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"Nirbhaya"withU- A Women's Safety Device

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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, 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 tap sensor. On sensing the emergency situation, we need to tap tap sensor two times, after that this device fetches the current location of woman and sends it to emergency contacts via Global System for Mobile (GSM) module, a hooter or siren, and 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.

Keywords — :**Women Safety ,Emergency, Alerting, Self-defense.**

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I.   INTRODUCTION

Women's safety could be a vital issue thanks to rising crimes against ladies currently.To help resolve this issue we propose a GPS based women's safety system that has dual security feature. This device consists of a system that ensures twin alerts just in case a lady is troubled or she thinks she is in bother.This system can be turned on by a woman just in case she even thinks she would be in bother.It is helpful as a result of once an event happens with a lady she might or might not get the prospect to press the emergency button.In a button press alerting system, just in case a girl is hit on the pinnacle from behind, she could ne'er get the prospect to press button and no one will know she is in trouble. Our system solves this problem.
This device is to be turned on before by a lady just in case she is walking on a lonely road or some dark alley or any remote space.
Only the lady genuine to the devices will begin the system by fingerprint scan.
Once started the devices needs the lady to perpetually scan her finger on the system each one minute, else the system now sends her location to the authorized personnel
number through SMS message as a security live and additionally sounds a buzzer ceaselessly so close individualsmight notice matters.
In this case even if someone hits the woman or the woman falls down and get unconscious, she does

not need to do anything, the system does not get her biometric identification in one minute and it mechanically starts the twin security feature. This device will prove to be very useful in saving lives as well as preventing atrocities against women. The device uses GPS sensor along with a GPS modem, LED's and Microcontroller based circuit to achieve this system.

II.LITERATURE SURVEY

2.1 Brief Case Study
Every single day single girls, young women, mothers and girls from all walks of
life ar being maltreated, molested,
and desecrated.
The streets, conveyance,
public areas specifically became the territory of the hunters.
While the ones already hunted down weep in silence or in disdain, the rest fight their way to a basic life with dignity.There is an unspoken war on the streets.
Young faculty and faculty going women use books to protect themselves, other women wear full-covered attire to protect their bodies, and others avoid the mere glance of the roving gaze.

One explore the official statistics and there is cause for concern:

o Officials from NGOs working with women state almost every single day, a young girl is being trafficked (sold)
into flesh trade.
Most of the days, her parents sell her off.

o Officials from Stop Acid Attacks say there are reported cases of acid attacks on the streets two or three times a week
o .Every 20 minutes a woman is raped in India.We don't need to look at statistics to confront the horrid truth.
News stories of ladies from everywhere Asian country being raped, beaten, killed are flashed across us day after day – and we all are aware of it.

o The fatal Nirbhaya gang-rape saw an outpouring on the streets of Delhi – protests decrying the fragile status of women in India. Candle light marches, editorials examining the patriarchal and sexist traditions of our country, an awakening on social media – even conversations on streets revolve around the night they cannot forget: the night that took Nirbhaya.
2.2 Literature Survey
In 2015,Glenson Toney ; FathimaJabeen; Puneeth S ,presented their work on armband would have a controller with GSM/GPS kit interfaced.
The band would even be interfaced with a wireless camera for grouping pictures.
A human action would initiate the system.
On initiation, the video collected is live video streamed to the Control room.
An alert message together with the placement is distributed to a predefined Mobile Station till the system is reset.
Since change in Longitude and Latitude is sent continuously, the person can be tracked.
The system is meant conjointly to be used as associate alert system throughout medical emergency.

In 2016, G C Harikiran; KarthikMenasinkai; SuhasShirol, presented their work on The software or application has access to GPS and Messaging services which is pre-programmed in such a way
that whenever it receives emergency signal, it will send facilitate request together with the placement co-ordinates to the closest station house, relatives and also the folks within the close to radius World Health Organization have application.
This action allows facilitate in a flash from the Police still as Public within the close to radius World Health Organization will reach the victim with nice accuracy.

