

EMERGENCY ALERT FOR WOMEN SAFETY WITH LOCATION

Ms. Ayesha Fatima^{*1}, Mr. Kidwai Mustafa Haroon^{*2},

Mr. Mohammed Abdul Hannan^{*3}, Mrs. Rubeena Begum^{*4},

^{*1, 2, 3} B. Tech. Student Dept. of ECE, Shadan College of Engineering and Technology

^{*4} Assistant Professor, Dept. of ECE, Shadan College of Engineering and Technology

ayeshashaik24102002@gmail.com^{*1}, mustafakidwai981@gmail.com^{*2}, alihannan83697@gmail.com^{*3},

rubeenabegum72@gmail.com^{*4},

Abstract : In this project a system for increasing women's safety is proposed. Today in the current global scenario, the prime question in every girl's mind, considering the ever-rising increase of issues on women harassment in recent past is mostly about her safety and security. 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 perspective to use technology for women safety. "848 Indian Women Are Harassed, Raped, Killed Every Day!!" That's a way beyond HUGE number! We propose an idea which changes the way everyone thinks about women safety. A day when media broadcasts more of women's achievements rather than harassment, it's a feat achieved! Since we (humans) can't respond aptly in critical situations, the need for a device which automatically senses and rescues the victim is the venture of our idea in this paper. We propose to have a device which is the integration of multiple devices, hardware comprises of a wearable "Smart band" which continuously communicates with Smart phone that has access to the internet. The application is programmed and loaded with all the required data which includes Human behavior and reactions to different situations like anger, fear, and anxiety. This generates a signal which is transmitted to the smart phone through blynk application.

Keywords. Arduino, NodeMCU, GSM Module, Heartbeat Module, LCD.

Introduction

The Internet of things is the inter-connection of devices, apps, sensors and network connectivity that enhances these entities to gather and exchange data. The distinguishing characteristic of Internet of Things in the healthcare system is the constant monitoring a patient through checking various parameters and also infers a good result from the history of such constant monitoring. Many such devices equipped with medical sensors are present in the ICUs now-a-days. There could be instances where the doctor couldn't be alerted in time when there is an emergency, despite of 24 hours of monitoring. Also there might be hurdles in sharing the data and information with the specialist doctors and the concerned family members and relatives. The technology that enhances these features is already available but is not accessible and affordable by most of the people in developing countries such as India. Hence these solutions to these problems can be just a simple extension to the current devices which don't have these facilities. This paper demonstrates a Remote Health Monitoring System controlled by microcontroller. In this paper, a system is designed to continuously monitor the vital parameters such as heart rate, blood pressure and body temperature.



The information is stored on a cloud server database and can be displayed through an online website or mobile application by authorized personnel only. The main objective of this system is to update the data online and send an alert to the doctors for any abnormality and also predict if the patient is having any disease.

II Project Introduction

AIM:

The main objective of this system is to design a system for increasing women's safety.

COMPONENTS

NODEMCU, IR Sensor, Tilt Sensor, Temperature sensor.

EXISTING SYSTEM:

Having this concern in mind many developers have come up with creative applications. Some of such applications are:

Codes like *91# is used to provide emergency services, which will alert police control. Free mobile application 'Help me on mobile' to ensure safety of Women was launched to assist those who need emergency .These applications need a single click to do this task. But when a girl is in trouble, there can be times that the girl is not capable of taking the phone and pressing button.

DISADVANTAGES OF EXISTING SYSTEM

- Stability is very less.
- Low reliability

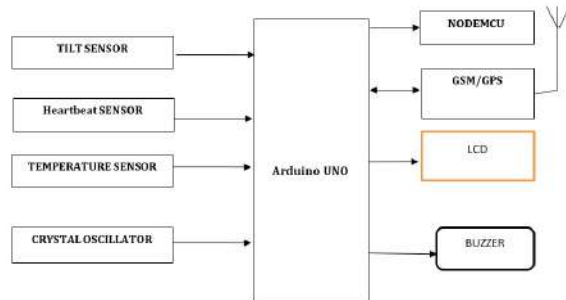
PROPOSED SYSTEM

We propose to have a device which is the integration of multiple devices, hardware comprises of a wearable “Smart band” which continuously communicates with Smart phone through internet. The application is programmed and loaded with all the required data with the use of sensors which includes Human behavior and reactions to different situations like anger, fear and anxiety. This generates a signal which is transmitted to the monitoring section.

