WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Design And Development Of Smart E-Kit For Womens Safety

Jadhav Tejas[1], Khatal Akash[2] , Prof. Dixit S.[3]

UG Student, Eletronics & Telecommunication Engineering, SVPM`s College of Engineering Malegaon(bk), Baramati1[1,2]
Professor, Eletronics & Telecommunication Engineering, SVPM`s College of Engineering Malegaon(bk)[3]

ABSTRACT :

In the current global context, every girl's top concern is safety and the problem of harassment. Every girl's primary concern is when they will be able to walk around the city freely, even at strange hours, without having to worry about their safety. This project offers innovative technological solutions for women's safety. The goal of this project is to provide women with security so they never feel powerless. Numerous components, including an ESP8266 module, a camera, a buzzer, and a GPS, make up the system.

There are several incidents involving women nowadays. We women desperately needed a change at this point. Women's security—a state in which they feel safe—is the foundation of this endeavor. In light of the fact that drivers are currently abducting, harassing, and molesting women, this paper discusses the safety electronic systems for women that are installed in cars, buses, and autorickshaws. Women have a unique influence on every field. similar to business, dance, education, sports, and politics. Every field is being led by women. Are the women in India truly safe?

Every time, we get a no response. Consequently, an ESP8266 board is interfaced with an electrical system that includes a GPS, camera, and buzzer installed in the jacket to control the aforementioned items. In today's world, women's security has become a major social concern. The purpose of this research is to develop a wearable jacket and mobile technology combination that will increase women's safety in society. A buzzer, GPS, and WiFi module are used in this manner to alert the victim's closest friends and family members. When the device is turned on, a WiFi module sends an emergency alert message to the specified contact while a GPS module locates the victim.

When the system is turned on, a GPS module locates the victim and uses a WiFi module to send an emergency alert message to the designated contact. The purpose of the buzzer is to draw attention from the surrounding populace and catch the attacker off guard. The primary benefit of this system is that, in contrast to other applications created previously, it does not require a smartphone on the part of the user. In addition, the system takes into account WiFi once to minimize action gaps, allowing the victim to flee right away.

INTRODUCTION :

Over the past few decades, there have been significant improvements in the status of women in India. Indian women have had a turbulent history dating back thousands of years. Despite the fact that women now hold prominent roles in both the workforce and society, they continue to experience sexual assault and unethical physical harassment. India is the worst country for women among the G20 and the fourth most dangerous country for women overall, according to a Thomson Reuters worldwide poll. As a result, many security system kinds are created to offer women protection in every way. In order to assist the victim in any emergency scenario, this article provides a unified combination of a wearable jacket at optimal outcomes with the fewest hardware components and mobile technology.

Even though there is already an Android application for women's security available, I had the idea to use a Raspberry Pi module to construct a project centered around women's security for non-Android users. In addition to using our jacket shock circuit to inflict self-defense injuries on the assailant, the Raspberry Pi module receives signals from the GPS system, which has current location information. The Raspberry Pi controller then permits the GSM system to transmit the Alert Message to the three specified numbers. An external memory card is utilized to save the captured image of the attacker, and a camera is used to capture the image.

IOT networks and other technologies are also used in this project. Through the Internet of Things (IOT), objects can be sensed or controlled remotely over current network infrastructure. This opens up possibilities for a more direct integration of the physical world into computer-based systems, which reduces the need for human intervention while also improving efficiency, accuracy, and economic benefit.
As such, it offers a solid foundation for safety.

COMPONENTS REQUIRED

1. GPS Module :-

Figure1. GPS Module

Using specific radio frequencies, GPS modules' tiny CPUs and antennas directly receive data given by satellites. From there, it will get further data and a timestamp from satellites.

