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THE DESIGN OF LATEST AND SMART CHILD SAFETY WEARABLE SYSTEM USING GSM AND GPS TECHNOLOGY

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ABSTRACT: In present time there is a drastic increase in number of kidnapping cases. Child Safety Wearable Device is implemented. The purpose of this device is to help parents locate their children with ease. An SMS text enabled communication medium between the child's wearable and the parent. The wearable device will reply back with a text containing the real time accurate location of the child. The Internet of Things System (IOT) refers to the set of devices and systems that stay interconnected with real-world sensors. The motivation for the wearable comes from the increasing need for safety for little children. The secondary measure is the people present in the surrounding of the child who could instantly react for the child's safety till theparents arrive.

KEY WORDS: Microcontroller, Temperaturesensor, GPS, GSM, Buzzer.

I.INTRODUCTION

In present time there is a drastic increase in number of hijacking cases. Here executed this installed idea in the task. By the investigation of missing children in 2004, there are total 5996 Childs are missing, Out of these select 4092 children found by police. Anyway 1904 youths are missed. GPS includes an arrangement of 24 satellites in 6 unmistakable 12-hour orbital ways scattered so that no fewer than five are in context from each point on the globe. Short Messaging Service (SMS) is a part available on every single cell phone which allows somewhat substance to be sent message. In perspective on this, if kid is caught or he/she is moved outside of describe zone at that point prepared message will be sent to isolate gatekeeper's Enrolled number. The Child Guard framework is organized into three

Sections and gives two fundamental capacities utilizing the district security include, a gatekeeper can be cautioned if a byke moves past a specific locale. The Child Guard framework is organized and gives two principle capacities. With the quick improvement of urbanization and industrialization in China, the occupant populace in the wide open has steadily diminished, and a critical number of kids are currently living in or close urban areas [1].

Guardians and watchmen in this way need approaches to all the more likely screen their kids yetaverage safety efforts center around avoiding burglary or other illicit activity and aren't appropriate for observing youngsters for instance, two run of the mill measures incorporate contracting kept an eye on gatekeepers or utilizing video observation, yet protects aren't useful or moderate with regards to checking kids and video reconnaissance frameworks typically dazzle zone. Besides, guardians and watchmen don't have consent to get to reconnaissance recordings to screen their kids. Byke watch is security technique for checking kids that utilizes omnipresent figuring gadgets, for example, wearable gadget. Which are developing in both fame and execution. Such gadgets are screen to the area and exercises of the youngsters and to proactively inform kids and gatekeepers of potential danger. The wearable gadget will answer back with a contentcontaining the continuous precise area ofthe kid which after tapping will give

guidance to the kid's area on GOOGLE Map application and will likewise give the encompassing temperature [2-3].

The inspiration for this wearable originates from the expanding requirement for security for little kids in current occasions the vast majority of wearable's are centered around giving the area, exercises of the youngster to the parent by means of GPS in this way it is planned to utilize SMS as the method of correspondence between the parent and tyke's wearable gadget. And furthermore In an ICU should play. Before utilizing the wellbeing district work, watchmen need to set polygon security locales in the tyke's application. From that point forward, the tyke application secures from the gadget's sensors the directions of the kid's present position (same as with the in-way work). On the off chance that the kid is close to the limit of the security locale of area share the frameworks and Wi-Fi. Here utilizing the moment emissary programming advancement pack to set up a web server for data travel between the gatekeeper and tyke uses of the Child Guard framework

LITERATURE SURVEY

The vast majority of the wearable's gadgets are accessible today which is utilized to decide the position, development, and so forth of the kid to the guardians through Wi-Fi and Bluetooth. In any case, Wi-Fi and Bluetooth appear a truly problematic source to exchange data. Kid watch is a security strategy for observing youngsters that utilizes pervasive registering gadgets, for example, wearable gadget which are developing in both ubiquity and execution. Such gadgets are screen to the area and exercises of the youngsters and to proactively tell kids and watchmen of

potential danger. The wearable gadget will answer back with a content containing the continuous exact area of the youngster which after tapping will give guidance to the kid's area on GOOGLE Map application and will likewise give the encompassing temperature. The inspiration for this wearable originates from the expanding requirement for security for little kids in current occasions a large portion of wearable's are centered around giving the area, movement and so forth. Of the youngster to the parent by means of ZIGBEE and GPS along these lines it is proposed to utilize SMS as the method of correspondence between the parent and tyke's wearable gadget and furthermore In an ICU should play[4-5].

