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Child Security System using Mobile App

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ABSTRACT: Nowadays a lot of cases have been seen about missing of children. According to survey the children between age group 4-14 are mostly misplaced; hence parents are worried about their child. This system explains about an android application which is used to monitor and track children. Nowadays a lot of people are having mobile phones. The application works with the help of android mobile. The GPS service is used for tracking exact location of child. The GPS and GSM based systems are used to track the location of child. There are two ways an application can work. First is GPS based that is related to the location services and second is SMS based which is related to the network services. If location based services are not working then the application uses network based services which can be able to send and receive messages.

KEYWORDS: Global Positioning System (GPS), Global System for Mobile Communications (GSM), Network Services and mobile app

I. INTRODUCTION

As per the survey roughly 8000 children are lost every year. Parents have a fear their child should not get lost anywhere. It gives peace of mind by knowing the exact location of your child at every time is simply PRICELESS. Near about 92% parents want to know location of child at the same time 88% parents say that always their child must be able to contact with them. With this one point arises that their child is not old enough to use smart phones. So by taking a step ahead; it decided to design a unique device to keep parents and their child in touch 24x7.

Today, GPS has an extensive variety of uses including following bundle conveyance, versatile business, and crisis reaction. GPS comprises of a system of 24 satellites in 6 distinctive 12-hour orbital ways dispersed so that no less than five are in perspective from each point on the globe. Short Messaging Service (SMS) is a component accessible on all cellular telephones which permits a little content to be sent between one client and another. The following framework will track development of their child while going to class and originating from school to home. In this following framework specific zone will be characterized by utilizing geo-fencing. In view of this if kid is captured or he/she is moved outside of characterize zone then ready message will be sent to separate guardian's enrolled number. So guardians don't need to do ceaseless observing of tyke development, framework will alarm the guardians if youngster is moved outside of bound range.

A. Literature survey:

- Using android phones: With the help of smart phones GPS and SMS based tracking application parents can watch on their child. GPS is combined to GSM based SIM card into mobile to watch on child's location. The GPS uses longitude and latitude to track the location the SMS (Short Message Service) is used to communicate child side and parent side application. SMS service used when smart phones does not support internet connectivity. System able to send the child's smart phones exact location in the parents smart phone when parent demand to check the child's location.
- GPS and SMS based: The communication between the parent and the child applications is done using Short Message Service (SMS). SMS offers the system unique features. It will allow the system to work without the



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need of internet connection thus allows the application to be implemented on smart phones that don't support GPRS, 2G or 3G internet connectivity. The system sends the location of child's smart phone to parent's smart phone when the parent wishes to check on the child

B. ProblemStatement:

By the study of missing kids in 2015, there are of aggregate 5996 children are absent, out of these exclusive 4092 kids found by the police. However 1904 youngsters are missed. Parents always worry about the possibility of kidnapping of their child. So this project is designed to be used by parents and aimed to help locating those missing children.

II.SYSTEM MODEL AND ASSUMPTIONS

A. System Development:

The block diagram of the system is shown below

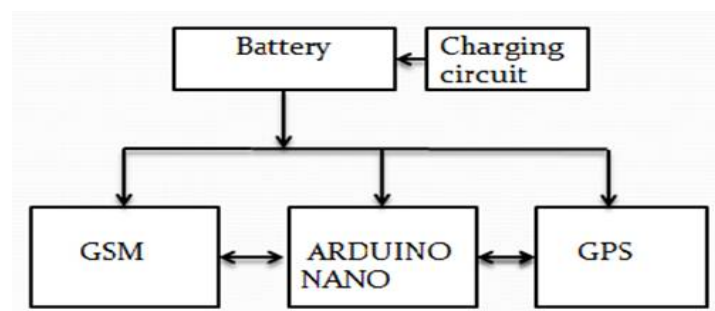


Fig. Block diagram of proposed system

1.GPS module: GPS provides latitude and longitude values. GPS satellites continuously transmit data about their current time and position. The GPS system does not require the user to transmit any data and it operates independently of any telephonic or internet reception through these technologies can enhance the usefulness of the GPS positioning information.

2. GSM module: Global system for mobile communication (GSM) is a standard for advanced cell correspondence. A GSM modem is a remote modem that works with a GSM remote system. This one GSM association is sufficient to handle many exchanges.

3.Arduino: It is an open source computer hardware and software company, project, and user community that designs and manufactures single-board microcontrollers and microcontroller kits for building digital devices and interactive objects that can sense and control objects in the physical world.

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III.EFFICIENT COMMUNICATION

A. Flow Chart :

The exact working of the system is shown with the help of flow chart.

