

Women Safety System using Raspberry pi

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Abstract - In today's world, women come across many situations that make them feel insecure. Women from various locations face situations that make them feel in danger in different environments. Sixty six percent of women have reported sexual annoyance in the year 2010 in New Delhi. It has also been proved that in urban environments, women are more lying face down to experience harassment especially in developing countries. In such situations, the help of a safety device that will inform the victim's family members or the authorities (in Severe situations) may help women feel safer, confident and reduce the chances of irritation. Though there are a few Smartphone based solutions for the same, it might not be possible for the victim to reach for her phone in some situations without the knowledge of the perpetrator. In this approach, the focuses on a security system that is planned just to provide the purpose of providing security to women so that they never feel powerless while facing such social challenges. An higher system can be built that can capture and stream the video of the event as well as send the emergency messages of the victim through GSM to respective mobile numbers. The plan to develop a smart device for women is that it's completely comfortable and easy to use as compared with already existing women security solutions such as a separate garment, bulky belts and infamous mobile apps that are just very conceptual and outdated.

Key Words: Dataplicity, GSM, GPS, Raspberry pi, Panic Button, Mic

1. INTRODUCTION

As India races towards becoming an economic superpower, the country is lacking in women's safety- with an alarming number of women succumbing to rape and fire-related deaths every year. The Indian woman of today is the 'Bharatiya Nari' an ideal Indian woman in the recreate. As a Bharatiya Nari, she always was the mother, and the supporter of culture and values. She was more within and content being at the centre of the home, less visible externally, and not a part of the hustle-bustle of economic activity. But we have already seen this changing. As the Indian economy and the society hold new frontiers, the Indian woman of today is more and more a part of the public places, claiming her rightful place in the civilization and the commercial world. She ensures that she is being heard. Juggling work, marriage, children and a home, or giving up one in favors of the other, women in our country have surely come a long way, even if there is a longer way still to go. One certain reality that has sadly not changed, and has become harsher with passing time, is the question of women's safety. Last few years ago the unfortunate Nirbhaya

incident caught the attention of the whole nation and the world. Since then, a lot was promised and budgets were approved for women's safety, but we know that little has moved in these years. Time and again, we have to bend our head in shame, not just for the continuing craze of events but also for our inability to attempt such a danger with determination. It is only natural, then, that efforts toward women's empowerment, both government and corporate-driven, are more eagerly focused on safety against sexual assaults. There is thus, a need of simpler safety resolution that can be activated as simply as by pressing a switch and can instantly send out alerts to the near ones of the victim. This project focuses on a security system that is designed exclusively to serve the purpose of providing security and safety to women. The objective of study work is to create a safety device for women, which provides following facilities

1. Alerts family and friends by sending emergency message with her location.
2. Captures & streams the video of the attacker & record audio to maintain a proof for lawful actions.

2. EXISTING SYSTEMS

The most of the existing systems are implemented using GSM, GPS and Android APP. But the main disadvantage of those systems is that ladies, girls should have to carry mobile phone with her while travelling. Another disadvantage is the victims have no proof for allegation. Hence there is need of a novel system which can overcome the above limitations. There is thus, a need of simpler safety solution that can be activated as simply as by pressing a button and can immediately send out alerts to the near ones of the sufferer. This project focuses on a security system that is designed exclusively to serve the purpose of providing security and safety to women so that they never feel weak while facing such social challenges.

3. SYSTEM DESIGN

- Raspberry Pi: The raspberry Pi is a controller board based on the Broadcom BCM2837 chip which contains an 4× ARM Cortex-A53, processor running at 1.2GHz, 1GB LPDDR2 (900 MHz) of RAM.
- GSM & GPS: The SIMCOM 900A GSM module was chosen to send the message. The GPS Receiver module SIM 28M was chosen which is operated by 9v-15v DC adapter.

