IOSR Journal of Engineering (IOSRJEN) **www.iosrjen.org**
ISSN (e): 2250-3021, ISSN (p): 2278-8719
PP 59-62

"Women Safety Band"

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Abstract: *India which sees itself as a promising super power and an economic hub, is still trapped in the clutches of various patriarchal evils like molestations, dowry, crime against women, worst among all is rape. 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 fear of physical/sexual abuse and violence.So, in an attempt to curb this menace, the atrocities against the women can be now brought to an end with the help of a Women Safety Device. This safety device consists of a microcontroller, a temperature sensor, a heartbeat sensor and an emergency pushbutton switch. On sensing the emergency situation, this device fetches the current location of woman and sends it to emergency contacts via Global System for Mobile (GSM) module. The safety device also includes a shock giver circuit which is intended to hurt the attacking or abusing person, due to which there is a chance for the women to escape.*

I. Introduction

This women safety device is a microcontroller based system. An ATmega328 microcontroller based arduino board is one of the series AVR microcontrollers, one of the oldest yet commonly used microcontrollers. It has the less complex features than other microcontrollers and it is also easily available and cheap in comparison of other microcontrollers. The implementation of women safety system was done on AVR microcontroller via GSM modem and the interfacing is done through MAX-RS 232. Communication of alarming situation & prevention of incident has achieved by GPS, GSM technology, and defensive system respectively. This is the aim of our system. As a result the design is separated into two parts.

A) Message of the offense throughout wireless
B) Prevention of the crime.

1) The women wearing a watch or band when finds that someone is going to harass, she presses a switch that is located on the watch or band, which is accompanied by a condition check by temperature and heartbeat sensor. The signal gets transmitted to GSM module which then decodes the received information (either some code orname) and then activates the arduino in which contacts of 4 people and message "HELP" is stored in memory is sent to the destination through GSM.
2) This safety device works for self-defense and prevention of crime as well. Also, for self-defense, this device includes a shock generator which a woman can use against an attacker in case of emergency. This shock is intense enough to scare the attacker away.

II. Literature Survey

As we all know that India is a most famous country all over the world for its great tradition and culture where women are given most respected place in the society from the ancient time. It is the country where women are considered as safer and most respected. Women are given the place of Goddess Lakshmi in the Indian society. Indian women are found working in all fields like aeronautics, space, politics, banks, schools, sports, businesses, army, police, and many more. We cannot say that this country has no any women concern however we cannot ignore positive points for women in India. If we remember our history, we found that there was PanchaaliPratha in which a single woman (Draupadi) was allowed to get married to five men (Pandavas). It was all that what we see from our open eyes however if we see behind the curtain we will found all the crimes against women at home, offices, streets, etc. By seeing last few crimes against women in India such as rape cases, acid attacks, etc, the safety of women has been in doubt.Safety of women matters a lot whether at home, outside the home or working place. Last few crimes against women especially rape cases were very dread and fearful. Because of such crimes, women safety in India has become a doubtful topic. According to the statistics of National Crime Records Bureau, highest rate of crime against women was recorded in the Chennai in 2000 (around 4,037 incidences). Chennai is the capital of southern state of Tamil Nadu however has been marked as city with high rate of crimes against women. However, it was seen some decrease in the crime rate against

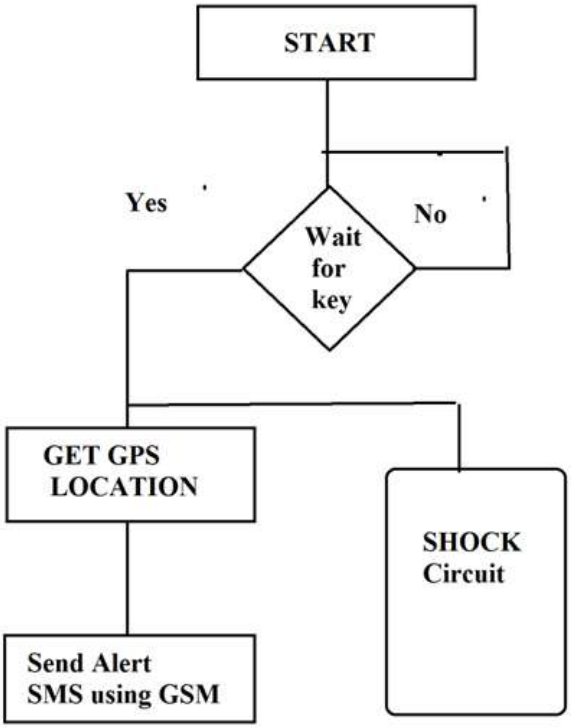
women in the subsequent years (around 838 by 2013). It has been recorded as the largest fall in the crime rate than other cities in India. It was just opposite in the capital of India, Delhi. Crime rate against women in Delhi was 17.6/100,000 females in 2000 (2,122 incidents) and 151.13/100,000 females in 2013 (11,449 incidents). Some of the most common crimes against women are rape, dowry deaths, sexual harassment at home or work place, kidnapping and abduction, cruelty by husband, relatives, assault on a woman and sex trafficking. Our primary goal of this project is to ensure every woman in our society to feel safe and secured. According to the survey in India 53% of working women are not feeling safe - Women is working in night shift (Bangalore-56%, Chennai-28%, Hyderabad-35%, Mumbai-26%). Overall 86% of working women in India, women facing hurdles are high in Delhi, Mumbai, Hyderabad, Kolkata and Pune comparatively to other places. Women Safety Device can play a major role by providing women a safe environment in all situations for example (detecting hidden camera, physically threatened, harassed, robbery, stalked). Implementing real time application and a device, we can solve the problems to an extent. With further research and innovation, this project can be used as a small wearable device like watch, pendent etc.