ADVANTAGES OF PROPOSED SYSTEM

- Safe and secured
- accurate
- Easy to implement and low cost technique.

BLOCK DIAGRAM



Equipment:

Arduino, NodeMCU, LM35, GSM Module, Heartbeat Sensor.

Programming:

Arduino IDE



III. ARDUINO

Overview:

Arduino Uno is a microcontroller board based on the ATmega328P (datasheet). It has 14 push information/yield pins (of which 6 can be utilized as PWM yields), 6 essential information sources, a 16 MHz completed resonator (CSTCE16M0V53-R0), a USB alliance, a force jack, an ICSP header, and a reset button. It contains all that ordinary to help the microcontroller; on a crucial level interface it to a PC with a USB association or force it with an AC-to-DC connector or battery to begin. You can intrude with your Uno without anguishing essentially overachieving something mistakenly, most central outcome possible you can trade the chip for two or three dollars and start once more. "Uno" suggests one in Italian and was picked to stamp the presence of Arduino Software (IDE) 1.0. The Uno board and structure 1.0 of Arduino Software (IDE) were the reference sorts of Arduino, direct made to unendingly current deliveries. The Uno board is the first in the headway of USB Arduino sheets and the reference model for the

ISSN: 2456-4265

Arduino stage; for a sweeping once-over of current, past, or old sheets see the Arduino report of sheets. • Physical contraptions and sensors Physical contraptions and sensors can amass and see sagacious and multidimensional data, and check of the target state of a function uninhibitedly without human mediation. Besides, when contraptions capacity to get data with presented understanding, gadgets can act and respond. Condition setting will at that point be changed and the contraptions will reach out of the blue. In that limit, this assortment structure will be rehashed perseveringly. • Connection and foundation Association and foundation, for example, cloud, security, covering ceaselessly, security, insistence, and controlling, pull in interminable, solid information and data stream and assessment circles.

LM35 TEMPERATURE SENSOR

LM35 is an exact IC temperature sensor with its out-put related with the temperature (in C). The sensor device is fixed and hence it isn't introduced to oxidation and specific structures. With LM35, the temperature can be evaluated more as it should be than with a thermistor. It besides has low self-warming and does not extend to than 0.1oC temperature upward air.

The working temperature value is from - 55°C to 100 fifty°C. The out-put voltage shifts by 10mV considering each upward high/fall in appropriate incorporating temperature, i.e., its scale

No	Function	Name
1	Supply voltage; 5V (+3.5V to -2V)	Vcc
2	Output voltage (+6V to -1V)	Output
3	Ground (0V)	Ground

to.01V/oC

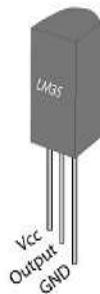


FIG: TEMPERATURE SENSOR LM35

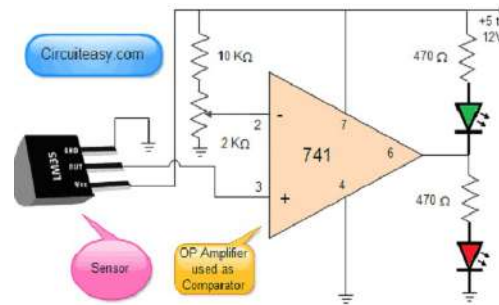


Fig 4.2. Circuit Diagram of temperature sensor

TILT SENSOR

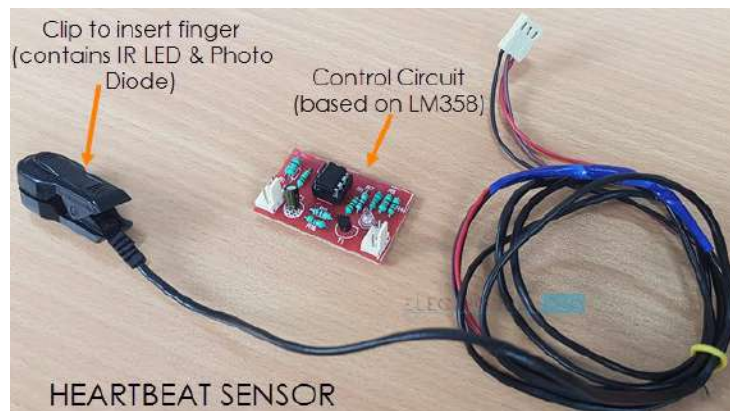


Tilt sensors, also known as tilt switches, are devices that are used to measure the angle at which an item is tilted about an absolute level plane... Tilt sensors can perform their function because they monitor the angle relative to a "zero" starting point. A detector of flames using infrared light.

