

ELECTRONIC JACKET FOR WOMEN SAFETY

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Abstract: In today's world, every girl's primary concern is her safety and harassment issues. The only thought haunting every girl is when they will be able to move freely on the streets even in odd hours without worrying about their security. This paper suggests a new technology to protect women. This mainly focuses on security for women so that they will never feel helpless. This proposed system is based on the design of an electronic jacket for the safety of women during dangerous conditions. This system consists of a Raspberry pi 3 module along with a Buzzer, a Shock circuit, temperature sensor, GPS, GSM modules, and push-buttons. In emergency situations when the push buttons are pressed, the shock circuit gives a mild shock to the attacker. The user's location and an alert message will be forwarded with the help of GPS and GSM respectively. The buzzer gives a sound and the camera starts recording the incident. This system gives safety to women and reduces crimes against women.

Keywords: Raspberry Pi Module, GPS, GSM, Temperature sensor, Shock circuit.

I INTRODUCTION

In today's world, every girl's primary concern is her safety and harassment issues. When an emergency situation occurs then women cannot protect and operate the smartphones. Moreover, she is unable to activate the alert function when they are in a dangerous scenario and are unable to promptly pass and communicate their location to the authorities and family members. This paper suggests a new technology to protect women. The system consists of various modules such as GSM, GPS, memory card, shock circuit, buzzer, Temperature sensor, Raspberry pi module. This proposed system using wireless technology for security purposes. An electronic jacket for women's safety that allows users to protect themselves while traveling odd hours or when they feel helpless. Although an Android-based application on Women security is already out in the market but for non-android users, thought of an idea for developing a project based on women security using the Raspberry pi module. The Raspberry Pi controller allows the GSM system to deliver the Alert Message to the designated numbers after receiving signals from the GPS system with current location information. In our jacket, we also use a shock circuit to injured the aggressor as a form of self-defense. A camera used for the capturing image of an attacker and an external memory card is used for the capturing image is saved on this card. The temperature sensor is used to record and sent the temperature of the women to the saved numbers. In the literature survey, GowriPredeba.B, Shyamala.N, Tamilselvi.E, Ramalakshmi.Selsiaulvina.C [1] in this paper unified a combination of wearable jackets and mobile technology for the safety of women in society. This system helps to alert family members and people closest to the victim by using a buzzer, GPS, and GSM module. Niranjana L, Charmila G, Bindhu V, Jyothi M, Meghana [2] in this paper proposes an electronic

protection device for women, installed in public transportation vehicles such as cars, buses, and auto-rickshaws as women are now being molested, abducted, and abused by drivers. This electronic device is having GPS, GSM monitor, shock circuit, buzzer, memory card interfaced with the Raspberry pi-3 board. Dr. K. Valamarthi [3] in this paper the authors have reviewed various existing systems on women's security. The GPS module uses longitude and latitude to determine a user's exact location and sends a pre-programmed emergency message with the user's location to the registered contact numbers. The Audio Recording module starts the recording of the conversation. Dr. Vasanth [4] in this paper clearly uses two main modules of GSM and a microcontroller. Whenever the user presses the panic button in the encoder the microcontroller pin gets low and it starts to allow GPS to send location information to GSM. Through the AT commands all those messages reach the microcontroller. Using AT Commands GSM will send the help message along with latitude and longitude values to the registered mobile numbers in the code. By using this system, we can reduce the crime rate against the women. Saranya, Mr. K. Karthik [5] in this paper application created to know whether a woman is safe or not? This indicates the present state of affairs of the woman by touching the option, which also indicates the location of the endangered woman they gave a phone call, video forwarding, fake calls, and location of the person, first-aid details, and application having the instructions that are the way to use the application. From the literature survey, it has been observed that existing research having more systems are available for women's safety. The proposed system having more advantages compared to an existing system. The rest of the paper is organized as follows: The proposed model is discussed in Section 2. Section 3 presents the result of the proposed system. Section 4 will conclude the paper. The future scope is discussed in Section 5.

