

DESIGN AND IMPLEMENTATION OF COLLEGE BUS MONITORING AND TRACKING SYSTEM

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ABSTRACT

In daily operation of college transport systems, the movement of vehicles are affected by different uncertain conditions as the day progresses, the transport system which is been practiced in colleges have certain difficulties in daily routine. Millions of students commute between home and college every day. While there is much feasibility that makes the system reliable, yet there are some issues, such as unexpected delay in boarding the bus as the exact location is unaware, that makes the students to miss their daily classes. As many students escalate the college transportation, determining the total number of students and faculties has been practiced manually. This process requires a man power to determine the count on number of students entering and exiting the college bus. In recent times, drowsiness is one of the major cause of highway accidents. As every bus system is controlled by the driver, it is important that driver must be conscious every time the bus is active. It is significant that driver must be attentive to the road that makes the students to reach their destination safely. Henceforth, the system provides the efficient solution to overcome these issues. In overall the system is useful and safety.

Keywords: GPS(Global positioning system), Eye-Blink sensor, IR(Infrared rays) sensor.

I. INTRODUCTION

In this fast moving world, everyone is in rush to reach their destination. In this case waiting for the bus is not reliable. This system propose smart bus tracking system for Students who rely on the college transport. Their major concern is to know the real time location of the bus for which they are boarding for. This system intends to find yet another solution to solve this problem by developing a bus safety system that will track the location of the bus through GPS and monitor the entry and exit of persons from the bus through an

energy efficient methodology. The proposed system will continuously sense the way in and way out of the person using IR sensor(Infrared rays), and eventually, the count is displayed on the LCD. In recent times, drowsiness is one of the major cause of highway accidents. This system is used to prevent and control when the vehicle is out of control. The drowsiness of the driver is identified by the eye blink closure and blinking frequency through infrared sensor worn by a driver by means of spectacles frame. If the drowsiness is detected, immediate buzzer alert is

Fig 1.1 Architecture Diagram for college transportation system.

MODULE DESCRIPTION

1) PIC16F877A

The PIC16F877A CMOS FLASH-based 8-bit microcontroller is upward compatible with the PIC16C5x, PIC12Cxxx and PIC16C7x devices. It features 200 ns instruction execution, 256 bytes of EEPROM data memory, self-programming, an ICD, 2 Comparators, 8 channels of 10-bit Analog-to-Digital (A/D) converter, 2 capture/compare/PWM functions, a synchronous serial port that can be configured as either 3-wire SPI or 2-wire I2C bus, a USART, and a Parallel Slave Port.

2) IR-SENSOR

An infrared sensor is an electronic device, which emits in order to sense some aspects of the surroundings. An IR sensor can measure the heat of an object as well as detects the motion. These types of sensors measure only infrared radiation, rather than emitting it that is called as a passive IR sensor. These types of radiations are invisible to our eyes, which can be detected by an infrared sensor. The emitter is simply an IR LED (Light Emitting Diode) and the detector is simply an IR photodiode which is sensitive to IR light of the same wavelength as that emitted by the IR LED.

3) EYE-BLINK SENSOR

The eye-blink sensor works by illuminating the eye and/or eyelid area with infrared light, then monitoring the changes in the reflected light using a phototransistor and differentiator circuit. The exact functionality depends greatly on the positioning and aiming of the emitter and detector with respect to the eye. The sensor at the eye will allow the user to control communication devices.

4) GLOBAL POSITIONING SYSTEM

GPS satellites circle the earth twice a day in a very precise orbit and transmit signal information to earth. GPS receivers take this information and use triangulation to calculate the user's exact location. Essentially, the GPS receiver compares the time a signal was transmitted by a satellite with the time it

was received. The time difference tells the GPS receiver how far away the satellite is. Now, with distance measurements from a few more satellites, the receiver can determine the user's position and display it on the unit's electronic map.

5) BUZZER

Buzzers like the TMB-series are magnetic audible signal devices with built-in oscillating circuits. The construction combines an oscillation circuit unit with a detection coil, a drive coil and a magnetic transducer. Transistors, resistors, diodes and other small devices act as circuit devices for driving sound generators. With the application of voltage, current flows to the drive coil on primary side and to the detection coil on the secondary side. The amplification circuit, including the transistor and the feedback circuit, causes vibration. The oscillation current excites the coil and the unit generates an AC magnetic field corresponding to an oscillation frequency. This AC magnetic field magnetizes the yoke comprising the magnetic circuit. The oscillation from the intermittent magnetization prompts the vibration diaphragm to vibrate up and down, generating buzzer sounds through the resonator.