In 2016,Divya Chitkara; NipunSachdeva; Yash Dev Vashisht presented their work on The defence strategy used by females needs to be

revolutionised by adopting modern technology and gadgets to protect them from their oppressor. AnandJatti; Madhvi Kannan ; R M Alisha ; P Vijayalakshmi; Shrestha Sinha Presented their work on rable device for the safety and protection of women and girls.
This objective is achieved by the analysis of physiological signals in conjunction with body position.
The physiological signals
that ar analyzed ar galvanic skin resistance and blood heat.
Body position is set by effort raw measuring system information from a triple axis measuring system.
Acquisition of data is then followed by activity recognition that could be
a method of using a specialised machine learning algorithmic program.
Real-time watching {of information|of knowledge|of information} is achieved by wirelessly causation sensing element data to associate open supply Cloud Platform.
Analysis of the info is completed on MATLAB at the same time.
This device is programmed
to ceaselessly monitor the subject's parameters and take action once any dangerous state of affairs presents itself.

In 2018, KalpanaSeelam; K. Prasanti presenting their work for describes about safe and secured electronic system for women which comprises of an Arduino controller and sensors such as temperature LM35, flex sensor, MEMS accelerometer, pulse rate sensor, sound sensor.
A buzzer, LCD, GSM and GPS ar utilized in this project.
When the ladies is in threat, the device senses the body parameters like heartbeat rate, change in temperature, the movement of victim by flex sensor, MEMS accelerometer and the
voice of the victim is detected by sound sensing element.
When the sensing element crosses the edge limit the device gets activated and traces the

placement of the victim victimization the GPS module.
By victimization the GSM module the victim's location is distributed to the registered contact variety.

In 2018, ShivaniAhir; Smit Kapadia ; Jigar Chauhan ; Nidhi Sanghavi,presented their work on developing a prototype that is a smart band which gets activated by tapping on the screen twice. Once the device is activated it starts sending the GPS location to the ICE contacts and police control rooms. There is a pulse rate sensor embedded in the device that senses the pulse rate of the person and a temperature senor that senses body temperature of the person

III. PROPOSED SYSTEM

3.1 BLOCK DIAGRAM
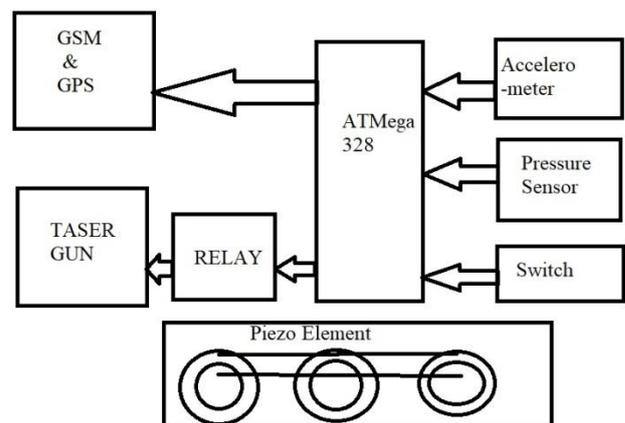
As shown in the fig. the circuit is designed around microcontroller ATMEGA 328P.
Here the MEMS device is employed to sense any mishappening with girls in keeping with the extraordinary movement of body.
If in any case MEMS sensor is unable to sense the misshape ning then the switch in the watch can be pressed manually to indicate any mishappening. As soon as any misshape ning is detected by the sensor the same is indicated to controller. Upon receiving the signal the controller starts generating shock waves through shock wave circuit and at the same time a

message containing location of the victim obtained through GPS is transmitted to the relative or friend whose number is already in the program.

3.2 INTRODUCTION OF HARDWARES

3.2..1 ATMEGA328

The Atmel ATmega328/P is a low-power CMOS 8-bit microcontroller based the enhanced RISC architecture.

By deat penalty powerful directions during a single clock cycle, the ATmega328/P achieves throughputs close to 1MIPS per MHz.

This empowers system designer to optimize the device for power consumption versus process speed.

