

EdTAM: Efficient Detection of Theft Android Mobile

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Abstract

Objectives: This paper describes to improve the android mobile device theft tracking technique **Methods/Statistical Analysis:** The proposed framework uses SMS in offline, MMS in online and Camera (Front) to capture the picture. The user has to provide the alternative mobile number and email ID after installing the application. The application start working on its background and it check for the IMSI (SIM card) number, if the SIM changes and take the snapshot by using Camera and send the SMS to the alternative number without his/her knowledge. **Findings:** The SMS contains the new SIM number and we can track the mobile. GPS system is used to identify the location. **Application/ Improvement:** The existing technique that runs always in background which leads memory leak, but here the system will start whenever mobile instrument restart or change the SIM card and start works.

Keywords: Global Positioning System (GPS), International Mobile Subscriber Identity (IMSI), Multimedia Message Service (MMS), Short Message Service (SMS)

1. Introduction

The world has shrunk due to communication development and we can communicate with each other in any part of the world. The smart phones are one of the important tool for our communication. The smart phones act as a personal computer. We can do all the tasks whatever we want through smart phones such as internet access, ticket booking, mobile banking and Emails.

This paper is mainly proposed for security and is more guaranteed for a lost android smart phone. Here, we introduce a new scheme like MMS and CAMERA (front and back). Once the request is installed in the smart phone, simultaneously it start working on its background .Role of the Owner is to update the email id and alternative mobile number in the apps. Where it continuously check for the IMSI NUMBER (SIM number), if the SIM changes it start taking snapshot continuously by using Camera (front and back) and small video without his / her knowledge. Then it send all the details to the alternate mobile number and Email id i.e. which is already installed

in the application. For quicker and accurate tracking of a device, GPS location tracking system is included. By using this snapshot technique, the image of the robber and his/ her location can be traced quickly and easily.

This paper explain to improve the existing application which will help to find the android operating system used theft mobile phone. The mobile phone start to get the latitude and longitude values of the theft mobile phone by using the inbuilt GPS. The value of the latitude and longitude is continuously changing when the mobile phone travel from one place to another place and the latest values kept in memory.

The application will wait to insert the new SIM card to compare the both old and new SIM cards IMSI numbers. The application will work, if both SIM numbers are same else the present latitude and longitude values are send as the SMS to the specified mobile number. The IMSI number is a unique number that is embedded in the mobile phones and this number helps us to block the calls and help to detect the lost mobile.

In Android Mobile phone by send an SMS in a

predefined format we can activate the camera. Utilizing this facility, the front and back cameras works in background, captures pictures of the person who is currently operating the mobile and along with these images a mail will be sent to the already stored mail account.

Multimedia Messaging Service include the video clippings and photos are send to alternative mobile number and SMS is having only the text. MMS have the information about the thief by using captured snaps and small video clippings which help us to understand about the thief.

Several techniques are available to identify the location in the market and most of the systems are using GPS technique to identify the exact location to save the victims. This will be explained in detailed in that paper¹.

In the existing system, user Location is mainly tracked using GPS, but it is not easier to identify the thief by using GPS tracking. In the Existing Scenario, We have to give Police Complaint to catch hold of the thief. There are some Android Applications have been developed but it will identify that phone is Theft. It will not capture the person's Photo and as well as it will not Track the Current Location of Phone. [Figure.1] depicts the percentage of security mechanism used for Smart phone.

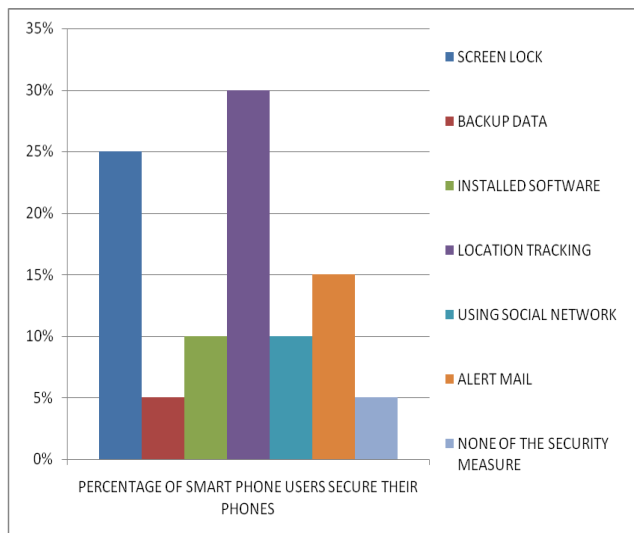


Figure 1. Analysis of smart phone security.

The proposed improvement solution is anticipated to provide hypothetical details of various important features that are associated with an Asterisk based voice exchange i.e. conferencing, paging and voice ailing. EdTAM will focus on the web based approach for the pattern of

the hard phones that will be used at the customer end. Our approach follows the client server model for all supplementary processes.

This paper generates a new proposal to find the lost mobile and reduce the Police Officers intervention. The application will automatically send the location using GPS².

