Safety Gadget for Child Safety Monitoring and Notification

Abstract

The overall percentage of child abusements filed nowadays in the world is about 80%, out of which 74% are girl children and the rest are boys. For every 40 seconds, a child goes missing in this world. Children are the backbone of one's nation, if the future of children was affected, it would impact the entire growth of that nation. Due to the abusements, the emotional and mental stability of the children gets affected which in turn ruins their career and future. These innocent children are not responsible for what happens to them. So, parents are responsible for taking care of their own children. But, due to economic condition and aims to focus on their child's future and career, parents are forced to crave for money. Hence, it becomes difficult to cling on to their children all th It makes parents to easily monitor their children in real time just like staying beside them as well as focusing on their own career without any manual intervention.

INTRODUCTION

Abuse is a criminal act. Child abuse is a far more serious and punishable act. Criminals are jeopardising not only a child's childhood, but also their productive and attractive adult life. Some children are intelligent enough to flee and avoid becoming victims, while others, despite their intelligence, are powerless. Various people can react to the same scenario in different ways. Abuse has different consequences on two children depending on their physical, psychological, and emotional condition. Recently, child abuse has become a global issue. Every country in the globe has a large number of child abuse cases.The presence of technology has recently transformed the way people carry out activities. In the suggested system, GSM, GPS, and a NODE MCU ARDUINO UNO are used. The real-time value is detected using the sensors.

LITERATURE SURVEY

A. RFID-based System for School Children Transportation Safety Enhancement

This paper presents a system to monitor pick-up/drop-off of 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 the system is used to detect when a child boards or leaves the bus.This information is communicated to the school unit that identifies which of the children did not board or leave the bus and issues

an alert message accordingly. The system has a developed web-based database-driven application that facilities its management and provides useful information about the children to authorized personnel. A complete prototype of the proposed system was implemented and tested to validate the system functionality. The results show that the system is promising for daily transportation safety.

B. Design and Development of an IOT based wearable device for the Safety and Security of women and girl children The aim of this work is to develop a wearable device for the safety and protection of women and girls. This objective is achieved by the analysis of physiological signals in conjunction with body position.The physiological signals that are analyzed are galvanic skin resistance and body temperature. Body position is determined by acquiring raw accelerometer data from a triple axis accelerometer.

C. Child Safety Wearable Device

Parents need not have a smart mobile. Set of keywords are used to gain from the kit.LOCATION keyword is used to obtain the location of the child. UV keyword is used to obtain the temperature of the surroundings. BUZZ keyword is used to turn on the buzzer which is fixed in thatdevice. SOS is used to send a signal to the device.

D. Smart Intelligent System for Women and Child Security A portable device which will have a pressure switch. As soon as an assailant is about to attack the person or when the person senses any insecurity from a stranger, he/she can then put pressure on the device by squeezing or compressing it. Instantly the pressure sensor senses this pressure and a conventional SMS, with the victim's location will be sent to their parents/guardian cell phone numbers stored in the device while purchasing it, followed by a call. If the call is unanswered for a prolonged time, a call will be redirected to the police and the same message will be sent. Additionally, if the person crosses some area which is usually not accessed by the person then a message with the real-time location is sent to the parent/guardian's phone via conventional SMS.

Problem Statement

More family's spent their time for work and social duties but since Children are gift of GOD theyneed care of family. The current situation of our country is not confortable for monitoringchildren in school. With the absence of child monitoring system it is hard to monitor the whereabout of children.The poor performance of family's and school to monitor the children's by Collaboration. The useof manual system to connect

family's and there students most of time teachers or other personsare intermediate between the students and family. In our country families and their children haveno direct contact in school when they need to contact their children if the families came toschool.Lack of child monitoring in school affect the child's behavior. Under age children may bepremature in the way they act and places to be. Most of human behavior is shaped in childhoodstage, in order to get morally acceptable behavior child monitoring system is necessary. Children are prone to many accidents. Safety of children is very critical since children cannotprotect themselve

EXISTING SYSTEM

Real-Time Child Abuse and Reporting System

In the existing system, we use a voice recognition module in which the alert commands from the child are stored and kept for further reference. If the same child delivers the same command, it will compare with the alert command which was previously stored and sets an emergency level according to the alert command. The GSM has a SIM which is used to send an alert message or an alert call to the trusted peoples. GPS is used to track the live location and it is used when needed. The server will search the respective device ID from the database and search for respective contacts according to that device ID and helps in alerting the registered guardians.