- Camera: The raspberry pi camera board plugs directly into the CSI connector on the Raspberry Pi. Camera is used to captures the video in incidence.
- Panic Button: A panic button is an electronic switch designed to initialize system and start to assist in alerting somebody in emergency situations. Light weight micro limit switch is used as panic button which will be easier to carry.
- Mic : Mic is used for recording purpose which will going to record the audio.
- Speaker : Used to play the recorded sound.

4. WORKING

It is projected for providing safety to women using Raspberry pi. As shown in the figure 1 , the device intends to work as follows. If a woman is subjected to attack by an adversary, then a switch has to be pressed manually, by her which is located on safety system. This switch will send signal to the raspberry pi this will start the camera to shoot the video of the attacker and will stream it through dataplicity website. Also with this emergency message "Please Help Immediately" & location co-ordinates of that area will send to the pre-decided cell phone numbers (typically the family and the friends) via GSM module. Audio will also get recorded on SD card using mic & it can be playback through speaker.

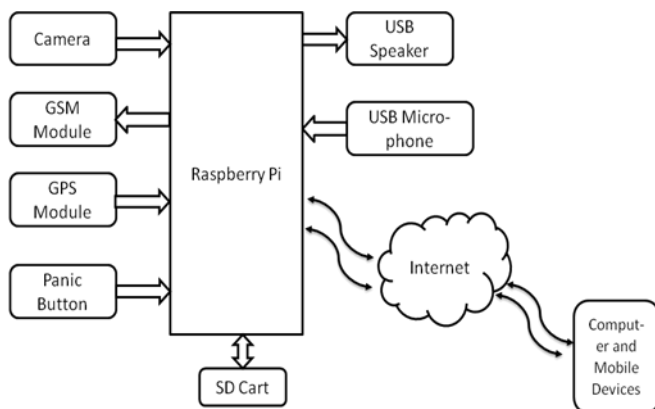


Fig -1: Block Diagram of Women Safety System

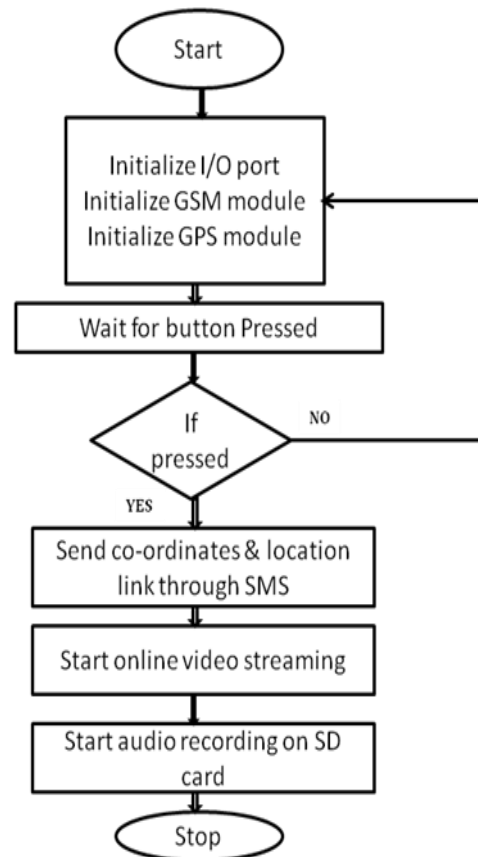


Fig. 2 Flowchart of Women Safety System

5. RESULT & OUTCOME

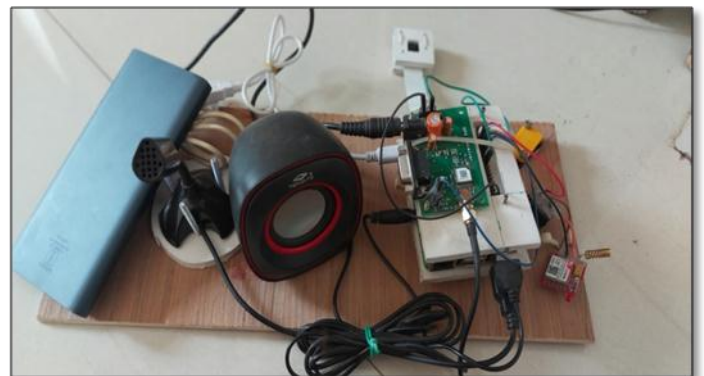


Fig.1 HARDWARE IMPLEMENTATION OF WOMEN SAFETY SYSTEM



