

Android Application Based on Image Transfer to Track Smartphones (AABITTSp) An Ameliorate Mobile Tracker

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Abstract — The introduction of Android Mobile phones has bought a new revolution in the mobile phone market and almost everyone might have experienced misplacing or losing their mobile phones. Hence it is necessary to develop an application in all smart phones to prevent the mobile phone theft. This paper describes a tracking application called AABITTSp (Android Application Based on Image Transfer to Track Smartphone) which is embedded with a lot of features such as location tracking, SIM card detection, sending the location values to the predefined email address and to the predefined number via SMS, sending the images to the predefined email address. These features are quite different from the existing tracker applications which would be helpful in tracking the lost mobile.

Keywords — Smartphone Security; Theft Protection; GPS; GPRS; Image Transfer.

I. INTRODUCTION

Today Mobile phones are becoming more techno logically advanced and offer more features. Specially, Smart phones are having more advanced computing capability than a feature phone. Smart phones can run applications and can access the internet directly unlike cell phones rely on a carrier to get that. The reason Smart phones can run applications because these phones have CPU, memory and all other stuff that allows PCs to do the same thing.

The mobile operating systems (OS) used by modern smart phones include Android, BlackBerry, iOS and Symbian , which are the world's best mobile operating systems. There are many differences between their features and performance. In Android various changes have been made in the user interface. There are changes in settings and menus which make it easier for the users to navigate and control the features of system and device.

This application uses Android OS which demonstrates a system that uses a Smartphone equipped with a primary and secondary camera, a GPS receptor connected to a global system for mobile (GSM) network that takes advantage of

these technologies in behalf of the user safety. AABITTSp is a useful mobile application that combines several features which aims at user's security.

There are already several applications in the market that offer tracking systems and anti theft applications like mGuard. Unlike this application, the AABITTSp is able to click pictures from the primary and secondary camera when the SIM card change is detected in the device by comparing the Integrated Circuit Chip Card Identification (ICC ID). The ICC ID number is unique for each SIM card. Most of the above-mentioned systems, provide dedicate solutions using tracking methods to monitor a mobile device. But by just enabling the mobile phones with GPS system and retrieving the information about the new SIM would be insufficient to track the Smartphone. Hence came the idea of developing AABITTSp: Android Application Based on Image Transfer to Track Smart phones, an efficient and unique application with few more features which help in tracking the lost android Smartphone.

AABITTSp is filled on with features like SIM card detection, location fetching through GPS and transfer of images to email address, sending the new cell phone number

via SMS, sending the fetched location via SMS in case there is no internet connectivity.

II. LITERATURE SURVEY

Android is a new and very user friendly operating system for mobile devices which includes key applications and, middle wares, and even uses Linux Kernel modified version. Android devices are mostly Smart phones. In the recent years mobile phones are capable of providing internet access. These days smart phones which supports internet access is gaining more popularity. So it makes more interesting working with android applications, which is an interesting technology as well as fast moving market segment.

J.Jayashree, K.Nirupama, J.Vijayashree, K.Anish Fatima presented 'Mobile Tracking application for Locating Friends using LBS'[1]. They presented an application which based on a client server system that helps user to locate their friends and receive alerts when friends are nearby. The main purpose of this application is to boost the accuracy of positioning system in cellular networks. Hybrid location scheme, which combines both satellite-based and the network based signals, is used. This application works in open space areas only since it relies on GPS. The objective is to track the location according to radius maintained by administrator.

A.Mondal, Md.A.Masud, N.K.Biswas, Md.E.Sarder presented 'Smartphone tracking application using SMS service'[2]. This application helps the user by informing about the theft SIM number from the stolen phone. Once the SIM card is changed, a messaged will be sent to the alternated number. Another method which this paper proposes is the use of advanced GPS tracker wherein the application will keep updating the location every 10 minutes, and each times the location changes, it will send an email to the user.

Xianhua Shu, Zhenjun Du, Rong Chen presented 'Research on Mobile Location Service Designed Based on Android'[3]. This paper focuses on developing an android application that would use Google Map service as the main intent. The android application makes use of the components like Map View, Map Activity and Location Based API on android. MapView is used to display a view of the map. It can accept the keyboard events such as onKeyDown and onKeyUp to support the map movement and the zoom feature. It also supports multi-layer Overlay and user can draw coordinates, pictures and strings on the map. MapView is set up only by MapActivity. Because MapView uses the file system and network in the background, all of these threads are in the control of the Activity life cycle. Before using the map, an api-key for the Map service needs to be applied from Google.

Prof. Seema Vanjire, Unmesh Kanchan, Ganesh Shitole and Pradynesh Patil presents 'Location Based Services on Smart Phone through the Android Application'[4]. In this paper, Location-based services or LBS refer to a set of applications that exploit the knowledge of the geographical position of a mobile device in order to provide services based on that information. The location of the device can be retrieved by Mobile Phone Service Provider Network or Satellites The Global Positioning System (GPS) uses a

constellation of 24 satellites orbiting the earth. This paper also provides us with a description of various android locations API such as LocationManager, LocationProvider and LocationListner. But the LBS system has constraints such as lack of spread of the wireless network into the countryside. The problem of network congestion is also an important issue. Google provides simulated environment and standard development kit for developing Android applications.

K.S.Kuppusamy, Senthilraja.R, G.Aghila presented 'A Model For Remote Access And Protection Of Smartphone's Using Short Message Service'[5]. This paper proposes a model to secure Smartphone's from theft as well as provides options to access a Smartphone through other Smartphone or a normal mobile via Short Message Service. It also provides facilities to receive the incoming call and SMS information to the remotely connected device and enables the remote user to control the mobile through SMS. The proposed model has two components. One client and one server. Client interface will help the user to send command by just clicking the radio buttons. The proposed model facilitates accessing of the device from a remote location using any other mobile terminal. The system has been designed in such a way that the mobile terminal used for accessing the remote android device, need not be an android device.