They are tiny and compact instruments, which makes them a feasible alternative for a wide variety of applications where the detection of orientation or inclination is a vital component. Some examples of these applications include warning systems on construction or agricultural equipment. The tilt-switches that we manufacture here at Level Developments, in addition to our extensive selection of inclinometers and inclinometer sensors, also make use of highly accurate sensors to function. This gives them an advantage over alternatives such as mercury switches or rolling ball mechanisms.

Tilt sensors can perform their function because they monitor the angle relative to a "zero" starting point. They are configured with a maximum and lowest threshold in which the application will work or it will be safe to run based on the requirements of the individual application. If the tilt or inclination exceeds these threshold values in either direction, a relay will be engaged and the switch will be closed. This will result in an operation being sent to an external device such as an alarm or warning light to indicate that conditions are either unsafe or not functioning properly.

Heart beat sensor:



A heartbeat sensor is a piece of electrical equipment that can measure the heart rate, also known as the pace at which the heart beats. Two methods may be used to check a person's heart rate: the first method involves physically checking the pulse at the wrists or the neck, and the second method involves using a heartbeat sensor.

The monitoring of an athlete's or patient's heart rate is particularly significant since it is used to determine the status of the heart (just heart rate). There are several methods for determining a person's heart rate, but electrocardiography is the method that provides the most accurate results. However, using a heartbeat sensor is the simpler and more convenient technique to monitor the patient's heart rate. It is available in a variety of forms and sizes and provides a quick method for measuring a person's pulse. Wristwatches (also known as smartwatches), smart phones, chest straps, and other wearable devices can all have heartbeat sensors. The number of times that the heart either contracts or expands throughout one minute is denoted by the beats per minute (bpm) measurement used to describe the heartbeat.

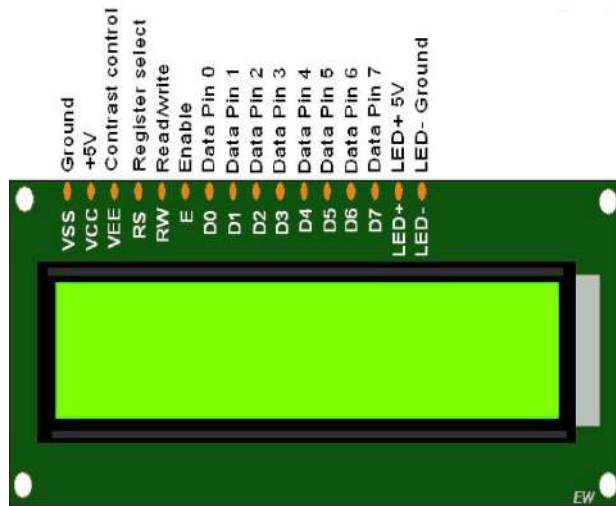
IV. LCD

Introduction

LCD (Liquid Crystal Display) is such a level board show which utilizes fluid noteworthy stones in its major sort of development. LEDs have a gigantic and moving methodology of usage cases for clients and connections, as they can be customarily found in telephones, TVs, PC screens, and instrument sheets.

LCDs were a basic ricochet the degree that the development they eliminated, which breaker light-passing on the diode (LED) and gas-plasma shows. LCDs permitted partners to be all-around more meager than the cathode bar tube (CRT) development. LCDs eat up liberally less force than LED and gas-show shows since they search after the standard of deterring light instead of delivering it. Where a LED emanates light, the fluid tremendous stones in an LCD pass on a picture utilizing foundation edification.

As LCDs have supplanted dynamically sorted out superstar drives, LCDs have started being eliminated by new presentation improvements, for example, OLEDs.



