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Personal safety device for women using GPS and GSM

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ABSTRACT

Women's safety has become a critical global concern due to the increasing number of harassment cases, crimes, and delayed emergency responses in critical situations. In many instances, victims are unable to seek help quickly, which highlights the need for a reliable, fast, and easily accessible safety solution. This paper presents the design and implementation of an advanced IoT-based women safety smart watch that enables real-time emergency communication using GPS and GSM technologies. The proposed system is built around a compact and power-efficient microcontroller, the Seeeduino XIAO ESP32C3, which ensures high performance to maintain a small wearable form factor. The system integrates a Ublox Neo-6M GPS module to continuously track the user's real-time geographical location and a SIM800L GSM/GPRS module for wireless communication. These components work together to provide a seamless emergency alert mechanism. This button is strategically placed to allow the user to trigger an emergency alert quickly and discreetly during dangerous situations. Once activated, the system immediately captures the current GPS coordinates and sends an alert message via GSM to predefined emergency contacts, such as family members, friends, or nearby security authorities. The alert message includes a Google Maps link for easy and accurate location tracking. In addition to emergency functionality, the smart watch includes an SSD1306 OLED display that provides real-time information such as time, date, and system status during normal operation. This ensures that the device functions as a regular smartwatch, making it practical and no suspicious for daily use. The system is designed to be lightweight, portable, and energy-efficient, ensuring long-term usability. The proposed solution focuses on affordability and scalability, making it accessible to a wide range of users. Experimental results indicate that the system is capable of accurately obtaining GPS location data and transmitting emergency alerts within a very short response time. The communication between modules is stable, and the alert delivery is consistent even in low-network conditions.

1. INTRODUCTION

Women's safety is one of the most critical concerns in modern society, especially with the increasing number of crimes, harassment cases, and unsafe public environments. Despite technological advancements, many individuals still face difficulties in accessing immediate help during emergency situations. In such critical moments, the ability to quickly alert others and share accurate location information can make a significant difference in ensuring safety. Unfortunately, traditional safety methods, such as helpline numbers or mobile applications, often depend on internet connectivity, smartphone accessibility, or manual interaction, which may not always be feasible during high-stress situations. In many real-life scenarios, victims may not have enough time to unlock their phones, open applications, or dial emergency numbers. Additionally, network issues or low battery conditions can further delay communication. These limitations highlight the need for a dedicated, fast, and independent emergency system that can operate with minimal user effort. Therefore, there is a strong demand for a reliable hardware-based solution that can function efficiently without depending on complex user actions or continuous internet access. To address these challenges, this project proposes the

development of a hardware-based personal safety device that enables instant emergency communication with a single button press. The primary objective of this system is to provide immediate assistance by automatically sending the user's real-time location to predefined emergency contacts, such as family members, friends, or security authorities. This ensures that help can be dispatched quickly without delay. The system is built around the ESP32-C3 microcontroller, which is selected for its compact size, low power consumption, and efficient processing capabilities. Its small form factor makes it highly suitable for wearable applications, allowing the device to be easily integrated into everyday accessories such as smart bands, watches, or key chains. This ensures that the device remains discreet and convenient for continuous use. 5 A key strength of the proposed system lies in the integration of GPS and GSM technologies. The GPS module is responsible for acquiring accurate geographical coordinates (latitude and longitude), enabling precise location tracking. Meanwhile, the GSM module is used to transmit this information via SMS to emergency contacts. Unlike internet-based systems, GSM communication does not require Wi-Fi or mobile data, making it highly reliable even in remote or low-connectivity areas. This combination ensures that the device can operate effectively in both urban and rural environments. Furthermore, the device is designed with simplicity and user-friendliness in mind. The inclusion of a single emergency (SOS) button allows users to trigger the alert system instantly without any technical complexity. This makes the system accessible to people of all age groups, including children and elderly individuals. The compact and portable design ensures

Override. If wireless fails, the trolley should still move. This design choice came from practical thinking rather than theoretical design