Problem statement:

- The purpose of designing this gadget is: To design and develop easy-to-use personal safety gadget. To employ Arduino Uno (ATmega328P microcontroller) for the gadget.
- To integrate Arduino circuit board with a SIM900 GSM Modem to send SMS and calls.
- To use the present technology for enhancing social welfare by providing a low cost device for timely and reliable communication.

Proposed Approach:

We will design project step by step, we will use arduino first and get aware of it. GSM and GPS module embedded commonly once operation performed individually. Shock circui will be there to give shock. Work flow algorithm is as follows.



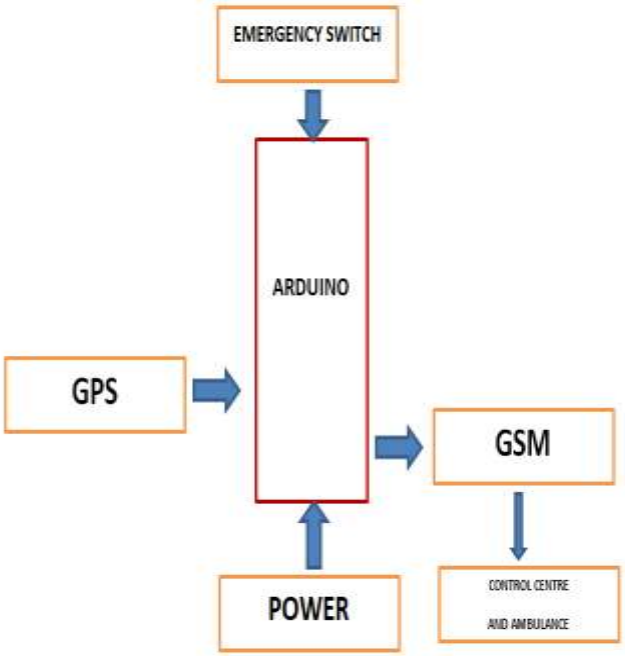
III. Methodology

The main purpose of our project is to provide security to the women from dangerous situations. This device consists of a key or button which can be pressed by the women when she is in need or when she feels insecure. As the switch is pressed by the women the microcontroller gets the command and it takes the current latitude and longitude value of the victim with the help of GPS module. Not only this, the pulse sensor also becomes active and starts sensing the pulse value of the victim and sends this value to the microcontroller.

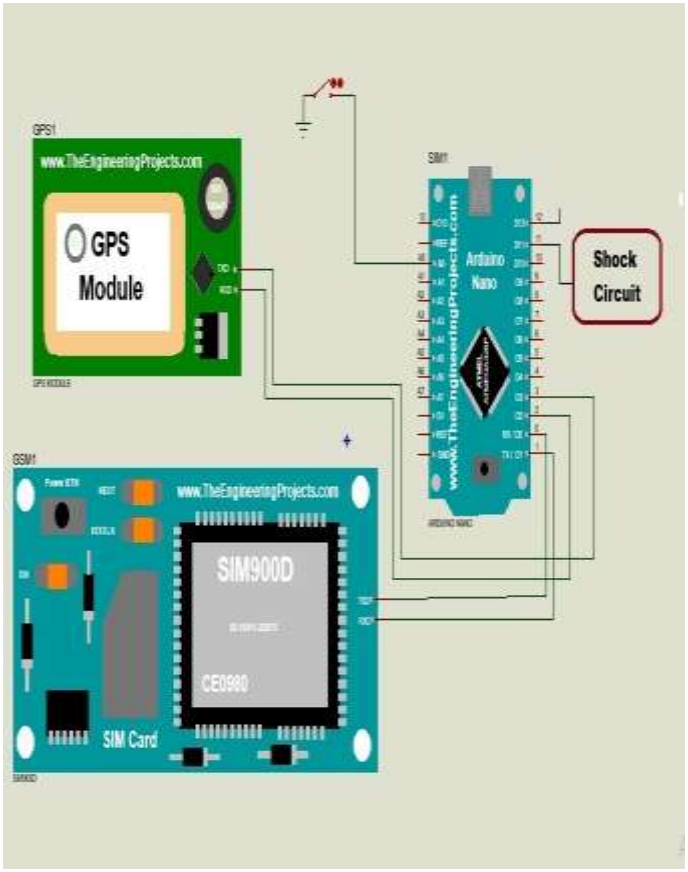
The microcontroller switch ON the buzzer present in the device so that nearby people may notice the critical condition and may come to rescue. And microcontroller sends the SMS of current location and pulse

reading to the registered mobile number of the family member and police with the help of GSM module. The GSM sends the current location and other data at every 10sec so that if victim is changing its current location continuously then that can be easily traced by police. And this GSM module also calls the family member and police station.

In case if the pulse reading also goes abnormal then the microcontroller command the GSM module to send the pulse reading by SMS and to call the ambulance so that the immediate medical help can be provided.



WOMEN SAFETY BAND



Tools for development :

Hardware tools:

- Ardunio
- GSM
- DPS
- Shock CKT
- Key

Software tools:

Arduino IDE
Embedded C programming language

Expected Outcome:

- **It must give exact location of the device.**
- **Gsm module must send sms as early as possible**
  And ultimate outcome is to make device useful to womens.

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