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Child tracking system

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ABSTRACT

There are many cases of missing children. This project proposed a technique to track their child location. The child has no need to carry the mobile phone. This system makes the use of android mobile and a GPS device. The parent can track their child location with the help of GPS and GSM. The location is sent to the parent mobile with the help of Google map. We have to define the area of the child's school and whenever the child is out of the defined location then alert message will be sent to the parent's mobile phone. There is one more concept in which a child can press the help button when he will be in trouble and the alert message will be sent to all the contacts added in the emergency help.

Keywords *— Android, GPS*

1. INTRODUCTION

Lots of tracking systems are present in today's world for tracking the locations. These devices can be used to track the location of vehicles, travelling bags, etc. Tracking the location of a human being is the most important part we have considered. The main focus is on tracking the child's location. Because in today's world there are many cases of kidnapping has been found. With the help of a GPS device, the parent need not have to worry about the child's safety. Now a days almost all people carry Android phones. The responsibility of the android phone is to track the GPS location and send this location by creating GPRS packets. The position of the person is saved in a Mobile Object Database for live tracking. From Mobile Object Database the data is transferred into a web application. The Google Map API is responsible for displaying the current location. The child module will have a GPS and GSM module and one LED to display the latitude and longitude. There is an emergency button on the chip whose job is to send alert messages. The parent need not have to worry if the internet connection is off. In case of disabled internet connection of the parent mobile, there is a facility of text messages. The parent can also able to add emergency help contacts. When the child is out of the defined area or when the child will press the emergency help button the alert message will be sent to all the emergency contacts.

This paper is divided into various sections. Section 2 focuses on the techniques which include the theoretical techniques and algorithmic contributions. Section 3 focuses on the Related Work which includes the current knowledge and the previous findings of the chosen project. Section 4 focuses on the Proposal which refers to the idea about why and how this system is going to be implemented. Section 5 focuses on the Conclusion which is added up so that the workflow of the system project is efficiently completed and successfully implemented.

2. FUNDAMENTALS

2.1 Trajectory

A direction of a moving article is a discrete follow that the moving item goes in geographical space. For the most part, it is an arrangement of Geo-areas with comparing timestamps.

Global System for Mobile communication (GSM) is a globally accepted standard for digital cellular communication.

It uses a variation of Time Division Multiple Access (TDMA). Along with other technologies GSM is a part of wireless mobile telecommunication which includes General Packet Radio System (GPRS), Enhanced Data GSM Environment (EDGE), and Universal Mobile Telecommunications Service (UMTS) [1].

GPS is a satellite-based navigation system made up of at least 24 satellites. GPS works anywhere in the world in any weather condition. GPS is free of cost service. Once your position has been determined the GPS unit can also calculate other information such as speed, distance to the destination etc.

2.2 Location mapping algorithm

General Process follows the steps which are normally part up into two following steps:

- The child is out of the area the location will be sent to the parent by fetching the latitude and longitude.
- The extracted location is also sent to the administrator.
- Store the received coordinates in the database.
- Google API will navigate the parent to the destination.
- A parent can now see the area where the child is and can take the respective action.
- Display the location.

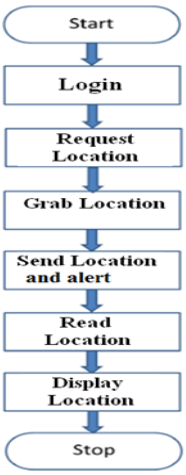

Fig. 1: Flowchart of location mapping

3. RELATED WORK

This section focuses on the related work which includes the current knowledge and the previous findings of the chosen project.

Rita Pawade, Dr Arun Gaikwad, [1] says that Child Tracking System is an application which consists of two modules. The child module consists of ARM7 microcontroller. This device will start the recording whenever the child starts crying. This recording is mapped with the voice of a child which is needed to be added previously in the database. If the match is found then parent get notified with an alert message.

Rohit Bhoi, Dr V. Shete, S.B. Somani, [2] suggested the system which makes the use of GPS, GSM and a voice playback circuit. The GPS is used to track the location and GSM sends an alert message. The additional feature here is a voice playback circuit in which the child must have to press the emergency button and then the child's cry will be recorded and sent to the parent's mobile phone.

Gaikwad Priyanka, Gotraj Sonali, Jagtap Pooja, Pagare Prajakta, [3] introduce the system which includes tracking the child's movement to and from school. The child missing information is sent to the control room. Android terminals must have internet, GPS, GSM and a SIM card. The child module include Arduino UNO kit, GPS, GSM, SIM card, internet. Here in the alert message time, latitude, longitude and altitude will be sent and from this information parent has to identify the child location.

3.1 Analysis

The existing system makes use of mobile devices to both parent and child. It is difficult to carry a mobile phone in school and also it is not allowed. We proposed a system where the child carries a GPS device and parent can track his child's location using the proposed application which is to be installed on the parent's Android mobile. In this, a parent needs to download an application in which the child's area is followed wherever he moves and the result is given to his parent.

4. PROPOSED METHODOLOGY

This chapter focuses on the Proposed Methods that are generated using the combination of various hardware modules such as GPS, GSM.

We proposed a concept which consists of a GPS module, GSM module and internet enabled android mobile phone. The parent has to register on this tracking application with the valid device id. The device id is unique for each device. The parent with the valid device id can only be allowed to register. There are one of the security features of the parent modules. Using the username and password parent can login to the system. The system consists of various parts for tracking the child. The first part focuses on tracking the current location of the child. Here the GPS system can be used to get the location which includes the details like latitude, longitude and altitude values along with the timestamp details. GPS is free of cost service available to every individual. The next part displays the previous history of the visited locations. With this option, the parent can select any date from the past history and see the details of the area visited by the child. The most important feature in the system is, we have defined one particular area and if the child is out of the area then the alert message will be sent to the parent mobile phone. The system uses an Android operating system for tracking, eliminating the need for SMS creation and sending. The parents will be automatically navigated to the child's location which eliminates the need for manual searching. The system can also be used to check for the locations in an unknown area.

5. CONCLUSION

The main focus of this project implementation is on tracking a child's location and it will be sent to its parent. It can be used by the parent whose children are attending the school. When the child moves out of the school, the parent will get notified. Also when the child will the emergency help button an alert message will be sent to all the emergency contacts added by their parents. This feature is helpful in case of one parent is unavailable other can work.

6. REFERENCES

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