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A Smart Security for Child Safety

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ABSTRACT

God sees Children's are particularly critical in his kingdom" in this day and age, the security of a kid turns into an incredible issue and furthermore a large portion of the guardians think about their tyke's security. As of late numerous instances of missing youngsters is expanded. Kid's wellbeing has dependably been a basic issue. The vast majority of guardians think about their kid's wellbeing. Indeed, even in the 21st century where the innovation is quickly developing and new contraptions were produced yet at the same time kids are confronting issues yet Parents dependably stress over the likelihood of capturing of their youngsters., For these issues our paper expect to outline and build up a Smart Wearable GPS gadget unit with Smart Android App which will track the situation of the appended kid and furthermore to screen tyke every last action and Irregular Attacks. The framework comprises of two gadgets in this undertaking. One is the brilliant gadget informal ID for child's and changes the first style of unofficial ID at that point plan some example for youngsters and put a few sensors in it. The sensors will distinguish kids' status at that point sent to the Parent. Additionally, make an etched light to show youngsters' data. These gadgets screen kids status as well as can be a Spangle at home. Etched Wireless Lamp can be set at home or guardians' office. Guardians can knows their kids' information by investigate etched light Or they can check these data on Mobile application The fundamental approach is to imply moment area and a sorrow message to the cops and enrolled number like guardians, relatives and so on. Subsequently this paper goes for furnishing guardians with a suspicion that all is well and good for their kid in the present time.

1. INTRODUCTION

In a shocking revelation, a government specially made survey has found that more than 53% of children in India are subjected to sexual abuse, but most don`t report the assaults to anyone. It also found that every child have been physically abused. Relatives and persons known to the child or in a position of trust and responsibility were found to be the perpetrator's of child abuse in the country. In Delhi, eighteen children go missing every day on average. Only a few are traced and restored to their parents. Nowadays, children are facing more threats in this society. The harassment towards child`s are increasing day by day as like harassment towards adults and women. Recently, the murder of seven year old Hasini from Chennai has set across shock waves.

She went missing from her apartment and two days later she was found dead and severely abused. Another shocking incident just after the 7 year old girl Hasini`s death, three year old girl was being sexually beaten and in Chennai. She was found in a garbage yard with her mouth was gagged by rags. These all incidents happened against child made us to develop such a Smart security for child safety. It will help the child`s who are all feeling in security in external environments as well as it will helps them preventing from danger and to alert the parents while in danger. Smart security for child safety is an innovative safety application for child and anyone who needs assistance in an urgent situation.

Children in all over the world are facing a lot of physical harassment and kidnapped by anyone. There is a need of advanced child security system to provide the safety measure in public places as well as travelling alone through public transports. This project provides a new model for the child security in public places which aims to provide

the 100% safe environment. Childs security is a critical issue in today's world and it is very much needed for everyone over such an issue.

2. LITERATURE REVIEW

The Kid Safety Wearable Device is undertaking depicts the idea of a brilliant wearable gadget for little children. The reason for this gadget is to enable guardians to find their kids easily. Wi-Fi and Bluetooth seem, by all accounts, to be a problematic medium of report between the parent and kid. Consequently, the focal point of this paper is to have a SMS content empowered correspondence medium between the youngsters' wearable and the parent as the earth for GSM portable correspondence is relatively present everywhere. At the point when Child is press the catch SMS sent to Parent gadget. UV radiation and SOS utilized optional gadget measure actualized was utilizing a splendid SOS Light and misery alert ringer introduce on the wearable gadget which when actuated by the guardians by means of SMS content should show the SOS flag brilliantly and sound a caution which an observer can without much of a stretch spot as an indication of pain. Vehicle Tracking System for Children Safety Using RFID, GPS, GSM, This Project comprises of RFID labels and perusers which are intended to investigate the passage and exit of a man in a vehicle. Every individual is relegated with a label which holds the exact points of interest. When he/she enters the vehicle, the peruser peruses the individual's tag and stores the points of interest of passage and exit. This data is told to the concerned specialist through SMS utilizing GSM. The proposed framework encourages to think about the territory where the vehicle has crossed the way utilizing RFID. The GPS innovation associated with this framework helps in securing reports on understudy's ongoing area.