A Self-Configurable New Generation Children Tracking System Hiroshima City Children Tracking System is a security emotionally supportive network for youngsters dependent on specially appointed system innovations. Field tests have been led in collaboration with a primary school in Hiroshima. In this paper, proposing another age kids tracking framework which depends on encounters and discoveries of the field tests for Hiroshima City Children Tracking System. Our proposed framework comprises of Android terminals which has Wireless LAN gadget and Bluetooth gadget with the impromptu correspondence work. This framework oversees gatherings of Android terminals utilizing Autonomous Clustering procedure. In this paper, showing the framework prerequisites for our youngsters following framework and depict the usage highlights to fulfill the framework necessities. At last, give some starter executed outcomes to the proposed framework. Many technologies using ubiquitous networks have been

developed to prevent crimes against children on their way to and back from school [6].
Existing technologies, however, are not powerful to prevent crimes against children and helpful for parents since it is difficult to take information of children as a group. If the system can provide group information of children on the way to and back from school, it is easy for parents to know their safety level. This paper proposes another innovation for youngsters following framework dependent on versatile specially appointed systems and depicts

blueprint of kids following framework in Hiroshima City. The field tests utilizing the kids following framework have been performed and the viability of the framework is appeared by information examination for the exploratory outcomes. In the creating System, Android terminals speak with one another with Bluetooth and arrange a Bluetooth MANET. Additionally, they design bunches self-governing by traded data. Labels in the Mesh Network utilize Wireless LAN to speak with neighborlabels. They speak with one another utilizing the specially appointed steering conventions. Here, actualize Secret Sharing Scheme for secure their start to finish correspondence.

A Tracking System Using Location Prediction and Dynamic Threshold for Minimizing SMS Delivery In this paper, a novel technique called area based conveyance, which joins the short message administration (SMS) and worldwide position framework (GPS), is proposed, and further, a sensible framework for following an objective's development is created. LBD decreases the quantity of short message transmissions while keeping up the area following precision inside the adequate range. The ace presented approach, LBD, comprises of three essential highlights: Short message design, area expectation, and dynamic limit. The characterized short message design is restrictive. Area forecast is performed byutilizing the present area, movingvelocity, and course of the objective to anticipate its next area. At the point when the separation between the anticipated area and the real area surpasses a specific edge, the objective transmits a short message to the tracker to refresh its present area. The edge is progressively changed in accordance with keep up the area followingexactness and the quantity of shortmessages based on the moving pace of the objective. The test results demonstrate that LBD, surely, beats different strategies since it palatably keeps up the area following exactness with moderately less messages. A bunch of studies have created area following applications through SMS. In any case, SMS is a client pay administration.

II. PROPOSED SYSTEM

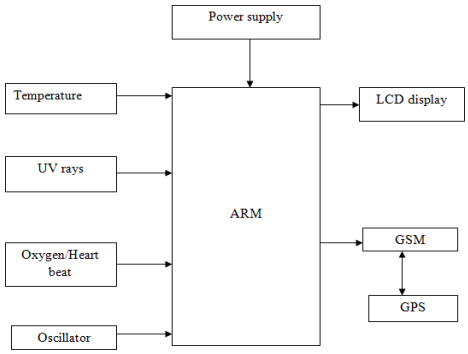

Fig. 1: PROPOSED SYSTEM

The above figure (1) shows the architecture of proposed system. The devices used in this system are temperature sensor, oxygen or heart beat sensor, GSM, GPS, LCD display, ARM and UV rays. The wearable IOT device tasked with acquiring various data from the all different modules connected.

ARM processor receives the data fromits various physically connected modulesand analyzes this data and sent to thedifferent available user interfaces. Theuser can conveniently view theinformation on the in cell phone. The physical characteristics of the wearable device are designed to be as a wrist watch. Let us discuss each component in detail manner.

