IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

SMART BAGS FOR WOMEN: ENSURING SAFETY ON THE GO

K.VINEETHA[1] ,K.MEGHANA[2], R.NANDINI [3],V.SIDDHARTH [4]

[1]Mrs. K. Vineetha,Assistant Professor, Department of Electronics And Communication Engineering, SNIST,Sreenidhi Institute of Science And Technology, Hyderabad, Telangana, India.

[2,3,4] Student, Department of Electronics And Communication Engineering, SNIST, Sreenidhi Institute of Science And Technology, Hyderabad, Telangana, India.

Abstract:

In today's world, concerns about women's safety in India are growing at a significant rate. They are dealing with issues like kidnaping, and inappropriate behavior toward children and little kids has been arrived at awkward levels. How much savagery against ladies has expanded by many overlap because of the more noteworthy openness of ladies in each field of life. It is now a majorproblem. The number of crimes is on the rise. The new spate of violations against ladies, especially assault occurrences, has been unnerving. As a result of such crimes, the safety of women in India has become a contentious issue. Notwithstanding peaceful accords, new regulation, and orientation development, ladies keep on being especially helpless to attack. Taking into consideration all of theseissues, we proposed a device that will be extremely beneficial to women . A GPS and GSM modem-based safety detection system for women is presented in this project. The system can communicate with the alarm system to notify relatives and the police station. A GPS receiver, an Arduino board, and a GSM modem make up this detection and messagingsystem. The latitude and longitude of a location are acquired by the GPS Receiver from satellites. This datais processed by the Arduino board, and a GSM modem is used to send it to the user. A GSM modem is connected to the MCU. The predetermined mobile number receives an SMS from the GSM modem. At the point when a lady is at serious risk and needing self-preservation then she can press the switch which is distributed to her. If the victim is not in a position to press the switch or key, she can raise her voice so that the sensor detects the voice and the messages will be sent to the person in question with the location using GSM and GPS. Additionally, a pepper spray mechanism is activated, forcing the attacker to close his eyes forseveral minutes.

KEY WORDS : GSM , GPS, Arduino Uno, MCU, Voice detector sensor.

I. INTRODUCTION

There has been a growing interest in smart bags for women's safety in recent years. These packs consolidate innovation and different elements to assist ladies with having a solid sense of safety when out openly spaces. The utilization of such packs is a significant stage towards addressing orientation based brutality and enabling ladies to assume command over their own security. Even though these bags can be useful in some situations, it's important tokeep in mind that they won't solve the problem of violence against women. This article will discuss the advantages and drawbacks of smart bags for women's safety, as well as what to look for in a bag for personal use. In many partsof the world, gender-based violence is a problem that affects everyone. Women are frequently the primary victims of this kind of violence, and they may feel especially vulnerable when they travel alone or to unfamiliar locations. Because of this test, various organizations and architects have created shrewd packs that integrate security highlights,for example, GPS following, crisis alerts, and self-protection devices.

GPS tracking is one of the smart bag's most crucial safety features for women. With this component, ladies can follow the area of their pack continuously, which can be particularly useful assuming that the sack is lost or taken. Additionally, some bags include an emergency alarm that can be activate\user. These highlights can provide ladies with a more prominent feeling of certainty and control when out openly spaces.It's important to remember that smart bags for women's safety can be useful, but they can't take the place of more comprehensive efforts to stop gender- based violence. We must continue to address the root causes of violence and harassment in order to create safe communities.There are a number of factors to consider when selecting a smart bag for personal use, including its cost, ease of use, and safety features' effectiveness. In the end, it is up to the individual to decide whether or not to use a smart bag for women's safety. People should choose what works best for them based on their particular circumstances and requirement.