V. SOFTWARE TOOLS

Arduino Software:

Arduino IDE (Integrated Development Environment)

The Arduino progress condition contains a word processor for including code, a message zone, a book maintains, a toolbar with gets for crucial cutoff regular environmental factors, and an improvement of menus. It interfaces with the Arduino contraption to move activities and talk with them.

Making Sketches

Programming made using Arduino is called follows. These depictions are written in the substance boss. Depictions are saved with the record progress .ino. It has featured for cutting/staying and for looking/dislodging content. The message a region gives input while saving and passing on what's more shows abuses.

NB: Versions of the IDE before 1.0 saved draws with the expansion pde It is possible to open these records with understanding 1.0, you will be begun to save the sketch with the .ino progression on save.

The Arduino condition uses the opportunity of a sketchbook: a standard spot to store your undertakings (or depicts). The depictions in your sketchbook can be opened from the File Sketchbook menu or the Open catch on the toolbar.

"Beginning with interpretation 1.0, records are saved with a .ino report progress. old blends use the .pde improvement and regardless of open .pde named reports in structure 1.0 and later, the thing will therefore rename the progress to .ino.

Tabs, Multiple Files, and Compilation

Connects with you to figure out draws with more than one record (all of which appear in its own astounding tab). These can be typical Arduino code records (no new unexpected new development), C reports (.c speeding up), C++ records (.cpp), or header records (.h).

APPLICATIONS,

ISSN: 2456-4265

IJMEC 2024



Far away contraction control, robotized control of modern mechanical assemblies, Surveillance.

VI. CONCLUSION

It is obvious that a variety of methods are used to monitor the health of the people in order to protect them at the appropriate moment, and it is also obvious that a variety of communication methods are employed in order to convey the data to them. We have a number of distinct methods for the women health monitoring system developed by diverse academics. The problem that is occurring in the army field is described in this project, and the women are safeguarded by employing sensors, buzzers, and technology based on the internet of things. We will be able to simply monitor the health state of the women and automatically modify the temperature of their suit if we implement this project.

Future Scope

To be of assistance to the women in the future, it is possible that a portable handheld sensor device with more sensing possibilities and GPS tracking will be developed.

REFERENCES

1. B. G. Ahn, Y. H. Noh, and D. U. Jeong. Smart chair based on multi heart rate detection system. In 2015 IEEE SENSORS, pages 1–4, Nov 2015.
2. S. H. Almotiri, M. A. Khan, and M. A. Alghamdi. Mobile health (m-health) system in the context of iot. In 2016 IEEE 4th International Conference on Future Internet of Things and Cloud Workshops (FiCloudW), pages 39–42, Aug 2016.
3. T. S. Barger, D. E. Brown, and M. Alwan. Healthstatus monitoring through analysis of behavioral patterns. IEEE Transactions on Systems, Man, and Cybernetics - Part A: Systems and Humans, 5(1):22–27, Jan 2005. ISSN 1083-4427.
4. N. V. Lopes, F. Pinto, P. Furtado, and J. Silva. Iot architecture proposal for disabled people. In 2014 IEEE 10th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), pages 152–158, Oct 2014.
5. R. Nagavelli and C. V. Guru Rao. Degree of disease possibility (ddp): A mining based statistical measuring approach for disease prediction in health care data mining. In International Conference on Recent Advances and Innovations in Engineering (ICRAIE-2014), pages 1–6, May 2014.
6. P. K. Sahoo, S. K. Mohapatra, and S. L. Wu. Analyzing healthcare big data with prediction for future health condition. IEEE Access, 4:9786–9799, 2016. ISSN 2169-3536.
7. Lodhi, Amairullah Khan, M. S. S. Rukmini, Syed Abdulsattar, and Shaikh Zeba Tabassum. "Performance improvement in wireless sensor networks by removing the packet drop from the node buffer." Materials Today: Proceedings 26 (2020): 2226-2230.