2. ESP8266 NodeMCU :-

A flexible microcontroller board, the ESP8266 NodeMCU combines strong. Its cost-effectiveness and capabilities make it a preferred option for embedded systems and the Internet of Things. Its integrated WiFi module allows it to be designed to seamlessly connect to wireless networks. For Internet of Things applications, this connectivity is essential since it allows devices to share data and communicate with one another over the internet.
Its interoperability with the Arduino IDE, which makes programming easier by enabling developers to use the well-known Arduino programming language and libraries, is one of its best features. It also has a USB-TTL converter built in, which makes it useful for debugging and programming. The Node MCU provides versatility in attaching different sensors, displays, and other peripherals because to its assortment of GPIO pins. Its flexibility is necessary to customize Internet of Things solutions. Originally created for the Node MCU firmware, this board provides support and other features for improved functionality.
Code and data may be stored in significant amounts on the Node MCU due to its large flash memory, even with its compact physical factor. For projects with limited area, its compact size is ideal. In addition, the Node MCU's extreme affordability makes it a viable option for developers and enthusiasts wishing to integrate IoT projects without going over budget.

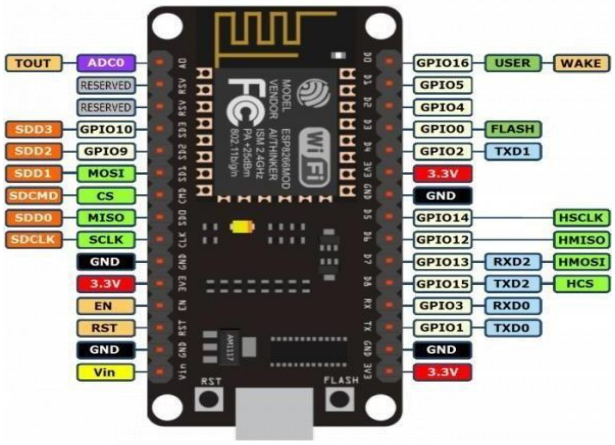

Figure2. ESP8266 NodeMCU

3. SPY Cam:-

Figure3. SPY Cam

The ESP32-CAM is a feature-rich microcontroller that has a microSD card slot and an integrated video camera. It's affordable, user-friendly, and ideal for Internet of Things devices that need a camera with sophisticated features like image tracking and identification. The ESP32-CAM is a feature-rich microcontroller with a built-in microSD card slot and video camera. It's affordable, user-friendly, and ideal for Internet of Things devices that need a camera with sophisticated features like image tracking and identification.An intricate control panel for a web-based camera can be constructed using the schematic included in the example software provided by Espress if. Utilizing the devices is quite simple once you get the idea of programming them.

4. Connecting wires :-

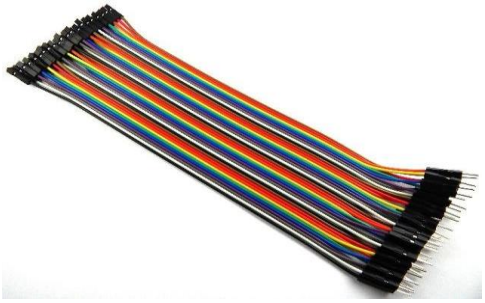

Figure4. Connecting Wires

Since they enable the establishment of electrical connections between different components, connecting wires are crucial parts of electronics and electrical applications. Usually composed of conductive materials like copper or aluminium, they are available in different gauges and lengths to meet different requirements. In order to guard against external elements like moisture and heat and to avoid electrical shorts, these wires are frequently insulated. Correct component connections are made easier by their color-coding, which aids in identifying the function of each wire. There are many different uses for connecting wires, ranging from straightforward circuit connections to intricate wiring in commercial and residential environments.

5. Relay :-

A relay consists of a core with a coil (copper wire) wrapped around it. In a typical circumstances, the usually closed (NC) terminal and the switch (armature) continue to be in contact. When electricity is given to the coil, it starts to operate like a magnet and draws the armature to the normally open terminal (NO), creating an electromagnetic field. That is all that relays are at their most basic level Apart from that, there are numerous additional kinds of relays, including thermal and solid state relays, each of which performs a different function but with the same objective. This section controls the little DC pump whose flow is controlled by a relay so that the plants are watered automatically. Control circuits with lesser current handling are switched via relays. Furthermore, with the aid of amplification, it is capable of handling even higher voltages and amps.