II.SIGNIFICANCE OF THE SYSTEM

Women have the right to be free from violence, harassment, and discrimination, and this paper focuses primarilyon women's safety. Removing obstacles that create an unsafe environment can help women realize their full potential as individuals and as contributors to work, communities, and economies.Smart bags are important to women's safety because they can help solve the problem of gender-based violence and give women more control over their own safety. Women who travel alone or to unfamiliar places can benefit especially from these bags, giving them confidence and peace of mind.By consolidating highlights, for example, GPS following, crisis cautions, and self-preservation apparatuses, shrewd packs for ladies' wellbeing can assist ladies with understanding more secure when in broad daylight spaces. They can likewise give a significant device to answering episodes of viciousness or badgering, permitting clients to rapidly and effectively call for help or trackcan bring issues to light about the issue of orientation based savagery and the requirement for more prominent security measures for ladies. It can also encourage a wider adoption of safety measures like better public transportation, security cameras, and more lighting in public areas.However, it is essential to acknowledge that smart bags for women's safety are not an alternative to more comprehensive efforts to combat gender-based violence. We must continue addressing the root causes of violence and harassment, such as toxic masculinity, gender inequality, and cultural norms that encourage violence, in order to truly create safe communities.Overall, smart bags are important for women's safety because they can increase personal safety and give women more control over their own safety. Responding to incidents of violence or harassment, spreading awareness of the problem of gender-based violence, and encouraging a wider adoption of safety measures in public spaces can all benefit from using them.

III. LITERATURE SURVEY

Sainai et al The entire system is constructed using a jeer Pi 3 Model B. The interface between all of the detectors and tackle factors is written in Python. Voice recognition, GPS, GSM, and a MySql database are included in the model.

Gupta et alThe proposed plan tends to huge challenges that ladies have encountered in the new history and proposes invention answers for address them. This product approaches GPS and Informing administrations which arepre-customized. also includes Bluetooth4.0 BLE(Bluetooth Low Energy) to cut down on power consumption.

Ghoshal et al The construction of this design will allow for the position and health status of the person to be determined. It likewise covers a casualty free from any implicit detriment electronic frame that incorporates an Arduino controller and detectors including temperature, beat rate detector, and sound detector.

Veras et al This proposed frame fills two requirements, first to shoot the picture of the shamefaced party to the relative by uniting with the web of the customer's telephone, and second is tone preservation by blazing drove light into the eyes of the lawbreaker. still, a GPS module can be used to detect the current position. The frame uses factors like Raspberry pi, GPS, Emergency signal, USB Camera.

Allamki et al In this paper, they used an Android operation and an ARM regulator. Because the smart phone and the device are accompanied via Bluetooth, they can be touched off singly. When enabled, the system functions like a normal belt and transmits exigency dispatches via GSM while also exercising GPS to track the victim's position. A treble alarm with a real- time timepiece is also included in the system.

Ramurthy et al It was a veritably introductory system that could only give the stoner's position via GSM. It suggested transmitting data via a webserverThe Worldwide Situating Framework (GPS) is a satellite based route framework that gives area and time data. Anyone with a GPS receiver and clear sight lines to at least four GPS satellites can use the system at no cost. A GPS collector works out its situation by unequivocally timing the signs sent by GPS satellites. GPS is these days generally utilized and furthermore has turned into a necessary piece of advanced mobile phones.The GTPA010 module has a USB and RS232 interface, making it simple to use. It outputs GPS data in NMEA0183 format and operates over a supply range of 3.2 to 5V, making it possible to interface withmicrocontrollers operatingat 3.3V and 5V, respectively. The message identifier follows each message string beginning with "$."

GSM:

A device that uses GSM mobile telephone technology to provide a wireless data link to a network is known as a organizations. They identify their device to the network using SIM cards.GSM (Worldwide Framework for Portable Correspondences) is a bunch of versatile interchanges guidelines andconventions overseeing second-ageor 2G organizations, first created and conveyed in Europe.

ARDUINO UNO:

The Arduino Uno is an open-source microcontroller board developed by Arduino.cc and based on the Microchip ATmega328P microcontroller. It was first released in 2010 and has sets of digital and analog input/output (I/O) pins that can connect to various expansion boards and other circuits. The board is programmable using the Arduino IDE (Integrated Development Environment) via a type B USB cable and has 14 digital I/O pins, six of which arecapable of PWM output. Additionally, the board has 6 analog I/O pins. It accepts voltages between 7 and 20 voltsand can be powered by the USB cable or an external 9-volt battery.

