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Women Security System using GSM & GPS

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ABSTRACT: Children and women are facing many security problems nowadays. So in such cases they feel handicap and need help to protect them. In the light of recent outrage in kopardi which shook the nation and woke us for the safety purpose for women, people are finding up in different technique to defend. Hence there must be a system which can protect them in such difficult situation. This paper suggests a new technology for a women safety with one touch system using GSM & GPS so that women never feel helpless while facing such social problems or challenges. Here we introduce a device which ensures the protection of women. The problems we have overcome here using raspberry pi, GSM, GPS and force sensor. Anytime when women sense danger only button is to be pressed on the device. In such case GPS tracks the location of the women & sends emergency message using GSM to saved contacts & police control room. The system proven that it is providing complete security to women's and kids wherever we are using it.

KEYWORDS: Security, Raspberry pi, GPS, GSM, push button, audio video recorder, buzzer, force sensor.

I. INTRODUCTION

The Indian women's movement has always raised the issue of- violence against women (which is basically, gender-based violence) and the violence that follows from structural inequalities like caste, poverty or identity. No such city or country is present in the world where women and girls live free of the fear of violence. No leader can claim: this is not happening in my backyard.

Unfortunately, the news has recently come into the notice about the instances of abuse, kidnapping and rape. Schools and universities must compulsorily teach the students to learn about physical education and art, schools do not equip students with basic skills of life - especially the safety one. It's necessary for a project that instructs young girls how to defend themselves is immense.

This work focuses on a security system that is designed to serve the purpose of providing security to women, while facing such social challenges they never feel helpless. The system consists of various modules such as PIC, GSM, GPS, audio and video recording and force sensors, the system with GSM and GPS interfaced with the PIC microcontroller. Recently many methods were introduced for such application. "One touch alarm system for women's safety using GSM" [1], this system operates with the push button, whenever switch is pressed the current location is sent through GSM to receiver side. In this the smartphone is not required like other systems, without smartphones the device operates. Whenever the women feel unsafe, by pressing switch of the device, she can get help. This device can only send the message and receive the message. The various problems arise has overcome with the "All in one intelligent safety system for women security" [7], in this mobile application, SOS Key Press Module and Voice Recognition Module. Any one action can be activated the system, which sends the message including the user location to the registered contacts. At the receiver, just by clicking on the location link provided in the message it can show the location on the Google map. "Smart girls security system" [2], is developed using GPS, GSM and pressure sensor. In this, GSM help to find the exact location of incidence and the

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information of incidence can be conveyed by using GSM through message. In this system the pressure sensor activated if any incidence happened and a screaming alarm blow for asking the help from near by people. The women security system architecture will be introduced in section II. The processing of the system will be described in section III. The advantages of the system is given at section IV. The results and conclusions will be explained in section V and VI.

II.A.SYSTEM DIAGRAM & SYSTEM OPERATION

In this work we have introduced GSM module. GSM module will send the message to her relatives and also to the police. So, the relatives and the police can reach to girl/women to help her immediately. We have interfaced a GPS module to find location of the girl in the danger. Message the location of the girl will be send to her relatives and police. So, the relatives and the police reach to girl/women to help her immediately by getting the location (co-ordinates) accessing Google Maps. Thus the girl will be safe and she feels protected.

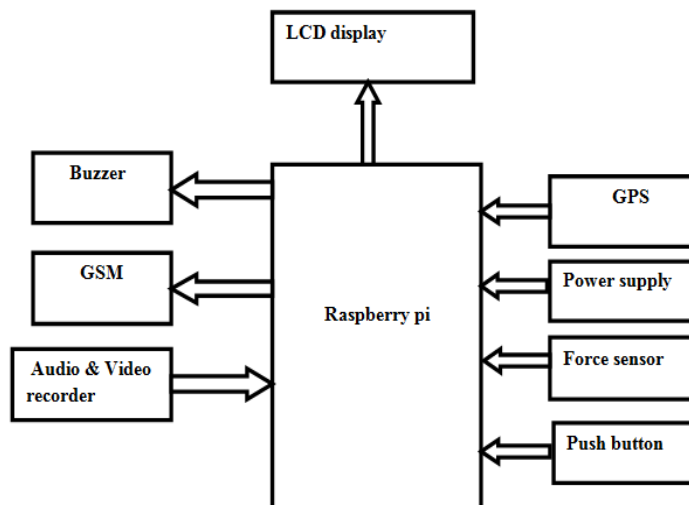


Fig.1.System diagram

Whenever panic switch is pressed the device will get activated. The audio and video recorder will start to capture the live incident. If the pressure sensor sense the physical pressure the message will be send to contacts with the live recording through GSM. Buzzer is provided in the device, when the device gets activated the buzzer produces high sound in the surrounding. So, nearby people may hear the sound and may give help to her. Spy-camera starts functioning when device activates and capture the video of present location and the data is stored in SD card.

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1. RASPBERRY PI MODULE-

The raspberry pi board comes equipped with an SD card. The SD card is a main storage device for raspberry pi board like a hard disk of a personal computer.

