
- Compact in size.
- Wireless connectivity.
- Easy and fast to install.
- Easy Maintenance
- Low cost with high performance.
- Works round the clock.

ADVANTAGES OF THE PROJECT:
- Can be used for the safety of women.
- Can be used for the safety of children.
- Can be used for the safety of elderly aged people.
- Can be used for the safety of physically challenged people.
- Can be used as a legal evidence of crime with exact location information for prosecution

CONCLUSION:
Providing quality and timely health assistance for elderly population is a growing concern of
both developed and developing nations. Though there are high-tech hospitals and care centers for elderly, fact that majority of them suffer from chronic disease and they require continuous monitoring of their physical parameters make it quiet expensive. Moreover majority of the elderly prefer to be at home where they are not detached from the family and society. In such a scenario this system could be very effective. It can work independently at a home environment. Thus this device can really be a boon to elderly society by assisting them in getting quality assistance at their own houses

REFERENCES:


