Hackdroid: Child Safe Browser with Parent Control

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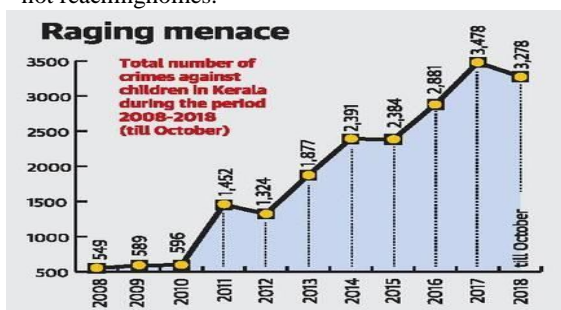[4]Mangalam College of Engineering, Kottayam, India, neena.joseph@mangalam.in

ABSTRACT

Child lock is a complete solution for ensuring the safety of kids. Nowadays the crimes against children are widely increasing. So, it is important to give security to children. This system provides the facility to find the current location as well as the motion of child with great accuracy using an android mobile. It mainly focuses on children of age above 10 years, who uses smart phone. Both educated and uneducated people can use this application effectively. It uses the GPS system to trace the location of the child. The application also features a web browser that is capable of analyzing the searches done by children. Parents can add restricted categories as updates in the app. The child lock system will help the parents to trace their child with the help of an android application. Parent can monitor the activities of any number of children. The GPS and SMS related to location and network services respectively. The child do not have any provision to change the settings. By using geo-fencing, parents can add particular area for each child separately . If child's location is foundoutside of defined area then alert message will be sent to the parent.

Key words: GPS, GSM, SMS, Android

1. INTRODUCTION

The children growing up bring with them a mixture of pleasure and pain, love of knowing everything and need to discover anything. Day by day crimes against children increased very rapidly. We have to see and read many stories about children's or students who are kidnappedor not reachinghomes.

Figure 1: Survey on crimes against children in Kerala

The above figure 1 shows the rapid increase in the crimes against children in Kerala every year. This is same asin the case of our country also.

Every parents want to feel safe about there is the first preference in all things. The reality is that constant monitoring of children is not always feasible; especially when a parent must monitor multiple children at the same time. This android application uses GPS and SMS services. If parents mobile phone does not support internet connectivity, they can use SMS service. Each parent can monitor the activities and track the location of a child. A web browser that is capable of analyzing the searches done by children. Parents can add restricted categories as updates in the app. System able to send the child's smart phones exact location in the parents smart phone .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 child's location. In Today's world lots of child's have smart phones. By using GPS and SMS service, the parent can get tracking application on their mobile phones and also parents can track the live location of theirchild.

2. LITERATURESURVEY

In Location based parental control – child tracking app using Android operating system(2018),they solved the problem by a mobile application that is dependent on the location of a mobile phone. Due to rapid growth and enhancement of location based positioning technologies users find LBS services in a variety of contexts, such as health, work, and personal life, to find the nearest shopping mall, nearest bus stop and nearest hospitals etc. at any place, anytime[1]. It also include services to identify the location of a person or object, such as discovering the nearest banking cash machine or the where about of a friend oremployee.

In 2017,the solve the problem by developing a Self - Configurable New Generation Children TrackingSystem on Mobile Ad-Hoc Networks Consisting of Android Mobile Terminals consists of tags which collect information of children group, Android mobile terminals which each child holds, and the server which stores children tracking information[2]. A collection of tags (that is, computers with wireless LAN) construct a mesh network. The tag is fixed, and it is used for collection of the position information. The children group information when children walk to and from school is collected using Autonomous Clustering technique[2]. The collected tracking information in this system contain the position and time information of Android mobile terminals. This system contain a mesh network by using wireless LAN instead of the mobile phone network

In Android Based Child Tracking System contain geo-fencing is used to define particular area. The major advantage of geo-fencing is that, if child moved to defined area then alert message will be given to the parents. Because of this continuous monitoring of child moment is not necessarily required[3]. Not only this, system will alert the parents if child is cryingcontinuous. A panic switch is provided at child module with the help ofwhichchildcanalertheparentsthathe/sheneedshelp. It consist of tags which collect the information of child group,eachchildisgivenoneandroidterminalandserver which stores tracking information[3]. Tag consist of wireless LAN which construct a mesh network and also receives and transmit the information regarding to positionofchildfromonetagtoanotherandfinallygiven to computer server which is located at school control room. This system will alert the school that one of the childismissingbutitsfailstotellwherethechildisatthe current moment. The project implementation mainly concentrate on tracking of child's movement to and from school. A particular area can be defined for each child separately,soifchildismovedoutsideofdefineareaalert message will be given toparents.

In 2017,Implementation of Child Tracking System On Android Mobile Terminals developed by the information of child being missed is sent to respective parents mobile, if they move beyond the coverage area. Also, when child wants to convey that they are in danger than they will press a panic button given on their school I-card. Mobile terminals have wireless local area network (LAN) and Bluetooth device[5]. It adopts bluetooth communication among mobile terminals in every group to collect information and delivers to respective server using wireless LAN. This project implementation primarily focuses on tracking a child's position and its location is sent to its parent and control room. It can be extended to perform the same for all children in the school by reducing the size of the child module, thus fixing it to ID card of every child[6]. This project also focuses on recording a child's cry and when it matches with crying of the child in school the text message is sent to its parents.

