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# Review on Women Safety Jacket

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**ABSTRACT:** In today's world women are less secure and have many issues regarding their security purpose. Women's Safety hence, has become a very important issue due to rising crimes against women these days. Women face a lot of challenges every day and there is a need to construct a system to ensure women's safety. Although there are many existing systems for security purpose need of advanced smart security system is increasing day by day. In order to overcome such problems smart security system for women is implemented. This system describes about safe and secure electronic system for women which comprises of Arduino Nano and sensors such as temperature sensor, accelerometer, pulse rate sensor. A buzzer, GSM and GPS are also used in this project. When the woman is in threat, the device senses the body parameters like heartbeat rate, change in temperature, and the bending movement of the victim by accelerometer. When the sensor crosses the threshold limit the device sends the location of the victim using the GPS module. By using the GSM module, the victim's location is sent to the registered contact number.

**KEYWORDS:** Women's Safety Jacket, Types, Component, Model etc.

## I. INTRODUCTION

In global scenario, the prime question in every girls mind is about her safety and the 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 project suggests a new technology to protect women. This project focuses on a security for women so that they will never feel helpless. The system consists of various modules such as GSM, GPS, memory card, shock circuit, buzzer, camera, Raspberry pi-3 module. In this project we are using wireless technology for security purpose. An electronic jacket for women safety means that allow users to protect while traveling odd hours or when they feel helpless. This project is based on women's security as it is reported that every day there is many cases about women harassment. Although an Android based application on Women security is already out in the market but for non-android users, I thought an idea for developing a project based on women security using Raspberry pi module. Raspberry pi module receives the signals from GPS system which has present location information and then the Raspberry pi controller allows the GSM system to send the Alert Message to the three predefined numbers also in our jacket shock circuit is used to injure the attacker for self- defense. A camera used for the capturing image of an attacker and external memory card is used for the capturing image is save on this card.

Women are the primary caregivers in today's world, but the main concern on every woman's mind is her safety and freedom from harassment. What every girl need is the ability to travel wherever she wants, even at strange hours, without fear of being harassed. Women are assaulted, harassed, and even kidnapped in public areas and on public transportation these days. Women are unable to protect and operate smart phones in an emergency. Also, she cannot activate the alert function when they are in a dangerous situation and cannot immediately pass and send their location to the police and family members. Fig. 1. Throughout history, women's roles in the world have been critical to the stability, progress, and long-term development of our nations. Women make up 43 percent of the world's force, and this figure is rising to 70 percent in some countries. In any family, the female makes the majority decisions and plans. Woman is unique for a variety of reasons. They are the world's most sensitive, kind, and mental people. Women are the primary caregivers for everyone in every home, country, and planet, including children and the elderly. According to international reports, when our world's economy and politics change, women will play a major role and take the lead in assisting the family.



## II. LITERATURE SURVEY

Electronic jacket for women safety: Women safety application using android mobile. In this paper system can show exact location to relatives, parents, friends and track every time interval. Emergency panic button using microcontoller. In this paper panic button is used for protection while emergency situation occurs [1].AVR microcontroller based wearable jacket for women safety .In this paper unified combination of wearable jacket and mobile technology for safety of women in the society. This system helps to alert family members and people closest to the victim by using buzzer, GPS,GSM module [2]. All in one intelligent safety system for women security In this paper the authors have reviewed of various existing systems on women security. The GPS module tracks the longitude and latitude to trace an exact location of a user and sends the pre-stored emergency message including location to the registered contact numbers. The Audio Recording module starts the recording of the conversation for five minutes and stored as evidences. The message goes in queue if network problem and send when network gets available [3]. Mobile based women safety application. In this paper Some app created to know whether a woman is safe or not? Which 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 is the way to use the application [4].

## III. TYPES OF ELECTRONIC JACKET FOR WOMEN SAFETY

### 3.1 RASPBERRY-PI 3-MODEL B+ :

The Raspberry Pi 3 Model B+ is the latest product in the Raspberry Pi 3 range, boasting a 64- bit quad core processor running at 1.4GHz, dual-band 2.4GHzand 5GHz wireless LAN, Bluetooth 4.2/BLE, faster Ethernet, and PoE capability via a separate PoE HAT. The dual-band wireless LAN comes with modular compliance certification, allowing the board to be designed into end products with significantly reduced wireless AN compliance testing, improving both cost and time to market. The Raspberry Pi 3 Model B+ maintains the same mechanical footprint as both the Raspberry Pi 2 Model B and the Raspberry Pi 3 Model B.



