Smart School Bus Monitoring and control with Engine Locking system using IOT

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Abstract

Now a days with the rise within the rate and accidents parent worry about their children once they are getting to school and if the varsity are at a long distance from their houses they really worry. We also hear many children getting locked inside a faculty bus within the parking slot after falling asleep on their thanks to school. Our project makes use of RFID module for tracking and monitoring children during their trip and from school. it's advantage of efficient tracking capabilities law cost, easy maintenance, fire sensor is additionally wont to detect any fire accident the system contains three unit Bus unit, parent unit, school unit. The microcontroller use in this device detect alcohol signal from alcohol sensor and display alcohol detection note on LCD screen and also stop DC motor which stop the bus. The system need a password to start out the engine. If alcohol is detected at the time of starting the engine doesn't start in the least. If alcohol is detected after engine starting the system lock the engine at that point. Not only school buses it are often used for shielding automobile from drunken driver for safeguarding them by using IoT. The system permit a tons to the varsity unit on mail, mobile sms.
 *Key Words: frequency identification.*

I.   INTRODUCTION

There are numerous children got to travel from home to high school and the other way around a day. So parents, obtaining a secure transport for his or her children may be a critical issue. Crime against children is increasing and each parent is requesting the respective school for the safety of their child while traveling from school to home and the other way around in class bus .This system will notify parents by SMS whenever children enters or leaves bus, this may assure parents that children are safely reached to destination .Count through IR sensor will make sure that is bus is vacant or still any children are remains inside the varsity bus. The proposed system is employed to watch and detect the speed of the vehicle and send an aware of the oldsters, if the bus cross the regulation. Parents use the Google map in android to trace the bus. If the oldsters open the Google map the present location of the bus can display within the android. The GSM and GPS is employed to send the alert message to the oldsters and also to the varsity unit. The LCD display is fixed inside the varsity bus to display the identification of the scholar to the driving force. We usually see the across drink and driving cases where drunk drivers crash their cars under the influence of alcohol causing damage to property and life. In this system we propose an innovative system to eliminate such cases. In this system our proposed system would be

constantly monitor the drive breath by placing it on the drive wheel or somewhere the driver's breathe are often constantly monitored by it. So if a driver's drunk and tries to drive the system detects alcohol presence in his/her breathe and locks the engine in order that the vehicle fails to start out. In another case if the driving force isn't drunk while he starts the vehicle and engine is started but he/she drinks while driving the sensor still detects alcohol in his breath and stops the engine in order that the car wouldn't accelerate any longer and driver can steer it to roadside. During this system we use an AVR family micro controller interfaced system with an alcohol sensor alongside an LCD screen and a dc motor to demonstrate the concept. So here the alcohol sensor is employed to watch uses breath and constantly sends signals to the micro controller.

II.   LITERATURE SURVEY

On reviewing the past work of faculty bus tracking, monitoring and alerting system, there's an opportunity to categorize various methodologies and identify new trends. One of them may be a challenge for vehicle tracking, monitoring and alerting system. Now-a-days with the rise within the rate and accidents, parents worry about their children once they are getting to schools. and lots of children find themselves locked during a bus within the bus parking zone after falling asleep on their thanks to school, miss the bus, or leave at the incorrect station. The. Australian College of Road Safety says that bus travelling within the safest kind of road transport system is safer than the private car for the youngsters, which the record for college bus travel especially is extremely good. Global Positioning System and Global system for mobile communication module is meant for tracking and positioning the varsity bus. Also, the research undertaken by National Highway Traffic Safety Administration in USA notes that when comparing the amount of fatalities of youngsters aged 5 to 18 years during teachers college transportation hours, school buses are 87 times safer than private cars. However, headlines like Girl dies in bus humiliation from the May 18, 2010 issue of the Peninsula newspaper in Qatar seems to be repeated several times once a year in several places of the earth .This system will issue the messages to folks to con-vey them that their children are reached to highschool safely, which they are within the school and also give an alert message if fire accident occurs. LCD displays the message about the speed of the varsity bus. The tracking system includes the situation and speed of the vehicle in current movement, speed of the vehicle is monitored then sms alert is send to the oldsters through the GSM.

