IOT BASED SAFETY GADGET FOR CHILD SAFETY MONITORING &NOTIFICATION

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ABSTRACT

The project entitle "IOT Based Safety Gadget For Child Safety Monitoring &Notification" is developing a gadget which can be tracked via its GPS locations and also a panic button on gadget is provided to alert the parent via GSM module calling for help. Parental android app is developed to manage and track the device anytime. Smart gadget device is always connected to parental phone which can receive and make phone calls and also receive SMS on gadget via GSM module, also a wireless technology is implemented on device which is useful to bound the device within a region of monitoring range, if devices moving out of monitoring range, then an alert will be triggered on binding gadget, this helps you keep a virtual eye on child.

Health monitoring system on gadget checking for parameters like heart beat/pulse rate and temperature is included which can be monitored on parental app. Gadget also monitors whether it is plugged on hand or not using contact switch and alert the parent as soon as it is unplugged

1. INTRODUCTION

The internet of things (IOT) refers to the set of devices and the system that say interconnected with real-world Sensor to the internet. During years child safety is under threat and it is very important to provide a technology-base solution which will help under panic situations and monitor them using a smart gadget. The proposed system equipped with GSM and GPS modules for sending and receiving call and SMS between safety gadget and parental phone the proposed system also consists of Wi-Fi module used to implement IOT and send all the monitoring parameters to the cloud for android app monitoring on parental phone.

Android application can be used to track the current location coordinates on parental phone android app and also via SMS request from parental phone to

safety gadget. Panic alert system is used during panic situations and automatic SMS alert and phone call is triggered from safety gadget to the parental phone seeking for help and also monitored plugs and unplug from hand a SMS is triggered to parental phone and the alert parameter is also update to the cloud. Child and women safety is a challenging problem now a days due to antisocial elements in society. The crime rate is day by day increasing. Schools and working place need highs surveillance for ensuring safety among child and women. Smart phone are playing major role for ensuring safety. Some mobile base application provide alert system .During the emergency mobile app alert the control room of nearby police station or caretaker of children. The literature shows location tracking devices are available in the market but does not provide complete solution problem.

2. OBJECTIVES

Basically children cannot complain about the problem which they face in their daily life to their parents. They can't realize what actually happen to them at their age. It is also difficult for parents to identify their children are being affected. Since to prevent children before attacked an autonomous real-time monitoring is necessary for child out there. In this system the

collected value from every sensor like temperature sensor, pulse rate detection sensor, metal detection sensor and the location value from GPS are used to detect the status of child and alert the respective guardians using GSM accordingly.

RFID based system for school children Transportation safety enhancement. This paper present a system to monitor pick-up/drop–off school children to enhance the safety of children during daily transportation from and to school. The system consists of two main units a bus unit and a school unit. The bus unit system used to detects when a child boards or leaves the bus. This information is communicated to the school unit that identified which of children not board or leave the bus and issues alert message accordingly. The system has developed web based database driven application that facilities its management and provide useful information about to children to authorized person. And the geo fence is created to the required children.

Then, the child will be monitored periodically when child move out of the geo fence then will be intimated to the authorized person. This aim of this work is to developed wearable device for safety and protection of women and child. This objective achieved by the analysis of

physiological signals in conjunction with body. The physiological signals that are analyzed are galvanic skin resistance and body temperature. Body position is determined by acquiring raw accelerometer data. Acquisition of raw data is followed by activity recognition which is process of employing specialized machine learning algorithm. Real-time monitoring of data is achieved by wirelessly sending sensor data to an open source cloud platform. Analysis of the data is done on MATLAB simultaneously.

Parents need not have smart mobile. Set of key gain information from kit. Location keyword is used to obtain the location of child. UV keyword is used to obtain the temperature of surrounding. BUZZ keyword is used to turn on the buzzer which is fixed in that device. SOS is used to send a signal device parent need not have smart mobile. Set of keyword are used to gain information from the kit. The system is developed link it one board programmed in embedded in C interface with temperature, heartbeat, touch sensor and also GPS,GSM & digital camera modules. The novelty of the work is that the system automatically alerts the parent/caretaker by sending SMS, when immediate attention is required for the child during emergency.

3.METHODOLOGY

The increasing need for protection of the child at present time and also when child can be lost in crowded areas.using Bluetooth and Wi-Fi is not possible to track longer distance. Crimes against children are increasing year on year. According to study roughly 60,000 children missing in Indian every Year. In case of an emergency or in situation of panic the child must be not able to communicate with their parent without the knowledge of mobile. Assuming the child is not found immediately officers and detectives will begin following up on various lead to see if they can find the child. In many case community members will come together to form search parties to look for the child throughout the town.

We can use web application as well as mobile application or either one of it as the front end user interface, and device monitoring. GPS is used to track the live location of the child who wearing that device. With the help of GPS we can easily perform Geo-fencing concept in which we will be able to feed a particular boundary to develop. This device which can be carried in pocket, strapped to body or worn around neck, the parent to create the safe zone for their child, including school, home, parks or even tuition center. The moment the child move away from these zones an alert send to the

parent phone using an app. This GPS enable package which has a phone and a tracker which could be installed in children's watch. Parent can monitor child location and surrounding. It operates on an IOT platform called TARXROOT.
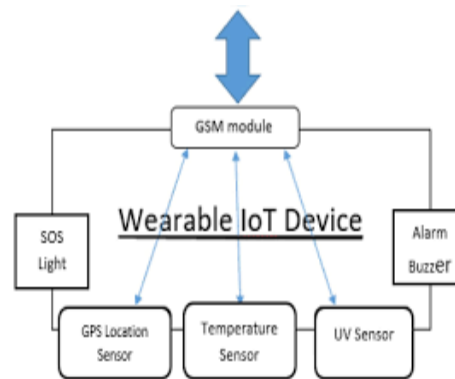
The system shall allow the user or family's register phone number. The system shall provide report for the day to day activity both for school and families. The system should provide all the sensed data from each sensor send by text message. The system shall check the sensed data with the threshold value of each input. The system shall notify the user while the input value exceed or become below the threshold value.