Fig. 2 IMAGE OF ONLINE VIDEO STREAMING

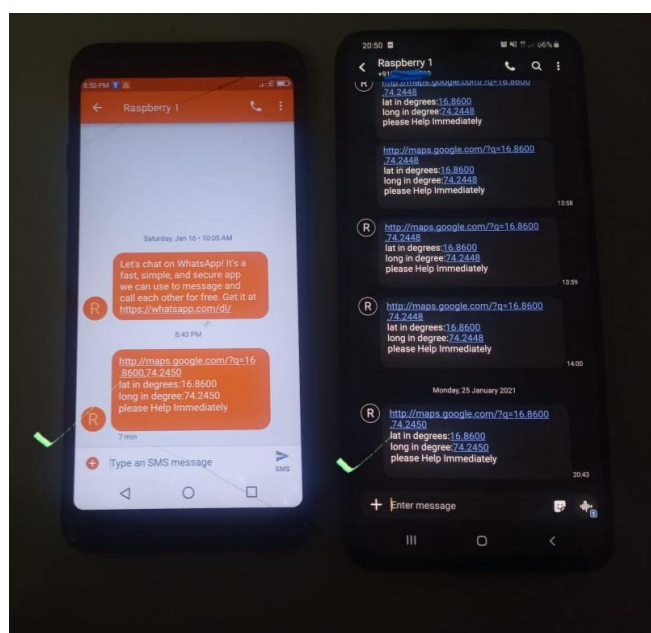


Fig.3 SMS SEND WITH LOCATION CO-ORDINATORS

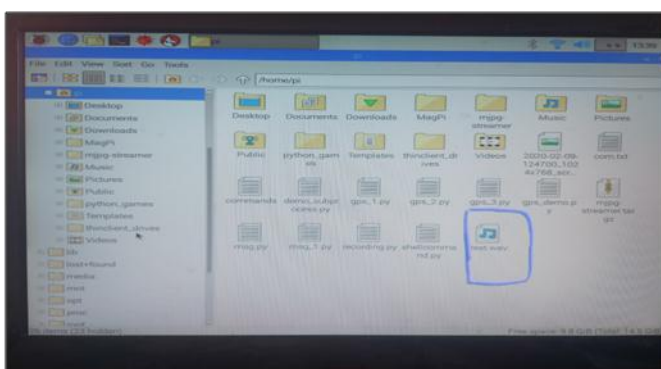


Fig 4. AUDIO RECORDED FILE

6. CONCLUSION

The fundamental reason for this research work is to guarantee that each lady in the general public feels safe and secure while going around evening time, on streets, while going to schools, universities, working environments, and so

forth actualizing ongoing application and an updated gadget, we can begin the issues to a level With additional study and development, it very well may be utilized to guard the ladies in basic conditions, as ladies are confronting several issues with respect to their security. This system is valuable to avoid cases like assaults and any sick people prodding young ladies, young ladies being followed or irritated.

On the base of writing survey completed we have designed a outline which will go about as a good device for the ladies and may assist her with giving the data of her area to the pre-decided members with SMS at serious risk.& Also with this for proof audio is going to be recorded with online video streaming. In the present situation, each lady faces an issue with respect to her security because of rapidly expanding frustration against ladies. This structure will take care of ladies to beat their fear in proceeding to look for after their professions and work.

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BIOGRAPHIES



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