Figure . ATmega328

Fetures:

. High Performance, Low Power Atmel AVR 8-Bit Microc Family

• Advanced RISC Architecture
– 131 Powerful Instructions
– Most Single Clock Cycle Execution
– 32 x 8 General Purpose Working Registers
– Fully Static Operation
– Up to 20 MIPS Throughput at 20MHz
– On-chip 2-cycle Multiplier
• High Endurance Non-volatile Memory Segments
– 32KBytes of In-System Self-Programmable Flash program Memory

– 1KBytes EEPROM
– 2KBytes Internal SRAM
Operating Voltage: – 1.8 - 5.5V
Temperature Range: – -40°C to 105°C

3.2..2Accelerometer

The ADXL335 may be a little, thin, low power, complete 3-axis measuring system with signal conditioned voltage outputs.

The product measures acceleration with a minimum all-out vary of ±3 g.

It will live the static acceleration of gravity in tilt-sensing applications, additionally as dynamic acceleration ensuing from motion, shock, or vibration.

The user selects the information measure of the measuring system victimization the 110, CY, and CZ capacitors at the XOUT, YOUT, and ZOUT pins.

Bandwidths can be selected to suit the application, with a range of 0.5 Hz to 1600 Hz for the X and Y axes, and a range of 0.5 Hz to 550 Hz for the Z axis.

The ADXL335 is out there in an exceedingly little, low
profile, four millimeter × four millimeter × one.4 5 mm, 16-lead, plastic lead frame chip scale package

Figure 3.2 Accelerometer

3.2..3 Piezo Element

A electricity sensing element may be a device that uses the piezo effect, to measure changes in pressure, acceleration, temperature, strain, or force by converting them to an electrical charge.'

Figure :Piezo Element

3.2..4 GSM and GPS Module:

3.2.5 Taser Gun

It is AN electrical protection device that uses high voltage to prevent AN assaulter.
Touching someone with the prongs of the device quickly immobilizes the assaulter.
However, as a result of the electrical phenomenon is incredibly low, no serious or permanent injury is inflicted.

Figure 3.2.2.5 Taser Gun in ShoesTaser guns work the same basic way as ordinary stun guns, except the two charge electrodes aren't permanently joined to the housing.
Instead, they're positioned at the ends of long conductive wires, hooked up to the gun's circuit.
Pulling the trigger breaks opecompressed gas cartridge inside the gun.

## IV.HARDWARD AND SOFTWARE DESIGNE

SOFTWARE:

4.1 Proteus:

The Proteus style Suite could be a Windows application for schematic capture, simulation, and PCB (Printed Circuit Board) layout style.
It are often purchased
in several configurations, looking on the scale of styles being made and also the needs for microcontroller simulation.
All PCB style merchandise embody Associate in Nursing autorouter and basic mixed mode SPICE simulation capabilities.