2. LITERATURE REVIEW

Several research studies and existing systems have focused on improving women's safety using technology. Many solutions are based on mobile applications that allow users to send alerts or share their location. However, these applications require internet connectivity and user interaction, which may not be practical in dangerous situations. Wearable safety devices have also been developed, such as smart watches and panic buttons. While these devices provide better accessibility, they are often expensive and complex to use. Some systems use GPS tracking but lack instant alert features, which reduces their effectiveness in emergencies. IoT-based systems have improved safety solutions by integrating sensors and communication modules. However, many of these systems rely on cloud connectivity, which introduces delays and dependency on network availability. The proposed system addresses these limitations by combining GPS and GSM technologies in a simple and cost-effective design. The use of ESP32-C3 improves processing speed and reduces power consumption. Unlike other systems, this device provides instant alert functionality without requiring internet connectivity, making it more reliable and efficient. Literature Review several research studies and existing systems have focused on improving women's safety using technology. Many solutions are based on mobile applications that allow users to send alerts or share their location. However, these applications require internet connectivity and user interaction, which may not be practical in dangerous situations. Wearable safety devices have also been developed, such as smart watches and panic buttons. While these devices provide better accessibility, they are often expensive and 7 complex to use. Some systems use GPS tracking but lack instant alert features, which reduces that the device can be carried at all times, increasing its practicality and effectiveness.

In addition to its core functionality, the system can be further enhanced by integrating additional features such as real-time tracking, health monitoring sensors, or mobile application support. These enhancements can improve the overall usability and expand the scope of the device for broader safety and healthcare applications. In conclusion, this project aims to provide a fast, reliable, and cost-effective solution for personal safety by minimizing response time and ensuring accurate location sharing during emergencies. By leveraging embedded systems and IoT technologies, the proposed device offers a practical and scalable approach to improving safety and security in everyday life Material handling looks simple, but in real industrial environments it becomes tiring and time-consuming. Small factories and hospitals often depend on workers to push heavy trolleys manually. Even when electric trolleys are used, they usually depend on direct wired control or short-range wireless modules. We wanted to build something practical — not fully autonomous, not overcomplicated — but flexible enough to be used in real conditions. That's how the idea of a dual-mode trolley came up. Instead of depending only on wireless communication, we added a physical manual their effectiveness in emergencies. IoT-based systems have improved safety solutions by integrating sensors and communication modules. However, many of these systems rely on cloud connectivity, which introduces delays and dependency on network availability. The proposed system addresses these limitations by combining GPS and GSM technologies in a simple and cost-effective design. The use of ESP32-C3 improves

processing speed and reduces power consumption. Unlike other systems, this device provides instant alert functionality without requiring inter still, few studies look at setups that mix distant wireless operation, hands-on backup controls, and instant video feedback within one budget-friendly device. This design fills that hole by bringing together LoRa signal transmission, physical fail-safes, along with continuous visual feeds to support smooth and steady cart handling

3. PROPOSED SYSTEM ARCHITECTURE

The proposed system is designed as an integrated and compact emergency response solution that combines multiple hardware components to provide immediate assistance during critical situations. The system consists of several interconnected modules, each performing a specific function to ensure fast and reliable operation. At the core of the system is the ESP32-C3 microcontroller, which acts as the central processing unit and coordinates all activities of the device. It is responsible for reading inputs, processing data, and controlling the output modules efficiently. The system incorporates a GPS module, which continuously communicates with satellites to obtain accurate real-time geographical coordinates, including latitude and longitude. This information is crucial for identifying the exact location of the user during an emergency. Alongside this, a GSM module is integrated into the system to enable wireless communication. The GSM module allows the device to send SMS alerts to predefined emergency contacts without relying on internet connectivity, making the system highly reliable even in remote or low-network areas. The working of the system begins when the user presses the emergency (SOS) button. This button is designed to be easily accessible and responsive, allowing the user to trigger the system instantly during distress situations. Once activated, the ESP32-C3 immediately initiates communication with the GPS module to retrieve the current location data. After successfully acquiring the coordinates, the microcontroller processes this data and formats it into a readable message, often including a direct Google Maps link for convenience. Simultaneously, the GSM module is activated to transmit the emergency message to multiple pre-stored contact numbers, such as family members, friends, or security authorities. This ensures that the alert reaches responsible individuals without delay. In addition to sending the message, the system also activates a buzzer or alarm mechanism, which serves as a local alert to attract the attention of nearby people. This dual-alert approach increases the chances of immediate assistance. 9 The system is designed with a focus on speed, reliability, and ease of use. The entire process— from button press to message transmission—occurs within a few seconds, minimizing response time during emergencies. The hardware-based nature of the system ensures that it does not depend on smartphones or internet connectivity, which are common limitations in existing solutions. Furthermore, the design is optimized for portability and practical use. The compact size of the ESP32-C3 and other modules allows the system to be integrated into wearable devices such as smart watches, bands, or portable key chains. This ensures that the device can be carried at all times without inconvenience. The system is also energy-efficient, making it suitable for long-term usage with minimal power consumption. In conclusion, the proposed system provides a fast, efficient, and reliable method for emergency communication by integrating GPS and GSM technologies with a microcontroller-based design. Its ability to deliver real-time location information and instant alerts makes it a highly effective solution for enhancing personal safety Working Method.