Muthumurugesan D, Nalini S, Vinodini R presented 'Smart Way to Track the Location in Android Operating System'[6]. They provide us an exceptional overview of how unique Google maps can prove beneficial for tracking Smartphone by using latitude and longitude values. The application is integrated with the GPS network providers and Google maps to obtain the latitude and longitude values. These values would let us know what's the current location of our device is. Further it would list out the destinations and the place these process list the destination by calculating the distance between current place and the destination place. This process contains the list of predefined places where user can select their starting location by typing the place name and can find the distance from that place.

III. METHODOLOGY

This section of the paper provides an overview of the method adopted for proposed system. The android application consists of a front end and the backend. Both are explained in the following section.

A. The Front End

The front end is an interface between the user and the back end. The front is an abstraction, simplifying the underlying component by providing a user-friendly interface. After the successful installation of the application the user will be provided a form in which attributes such as secondary email id, phone number should be filled. GUI components such as text filed are used for this purpose. After the successful submission of the attributes the user will be prompted with a successful registered page thereby resuming all the features which this application possesses.

B. The Back End

The backend of the application refers to the actual process that is triggered by the particular action such as a button click. The application requires to send the data of the registered user to the server for transferring the user data such as email id and phone number of the user PHP is used. The application will launch itself when the SIM card change is detected. The images will be captured using primary and secondary camera. For this purpose the manifest file of application obtains camera permission. Also the location values will be fetched using the GPS service. To access current location information through location providers, we need to set permissions with android manifest file for Access_Fine_Location. Both the location and the images are wrapped in JSON object. JSON object are used primarily to transmit data between a server and application. PHP json_encode() function is used for encoding JSON in PHP. This function returns the JSON representation of a value on success or FALSE on failure. Serialization of data using JSON by the sender is relatively quick and compact because the structure of JSON reflects the structure of standard programming data types and the encoding mechanism adds only the minimum number of characters required to indicate the structure and value of the data. Once the recipient receives the JSON serialized data, then, the only processing needing to be done is to evaluate the text of the string using. The object is then sent as an email to the registered users email id by the server.

C. Application development

The application will be developed using Eclipse IDE. The server side scripting will be done using PHP and the objects are wrapped using JSON format.

IV. ADVANTAGES

A. Installation

The enviable advantage of this application is that it would be easy to install.

B. Runs in the background

Android provides a unique ability for applications to launch itself and then run in the background. This application would be running in the background keeping a watch on SIM change without affecting the devices performance.

C. Financial Cost

Unlike other systems which provide security on pay per install basis, this application will be available for free.

D. Captures Images

By making good use of the android camera hardware libraries the application is will able to capture images by both primary and secondary camera without making any shutter noise and without letting the thief know this activity.

E. Makes use of GPS technology

Application makes healthy use of GPS driven technology to get the latitude and longitude values which further boasts tracking of a Smartphone in addition to capturing image feature.

F. Use of JSON in the backend

JSON is light weight component. It doesn't take more time for execution. It supports data structures used in modern languages. In JSON we can retrieve values from anywhere.

V. DISADVANTAGES

A. Low balance

When the thief changes the smart phone user's SIM by his own SIM, then a short message will be sent. If his SIM has no balance, then no message will be sent to the user predefined number.

B. An expert thief

An expert thief may changes the version or format the smart phone, then the installed application will be deleted and can't send any SMS. The application then cannot find out the location of the thief.

C. Mandatorily requires Internet Connection

AABITTSp requires internet connection to perform its main job i.e. to send images. If there is no internet connection because of network issues or the internet connection is turned off, then the images clicked from the primary and secondary camera won't be sent to predefined email address.

D. Necessity of front camera

The scenario proposed in this work is totally dependent on the hardware of the Smartphone like camera (primary & secondary).

VI. FUTURE SCOPE

In order to enhance the full potential of android applications that help the user to track their Smartphone's we proposed an application that would click and send the captured images to the predefine email address. So for future work, it is proposed to implement some algorithm that would check for SIM card in the device and if it's not found then the application would switch on the WiFi connection and attempt to connect to a nearest open port and start sending the captured images.

VII. REFERENCES

- [1] J.Jayashree, K.Nirupama, J.Vijayashree, K.Anish Fatima 'Mobile Tracking application for Locating Friends using LBS',International Journal of Engineering Science and Technology (IJEST).

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- [2] A.Mondal, Md.A.Masud, N.K.Biswas, Md.E.Sarder 'Smartphone tracking application using SMS service', International Journal of Electronics, Electrical and Computational System.
- [3] Xianhua Shu, Zhenjun Du, Rong Chen 'Research on Mobile Location Service Designed Based on Android'.
- [4] Prof. Seema Vanjire, Unmesh Kanchan, Ganesh Shitole and Pradynesh Patil 'Location Based Services on Smart Phone through the Android Application'. International Journal of Advanced Research in Computer and Communication Engineering, Vol. 3, Issue 1, January 2014
- [5] K.S.Kuppusamy, Senthilraja.R, G.Aghila 'A Model For Remote Access And Protection Of Smartphone's Using Short Message Service', International Journal of Computer Science, Engineering and Information Technology (IJCSEIT), Vol.2, No.1, February 2012.
- [6] Muthumurugesan D, Nalini S, Vinodini R presented 'Smart Way to Track the Location in Android Operating System', IOSR Journal of Computer Engineering (IOSR-JCE), Volume 12, Issue 4 (Jul. - Aug. 2013)

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