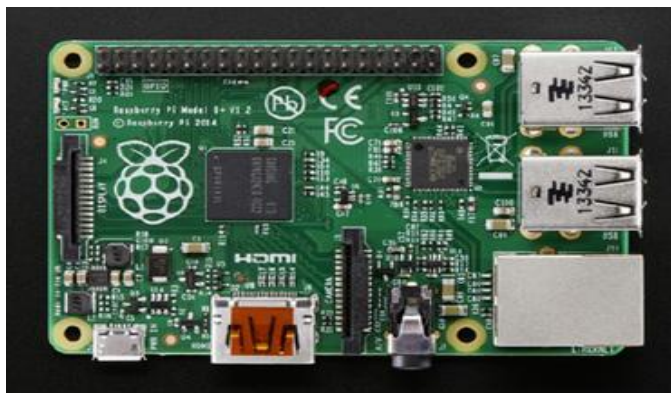


Fig.2. Raspberry pi model

Raspberry pi supports three different outputs like HDMI video, Composite video and DSI video. It is small in size and it works as a normal computer at low cost server to handle web traffic.

- Dual step-down (buck) power supply for 3.3V and 1.8V
- 5V supply has polarity protection, 2A fuse and hot-swap protection
- New USB/Ethernet controller chip
- 4 USB ports instead of 2 ports
- 40 GPIO pins instead of 26. The top/first 26 pins match the original layout, 9 additional GPIO

2. GPS MODULE-

The current date, time, longitude, latitude, altitude, speed, and travel direction / heading among other data, are provided by the module and can be used in a many applications including navigation, fleet management, tracking systems, mapping and robotics.

Specification:

- I/O Pin- 22pins
 - Power consumption -16 Vcc DC +3.3V@ ±5%
 - Current Normal mode: VCC_IN CURRENT
 - Hibernate mode :VBATT current
 - TYP. 20uA@3.3V(without ext. antenna)
- Mechanical requirements

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3. GSM MODULE-

With the help of GSM module interfaced, we can send short text messages to the required authorities as per the application. GSM module is provided by SIM uses the mobile service provider and send SMS to the respective authorities as per programmed.

Specifications:

- Control via AT commands (GSM07.07 ,07.05 and SIMCOM enhanced AT Commands)
- Supply voltage range 3.4 - 4.5 V
- Low power consumption
- Operation temperature:
- -30 °C to +80 °C

III.ALGORITHM

Fig.3 shown below is the flowchart for the given system.

Condition-

1. Module is carried by the women/girl in handbags, purse, toys, etc. The module is always is in off state.
2. Switch pressed- Whenever switch is pressed, audio and video recording start and stored in SD card.
3. Force sensor- When physical pressure is sense by the sensor, the message and live video is send to preset contacts.
4. If the switch is pressed twice then the module is, in the off condition.

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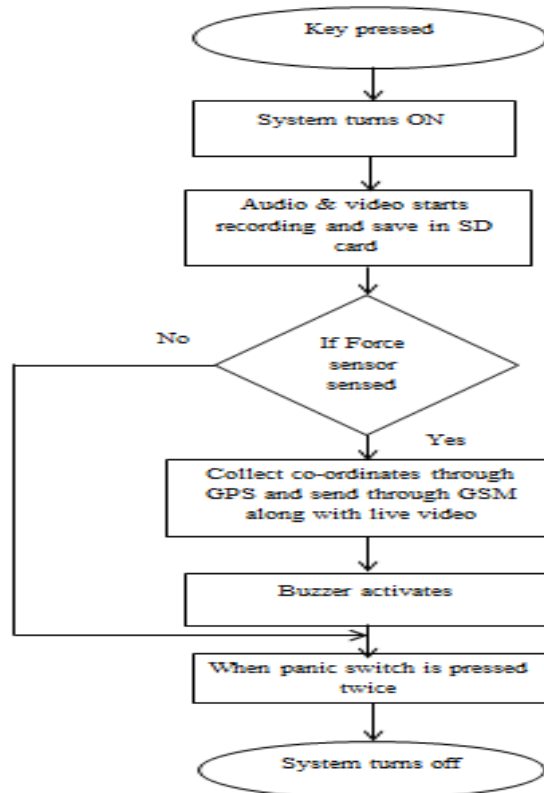


Fig.3. Flowchart for the system

IV.RESULTS & DISCUSSIONS

Push button has given higher priority, when switch pressed, device start to activate, if the pressure sensor sense physical pressure, “Latitude and longitude”, will be sent from device with alert message to the pre-set contacts in single click, whereas audio and video will be recorded and video will be sent to the pre-set contacts and it will also be stored in SD card.

User will received message on LCD that message have been delivered to control room.

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SR NO.	INPUT	ACTION	OUTPUT
1.	Push button	It comes at first priority. Panic mode ON	Sensors ON. Audio video recording start.
2.	Force sensor	Physical pressure is sensed.	Message and record data is send.
3.	GPS	It gives information in terms of longitude and latitude.	It display the current location through satellite

V.ADVANTAGES

- Safety Device which can be carried by everyone – These devices will be used for safety purpose which will be easier for carrying from place to place.
- Compact in size- The device will be small in size.
- Easy and fast to install-These system will be easy to handle.
- Low cost with high performance-The device will be in a low cost which will work with a good performance.
- Environmental friendly system- The system will not harmful for the surrounding.

VI.CONCLUSION

This proposed design will help to solve critical issues faced by women in the near past with technologically sound equipment's and ideas. While the society may or may not change for the enhanced, the power to be autonomous, self-assured and truly free can come with arming oneself with the best possible device.

The system will provide correct information as physical devices gives guarantee for the same. Our primary goal of this work is to ensure every woman in our society to feel safe and secured. The system will be portable, shock proof and cost effective.

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