3. MODULES

1. Flexi Force Sensor
2. Temperature Sensor
3. MEMS Accelerometer
4. Alert Module

3.1. FLEXI FORCE SENSOR

Since this is a security framework, GPS watch ought to be constantly joined to the observed Child and evacuating or harming this gadget ought to be controlled. To accomplish this, a Flexi-Force Sensor is appended to the back of the gadget and it detects the grasp power of the gadget with the client skin. The gadget will send a SMS to the specialists if the gadget gets altered or expelled by any methods. To debilitate this security bolt highlight an approved Child Parents could essentially empower or incapacitate Wearable unit utilizing a Mobile Keypad.

3.2. MEMS ACCELEROMETER

MEMS (Micro-Electro Mechanical System)- based accelerometers are gadgets that measure the best possible quickening. At the point when a Child falls or Attacks, a 3-hub Digital MEMS Accelerometer sensor in the

wearable gadget could detect this and caution the focal unit by means of remote correspondence which thus will send area and in addition kid every last Activity data are screen and show it

3.3. TEMPERATURE SENSOR

The term temperature sensor, with electrical thermometers, depicts a unit from at least one temperature sensor components and a use particular defensive layer, which can comprise of, for instance, association head, neck tube, thermo well or a hand grasp. The sensor component incorporated with the temperature sensor takes the genuine estimation and proselytes the deliberate temperature into an electrical flag.

3.4. ALERT MODULE

Because of the lower control nature of the gadget the remote radio correspondence standard, IEEE 802.15.4 is chosen for this task. In excess of one SMS and area can be sent in the event that it needs to. The technique encourages us to make any measure of predefined security zones inside a zone which isn't practical with human securities.

4. HARDWARE REQUIREMENTS

The hardware requirements may serve as the basis for a contract for the implementation of the system and should therefore be a complete and consistent specification of the whole system. They are used by software engineers as the starting point for the system design. It should what the system do and not how it should be implemented.

1. Arduino UNO
2. MEMS Sensor
3. Temperature Sensor
4. Bluetooth TXR
5. GPS Receiver
6. LCD display
7. RGB Light

4.1. SOFTWARE REQUIREMENTS

The software requirements document is the specification of the system. It should include both a definition and a specification of requirements. It is a set of what the system should do rather than how it should do it. The software requirements provide a basis for creating the software requirements specification. It is useful in estimating cost, planning team activities, performing tasks and tracking the teams and tracking the team's progress throughout the development activity.

1. Operating system : Windows 07/ 08
2. Software : MPLAP X IDE
3. Coding Language : Embedded "C"

5. SYSTEM ARCHITECTURE

Child tracking is mainly based on two units GPS watch unit and Android monitoring unit. The GPS wearable device unit contains a GPS receiver, Flexi Force Sensor, Temperature Sensor, MEMS accelerometer. This device unit is attached to the hands of the Child. Using the GPS receiver we can monitor the movement of the students and child. This GPS receiver will work under the control of GPS satellite and then if the device unit is removed or gets tampered the Flexi Force Sensor will alert the authority with the help of Bluetooth Connection with Android App. This Flexi Force is available in the bottom of the watch which makes a grip we can monitor while they removing the watch unit from the hand. MEMS accelerometer present in the device unit is used for monitoring the sudden fall and Attack of the Child and child stages. This device unit will send the signals to the Android monitoring unit with Bluetooth communication. The fig.a, fig.b shows

