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ABSTRACT

Parents are attentive to their children's education and supply exemplary one. Nowadays there's increase in number of kidnapping cases and road accidents. Parents always worry about their children as losing a beloved child isn't any doubt the worst thing for each parent. In existing system, Bio-Metric method are implemented in school bus. RFID is employed to handle the children entry and implemented in school. RFID Tag is inserted together with children's ID card then, RFID reader is placed in schools when a children entry's or leave's a school and message is distributed to parents phone. With this message parents know the status of their children. to make sure safety we are using method of student tracking.

KEYWORDS

Radio Frequency Identification, GSM, GPS, LCD Display, Arduino uno and Arduino IDE.

1. INTRODUCTION

Safety is vital to each living being especially providing protection to kids is mandatory as they don't have enough knowledge about the world and to shield them self. In between 2018 and 2019 of April over 13,000 missing complaints were registered as by the right To Information (RTI). India encompasses a high volume of kid trafficking, as many mutually child was disappear every eight minutes in line with National Crime Records Bureau. Majority of missing cases is on school children's as they kidnapped in-between visiting school, on the other side children's from rural areas walk for meters and more to achieve school. Some can be missed by not knowing the proper way. This paper provides a secure guarding to high school children's by using the technology of RFID an radio frequency Identification, GSM an Global System Of Mobile Communication and Global Positioning System (GPS).

Identification and tracking of tags attached to things takes place automatically by RFID because it uses electromagnetic fields . It consists of passive and active tags getting used in many industries. RFID Tag be attached to the ID card which is able to recognized by the reader for object. Here, GSM is employed for sending status of the student when reach and exit from school because it describe protocols for second generation as mobile phones & tablets. If the kid get missed then the location of the child be sent to parents by use of GPS.

AIM

The aim of our project is to enhance the protection of the children after they are visiting school from home or from home to high school by sending the kid status to the parents and school. If the kid is missed while visiting the school from home or from school to home then alert message are going to be send to parents so they will take necessary actions as soon as possible. this method really helps in improving child safety using IoT technology.

OBJECTIVE

To ensure the protection of the school children by sending the kid status

to the parents and school , after they reach school or home. This process be made possible using technology of RFID,GSM and GPS. It should provide an economic means for the school system to watch and enhance the protection of school children during visiting school from home or from home to school.

2. STUDIES AND FINDINGS

Karuna Kishore More, Varsha Bhosale[1], suggests an android based solution which helps parents to trace their children location in real time. Whenever a child boards a bus, the biometric identification is completed within the bus and therefore the system will identify the kid and update login server will send to the parents consisting of the present location and time. Parents can see the location of the bus, they're going to be notified when the children have gotten into the bus or getting down from the bus[1].

Priya Davkhar, Ritesh Kadam, C. M. Raut[2], This paper proposed a mobile application that's designed to work out the point in time of the children. Then the bus application is employed to apprise a parents couple of minutes before coming to their home. Additionally the system will allow the parent to tell the school about their children. The system has been designed effectively and dynamically. Then it's implemented well, so it may be presented to any of the school administration for his or her use without the necessity of any major modification[2].

R. Ablish, R. Mahima, S. Monisha, R. Nagashri[3], develop a sensible tracking system for school buses, it's designed by android application and implemented to supply remote tracking of bus by GPS and so send SMS to their parents because the alert notification of the children. this method is user friendly, interaZctive and secure which uses the Google API to detect the present location of the children and therefore the GPS is used to trace the school bus real time. This paper presents the methods and work flow of various modules utilized in the application[3].

Ilker Korkmaz, Alp Camci, Cihangir Cengiz, Dogan, Dirik, Emre Cekci, Fatih Mehmet Akbaba[4], The proposed motorbus tracking system is intended because the web content additionally because the mobile application to form easy for the utilization of parents.This system tracks the accurate location of the school service vehicles. Thus the smart school bus service information is set within the context of smart city features. The mobile application make parents to use it easily and to trace their kids bus. the school management can easily register the new student and determine the route of the school buses dynamically. this method shares all location information and user data privately within the variety of encryption. The parent can the knowledge about their related buses only. Its is implemented as an interactive application[4].

3. PROPOSED SYSTEM

The proposed model for school children tracking system has been developed. Using this method, concerned authorities, school are often alerted as it’s visible from the RFID card. At the identical time, just in case if there was a student wasn't enter into the school, the system will send an SMS message to the management of the school to take the proper decision. In this system, reader read the RFID tag during student entered into school and send the student status to parent mobile phone. In case student not reached the house in respective time and GPS send the location of student to parent mobile phone. The paper shows that that RFID technology based tracker system remains acts together of the best solution to reinforce the protection within the school , which can reduce the accidents of missing children’s.

4. BLOCK DIAGRAM

The block diagram consists of school section and student section.

