

**S-ZONE: A SYSTEM FOR WOMEN SAFETY & SECURITY  
SYSTEM.**

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**ABSTRACT :**

*The usage of smart phones equipped with GPS navigation unit have increased rapidly from 3% to more than 20% in the past five years. Hence, a smart phone can be used efficiently for personal safety or various other protection purposes especially for women. This paper presents s-zone, a personal safety application developed for smart phones of android platform. This app can be activated by pressing the key when the user feels she is in danger. This application communicates the user's location to the registered contacts for every few seconds in the form of message. Thus, it acts like a sentinel following behind the person till the user feels she is safe. The key features of this system are along with the user's location, one of the registered contacts sends the location via gps. Also, the registered contacts and GPS location are saved from time to time in a database.*

**KEY WORDS:** Smart Phone, Android, Registered Contacts, GPS location, Database, keys.

**1. Introduction**

In today's world, it is not safe for a person to travel alone at night especially for women; it will be high time to travel alone because a woman is not highly strong as men to protect herself from them. The good way to reduce chances in becoming a victim of violent crime (robbery, sexual assault, rape, domestic violence) is to identify to help you out of unsafe situations. Whether you are in instant trouble or got separated from friends during night and do not know to reach home, having these system on your shoes & hand bracelet can diminish our risk and bring assistance when we require it. In this paper, we present S-ZONE, an application for smart phones working over android platform. Our motto in developing this system is to provide a safe environment to women through smart phone as today most of the people are carrying smart phones to wherever they go. Of course, the Delhi Nirbhaya case has made the Government to make the laws tougher, but even though the sexual crime rate in India have not decreased. So, it is better to take our own safety measures rather than becoming a victim of those crimes.

**GPS module**

This is a GPS Receiver (5V Serial) with high gain having 4 Pin 2.54mm pitch strip. The third generation POT (Patch Antenna on Top) is used by the receiver for the GPS module[2]. It can be interfaced with normal 5V Microcontroller with the help of the in

built 3V-5V converterAn embedded Powerful TCP/IP protocol stack Based upon mature and field-proven platform, backed up by our support service, decreased. So, it is better to take our own safety measures rather than becoming a victim of those crimes.



Fig: GPS Module

**Buffers**

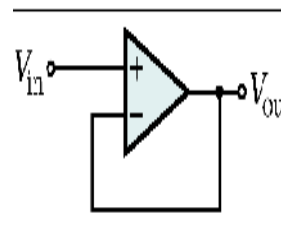


Fig: Buffer

## 2. RELATED WORK

As a part of literature survey, we investigated some applications of women safety that already exist in market. The aim is to observe how these applications work and to see how they can be improved and how are they different. To date it is identified that the following Android Apps of women security are good and are offering relatively similar service

### A. WOMEN'S SECURITY:

This app is developed by AppSoftIndia. The key features of the app are: the user has to save some details. These details include: Email address and password of the user, Email address and mobile number of the recipient and a text message. Then, app is loaded as a “widget”, so that when the user touches the app, it alerts the recipient. Another key feature of app is that it records the voice of surroundings for about 45 seconds and this recorded voice, text message containing location co-ordinates of the user is sent to the recipient mobile number.

### B. BSAFE- PERSONAL SAFETY APP:

This app is developed by Bipper Inc. On March 6, 2015. The app's motto is “Never Walk Alone”. This app helps the user to create a gang of 'Guardians' and SOS message will be received by them when the user is in trouble. Also another good feature of this app is one of the guardians will also be called. The SOS message also includes location of user via GPS. The user can also enable the GPS tracker and let the friends know location at any time.