Figure 1-RASPBERRY-PI 3-MODEL B+



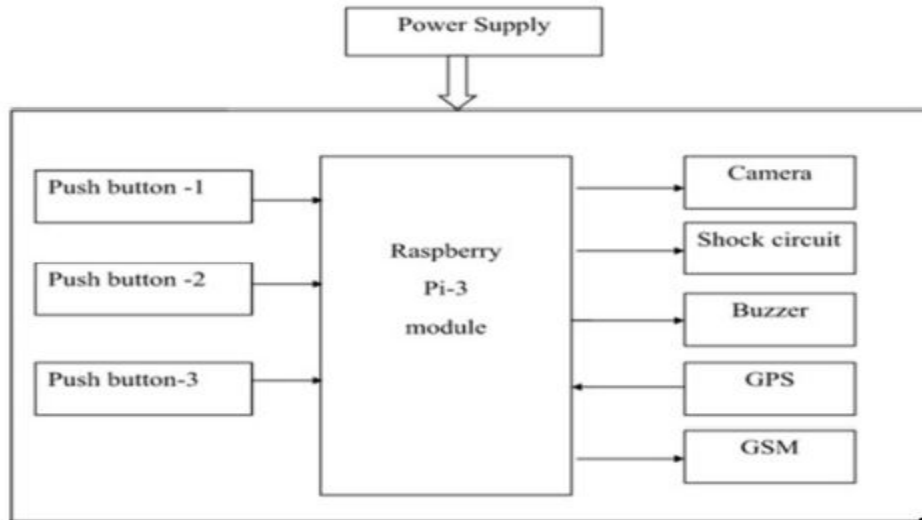


Figure 2: System Block diagram

**3.1.2 Working :**

Raspberry pi module is main part. This module has total 40 pins. In circuit the three buttons used. Out of that three buttons first button is used for circuit on/off. Second button is used for on GPS, GSM & buzzer. Third button is used for shock circuit. Once first button is pressed that time circuit is on. When second button is pressed that time GSM is on & GPS is also on. It sends location to predefined numbers. We save three numbers that three numbers are police station, neighbor's, and parents. Location is send to that three numbers in the form of latitude and longitude also using GSM alert message MY LIFE IS IN DANGER SITUATION. At that also buzzer will be on .When third button is pressed that time shock circuit will be on. when attacker attack to women that time shock circuit is used to injure attacker for self defence. At time camera will be on for capturing image and that capturing image is saved on memory card. Therefore it is helpful for police for searching attacker. Today's life this system is most useful. Intel board has many advantages compared to arduino board. The below table 1 shows the comparison between Arduino modules (Uno, Nano) and Galileo board.

**3.2 IOT Based :**



Figure 3-IOT Based circuit

The main working is based on UART (Universal Asynchronous Receiver & Transmitter) serial communication. Here data is transmitted asynchronously. UART is a serial communication device & it sends and receives data in parallel manner but internal it converts into serial. UART acts as a bridge between serial communication port and processor. On

the transmitter side, this UART converts parallel to serial data, while on the receiver side, it converts serial to parallel data. Universal Asynchronous Receiver and Transmitter transfers the data at speed which is very high. It is easily configurable than other devices. UART does not contain clock signal to validate the date send by transmitter and received by receiver. UART contains two shift registers which includes Transmitter Shift Register and Receiver Shift Register.

### 3.2.1 Working

The Arduino and Raspberry Pi are programmed in such way such that they can communicate with GPS and GSM. Arduino supports the C and C++ languages, there are some drawbacks for code organization. For Raspberry Pi, python language is used for its operation. They all communicate each other for sending exact location of victim also sends notification to their relatives or guardians for faster response. Android Studio is used for development of app which is installed in guardian mobile so that then can receive notification easily to mobile itself so that they can protect the victim within no time by knowing her exact location.