SCHOOL SECTION

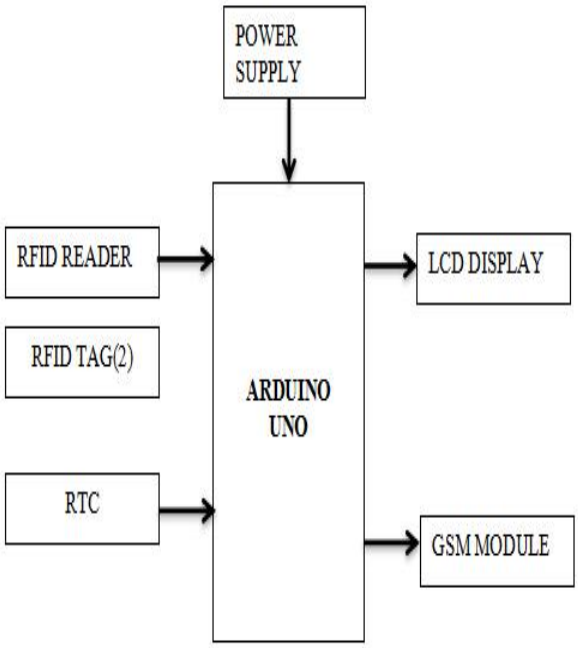

Fig.1.School section

STUDENT SECTION

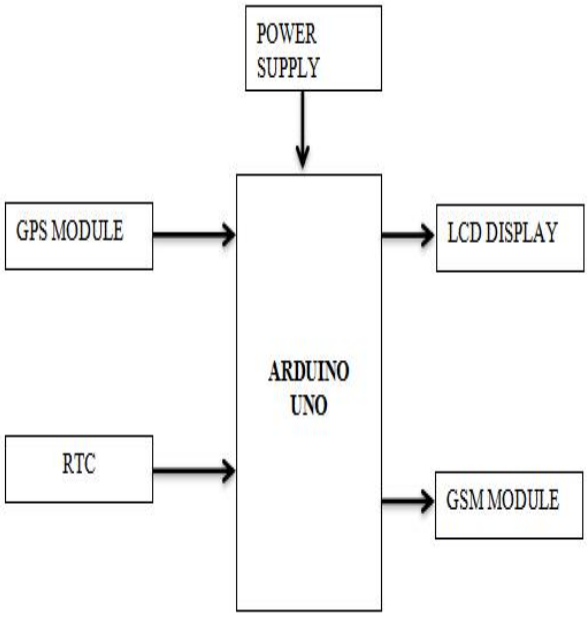

Fig.2.Student section

5. SYSTEM FLOW CHART

ENTRY LEVEL

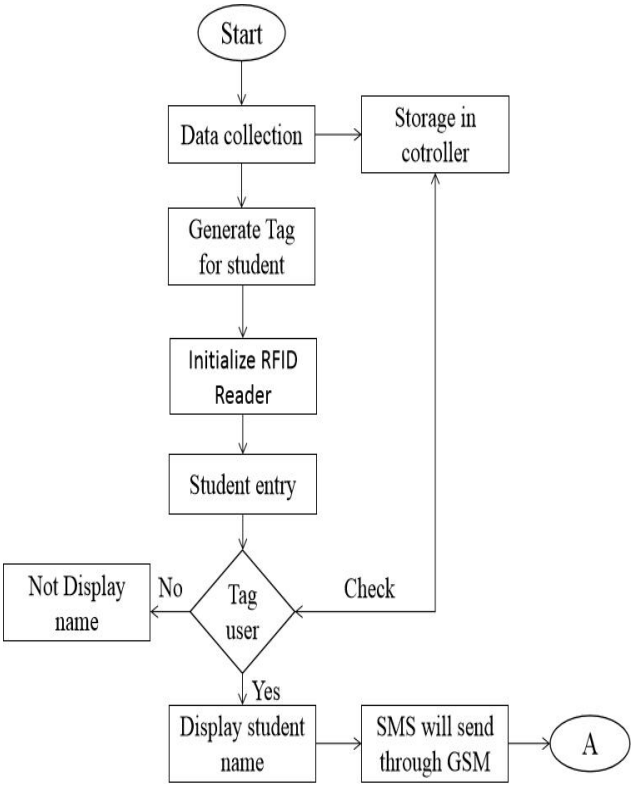

Fig.3.Entry level flowchart

EXIT LEVEL

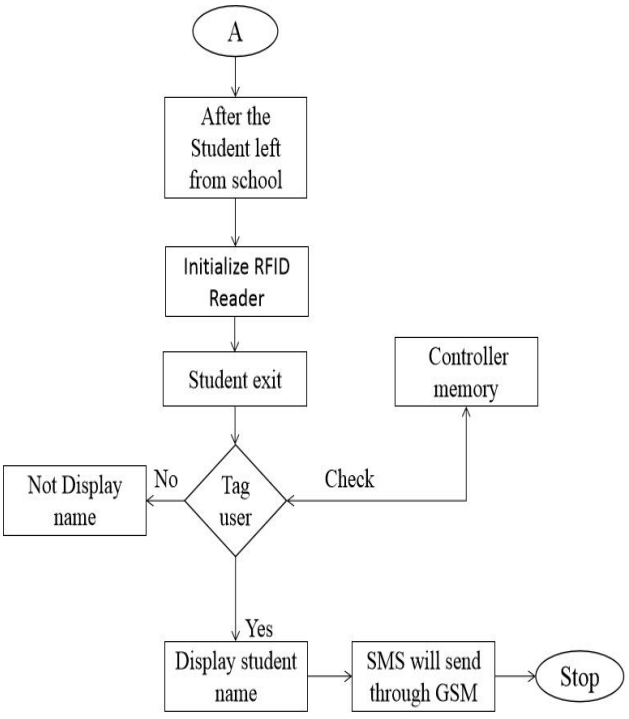

Fig.4.Exit level flowchart

6. WORKING PRINCIPLE

This system we are going to be using arduino UNO as a main a part of the system, because all the programs are stored in it. Here we are having two sections school section and student section. Student will have a tag and the school section consists RFID reader when the student reach the school it'll be scanned and the name of the student are displayed with the time. Message are send to parent about the child reaches the school. Student section also will have an RTC which is able to continuously monitor time once the time reaches the allocated time it'll automatically send the location to the parent.

7. RESULT

The RFID, GSM, GPS, RTC are connected with Arduino UNO. Whenever RFID tag is scanned the student name and in/out status is displayed on the LCD and also message sent to parents by GSM. In case of missing, the location of student is distributed to parents using GPS and GSM. Through this experiment and implementation we came to know that the student is monitored using RFID and sent the status as SMS to particulars mobiles successfully.

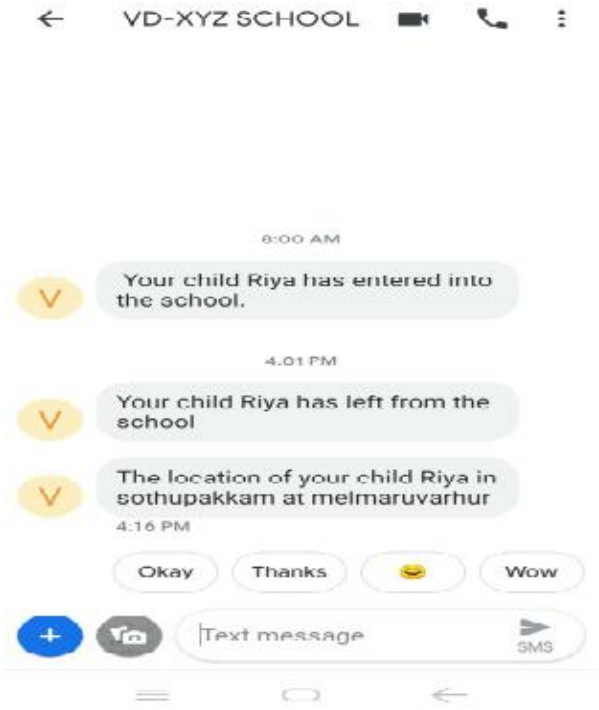

FIG.5.Message received by parents

8. CONCLUTION

This Paper presents RFID based systems that enhance the protection of children to and from school. The project focuses on monitoring child's position and status is send to their parent. The effectively utilization of RFID with technology of GSM, GPS is successfully deigned and implemented on laboratory scale. For the real time system, the faster processing and ranges be achieved with the development of RFID reader .