6) LCD

A **liquid-crystal display (LCD)** is a flat-panel display or other electronically modulated optical device that uses the light-modulating properties of liquid crystals. Liquid crystals do not emit light directly, instead using a backlight or reflector to produce images in color or monochrome. LCDs are available to display arbitrary images (as in a general-purpose computer display) or fixed images with low information content, which can be displayed or hidden, such as preset words, digits, and 7-segment displays, as in a digital clock. They use the same basic technology, except that arbitrary images are made up of a large number of small pixels, while other displays have larger elements.

VI SYSTEM IMPLEMENTATION

In this system to make an easy monitoring, automatic passenger count has been proposed. The counting is implemented using IR sensor. Two sensors, one for entering and another for exiting the bus has been designed which is simply said as IR-IN and IR-OUT. To the track

the location, the GPS setup is placed inside the bus where by using the Bluetooth module the current location of latitude and longitude is displayed on driver application is. When the server gets started the current location is displayed on user's application. To enhance the safety measures of the students, monitoring the drowsiness of the driver is proposed using eye-blink sensor. It senses the thermal reflection of an eye and deducts the driver's presence. If the abnormality is deducted, immediate buzzer alert



is been provided. In overall the system brings out the safety features the college transportation.

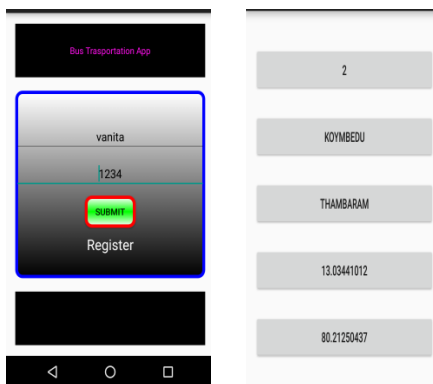
COMPLETE DESIGN

VII RESULTS

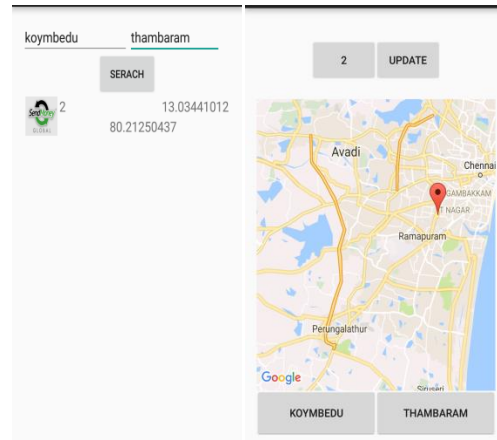
As by implementing the above process the results were executed successfully as follows

DRIVER APPLICATION

[1]. prevention of accident due to drowsy by using eye blink



USER APPLICATION



VIII FUTURE ENHANCEMENT

- The accident alert can be extended by providing automatic vehicle stopping system once the drowsiness has been detected.
- Accident detection can be proposed by using meme sensor which in turn gives the notification to the management instantly.

IX CONCLUSION

In this paper the smart tracking and monitoring of college transportation has been proposed with the desired features that can be implemented in real time. The overall system produces the safety enhancement for the students that provides the automatic system for transportation. It also provides the idea of preventing major accidents by deducting the activity of the driver. Thus the overall system provides the safety features and tracking process for college transportation.

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XI REFERENCES

[1].B.Praveenkumar, K.Mahendran
International Journal of Innovative Research in Science, Engineering and technology(An ISO

3297:2007 certified Organization)Vol.3,Issue 5, May 2015.

[2].Dr.(Mrs.) Saylee Gharge, Manal Chhaya, Gaurav Chheda. International Journal of Scientific and Research Publications, Volume 3, Issue 5, May 2015.

[3].Dipti R. Kulkarni a , Sneha H. Kulkarnib , Pooja B. Nalawade c Swati P. Jagtap d International Journal of Innovative and Emerging Research in Engineering Volume 3, Issue 3, 2016.

[4].Mrs.Swati Chandurkar, Sneha Mugade, Sanjana Sinha, Megharani Misal, Pooja Borekar International Journal of Scientific and Research Publications, Volume 3, Issue 5, May 2013 ISSN 2250-3153