II. PROPOSED MODEL

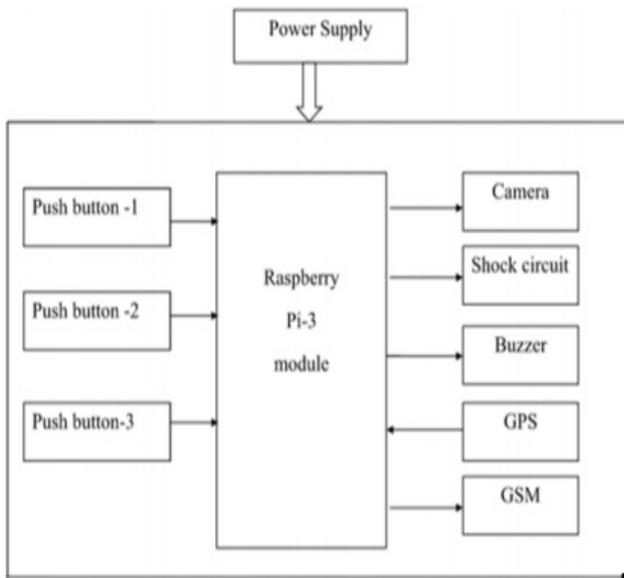


Figure 1 Proposed Model

The proposed system in Figure 1 describes that Raspberry pi module is the key component of this system. It is used in interfacing the GSM and GPS modules. Three buttons are used in our proposed system. First button is used for GPS which is used to find the exact location of women. Second button is for GSM which is used to send alert messages. Third button is for shock circuit and buzzer. Shock circuit is used for self-defence and buzzer is used in alerting the persons near to the women. Temperature sensor is also interfaced in this system to record the temperature of the women.

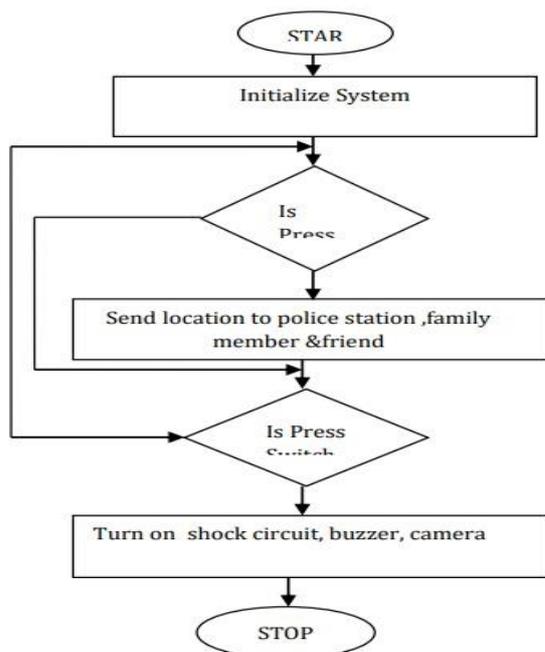


Figure 2 Flow of operation

Figure 2 describes the proposed system flow of operation. Raspberry pi is used to interface the GSM, GPS, buzzer and the shock circuit. Using three push buttons to turn on each and every device. When the first push button is pressed, GPS will be turned on and record the exact location of women. When the second push button is pressed, the GSM will be turned on. It is used to send alert messages and the location of the women to the respective saved phone numbers. When the third push button is pressed, the shock circuit will be turned on. It is used for self-defence which can injure the attacker. Temperature sensor is also interfaced in this system so that the temperature of the women who is in critical situation is also sent via GSM module.

III. RESULTS

Electronic Jacket for Women Safety is that use a wireless system to send message and location. It is very useful for security purposes. Shock Circuit is used to injure an attacker for self-defence. This System is used for protection and to control other activities which are happening in today's life. The temperature sensor is used to record the temperature of the women and is sent along with the alert message. All these circuits are interfaced with the Raspberry Pi Module.

