Iot Based Children Bus Security System

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Abstract:-**The growth in scientific knowledge has made our lives easier. Millions of children travel form home to schools every day. Now a day's children's is not secure. Many incidences happen like, children themselves locked in school bus ,miss the bus, and also sometimes they ride the wrong bus with no way to track them. This prototype project use for solved this type school child problem. The purpose of this project to control entry and exit of students form home to school The correct entry and exit of particular student will be identify by "RFID" Tag's. "GSM" technology use to ensure entry and exiting of all students to and from the school bus in safe manner .The system will do all the process and allow the students to track while entering and existing bus. It will also send an "SMS" to inform management and parent's while entering bus.**

Keywords: ARM LPC2138/LPC2148, GPS MODEM, GSM MODEM, Alcohol sensor, IR Pair sensor, RFID Tag, buzzer

I. INTRODUCTION

 In this project, GSM and GPS module and RFID module used. Now a days there are many problems during travelling from home to school for a primary child. Mainly there security problems this is the big issue.for that we design a project based on IOT(INTERNET OF THINGS) that is IOT based child security system. Using that system we can able to track the location of the bus and from we know the exact location of that child.each child was give the RFID card for the identification purpose .each child information has been stored for indification while child entering the bus card is important without card can't enter.In this project we provides the link to parent's and management to monitor the system is place in the bus.using this smart bus we can sure the safety of child as well as we can save time   of

management as well as parents.and also provides the massages to assigned persons through the GSM.

II. METHODOLOGY

SR. NO	NAME	OUTLOOK
1	ARM LPC2138	
2	IR PAIR sensor	
3	Alcohol sensor	
4	RFID TAG	
5	Buzzer	

6	GSM MODEM (SIM900A)	
7	GPS MODEM (200A)	
8	LCD 16x2	

Table1. Basic components

The model of an bus child security system using GSM and GPS modem using LPC2138 working will be made in the following step are:

[1] The design of system will be represented in the form of a block diagram.
[2] RFID model connected to the LPC2138
[3] RFID Tag used to read the student data to given to particular
[4] The GPS MODEM detects the latitude and longitude position of the school bus
[5] The location coordinates detected by GPS MODEM are sent as a message through the GSM MODEM using AT commands to registered phone numbers which are saved in memory of LPC2138
[6] The Alcohol sensor is used detect the presence of drunk school bus driver status
[7] IR Pair is used to detect the laziness of school bus driver
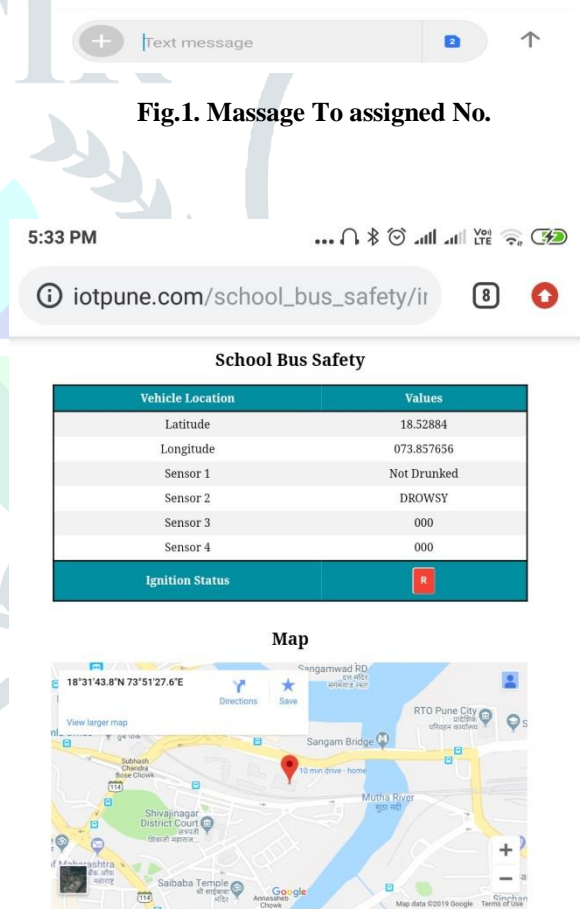

Fig.1. Massage To assigned No.

