Smart Tracking Device for Students

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ABSTRACT: Now a days lots of cases are seen of missing children. The children missing are of ages between 14 to 17. Parents are worried about children. The project is about an android application which is used to track the child. Nowadays lots of mobile phone users have an android phone. The application works with the help of android mobile. The android application is based on GPS and GSM services in Android mobile. This project has the child tracking device on his schoolbag which has GPS and GSM module along with raspberry pi used for getting the exact location of child and this location is sent to his parents/guardians for tracking and safety of the child is achieved.The GPS service is used for tracking exact location of Child. There are two ways that can an application works. 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 not working then the application uses Network based services which can be able to send and receive messages.

KEYWORDS: Efficient tracking, student security, Real time application.

I. INTRODUCTION

Now a days 80% of people in the world use smart phones for different purposes. The major issue of child missing can be solved with the help of child tracking system android application. The android application uses GPS and SMS services and GPS help in locating the missing children location by the survey of missing children. The parents are worried about their children. As child goes missing the parents are scared to go on family trips and are also worried to send child on school trips. There are lots of chances to miss the child in trip. This application is designed for reducing the parents tension of let go their child on trips. In today's world lots of children have smartphones. 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 childrens smart phones exact location in the parents smartphone when parent demand to check the childrens location.

A. BLOCK DIAGRAM

Fig :- Architecture of proposed system

SYSTEM MODULES
A] Application
B] Registration and login phases
C] Parent Side:- Request location to Cellular Tower
D] Cellular Tower:- Request location to Child Side
E] Cellular Tower:- Receive location from Child Side
F] Parent Side:- Receive location from Child Side
G] SMS Service

A] Application: This application provide the authentication to the parent device to track the child device.In this, the process occurs by requesting and receiving the location value. When the parent wants to track the child then the parent device request the location from the cellular tower which requests the location from the child device. This system is based on IOT technology. The application uses two main services that is GPS and SMS.For location services it uses GPS and telephony services is for SMS. SMS is used for communicating between child side and parent side.

B] Registration and login phases: To Access the location of the child device, both the devices that is the parent device as well as the child device need to register on the mobile application. After registration the devices need to sign up and get the user ID. After getting the user ID the parent device can track the child device.

C] Parent Side request location to Cellular Tower: Parent device after the registration process request location of child device.

D] Cellular Tower request location to Child Side: When the cellular tower gets the request from the parent device it tries to get the location of the child device by sending request to the child device.

E] Cellular Tower receive location from Child Side: When the child device gets the request of location its sends the location of the device to the cellular tower.

F] Parent Side receive location from Child Side: When the cellular tower receives the location of the child device it forwards the same to the parent device.Thus in this way the parent can track the child.

G] SMS Service: When the parent device is not an android application it still can access the child by the SMS service. In this if the parent device doesn't have the app installed, it will get the link of the location on map and same can be accessed by the parent through the browser.
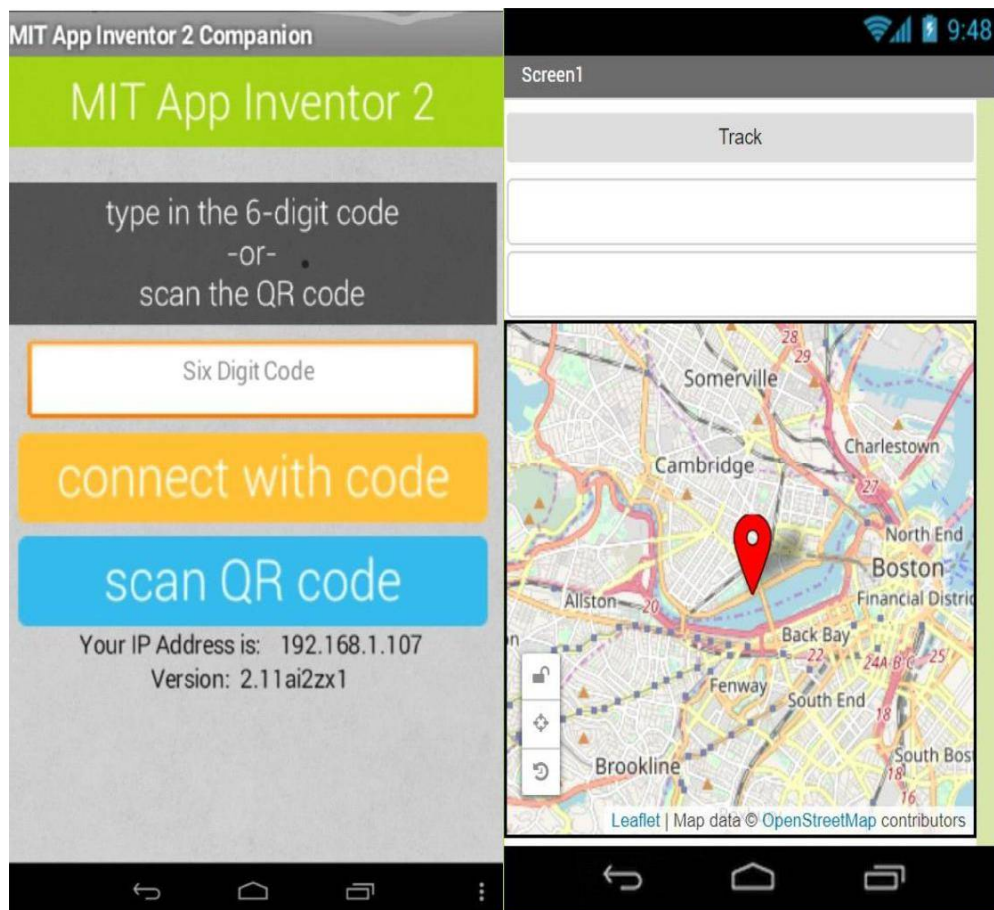
1) Sign up page (Parent Side)   2) App view on mobile (Parent Side)

        After registering with code or QR code the user can track the child device. The above image will be the sign up page on the parent device. The parent side acts as the server whereas, the child side acts as the client. Here, the parent device can get the location of the child by clicking on the track button. In the textbox displayed below will show

the latitude and longitude of the location of the child device. The marker on the map will show the exact location of the child on the map.

VI.CONCLUSION

The project was designed to overcome the theft of children going missing. The project was proposed using the GPS & GSM module i.e SIM808 to overcome the internet connectivity issues as some modules don't give exact real time location. Some features can be added in the future such as emergency alerts, SMS, etc. The android application is increasing with different use and the above review papers made use of the same. So additional modules can be added easily when necessary. Also the applications is very flexible, versatile and user friendly. The proposed paper is concluding by the above review on child tracking system. In this paper, a new android based children tracking system is developed which overcomes the drawbacks of kidnapping.this project was developed to aid locating missing or lost children.The solution proposed in this paper takes advantage of the rich features offered in Androids smart phones.

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