ARM

The ARM microcontroller is a most mainstream microcontroller in the computerized inserted framework world and the vast majority of the businesses lean toward just ARM microcontrollers since it comprises of colossal highlights to execute items with a propelled appearance. The ARM microcontrollers are cost delicate and superior

gadgets which are utilized in a wide scope ofutilization, for example, mechanical instrument control frameworks, remotesystems administration and sensors and car body framework and so forth. The ARM represents Advanced RISCmachine and this is a 32-bit decreased directions set PC (RISC) microcontroller. An ARM processor isone of a group of CPUs dependent on theRISC (diminished guidance set PC) engineering created by Advanced RISC Machines (ARM). ARM makes 32-bit and 64-bit RISC multi-center processors. ARM processors are totally founded on the RISC engineering. This methodology decreases the expenses of equipment and it creates less warmth than customary x86 structures thus it is control proficient. It has exceedingly advanced guidance sets.

A) Power Supply

A power supply is an electrical gadget that provisions electric capacity to an electrical burden. The essential capacity of a power supply is to change over electric flow from a source to the right

voltage, flow, and recurrence to control the heap. Subsequently, control supplies are in some cases alluded to as electric power converters. Some power supplies are isolated independent bits ofhardware, while others are incorporated with the heap apparatuses that theycontrol. Instances of the last incorporate power supplies found in personal computers and gadgets. Different capacities that control supplies may perform incorporate constraining the flow attracted by the heap to safe dimensions, stopping the flow in case of an electrical blame, control molding to forestall electronic clamor or voltage floods on the contribution fromachieving the heap, control factorrectification, and putting away vitality soit can keep on fueling the heap in case ofa brief intrusion in the source control (uninterruptible power supply).

LCD Display

A liquid crystal display (LCD) is a thin, level showcase gadget made up of any number of shading or monochrome pixels exhibited before a light source or reflector. Every pixel comprises of asection of fluid gem particles suspended between two straightforward cathodes, and two polarizing channels, the tomahawks of extremity of which are opposite to one another. Without the fluid gems between them, light going through one would be obstructed by the other. The fluid precious stone winds thepolarization of light entering one channelto enable it to go through the other.

A program must collaborate with the outside world utilizing info and yield gadgets that discuss straightforwardly with a person. A standout amongst the most widely recognized gadgets appended to a controller is a LCD show. Probably the most well-known LCDs associated with the controllers are 16x1,

16x2 and 20x2 showcases. This implies 16 characters for each line by 1 line 16 characters for every line by 2 lines and20 characters for every line by 2 lines, individually.

Numerous microcontroller gadgets use 'savvy LCD' showcases to yield visual data. LCD shows structured around LCDNT-C1611 module, are modest, simpleto utilize, and this is even conceivable to create a readout utilizing the 5x7 specks in addition to cursor of the showcase.They have a standard ASCII set of characters and numerical images. For an 8-bit information transport, the presentation requires a +5V supply in addition to 10 I/O lines (RS RW D7 D6 D5 D4 D3 D2 D1 D0). For a 4-bit data transport it just requires the supply lines notwithstanding 6 extra lines (RS RWD7 D6 D5 D4). Right when the LCDshow isn't enabled, data lines are tri-stateand they don't interfere with the movement of the microcontroller.

Oscillator

An oscillator gives a wellspring of tedious A.C. motion over its yield terminals without requiring anycontribution (aside from a D.C. supply). The flag produced by the oscillator ismore often than not of steady sufficiency. The wave shape and sufficiency are controlled by the plan of the oscillator circuit and decision of segment esteems. The recurrence of the yield wave might be fixed or variable, contingent upon the oscillator structure.

GSM

The information over to the user via SMS by using general packet radio service (GPRS) which can provide data rates. Microcontroller gives GSMlibraries to their authority GSM shield has well which permits the GSM shield to make/get a call, send/get SMS and go about as a customer/server. The GSM

shield has been programmed to get SMS instant messages from the parent cell phone. The GSM shield will continually be checking the gotten instant messages for the particular catchphrases, for example, "Area" "TEMPERATURE""Ringer". The essential purpose behind utilizing GSM shield as the method of correspondence over ZIGBEE was that this wearable was gone for being available to any cell phone client and notreally a costly advanced cell client. Likewise, to make the innovation as easyto understand conceivable so a client who is mechanically tested can likewise utilize it effortlessly.

B) GPS

The associations between PICmicrocontroller and the GPS module build up with three wired association which empower the microcontroller toperuse the GPS information. The GPSmodule gets area data from the different satellite present in the NAVSTAR (American satellite planning and going worldwide situating system). It has low power utilization and which is reduced. The yield got from the GPS module is standard string data which is represented by the National Marine Electronics Association (NMEA) Protocol. When the SMS trigger content "Area" is sent from the cell phone of the client this content is gotten by the GSM shield which thusly triggers the microcontrollerto execute the GPS code to get the current, exact area of the GPS module.

