STUDENT MONITORING SYSTEM

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Abstract:

India has many numbers of colleges and teaching is one of the major activity in which providing the employment to number of persons who like to give knowledge to the other person. In Today's world many colleges are facing common problem like bunking the college lectures also meet with the severe accidents. Indian department of education ask the question to the department for their irresponsibility. This same department also seeks records of all the students which are very difficult to maintain. This paper proposed the prototype development of maintaining all the record of all the students titled RFID based Sensing & Attendance with GSM Module exclusively Considering the need of Teachers of India. e, the RFID card is used for the ID card of the students of a college. Each student will have an RFID card. The system is like that if any student arrives at the college, he has to swipe the card at the entry gate. As soon as the student swaps the card, an automatic SMS is sent to the registered user corresponding to the student**.**

I.   Introduction

Student Monitoring System is an IOT based project which will help many worried parents by easing them a little i.e. watching their child while he is off to school. The project is not only helpful to the Parents but also to the School Teachers and the staff members as it will help them in removing the day to day taking attendance system. Our project will read
the RFID of the respective student and if valid card has been identified then the parents will be notified that their ward has reached school premises and the
same procedure will be followed when he will leave the school premises that is when he will leave the school gate.
When the student will enter the school gate then his in timings, name, class will be stored in an excel file which then can be used by the teacher to update their registers or computers. Similarly the message is send every time the student leaves the school premises or enters in school premises.
One common problem which every parents face is that early morning waiting in the bus stop for the bus. It is really annoying for a parent to uselessly wait in the bus stand and if sometime there is some problem with the bus or it is late the parents have to stand there for the

All this is doing to provide the safety and reducing the concern of the parents. This will help in maintaining the information of the student and record in the database and all this can be saved.

II.   Module Description

RFID
- Contains Name information
- Contains number of parents
- Contains RFID ref number

Database
- Shows Name
- Shows time in and time out
- Shows date
- New database creates every time with system restart

GSM
- SmS sending
- Date and time sending
- Text sending to Parents

RFID and SERVO Motor
- RFID scanner is implemented at the gate of the bus
- Every time a valid RFID card is swiped though the reader gate will open
- Gate will open for a specific time
- Invalid card will be ignored

Location Tracking (GPRS)
- Co-ordinates information
- Works well in open area
- Web page is designed for getting proper coordinates
- Every time refresh we get updates location
- Web page will redirect us to maps for appropriate location
- Google is being used to show the accurate area
- Local network is required
- Both espwifi and laptop must connect to same network host

Alcohol tester
- Having thresold value
- Buzz if the alcohol content is more than thresold
- This is for testing driver
- Prevents drink and drive

III.   Working of Proposed Model

A. Bus Module

The Bus monitoring system plays a vital role in this current world of the technology and has its own various applications. There is a need of efficient transportation system. Therefore we created a remote efficient user system which will create a real time information about the bus.

We proposed a system which solved the issues with the current Bus Management system and updates it with some of the new features by which we will get the regular updates about the Bus and can track its location time to time.For the development process we included GPRS(General Packet Radio System) and GPS(Global Positioning System) which will provides the data of the coordinates and thus our page is redirecting it to the google maps which the shows the exact location of the bus and it will provide the new location with every refresh

Besides this we are using the Alcohol detection which will help us in depleting the issue of the drink and drive with the help of the alcohol detection

Another part is entry using the RFID card with the servo motor which will detect the card and opens gate of the bus for a minute duration of the time

All this will provide the safe and secure environment for the students

Live Location

Bus transportation service is every way but without a good bus transportation management system bus services aren't properly safe and secure. Bus service is still a major concern on primary schools students as they are not able take care of their own.

We created a monitoring system for bus itself which will track the bus and will keep update the parents this is done by creating our own local network system which will lead the parents by providing them real time coordinates of the bus and will provide them the location and show them the exact area by redirecting them to the google maps
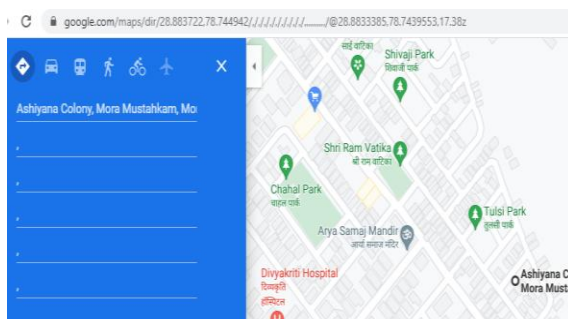
Fig.1: Live location in Map

SERVO Motor

A servo motor is used at the entrance of the bus gate which is connected to the RFID Reader and gate will open for a specific time when RFID tag is came close the Reader which will led the valid students to come inside the bus.