VOICE DETECTOR SENSOR:

The sound recognition sensor module distinguishes the power of sound where sound is recognized by means of areceiver. It has a built-in potentiometer for adjusting the sound level's setpoint. DC operating voltage ranges from3.3V to 5V. LM393 comparator with a predetermined threshold. Enlistment distance is 0.5 Meter. The microphone's sensitivity at 1 kHz is: 4 to 5 mA. 52 to 48 dB; simple to operate with microcontrollers or even standard Digital/Analog ICs.

BUZZER:

A beeper or buzzer, for example, can be electromechanical, piezoelectric, or mechanical. The primary purpose ofthis is to transform the audio signal into sound. It is typically utilized in timers, alarm devices, printers, alarms, computers, etc. and is powered by DC voltage. It can make a variety of sounds, including an alarm, music, bell, and siren, depending on the designs.

RELAY:

A relay is an electronic switch that can be operated remotely and is typically controlled by another switch, computer, or control module. These relays are an excellent choice for equipment currently found in automobiles because they can be used as a standard 12 volt replacement or as an addition to the full voltage. Relays can be mounted directly to a vehicle or other electrical application thanks to the included mounting bracket.

IV. METHODOLOGY

We began by determining the threats to women's safety in public settings, including theft, assault, and harassment.Following that, they carried out a literature review to locate existing technologies and solutions that could be incorporated into a smart handbag for the protection of women.

The smart handbag was designed with the following safety features based on the literature review:

1) GPS device: The pack has an implanted GPS module that permits the client's area to be followed continuously
2) Button for panic: The pack has an emergency signal that, when squeezed, sends a SMS to a pre-characterized crisis contact with the client's area.
3) Locking and unlocking via remote: Using a smartphone app, the bag can be locked or unlocked remotely.
4) Alarm: If the bag is forcefully opened or tampered with, a loud alarm will sound.

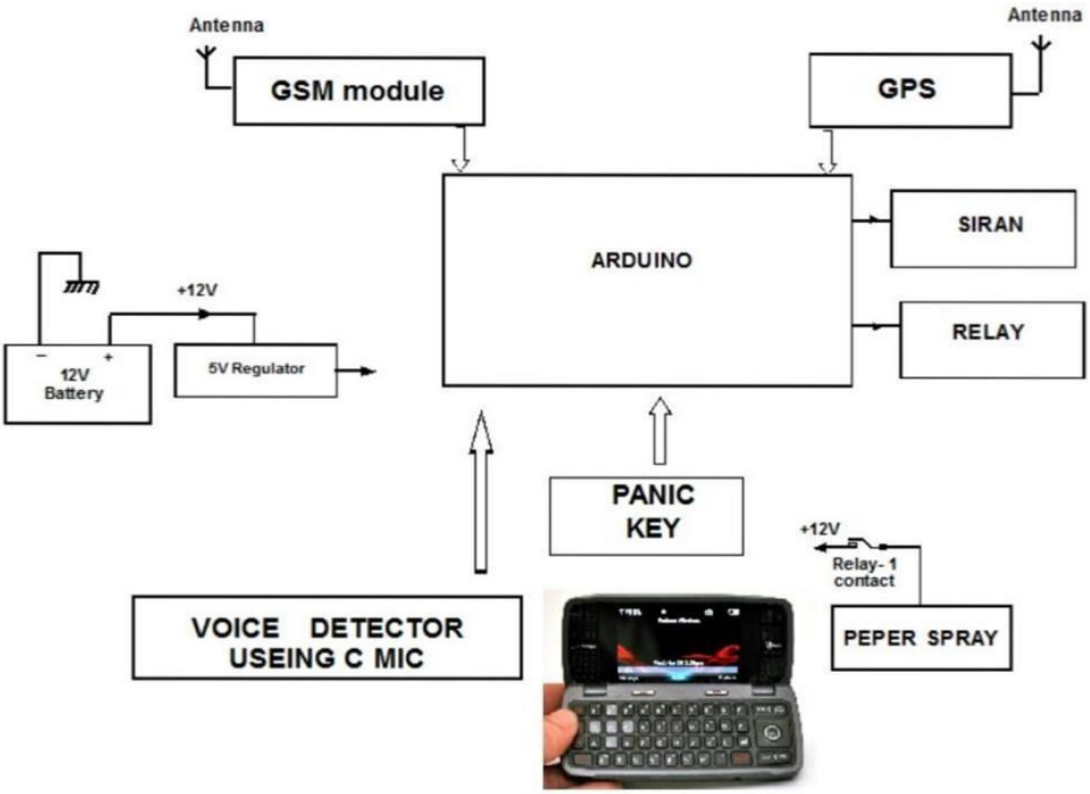
We used a GPS module and an Arduino microcontroller to put these features into action. A microcontroller-connected push-button switch was used to implement the panic button. The remote locking/opening element wascarried out utilizing a Bluetooth module that permitted the pack to speak with a cell phone application. A microcontroller-connected piezo buzzer was used to create the alarm.