This paper helps the owner by indicates the SIM card number from the lost phone. The owner will receive the message to his alternative mobile number, if the SIM card changed and the owner can track the location with help of GPS tracker in every ten minutes³. They put forward a client server system which would help to found friends and get an alert when they are closer. This paper is to improve the exact positioning in cellular networks using hybrid location system. The disadvantage is that it works in open space area and it is depending on GPS technique⁴.

This paper proposes a model to secure the smart phones from theft as well as provides the option to access the smart phone handset through other smart or normal mobile phone via Short Message Service. That focuses on the access of the mobile phone from the remote location using other mobile phones⁵. This paper focuses on Google Map Service as the main intent. The Google Map Service supports multi-layer overlay and coordinates pictures on the map. Map view is done by Map activity. The API-Key for the Map Service needs to be applied from Google before using the Map Service⁶. The mobile phone location can be obtained by mobile phone network service provider. The network congestion is a factor to be considered⁷.

The Google Maps and GPS providers will help us to obtain the latitude and longitude values and those values would indicates the current location. It calculates the distance between current location and the destination location. It has the list of locations where use can select their current location by typing the location name and find the distance from that location⁸.

This paper includes the location tracking, SIM card number detection, calls monitoring, profile changing and sending the photos to the pre-defined email ID and deletes the messages⁹.

This solves the issue of unwanted notification for SIM card changes done by the real owner of the android phone by providing safe and alert modes. It has a facility to wipe the content remotely, detect the SIM card changes, track the location and change the target phone to send the notification messages at any point of time¹⁰. Chandra A

et al uses GPS and Web Technology to find the position detection and tracking system. It alerts the user about the position of a person using mobile phone. This location and position of person information can be shared online¹¹. Amit et al helps the user with information regarding a place he or she wants to visit. But it is limited to desktops alone. Import details on mobile devices so that the traveler not carries the travel guides with him¹². Maia C, Nogueira et al intends to explore the gap and provide a basis for discussion on the suitability of Android in order to be used in Open Real-Time environments. It overcomes its current limitations and provides suitable environments on Android¹³. Zou H et al provides Blue Detect on Android mobile devices and evaluate its performance continuously. The superiority has been detected by IO detection accuracy, localization accuracy and energy consumption¹⁴. Kumar et al on his paper combines the mobile computing technology and the GIS technology to meet the needs of LBS and GIS. The user can access the hardware directly to develop Web and GPS enabled services¹⁵.

Abo-Zahhad M et al presents hybrid UTDOA and A-GPS positioning technique in mobile network. The procedure for location determination is introduced. It generates pseudo ranges through Advanced GPS receiver structure¹⁶. Lin et al estimates mobile location and tracking technique for wireless communication systems. That is based on the differences of downlink signal. But the actual location is given by the intersection of the circles. It applies simple genetic algorithm to improve the locations estimation¹⁷. Kim et al investigates and concludes accuracy of Seamless LBS technology is higher than accuracy of GPS in mobile environment¹⁸.

2. Materials and Methods

This paper put forward the technique to protect the personal information and data when and data when mobile stolen through installed the applications. This application includes the latest technique like MMS which help us to take the video clippings and images of the specified mobile phone, but SMS includes only the text messages. This application provide the information about the person by sending the snapshots continuously by time sequence and It help us to recognize the person who is having the mobile phone by small video clippings from specified mobile number.

- Process happens in backend
- Track the mobile easily
- Reduce the time consume

2.1 System Architecture

[Figure.2] narrates the work flow of proposed system. The people who access the mobile would be caught in the camera that images sent to the Owner's E-mail ID. GPS installed in the lost Phone estimate the Location of the thief. URL is sent to the given Mobile Number of the Original Owner, and then the owner can track thief's area. System automatically Triggers Google Map so that Location of Thief is tracked continuously.



Figure 2. Functional diagram of the EdTAM system.

2.2 Application Features

Process not shown in screen display, it works on the backend so thief unaware of this task. If the mobile lost, system allows the owner to search the mobile and to acquire information via SMS to an assigned number.

The data flow diagram of EdTAM shown in [Figure.3] Algorithm:-

- Step1. Start the procedure.
- Step2. Enter the e mail ID and back up mobile number. It will be set to start running in background every time the mobile restarts.
- Step3. Restart the Mobile device.
- Step4. If same SIM number, regular process will be continued.
- Step5. Otherwise alert SMS send to predefined mobile number.
- Step6. If the SIM is snapped, EdTAM send a SMS about the particulars of new SIM to the assigned mobile number.
- Step7. Capture Image of the thief; shoot small video clip send it as MMS.
- Step8. GPS locate the place and alert E-Mail posted to

alternate number.
Step9. Stop the process.

