Web of Things Based Student Tracking Monitoring System

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Abstract – In recent times there's increment in cases of kid seizure, missing kid, and kid harassment. It's ascertained that children's security faculty in class| at school buses and out of doors school premises is questionable. This planned system tries to make sure absolute best safety of children exploitation sensible options that square measure additions in existing chase system for higher security. The planned system consists of school bus unit, faculty unit and humanoid application. The School-Bus Unit will note the presence of kid in bus exploitation RFID.GPS module attached to the current unit can track location and bus speed perpetually. Alcohol sensing element and meddling switch during this unit give secured transport to kid. Cloud property and live video streaming facility is provided by Raspberry pi unit that act as slave controller to AVR in bus unit. The varsity Unit identifies the kid at school exploitation RFID scan and update child location on server exploitation WLAN module

INTRODUCTION

Recently, everywhere the planet, the crime against youngsters is increasing at higher rates and it's time to supply safety support system for the youngsters planning to colleges. School buses area unit stressed to supply a secure, reliable service to school youngsters and their folks. It's determined that almost all of the kid harassment and snatch cases occurred during a college bus and during a neck of the woods of the college space. Most of the college buses don't have enough facility for youngster's security. College premises lack police investigation and area unit liable to criminal cases, therefore, causation a baby to high school by bus is often stressful for fogeys. Children following system are widely used everywhere the globe to assure folks that their wards area unit safe from suspicious actions. Therefore, we'd like the sensible kid following system which can track child's movement from home to high school and vice a versa. There are a unit varied technologies obtainable in today's world for kid security and everyone has its limitation and utility. However, the prevailing systems don't seem to be powerful enough to stop the crime against youngsters since leading to low assurance regarding their kid safety to oldsters. The thought of this project is to develop additional safe and sensible system than existing systems. When analyzing varied current kid following systems we tend to try and create systems additional reliable and avoid faults within the existing system. We tend to add some new options to the prevailing system for creating it simpler.

2.RELATED WORKS:

After a quick review, we tend to distinguish that few current systems within the market target the various security and chase aspects. This includes 2 terminals. The primary terminal is parent Smartphone and therefore the second is kid Smartphone. During this system, each terminal uses sensible options of mobile like GPS and GSM. Parent terminal will request send missive of invitation to kid terminal for the situation updates. Attended running within the back spherical services of the kid terminal reads the request SMS and can reply the most recent coordinates from the satellite or the network provider [5].

This planned system captures location of the kid victimization GPS and therefore the coordinates are transferred to the mobile terminals via GSM. The push provided at the bottom terminal so as to alert parent via the mobile terminal. PIC micro controller manages all the interfaces at the bottom terminal [6]. It is arm7 based mostly kid following system. During this system, GPS tracks the placement of the kid and inform it to the fogeys through GSM and mechanical man app. This method additionally has the distinctive feature of voice chip with the speaker. An identical style of system is enforced exploitation Adriano board given in numerous paper[7]. This system includes arm controller together with GPS, GSM. It additionally includes voice police work circuit, a temperature detector and accident detection switch for added security. Following server tracks location and safety of the kid on the bus and provides it to the fogeys [8][9].

Project enforced victimization Arm7 (lpc2378). The project tracks kid victimization GPS and standing can reach to folks automaton phone via local area network.GSM unit can give knowledge to observation unit at college. Moving kid to 2 receivers. Once the kid cries, voice playback circuit is triggered by ARM7microcontroller and intimation regarding

corresponding kid is given through text message to their oldsters [10]. This can be a sensible application that uses Raspberry Pi boards as a controller. During this project, raspberry pi fetches position coordinates from GPS module by victimization NMEA protocol. Raspberry Pi sends this coordinates to the online server victimization Ethernet.

The broadband association is required for raspberry pi to supply local area network association. The online server uses My SQL information to store coordinate data. Automaton device request net server to supply the present location of the kid and displays it on the Google map [11]. The system contains passive RFID module. Every kid has given a singular RFID tag hooked up to his bag. Once the kid enters or leaves the varsity bus RFID module scans the kid tag and build note of it. It uses GPRS technology for local area network association within the omnibus and wireless fidelity association faculty school unit for marking child's entry and exit during a school on the online server. Backend a server manages the online server records.

The projected system conjointly includes completely different call formulas for safety purpose like decision-making formula and alert management algorithm. This formula alerts system if the kid is left behind or on the incorrect bus [12]. We conjointly got few plans from the present project undertaken by the govt for following faculty buses. That provides the precise location of the bus. It conjointly provides the arrival and also the departure timings of the buses beside driver details[13]. This bus following system is another sensible system which has omnibus following and bus attending. It conjointly includes options like speed alert, live North star, eating, emergency management system, voice business, pickup-drop SMS, bus engine standing and driver identification[14] North star could be a comprehensive kid safety platform.