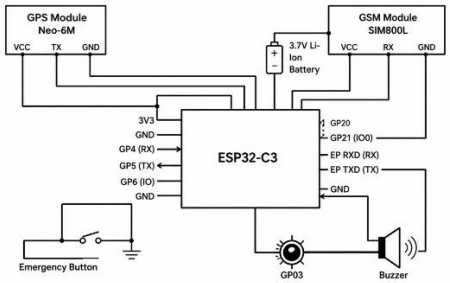

Figure1: Connection diagram

4. METHODOLOGY

The working of the proposed system is designed to be simple, fast, and highly efficient, ensuring immediate response during emergency situations. The entire process is initiated when the user presses the emergency (SOS) button embedded in the device. This button is designed for quick and easy access so that the user can activate the system instantly, even under stress. Once the button is pressed, the ESP32-C3 microcontroller immediately takes control and begins executing the emergency sequence. The first step involves activating the GPS module to retrieve the user's current geographical location. The GPS module communicates with satellites to obtain accurate latitude and longitude coordinates. The microcontroller continuously reads this data until a valid location is acquired. After successfully obtaining the location data, the ESP32-C3 processes the information and formats it into a readable message. This message typically includes the latitude and longitude values along with a Google Maps link, allowing the recipient to directly view the user's location on their smartphone. This makes it easier for emergency contacts to quickly

identify the exact position of the user. Following this, the GSM module is activated to send the emergency alert message. The microcontroller communicates with the GSM module using serial communication and instructs it to transmit the SMS to predefined contact numbers. These contacts may include family members, VII. Results and Discussion The implemented system successfully demonstrates an effective and reliable solution for personal safety by providing real-time emergency alerts along with accurate location data. During testing, it was observed that the device consistently captured GPS coordinates and transmitted SMS alerts to the intended recipients within a short time. This ensures that emergency contacts are informed quickly, significantly reducing response time during critical situations. In addition to remote communication, the inclusion of a buzzer enhances the safety mechanism by generating an audible alert. This helps in attracting the attention of nearby individuals, increasing the chances of immediate physical assistance. The combination of remote alert (SMS) and local alert (buzzer) makes the system more robust and effective in real-world scenarios. The system is designed to be cost-effective, compact, and user-friendly, making it accessible to a wide range of users. Its hardware-based approach eliminates dependency on smartphones and internet connectivity, which are common limitations in many existing solutions. This makes the device highly suitable for both urban and rural environments. 19 Furthermore, the use of the ESP32-C3 microcontroller ensures efficient performance with low power consumption, making the device ideal for wearable applications such as smart watches or safety bands. The overall system operates smoothly with minimal delay, demonstrating high reliability and stability during continuous operation. Despite its effectiveness, the system can be further enhanced by integrating additional features. For instance, real-time tracking can be implemented to continuously update the user's location, providing better monitoring during emergencies. Voice activation or gesture-based triggering can also be added to improve accessibility in situations where pressing a button is not possible. Additional features such as mobile app integration, cloud storage, and health monitoring sensors (heart rate, fall detection) can further increase the functionality and usability of the system. In conclusion, the proposed system offers a practical, efficient, and scalable solution for enhancing personal safety. By combining embedded systems with communication technologies, it provides a fast and reliable emergency response mechanism, contributing to improved safety and confidence in everyday life friends, or security authorities. Since the GSM module does not require internet connectivity, the system remains functional even in areas with limited or no internet access. At the same time, a buzzer is triggered to produce an audible alert. This helps in attracting the attention of nearby people, increasing the chances of immediate physical assistance. The buzzer acts as a local alert system, complementing the remote SMS notification. The entire sequence—from pressing the button to sending the alert—takes only a few seconds, ensuring rapid communication during critical situations. Additionally, the 15 system can be programmed to send continuous location updates at regular intervals until the emergency is resolved or manually stopped. This feature allows real-time tracking of the user's movement, which is especially useful in dynamic situations. Overall, the system operates in a coordinated and reliable manner, combining real-time location tracking with instant communication and local alert mechanisms. This ensures that help can be requested quickly and efficiently, significantly improving the chances of timely assistance during emergencies.