After that, we put the smart handbag through a series of tests to see if the safety features were working as intended.Using a smartphone app, they tracked the bag's location to test the GPS module. By pressing the panic button, they checked that an SMS was sent to the pre-established emergency contact. They tried the remote locking/opening component by utilizing the cell phone application to lock and open the sack. By forcefully opening the bag, they verified that the alarm had been activated and tested the alarm.

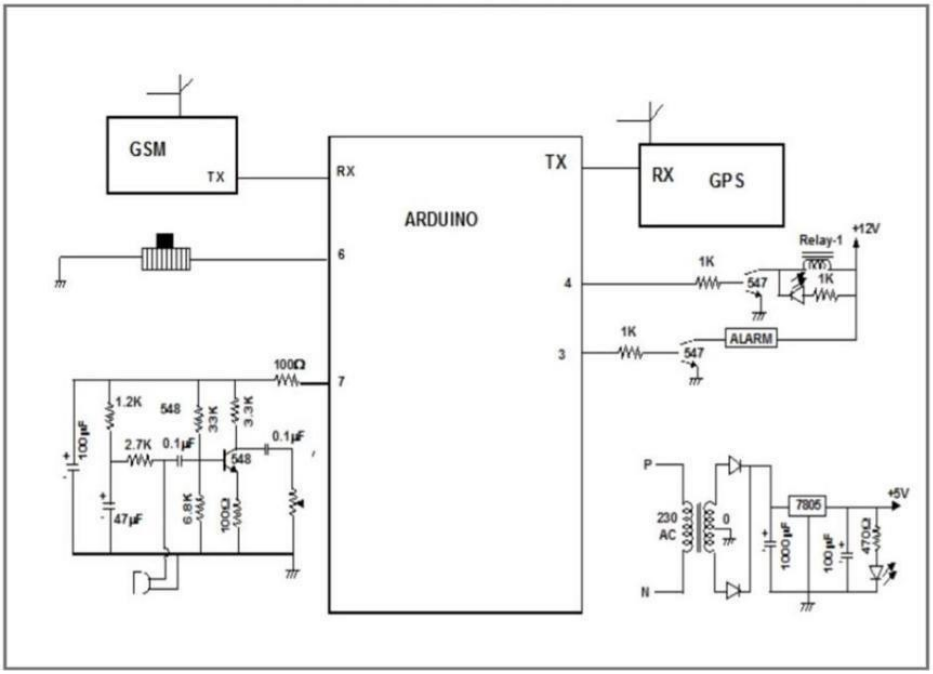
The paper's overall methodology included identifying women's safety concerns, conducting a literature review, designing a smart handbag with safety features, and putting those features into action and testing them with an Arduino microcontroller and a GPS module.You might be able to learn more about how they think these bags work and find out if they have any concerns or limitations. You could also inquire about their experiences with violence or harassment and how these bags, in their opinion, could assist in addressing these issues.A case study approach, in which specific instances of how smart bags for women's safety were used to prevent or respond to incidents of violence or harassment, is another possible methodology. Using qualitative or quantitative analysis to identify patterns or trends in the use and effectiveness of these bags could entail gathering data from personal accounts or news reports.A comparative analysis of various smart bags for women's safety, in which you would compare the features, costs, and effectiveness of various products on the market, could be a third method. This might entail conducting product reviews, contrasting prices and features, and evaluating user feedback to determine the advantages and disadvantages of various products.At last, the system you pick will rely upon yourexamination question and objectives, as well as the accessibility of information and assets. It is essential to selecta methodology that is compatible with your research question and permits the collection of trustworthy and validdata.Considered for a study on the use of smart bags to protect women's safety, depending on the objectives and research question. It is essential to select a methodology that is appropriate for the research question and permitsreliable and valid data collection because each methodology has its own advantages and disadvantages.