III.   DESIGN AND DRAWING
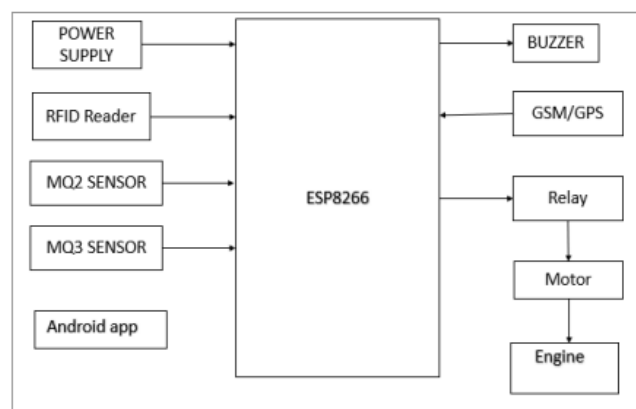
Block Diagram Description

1. ESP 8266 WIFI MODULE

ESP8266 (presently ESP8266EX) may be a chip with which manufacturers are making wire Lesly network able micro controller modules. More specifically, ESP8266 may be a system-on-a-chip (SoC) with capabilities for two .4 GHz Wi-Fi (802.11 b/g/n, support in WPA/WPA2), general-purpose input/output (16 GPIO), Inter-Integrated Circuit (I2C), analog-to-digital conversion (10-bit ADC), Serial Peripheral Interface (SPI), I2S interfaces with DMA (sharing pins with GPIO), UART (on dedicated pins, plus a transmit-only UART are often enabled on GPIO2), and pulse width modulation (PWM). The processor core, called "L106" by Expressive, is predicated on ten silica's Diamond Standard 106 Micro 32-bit processor controller core and runs at 80 MHz (or over clocked to 160 MHz). It's a 64 KB boot ROM, 64 KB instruction RAM and 96 KB data RAM. External non-volatile storage are often accessed through SPI.

2. MQ2

We are using MQ2 smoke and flammable gas sensor as a gas detector it need only two connection vcc and ground. The gas sensor module is sensitive to smoke it can utilized in for the hearth detection. MQ2 gas sensor is additionally sensitive to flammable gases like LPG, propane, etc. It require 5v power supply, interface type: analog and digital. It has low cost, stable and long life.

I.   POWER SUPPLY

Power supply is a device which supplies electric power to an electrical load. The first function of power supply is to convert current from a source to current voltage, Current and frequency to power the load. It's used as an input to micro controller. It supply regulated 5V supply to the micro controller.
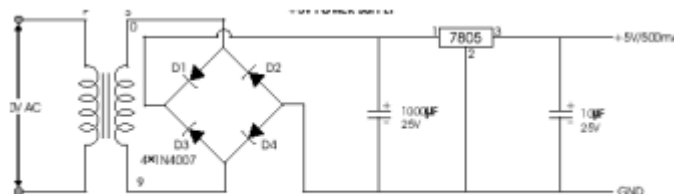

Fig. Power Supply.

4. BUZZER

Buzzer is an audio device. It's used for emergency purpose when fire detection is detected within the bus. Rated voltage: 6V dc. Operating voltage: 4-8V dc.

5. ALCOHOL SENSOR

This alcohol sensor is acceptable for distinguishing liquor fixation on your breath, much an equivalent as your normal Breathalyzer. It has a more affectability and quick response time. Sensor gives an easy resistive yield in sight of liquor fixation. The driver circuit is extremely straight forward; all it needs is one resistor. A basic interface might be a 0-3.3V ADC.

6. RFID READER

RFID Tag is employed to spot the kid within the bus with the assistance of reader present within the

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bus. GSM Technology for sending the message to oldsters and faculty management. It also provide the push button in emergency. Everyday data of the student is stored within the database and parent can check this data anytime. Operating current is 13-26mA\dc3.3V.Data transfer rate max 10mbits/sec Module size 40mm*60mm.reader distance >= 50mm.

7. ANDROID APPLICATION

Android app may be a software application running on android platform. An android is design for mobile devices. We are designing app for folks this app will help parents to remain updated by tracking the situation of the path.

IV. CONCLUSION AND FUTURE SCOPE

This paper show that smart school Van safety system may be a feasible for supervising and tracing the child's during their drive to make school. Also drink and drive cases, missing school children's, accident emergencies, and push and school management plays a significant role to reinforce child security. By developing the mobile application live tracking of faculty bus are often implemented. To beat the delay thanks to traffic in cities, real clock are often wont to know the precise time of the arrival of bus and avoid to drink and drive.

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