### C. SAFETIPIN- COMPLETE SAFETY APP:

This is a privy security app having the troop of features; GPS tracking, emergency, important contact numbers, directions to safe locations, pins displaying unsafe and free from danger areas and a Safety Score. It drives in advance of exemplary women safety apps, and presents a vast range of features, so that they will help to practically plan and can give a counter attack to those spots in the locality. When a person is going to move to a new locality that is unknown to him and if he or she want to know the safe areas, then this app will be much helpful providing the user a map based view of the locality along with its safety score. Also, the person can select the areas on those he or she excited to go and can get knowledge about the risks of hassles about the area, so they can finally take safety measures.

## 3. BLOCK DIAGRAM:-

The block diagram depicted below shows the exact flow of control of the system.

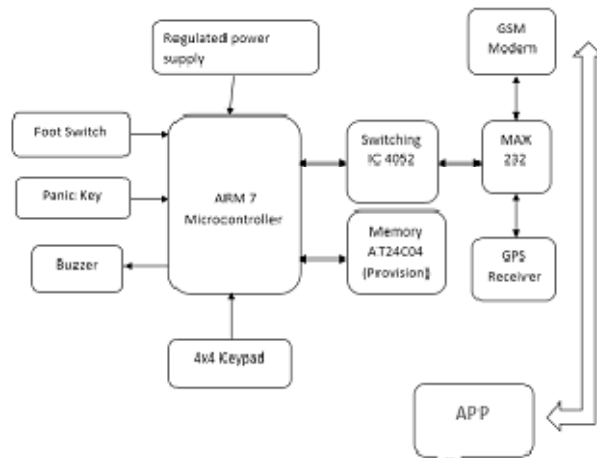


Fig. 1. Block Diagram for the Proposed System

### LCD Display



### 16x2 LCD module

16x2 LCD module is a very common type of LCD module that is used in 8051 based embedded projects. It consists of 16 rows and 2 columns of 5x7 or 5x8 LCD dot matrices. It is available in a 16 pin package with back light, contrast adjustment function and each dot matrix has 5x8 dot

## 4. WORKING:

The working of the application is divided into three major sections. They are described as follows:

- Initially, when we press the panic key or foot switch the device display the contact details and a grid layout of three buttons save, close, start will be appeared. In this section, the contacts who will respond immediately must be saved like family, friends or police. These contacts are called registered contacts; they are called so because they are registered to the application. After entering the contact details, save button must be touched so that those will be saved and alter after to these the user information will be sent when she is in danger. Here, the contact details are of two types: A contact number

to be called and the contacts to which the SMS to be sent.

2. When we click start button, the GPS information (the GPS information can be in the form of latitude and longitude co-ordinates of the user's location or in the form of URL which leads to the location of the person through any stock map application in the likes of third party application like Google, Nokia etc.) is sent to the database continuously for an interval of every thirty seconds. The whole process of the system is done only when the device is connected to proper mobile network, data connection of the device is on and location service in the device is switched on (GPS).

3. This section describes the primary working of the database. The information that is sent to the database is in turn sent to the registered contacts continuously. The purpose of the database is it can continuously track the location of the user since the user's location information is continuously sent in a periodic interval of thirty seconds. The other major asset of using database in future will be if the database used in the application is city police control room database, then when the user is in trouble, based on the user's location observed from the database from the control room, the nearest police people can go to the location and can rescue the person in danger. Hence, by sending the user's location in periodic intervals of time, the exact location of the person will be identified and she can be rescued quickly.

The other asset of this system is if we want select another number then we can choose different number, with the help of keypad. These number are stored in memory.

#### **5.Application:**

- 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

#### **6. Conclusion:**

This paper describes the system, S-zone that is designed in android platform for safety of women with the aid of recent improvements in mobile technology. This system helps the tracking of the root device through GPS which will help the law enforcement authorities to rescue the person in danger as quickly as possible from the anti- social elements. For future development, this application can be integrated with the law enforcement database (eg.city police control room database) instead of experimental database used here in the project. Also, some further upgrade can be done when the mobile network is not available for the root device and also if the root device is switched off. Thus, this system can help in a big way to rescue the women or men from unsafe conditions.

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