

LITERATURE SURVEY

DOMAIN : Internet Of Things(IoT)
PROJECT : IoT-Based Safety Gadget for Child Safety Monitoring
& Notification
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ABSTRACT:

In today's world children are less secure and have many issues concerning their security purpose. More family's spent their time for work and social accountability but since Children are gifts of GOD they need the care of family. The current status of our country is not habitable for monitoring children in school. With the absence of a child monitoring system, it is hard to monitor the whereabouts of children. Underage children may be impulsive in the way they act and in places to be. Most of the human behaviour is shaped in the childhood stage, in order to get morally acceptable behaviour child monitoring system is necessary. Children are prone to many accidents. The safety of children is very indispensable as children cannot protect themselves.

The main goal of this project is to create a smart wearable device for children that uses refined technology to assure their safety. The paper provides a smart solution for deflecting losing kids while going out alone or with their parents based on the Internet of Things(IoT). Our proposed strategy ensures utmost security and ensures live tracking for their kids. This paper proposes a model for child safety through smartphones that can track their children's location and give the precise coordinates of the child's location in real-time anywhere. By monitoring the activities the security state of the child is examined.

INTRODUCTION:

The Internet of Things (IoT) plays a vital role in day-to-day life. The major difference between IoT and the embedded system is that a dedicated protocol/software is embedded in the chip in the case of an embedded system, whereas, IoT devices are smart devices, which are able to seize decisions by sensing the environment around the device. The Internet of Things is increasingly finding a place at the heart of many business automation strategies. Companies are using sensors in the logistics chain to help them track where delivery is with extraordinary accuracy.

The motivation for this wearable comes from the increasing need for safety for little children in contemporary times as there could be scenarios of the child getting adrift in a major crowded sector. This paper focuses on the key aspect that a missing child can be assisted by the people around the child and can play a remarkable role in the child's safety until reunited with the parents. If any deviant readings are disclosed by the sensor, then an SMS and phone calls are set off to the parent's mobile. Also, it overhauls the parental app through the cloud.

The technique is equipped with GSM and GPS modules for sending and receiving calls, and SMS between the safety gadget and the parental phones. The system also consists of a Wi-Fi/cellular data module used to implement IoT and send all the monitored parameters to the cloud for android app monitoring on the parental phones. The panic alert system is used during panic situations alerts are sent to the parental phone, seeking help also the alert parameters are updated to the cloud. Most of the wearables available today are focused on providing the location, and activity of the child to the parents.

LITERATURE SURVEY:

{1} Authors: Zambada J,Quintero R,Isijara R,Galeana R, Santillan, L.(2015)

Using the paradigm of IoT, the proposed sensors send data about the location to the Internet through a broker, as well as billions of objects in the world are sending their own data to the Internet.

{2} Authors: M Nandini Priyanka, S Murugan.

The parent can send a message to the GSM module, according to the message information the GSM module replies back with particular details about the children. The location can be seen on Google Maps. When a particular child is facing an emergency situation, the device button should be pressed so that the device captures the image along with the user information to the enrolled mobile numbers. The life of the child can be saved within no time.

{3} Authors: K N H Srinivas, T D S Sarveswara Rao, E Kusuma Kumari.

From the children's point of view GPS, GPRS and GSM are used to monitor the speed and location tracking purpose. The system is fixed on the bus or car or in any vehicle so that the vehicle is going on a routine route or not can be identified by the GPS tracker, and the speed of the bus can also be extracted. Nowadays digital technology plays a major role in connecting people via the internet. For tracking the children, the android-based solution is provided to parents. Internet is the one that will connect different components through a single device and is connected to the server. Parents track their children in real time with the location tracker by GSM.

{4} Authors: Khushalsing Rajput, Ankur Chavan.