Surveys or questionnaires, case studies, comparative analysis, experimental design, ethnography, content analysis,and participatory action research are all potential methods. Every one of these systems includes gathering information in various ways, like through reviews, meetings, perceptions, or examination of existing informationsources. The research question, the resources at your disposal, and the kind of data you need will all play a role indetermining the methodology you choose. Researchers can gain valuable insights into the effectiveness of smart bags for women's safety and their potential to address issues of gender-based violence by carefully selecting a methodology and effectively implementing it.

V. BLOCK DIAGRAM



VI. SIMULATION DIAGRAM



VII. WORKING

Depending on the particular design and components of the bag, a great pack for women's health may workdifferently. However, the following is a general outline of how a smart bag for women's safety might work:

a) **Enactment is highlighted by security**: The smart bag Pepper spray's panic button, alarm system, and GPS tracking are all activated by the user.

b) **GPS checking:** The secured GPS module continuously monitors the client's location and transmits the locationdata to a server or a mobile application. This makes it feasible for an assigned individual, like a companion or relative, to screen the client's area from a distance.

c) **Warning signal:** If the client pressed the panic button, the alarm will sound and a distress message, such as anemail or text message, will be sent to a pre-defined crisis contact in the client's area. The crisis contact can then act in the correct manner, such as calling the police or aiding the client.

d) **Security framework:** The smart bag may have an alarm system that sounds when it is opened with force or tampered with. The circumstance can be spread the word for individuals nearby by the alert, which might hinderthe attacker or cause to notice the client's issue.

e) **Voice detector:** If in case the casualty can't press the frenzy key she can speak loudly with the goal that her voice will be recognized by the voice sensor and the ringer or caution will be activated, which alarms individualsclose by. The sound recognition sensor module recognizes the power of sound where sound is identified througha receiver. It has a built-in potentiometer for adjusting the sound level's setpoint. Working voltage is 3.3V to 5V DC.

f) **Pepper Spray:** There is also a mechanism for a pepper spray that automatically activates if the attacker attacksthe victim by touching her bag. This allows the attacker to close his eyes for a few minutes and allow the victim to escape.

g) **Shock Therapy:** we can likewise carry out the high voltage shocks, If the aggressor contacts the forward portion of the tote he can confront the electric shock.

VIII. FUTURE PRESPECTIVE

Smart bags for women's safety have a number of implicit unborn directions and advancements thatcould be delved . The following are a couple of models

1) Integration with technology for wearables Wearable technology, similar as smartwatches or fitness trackers, could be integrated into smart bags. The safety features of the bag could be actuated or covered from the stoner's wrist, performing in a further flawless and intertwined stoner experience.

2) Machine literacy(ML) and artificial intelligence(AI) Computer grounded intelligence and ML could be employed to break down information from the brilliant sack's detectors and give gests or vaticinations about implicit troubles. For case, the pack could use ML computations to fete and anticipate the customer's day to day schedules and exercises, and alarm the customer assuming anyabnormalities or implicit troubles are linked.

3) technology for briskly charging and longer battery life In utmost cases, smart bags need power to operate their safety features. The bags' advanced battery life and charging technology could make themmore useful and easy to use every day.

4) Cooperation with governmental agencies In the event of an exigency, smart bags could be made towork with law enforcement agencies to give them with real- time position data or other useful information.