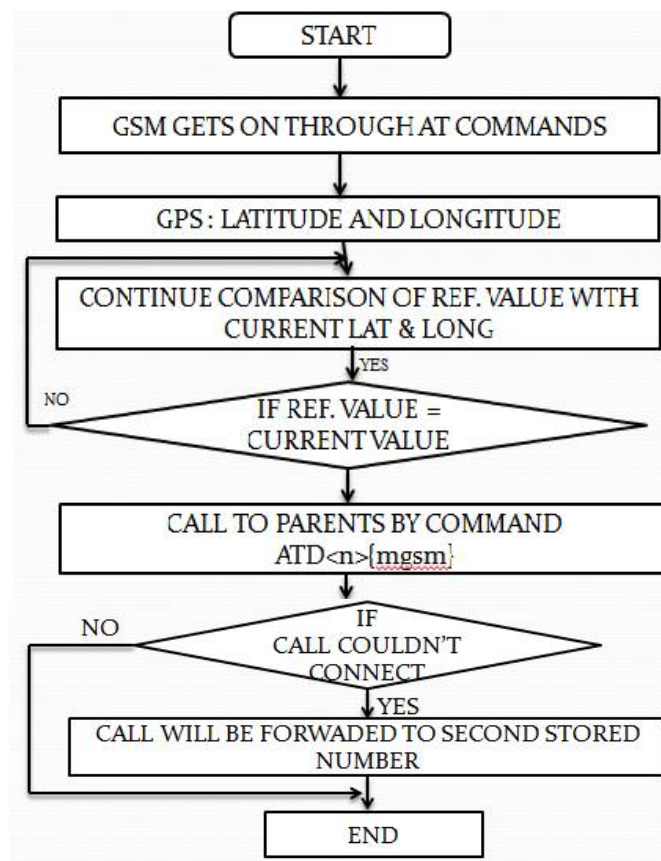


Fig. Flow chart of the system

IV.SECURITY

This system consists of two components: Client (child) and Server (parent/school). The client will be the android application or android phone. It is designed in such a way that it has very few elements and very less user interaction and the interval at which location updates are received can be predefined, but ideal timing will be every 10minutes. In this system server will receive data sent from the client side and it will save it in a database and display to the parent app. The tracking is possible with two main components: GPS and Network; these two features are present in almost all smart phones now. For first time once user installs the app he should start the app and after that every 10minutes or any predefined time the application will start automatically and fetch the location and send to server.

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V. RESULT AND DISCUSSION

In the fig, it shows the graph of child kidnapping by the age.

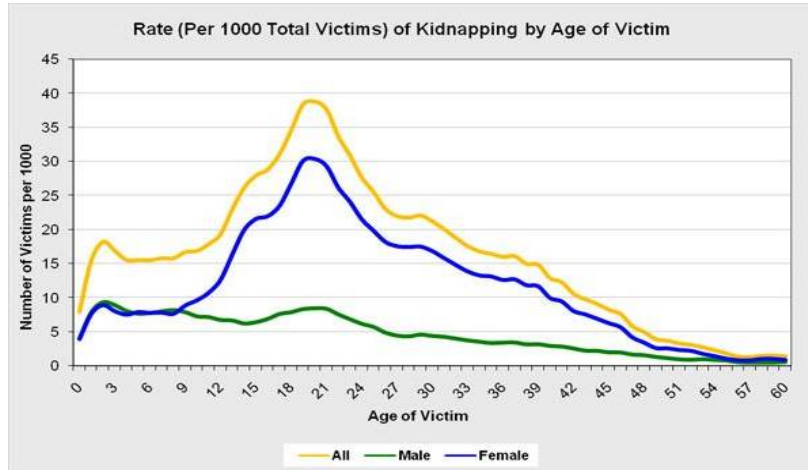


Fig.graph of kidnapped children age wise

The above graph shows about the age group of children that are generally kidnapped. According to the graph number of females are more than the number of males.

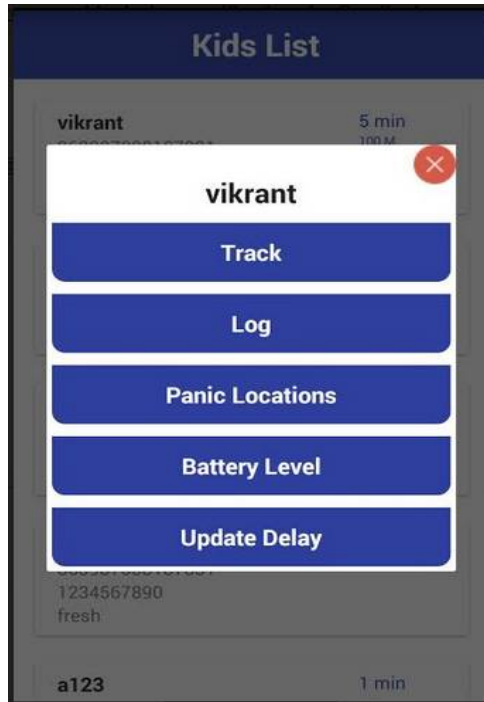


Fig. App details

- **Track:** track option will give current location of the device.
- **Log:** In this option, it will provide the previous history of the device according to date.



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- **Panic location:** The SOS button will help the child whenever he or she is in danger and so the panic location will notify about the situation whenever the button was pressed.
- **Battery level:** The battery level of the device will be shown at this option.
- **Update delay:** The update delay gives us flexibility to change the delay time of the device location.

VI.CONCLUSION

In conclusion, this system was developed to locate children for their parents and this research showed that GPS tracking technology is a practical option for monitoring and tracking the children. In this way any one can be able to secure and guard their child. This project will give depth information about child tracking system with the help of two components such as GPS and GSM telephony services the application is built in. Geo-fencing. Emergency alerts such features added to enhance system. The proposed system will be improved in later work.

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