5. PERFORMANCE ANALYSIS

The proposed system was tested under various environmental and operational conditions to evaluate its performance, reliability, and response time. Multiple trials were conducted in both indoor and outdoor environments to ensure consistent and accurate results. The testing focused on key parameters such as GPS data acquisition time, SMS transmission delay, and overall system response time. The experimental results indicate that the system performs efficiently under normal conditions. The average time required to acquire GPS location data is approximately 2 seconds, depending on satellite visibility. Once the location is obtained, the GSM module transmits the SMS alert within 2–3 seconds. Therefore, the total response time of the system ranges between 4 to 6 seconds, which is considered fast and suitable for emergency situations. In outdoor environments, where GPS signals are strong and unobstructed, the system demonstrates highly accurate and stable performance. The location data is precise, and the communication process is smooth. However, in indoor environments or areas with signal obstructions (such as buildings or dense structures), the GPS module may take slightly longer to acquire accurate coordinates. Despite this limitation, the system still maintains acceptable performance and successfully sends alerts. The GSM module shows reliable communication capability across different network conditions. Even in low-signal areas, SMS delivery was successful, although with a minor delay in some cases. This highlights the advantage of using GSM-based communication, as it does not

Depend on internet connectivity. Additionally, the system is designed with low power consumption in mind. The ESP32-C3 microcontroller operates efficiently, making the device suitable for battery-powered wearable applications. The overall system stability was tested over extended periods, and no major failures or interruptions were observed. In conclusion, the performance analysis confirms that the proposed system is fast, reliable, and efficient. It provides quick emergency response, accurate location tracking, 17 and dependable communication, making it a practical solution for real-world safety applications.

6. RESULTS AND DISCUSSION

The implemented system successfully demonstrates an effective and reliable solution for personal safety by providing real-time emergency alerts along with accurate location data. During testing, it was observed that the device consistently captured GPS coordinates and transmitted SMS alerts to the intended recipients within a short time. This ensures that emergency contacts are informed quickly, significantly reducing response time during critical situations. In addition to remote communication, the inclusion of a buzzer enhances the safety mechanism by generating an audible alert. This helps in attracting the attention of nearby individuals, increasing the chances of immediate physical assistance. The combination of remote alert (SMS) and local alert (buzzer) makes the system more robust and effective in real-world scenarios. The system is designed to be cost-effective, compact, and user-friendly, making it accessible to a wide range of users. Its hardware-based approach eliminates dependency on smartphones and internet connectivity, which are common limitations in many existing solutions. This makes the device highly suitable for both urban and rural environments. 19 Furthermore, the use of the ESP32-C3 microcontroller ensures efficient performance with low power consumption, making the device ideal for wearable applications such as smart watches or safety bands. The overall system operates smoothly with minimal delay, demonstrating high reliability and stability during continuous operation. Despite its effectiveness, the system can be further enhanced by integrating additional features. For instance, real-time tracking can be implemented to continuously update the user's location, providing better monitoring during emergencies. Voice activation or gesture-based triggering can also be added to improve accessibility in situations where pressing a button is not possible. Additional features such as mobile app integration, cloud storage, and health monitoring sensors (heart rate, fall detection) can further increase the functionality and usability of the system. In conclusion, the proposed system offers a practical, efficient, and scalable solution for enhancing personal safety. By combining embedded systems with communication technologies, it provides a fast and reliable emergency response mechanism, contributing to improved safety and confidence in everyday life

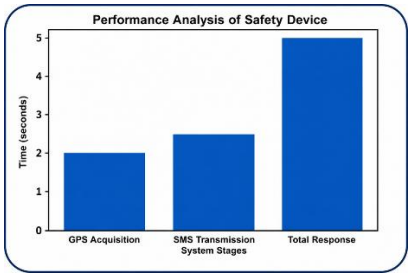

Figure 2: Performance analysis of safety device

CONCLUSION

The proposed IoT-based women safety smart watch offers a practical, reliable, and efficient solution to address the growing concerns surrounding personal safety and delayed emergency response. By integrating GPS and GSM technologies with a compact microcontroller, the system enables real-time location tracking and instant communication during critical situations. The inclusion of a discreet SOS button ensures that users can quickly and safely trigger alerts without drawing attention, significantly improving response time in emergencies. Additionally, the smart watch's dual functionality as both a safety device and a regular wearable enhances its usability and acceptability in everyday life. The use of cost-effective and energy-efficient components makes the system accessible to a broader population while maintaining performance and reliability. Overall, this solution demonstrates strong potential in improving women's safety through technology. With future enhancements such as health monitoring, fall detection, and mobile application integration, the system can evolve into a more comprehensive personal safety ecosystem, further strengthening its real-world impact and scalability.