The Servo Motor has some of the control circuits and a potentiometer which is connected to a shaft

If the shaft of the motor is at a correct angle , then the motor shuts off. The motor will run until it gets a desired angle to which a shaft will turns off.

Fig.2: SERVO Motor

Alcohol Detection

We use **Alcohol detection sensor** which is used to detect the driver so it children will not suffer from drink and drive. Frequency of accidents is on the rise. We propose mechanisms that can detect accidents, and detect whether the person has over-consumed alcohol. During the time of the accident this will uses the services of the GSM and it get combined with the services of the GPS to sends the precise and the accurate location of the Bus. And this will help in reducing the chances of accidents and help in saving lives. In this we are using the thresold amount for checking the whether the driver is drunk or not. And mandatory action can be done with the driver.

These all things can we used to provide the accurate result which will led to save the bus from a undesired accident and can be able to save lives of various students

Fig.3: Alcohol Detection

B.   ATTENDANCE MODULE

Our project of the student monitoring system is using the tack of every student using the various data which can be updated into the database with the help of the IOT

We are using the RFID and various other things to list down the information of the student which will

Here three things places are there where students information is being showed using RFID. The information like Time in and time out , card id and date will show up of the attendance.

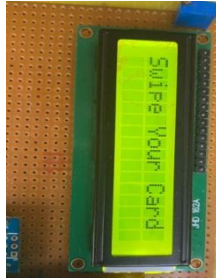These three things are LCD Panel, Excel database and Message at Phone Number.

LCD Panel

Fig.4: LCD Panel

The message is displayed on the LCD screen which is being connected to the RFID and the Arduino Board with the information of the name which is encoded with the RFID Card.

Here when RFID tag is swiped through the RFID Reader (which already shows Swipe your card on the LCD panel) the card firstly shows the Name of the Card holder student. Through this it is being confirmed that card holding a valid card. Then after this the message is being to the parent number so a Alert is being showed in the LCD panel that consist of text "Alert SENT".

MESSAGE SENT

After a delay of few seconds the message is sent to the parents that your child is safely reached the school. This is done with the help of the GSM though which the message is being sent on the Parents number which will ensure them the safety of their child.

The alert text is being sent to their number comprises of a specific text which can be modified and altered anytime.

This contains information that student is reached safely into the school. And this will get every time the card is swiped with the reader of RFID Tag.
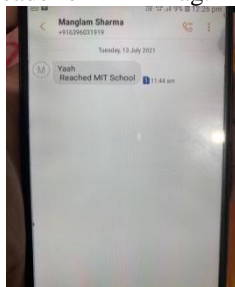

Fig.5: MESSAGE SENT

EXCEL Database

The excel database is being created with various rows comprises of details like ID, Name, Date, Card ID, Time in ,Time OUT

Whenever the tag is being swiped to the reader the database shows the ID, Name, Date, Card ID, Time in ,Time OUT

The data from the RFID Reader which is comprised of various details like date ,time of entering the class and the time of leaving the class is stored into the database

Fig.6: Batabase

IV. Design and Implementation

This is how we designed and implemented our project. In this we show the data flow diagrams and the circuit diagrams
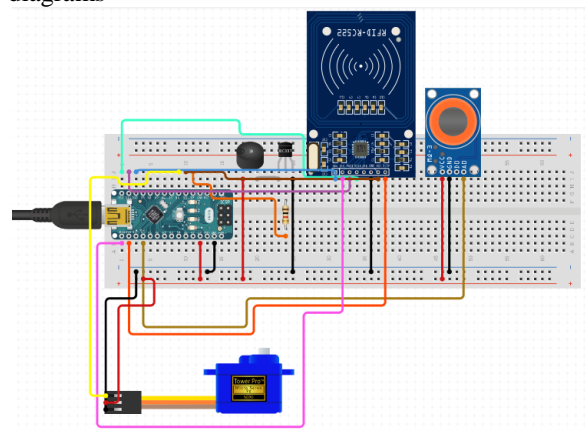