It leverages the simplest in Geo-technology to supply associate degree end-to-end omnibus following and kid observation resolution. North Star, a product from Magnasoft, leverages GPS, RFID and Video police work technology, in addition to a cloud-enabled package platform. This can be up to now best-working application we have a tendency to found enclosed with all safety options mentioned higher than. [15] There square measure more systems offered that square measure accustomed tracks the situation of the kid or person or any quite objects. [16][17][18][19].

These systems had few drawbacks and conjointly needed a compiled system which will give each attainable side of the kid and also the location. The project we have a tendency to aim to implement provides video streaming through a cost-efficient means. We have a tendency to try and give sensible security in terms of alcohol sensing element and change of state protection. Thus our project can replicate bound options in already enforced systems with most attainable potency. School exploitation RFID scan and update child location on server exploitation WLAN module

3. EXISTING SYSTEM:

GSM primarily based alternative communication modules they need to be used. Monitoring and dominant vary isn't wider. Complexity additional in transferring data

4.PROPOSED SYSTEM:

Now a day's kid seizure, missing kid, and kid harassment becomes major problem for the parents as well as school management. To more over this problems and improve the security, a new Cloud Based Child Tracking System Using Raspberry pi system is introduced. By using the proposed technique which will provide the online video stemming (Transferring messages through internet technologies) and SMS based alert for kid's security. The block diagram of the proposed system is show in the below Fig.1.
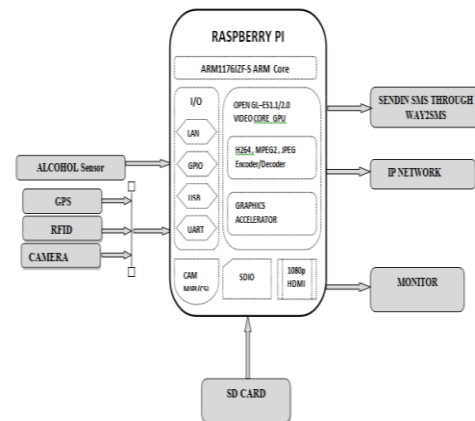

Fig.1. Block diagram of the web of things based student tracking monitoring system

In this proposed system consist of two major parts such as Transmitting section and receiving section. In the transmitting section for authenticated the Kids

RFID cards are used. Whenever the student is enter to the class room or school bus at the time RFID pass the message signal to the Raspberry pi. The Raspberry pi enabling the GPS and camera the outputs are directly updated in the webpage. By accessing particular webpage parents can able to the see their kids. The proposed system is also consisting of the SMS system and Alcohol sensor, the SMS system provide the school bus location and attendance of the kids. Alcohol sensors are used to detect the driver conditions.

5. EXPERIMENTAL SETUP & RESULTS

Alcohol sensing element is employed to observe the motive force standing. The sensing element connected to raspberry pi GPIO pins. The Radio Frequency Identification is employed to visualize whether or not the coed in bus or college zone The module are going to be communicated via UART port of raspberry pi. Global Positioning System is employed to trace the situation of bus unit. The GPS Module can communicate over USB port of the Raspberry Pi. The USB digital camera is employed here for live streaming of the bus unit to the webpage. The streaming is employed to observe visually from the remote location. The SMS is used for sending alert messages. Here we create an API for sending SMS USING Python Programming via WAY2SMS. All of the components information is updated on the web page; Here we install a Web server in the raspberry pi for creating a web page using PHP and HTML.

5.1. Hardware used
Raspberry pi controller, Alcohol Sensor, RFID, GPS, Camera, Monitor, SD card and USB adaptor.

5.2. Software used
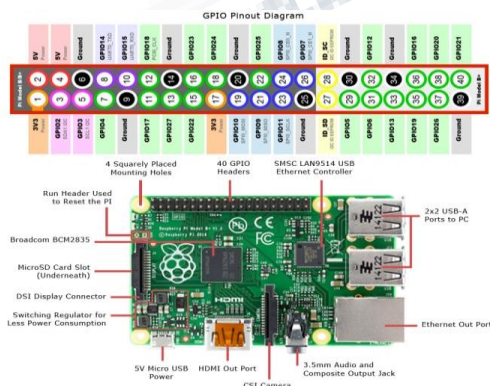Raspbian Jessie with the language of Python, PHP, HTML.

Fig.2. Picture of the proposed implementation.

(create from paint)
Fig.3. Online Webpage short.

Fig.4. Online screen short of streaming.

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