ISSN (Online) 2278-1021
ISSN (Print) 2319-5940

IJARCCE

International Journal of Advanced Research in Computer and Communication Engineering

Vol. 7, Issue 8, August 2018

Arduino Based Security System for Women

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Abstract: Nowadays women are facing many problems like rape, molestation, kidnapping etc. This uniquely designed system will help to reduce crime rates against women. It has been prioritized to give security to women especially to the women in urban areas as they can face problems while travelling the system is not so expensive thus many women can benefit themselves.

Keywords: Arduino, SMS, GPS & GSM

I. INTRODUCTION

When women are travelling or doing any outdoor activities and if unfortunately they go through these problems and to avoid these crimes to be faced they pronounce or rather say speak keywords which will give a signal to android but this can also give suspicion to the criminal and then he/she will throw victim's android.

A. Challenges faced By Women

The world is becoming less safer for women as they have to deal with major problems like sexual harassment, domestic violence, rape etc. Rapists and molesters still continue to commit such crimes even though in presence of strict laws and armed forces. The crimes are increasing in India as it was 195,856 in year 2008 and went up to 244,270 in 2012. Not only India but the most developed country on Earth also faces these problems in America 232,960 women were allegedly raped or sexually assaulted in the year 2006.

B. Solution with the Help of Technology

Many apps have been developed by developers to solve these problems but due to lack of features these problems are still unsolved and our eyes can read the headline of newspaper saying "Rape." When women are travelling or doing any outdoor activities and if unfortunately they go through these problems and to avoid these crimes women can use this system and reduce their problems. Ensures the safety of women as it sends the location of the woman also it does dens the photo of the criminal. Also in India 30% of women can access the internet easily.

Related Work: Security for women has become a major issue as the number of crimes over women and girls is increasing day-by-day. [1] In case of any harassment ,the women wearing a watch or band is embed with active RFID tag with on/off switch where by switching on, the information is passed to RFID reader which communicates with 8051 microcontroller and through GSM the "help" message is sent to 4 predefined contacts(parents, friends, media, women cell).The main aim of this project is to design a system which is used for security of anything like home, vehicle and banking by opening and closing the door. [2] The main aim of this system is to send location instantly of the woman to the cops, so that unfortunate incident can be averted and to provide real time evidence for the action against the perpetrators of crime against women. [3] Their system helps to click clear pictures and as photo sharing is an attractive feature which popularizes Online Social Networks (OSNS). Unfortunately, it may leak user's privacy if they are allowed to post, comment, and tag a photo freely. [4]

II. METHODOLOGY

In this system there are many components like LEDS, buzzer, shock generator etc. When a woman finds herself in a wrong situation she will instruct the machine so that it can send messages to known five people with her location and the message is immediately sent without any problems. The hardware components are maintained so that there will not be an error also there is a power supply present in it a battery of high quality has been used this system will easily help a woman out to escape from this dangerous situation as it will smartly give GPS means location of a woman and then any known ones of the woman can rush at the location and help her.

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III. TECHNICAL PARTS

A. Structure of the Process

1- Start
2- Connect the rechargeable battery to the power section
3- Make sure all the connections in power supply are correct
4- Then we use an Arduino Uno R3 port which has 28 output pins
5- A0-A1 is the first set of pins
6- A0-A13 is the second set of pins
7- The remaining pins are 16MHz crystal, reset, VCC and ground
8- These are the above total input/output pins
9- A USB socket is artificial hallow into which something fits
10- There a special socket called as power supply socket
11- A 5 volts power supply unit is present
12- An external power supply has also been used in this model
13- 16*2 LED display is used to show whatever is going on in the processor
14- There are two buzzers named as buzzer1 and buzzer 2
15- A shock generator has been provided to ensure a woman's security
16- Switch button Is available
17- GPS model is there GPS stands for global positioning system
18- GPS takes the longitude and altitude value
19- The GSM module has components like adaptor, bridge rectifier, LED etc. 20- As the GSM is of 800L a sim card of 2G or 3G can be used
21- 0 and 1 are connected to GSM module
22-The third pin is connected to the external GPS
23-Sixth pin is connected to the alarm 2
24- Alarm 1 is connected to the seventh pin
25- Rest of the pins that are 8,9,10,11,12,13 are the LEDS
26- When the execution process begins the GPS module takes the GPS values
27- It is capable of taking longitude and altitude values
28- With the help of LED display the LED display will help to print the longitude and altitude values
29- After this step the processor will start to initialize the GPS modem
30- If the connections are loose then the LED display will print to connect it properly
31- Now if a woman finds herself in trouble she can press the button
32- After pressing the button the buzzers will give loud and clear sound
33-Once thus sound is produced it will gain people's attention and they will flock towards the woman
34- After this it will send messages to the selected numbers
35-After the message has been received by the one who the woman selected will get her proper and exact location
36-Also this system will send message to another selected a=number
37- The system will send 5 messages at a single time
38- The purpose sending 5 messages is that it will give an emergency signal to the selected person
39- So this will help a woman easily and this can reduce the crime rates against women
40- This project can also be more advanced by adding the calling feature

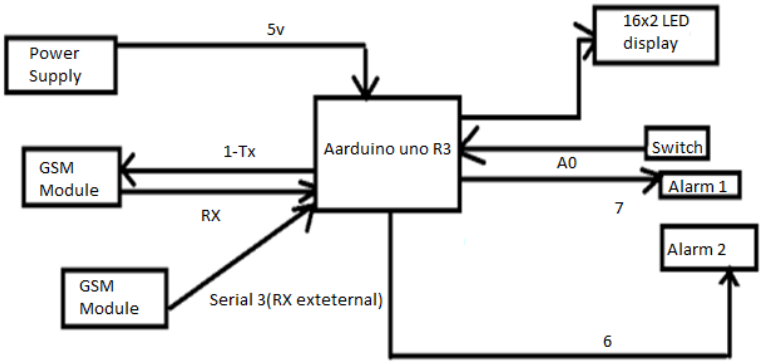

Fig 1. Block Diagram of Arduino Based Women Security System

ISSN (Online) 2278-1021
ISSN (Print) 2319-5940

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IV. ADVANTAGES AND DISADVANTAGES

A. Advantages
1. Easily tracks a woman's location
2. The buzzers help to gain people's attention
3. Affordable not so expensive

B. Disadvantages
1. Heavy in nature
2. Will not give proper output if connections are loose
3. To track a woman's location internet connection is must

V. FUTURE SCOPE

As the main aim in the world is to ensure women's security so by this model we can achieve our aim also slowly it would reach the rural areas and the women in can benefit themselves at a low price and women can leave their houses without any worries. This system can be more advanced by adding calling feature also the location can also be send to the nearest police station. Images can be clicked in the advanced system.

VI. CONCLUSION

After studying this system model carefully we can conclude that this system will surely help to reduce the crime rates against women and by sending location it is easier to help a needy woman.

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