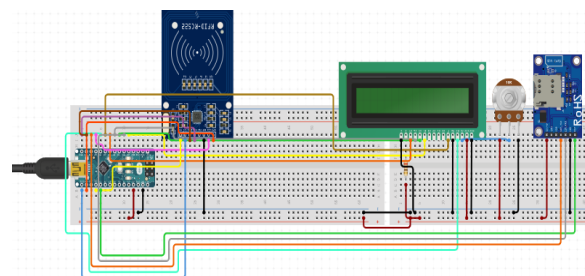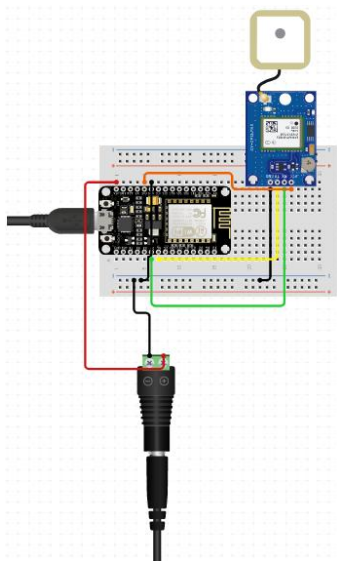**Fig. 7:** Circuit diagram of Bus Module

Fig. 8: Circuit diagram of Attendance Module

Fig 9: Circuit diagram of Live Location Module

V. Conclusion

In last few years there have been rapid rise in the number of applications which are based on Radio Frequency Identification (RFID) systems and these have been successfully applied to different areas as dense and divese as transportation, healthcare, agriculture, and hospitality industry to name a few. Radio Frequency Identification system Field Supports for example automatic wireless identification using electronic passive and active tags with suitable readers .As the Radio Frequency Identification Detection technology evolves, more sophisticated applications will use the capability of Radio Frequency Identification Detection to receive, store and forward data to a remote sink source.   Radio Frequency Identification Detection has many applications as can be imagined. In this paper, we have utilized the

versatility of Radio Frequency Identification Detection in implementing functional and automatic student course attendance recording system that allows students to simply fill their attendance just by swiping or moving their ID cards over the Radio Frequency Identification Detection reader that are located at the entrance of lecture halls with a considerable degree of success and acceptability of usage in our faculty. We shall hoping this system can Change the methord of students attending lecture attendance monitoring in classroom and provide a new,better, accurate, and less troublesome way of taking student attendance

References

[1] S. Nainan, R. Parekh, T. Shah. "RFID Technology Based Attendance Management System", International Journal of Computer Science, Vol. 10, Issue 1, January 2013.

[2] K. Ding, P. Jiang. "RFID-based production data analysis in an IoT-enabled smart job-shop" IEEE/CAA Journal of Automatica Sinica, Volume: 5, Issue: 1, Jan. 2018.

[3] A. Singh, S. Meshram, T. Gujar, P.R. Wankhede. "Baggage tracing and handling system using Radio Frequency Identification Detection and IOT for airports", International Conference on Computing, Analytics and Security Trends (CAST), (Pune, India, 19-21 Dec. 2016.

[4] T. Sharma, S.L. A., "An automatic attendance monitoring system using Radio Frequency Identification Detection and Internet Of Things using Cloud", Online International Conference on Green Engineering and Technologies (IC-GET), (Coimbatore, India, 2016).

[5] O.T. Arulogun, A. Olatunbosun, O.A. Fakolujo, O.M. Olaniyi., "RFID-Based Students Attendance Management System", IJSER, Volume 4, Issue 2, February-2013.

[6] O.G., Chiagozie, O.G. Nwaji. "RADIO FREQUENCY IDENTIFICATION (RFID) BASED ATTENDANCE SYSTEM WITH AUTOMATIC DOOR UNIT", Academic Research International, 2,2:168–183 (2012).

[7] M. Kassim, H. Mazlan, N. Zaini, M.K. Salleh. "Web-based student attendance system using RFID technology. Indian EEE Control and System Graduate Research Colloquium", 7MATEC Internet of Conferences. 164, 01020 (2018)

[8] N. Saparkhojayev, S. Guvercin, "Attendance Control System based on RFID-technology" IJCSI, 9,3:227–230(2012).

[9] J.D. Irawan, S. Prasetio, S.A. Wibowo. "IP based module for building automation system", In: Proceedings of second international conference on electrical systems, technology and information 2015 (ICESTI 2015).

[10] H.M. Nguyen, S.H. Kim, D.T. Le, S. Heo, J. Im, D. Kim. "Optimizations for RFID-based IoT applications on the Cloud", 5th International Conference on the Internet of Things, (Seoul, South Korea,2015) .