In 2019, Multipurpose Child Tracking System Design and Implementation is developed that when a violation of child safe is detected, a specific sensor in child module will produce a signal. This signal will be sent from these sensors and GPS to microcontroller then through transmitter to parent module.The parent module will take the decision and start the violation handling procedure[6]**.** This includes a certain driving circuit that activates the sensors.The main hardware parts of child tracking system are; sensor driving circuits, GPS, PIC, Transceiver, Buzzer, LCD and Keypad. The details of each module will be described in the next sections. When the parent switches the child module on,the program will put all the initialization and will ready to work. Then it waits until receive message from parent asking to send its state which include sensors data & GPSreading[7].

In 2017, SecureChild-Children Tracking Android Application is developed for a parent it is risky to give children with school bus driver. "SecureChild" is an application which will take care of your child while he/she is travelling to school and from the school here Global Positioning System reading is used for tracking the bus[8]. This application is used by both School and Parent. School will maintain all the database of Student likeNameofstudent,Parentname,Parentphonenumber, Van number through which child will travel and also the Drivers and Babysitters details like their Name, Phone number,LicensesnumberandAddress[9].Anychangein Driver or Babysitter will be immediately informed to the parent this is done to avoid the scenario of fake Driver or Babysitter.AlsotheStatusSMSwillbesenttotheparent saying Reached school, Left School or Absent in School. The User Interface module that is front end and is done usingAndroidSDK(softwaredevelopmentkit).Thiswill use XML for static Userinterface[10].

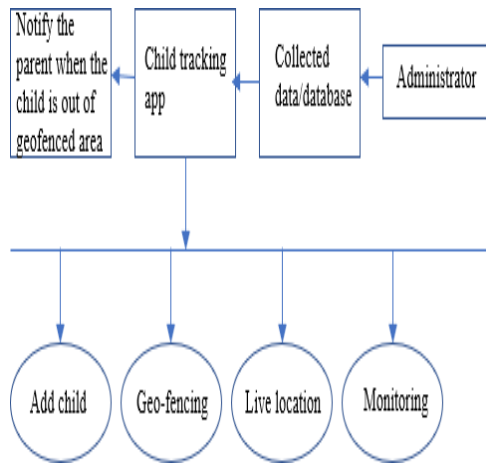## 3. PROPOSED SYSTEM

All parent wish to shield their children from real dangerous they will unavoidably undergo hard times. In our world, recently 40% of children becomes missing or kidnapped. Although there is no substitute for good childcare, which would include constant monitoring, but its not possible at every time. That's why it is high time to offer security to children. The crimes against children can be solved with the help of child tracking system as well as parents who need to keep a track of their every steps. As android is an open source operating system many developers are developing various applications every day, millions of applications are available for use free of cost. So developing a tracking system which is helpful for monitoring or tracking the child and their activities from anywhere in the world and also define particular area limit.

A child lock system that will help the parents to trace their child with the help of an android application.This system contains two android applications. One for child module and other one for the parent module. The child module is an android phone. The GPS system will find the current locationandwillsendthatdatatotheparent'sapplication. The parent can view the current address of the child and can also trace him in the Google Map. And the system provides the facility for emergencycall.

While a message "call" send to the parent module it automatically generates a call into the number which we provided. In this system child do not have any provision to change the settings. To find the current location of the child by using GPS service.By using web browser, analyzing the searches done by children. Parents can add restricted categories as updates in the app.To monitor the activities in child's device.To view the usage statistics of apps in child's device. The parents can track the live location of each child separately and give a particular area using geofencing

3.1 SystemArchitecture

Figure 2: System architecture

If a parent want to add a child, then it will generate a window that can add a child to be tracked. By the help of geo-fencing,the parent will be able to set a particular area for their child. Also the parent can track the live location of child. The parent can monitor the activities such as contact list, call log, app statistics and browsing history. This system contains two android applications. One for child module and other one for the parent module. The child module is an android phone. The GPS system will find the current location and will send that data to the parent'sapplication.

The parent can view the current address of the child and canalsotracehimintheGoogleMap.Thesystemprovide the facility for parent to view the current address of the child and can also trace him in the Google. Parents can easily look up on the items searched by their children from this browser. At the same time, parents can add restricted categories of sites in the app so that the child will be secure from those unwanted sites. This system is an effective means to monitor the activities in child's device.There is also an option to view the usage statistics of apps in child's device.Child do not have any provision to change the settings in their mobile phone. This application can help in reducing the crime rates against children. The parent can have the following features in thisapplication:

- Registration- Can register to the app and keep a personal profile to access services of theapp.
- Login- After registration, parent logs into their account.
- Pair device with app-Parent can pair theirchild's phone to theapp.
- Get usage statistics- The apps usage statisticsof each child can begenerated.
- Get emergency notifications- Notifications or alert messages will bereceived.