REFERENCES

[1] Shrenika N. B.E in CSE, BMSIT M Banglore, India. Srivani P. Badala Assistant Professor, BMSIT M Banglore, India, Sai Keerthana K. S. B.E in CSE, BMSIT M Banglore, India Hamsa N. B.E in CSE, BMSIT M Banglore, India, Design of Smart Device with Android based Application for Self-defence and Self-protection Women Security Solution, International Journal of Computer Applications (0975 – 8887) Volume 182 – No.5, July 2018.

[2] Nirmin Raheem V, Dr. C. Periasamy, V. Krishnapriya, Sruthi. P, SECURITY SYSTEM FOR PREVENTION AND RESPONSE TO VIOLENCE AGAINST WOMEN, e-ISSN: 2582-5208 International Research Journal of dernization in Engineering Technology and Science.

[3] Akhila C M, Jisna Raju, Lakshmi Sethunath, Vishnu Prasad Yadav, Mrs. Manju Bhavadas, B with U- IoT based Woman Security System, International Journal of Engineering Research & Technology (IJERT) ISSN: 2278-0181 Vol. 8 Issue 08, August-2019, Published by: http://www.ijert.org 4. Sujata Punait, A.R Askhedkar, Int. Journal of Engineering Research and Application ISSN : 2248-9622, Vol. 7, Issue 6, (Part -4) June 2017, pp.102-105, Int. Journal of Engineering Research and Application ISSN : 2248-9622, Vol. 7, Issue 6, (Part -4) June 2017, pp.102-105, www.ijera.com

[4] Sujata Punait, A.R Askhedkar, Int. Journal of Engineering Research and Application ISSN : 2248-9622, Vol. 7, Issue 6, (Part -4) June 2017, pp.102-105, Int. Journal of Engineering Research and Application ISSN : 2248-9622, Vol. 7, Issue 6, (Part -4) June 2017, pp.102-105, www.ijera.com

[5] Madhavi K. Kadam Shivani S. Khalkar Kadammadhavi35@gmail.com khalkars127@gmail.com Bhagyashri M. Karmase Prof. M. N. Patil Student at Matoshri college of engineering and research Matoshri college of engineering and research Centre Nashik, India centre Nashik, India Bhagyashrikarmase000@gmail.com manasipatil@gamil.com Electronics Jacket For Women's Safety, Vol-4 Issue-2 2018 IJARIIE-ISSN(O)-2395-4396.

[6] Mr. Shakil Shaikh, Gadekar Rameshwar Dnyaneshwar, Dive Nitin Rajendra, Rite Chandrakant Dagadu, Professor, Department of Electronics Engineering, Pravara Rural Engineering College, India, Safety Belt for Women and Child from Unwanted Threats, E-ISSN: 2582-2160 Website: www.ijfmr.com

[7] Shabdita Sharma, Smita Satav, Pratiksha Palkar, Shubham Ramdharne, Prof. Kiran Kolhar Department of Computer Engineering, Dr. D. Y. Patil School of Engineering and Technology, Savitribai Phule Pune University, Pune, Maharashtra, India, A Human Safety Device - An Attaching Clip Using Internet of Things, 2020 IJSRCSEIT | Volume 6 | Issue 3 |ISSN : 2456-3307, DOI : https://doi.org/10.32628/IJSRCSEIT

[8] Pragna B R, Poojary Praveen Mahabala, Punith N, Sai Pranav, Shankar Ram, UG Scholars Jayasudha B S K, Asst. Professor KSIT, Bengaluru, India, Women Safety Devices and Applications, Published by : http://www.ijert.org , ISSN: 2278-0181 Vol. 7 Issue 07, July-2018