9. REFERENCES

[1] Abhilash R1, Mahima R 2, Monisha S3 and Nagashri R4 , "Smart Tracking System for School Buses" , Volume: 04 Issue: 04 | Apr -2017.

[2] Anusha R and Dr.R.China Appala Naidu, "GPS and RFID Based School Children Tracking System", IJARCET Volume 5, Issue 6, June 2016.

[3] Priya Davkhar1, Ritesh Kadam2 and C.M. Raut3, "Safety-Tracker for School Kids", IRJET Volume: 06 Issue: 04 | Apr 2019.

[4] G. Suresh Kumar, S. Selvaraju, N. Manikanda Devarajan and Dr. T. Muthumanickam, "Smart Intelligent Tracking System for School Students Using GSM and GPS", © 2015 IJSRSET | Volume 1 | Issue 3.

[5] Panaskar Prajakta R, Patel Karishma M, Mote Shital P, Kale Aniket V, "RFID Based School Children Monitoring System",International Journal of Advanced Research in Computer and Communication Engineering Vol. 5, Issue 1, January 2016.

[6] R. C. Jisha, Aiswarya Jyothidranath and L. Sajitha Kumary, "IoT Based School Bus Tracking And Arrival Time Prediction", 978-1-5090-6367-3/1$31.007©2017 IEEE

[7] S. shah and B. singh, "RFID Based School Bus Tracking and Security System", pp. 1481-1485, 2016.

[8] Raja Godwin D, Abisha blessy E, Dhivyapriya K, Koodeswari B, Seshavardhan S, “Smart School Bus Monitoring System Using IoT”, International Journel of Pure and Applied Mathematics.

[9] Karuna Kishor More, Varsha Bhosale, “IoT Based Biometric School Bus Attendance and Tracking System” , © 2019 JETIR May 2019, Volume 6, Issue 5.

[10] Judy Thyparampil Raj, Jairam Sankar, “IoT Based School Bus Monitoring and Notification System”, 978-1-5386-2175-2/17 /$31.00©2017 IEEE