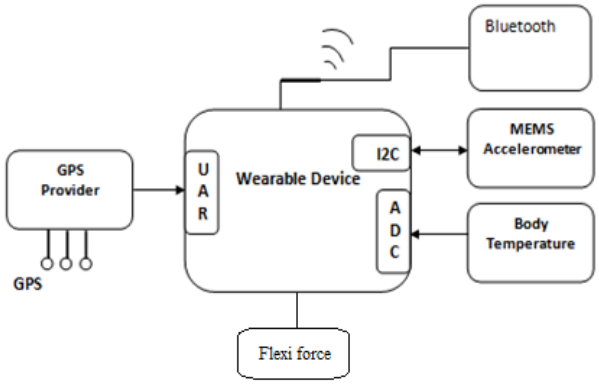


Fig a: Wearable device unit

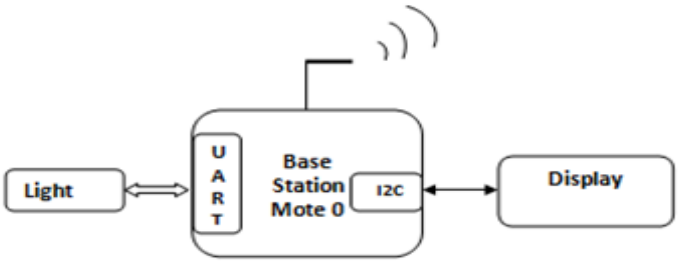


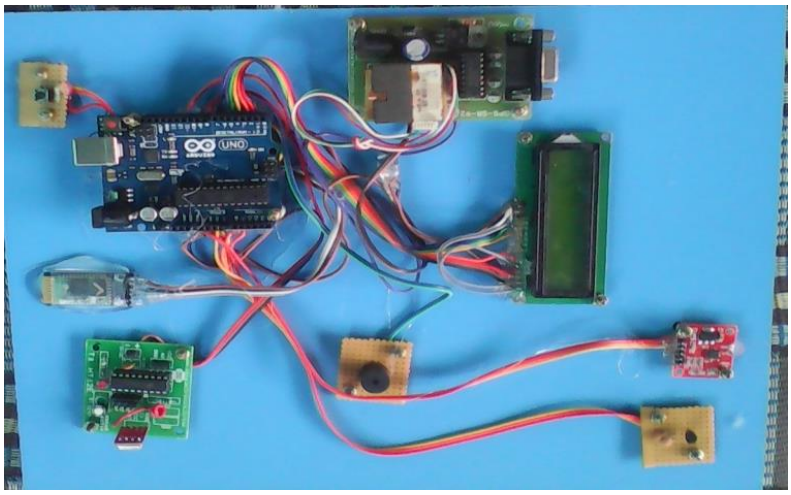
Fig b. Wireless Lamp Display

If the child crosses the given border line the signals will be send to the monitoring unit using the GPS receiver present in the GPS device unit. The monitoring unit sends location to the Android Phone. Removing the device unit from the hand or gets damaged is prohibited. If it happens, it will alert the authority using the Flexi Force Sensor. If the children go inside any dangerous zone present inside the school campus it can also be monitored using the GPS receiver. Sudden fall or Attack of the Child can also be monitored using GPS device unit. It will send Help Request to Special Android App.

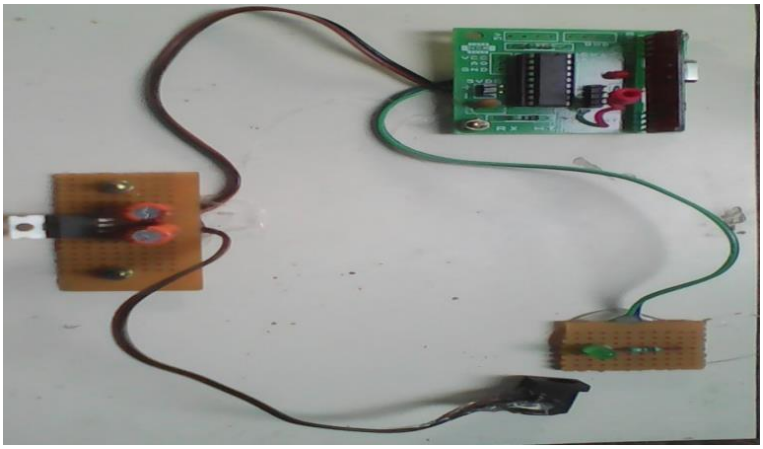
6. RESULT AND DISCUSSION

6.1 CHILD STATUS

6.2 WEARABLE DEVICE UNIT



6.3 WIRELESS LAMP RGB LIGHT DISPLAY



7. CONCLUSION

This security Wearable Device will keep the child safe and also the abusement against the child will be decreased. The parent of child will get continuous update about their child status so that they cannot afraid about their child when they are not being with the child. This will create some fear to the persons those who all involving in harassment and child trafficking. As like well-known proverb "Prevention is better than cure", this application will prevent the child from harassment and kidnapping.