[9] R. Pavithra pavi.jinty@gmail.com , P. S. Sangeetha sangee.7497@gmail.com , M. Shakthi Devi shakthimsd52@gmail.com S. Vanila vanilasildas@gmail.com Valliammai Engineering College, Kattankulathur, Tamil Nadu, Design and Implementation of a Rescue System for the Safety of Women by using Arduino Controller, ISSN: 2454-132X Impact factor: 4.295 (Volume 4, Issue 2) Available online at: www.ijariit.com

[10] Shirly Edward. A, edward.s@vdp.srmuniv.ac.in , Vijayakumari.S.G. Assistant Professor Department of ECE, SRM Institute of Science and Technology, Vadapalani. Vijayakumari.g@vdp.srmuniv.ac.inBhuvaneswari.M. S,Bhuvaneswari.ms@vdp.srmuniv.ac.in Assistant Professor Department of ECE, SRM Institute Of Science and Technology, Vadapalani GSM Based Women's Safety Device Volume 119 No. 15 2018, 915-920 ISSN: 1314-3395 (online version) url: http://www.acadpubl.eu/hub/ Special Issue

[11] Reshma Hebbar, Anisha , Balkis Hashiya, Chaithra , Famiya Kauser Assistant Prof, Dept of Computer Science, Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal1 Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal, Suraksha Women Safety Device and Application, ISO 3297:2007 Certified Vol. 5, Issue 5, May 2017

[12] Ch. Ganapathi Pullaji Department of ECE Assistant Professor Vsm college of engineering Ramachndrapuram, AP, INDIA K. Devi Saroja, V. Sai Nagarjuna, M. Avinash,, G. Satya Divakar Department of ECE Vsm college of engineering Ramachndrapuram, AP, INDIA, IMPLEMENTATION OF WOMEN SELF SECURITY BAND, Vol. 5, Issue 1, ISSN No. 2455-2143, Pages 392-394 Published Online May 2020 in IJEAST (http://www.ijeast.com)

[13] Sutar Megha, Ghewari M.U. Student, E&TC Department, DACOE, Karad, Maharashtra, India Assistant Professor, E&TC Department, DACOE, Karad, Maharashtra, India, Intelligent Safety System for Women Security, AGTI's Dr. Daulatrao Aher College Engineering, Vidyanagar Extension, Karad Vol. 4, Special Issue 2, January 2017

[14] Richa Pokhrel*,1, Asmita Jha1, Pooja Singh1 and Prays Jha1, and Rama Bastola1 1Department of Electronics and Computer, Thapathali Campus, Institute of Engineering, Tribhuvan University, Kathmandu, Nepal *Corresponding Email: richapokhrel.bm@gmail.com , Women Self-Defense and Security System, Journal of Innovations in Engineering Education | Vol: 3 | Issue: 1 | March 2020

[15] MsTaware Anushka Ashok, Ms Jagadale Sanika Kisan, Ms Kadam Pranjal Santosh, Ms Naik Poornima Chandrakant, Mr. S. D. Jadhav Dept. E&TC Engineering Phaltan Education Society's College of Engineering Phaltan, Maharashtra, Women Safety Device with GPS Tracking and Alert, © April 2025 | IJIRT | Volume 11 Issue 11 | ISSN: 2349-6002

[16] Sayli Patil, Chetan Pawar, Chetana Jadhav, Poonam Ganged, Kavita S. Kumavat, Brahma Valley Collage of Engg. And Research Institute Nashik, MH, India, A Novel Alerting System for Human Security, International Journal of Computer Applications (0975 – 8887) Volume 182 – No. 34, December 2018

[17] Garima Tiwari, Adarsh Tiwari, Amit Kumar, Himanshu Verma Kalyan Krishna Awasthi UG student, Department of ECE, BBDNITM LUCKNOW, INDIA, Associate Prof. BBDNITM LUCKNOW, INDIA. 'KAVACH' - WOMEN SAFETY DEVICE WITH GPS TRACKING AND SMS ALERT, © 2020 JETIR July 2020, Volume 7, Issue 7 www.jetir.org (ISSN-2349-5162)

[18] Karthiga M (Assistant Professor), Hemanth Kumar R, Vigneshwaran G, Vikash Kumar S, CSE, Bannari Amman Institute of Technology, Tamilnadu, India, SAFETY DEVICE FOR CHILDREN IN DANGER USING IOT, Vol-7 Issue-2 2021 IJARIIE-ISSN(O)-2395-4396