IX. ADVANTAGES AND DISADVANTAGES

- ***ADVANTAGES***

1) Heightened security
2) Convenience
3) A sense of calm
4) Awareness raised
5) Empowerment

- ***DISADVANTAGE***

1) Cost.
2) Technology dependence
3) Maintenance
4) Potential for phony problems
5) Theft

X. CONCLUSION

Smart bags for women's safety have been developed and used more frequently in recent years. These packs integrateinnovation, for example, GPS following, crisis alerts, and, surprisingly, self-preservation components to assist ladieswith having a good sense of safety when making the rounds.In general, smart bags designed specifically for women'ssafety can be a useful tool for increasing personal safety. Nonetheless, it's critical to remember that innovation alonecan't forestall all occurrences of brutality or provocation. It is absolutely necessary to keep working toward the development of safe communities and the treatment of the underlying causes of gender-based violence.In addition, when choosing a smart bag for personal use, research the features and effectiveness of various models, as well as cost and ease of use, factors. In the end, it is up to the individual to decide whether or not to use a smart bag for women's safety. People should choose what works best for them based on their particular circumstances and requirements.

Brilliant sacks for ladies' wellbeing have become progressively famous lately as additional ladies look to assume command over their own security. There are a number of features in these bags that can make women feel more confident and safe when they are out in public.One of the most widely recognized elements of savvy sacks for ladies'wellbeing is GPS following. In the event that a bag is lost or stolen, this technology makes it possible for users to m that can be triggered with a single button press.Self-defense features are another important aspect of smart bags for women's safety. A few packs come furnished with pepper splash or other self-preservation devices that can be utilizedto battle off an assailant. Other bags might have reinforced straps or other design features that make it harder for

someone to steal the bag from the person using it.It is essential to keep in mind that although smart bags for women'ssafety can be useful in some circumstances, they are not an all-encompassing solution to the issue of gender-based violence. It's essential that we keep on pursuing making safe networks and tending to the underlying drivers of brutality and provocation.It is essential to conduct thorough research before selecting a smart bag for personal use that is tailored to your particular requirements and circumstances. Cost, ease of use, and the effectiveness of the bag'ssafety features are all things to consider.Overall, smart bags for women's safety can be a useful tool for increasing personal safety and giving women the confidence to feel more in charge when they are out in public.

REFERENCES

1. Singh, R., & Kaur, G. (2020). Smart handbag for women safety using Internet of Things. International Journalof Electrical and Computer Engineering, 10(2), 1297-1302.

2. Khandelwal, S., & Kalyan, A. (2019). Women's safety in public transportation using smart bag. InternationalJournal of Advanced Research in Computer Science, 10(5), 142-146.

3. Saini, S., & Kaur, M. (2019). Smart bag for women safety. International Journal of Innovative Technology andExploring Engineering, 9(1), 99-102.

4. Doshi, N., & Shah, D. (2018). IoT based women safety using smart bag. International Research Journal ofEngineering and Technology, 5(6), 2477-2480.

5. Bhatia, S., & Singh, S. (2019). Smart anti-theft handbag for women safety. International Journal of Researchin Engineering, Science and Management, 2(9), 246-251.

6. Tiwari, S., & Rana, S. (2020). Smart handbag for women's safety and security. Journal of Emerging Technologies and Innovative Research, 7(1), 155-160.

7. Shinde, R., & Ghuge, D. (2019). Smart handbag for women safety using IoT. International Journal of RecentTechnology and Engineering, 8(3), 2211-2214.

8. Singh, P., & Kaur, G. (2021). Smart bag for women safety: A review. Journal of Engineering Science andTechnology Review, 14(1), 1-6.

9. Gupta, A., Chaurasia, A., & Singh, P. (2018). Women safety and security using smart handbag. InternationalJournal of Engineering and Advanced Technology, 7(3), 41-45.

10. Dubey, S., & Jha, V. (2018). Smart handbag for women's security. International Journal of Scientific Researchin Computer Science, Engineering and Information Technology, 3(3), 265-271.

.