proposed system

In our system, we use several components like,

1.Temperature sensor

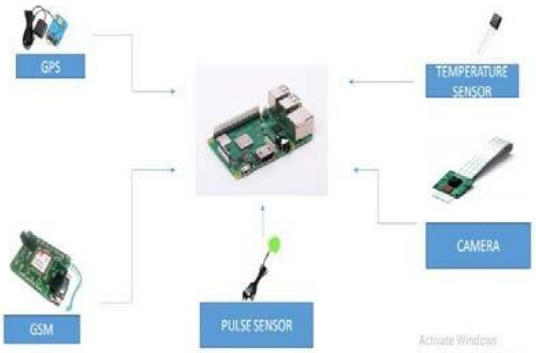
2.Pulse sensor

3.GPS

4.GSM

5.Web camera

6.Raspberry pi microprocessor



"Architecture diagram of the proposed system"

WORKING

Our proposed system consists of Raspberry Pi microprocessor in which all other sensors, GPS and GSM are integrated. The users are required to register using their credentials to use the application. The device will be given to the children for monitoring them regularly. When giving boundary for the school unit,

we can also maintain attendance by updating the entry and exit of the child, in and out, of school in the application.

The server compares the currently obtained values with the coded threshold values, if they are beyond the threshold value, it generates an alert message through GSM. The alert messages are delivered to specified users in the form of SMS and the user can be able to login to the application to check the status and updated information.

After receiving the alert messages, if the user wants to visually check the status of the child, they are required to enter specific IP address of that camera for the first time before syncing and can be able to watch the live streaming videos which are updated to the server, for further uses they can directly view.

The microprocessor is used to control all these actions and the alert was done by checking for specific user of that device in the database.

Sensor

Sensor known as a device measuring physical value and converts it into data. Common sensors like the temperature sensor measures heat of an object. Proximity sensor used to detect nearby objects. For the pressure sensor, it calculates pressure applied. Optical sensor able to sense the light intensity [12]. Humidity sensor will detect the presence of water vapor in the air [10]. Micro sensor is designed to collects and relays information about the environment.

Heart beat sensor

every particular interval of time the pulse sensor value is stored in the cloud. The pulse rate and the BPM are inversely proportional to each other. In figure6 after 4PM the pulse rate is 735. Pulse rate value in cloud.

The pulse rate is converted into beats per minute calculation is shown below. Here, Pulse rate is nothing but pulse interval.

BPM = (1.0/Pulse Intervel) * 60.0 * 1000

Pulse rate in graph of adult person = 735

BPM = (1.0/735) * 60.0 * 1000

BPM = 81.63

If the pulse rate of the child decreases then BPM increases.

Whenever the pulse rate value is less than 400 then automatically sent an SMS alert to the mobile and also an MMS is sent to parent mobilemodule which consists of an image indicating the surrounding area of the child.

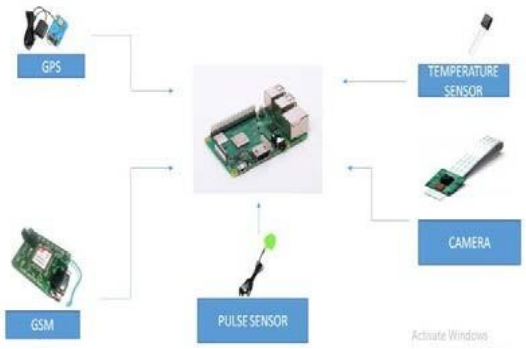
FUTURE SCOPE

In our system, we automatically monitor the child in real time using Internet of Things, with the help of GPS, GSM, and Raspberry Pi.

This system requires network satellite communication, and high-speed data connection when we use web camera and GPS to lively monitor. It is difficult to monitor when there occurs any hindrance to satellite communication or any network issue 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.

Methodology

Based on the problem statement the project is proposed to develop smart agriculture: Gathering information: previously there were approaches that were implemented tosolve child monitoring system. Many schools and families use different types ofapproaches to locate and monitor children. Modeling: Based on the information we have gathered through interviewing theproblems of the current monitoring system in our context designed the flow chart,system design and ER diagram for the project. Hard ware and Software: the hard ware construction and software implementation withArduino software.



Scope and Limitation

Scope-The scope of this project is limited to develop SMS platform implementation prototype. The project contribution is sensing the children status and displaying the output. Thissystem also provides the real time data to be available on mobile phone, so that it can send textmessage all the sensors data gathered from the children. Limitation-The major challenge may be to spread the knowledge

and awareness about the system tothe various stakeholders, particularly the family's .The cost of infrastructure modernizationand maintenance is another challenge. In order to use this system the family's need to link withglobal network and technology this may lead to go for hardest work. The other limitation of thisproject is the availability of global network around the rural area of the country.

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CONCLUSION

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