6. Blynk App :-

Blynk is a platform that lets you use iOS and Android apps to control Arduino, Raspberry Pi, and other devices over the Internet. You can drag and drop widgets on this digital dashboard to design the graphical user interface for your project. Using a tool called Blynk, you can make your own applications. It can be used on one project or several other ones. Any project can have virtual LEDs, buttons, value displays, and even a text terminal, along with the capability to communicate with one or more devices.

BLOCK DIAGRAM AND WORKING

Power Supply Unit: The two section voltages, +12 V and 5 V, are required for this unit to operate. In order to obtain regulated power sources, a properly designed power supply is built.

GPS module: GPS modules are made up of tiny processors and antennas that receive data transmitted by satellites using specific radio frequencies. From there, it will get other data and a timestamp from every satellite that is visible.

Push button: A push-button, also known as a basic button, is a kind of switch mechanism used to operate a machine or a process. Most buttons are composed of a hard substance, usually metal or plastic. Usually flat or contoured to conveniently accommodate the human finger or hand, the surface can be pushed or depressed. Most switches are biased, yet many unbiased buttons still need a spring to get back to their un-pushed condition because of the way they are made. The actions of pressing, depressing, mashing, slapping, hitting, and punching are all considered forms of "pushing" a button.

Spy camera :- A spy camera is a type of still or video camera that is used to secretly record individuals.
In TV shows, the phrase "hidden camera" is frequently employed, typically referring to the absence of subjects' awareness or agreement and in situations where people are not aware that they are being recorded. When the subject would object to being recorded if they knew the camera was there, the term "spy camera" is typically used. Conversely, "security cameras" are defined as cameras that are clearly visible and/or come with a notice alerting people to their presence.

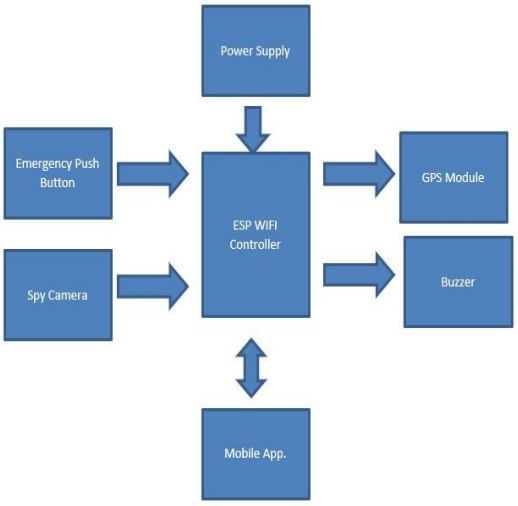

Figure5. Block Diagram

USE CASES

1) Wearing a jacket makes women feel secure.
2) Relatives and the police can be informed in an emergency.
3) A precise place can be identified.
4) A buzzer can aid in warding off potentially harmful individuals. 5) A camera can aid in preserving the proof.

ADVANTAGES

1) Offers protection in dire circumstances.
2) Live location tracking is possible.
3) Compact and safe.
4) No human labor is needed.

CONCLUSION

The primary goal of the suggested method is to give women who are in danger and in dire circumstances rapid aid. The system is made up of embedded systems, is lightweight, portable, and provides real-time streaming features. The local population is informed and made aware of the emergency situation through the usage of the alert system. In order to make this project available to the public, future scopes may be taken into account.

REFERENCES :

1. The introduction by the guest editors, Lukowicz, Baker, and Paradiso, is titled "Hostile Environments." (2010) IEEE Pervasive Computing, 9:13–15.
   Socio-cognitive elements of interoperability: Understanding communication task contexts within various organizations (Kwon, G.H., Smith-Jackson, T.L., Bostian, C.W.). 18–21 (2011) ACM Transactions on Computer-Human Interaction.
2. Tangible and wearable user interfaces for facilitating collaboration among emergency workers are presented by Cernea, D., Mora, S., Perez, A., Ebert, A., Kerren, A., Divitini, M., Gil de La Iglesia, D., and Otero, N. Collaboration and Technology, Herskovic, V., Hoppe, H.U., Jansen, M., and Ziegler, J. (eds.), pp. 192–199. Berlin, Heidelberg: Springer Berlin Heidelberg (2012).