Fig. 2. Web Page
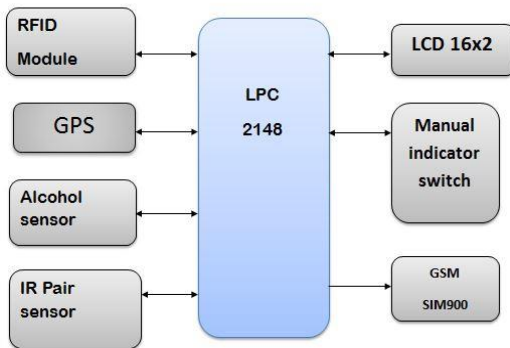
III. HARDWARE FRAMEWORK

Fig. 3. Block Diagram

1) ATMEGA 16

The proposed black box system is based on the operation of microcontroller. We have chosen ATMEGA 16 microcontroller as it is more compatible for applications of this project. ATMEGA 16 is a low power 8 bit microcontroller. It has 8 bit, 10 ADC channels with 512 bytes EEPROM. It also has four PWM channels.

2) IR PAIR SENSOR

IR sensor is basically used for detecting the motion and heat of the object .the IRsensor consist of the basic components and they are
IR LED(Emitter)
Photodiode(detector)
Op-amp
Emitter emits the IR rays and detector detect it.now there are many ways by which radiation may be or not able to reach photodiode we know that the white surface reflects all the ray fall on and the black color absorbs them.

3) GSM MODEM

GSM MODEM is built with dual band GSM engine SIM900A, works on frequency 900/1800 MHz.The MODEM is coming with RS232 interface which allows you to connect microcontroller with RS232 chip. Using this MODEM, audio calls, SMS, read SMS, attend the incoming calls can be made using simple AT commands.GSM modem is used to send message to specific assigned number over the internet network and has pay charges on it.

4) GPS MODE

Global Positioning System (200A)
We can build the GPS module in bus from that module we can know the exact location of the bus.through internet on provided site to parents and management they can know the location of that bus,management also able to monitoring on the bus in case of root changes then we can detect that problem through GPS

5) ALOCOHOL SENSOR

The alcohol sensor is basically used for detecting alcohol concentration on your breath, like our common breathalyzer .a alcohol sensor needs 5v dc supply to activate the sensor and alcohol sensor is sense the alcohol and its range0.05mg/l to 10mg/ l Alcohol sensor give information about the signal detected by the device.

Applications

- Breath Analyzer
- Blood Alcohol Concentration Checker
- Alcohol Gas Sensor

Features

- High sensitivity to alcohol and small sensitivity to Benzie
- Fast response and High sensitivity
- Stable and long life
- Simple drive circuit of 5V DC with analog output
- Operation Temperature: -10 to 70 degrees C

IV. ACKNOWLEDGMENT

V. CONCLUSION

This system presents the security about not mature child travling from home to school or school to home and alert parents and management by using GSM SYSTEM. SMS to the user registered mobile numbers. The GPS tracking and GSM alert based architecture is designed and implemented with ATMEGA16L MCU in embedded system domain. This made the project more user-friendly and reliable. The proposed method is verified to be highly beneficial for the automotive industry.

VI. REFERENCES

[1] K R Nithin , **"Evidence Collecting Black Box for the Vehicles"** International Journal of Engineering Science and Innovative Technology (IJESIT) ISSN: 2319-5967 Volume 3, Issue 3, May 2014

[2] P. Dileep Kumar,**"Black Box for Vehicles"**International Journal of Engineering Inventions ISSN: 2278-7461 Volume 1, Issue 7 October, 2012

[3] Saritha Il, **"Development of Wireless Black Box Using MEMS Technology for Accident Prevention"** International Journal of Innovative Research in Computer and Communication Engineering ISSN(Online): 2320-9801 Volume 3, Issue 6 June, 2015

[4] Gubbi Jayavardha,"Internet of Things(IoT) A Vision ,architectural element, and future directions" Future Generation computer System,29.7(2013):1645-1660

[5] Al-Mozloum.,"GPS and SMS based child tracking system using smart phone"International Journal of Electrical Robotics 7.2(2013):171.174