## IV. ARCHITECTURAL MODEL

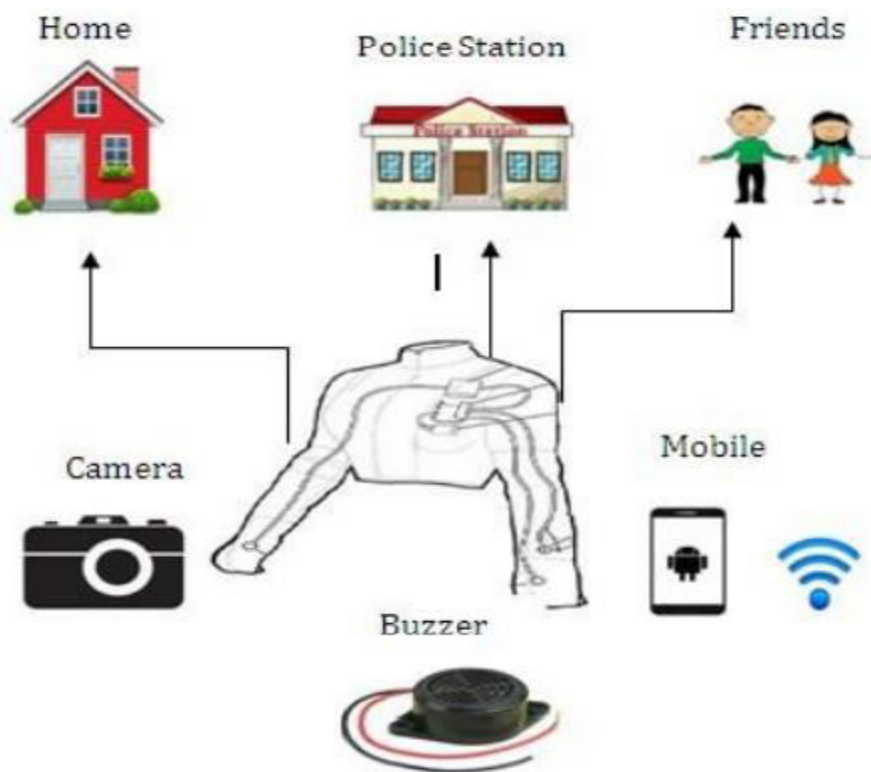


Figure 4- Architectural Model

- Power Supply Unit -**  
 The power supply unit has to provide a regulated d c supply to all sections of the system. As it is essential to operate the instrument on batteries since it is used with the person while moving. It consists of rechargeable batteries, filter capacitors and voltage regulators. Modern personal computers universally use switched –mode power supplies. Some power supplies have a manual switch for selecting input voltage, while others automatically adapt to the mains voltage.
- Liquid Crystal Display -**  
 This system uses a LCD display of mobile for displaying various prompts and status information of the system. It is also used display the title messages and other messages while communicating with the system. The microcontroller sends the signals to LCD module through its port pins.

- **Camera -**  
Smart camera module 5MP 2 cameras are used in this system. We are attaching a camera on a jacket which will capture the image of the attacker and a live video is sent to the emergency contacts when the link is activated. So that it will be easy for police to search the attacker with the minimum time.
- **GPS-**  
GPS (Global Positioning System) technology is used to find the location of any object or vehicle to monitor a child continuously using satellite signals. Three satellite signals are necessary to locate the receiver in 3D space and fourth satellite is used for time accuracy. GPS will give the information of parameters like longitude, latitude and attitude. With the help of these parameters one can easily locate the position of any object. In this GPS technology, the communication takes place between GPS transceiver and GPS satellite
- **GSM -**  
GSM (Global System for Mobile communications) is the technology that underpins most of the world's mobile phone networks. The GSM platform is a hugely successful wireless technology and an unprecedented story of global achievement and cooperation. GSM has become the global achievement become the world's fastest growing communications technology of all time and the leading global mobile standard, spanning 218 countries. GSM is an open, digital cellular technology used for transmitting mobile voice and data services. GSM operates in the 900MHz and 1.8GHz bands GSM supports data transfer speeds of up to 9.6 kbps, allowing the transmission of basic data services such as SMS.
- **Buzzer -**  
The alarm is designed to assist in alerting somebody in case of emergency situations

## V. CONCLUSION

The main goal of women safety jacket is to ensure that every woman in the society feels safe and secure while travelling at night, on lonely roads, while going to schools, colleges, workplaces, etc. Implementing real time application and an upgraded device. With further research and innovation, it can be used to safeguard the women in critical conditions, as women are facing many problems regarding their security. This application is useful to avoid cases like rapes and any perverts teasing girls, girls being stalked or harassed. Thus we conclude that we have been able to review different techniques that have been used over years regarding women safety. On the basis of literature review carried out we proposed a system which will act as a safety gadget for the women and may help her to give the information of her whereabouts to the people around when in danger. In today's scenario, every woman faces an issue regarding her safety due to rapidly increasing harassment against women. This system will help women to overcome their fear in going out and pursue their careers and work.

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