4.2 Simulation Result
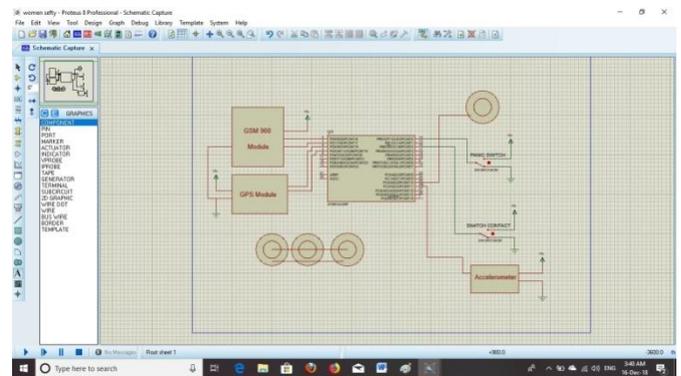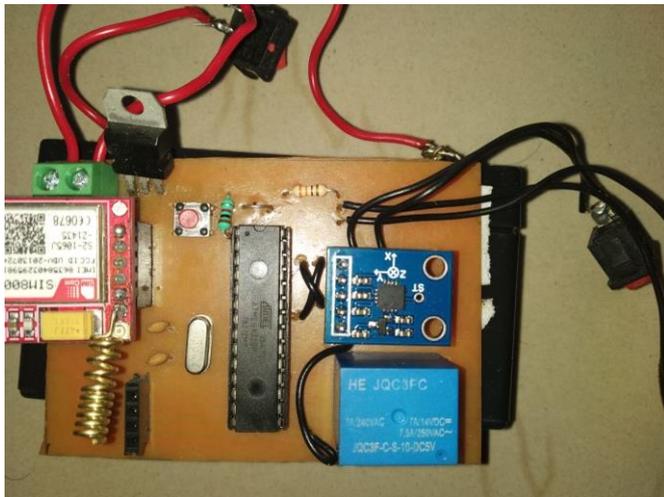

4.3 PCB Design
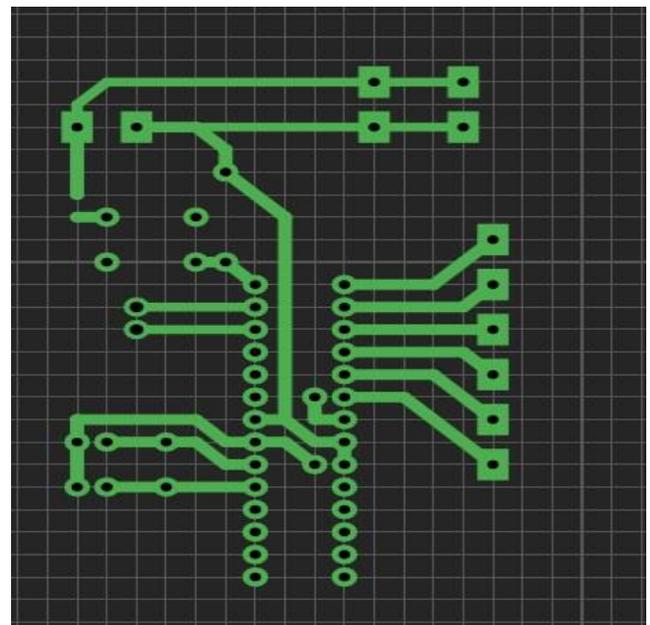
V. RESULT&CONCLUSION
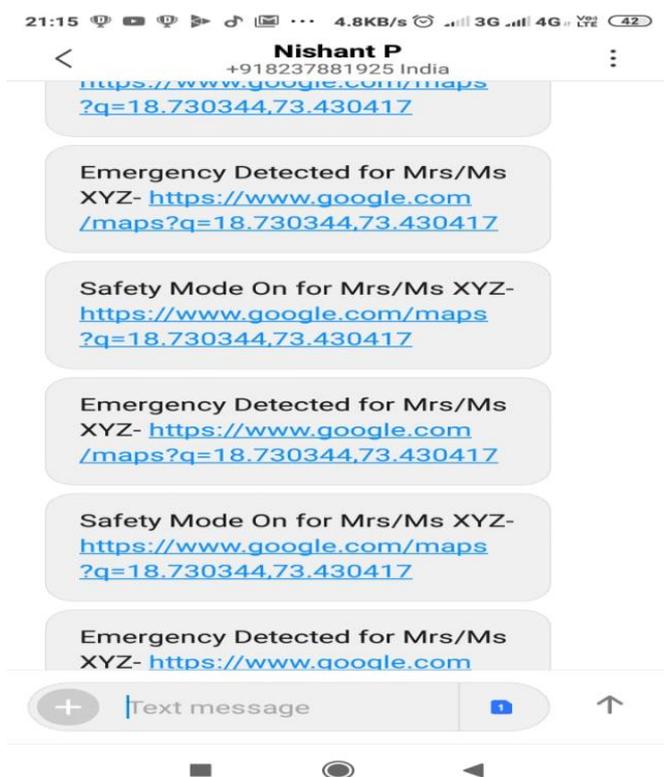

Fig5.1.Womens safety device

Fig5.2.Output emergency detected sms on mobile

Conclusion:

It are often over that the system helps to supports the gender equality by providing
safe surroundings to ladies with in the society, and permits them to figure until late nights. Anyone before doing any crime against the ladies are deterred and it facilitate reducing the rate against the ladies.In a number of the cases the system will offer helpful evidences. Since the system can do audio - video recording of incidences which can act as the evidences. The proposed system provides the tool for intrusion detection inside the home where senior citizen, handicapped person or women leaving alone and after detection of intrusion it takes necessary preventive measure action to ensure safety.

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