8. Lodhi, Amairullah Khan, and Syed Abdul Sattar. "Cluster head selection by the optimized ability to restrict packet drop in wireless sensor networks." In *Soft Computing in Data Analytics*, pp. 453-461. Springer, Singapore, 2019.
9. Lodhi, Amairullah K., M. Santhi S. Rukmini, and Syed Abdulsattar. "Energy-efficient routing protocol for network life enhancement in wireless sensor networks." *Recent Advances in Computer Science and Communications (Formerly: Recent Patents on Computer Science)* 14, no. 3 (2021): 864-873.
10. Lodhi, Amairullah Khan, M. S. S. Rukmini, and Syed Abdulsattar. "Energy-efficient routing protocol based on mobile sink node in wireless sensor networks." *International Journal of Innovative Technology and Exploring Engineering (IJITEE)* ISSN (2019): 2278-3075.
11. Lodhi, Amairullah Khan, M. S. S. Rukmini, and S. Abdulsattar. "Energy-efficient routing protocol for node lifetime enhancement in wireless sensor networks." *Int J Adv Trends Comput Sci Eng* 8, no. 1.3 (2019): 24-28.
12. Rukmini, M. S. S., and Amairullah Khan Lodhi. "Network lifetime enhancement in WSN using energy and buffer residual status with efficient mobile sink location placement." *Solid State Technology* 63, no. 4 (2020): 1329-1345.
13. Lodhi, Amairullah Khan, M. S. S. Rukmini, and Syed Abdulsattar. "Efficient energy routing protocol based on energy & buffer residual status (EBRS) for wireless sensor networks." *International Journal of Engineering and Advanced Technology (IJEAT)* ISSN: 2249-8958.
14. Tabassum, Shaikh Zeba, Amairullah Khan Lodhi, M. S. S. Rukmini, and Syed Abdulsattar. "Lifetime and performance enhancement in WSN by energy-buffer residual status of nodes and the multiple mobile sink." *TEST Engineering and Management* 82 (2020): 3835-3845.
15. Mohammad, Arshad Ahmad Khan, Amairullah Khan Lodhi, Abdul Bari, And Mohammed Ali Hussain. "Efficient Mobile Sink Location Placement By Residual Status In Wsn To Enhance The Network Lifetime" *Journal of Engineering Science and Technology* 16, no. 6 (2021): 4779-4790.
16. Lodhi, Amairullah Khan, Mazher Khan, Mohammed Abdul Matheen, Shaikh Ayaz Pasha, and Shaikh Zeba Tabassum. "Energy-Aware Architecture of Reactive Routing in WSNs Based on the Existing Intermediate Node State: An Extension to EBRS Method." In *2021 International Conference on Emerging Smart Computing and Informatics (ESCI)*, pp. 683-687. IEEE, 2021.
17. Syed Abdulsattar Mazher Khan, Amairullah Khan Lodhi, Sayyad Ajjj, M.S.S Rukmini "A Feasible Model for a Smart Transportation System using a Vehicular Ad-Hoc Network" Publication date, 2020/4/7, Journal, TEST Engineering & Management, Volume: 83, Issue March-April 2020, Pages 7341-7348, Publisher, The Mattingley Publishing Co., Inc.
18. Lodhi, A.K., Rukmini, M.S.S., Abdulsattar, S., Tabassum, S.Z. (2021),"Lifetime Enhancement Based on Energy and Buffer Residual Status of Intermediate Node in Wireless Sensor Networks" In Komanapalli,



V.L.N., Sivakumaran, N., Hampannavar, S. (eds) Advances in Automation, Signal Processing, Instrumentation, and Control. i-CASIC 2020. Lecture Notes in Electrical Engineering, vol 700. Springer, Singapore. https://doi.org/10.1007/978-981-15-8221-9_257.

19. Shaikh Zeba Tabassum Amairullah Khan Lodhi, M S S Rukmini, Syed Abdulsattar "Design Technique for Head Selection in WSNs to Enhance the Network Performance Based on Nodes Residual Status: an Extension to EBRS Method" Publication date, 2020, Journal, International Journal of Advanced Science and Technology (IJAST), Volume: 29, Issue: 5, Pages: 3562-3575, Publisher, ELSEVIER.
20. Rukmini, M. S. S., and Amairullah Khan Lodhi. "Network lifetime enhancement in WSN using energy and buffer residual status with efficient mobile sink location placement." Solid State Technology 63, no. 4 (2020): 1329-1345.