WOMEN SAFETY SYSTEM USING GSM GPS TRACKING

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Abstract

The world has become very bad for women in every way. Crimes against women are increasing. Working women feel unsafe due to the increasing crime rate. This article suggests a quick answer that may help anxious women. When someone wants to bother, he just presses a button and the location information of a few latitude and longitude numbers is sent to the newspaper. The controller used is ATMEGA328P. The buttons interact with the GPS module, GSM modem and LCD screen (16×2). When the switch is pressed, the controller will receive current location data from the GPS module and send this data to the specified number. Use GSM modem. The program was created in "C" language. The aim of this project is to keep women safe.

Keywords: Arduino, GPS, GSM, LCD

1. Introduction

Bullying, torture, violence, etc. even in this country due to the increasing number of crimes. Nowadays, women's feeling of insecurity outside the home is increasing in companies and the IT sector. Many women work in companies and even work at night. There is a strong sense of insecurity among working women. Preparing equipment is better than safety in case of an emergency. The device can be placed inside a jacket (similar to a women's blazer). It is an easytocarry product with many features and functionality. The emergency pack is attached to the shirt. The main purpose of the device is to let parents and police know the woman's current location. A GPS system is used to track the victim's current location, and a GSM modem is used to send a message to a specific number. This model is also useful for children and adults. [2]

2. Mission and Goals

The main purpose of our work is to ensure the safety of women in dangerous areas. In this project, we provide convenience for the protection of women by providing these tools. When a woman feels insecure, she can push the button. GPS calculates the latitude and longitude coordinates of the region. The controller reads this value and sends this data to a predefined number registered in the program. [2]

3. METHOD Design Overview

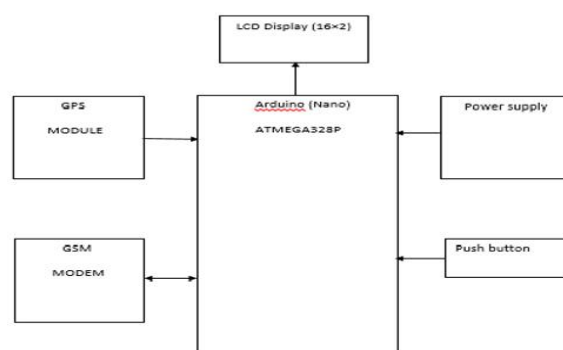The Block diagram of our proposed system is as shown below:

Fig-1: Block Diagram of Women Security System

This system consist of following component which are listed below.

1. Arduino (ATMEGA 328P)
2. LCD Display (16×2)
3. GSM Module(SIM800A)
4. GPS Module(SIM28ML)
5. Power supply
6. Push key

3.1 Arduino:

This board packs the same microcontroller power as the Arduino Uno into a smaller board. Arduino Nano is smaller and uses the ATMEGA328P microcontroller. It can only use the Mini-B USB cable instead of the standard cable because it does not have DC power. It works with 5V DC power supply. All the remaining parts are device related. The RX and TX pins of the device are connected to the TX and RX pins of the GSM modem of the SIM800 module. D10 pin is connected to the TX of the GPS module. Pins D2 to D7 are connected to the LCD screen. Then, Arduino can start working by providing the necessary power and grounding.

3.2 LCD Display (16 × 2):

It also has a userprogrammable RAM (Character RAM) area that can be designed to create desired features that can be created using a dot matrix. Distinguishing between these two sources of information. Controllers need more time to complete their work. D4-D7 pins are connected to D2-D5 pins of Arduino. The RS and EN pins of the display are connected to D6 and D7 pins respectively and the LCD is ready to display data by providing the necessary power and grounding. [3]

3.3 GSM module (SIM 800A):

The GSM module can accept SIM cards of all GSM network users and be like a mobile phone with number telephony compatibility. GSM/GPRS modem is a type of wireless modem device designed for computers to communicate with GSM and GPRS networks. It needs a SIM card like a mobile phone to initiate communication with the network. They also have an IMEI (International Mobile Equipment Identity). It is similar to the working knowledge of mobile phones. This mod can do the following. [4]
1. Receive, send or delete SMS messages from the SIM card.
2. Read, add and call SIM card phone numbers.
3. Make, answer or reject a voice call.

The TX, RX, GND pins of the module are connected to the relevant pins of Arduino and are fed with a 12 Volt, 2 Amp adapter. [4]

3.4 GPS model:

It has six lines, three of which are used for communication. The TX pin of this module is connected to the D10 pin of the microcontroller. The supply voltage is approximately 3.3V to 5V. When the button is pressed, the GPS starts receiving signals from 4 of the 24 satellites in orbit. When the connection is established, the latitude and longitude values of the current location are obtained. GPS acts as a transmitter. 5V power supply to GPS is provided by the controller. [4]

3.5 Power supply:

To make a 5 volt DC power supply, we use a step-
down transformer, a bridge circuit, a filter circuit and finally a constant voltage regulator. In this system we use a step down transformer where the primary voltage is higher than the secondary voltage. In this system, we use 909 stedown transformer. So we get 9 volts AC at the output transformer. We then use a bridge that works by converting AC power to DC power. A filter is then used to remove noise and convert the pulsating DC to pure DC. IC7805voltage regulator is used to provide positive 5V DC output. This voltage is required for Arduino to work.

3.6 Button:

When the button is pressed, it will send a GPS signal to the controller, and then the controller will send the GPS coordinates to the predefined GSM number.

RESULT:

Fig 2. Shows the hardware setup of system and fig 3. Shows the tracking location when user pressed the key that shows the final result.
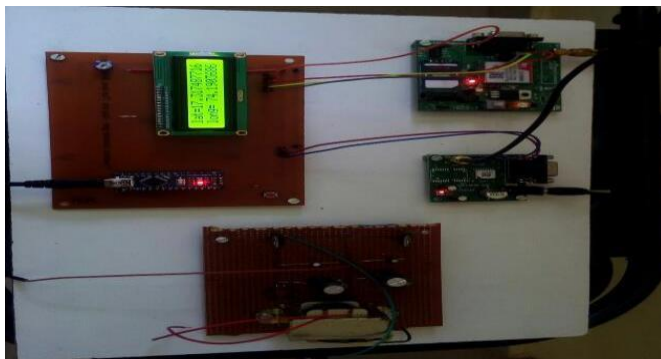

Fig-2: Hardware set up of system.

Fig-3: Tracking location

Future:

In the future, the system will be able to interact with the camera to capture images and record video in real time.

6. Application:

1. It will be used for the safety of women.

2. It will be used to keep track of children throughout the school day.

3. It can be used in vehicle tracking and security systems.

4. It will be used for the safety of the elderly. 7. Conclusion:

The design will solve the fundamental problems that

women will face in the future and will help solve these problems through tools that truly use voice and ideas. This process can
overcome the fears of all women in the country regarding their

safety and security.

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