C) Temperature Sensor

So as to quantify the temperature of the encompassing of the child, a seed studio woods temperature sensor was used, the sensor module is furnished with a thermistor for estimating the surrounding temperature and the change with high precision the noticeable temperature perceptibility. The temperatureassociated with microcontroller and

GSM protecting in this way thetemperature sensor is associated with thesimple port of the base shield.

Heart Beat Sensor

At the point when the heart beat finder is working, the beat LED flashes as one with every heart beat. This computerizedyield can be associated with microcontroller straightforwardly togauge the Beats Per Minute (BPM) rate. It chips away at the guideline of light regulation by blood move through finger at each heartbeat.

UV Rays

Ultra Violet (UV) assigns a band of the electromagnetic range with wavelength from 10 nm to 400 nm, shorter than that of obvious light however longer than X- beams. UV radiation is available in daylight, and contributes about 10% of the absolute light yield of the Sun.

III. RESULTS

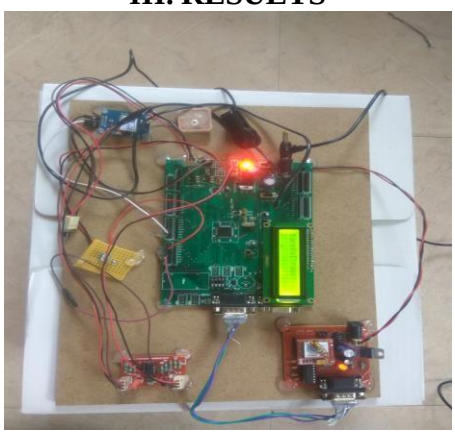

Fig. 2: HARMFUL RAYS DETECTED

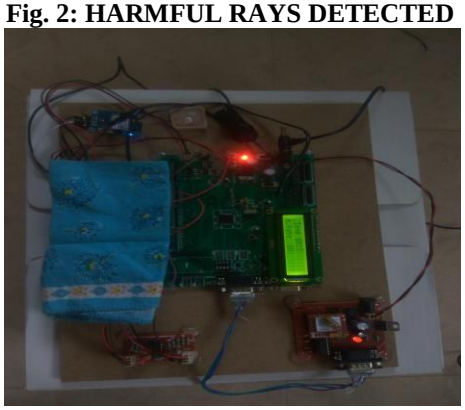

Fig. 3: TEMPERATURE VALUE

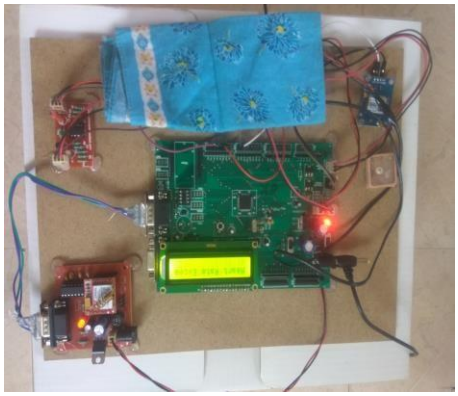

Fig. 4: HEAT RATE EXCEED

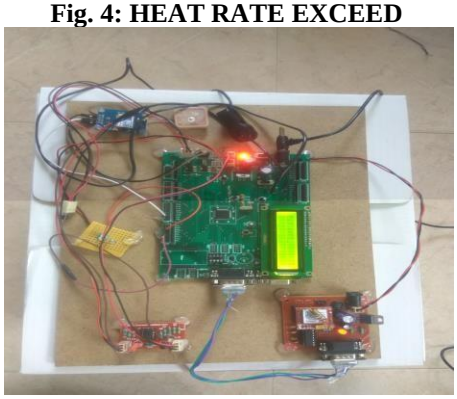

Fig. 5: MESSAGE SENT

IV. CONCLUSION

Child Safety Wearable Device is implemented. The purpose of this device is to help parents locate their children with ease. An SMS text enabled communication medium between the child's wearable and the parent. The child safety wearable device is able to acting as a smart IoT device. It provides parents with the real-time co-ordinates, surrounding temperature, UV radiation index. This system was developed to locate children for their parents and this research showed that GPS tracking technology is a practical option formonitoring and tracking the children.

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