The system shall give accurate result for different factors using sensing material as a result their will not be any distractive damage. The system shall be maintainable whenever faller occurs. Sometime the GPS module work on rainy condition. The system is cost effective comparing to the features it provides. The system shall be usable within a few minutes training.

Fig no: 1

For surveillance of the child surrounding to get clearer picture of the location or place this wearable can also be incorporate a camera module in it. The hardware that can be used would be an ad fruit TTL serial camera or any other camera module. Since the major focus of this wearable is the GSM module which is a better alternative than Bluetooth, Wi-Fi, Zig Bee due to the short range and connectivity issues. Therefore for this project using the GSM technologies is beneficial for us a cellular arrange is vast and since all the communication between the wearable and the user is taking place via SMS therefore no internet connectivity is required. But still the GSM module possesses the added advantage of using GPRS which enable the board to use the internet if required. Whereas for camera module which support video streaming but due to the constraint of trying to use only SMS, therefore only four wire connection will be taking place. The red and black wires will be connected

directly to +5V and GND respectively to the Arduino Uno board. Whereas for the RX pin which will be used for sending data via Arduino Uno and GSM board and for the TX pin which will be utilized for receiving incoming data via from modules. The 10 K resistor divider the camera serial data pins are 3.3v logic and it would be a good idea to divide the 5v down so that its 2.5 V. Normal the output from the digital 0 pin is 5 V high the way we connected the resistors is to the camera input never goes above 3.3 V. To talk to the camera the Arduino Uno will be using two digital pins and a software serial port to communicate to the camera. Since the camera or the Arduino Uno do not have enough on board memory to save snapshots clicked and it store it temporarily therefore an external storage source micro-SD board will be used to save the images temporarily. The camera work on a standard baud rate 38400 baud.

The camera will be collecting information in the same manner as the GPS module dose. It will be on standby conserving power waiting for the for particular keyword " SNAPSHOT " or any other defined in the program to be sent from the user smart phone to the GSM module will activate the camera

by the Arduino Uno start clicking a snapshot of the surrounding and save the file temporarily on the external micro-SD card. Arduino Uno will access the saved images from the SD storage and transfer it to the GSM module which sent it to the user via SSM/MSS text.

4. LITERATURE REVIEW

The idea behind Android app has been derived from having an automated boot to respond to text message responses from the user. It will provide the user with predefined response options at just click of a button. The use doesn't need to memorize the specific keyword to send. Also the boot will be pre-programmed to present the user with a set of predefined keyword options such as "LOCATION", "SNAPSHOT","SOS", etc.

Whereas for the future aspect of this wearable device based on what type sensor added to it, additional specific keyword could be added such as "HUMIDITY", "ALITITUDE" etc. This android app provides mote interface to the user which help to understand easily. The main idea in this android app is to provide keyword button that for getting location we have specific button by pressing this button we get location instead of typing keyword which ease our work.
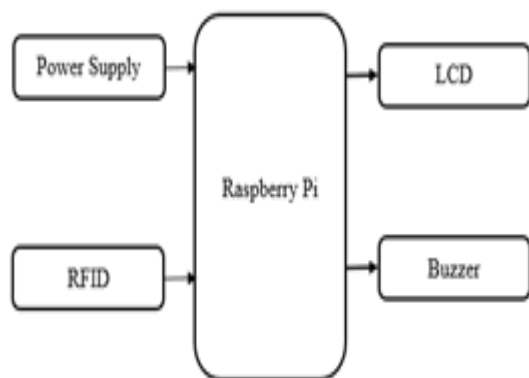
Fig no: 2

One of the modules in our project is temperature sensor which is used to detect the temperature of the child as well as the surrounding temperature. If there occurs any abnormal rise or fall in temperature in the body of the child or surrounding it will notify the user as per the coded time delay as shown in the picture. It will shows temperature and humidity value notifies the user based on the predefined value abnormal fall or rise scenarios. The parameter such as touch, temperature & heartbeat of the child are used for parametric analysis and results are plotted for same.

5. CONCLUSION

The word future resembles the word children. As Dr A.P.J. Abdul kalama's words "Youngsters are the future pillars of one nations", today children are tomorrow youngsters, preserving their dreams and life for a better future is necessary. Therefore each and every parent should take care of the own children, without letting them to fall into dark world of abasements which entirely ruin them physically, mentally, our project makes it easy for parents to track their children and to visually monitor them regular basis, which makes them ensure the safety of their children and reduces the rate of incidents of child abuse.

FUTURE SCOPE

In our system we automatically monitor the child in real time using Internet of Things with help of GPS, GSM, and Raspberry pi. This system requires network connectivity, satellite communication, high speed data connection when there occurs any hindrance to satellite communication or any network issues. There also occurs time delay in video streaming through the server. Hence in the future these issues can be overcome by using Zigbee concept or accessing the system without internet and using high speed server transmission.

6. REFERENCES

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