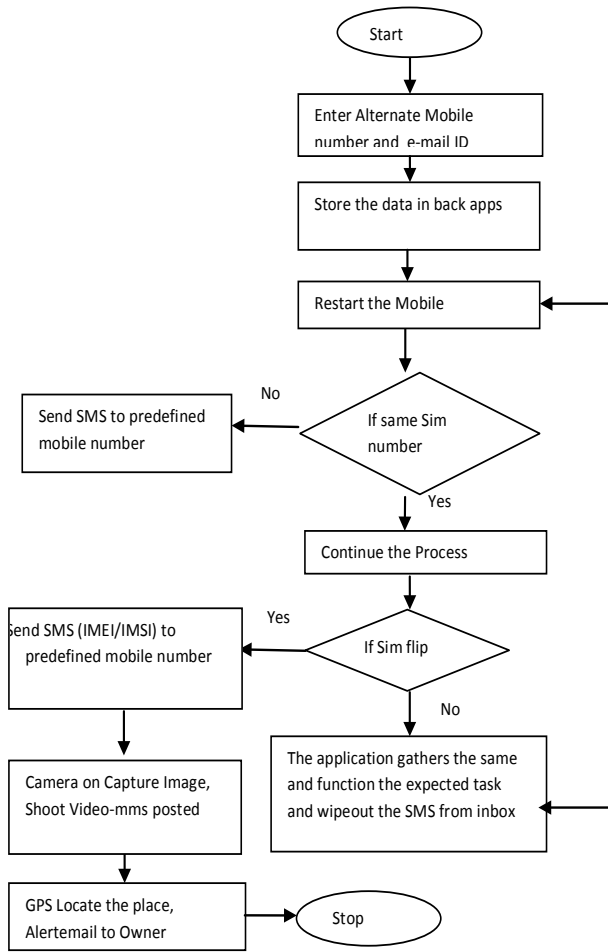


Figure 3. Construction of EdTAM model.

2.3 Technologies

We have chosen Java language along with Android software development Kit to develop the proposed system.

2.4 Sequence Diagram

A sequence diagram model shows the flow of logic within the system in a visual manner and enabling you to document and validate the logic. The purpose of this model is analysis and design of the system. The sequence diagram is the most popular UML artifact for dynamic models which forecast the behavior within the system.

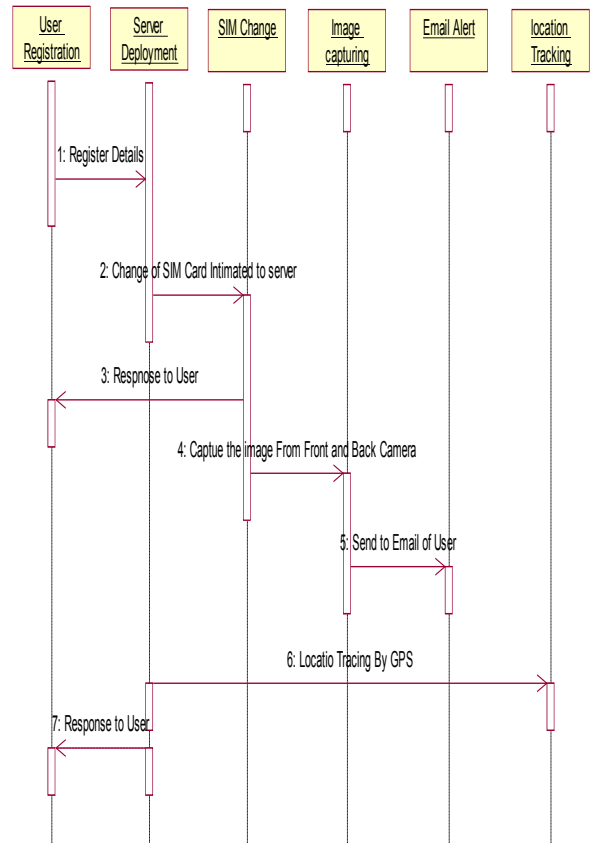


Figure 4. Sequence diagram.

3. Results and Discussion

3.1 Tracking Imei and Imsi Number

Using GPRS and GSM Technology we can easily know the stolen mobile location and trace the person. After that captured details posted through the email and SMS.

3.2 Capturing Image

In this camera is initiated and photo is taken so that anonymous person is captured by the android application. This photo is uploaded to the main server. Once after the photo is uploaded to the server, that link is captured and that link is send as SMS alert to the alternated number of the original user.

3.3 Alert Email

During this process photo and voice is captured and both are send to the original user's Email ID. So that original user can download the audio file and listen to that audio or else he can see the image of the anonymous person.

3.4 Gps Location

In the section stealth mobile location is traced using the GPS application so that it forwarded every movement of thief location and sent the location value to the original owner.

3.5 Alert Sms

In this SMS alert, place where the stolen mobile was kept will be intimated to the owner and they can search in person or make a call to police.

3.6 Multimedia Message Sending to Alternative Mobile Number

Snapshots combined with small video clip will be posted to alternative mobile provided at the time of registration by the actual owner of the stealth mobile.

4. Conclusion

This paper presents to improve theft mobile tracking technique for android based mobile instruments. The technique provide a better solution than the existing by giving a snapshot and short video clips that at least capture some part of stolen person's body or may be location, that will be helpful to the owner who lost the mobile may get some clues to identify the person who is having the mobile currently. Moreover SMS gives only text but using MMS we get a clear picture than earlier to arrest the person. This is available for android based mobile devices at present and we can use Whats App along with few changes with existing technique.

5. References

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