REFERENCES

[1] Muthukumaran. N and Ravi. R, 'Hardware Implementation of Architecture Techniques for Fast Efficient loss less Image Compression System', Wireless Personal Communications, Volume. 90, No. 3, pp. 1291-1315, October 2016, SPRINGER.

[2] Muthukumaran. N and Ravi. R, 'The Performance Analysis of Fast Efficient Lossless Satellite Image Compression and Decompression for Wavelet Based Algorithm', Wireless Personal Communications, Volume. 81, No. 2, pp. 839-859, March 2015, SPRINGER.

[3] Muthukumaran. N and Ravi. R, 'VLSI Implementations of Compressive Image Acquisition using Block Based Compression Algorithm', The International Arab Journal of Information Technology, vol. 12, no. 4, pp. 333-339, July 2015.

[4] Muthukumaran. N and Ravi. R, 'Simulation Based VLSI Implementation of Fast Efficient Lossless Image Compression System using Simplified Adjusted Binary Code & Golumb Rice Code', World Academy of Science, Engineering and Technology, Volume. 8, No. 9, pp.1603-1606, 2014.

[5] Nitin Shyam, Narendra Kumar ,Maya Shashi, Devesh Kumar, SMS Based Kids Tracking and Safety System by Using RFID and GSM, International Journal of Innovative Science, Engineering & Technology, Vol. 2 Issue 5, May 2015.

[6] Ruban Kingston. M,Muthukumaran. and N, Ravi. R, 'A Novel Scheme of CMOS VCO Design with reduce number of Transistors using 180nm CAD Tool', International Journal of Applied Engineering Research, Volume. 10, No. 14, pp. 11934-11938, 2015.

[7] Muthukumaran. N and Ravi. R, 'Design and analysis of VLSI based FELICS Algorithm for lossless Image Compression', International Journal of Advanced Research in Technology, Vol. 2, No. 3, pp. 115-119, March 2012.

[8] Manoj Kumar. B and Muthukumaran. N, 'Design of Low power high Speed CASCADED Double Tail Comparator', International Journal of Advanced Research in Biology Engineering Science and Technology, Vol. 2, No. 4, pp.18-22, June 2016.

[9] N. Muthukumaran, 'Analyzing Throughput of MANET with Reduced Packet Loss', Wireless Personal Communications, Vol. 97, No. 1, pp. 565-578, November 2017, SPRINGER.

[10] P.Venkateswari, E.Jebitha Steffy, Dr. N. Muthukumaran, 'License Plate cognizance by Ocular Character Perception', International Research Journal of Engineering and Technology, Vol. 5, No. 2, pp. 536-542, February 2018.

[11] Deepali M. Bhavale, Ms. Priyanka, S.Bhawale, Ms. Tejal Sasane, Mr. Atul S. Bhawale International Journal of Advanced Research in Computer Engineering & Technology Volume 5, Issue 8, August 2016

[12] N. Muthukumaran, Mrs R.Sonya, Dr.Rajashekhara and Chitra V, 'Computation of Optimum ATC Using Generator Participation Factor in Deregulated System', International Journal of Advanced Research Trends in Engineering and Technology, Vol. 4, No. 1, pp. 8-11, January 2017.

[13] Keziah. J, Muthukumaran. N, 'Design of K Band Transmitting Antenna for Harbor Surveillance Radar Application', International Journal on Applications in Electrical and Electronics Engineering, Vol. 2, No. 5, pp. 16-20, May 2016.

[14] Akhil. M.S and Muthukumaran. N, 'Design of Optimizing Adders for Low Power Digital Signal Processing', International Journal of Engineering Research and Applications, Vol. 5, pp. 59-65, March 2014. OrlandoArias,Jacob Wurm, Yier Jin,‖Privacy and Security in Internet of Things and Wearable Devices‖ ,IEEE Transactions On Multi-Scale Computing Systems, Vol. 1, NO. 2, April-June 2015.