Advantages of proposed System includes real –time tracking, complete access to child's data, possibility to add more children to parent's module, prevents the child from going to restricted site, setting geo-fencing for ensuring complete control on child.

The android application mainly consists of three modules, Admin module, Parent module and Child module. The users handling this system maybe unfamiliar with technical aspects. Admin handles the technical aspects of the system, so that it can be used by all types of users.The parent need not to bother about this. If the user needs to add more apps or sites to the blocked list, the parent can share the details with admin and he can handle the requirements. The admin handles the database storage also. The admin is the one who provides the facility of child tracking through the app. Thus this module establishes and maintains a connection between parent's control over the child's phone usage and the locations he/shetravels.

The parent is the one who add a child or register a child to the tracking system through the app installed in the parent's phone and install the application on child's phone. The parent can fetch the message, call, contacts, app list from child's phone with the help of the app installedinparent'sphone.UsingtheGPSfacilityusedin the system, parent can find the current location of the child. Parent can monitor the browser history of the child and add or remove more apps or sites from the blocked list by taking help from the admin.The apps usage statics of child is visible to the parent with the help of the facility.

Child can browse the internet using the custom browser application.Childdonothavetheprovisiontochangeany settings in thisapplication.

4. EXPERIMENT ANDRESULT

With a great view of " Prevention is better than cure", nowadays many child tracking systems are arising. Now a days, parents are worried about their children, so the parentswantacompletetrackonthemandmonitorallthe activitiesofthem.Butthisnotpossibleinaphysicalway, this complicated issue of child missing can be solved by giving a child tracking system for the parents who needa track on their children at every time, this system plays a vital role. The android application use GPS and GSM services to find the location ofchild.

But on the analysis of the existing systems, we reached on a low secured, limited range having no complete accesstothechild'sdata.Apartfromjusttrackingthelive location, by monitoring child's activity, many crimes can be avoided. This system will provide a complete access for the parent in a secure manner. Facility to monitor multiple children simultaneously makes the system effective. But, one of the drawback for the working of system is the necessity for continuous location access with the child.

It mainly concentrates on children using a smart phone. Because of the unnecessity of an extra hardware device andusageofanapplicationonourownsmartphones,this system is economically feasible to any level ofsociety.

The comparison of different systems are given below:

Table 1: Comparison Table

Systems	Features			
	GSM/GPS	Tracking	Geo-fencing	Monitoring
A		✓		✓
B	✓	✓		
C	✓			✓
D	✓	✓		
E	✓	✓	✓	✓

[*]A: Location based parental control – child tracking app using Android operating system
B: Self - Configurable New Generation Children Tracking System on Mobile Ad-Hoc Networks Consisting of Android Mobile Terminals
C: Android Based Child Tracking System
D: Implementation of Child Tracking System On Android Mobile Terminals
E: Hackdroid: child safe browser with parent control

5. CONCLUSION

The children, growing up bring with them a mixture of pleasure and pain, love of knowing everything and need to discover anything. Day by day crimes against children increased very rapidly. We have to see and read many stories about children's or students who are kidnappedor notreachinghomes.Everyparentwantstofeelsafeabout their children in all the things.

The reality is that constant monitoring of children is not always feasible; especially when a parent must monitor multiple children at the same time. So, no one is there to trackontheirchildateverytime.Inthisway,designinga child tracking system using android phones to assure parents that their child is safe from suspicious actions. It is helpful for monitoring or tracking the child and their activities from anywhere in the world. This application retrieves all the call logs, message details, contact lists, accurate location and also capable of analyzing the searches done by children. Parents can add restricted categories as updates in the app. By the usage of this application, it provides safety and also reduces the crimes against children. System was designed for locating missing or lost children. This system was given depth information about child trackingsystem.

The information gathered with the help of two components such as GPS and GSM services the application is built in. By using GPS and SMS service, the parent can get tracking application on their mobile phonesandalsoparentscantrackthelivelocationoftheir child. GPS is combined to GSM based SIM card into mobile to watch on child'slocation.

The GPS is used to find the longitude and latitude for track the location, the SMS is used to communicate from child and parent side application. System able to sendthe child's smart phones exact location in the parent's smart phone when parent demand to check the child's location. With the help of Geo-fencing,parent can define particular area for each child separately. Now everyone is using android phone because of its features like portability, platform independence, and low memory consumption. By using android application, parents can add restricted categories of apps and also retrieves all the activities done by children. SMS service when smart phones does not support internet connectivity.

This system reduces the worries of parents about their children and also provide more secure life to each child. Child lock is a complete solution for ensuring the safety of kids. Child lock system gives a facility to monitor the motionofachild.Thesystemwillprovidesomefacilities such as find the current location of the child. Thissystem will provide exact address of current location with great accuracy.

Now a day many crimes are there against children. Each parent can monitor the movements of their children by usingthisandroidapplication.Inthissystem,weuseGPS system to trace the location of thechild.

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