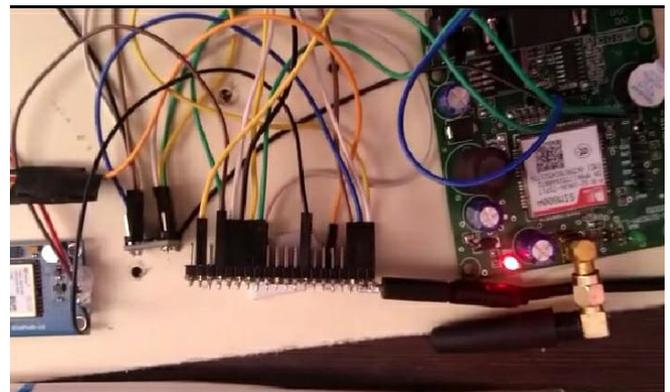


Figure 3 Interfacing GPS and GSM with Raspberry pi Pico

This Figure 3 describes that the Raspberry pi Pico is used to interfacing the GSM Module and GPS with the help of the level converter.



Figure 4 Shock circuit design

This Figure 4 describes that the shock circuit is designed with help of a relay circuit. It is also interfaced in this system with the help of Raspberry pi Pico.

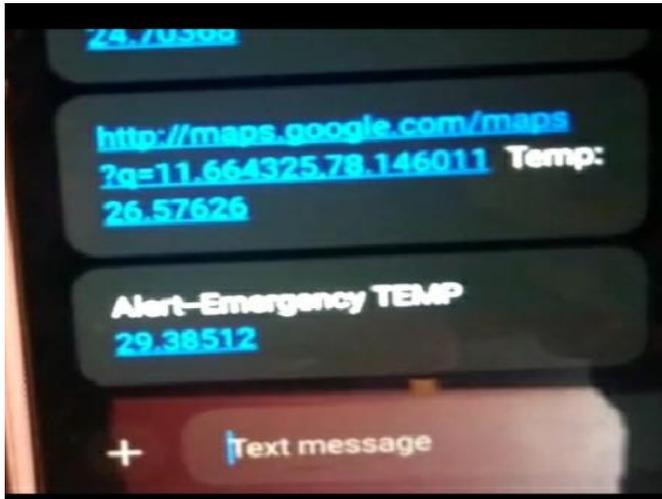


Figure 5 Alert message in mobile

This Figure 5 states that the location of the women is sent to the saved phone number via the GSM module. The temperature of the women detected by the sensor is also sent through it. By this can find out the body temperature condition of the women and can reach their position to rescue them.

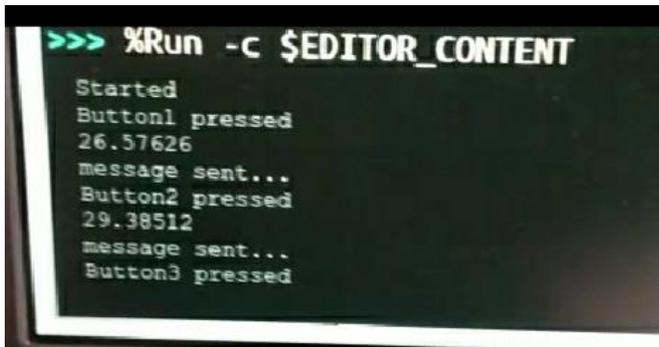


Figure 6 Push Button status

This Figure 6 describes the status of the push button is pressed and its related functions of are displayed on the monitor. When the first push-button is pressed GPS is turned on and is used to find the exact location of the women. When the second push button is pressed the GSM is turned on and is used to send alert messages and the temperature detected by the sensor. The third push button is used for the shock circuit.

IV.CONCLUSION

The proposed design will help the woman when she is in a danger zone. She can make rescue herself in dangerous situations. And this circuit will use to remove or decrease the stress of a girl when she can walk alone at night hour also so that she will never feel helpless in any situation and can protect herself. The women's temperature is also detected by the sensor. And the culprit's face will be recorded on the camera so that police will be able to catch him easily.

V.FUTURE WORK

Wearable devices such as activity trackers are good systems. Example of the Internet of things, since they are part of the network of physical parameters embedded with electronics, sensors, and connectivity to enable objects to exchange data with a manufacturer, operator, and other connected devices, without requiring human intervention. This type of system is very useful in the future for the safety of women.

School Children Safety: - As primary school children safety is a major concern for their parents as well as school management due to the recent child crimes like child abuse, kidnapping, etc. This system monitors the safety of the child when they are traveling in buses.

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