Some of the existing works done on these similar lines are for example the low-cost, lightweight Wristband Vital which senses and reports hazardous surroundings for people who need immediate assistance such as children and seniors. The major drawback of the Vital band is that it uses Bluetooth as the mode of communication between the child and the parent. Since the distance between the two in some cases could be substantial and the Bluetooth just won't be able to establish a close link between the two. Hence this system combines both GPS and GSM technology to provide a hand in such situations. The GPS is used for identifying the location and GSM is used for sending them a message

{5} Authors: Omkar Tanawade, Swapnil Sonawane.

The absence of an information system which could display conditions, actual activity, and annual reporting of kindergarten students in a platform which could be accessed easily anywhere and anytime has led to a major block in the coordination of students, parents, and teachers. One of the most difficult technical

implementations is how to compile and display the updates of children's position in a fast (near real-time) duration while accessed from outside communication.

{6} Authors: David Hanes, Gonzalo, Patrick Grosetete, Robert, Barton, Jerome.

Title: Henry "IoT Fundamental and Networking Technologies, Protocols".

During an emergency, mobile apps alert the control room of nearby police stations or caretakers of children. The literature shows that location tracking devices are available in the market but it does not provide a complete solution to the problem. The solution to this problem is to design an IoT device, which senses the child's location and environment and during an emergency, it should send the alert to the parents automatically.

{7} Authors: K. N. H. Srinivas, T. D. S. Sarveswara Rao, E. Kusuma Kumari.

Title: Smart IoT Device for Child Safety and Tracking.

Published in: 2019 IEEE. The system is developed using Link-It ONE board programmed in embedded C and interfaced with temperature, heartbeat, touch sensors 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 an emergency. Merits: The parameters such as touch, temperature & heartbeat of the child are used for parametric analysis and results are plotted for the same. Demerits: To implement the IoT device which ensures the complete solution for child safety problems

{8} Authors: Akash Moodbidri, Hamid Shahnasser.

Title: Child safety wearable device. Published in: 2017 IEEE.

The purpose of this device is to help parents to locate their children with ease. At the moment there are many wearables in the market which help to track the daily activity of children and also help to find the child using Wi-Fi and Bluetooth services present on the device. Merits: This wearable over other wearables is that it can be used on any phone and it is not necessary that an expensive smartphone is required and doesn't want to be a very tech-savvy individual to operate. Demerits: This device's battery gives a short lifetime.

High power efficient model will have to be used which can be capable of giving the battery life for a longer time.

{9} Authors: Aditi Gupta, Vibhor Harit. Published in: 2016 IEEE. Title: Child Safety & Tracking Management System by using GPS.

This paper proposed a model for child safety through smartphones that provide the option to track the location of their children as well as in case of emergency children are able to send a quick message and its current location via Short Message Services. Merits: The advantages of smart phones they offer rich features like Google maps, GPS, SMS etc. Demerits: This system is unable to sense the human behaviour of children.

{10} Authors: Dheeraj Sunehera, Pottabhatini Laxmi Priya. Title: Children.

Location Monitoring on Google Maps Using GPS and GSM. Published in: 2016 IEEE. This paper provides an Android-based solution for parents to track their children in real time. Different devices are connected with a single device through channels of the internet. The concerned device is connected to the server via the internet. The device can be used by parents to track their children in real time or for women's safety. The proposed solution takes the location services provided by the GSM module. It allows the parents to get their child's current location via SMS. Merits: A child tracking system using android terminal and hoc networks. Demerits: This device cannot be used in rural areas.

CONCLUSION:

The System put forward this paper to ensure the safety of children and increase their confidence. Many experimenters are operating in this area and have formulated different technologies to aid children. The key represented in this paper takes the advantage of smartphones which proposes affluent elements like Google maps, SMS, etc. The child safety and protection device is proficient in acting as a smart IoT device. It equips parents with real-time location, the surrounding temperature, and along with an alarm buzzer for their child's circumstances and the capability to locate their child. This paper depicts the fundamental design concept and functionality along with the anticipated consequencess.